

Electric Slide Tables

LES/LESH Series



Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

- Reduced cycle time
- Positioning repeatability: ± 0.05 mm
- Max. pushing force: 180 N
- Max. acceleration/deceleration: 5000 mm/s²
- Max. speed: 400 mm/s

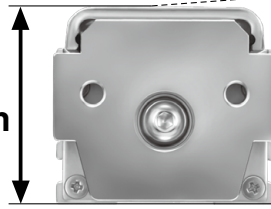
Compact Type *LES Series*

Size: 8, 16, 25 ▶ p. 423



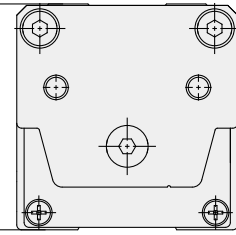
Compared with the LESH, Workpiece mounting surface height: Reduced by up to 12%

40.3 mm



Compact type
LES16D

46 mm



LESH16D

Basic type/R type



Symmetrical type/L type



In-line motor type/D type



High Rigidity Type *LESH Series*

Size: 8, 16, 25 ▶ p. 450



Deflection: 0.016 mm*

* LESH16-50 Load: 25 N

Basic type/R type

LESH□R Series



Symmetrical type/L type

LESH□L Series



In-line motor type/D type

LESH□D Series



Step Motor (Servo/24 VDC) Servo Motor (24 VDC) Controllers/Drivers

▶ p. 684

▶ Step data input type

JXC51/61/
LECA6 Series

- 64 positioning points
- Input using controller setting kit or teaching box



▶ EtherCAT®/EtherNet/IP™/
PROFINET/DeviceNet™/
IO-Link/CC-Link
direct input type

JXCE1/91/P1/D1/L1/M1 Series



▶ Programless type

LECP1 Series

- 14 positioning points
- Control panel setting



▶ Pulse input type

LECPA Series



- LEFS
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEY
- LEYG
- LES
- LESH
- LEPY
- LEPS
- LER
- LEH
- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC□
- LEC□
- JXC□
- LECS□
- LECS□-T
- LECY□
- Motorless
- LAT3

Compact Type **LES Series**

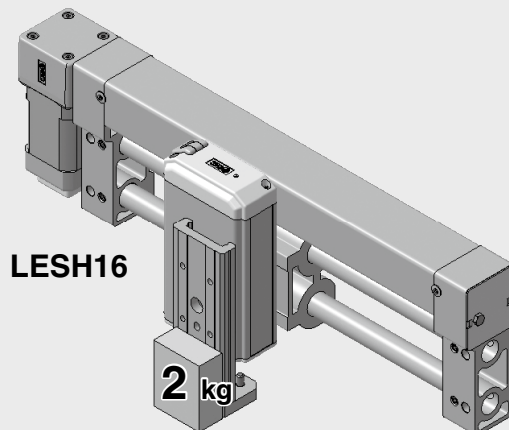
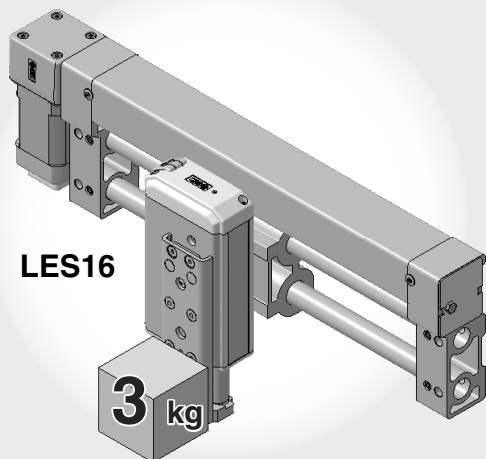
Vertical work load

Increased by up to **50%** *1 *2

*1 By reducing the weight of moving parts
*2 Compared with the LESH16

Model	Vertical work load [kg]
LES16	3.0
LESH16	2.0

Applications



Light weight

Reduced by up to **29%**

Model	Weight [kg]	Reduction amount
LES16D-100	1.20	Reduced by 0.50 kg
LESH16D-100	1.70	

- Max. pushing force: 180 N
- Positioning repeatability: ± 0.05 mm
- 2 types of motors selectable: Step motor (Servo/24 VDC), Servo motor (24 VDC)
- Can reduce cycle time
Max. acceleration/deceleration: 5000 mm/s²
Max. speed: 400 mm/s

Basic type/R type

LES□R Series



Symmetrical type/L type

LES□L Series



In-line motor type/D type

LES□D Series



High Rigidity Type LESH Series

High rigidity Deflection: 0.016 mm^{*1} *1 LESH16-50 Load: 25 N

**Integration of the guide rail and the table
Uses a circulating linear guide.**

Positioning pin hole

Improved workpiece mounting reproducibility

Body mounting through-hole

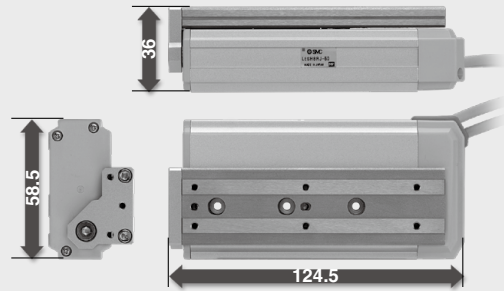
Can be mounted from the top

Workpiece mounting tap



Compact, Space-saving

For LESH8 R/L, 50 mm stroke



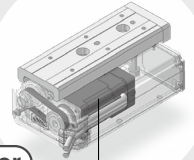
Reduced by 61% in volume^{*1 *2}

*1 Compared with the LESH16-50/LXSH-50

*2 For R/L type

Motor integrated into the body

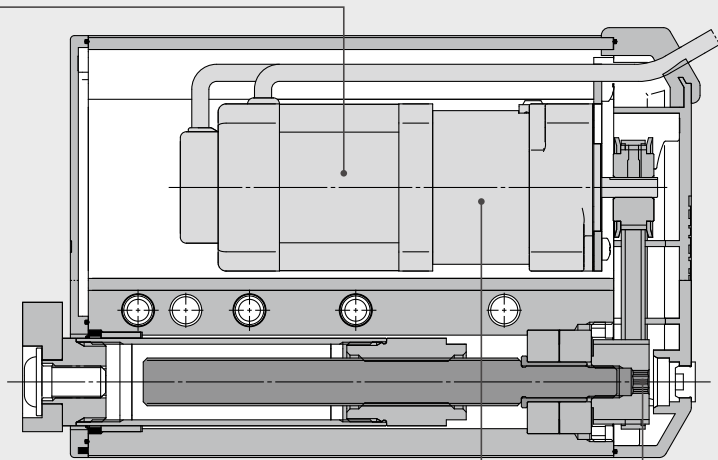
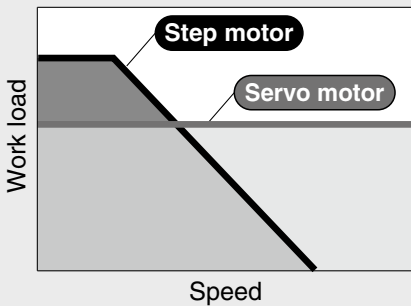
Built-in motor



Integration of the guide rail and the table

Select from 2 types of motors.

- **Step motor (Servo/24 VDC)**
Ideal for the low-speed transfer of heavy loads and pushing operations
- **Servo motor (24 VDC)**
Stable at high speeds
Silent operation



Non-magnetizing lock mechanism (Option)

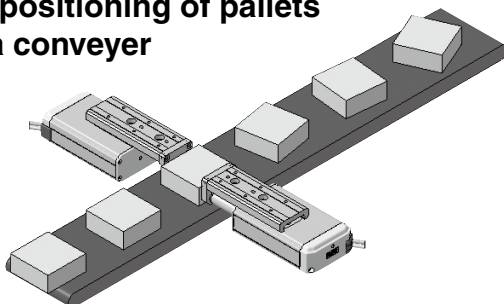
Prevents workpieces from dropping (Holding)

Manual override screw

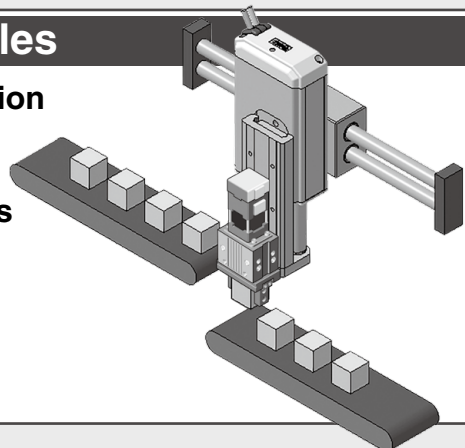
Adjustment operation is possible when the power is OFF.

Application Examples

For positioning of pallets on a conveyer



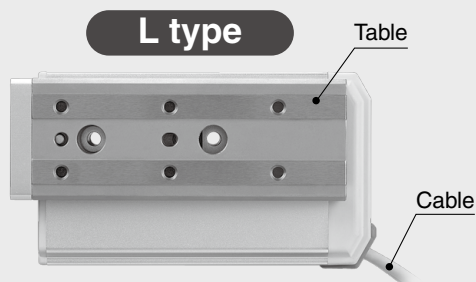
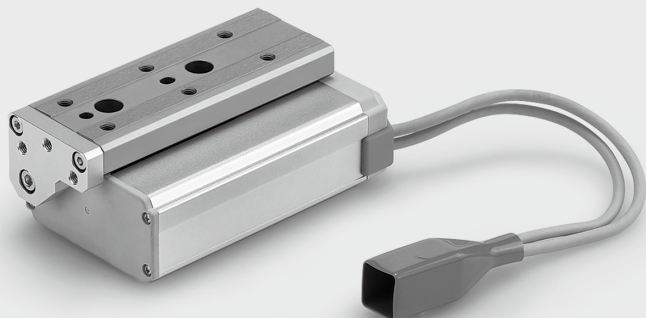
For Z motion for pick and place operations



- LEFS
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEY
- LEYG
- LES
- LESH
- LEPY
- LEPS
- LER
- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC
- LEC
- JXC
- LECS
- LECS-T
- LECY
- Motorless
- LAT3

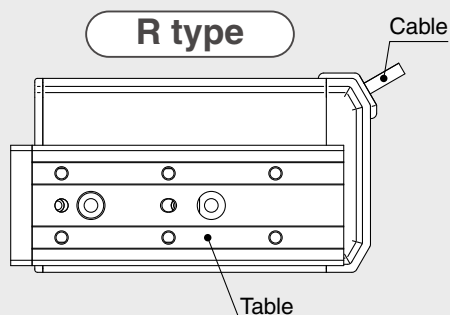
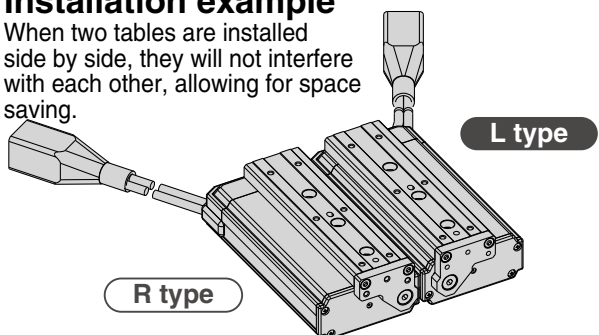
Symmetrical Type/L Type

The locations of the table and cable are opposite those of the basic type (R type), expanding design applications.



Installation example

When two tables are installed side by side, they will not interfere with each other, allowing for space saving.

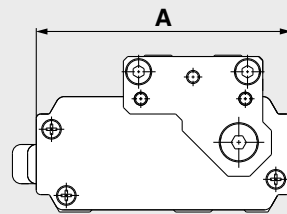
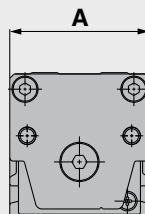


In-line Motor Type/D Type

Width dimension shortened by up to 45%

D type

R type



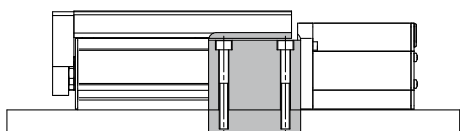
A Dimension

[mm]

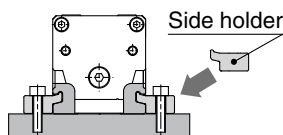
Size	D type	R/L type
8	32	58.5
16	45	72.5
25	61	106

How to Mount

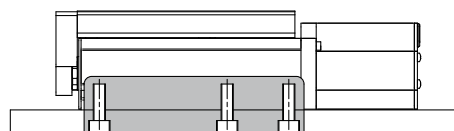
Through-hole mounting
(R/L/D type)



Side holder mounting
(D type)



Body tapped mounting
(R/L/D type)



- LAT3
- Motorless
- LECY
- LECS JXC LEC
- LECS T
- 11-LEJS
- 11-LEFS
- LEY-X5
- LEH
- LER
- LEPY
LEPS
- LES
LESH
- LEY
LEYG
- LEM
- LEL
- LEJS
LEJB
- LEFS
LEFB

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

Electric Slide Table/Compact Type *LES Series*



Model Selection	p. 423, 429
How to Order	p. 433
Specifications	p. 436
Construction	p. 438
Dimensions	p. 440

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

Electric Slide Table/High Rigidity Type *LESH Series*



Model Selection	p. 450, 455
How to Order	p. 459
Specifications	p. 462
Construction	p. 464
Dimensions	p. 466

Specific Product Precautions	p. 476
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Step Motor (Servo/24 VDC)/Servo Motor (24 VDC) Controller



Step Data Input Type/ <i>JXC51/61 Series</i>	p. 706-1
Step Data Input Type/ <i>LECA6 Series</i>	p. 707
EtherCAT®/EtherNet/IP™/PROFINET/DeviceNet™/IO-Link Direct Input Type/ <i>JXCE1/91/P1/D1/L1 Series</i>	p. 741
Gateway Unit/ <i>LEC-G Series</i>	p. 715
Programless Controller/ <i>LECP1 Series</i>	p. 719
Step Motor Driver/ <i>LECPA Series</i>	p. 731
Actuator Cable	p. 758
Communication Cable for Controller Setting/ <i>LEC-W2A-□</i>	p. 760
Teaching Box/ <i>LEC-T1</i>	p. 761

3-Axis Step Motor Controller



EtherNet/IP™ Type/ <i>JXC92 Series</i>	p. 747
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4-Axis Step Motor Controller (Servo/24 VDC)



Parallel I/O/ <i>JXC73/83 Series</i>	p. 749
EtherNet/IP™ Type/ <i>JXC93 Series</i>	p. 749

Electric Slide Tables

Compact Type *LES Series*

Step Motor (Servo/24 VDC)

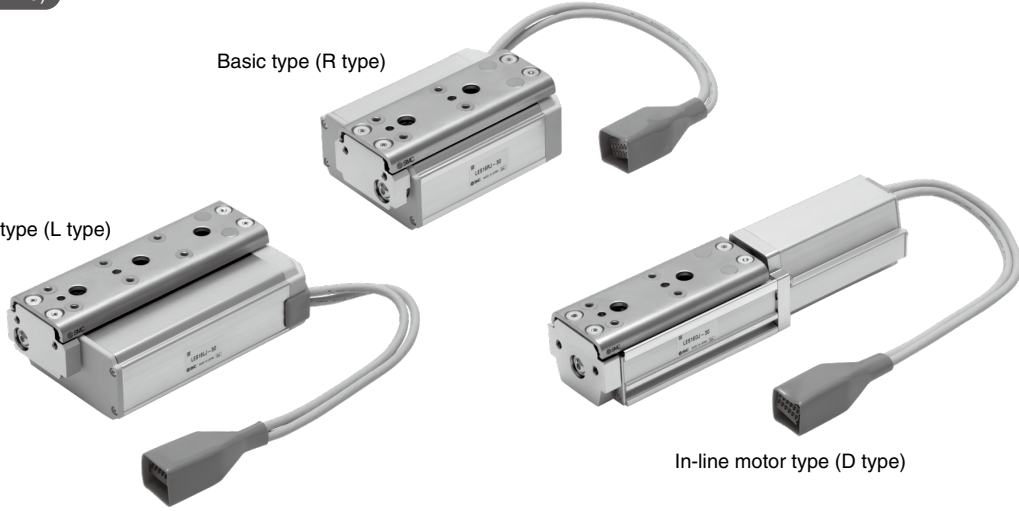
Servo Motor (24 VDC)

p. 433

Symmetrical type (L type)

Basic type (R type)

In-line motor type (D type)



High Rigidity Type *LESH Series*

Step Motor (Servo/24 VDC)

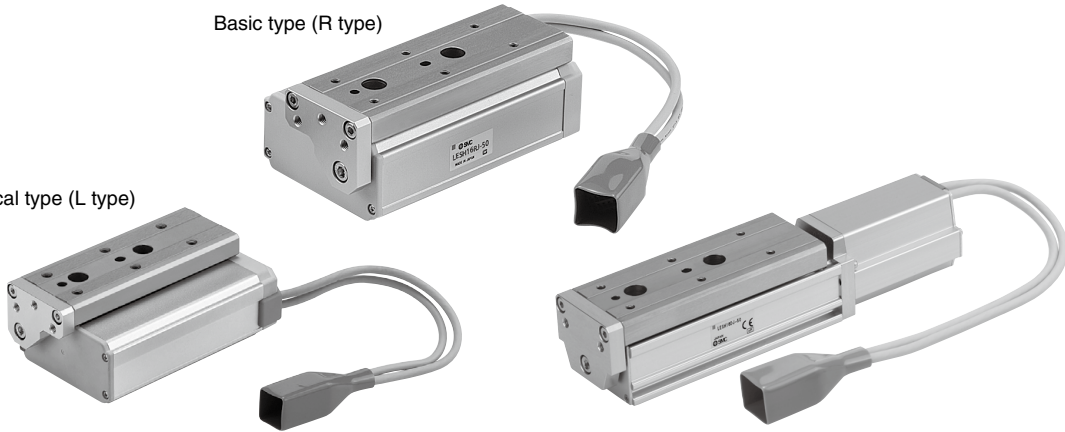
Servo Motor (24 VDC)

p. 459

Symmetrical type (L type)

Basic type (R type)

In-line motor type (D type)



Step Motor/Servo Motor Controller/Driver p. 684

- LEFS
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEY
- LEYG
- LES
- LESH
- LEPY
- LEPS
- LER
- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC
- JXC
- LECS
- LECS-T
- LECY
- Motorless
- LAT3

Model Selection 1



LES Series ▶ p. 433

Selection Procedure For the high rigidity type LESH series, refer to page 450



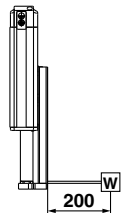
Selection Example

Step 1 Check the work load-speed. <Speed-Work load graph> (Page 424)
 Select a model based on the workpiece mass and speed while referencing the speed-work load graph.
 Selection example) The LES16□J-50 can be temporarily selected as a possible candidate based on the graph shown on the right side.

Step 2 Check the cycle time.
 It is possible to find an approximate cycle time by using method 1, but if a more detailed cycle time is required, use method 2.

Operating conditions

- Workpiece mass: 1 [kg]
- Workpiece mounting condition:
- Speed: 220 [mm/s]
- Mounting orientation: Vertical
- Stroke: 50 [mm]
- Acceleration/Deceleration: 5000 [mm/s²]
- Cycle time: 0.5 s



Method 1: Check the cycle time graph. (Page 425)

Method 2: Calculation <Speed-Work load graph> (Page 424)
 Calculate the cycle time using the following calculation method.
 Calculation example)
 T1 to T4 can be calculated as follows.

Cycle time:
 T can be found from the following equation.

$$T = T1 + T2 + T3 + T4 \text{ [s]}$$

- T1: Acceleration time and T3: Deceleration time can be found by the following equation.

$$T1 = V/a1 \text{ [s]} \quad T3 = V/a2 \text{ [s]}$$

- T2: Constant speed time can be found from the following equation.

$$T2 = \frac{L - 0.5 \cdot V \cdot (T1 + T3)}{V} \text{ [s]}$$

- T4: Settling time varies depending on the conditions such as motor types, load, and in position of the step data. Therefore, calculate the settling time while referencing the following value.

$$T4 = 0.15 \text{ [s]}$$

$$T1 = V/a1 = 220/5000 = 0.04 \text{ [s]}$$

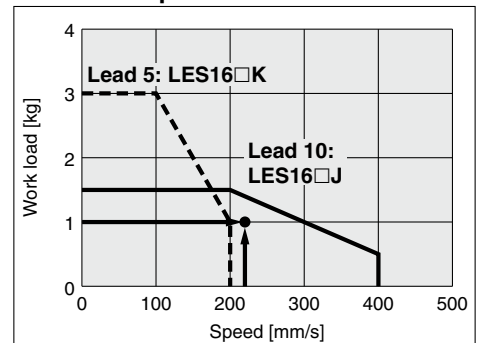
$$T3 = V/a2 = 220/5000 = 0.04 \text{ [s]}$$

$$T2 = \frac{L - 0.5 \cdot V \cdot (T1 + T3)}{V} = \frac{50 - 0.5 \cdot 220 \cdot (0.04 + 0.04)}{220} = 0.19 \text{ [s]}$$

$$T4 = 0.15 \text{ [s]}$$

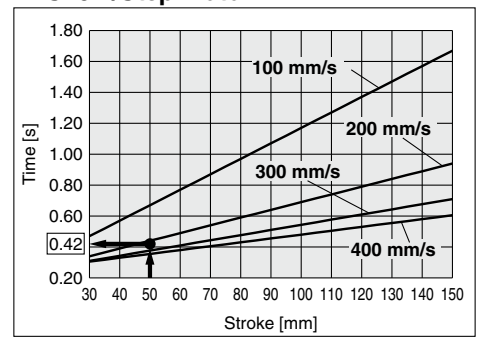
The cycle time can be found as follows.
 $T = T1 + T2 + T3 + T4 = 0.04 + 0.19 + 0.04 + 0.15 = 0.42 \text{ [s]}$

LES16□/Step Motor Vertical



<Speed-Work load graph>

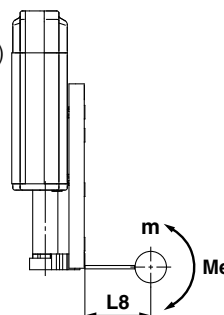
LES16□/Step Motor



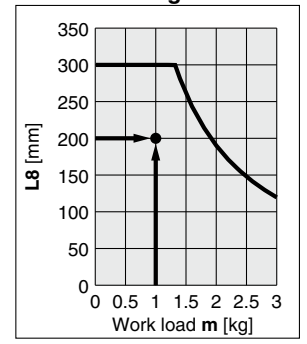
<Cycle time>

Step 3 Check the allowable moment. <Static allowable moment> (Page 425)
 <Dynamic allowable moment> (Pages 426, 427)

Confirm the moment that applies to the actuator is within the allowable range for both static and dynamic conditions.



LES16/Pitching



<Dynamic allowable moment>

Based on the above calculation result, the LES16□J-50 should be selected.

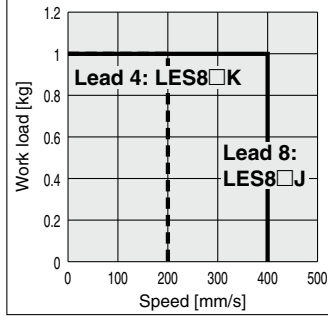
Speed-Work Load Graph (Guide)

Step Motor (Servo/24 VDC)

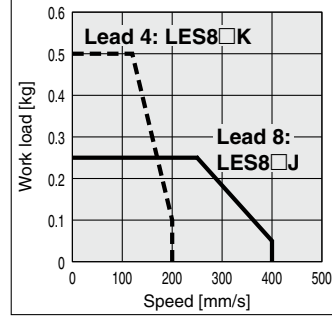
* The following graphs show the values when moving force is 100%.

LES8□

Horizontal

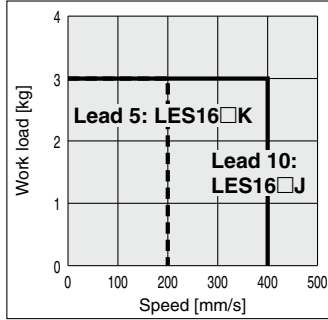


Vertical

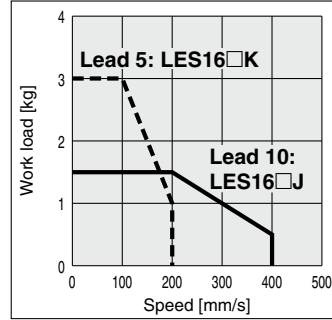


LES16□

Horizontal

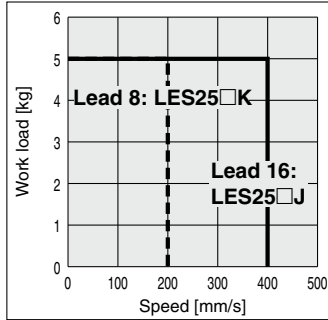


Vertical

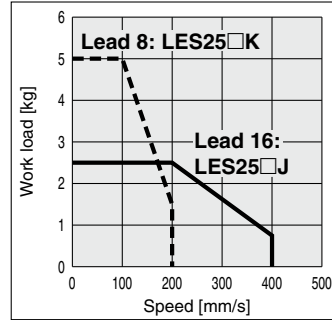


LES25□

Horizontal



Vertical

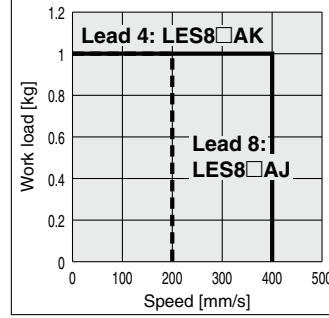


Servo Motor (24 VDC)

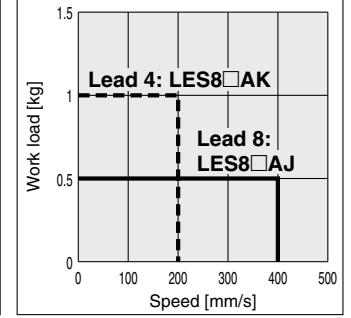
* The following graphs show the values when moving force is 250%.

LES8□A

Horizontal

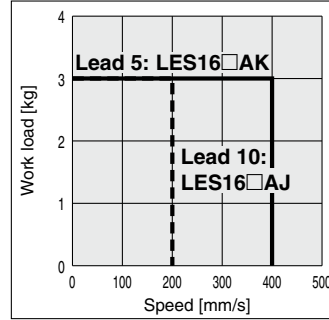


Vertical

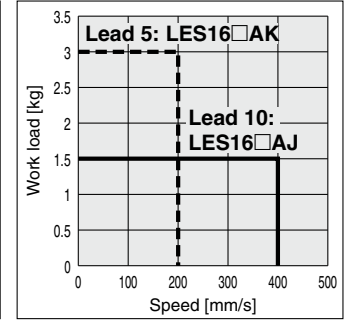


LES16□A

Horizontal

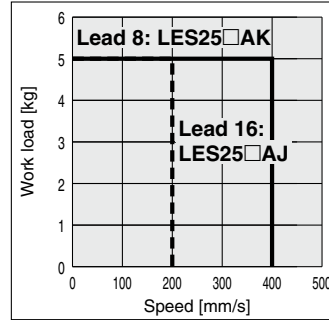


Vertical

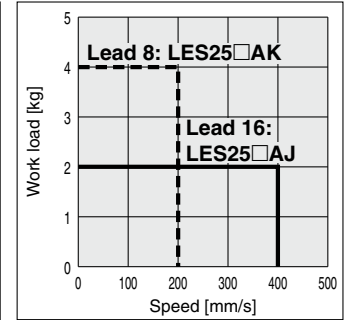


LES25^R□A

Horizontal



Vertical



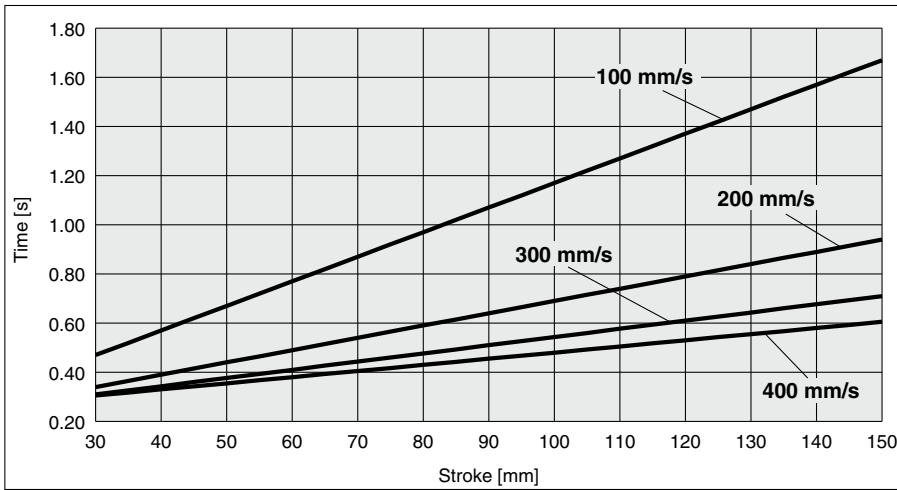
- LEFS
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEJY
- LEYG
- LES
- LESH
- LEPY
- LEPS
- LER
- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC□
- JXC□
- LECS□
- LECS□-T
- LECY□
- Motorless
- LAT3

LES Series

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

Cycle Time Graph (Guide)



Operating Conditions

Acceleration/Deceleration: 5000 mm/s²

In position: 0.5 mm

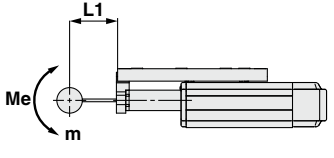
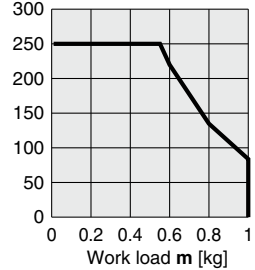
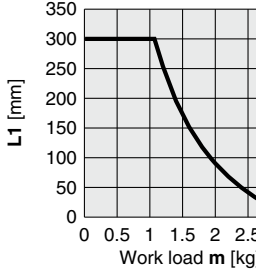
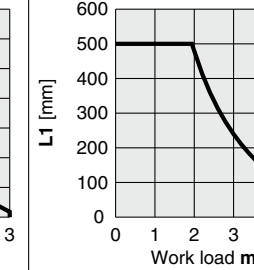
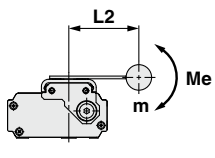
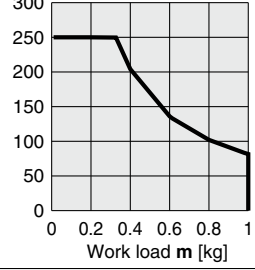
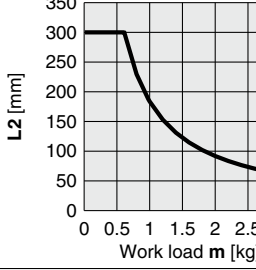
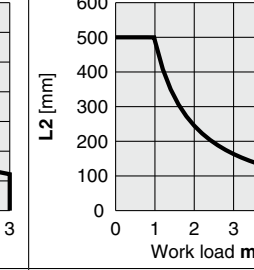
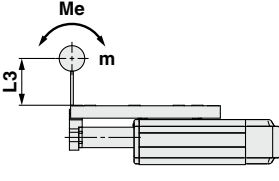
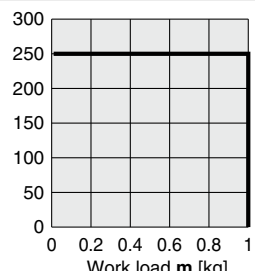
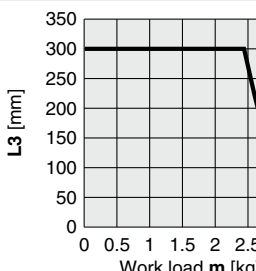
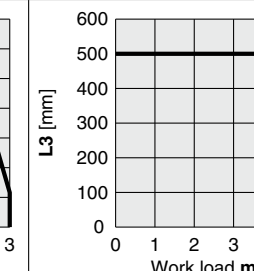
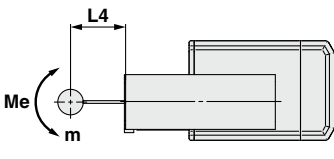
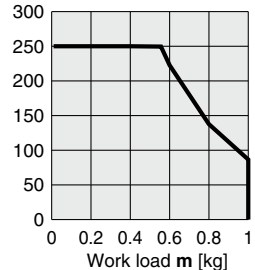
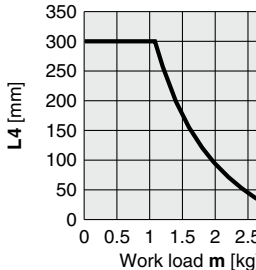
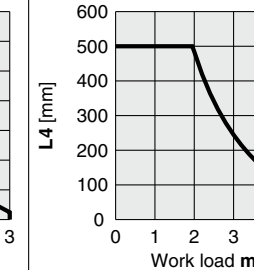
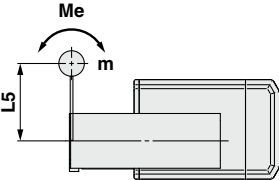
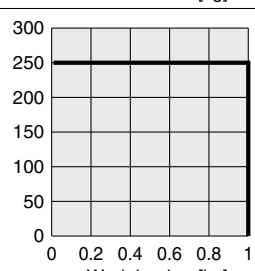
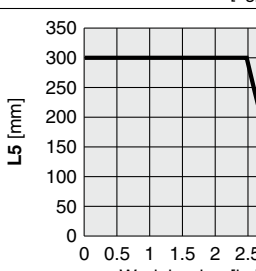
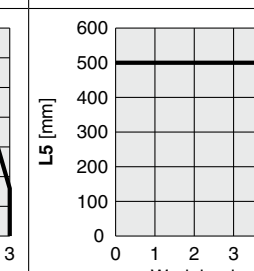
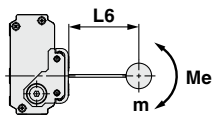
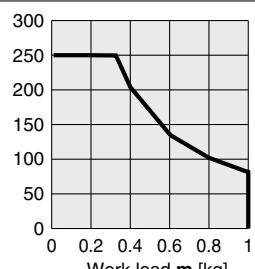
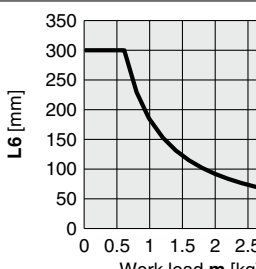
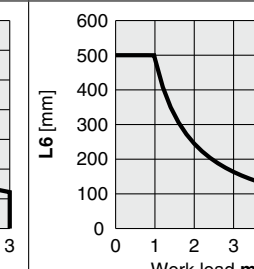
Static Allowable Moment

Model		LES8	LES16	LES25
Pitching	[N·m]	2	4.8	14.1
Yawing	[N·m]	2	4.8	14.1
Rolling	[N·m]	0.8	1.8	4.8

* This graph shows the amount of allowable overhang (guide unit) when the center of gravity of the workpiece overhangs in one direction. When selecting the overhang, refer to the "Calculation of Guide Load Factor" or the Electric Actuator Model Selection Software for confirmation: <https://www.smcworld.com>

Dynamic Allowable Moment

Acceleration/Deceleration — 5000 mm/s²

Orientation	Load overhanging direction m : Work load [kg] Me: Allowable moment [N·m] L : Overhang to the work load center of gravity [mm]	Model		
		LES8	LES16	LES25
Horizontal/Bottom	 X L1 [mm]			
	 Y L2 [mm]			
	 Z L3 [mm]			
Wall	 X L4 [mm]			
	 Y L5 [mm]			
	 Z L6 [mm]			

- LEFS
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEY
- LEYG
- LES
- LESH
- LEPY
- LEPS
- LER
- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC
- JXC
- LECS
- LECS-T
- LECY
- Motorless
- LAT3

* This graph shows the amount of allowable overhang (guide unit) when the center of gravity of the workpiece overhangs in one direction. When selecting the overhang, refer to the "Calculation of Guide Load Factor" or the Electric Actuator Model Selection Software for confirmation: <https://www.smcworld.com>

Dynamic Allowable Moment

Acceleration/Deceleration — 5000 mm/s²

Orientation	Load overhanging direction m : Work load [kg] Me: Allowable moment [N·m] L : Overhang to the work load center of gravity [mm]	Model		
		LES8	LES16	LES25
Vertical	Y			
	Z			

Calculation of Guide Load Factor

- Decide operating conditions.

Model: LES

Size: 8/16/25

Mounting orientation: Horizontal/Bottom/Wall/Vertical

Acceleration [mm/s²]: a

Work load [kg]: m

Work load center position [mm]: Xc/Yc/Zc

- Select the target graph while referencing the model, size, and mounting orientation.

- Based on the acceleration and work load, find the overhang [mm]: Lx/Ly/Lz from the graph.

- Calculate the load factor for each direction.

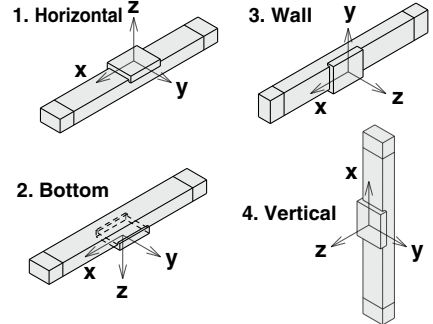
$$\alpha_x = X_c/L_x, \alpha_y = Y_c/L_y, \alpha_z = Z_c/L_z$$

- Confirm the total of α_x , α_y , and α_z is 1 or less.

$$\alpha_x + \alpha_y + \alpha_z \leq 1$$

When 1 is exceeded, please consider a reduction of acceleration and work load, or a change of the work load center position and series.

Mounting orientation



Example

- Operating conditions

Model: LES

Size: 8

Mounting orientation: Horizontal

Acceleration [mm/s²]: 5000

Work load [kg]: 0.6

Work load center position [mm]: Xc = 50, Yc = 30, Zc = 60

- Select three graphs from the top of the left side first row on page 426.

- Lx = 220 mm, Ly = 135 mm, Lz = 250 mm

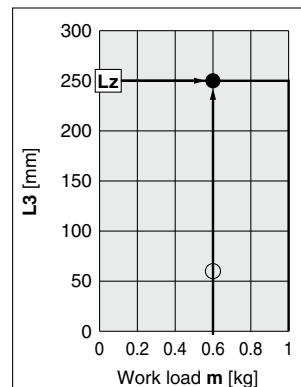
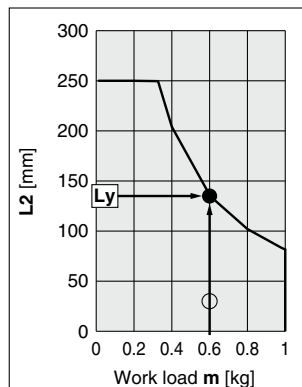
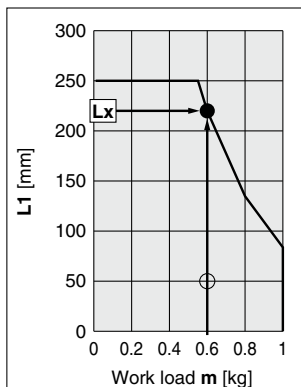
- The load factor for each direction can be found as follows.

$$\alpha_x = 50/220 = 0.23$$

$$\alpha_y = 30/135 = 0.22$$

$$\alpha_z = 60/250 = 0.24$$

- $\alpha_x + \alpha_y + \alpha_z = 0.69 \leq 1$



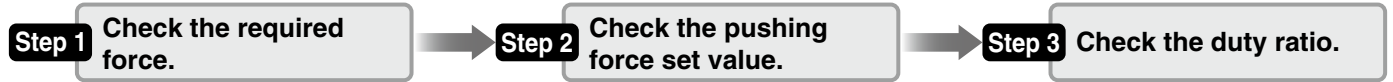
- LAT3
- Motorless
- LECY
- LECS JXC
- LECS T
- 25A-
- 11-LEJS
- 11-LEFS
- LEY-X5
- LEH
- LER
- LEPY LEPS
- LES LESH
- LEY LEYG
- LEM
- LEL
- LEJS LEJB
- LEFS LEFB

Model Selection 2



LES Series ▶ p. 433

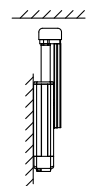
Selection Procedure For the high rigidity type LESH series, refer to page 455



Selection Example

Operating conditions

- Pushing force: 90 [N]
- Workpiece mass: 1 [kg]
- Speed: 100 [mm/s]
- Stroke: 100 [mm]
- Mounting orientation: Vertical upward
- Pushing time + Operation (A): 1.5 s
- Full cycle time (B): 6 s



Step 1 Check the required force.

Calculate the approximate required force for a pushing operation.

Selection example) • Pushing force: 90 [N]
 • Workpiece mass: 1 [kg]
 The approximate required force can be found to be $90 + 10 = 100$ [N].

Select a model based on the approximate required force while referencing the specifications (Pages 436, 437).

Selection example) Based on the specifications,
 • Approximate required force: 100 [N]
 • Speed: 100 [mm/s]
 The LES25□ can be temporarily selected as a possible candidate.

Then, calculate the required force for a pushing operation. If the mounting position is vertical upward, add the actuator table weight.

Selection example) Based on the table weight,
 • LES25□ table weight: 0.5 [kg]
 The required force can be found to be $100 + 5 = 105$ [N].

Step 2 Check the pushing force set value.

<Pushing force set value–Force graph> (Page 430)

Select a model based on the required force while referencing the pushing force set value–force graph, and confirm the pushing force set value.

Selection example) Based on the graph shown on the right side,
 • Required force: 105 [N]
 The LES25□K can be temporarily selected as a possible candidate.
 This pushing force set value is 40 [%].

Step 3 Check the duty ratio.

Confirm the allowable duty ratio based on the pushing force set value while referencing the allowable duty ratio.

Selection example) Based on the allowable duty ratio,
 • Pushing force set value: 40 [%]
 The allowable duty ratio can be found to be 30 [%].

Calculate the duty ratio for the operating conditions, and confirm it does not exceed the allowable duty ratio.

Selection example) • Pushing time + Operation (A): 1.5 s
 • Full cycle time (B): 6 s
 The duty ratio can be found to be $1.5/6 \times 100 = 25$ [%], and this is within the allowable range.

Based on the above calculation result, the LES25□K-100 should be selected. For allowable moment, the selection procedure is the same as that for the positioning control.

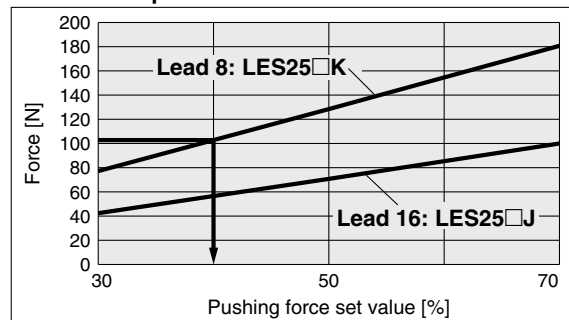
Table Weight

[kg]

Model	Stroke [mm]					
	30	50	75	100	125	150
LES8	0.06	0.08	0.10	—	—	—
LES16	0.10	0.13	0.18	0.20	—	—
LES25	0.25	0.30	0.36	0.50	0.55	0.59

* If the mounting position is vertical upward, add the table weight.

LES25□/Step Motor



<Pushing force set value–Force graph>

Allowable Duty Ratio

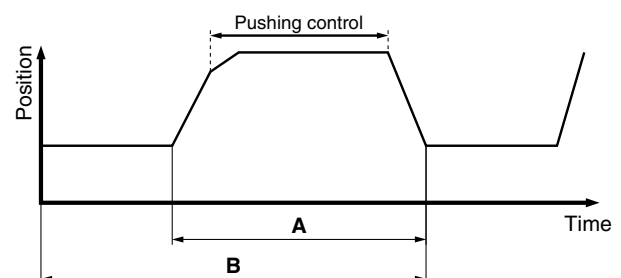
Step Motor (Servo/24 VDC)

Pushing force set value [%]	Duty ratio [%]	Continuous pushing time [min]
30	—	—
50 or less	30 or less	5 or less
70 or less	20 or less	3 or less

Servo Motor (24 VDC)

Pushing force set value [%]	Duty ratio [%]	Continuous pushing time [min]
50	—	—
75 or less	30 or less	5 or less
100 or less	20 or less	3 or less

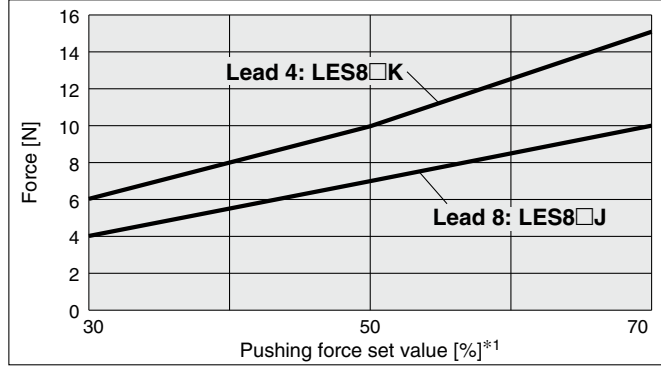
* The pushing force of the LES8□A is up to 75%.



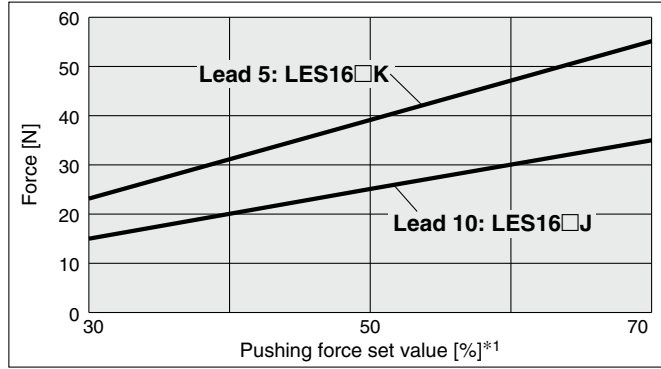
Pushing Force Set Value–Force Graph

Step Motor (Servo/24 VDC)

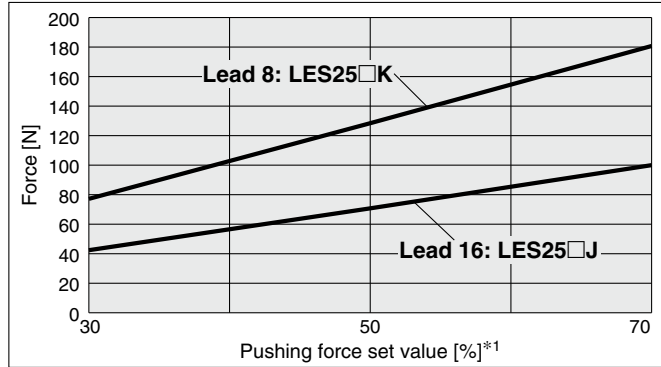
LES8□



LES16□

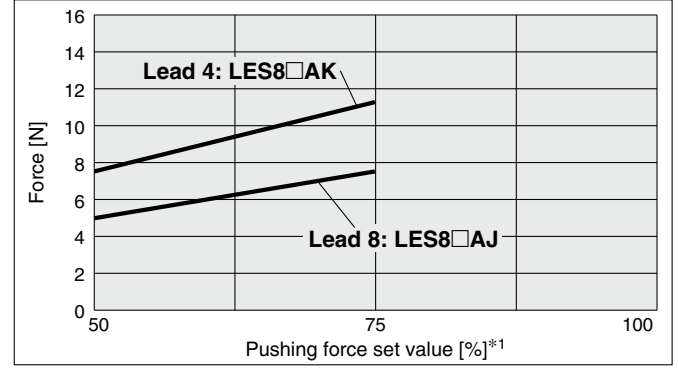


LES25□

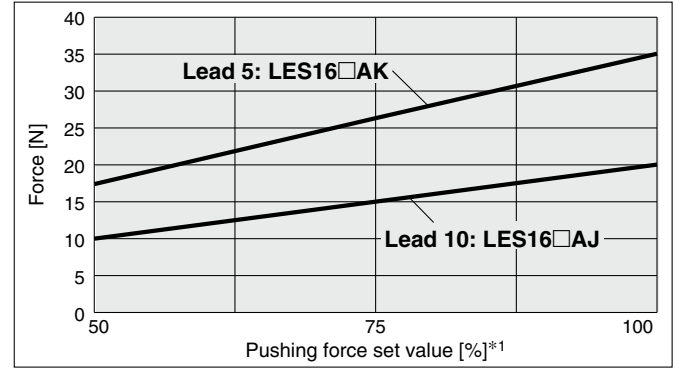


Servo Motor (24 VDC)

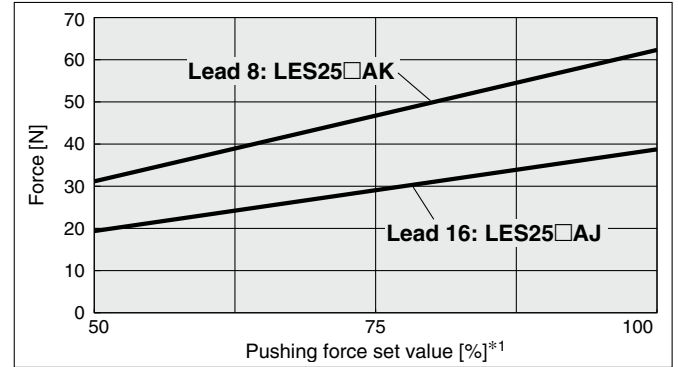
LES8□A



LES16□A



LES25□A



*1 Set values for the controller

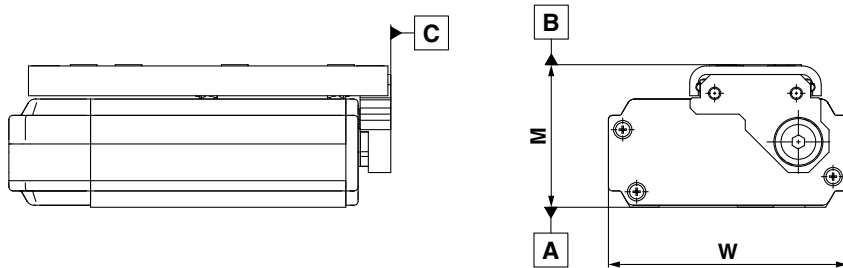
- LESF
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEY
- LEYG
- LES
- LESH
- LEPY
- LEPS
- LER
- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC□
- JXC□
- LECS□
- LECS□-T
- LECY□
- Motorless
- LAT3

LES Series

Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

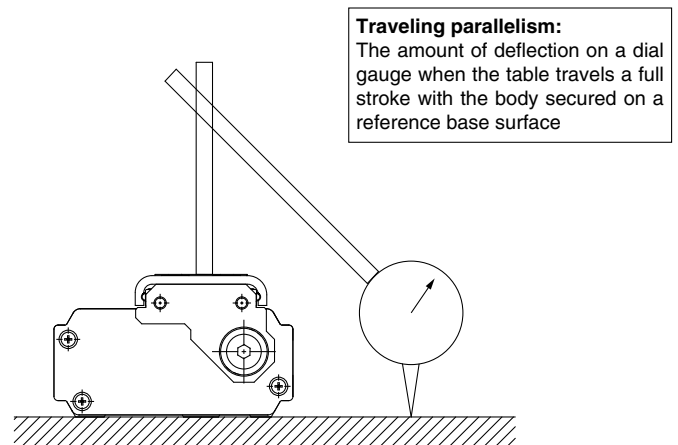
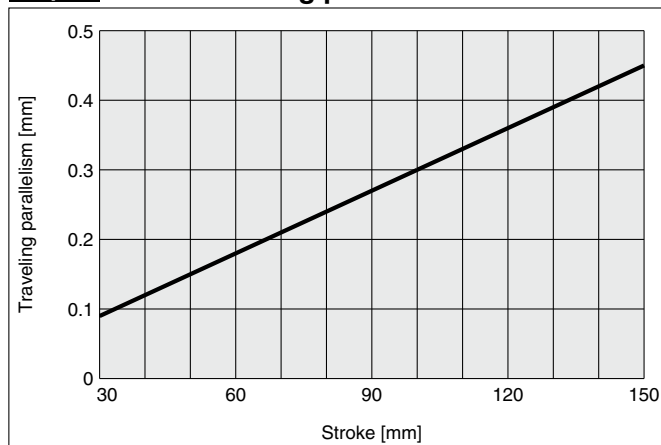
Table Accuracy

* These values are initial guideline values.



Model	LES8	LES16	LES25
B side parallelism to A side	0.4 mm		
B side traveling parallelism to A side	Refer to Graph 1.		
C side perpendicularity to A side	0.2 mm		
M dimension tolerance	±0.3 mm		
W dimension tolerance	±0.2 mm		

Graph 1 B side traveling parallelism to A side

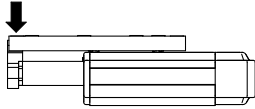


* These values are initial guideline values.

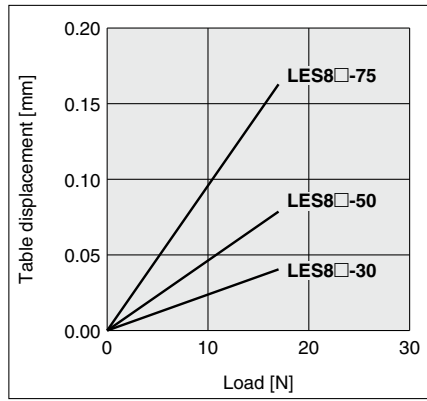
Table Deflection (Reference Value)

Pitching moment

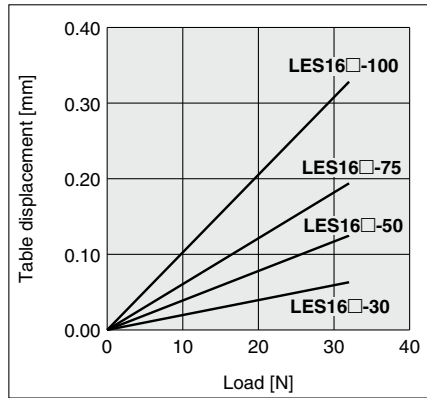
Table displacement due to pitch moment load
 Table displacement when loads are applied to the section marked with the arrow with the slide table stuck out.



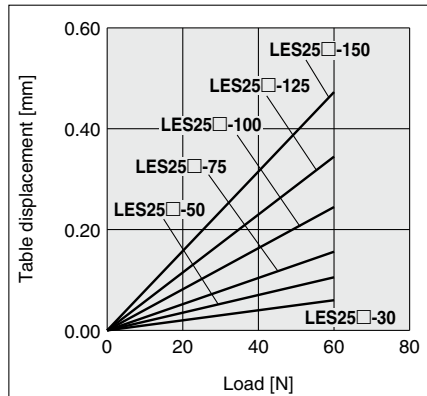
LES8



LES16

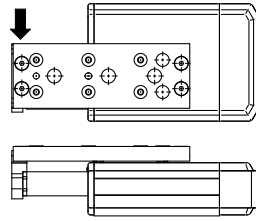


LES25

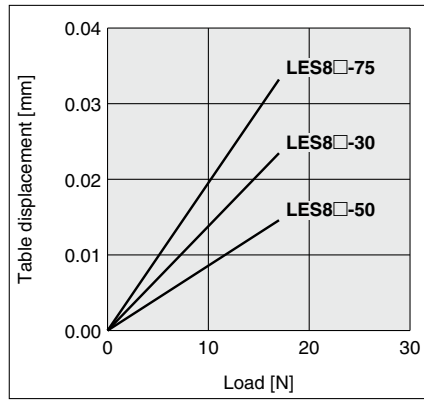


Yawing moment

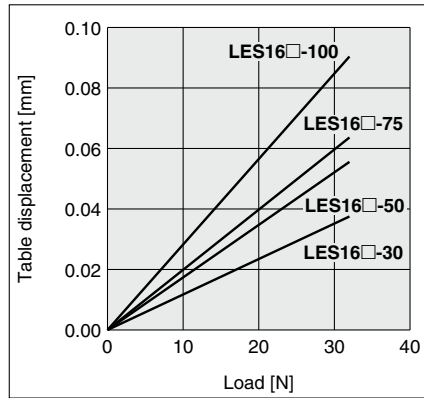
Table displacement due to yaw moment load
 Table displacement when loads are applied to the section marked with the arrow with the slide table stuck out.



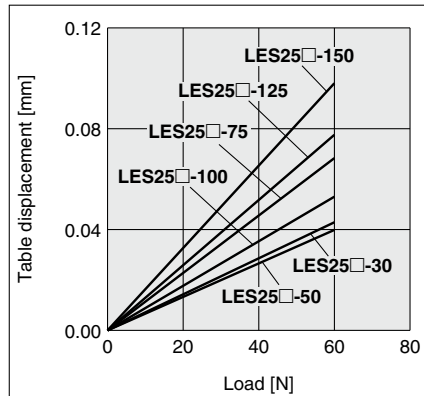
LES8



LES16

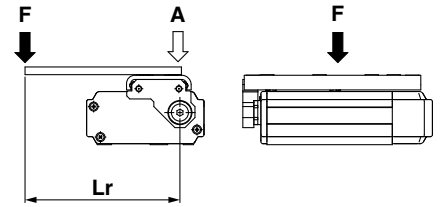


LES25

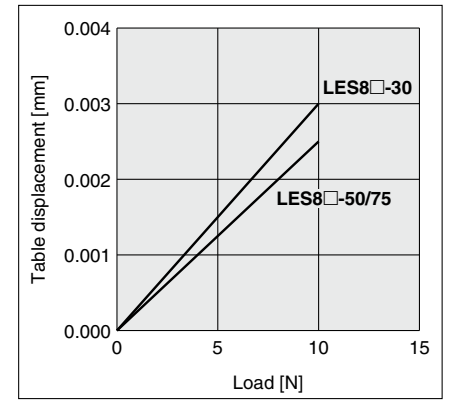


Rolling moment

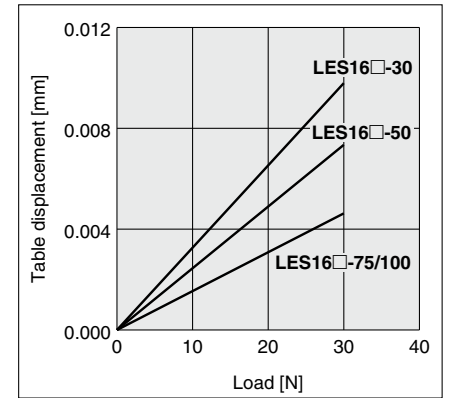
Table displacement due to roll moment load
 Table displacement of section A when loads are applied to the section F with the slide table retracted.



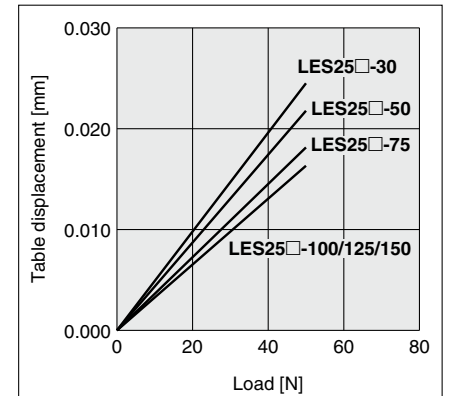
LES8



LES16



LES25



- LEFS
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEY
- LEYG
- LES
- LESH
- LEPY
- LEPS
- LER
- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC
- JXC
- LECS
- LECS-T
- LECY
- Motorless
- LAT3

Electric Slide Table Compact Type

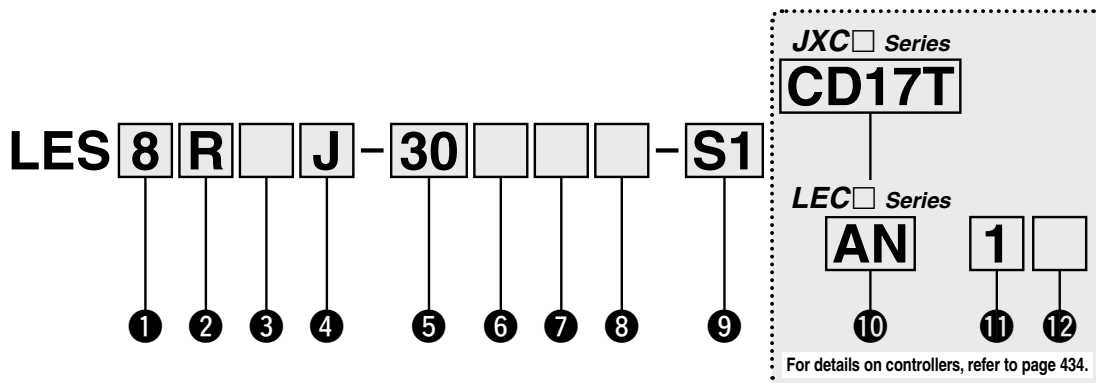
LES Series LES8, 16, 25



How to Order



Basic type (R type) Symmetrical type (L type) In-line motor type (D type)



1 Size

8
16
25

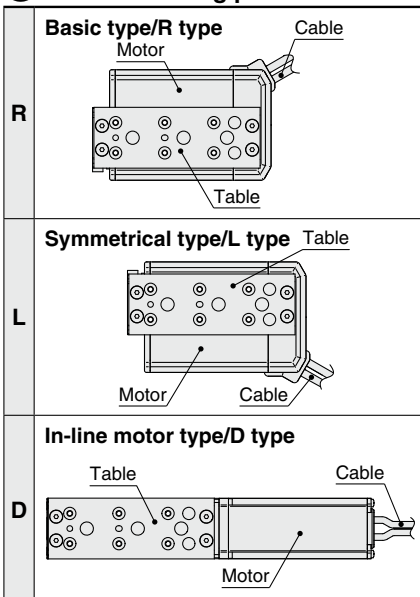
4 Lead [mm]

Symbol	LES8	LES16	LES25
J	8	10	16
K	4	5	8

5 Stroke [mm]

Stroke	Note	
	Size	Applicable stroke
30 to 75	8	30*2, 50*2, 75
30 to 100	16	30*2, 50*2, 75, 100
30 to 150	25	30*2, 50, 75, 100, 125, 150

2 Motor mounting position



3 Motor type

Symbol	Type	Compatible controllers/drivers
Nil	Step motor (Servo/24 VDC)	JXC51 JXCEF
		JXC61 JXC9F
		JXCE1 JXCPF
		JXC91 JXCLF
		JXCP1
		JXCD1 LECP1
		JXCL1 LECPA
A	Servo motor*1 (24 VDC)	LECA6

6 Motor option

Nil	Without option
B	With lock*2

7 Body option

Nil	Without option
S	Dust protected*3

8 Mounting*4

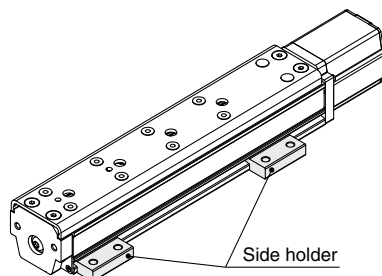
Symbol	Mounting	R type L type	D type
Nil	Without side holder	●	●
H	With side holder (4 pcs.)	—	●

Applicable motor option chart

Motor mounting position	Size	Stroke		
		30	50	75 or more
R/L	8	x	x	○
	16	x	x	○
	25	x	○	○
D	8	○	○	○
	16	○	○	○
	25	○	○	○

9 Actuator cable type/length*6

Standard cable [m]		Robotic cable [m]			
Nil	None	R1	1.5	RA	10*5
S1	1.5*8	R3	3	RB	15*5
S3	3*8	R5	5	RC	20*5
S5	5*8	R8	8*5		



JXC Series (For details, refer to page 435.)

10 Controller

Nil	Without controller
C□1□□	With controller

C D 1 7 T

Interface (Communication protocol/Input/Output)

Symbol	Type	Number of axes, Special specification	
		Standard	With STO sub-function
5	Parallel input (NPN)	●	
6	Parallel input (PNP)	●	
E	EtherCAT	●	●
9	EtherNet/IP™	●	●
P	PROFINET	●	●
D	DeviceNet®	●	
L	IO-Link	●	●
M	CC-Link	●	

Mounting

7	Screw mounting
8*12	DIN rail

Number of axes, Special specification

Symbol	Number of axes	Specification
1	Single axis	Standard
F	Single axis	With STO sub-function

Communication plug connector I/O cable*13

Symbol	Type	Applicable interface
Nil	Without accessory	—
S	Straight type communication plug connector	DeviceNet™
T	T-branch type communication plug connector	CC-Link Ver1.10
1	I/O cable (1.5 m)	Parallel input (NPN) Parallel input (PNP)
3	I/O cable (3 m)	
5	I/O cable (5 m)	

LEC Series (For details, refer to page 435.)

AN 1 □

10 11 12

10 Controller/Driver type*7

Nil	Without controller/driver	
6N	LECA6	NPN
6P	(Step data input type)	PNP
1N	LECP1 *8	NPN
1P	(Programless type)	PNP
AN	LECPA *8 *9	NPN
AP	(Pulse input type)	PNP

11 I/O cable length*10

Nil	Without cable (Without communication plug connector)
1	1.5 m
3	3 m*11
5	5 m*11

12 Controller/Driver mounting

Nil	Screw mounting
D	DIN rail*12

- *1 LES25DA is not available.
- *2 As the applicable motor mounting positions and motor options vary depending on the stroke, refer to the applicable motor option chart on page 433.
- *3 For R/L type (IP5X equivalent), a scraper is mounted on the rod cover, and gaskets are mounted on both the end covers. For D type, a scraper is mounted on the rod cover.
- *4 Refer to page 449 for details.
- *5 Produced upon receipt of order (Robotic cable only)
- *6 The standard cable should only be used on fixed parts. For use on moving parts, select the robotic cable. Refer to pages 758 and 759 if only the actuator cable is required.
- *7 For details on controllers/drivers and compatible motors, refer to the compatible controllers/drivers on the next page.

- *8 Only available for the motor type "Step motor"
- *9 When pulse signals are open collector, order the current limiting resistor (LEC-PA-R-□) on page 736 separately.
- *10 When "Without controller/driver" is selected for controller/driver types, I/O cable cannot be selected. Refer to page 713 (For LECA6), page 724 (For LECP1), or page 736 (For LECPA) if I/O cable is required.
- *11 When "Pulse input type" is selected for controller/driver types, pulse input usable only with differential. Only 1.5 m cables usable with open collector
- *12 The DIN rail is not included. It must be ordered separately.
- *13 Select "Nil" for anything other than DeviceNet™, CC-Link, or parallel input. Select "Nil," "S," or "T" for DeviceNet™ or CC-Link. Select "Nil," "1," "3," or "5" for parallel input.

⚠ Caution

[CE-compliant products]

- ① EMC compliance was tested by combining the electric actuator LES series and the controller LEC/JXC series. The EMC depends on the configuration of the customer's control panel and the relationship with other electrical equipment and wiring. Therefore, compliance with the EMC directive cannot be certified for SMC components incorporated into the customer's equipment under actual operating conditions. As a result, it is necessary for the customer to verify compliance with the EMC directive for the machinery and equipment as a whole.
- ② For the servo motor (24 VDC) specification, EMC compliance was tested by installing a noise filter set (LEC-NFA). Refer to page 713 for the noise filter set. Refer to the LECA series Operation Manual for installation.

[UL-compliant products (For the LEC series)]

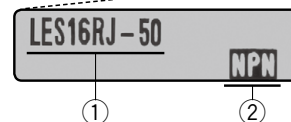
When compliance with UL is required, the electric actuator and controller/driver should be used with a UL1310 Class 2 power supply.

The actuator and controller/driver are sold as a package.

Confirm that the combination of the controller/driver and the actuator is correct.

<Check the following before use.>

- ① Check the actuator label for model number. This number should match that of the controller/driver.
- ② Check that the Parallel I/O configuration matches (NPN or PNP).



* Refer to the Operation Manual for using the products. Please download it via our website: <https://www.smcworld.com>

LEFS
LEFB

LEJS
LEJB

LEL

LEM

LEY
LEYG

LES
LESH

LEPY
LEPS

LER

LEH

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC□

JXC□

LECS□
LECS□-T

LECY□





Motorless











LAT3

LES Series

Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

Compatible Controllers/Drivers

Type	Step data input type	Step data input type	Programless type	Pulse input type
				
Series	JXC51 JXC61	LECA6	LECP1	LECPA
Features	Parallel I/O	Parallel I/O	Capable of setting up operation (step data) without using a PC or teaching box	Operation by pulse signals
Compatible motor	Step motor (Servo/24 VDC)	Servo motor (24 VDC)	Step motor (Servo/24 VDC)	
Max. number of step data	64 points		14 points	—
Power supply voltage	24 VDC			
Reference page	706-1	707	719	731

Type	EtherCAT direct input type	EtherCAT direct input type with STO sub-function	EtherNet/IP™ direct input type	EtherNet/IP™ direct input type with STO sub-function	PROFINET direct input type	PROFINET direct input type with STO sub-function	DeviceNet® direct input type	IO-Link direct input type	IO-Link direct input type with STO sub-function	CC-Link direct input type
										
Series	JXCE1	JXCEF	JXC91	JXC9F	JXCPI	JXCPI	JXCD1	JXCL1	JXCLF	JXCM1
Features	EtherCAT direct input	EtherCAT direct input with STO sub-function	EtherNet/IP™ direct input	EtherNet/IP™ direct input with STO sub-function	PROFINET direct input	PROFINET direct input with STO sub-function	DeviceNet® direct input	IO-Link direct input	IO-Link direct input with STO sub-function	CC-Link direct input
Compatible motor	Step motor (Servo/24 VDC)									
Max. number of step data	64 points									
Power supply voltage	24 VDC									
Reference page	741									

Specifications

Step Motor (Servo/24 VDC)

Model		LES8□		LES16□		LES25□		
Actuator specifications	Stroke [mm]	30, 50, 75		30, 50, 75, 100		30, 50, 75, 100, 125, 150		
	Work load [kg]*1	Horizontal	1		3		5	
		Vertical	0.5	0.25	3	1.5	5	2.5
	Pushing force 30 to 70% [N]*2 *3	6 to 15	4 to 10	23.5 to 55	15 to 35	77 to 180	43 to 100	
	Speed [mm/s]*1 *3	10 to 200	20 to 400	10 to 200	20 to 400	10 to 200	20 to 400	
	Pushing speed [mm/s]	10 to 20	20	10 to 20	20	10 to 20	20	
	Max. acceleration/deceleration [mm/s ²]	5000						
	Positioning repeatability [mm]	±0.05						
	Lost motion [mm]*4	0.3 or less						
	Screw lead [mm]	4	8	5	10	8	16	
	Impact/Vibration resistance [m/s ²]*5	50/20						
	Actuation type	Slide screw + Belt (R/L type), Slide screw (D type)						
Guide type	Linear guide (Circulating type)							
Operating temperature range [°C]	5 to 40							
Operating humidity range [%RH]	90 or less (No condensation)							
Electric specifications	Motor size	□20		□28		□42		
	Motor type	Step motor (Servo/24 VDC)						
	Encoder	Incremental						
	Power supply voltage [V]	24 VDC ±10%						
Lock unit specifications	Power [W]*6 *8	Max. power 35		Max. power 69		Max. power 67		
	Type	Non-magnetizing lock						
	Holding force [N]	24	2.5	300	48	500	77	
	Power consumption [W]*8	3.5		2.9		5		
Rated voltage [V]	24 VDC ±10%							

*1 Speed changes according to the work load. Check the "Speed-Work Load Graph (Guide)" on page 424.

*2 Pushing force accuracy is ±20% (F.S.).

*3 The speed and force may change depending on the cable length, load, and mounting conditions. Furthermore, if the cable length exceeds 5 m, then it will decrease by up to 10% for each 5 m. (At 15 m: Reduced by up to 20%)

*4 A reference value for correcting an error in reciprocal operation

*5 Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)

Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)

*6 Indicates the max. power during operation (including the controller)

This value can be used for the selection of the power supply.

*7 With lock only

*8 For an actuator with lock, add the power consumption for the lock.

LEFS
LEFB

LEJS
LEJB

LEL

LEM

LEY
LEYG

LES
LESH

LEPY
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC□

JXC□

LECS□
LECS□-T

LECY□

Motorless

LAT3

LES Series

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

Specifications

Servo Motor (24 VDC)

Model		LES8□A		LES16□A		LES25 ^R A*1		
Actuator specifications	Stroke [mm]	30, 50, 75		30, 50, 75, 100		30, 50, 75, 100, 125, 150		
	Work load [kg]	Horizontal		3		5		
		Vertical		1	0.5	3	1.5	4
	Pushing force 50 to 100% [N]*2		7.5 to 11	5 to 7.5	17.5 to 35	10 to 20	31 to 62	19 to 38
	Speed [mm/s]		1 to 200	1 to 400	1 to 200	1 to 400	1 to 200	1 to 400
	Pushing speed [mm/s]		1 to 20					
	Max. acceleration/deceleration [mm/s ²]		5000					
	Positioning repeatability [mm]		±0.05					
	Lost motion [mm]*3		0.3 or less					
	Screw lead [mm]		4	8	5	10	8	16
	Impact/Vibration resistance [m/s ²]*4		50/20					
	Actuation type		Slide screw + Belt (R/L type), Slide screw (D type)					
	Guide type		Linear guide (Circulating type)					
Operating temperature range [°C]		5 to 40						
Operating humidity range [%RH]		90 or less (No condensation)						
Electric specifications	Motor size	□20		□28		□42		
	Motor output [W]	10		30		36		
	Motor type	Servo motor (24 VDC)						
	Encoder (Angular displacement sensor)	Incremental						
	Power supply voltage [V]	24 VDC ±10%						
Power [W]*5 *7		Max. power 71		Max. power 102		Max. power 111		
Lock unit specifications	Type	Non-magnetizing lock						
	Holding force [N]	24	2.5	300	48	500	77	
	Power consumption [W]*7	3.5		2.9		5		
	Rated voltage [V]	24 VDC ±10%						

*1 LES25DA is not available.

*2 The pushing force values for LES8□A is 50 to 75%. Pushing force accuracy is ±20% (F.S.).

*3 A reference value for correcting an error in reciprocal operation

*4 Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)

Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)

*5 Indicates the max. power during operation (including the controller)

This value can be used for the selection of the power supply.

*6 With lock only

*7 For an actuator with lock, add the power consumption for the lock.

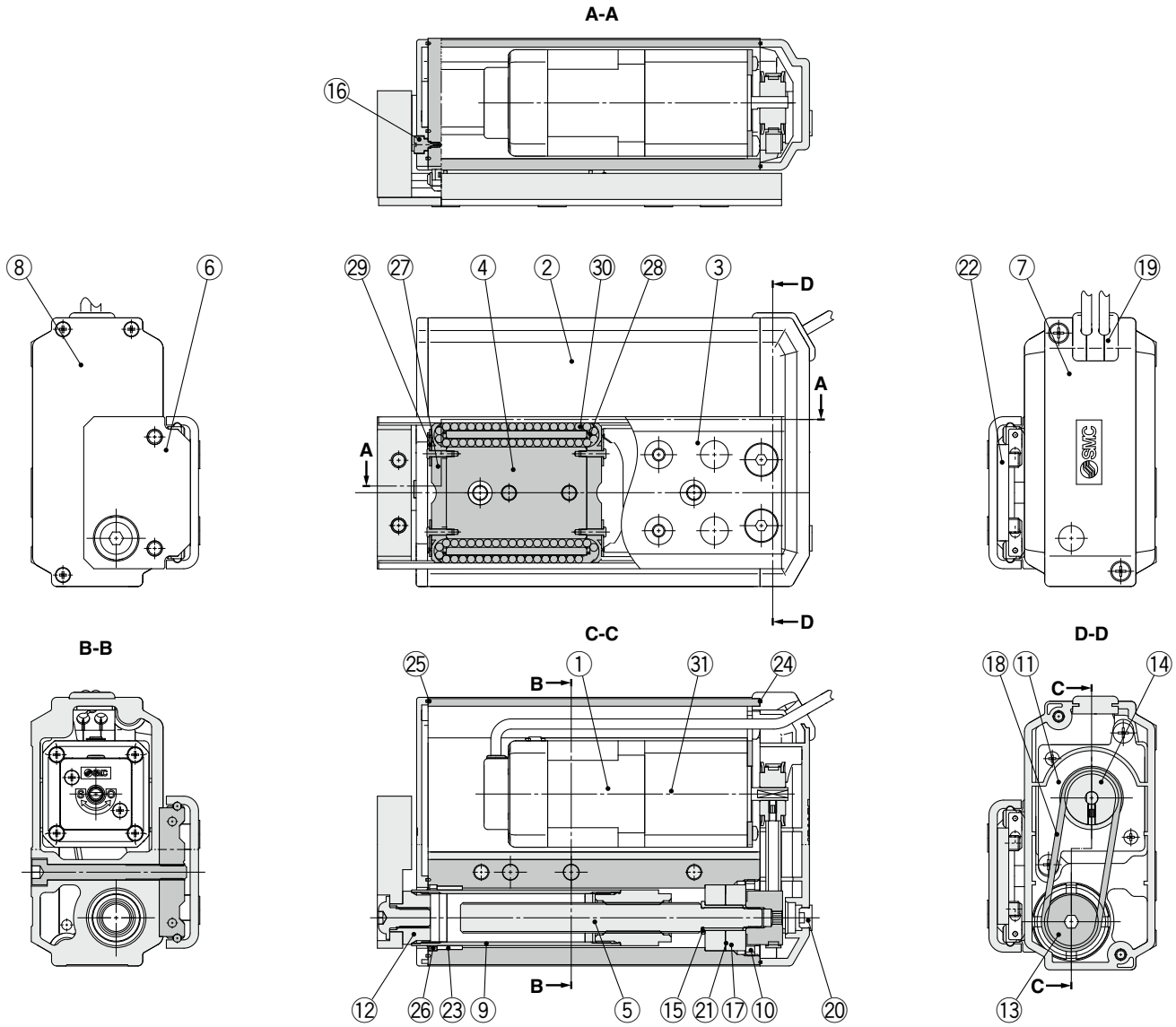
Weight

Step Motor (Servo/24 VDC), Servo Motor (24 VDC) Common

[kg]

Stroke [mm]		Without lock						With lock					
		30	50	75	100	125	150	30	50	75	100	125	150
Model	LES8 ^R (A)	0.45	0.54	0.59	—	—	—	—	—	0.66	—	—	—
	LES16 ^R (A)	0.91	1.00	1.16	1.24	—	—	—	—	1.29	1.37	—	—
	LES25 ^R (A)	1.81	2.07	2.41	3.21	3.44	3.68	—	2.34	2.68	3.48	3.71	3.95
	LES8D(A)	0.40	0.52	0.58	—	—	—	0.47	0.59	0.65	—	—	—
	LES16D(A)	0.77	0.90	1.11	1.20	—	—	0.90	1.03	1.25	1.33	—	—
	LES25D	1.82	2.05	2.35	3.07	3.27	3.47	2.08	2.31	2.61	3.33	3.53	3.74

Construction: Basic Type/R Type, Symmetrical Type/L Type



Component Parts

No.	Description	Material	Note
1	Motor	—	—
2	Body	Aluminum alloy	Anodized
3	Table	Stainless steel	Heat treatment + Electroless nickel plating
4	Guide block	Stainless steel	Heat treatment
5	Lead screw	Stainless steel	Heat treatment + Special treatment
6	End plate	Aluminum alloy	Anodized
7	Pulley cover	Synthetic resin	—
8	End cover	Synthetic resin	—
9	Rod	Stainless steel	—
10	Bearing stopper	Structural steel	Electroless nickel plating
		Brass	Electroless nickel plating (LES25R/L□ only)
11	Motor plate	Structural steel	—
12	Socket	Structural steel	Electroless nickel plating
13	Lead screw pulley	Aluminum alloy	—
14	Motor pulley	Aluminum alloy	—
15	Spacer	Stainless steel	LES25R/L□ only
16	Origin stopper	Structural steel	Electroless nickel plating
17	Bearing	—	—
18	Belt	—	—
19	Grommet	Synthetic resin	—
20	Cap	SI	—
21	Sim ring	Structural steel	—

No.	Description	Material	Note
22	Stopper	Structural steel	—
23	Bushing	—	Dust-protected option only
24	Pulley gasket	NBR	Dust-protected option only
25	End gasket	NBR	Dust-protected option only
26	Scraper	NBR	Dust-protected option only
27	Cover	Synthetic resin	—
28	Return guide	Synthetic resin	—
29	Cover support	Stainless steel	—
30	Steel ball	Special steel	—
31	Lock	—	With lock only

Replacement Parts/Belt

Size	Order no.	Note
LES8□	LE-D-1-1	Without manual override screw
LES16□	LE-D-1-2	—
LES25□	LE-D-1-3	—
LES25□A	LE-D-1-4	—
LES8□	LE-D-1-5	With manual override screw

Replacement Parts/Grease Pack

Applied portion	Order no.
Guide unit	GR-S-010 (10 g) GR-S-020 (20 g)

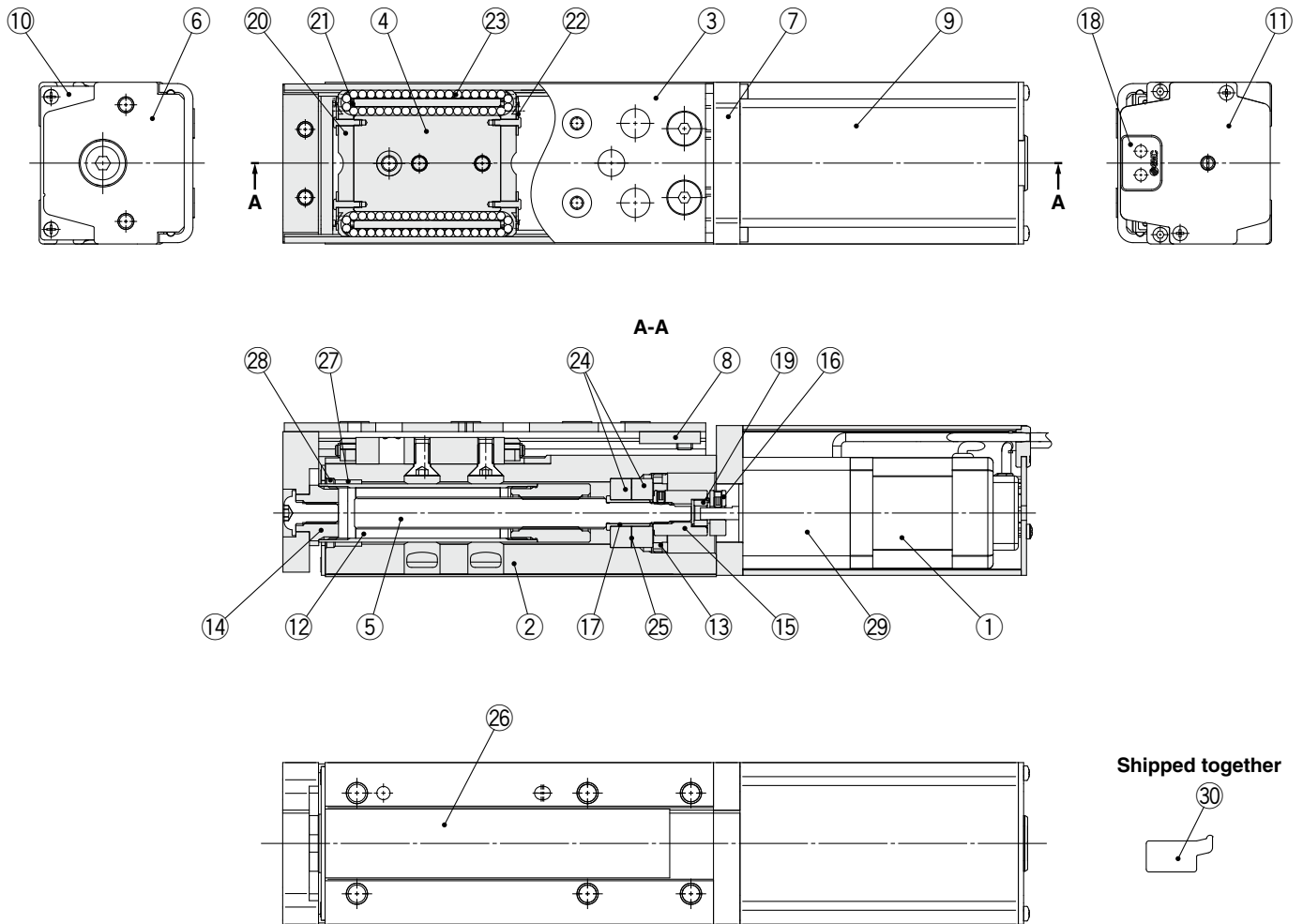
- LEFS
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEY
- LEYG
- LES
- LESH
- LEPY
- LEPS
- LER
- LEH
- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC□
- JXC□
- LECS□
- LECS□-T
- LECY□
- Motorless
- LAT3

LES Series

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

Construction: In-line Motor Type/D Type



Component Parts

No.	Description	Material	Note
1	Motor	—	—
2	Body	Aluminum alloy	Anodized
3	Table	Stainless steel	Heat treatment + Electroless nickel plating
4	Guide block	Stainless steel	Heat treatment
5	Lead screw	Stainless steel	Heat treatment + Special treatment
6	End plate	Aluminum alloy	Anodized
7	Motor flange	Aluminum alloy	Anodized
8	Stopper	Structural steel	—
9	Motor cover	Aluminum alloy	Anodized
10	End cover	Aluminum alloy	Anodized
11	Motor end cover	Aluminum alloy	Anodized
12	Rod	Stainless steel	—
13	Bearing stopper	Structural steel	Electroless nickel plating
		Brass	Electroless nickel plating (LES25D□ only)
14	Socket	Structural steel	Electroless nickel plating
15	Hub (Lead screw side)	Aluminum alloy	—
16	Hub (Motor side)	Aluminum alloy	—
17	Spacer	Stainless steel	LES25D□ only
18	Grommet	NBR	—
19	Spider	NBR	—
20	Cover	Synthetic resin	—

No.	Description	Material	Note
21	Return guide	Synthetic resin	—
22	Cover support	Stainless steel	—
23	Steel ball	Special steel	—
24	Bearing	—	—
25	Sim ring	Structural steel	—
26	Masking tape	—	—
27	Bushing	—	Dust-protected option only
28	Scraper	NBR	Dust-protected option only
29	Lock	—	With lock only
30	Side holder	Aluminum alloy	Anodized

Optional Parts/Side Holder

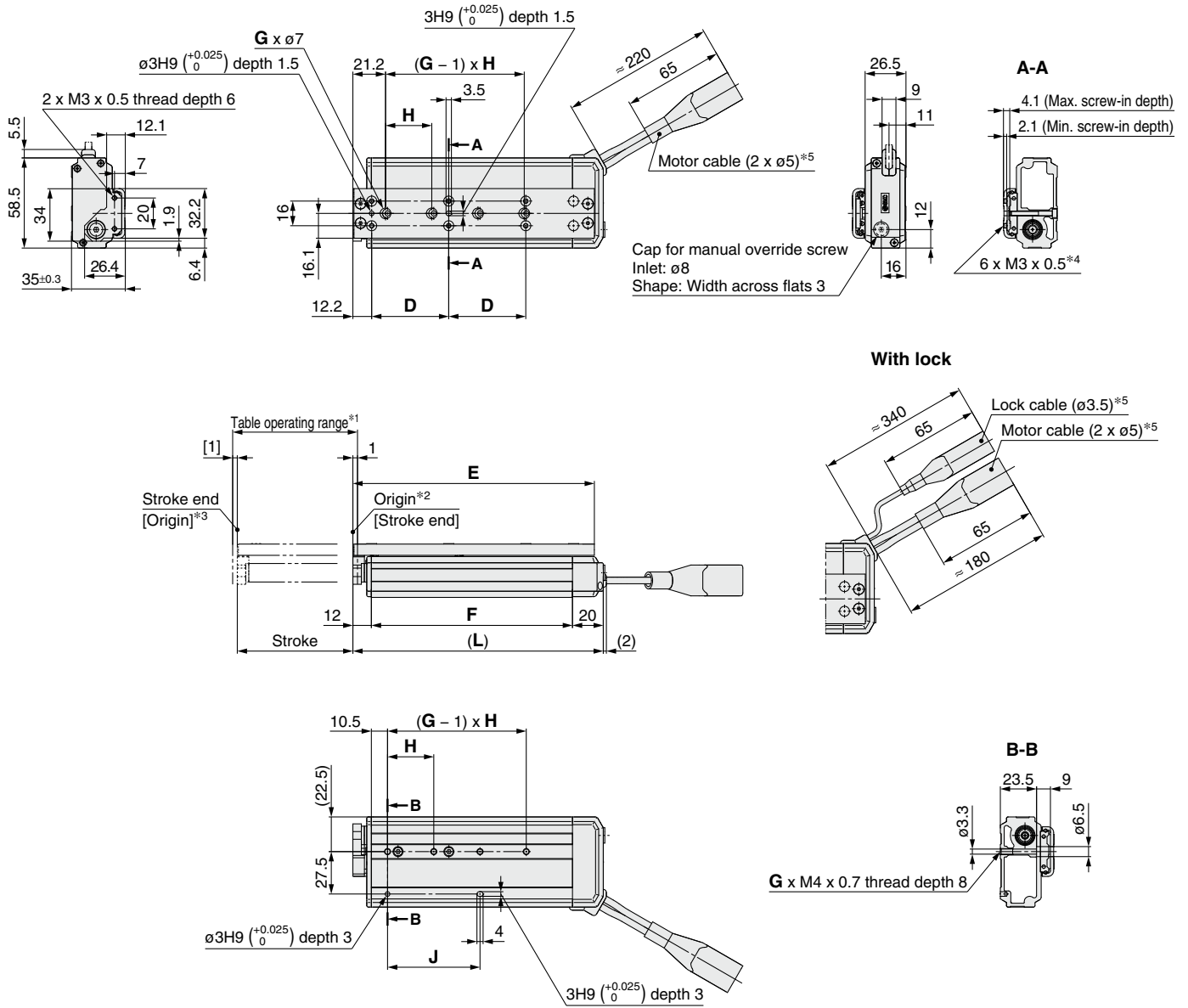
Model	Order no.
LES8D	LE-D-3-1
LES16D	LE-D-3-2
LES25D	LE-D-3-3

Replacement Parts/Grease Pack

Applied portion	Order no.
Guide unit	GR-S-010 (10 g) GR-S-020 (20 g)

Dimensions: Basic Type/R Type

LES8R



- *1 This is the range within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
- *2 Position after returning to origin
- *3 [] for when the direction of return to origin has changed
- *4 If workpiece retaining screws are too long, they can touch the guide block and cause a malfunction.
Use screws that are between the maximum and minimum screw-in depths in length.
- *5 Secure the motor cable and lock cable so that the cables are not repeatedly bent.

Connector		Step motor	Servo motor
Motor cable		20	24
Lock cable		15	15

Dimensions	[mm]							
Model	L	D	E	F	G	H	J	
LES8R□□-30□-□□□□□	94.5	26	88.7	62.5	2	27	27	
LES8R□□-50□-□□□□□	137.5	46	131.7	105.5	3	29	58	
LES8R□□-75□-□□□□□	162.5	50	156.7	130.5	4	30	60	

- LEFS
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEY
- LEYG
- LES
- LESH
- LEPY
- LEPS
- LER
- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC
- JXC
- LECS
- LECS-T
- LECY
- Motorless
- LAT3

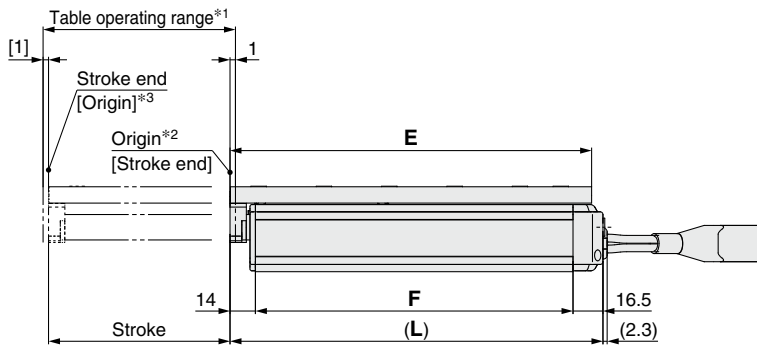
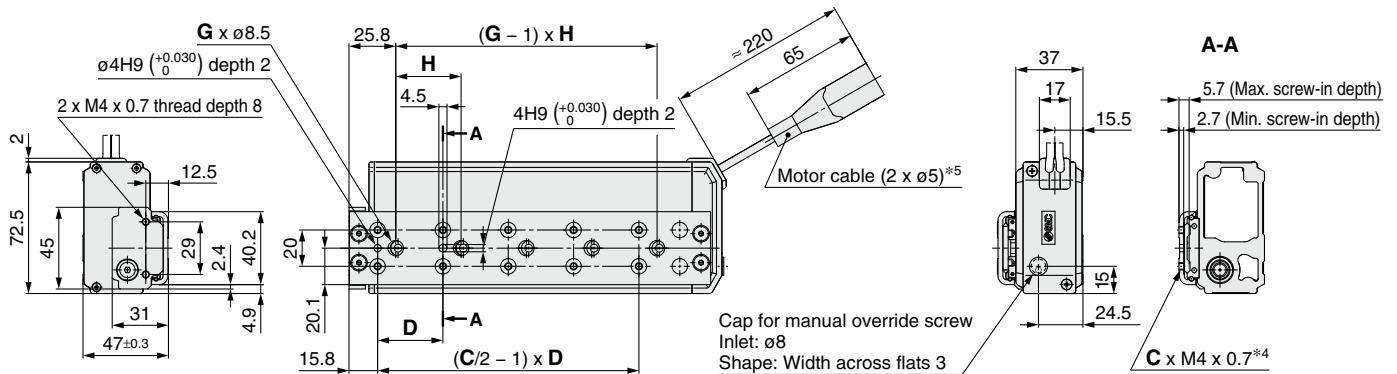
LES Series

Step Motor (Servo/24 VDC)

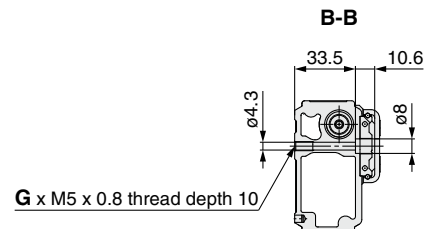
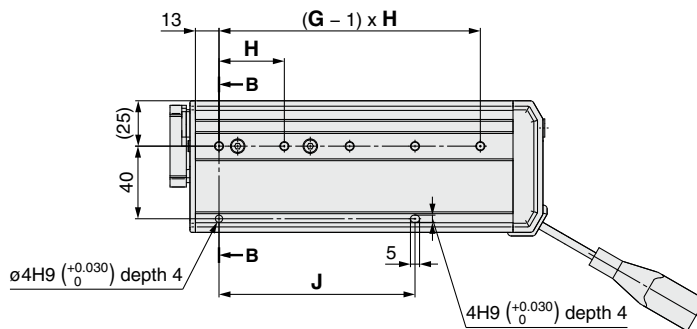
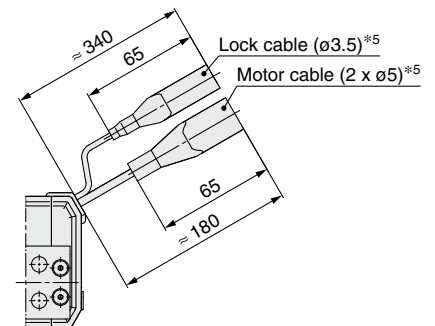
Servo Motor (24 VDC)

Dimensions: Basic Type/R Type





LES16R



With lock



- *1 This is the range within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
- *2 Position after returning to origin
- *3 [] for when the direction of return to origin has changed
- *4 If workpiece retaining screws are too long, they can touch the guide block and cause a malfunction. Use screws that are between the maximum and minimum screw-in depths in length.
- *5 Secure the motor cable and lock cable so that the cables are not repeatedly bent.

	Connector	
	Step motor	Servo motor
Motor cable		
Lock cable		

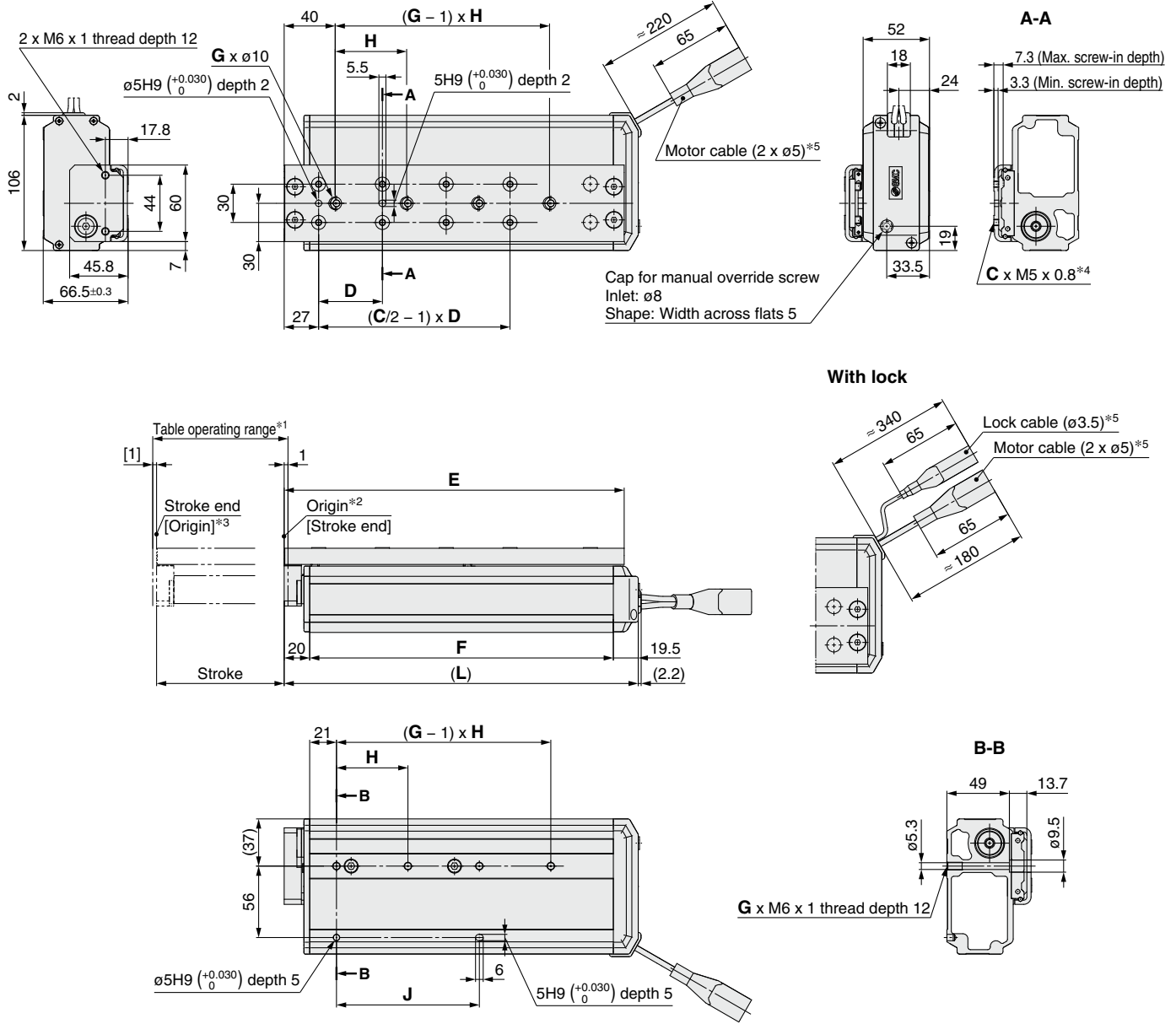
Dimensions

[mm]

Model	L	C	D	E	F	G	H	J
LES16R□□-30□-□□□□□□	108.5	4	38	102.3	78	2	40	40
LES16R□□-50□-□□□□□□	136.5	6	34	130.3	106	2	78	78
LES16R□□-75□-□□□□□□	180.5	8	36	174.3	150	4	36	72
LES16R□□-100□-□□□□□□	205.5	10	36	199.3	175	5	36	108

Dimensions: Basic Type/R Type

LES25R

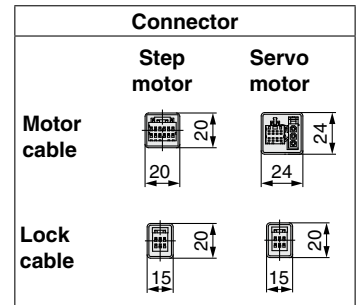


- *1 This is the range within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
- *2 Position after returning to origin
- *3 [] for when the direction of return to origin has changed
- *4 If workpiece retaining screws are too long, they can touch the guide block and cause a malfunction.
Use screws that are between the maximum and minimum screw-in depths in length.
- *5 Secure the motor cable and lock cable so that the cables are not repeatedly bent.

Dimensions

[mm]

Model	L	C	D	E	F	G	H	J
LES25R□□-30□-□□□□□□	144.5	4	48	133.5	105	2	46	46
LES25R□□-50□-□□□□□□	170.5	6	42	159.5	131	2	84	84
LES25R□□-75□-□□□□□□	204.5	6	55	193.5	165	2	112	112
LES25R□□-100□-□□□□□□	277.5	8	50	266.5	238	4	56	112
LES25R□□-125□-□□□□□□	302.5	8	55	291.5	263	4	59	118
LES25R□□-150□-□□□□□□	327.5	8	62	316.5	288	4	62	124



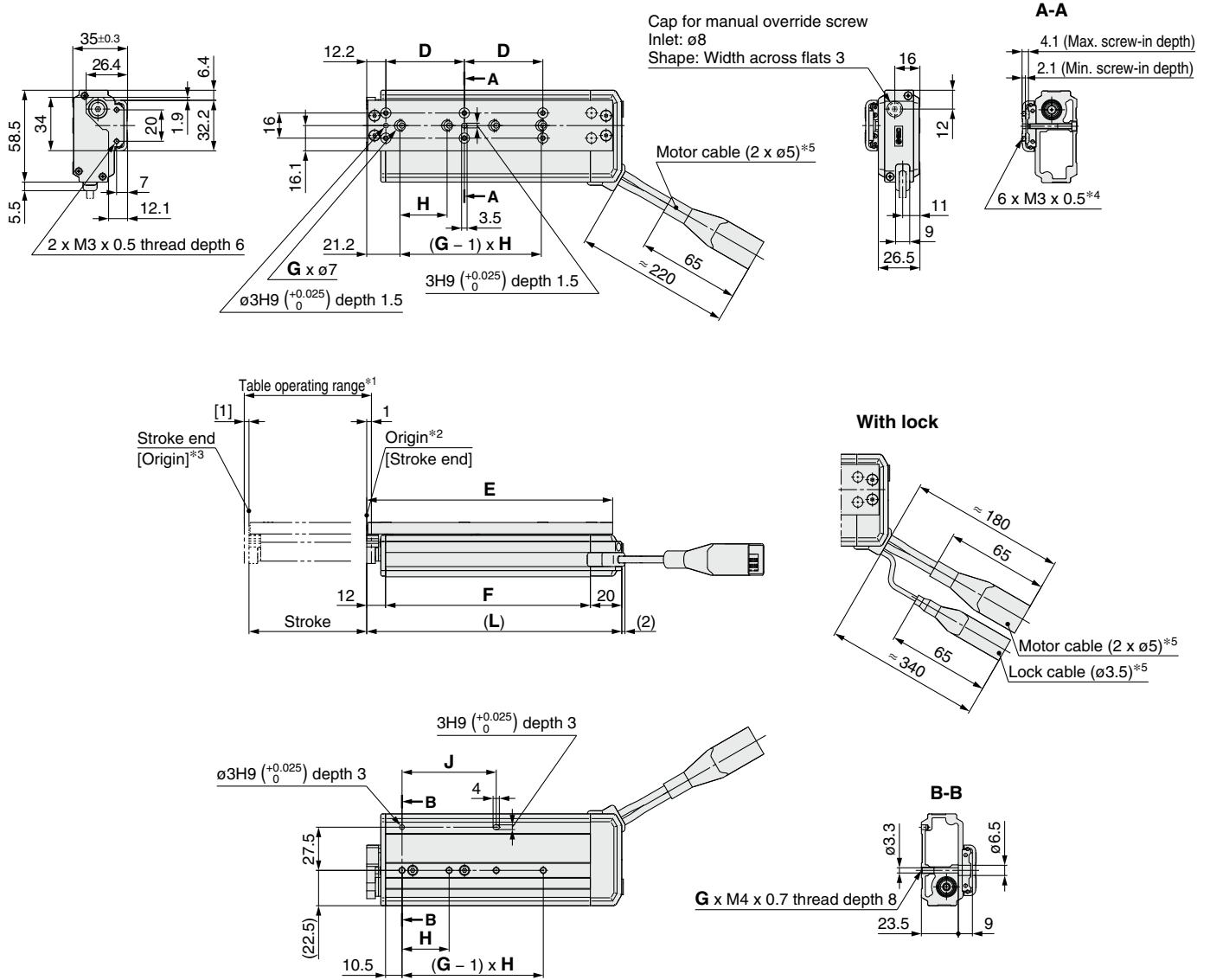
- LEFS
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEY
- LEYG
- LES
- LESH
- LEPY
- LEPS
- LER
- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC
- JXC
- LECS
- LECS-T
- LECY
- Motorless
- LAT3

LES Series

Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

Dimensions: Symmetrical Type/L Type

LES8L



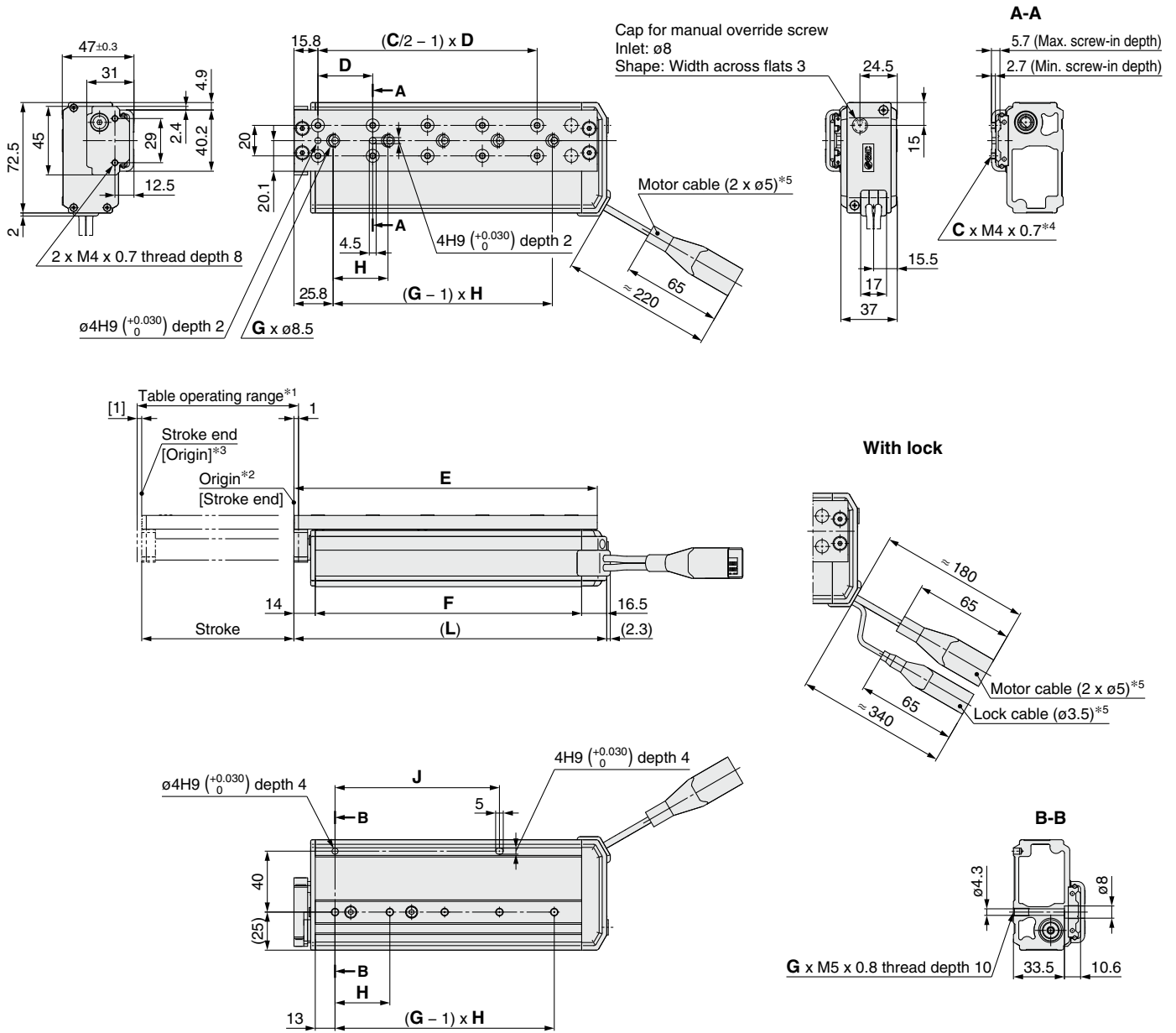
- *1 This is the range within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
- *2 Position after returning to origin
- *3 [] for when the direction of return to origin has changed
- *4 If workpiece retaining screws are too long, they can touch the guide block and cause a malfunction. Use screws that are between the maximum and minimum screw-in depths in length.
- *5 Secure the motor cable and lock cable so that the cables are not repeatedly bent.

	Connector	
	Step motor	Servo motor
Motor cable		
Lock cable		

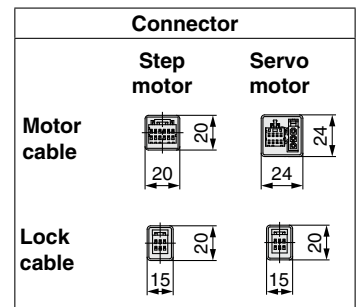
Dimensions	[mm]						
Model	L	D	E	F	G	H	J
LES8L□□-30□-□□□□□□	94.5	26	88.7	62.5	2	27	27
LES8L□□-50□-□□□□□□	137.5	46	131.7	105.5	3	29	58
LES8L□□-75□□-□□□□□□	162.5	50	156.7	130.5	4	30	60

Dimensions: Symmetrical Type/L Type

LES16L



- *1 This is the range within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
- *2 Position after returning to origin
- *3 [] for when the direction of return to origin has changed
- *4 If workpiece retaining screws are too long, they can touch the guide block and cause a malfunction.
Use screws that are between the maximum and minimum screw-in depths in length.
- *5 Secure the motor cable and lock cable so that the cables are not repeatedly bent.



Dimensions

[mm]

Model	L	C	D	E	F	G	H	J
LES16L□□-30□□-□□□□□□	108.5	4	38	102.3	78	2	40	40
LES16L□□-50□□-□□□□□□	136.5	6	34	130.3	106	2	78	78
LES16L□□-75□□-□□□□□□	180.5	8	36	174.3	150	4	36	72
LES16L□□-100□□-□□□□□□	205.5	10	36	199.3	175	5	36	108

- LEFS
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEY
- LEYG
- LES
- LESH
- LEPY
- LEPS
- LER
- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 11-LEL
- 25A-
- LEC
- JXC
- LECS
- LECS-T
- LECY
- Motorless
- LAT3

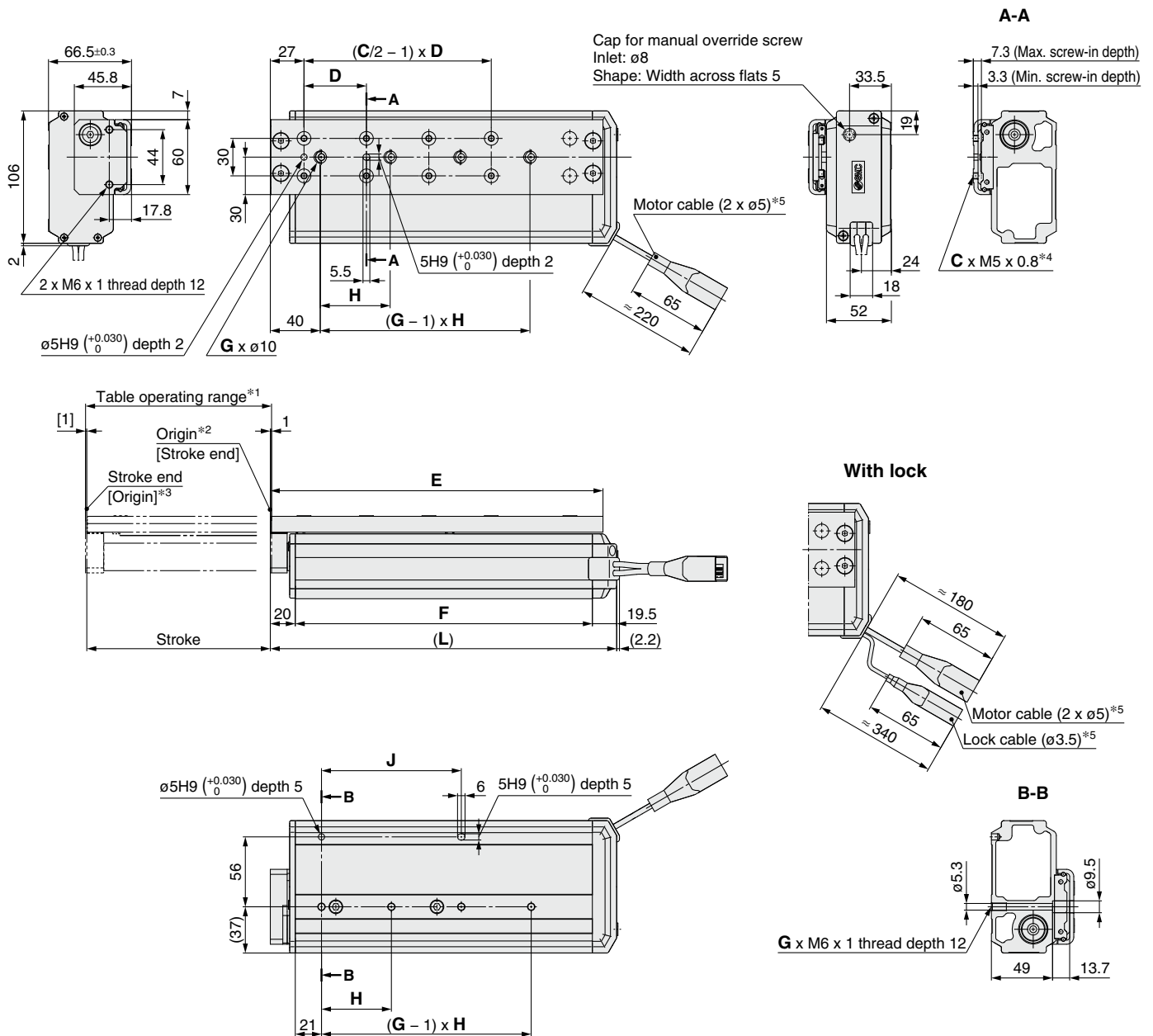
LES Series

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

Dimensions: Symmetrical Type/L Type

LES25L







- *1 This is the range within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
- *2 Position after returning to origin
- *3 [] for when the direction of return to origin has changed
- *4 If workpiece retaining screws are too long, they can touch the guide block and cause a malfunction.
Use screws that are between the maximum and minimum screw-in depths in length.
- *5 Secure the motor cable and lock cable so that the cables are not repeatedly bent.

Dimensions

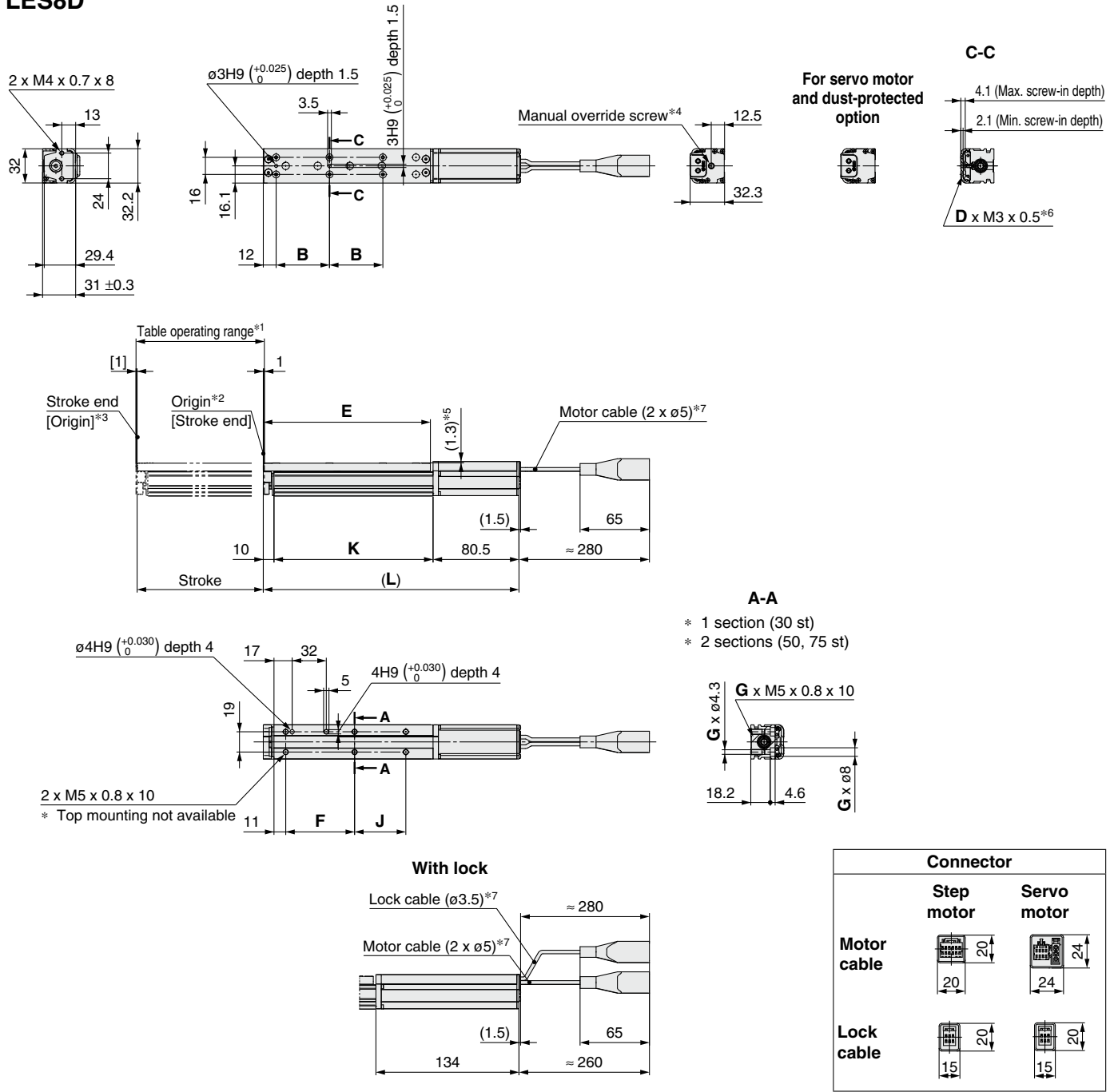
[mm]

Model	L	C	D	E	F	G	H	J
LES25L□□-30□□-□□□□□□	144.5	4	48	133.5	105	2	46	46
LES25L□□-50□□-□□□□□□	170.5	6	42	159.5	131	2	84	84
LES25L□□-75□□-□□□□□□	204.5	6	55	193.5	165	2	112	112
LES25L□□-100□□-□□□□□□	277.5	8	50	266.5	238	4	56	112
LES25L□□-125□□-□□□□□□	302.5	8	55	291.5	263	4	59	118
LES25L□□-150□□-□□□□□□	327.5	8	62	316.5	288	4	62	124

	Connector	
	Step motor	Servo motor
Motor cable		
Lock cable		

Dimensions: In-line Motor Type/D Type

LES8D



- *1 This is the range within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
- *2 Position after returning to origin
- *3 [] for when the direction of return to origin has changed
- *4 The distance between the motor end cover and the manual override screw is up to 16 mm. The motor end cover hole size is ø5.5.
- *5 The table is lower than the motor cover. Make sure it does not interfere with the workpiece.
- *6 If workpiece retaining screws are too long, they can touch the guide block and cause a malfunction.
Use screws that are between the maximum and minimum screw-in depths in length.
- *7 Secure the motor cable and lock cable so that the cables are not repeatedly bent.

Dimensions

Model	(L)	B	D	E	F	G	J	K
LES8D□□-30□□-□□□□□□	171.5	26	6	88.5	44.5	2	—	81
LES8D□□-30B□□-□□□□□□	225							
LES8D□□-50□□-□□□□□□	214.5	46	6	131.5	64.5	4	23	124
LES8D□□-50B□□-□□□□□□	268							
LES8D□□-75□□-□□□□□□	239.5	50	6	156.5	64.5	4	48	149
LES8D□□-75B□□-□□□□□□	293							

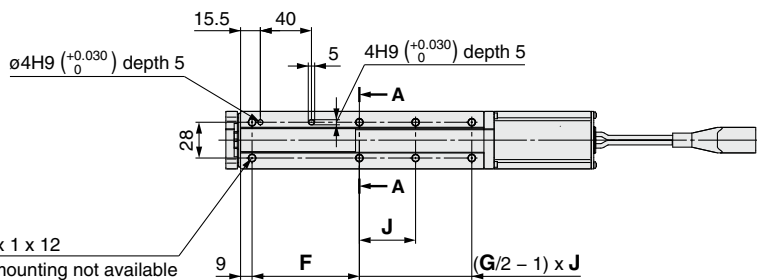
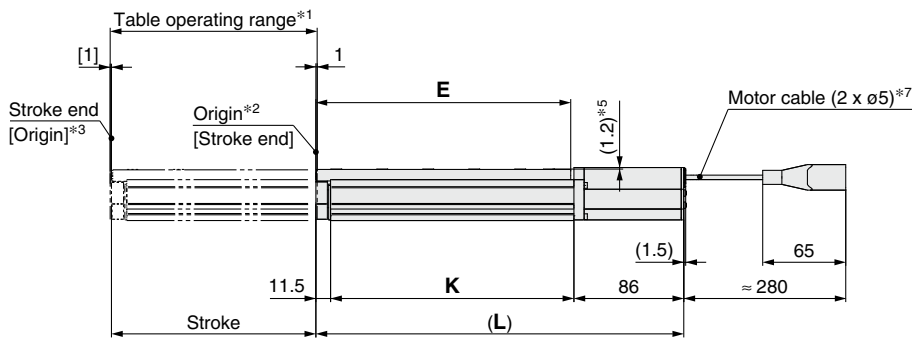
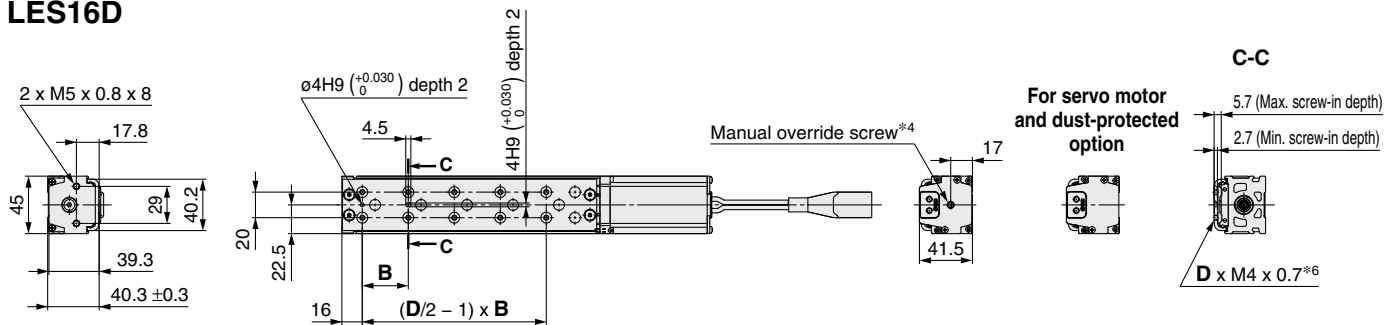
- LEFS
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEY
- LEYG
- LES
- LESH
- LEPY
- LEPS
- LER
- LEH
- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC□
- JXC□
- LECS□
- LECS□-T
- LECY□
- Motorless
- LAT3

LES Series

Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

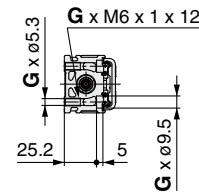
Dimensions: In-line Motor Type/D Type

LES16D

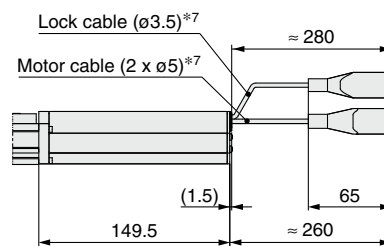






A-A

- * 2 sections (30, 50, 75 st)
- * 3 sections (100 st)



With lock



	Connector	
	Step motor	Servo motor
Motor cable	 20 20	 24 24
Lock cable	 20 15	 20 15

- *1 This is the range within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
- *2 Position after returning to origin
- *3 [] for when the direction of return to origin has changed
- *4 The distance between the motor end cover and the manual override screw is up to 17 mm. The motor end cover hole size is ø5.5.
- *5 The table is lower than the motor cover. Make sure it does not interfere with the workpiece.
- *6 If workpiece retaining screws are too long, they can touch the guide block and cause a malfunction.
Use screws that are between the maximum and minimum screw-in depths in length.
- *7 Secure the motor cable and lock cable so that the cables are not repeatedly bent.

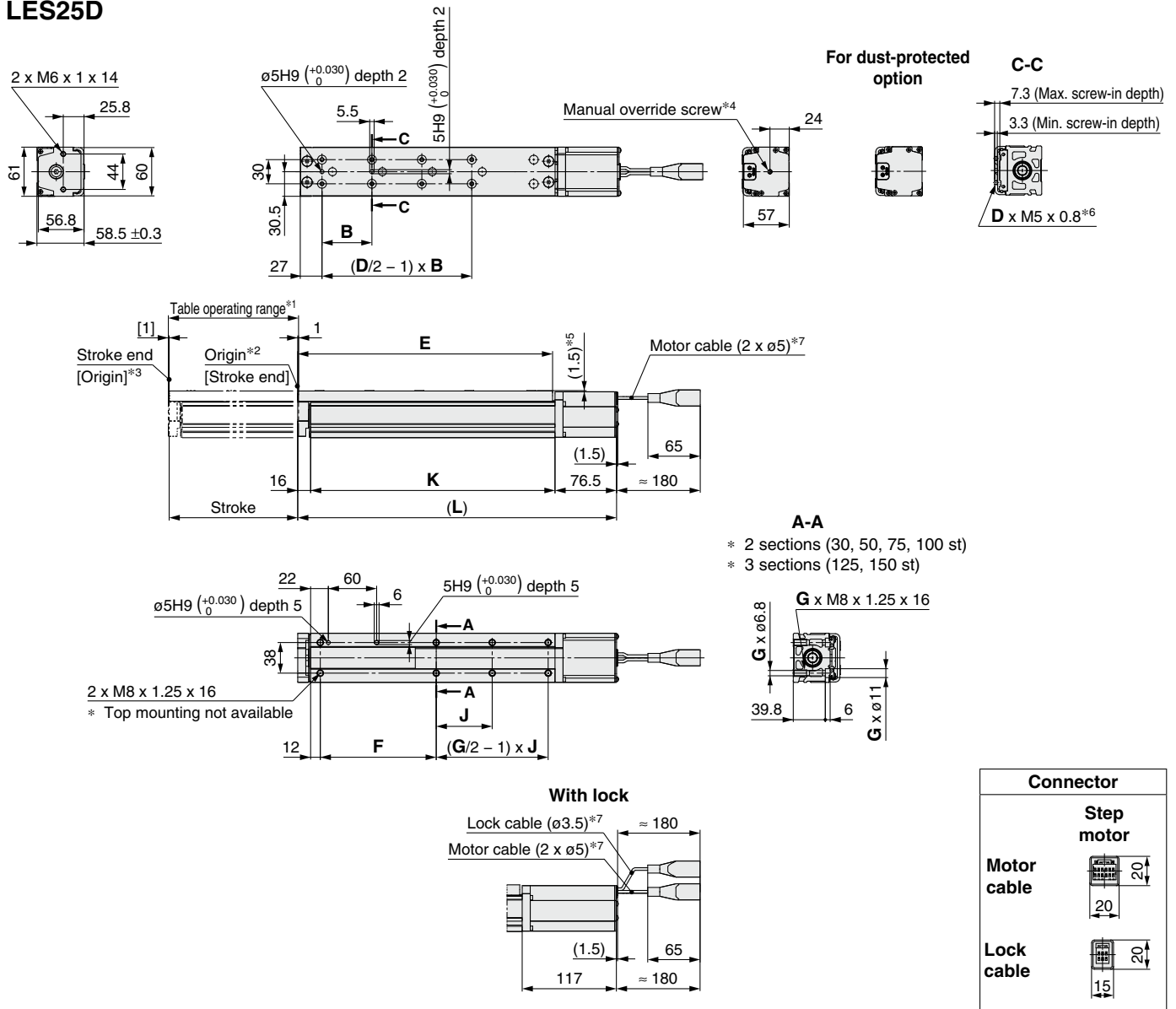
Dimensions

[mm]

Model	(L)	B	D	E	F	G	J	K
LES16D□□-30□□-□□□□□□	193	38	4	102.5	56.5	4	18.5	95.5
LES16D□□-30B□□-□□□□□□	256.5	38	4	102.5	56.5	4	18.5	95.5
LES16D□□-50□□-□□□□□□	221	34	6	130.5	65	4	38	123.5
LES16D□□-50B□□-□□□□□□	284.5	34	6	130.5	65	4	38	123.5
LES16D□□-75□□-□□□□□□	265	36	8	174.5	84	4	63	167.5
LES16D□□-75B□□-□□□□□□	328.5	36	8	174.5	84	4	63	167.5
LES16D□□-100□□-□□□□□□	290	36	10	199.5	84	6	44	192.5
LES16D□□-100B□□-□□□□□□	353.5	36	10	199.5	84	6	44	192.5

Dimensions: In-line Motor Type/D Type

LES25D



- *1 This is the range within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
- *2 Position after returning to origin
- *3 [] for when the direction of return to origin has changed
- *4 The distance between the motor end cover and the manual override screw is up to 4 mm. The motor end cover hole size is ø5.5.
- *5 The table is lower than the motor cover.
- *6 If workpiece retaining screws are too long, they can touch the guide block and cause a malfunction. Use screws that are between the maximum and minimum screw-in depths in length.
- *7 Secure the motor cable and lock cable so that the cables are not repeatedly bent.

Dimensions

Model	(L)	B	D	E	F	G	J	K	[mm]
LES25D-30□□-□□□□□□	214	48	4	133.5	81	4	19	121.5	
LES25D-30B□□-□□□□□□	254.5								
LES25D-50□□-□□□□□□	240	42	6	159.5	87	4	39	147.5	
LES25D-50B□□-□□□□□□	280.5								
LES25D-75□□-□□□□□□	274	55	6	193.5	96	4	64	181.5	
LES25D-75B□□-□□□□□□	314.5								
LES25D-100□□-□□□□□□	347	50	8	266.5	144	4	89	254.5	
LES25D-100B□□-□□□□□□	387.5								
LES25D-125□□-□□□□□□	372	55	8	291.5	144	6	57	279.5	
LES25D-125B□□-□□□□□□	412.5								
LES25D-150□□-□□□□□□	397	62	8	316.5	144	6	69.5	304.5	
LES25D-150B□□-□□□□□□	437.5								

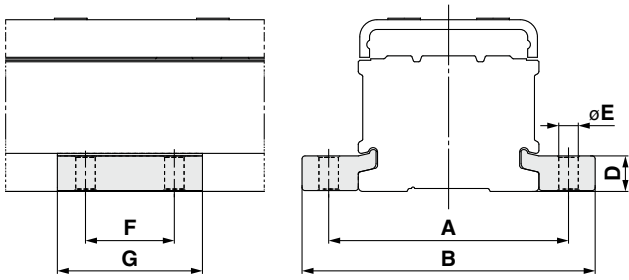
- LEFS
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEY
- LEYG
- LES
- LESH
- LEPY
- LEPS
- LER
- LEH
- LEY-X5
- LEYS
- LEFS
- LEJS
- 25A-
- LEC
- JXC
- LECS
- LECS-T
- LECY
- Motorless
- LAT3

LES Series

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

Side Holder (In-line Motor Type/D Type)



Part no.*1	A	B	D	E	F	G	Applicable model
LE-D-3-1	45	57.6	6.7	4.5	20	33	LES8D
LE-D-3-2	60	74	8.3	5.5	25	40	LES16D
LE-D-3-3	81	99	12	6.6	30	49	LES25D

*1 Model numbers for 1 side holder.

Model Selection 1



LESH Series ▶ p. 459

Selection Procedure For the compact type LES series, refer to page 423.



Selection Example

Step 1 Check the work load-speed. <Speed-Work load graph> (Page 451)
 Select a model based on the workpiece mass and speed while referencing the speed-work load graph.
 Selection example) The LESH16□J-50 can be temporarily selected as a possible candidate based on the graph shown on the right side.

Step 2 Check the cycle time.
 It is possible to find an approximate cycle time by using method 1, but if a more detailed cycle time is required, use method 2.

* Although it is possible to make a suitable selection by using method 1, this calculation is based on a maximum load condition. Therefore, if a more detailed selection for each load is required, use method 2.

Method 1: Check the cycle time graph. (Page 452)

Method 2: Calculation <Speed-Work load graph> (Page 451)

Calculate the cycle time using the following calculation method. Calculation example) T1 to T4 can be calculated as follows.

Cycle time:

T can be found from the following equation.

$$T = T1 + T2 + T3 + T4 \text{ [s]}$$

- T1: Acceleration time and T3: Deceleration time can be found by the following equation.

$$T1 = V/a1 \text{ [s]} \quad T3 = V/a2 \text{ [s]}$$

- T2: Constant speed time can be found from the following equation.

$$T2 = \frac{L - 0.5 \cdot V \cdot (T1 + T3)}{V} \text{ [s]}$$

- T4: Settling time varies depending on the conditions such as motor types, load, and in position of the step data. Therefore, calculate the settling time while referencing the following value.

$$T4 = 0.15 \text{ [s]}$$

$$T1 = V/a1 = 220/5000 = 0.04 \text{ [s]}$$

$$T3 = V/a2 = 220/5000 = 0.04 \text{ [s]}$$

$$T2 = \frac{L - 0.5 \cdot V \cdot (T1 + T3)}{V} = \frac{50 - 0.5 \cdot 220 \cdot (0.04 + 0.04)}{220} = 0.19 \text{ [s]}$$

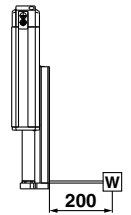
$$T4 = 0.15 \text{ [s]}$$

The cycle time can be found as follows.

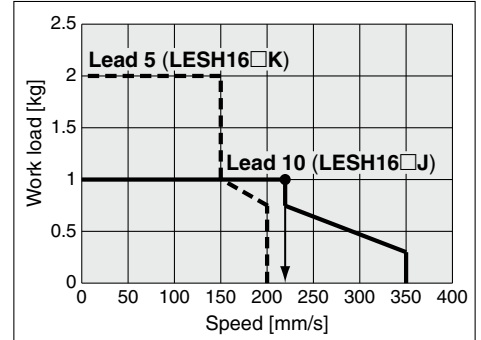
$$T = T1 + T2 + T3 + T4 = 0.04 + 0.19 + 0.04 + 0.15 = 0.42 \text{ [s]}$$

Operating conditions

- Workpiece mass: 1 [kg]
- Workpiece mounting condition:
- Speed: 220 [mm/s]
- Mounting orientation: Vertical
- Stroke: 50 [mm]
- Acceleration/Deceleration: 5000 [mm/s²]
- Cycle time: 0.5 s

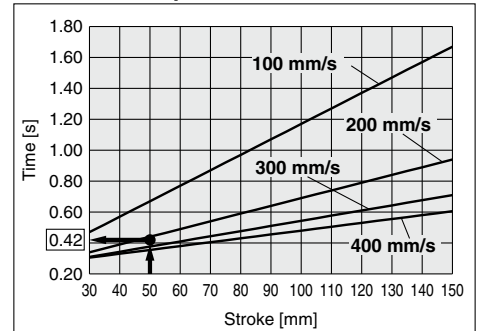


LESH16□/Step Motor Vertical



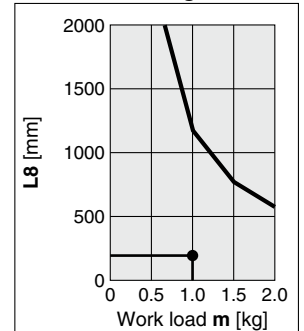
<Speed-Work load graph>

LESH16□/Step Motor



<Cycle time>

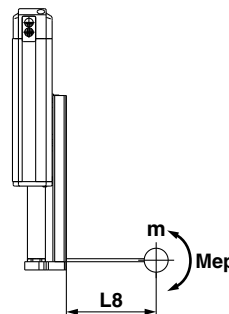
LESH16/Pitching



<Dynamic allowable moment>

Step 3 Check the allowable moment. <Static allowable moment> (Page 452)
 <Dynamic allowable moment> (Pages 453, 454)

Confirm the moment that applies to the actuator is within the allowable range for both static and dynamic conditions.



Based on the above calculation result, the LESH16□J-50 should be selected.

- LEFS
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEY
- LEYG
- LES
- LESH
- LEPY
- LEPS
- LER
- LEH
- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC□
- LEC□
- JXC□
- LECS□
- LECS□-T
- LECY□
- Motorless
- LAT3

LESH Series

Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

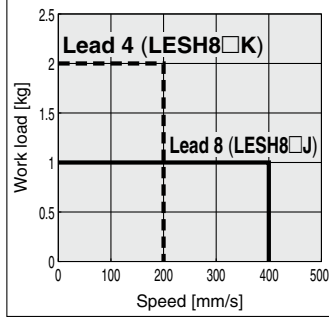
Speed-Work Load Graph (Guide)

Step Motor (Servo/24 VDC)

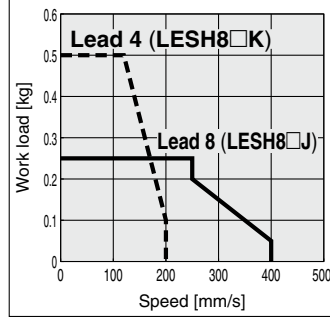
* The following graphs show the values when moving force is 100%.

LESH8□

Horizontal



Vertical

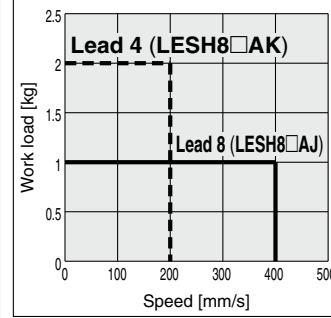


Servo Motor (24 VDC)

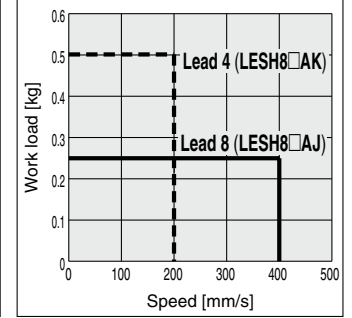
* The following graphs show the values when moving force is 250%.

LESH8□A

Horizontal

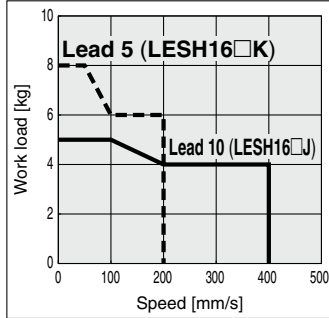


Vertical

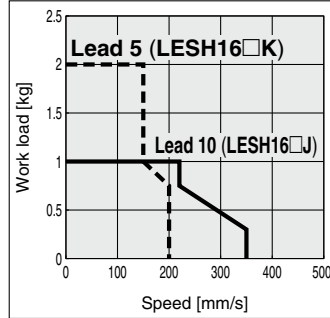


LESH16□

Horizontal

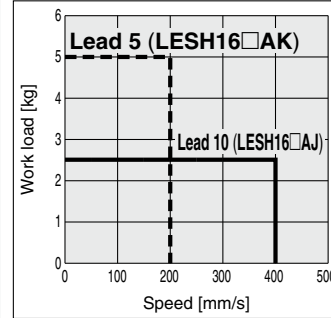


Vertical

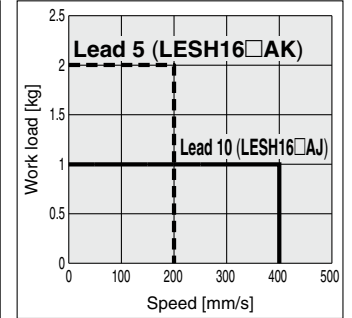


LESH16□A

Horizontal

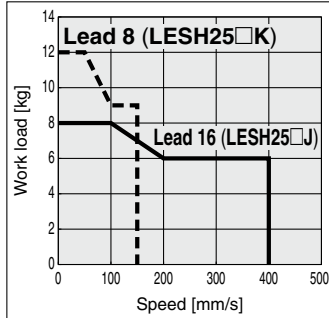


Vertical

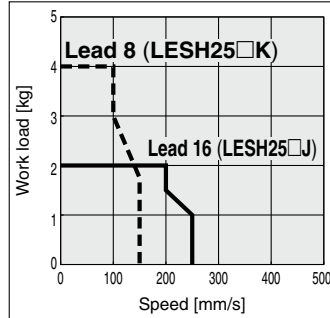


LESH25□

Horizontal

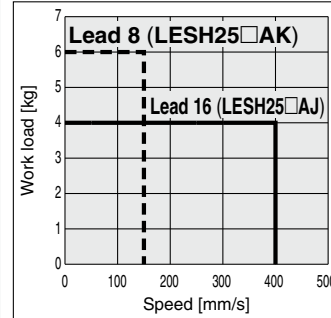


Vertical

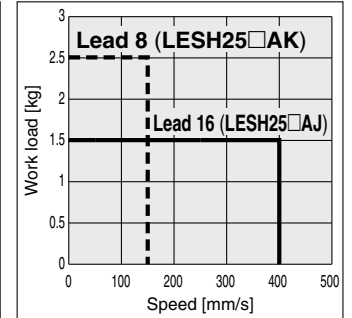


LESH25□A

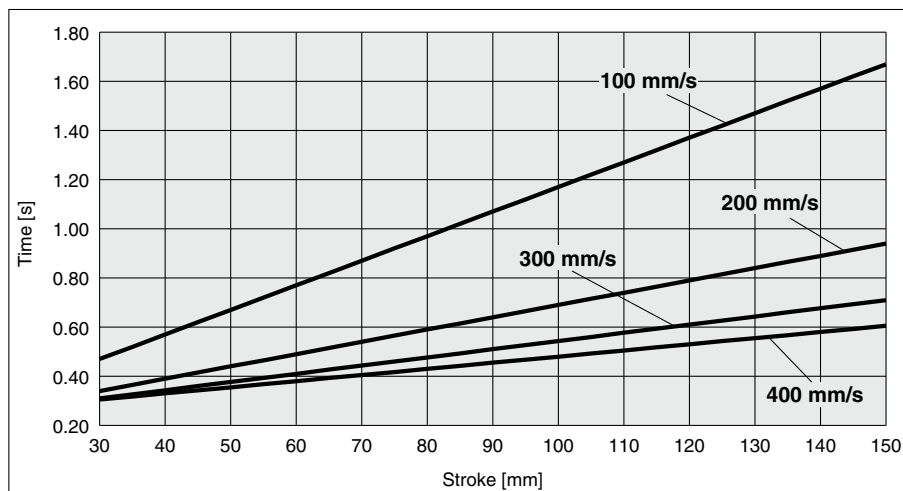
Horizontal



Vertical



Cycle Time Graph (Guide)



Operating Conditions

Acceleration/Deceleration: 5000 mm/s²

In position: 0.5 mm

Static Allowable Moment

Model		LESH8		LESH16		LESH25		
Stroke	[mm]	50	75	50	100	50	100	150
Pitching	[N·m]	11		26	43	77	112	155
Yawing	[N·m]	11						
Rolling	[N·m]	12		48		146	177	152

- LEFS
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEY
- LEYG
- LES
- LESH
- LEPY
- LEPS
- LER
- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC
- JXC
- LECS
- LECS-T
- LECY
- Motorless
- LAT3

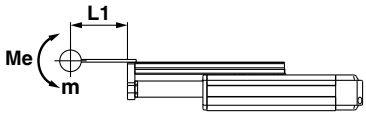
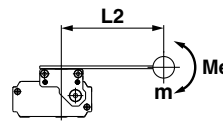
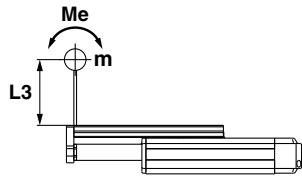
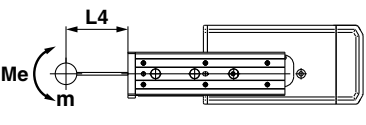
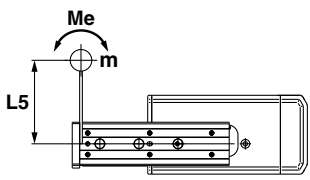
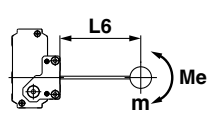
LESH Series

Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

* This graph shows the amount of allowable overhang (guide unit) when the center of gravity of the workpiece overhangs in one direction. When selecting the overhang, refer to the "Calculation of Guide Load Factor" or the Electric Actuator Model Selection Software for confirmation: <https://www.smcworld.com>

Dynamic Allowable Moment

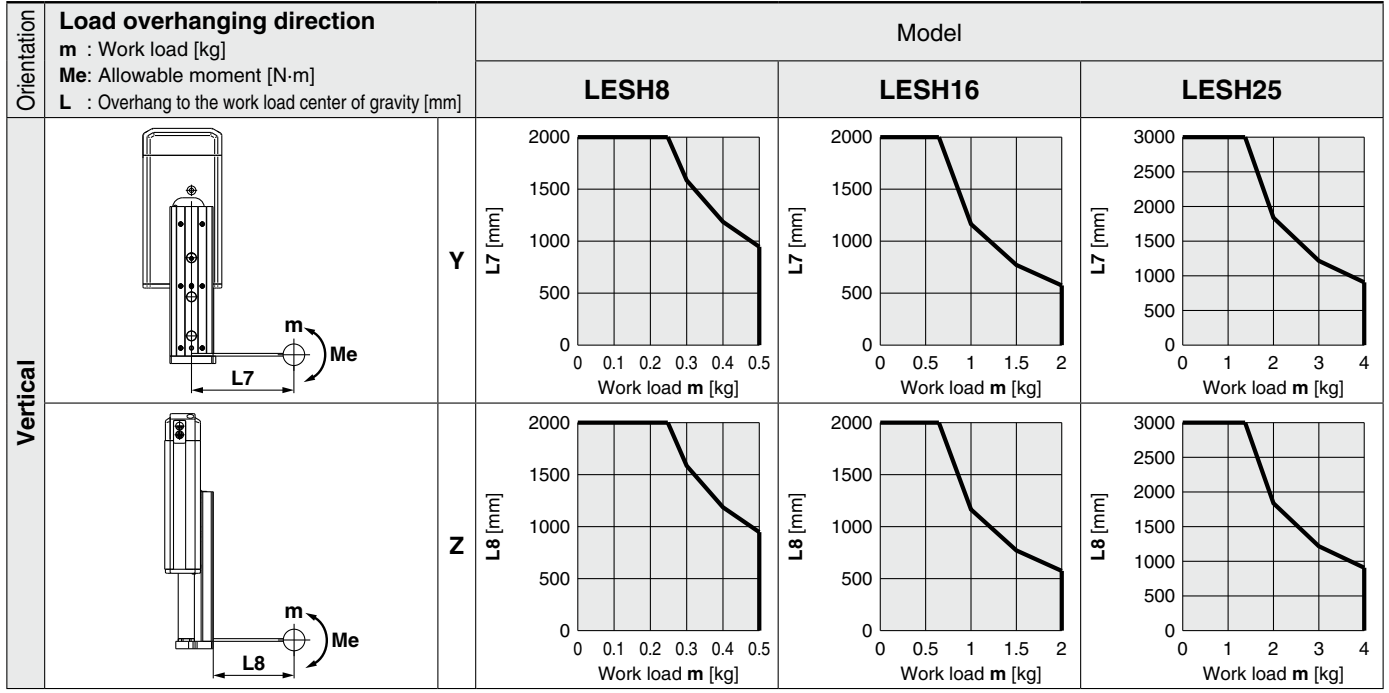
Acceleration/Deceleration — 5000 mm/s²

Orientation		Model		
Load overhanging direction m : Work load [kg] Me: Allowable moment [N·m] L : Overhang to the work load center of gravity [mm]		LESH8	LESH16	LESH25
Horizontal/Bottom	 X L1 [mm]			
	 Y L2 [mm]			
	 Z L3 [mm]			
Horizontal (Wall)	 X L4 [mm]			
	 Y L5 [mm]			
	 Z L6 [mm]			

* This graph shows the amount of allowable overhang (guide unit) when the center of gravity of the workpiece overhangs in one direction. When selecting the overhang, refer to the "Calculation of Guide Load Factor" or the Electric Actuator Model Selection Software for confirmation: <https://www.smcworld.com>

Dynamic Allowable Moment

Acceleration/Deceleration — 5000 mm/s²



Calculation of Guide Load Factor

1. Decide operating conditions.

Model: LESH

Size: 8/16/25

Mounting orientation: Horizontal/Bottom/Wall/Vertical

Acceleration [mm/s²]: a

Work load [kg]: m

Work load center position [mm]: Xc/Yc/Zc

2. Select the target graph while referencing the model, size, and mounting orientation.

3. Based on the acceleration and work load, find the overhang [mm]: Lx/Ly/Lz from the graph.

4. Calculate the load factor for each direction.

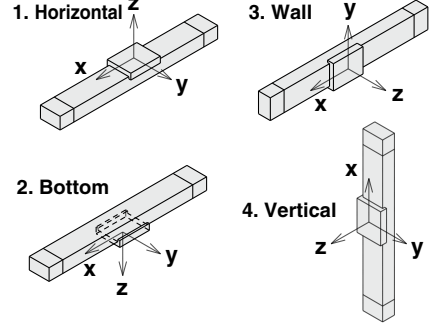
$$\alpha_x = X_c/L_x, \alpha_y = Y_c/L_y, \alpha_z = Z_c/L_z$$

5. Confirm the total of α_x , α_y , and α_z is 1 or less.

$$\alpha_x + \alpha_y + \alpha_z \leq 1$$

When 1 is exceeded, please consider a reduction of acceleration and work load, or a change of the work load center position and series.

Mounting orientation



Example

1. Operating conditions

Model: LESH

Size: 8

Mounting orientation: Horizontal

Acceleration [mm/s²]: 5000

Work load [kg]: 1.0

Work load center position [mm]: Xc = 80, Yc = 100, Zc = 60

2. Select three graphs from the top of the left side first row on page 453.

3. Lx = 480 mm, Ly = 225 mm, Lz = 1200 mm

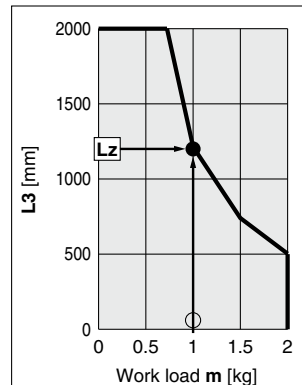
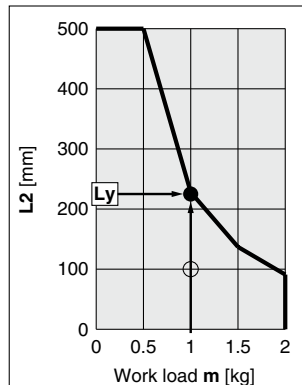
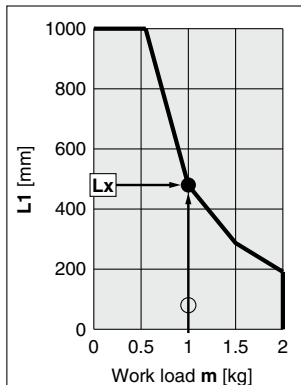
4. The load factor for each direction can be found as follows.

$$\alpha_x = 80/480 = 0.17$$

$$\alpha_y = 100/225 = 0.44$$

$$\alpha_z = 60/1200 = 0.05$$

5. $\alpha_x + \alpha_y + \alpha_z = 0.66 \leq 1$



- LEFS
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEY
- LEYG
- LES
- LESH
- LEPY
- LEPS
- LER
- LEH
- LEH
- LEY-X5
- 11-LEFS
- 11-LEIS
- 11-LEIS
- 25A-
- LEC
- JXC
- LECS
- LECS-T
- LECY
- Motorless
- LAT3

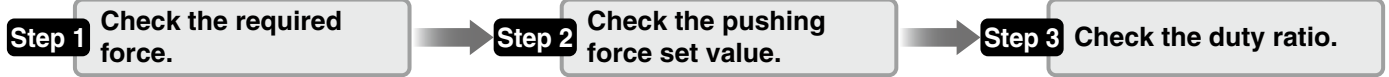
Model Selection 2



LESH Series ▶ p. 459

Selection Procedure

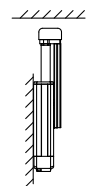
For the compact type LES series, refer to page 429.



Selection Example

Operating conditions

- Pushing force: 90 [N]
- Mounting orientation: Vertical upward
- Workpiece mass: 1 [kg]
- Pushing time + Operation (A): 1.5 s
- Speed: 100 [mm/s]
- Full cycle time (B): 6 s
- Stroke: 100 [mm]



Step 1 Check the required force.

Calculate the approximate required force for a pushing operation.

Selection example) • Pushing force: 90 [N]
 • Workpiece mass: 1 [kg]
 The approximate required force can be found to be $90 + 10 = 100$ [N].

Select a model based on the approximate required force while referencing the specifications (Pages 462, 463).

Selection example) Based on the specifications,
 • Approximate required force: 100 [N]
 • Speed: 100 [mm/s]
 The LESH25□ can be temporarily selected as a possible candidate.

Then, calculate the required force for a pushing operation. If the mounting position is vertical upward, add the actuator table weight.

Selection example) Based on the table weight,
 • LESH25□ table weight: 1.3 [kg]
 The required force can be found to be $100 + 13 = 113$ [N].

Step 2 Check the pushing force set value.

<Pushing force set value–Force graph> (Page 456)

Select a model based on the required force while referencing the pushing force set value–force graph, and confirm the pushing force set value.

Selection example) Based on the graph shown on the right side,
 • Required force: 113 [N]
 The LESH25□K can be temporarily selected as a possible candidate.
 This pushing force set value is 40 [%].

Step 3 Check the duty ratio.

Confirm the allowable duty ratio based on the pushing force set value while referencing the allowable duty ratio,
 Selection example) Based on the allowable duty ratio,

• Pushing force set value: 40 [%]
 The allowable duty ratio can be found to be 30 [%].

Calculate the duty ratio for the operating conditions, and confirm it does not exceed the allowable duty ratio.

Selection example) • Pushing time + Operation (A): 1.5 s
 • Full cycle time (B): 6 s
 The duty ratio can be found to be $1.5/6 \times 100 = 25$ [%], and this is within the allowable range.

Based on the above calculation result, the LESH25□K-100 should be selected. For allowable moment, the selection procedure is the same as that for the positioning control.

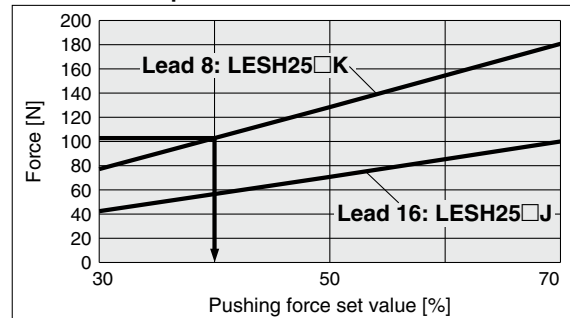
Table Weight

[kg]

Model	Stroke [mm]			
	50	75	100	150
LESH8	0.2	0.3	—	—
LESH16	0.4	—	0.7	—
LESH25	0.9	—	1.3	1.7

* If the mounting position is vertical upward, add the table weight.

LESH25□/Step Motor



<Pushing force set value–Force graph>

Allowable Duty Ratio

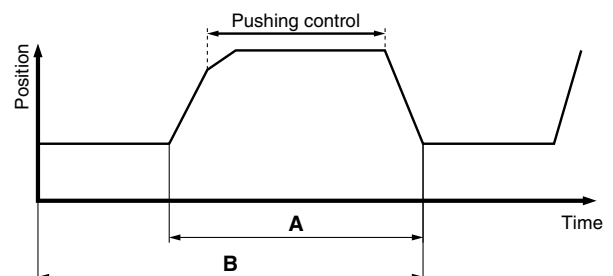
Step Motor (Servo/24 VDC)

Pushing force set value [%]	Duty ratio [%]	Continuous pushing time [min]
30	—	—
50 or less	30 or less	5 or less
70 or less	20 or less	3 or less

Servo Motor (24 VDC)

Pushing force set value [%]	Duty ratio [%]	Continuous pushing time [min]
50	—	—
75 or less	30 or less	5 or less
100 or less	20 or less	3 or less

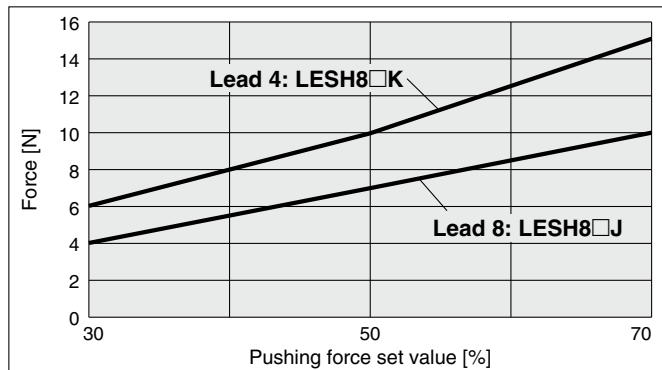
* The pushing force of the LESH8□A is up to 75%.



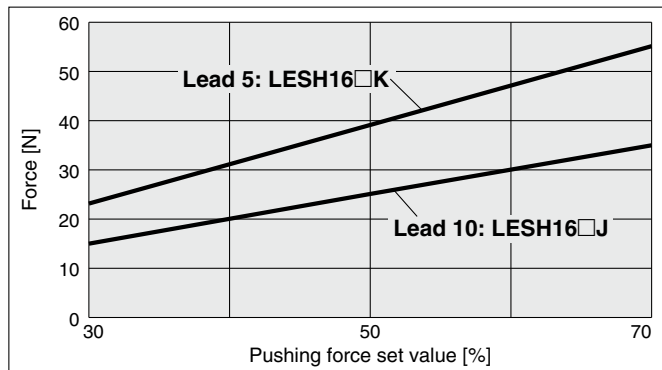
Pushing Force Set Value–Force Graph

Step Motor (Servo/24 VDC)

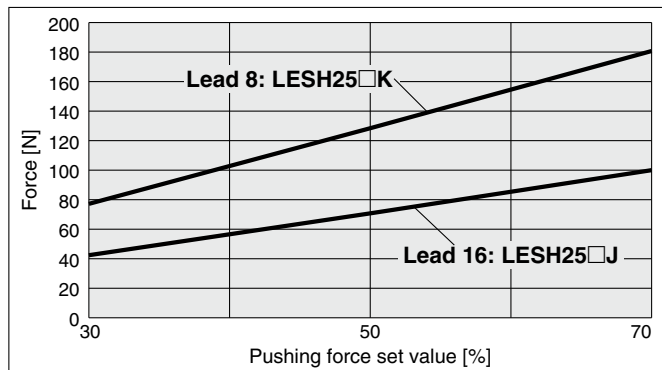
LESH8□



LESH16□

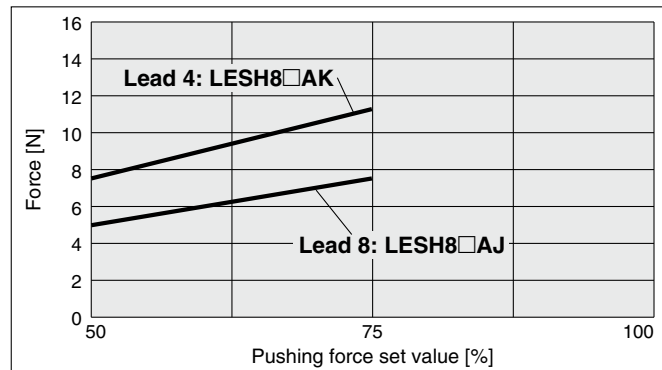


LESH25□

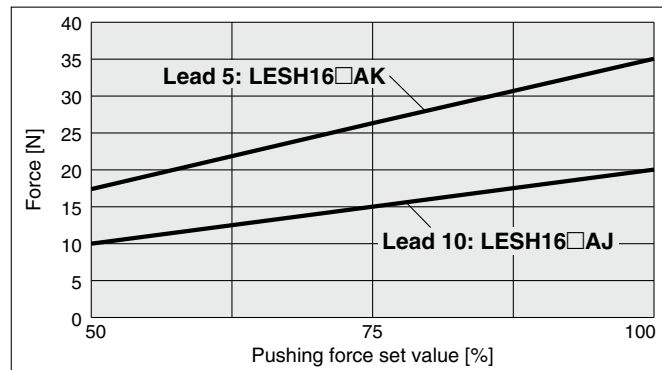


Servo Motor (24 VDC)

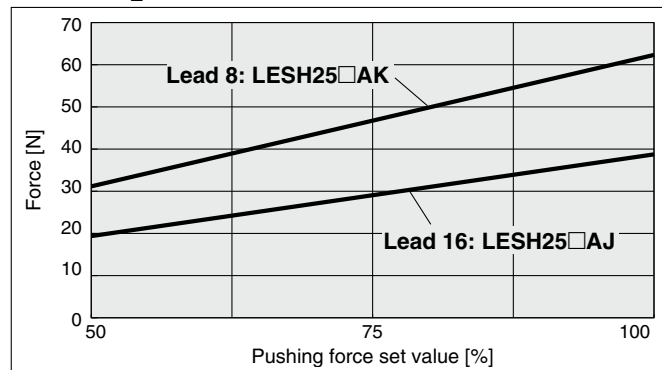
LESH8□A



LESH16□A



LESH25^R□A



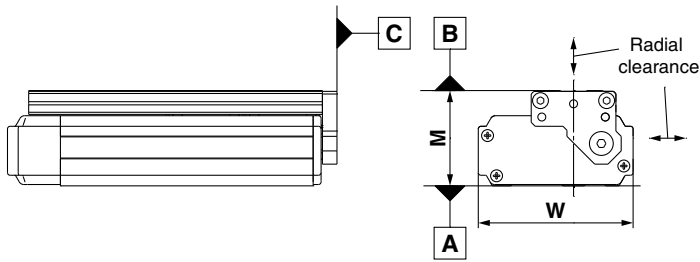
- LEFS
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEY
- LEYG
- LES
- LESH
- LEPY
- LEPS
- LER
- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC□
- JXC□
- LECS□
- LECS□-T
- LECY□
- Motorless
- LAT3

LESH Series

Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

Table Accuracy

* These values are initial guideline values.

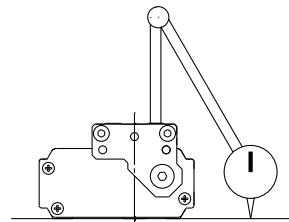
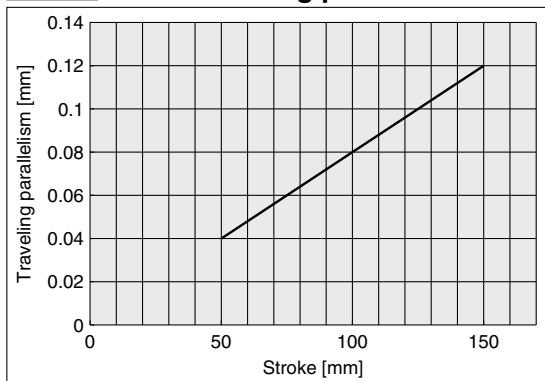


Model	LESH8	LESH16	LESH25
B side parallelism to A side [mm]	Refer to Table 1.		
B side traveling parallelism to A side [mm]	Refer to Graph 1.		
C side perpendicularity to A side [mm]	0.05	0.05	0.05
M dimension tolerance [mm]	±0.3		
W dimension tolerance [mm]	±0.2		
Radial clearance [μm]	-4 to 0	-10 to 0	-14 to 0

Table 1 B side parallelism to A side

Model	Stroke [mm]			
	50	75	100	150
LESH8	0.055	0.065	—	—
LESH16	0.05	—	0.08	—
LESH25	0.06	—	0.08	0.125

Graph 1 B side traveling parallelism to A side



Traveling parallelism:
The amount of deflection on a dial gauge when the table travels a full stroke with the body secured on a reference base surface

Table Deflection (Reference Value)

* These values are initial guideline values.

Table displacement due to pitch moment load
Table displacement when loads are applied to the section marked with the arrow with the slide table stuck out.



LESH8

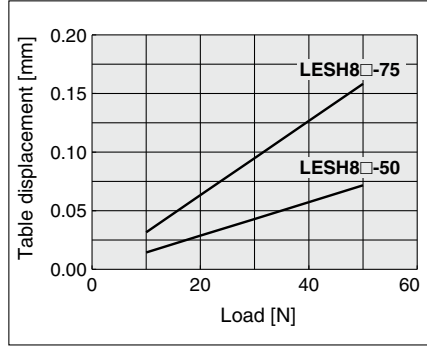
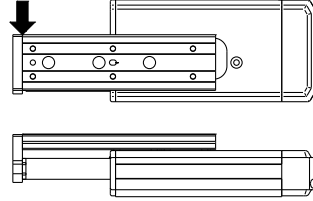


Table displacement due to yaw moment load
Table displacement when loads are applied to the section marked with the arrow with the slide table stuck out.



LESH8

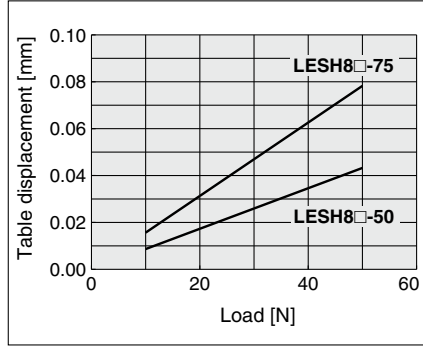
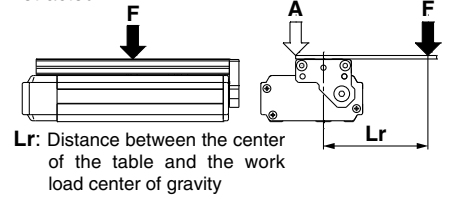
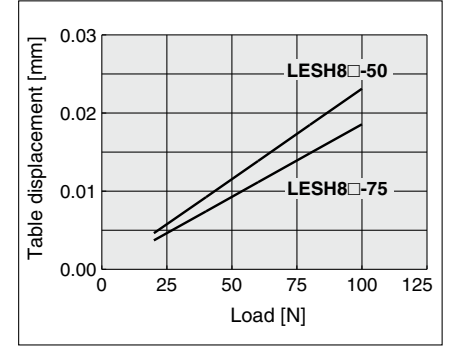


Table displacement due to roll moment load
Table displacement of section A when loads are applied to the section F with the slide table retracted.

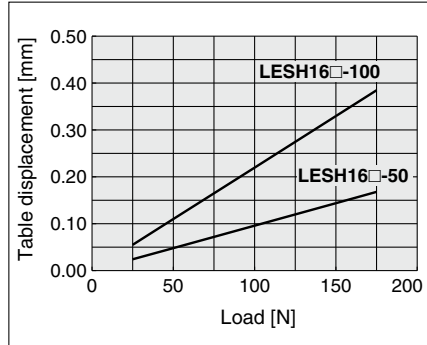


LESH8

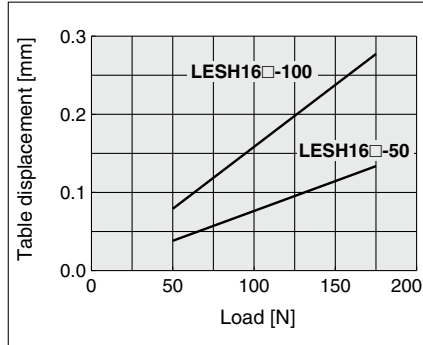
Lr = 70 mm



LESH16

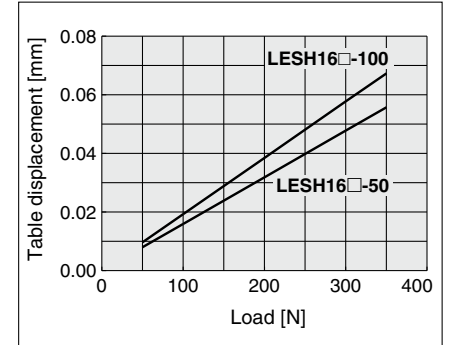


LESH16

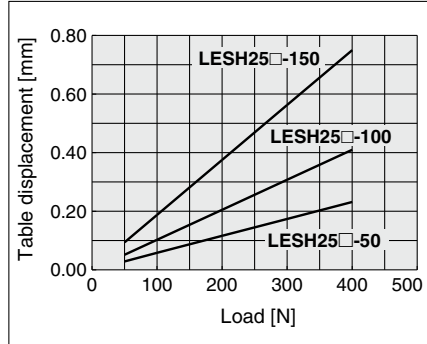


LESH16

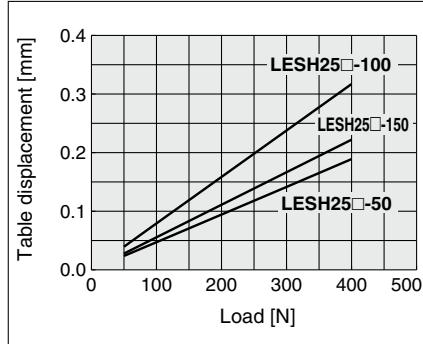
Lr = 120 mm



LESH25

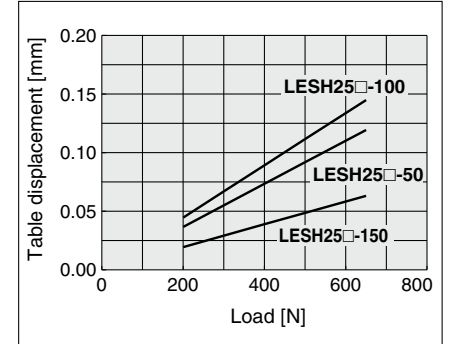


LESH25



LESH25

Lr = 200 mm



- LEFS
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEY
- LEYG
- LES
- LESH
- LEPY
- LEPS
- LER
- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC
- JXC
- LECS
- LECS-T
- LECY
- Motorless
- LAT3

Electric Slide Table High Rigidity Type

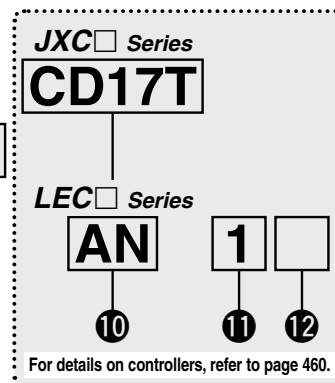
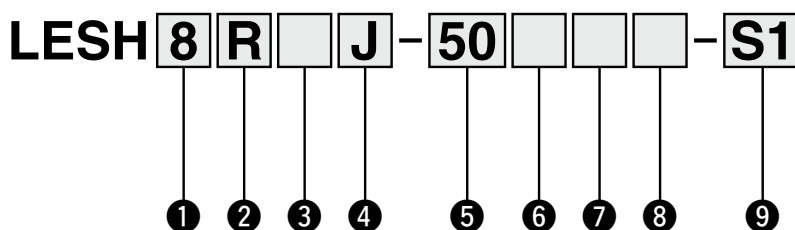
LESH Series LESH8, 16, 25



How to Order



Basic type (R type) Symmetrical type (L type) In-line motor type (D type)



1 Size

8
16
25

4 Lead [mm]

Symbol	LESH8	LESH16	LESH25
J	8	10	16
K	4	5	8

5 Stroke [mm]

Stroke	Note	
	Size	Applicable stroke
50 to 75	8	50*2, 75
50 to 100	16	50*2, 100
50 to 150	25	50, 100, 150

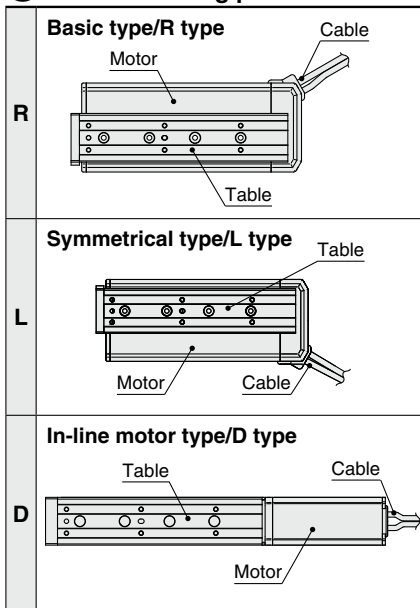
6 Motor option

Nil	Without option
B	With lock*2

Applicable motor option chart

Motor mounting position	Size	Stroke	
		50	75 or more
R/L	8	×	○
	16	×	○
	25	○	○
D	8	○	○
	16	○	○
	25	○	○

2 Motor mounting position



3 Motor type

Symbol	Type	Compatible controllers/drivers
Nil	Step motor (Servo/24 VDC)	JXC51 JXCEF
		JXC61 JXC9F
		JXCE1 JXC PF
		JXC91 JXCLF
		JXCP1
		JXCD1 LECP1
		JXCL1 LECPA
A	Servo motor*1 (24 VDC)	LECA6

7 Body option

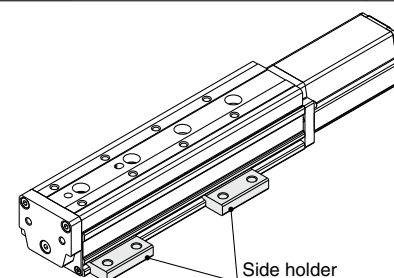
Nil	Without option
S	Dust protected*3

9 Actuator cable type/length*6

Standard cable [m]		Robotic cable [m]	
Nil	None	R1	1.5
S1	1.5*8	RA	10*5
S3	3*8	R3	3
S5	5*8	RB	15*5
		R5	5
		RC	20*5
		R8	8*5

8 Mounting*4

Symbol	Mounting	R type L type	D type
Nil	Without side holder	●	●
H	With side holder (4 pcs.)	—	●



Electric Slide Table High Rigidity Type **LESH Series**

Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

JXC Series (For details, refer to page 461.)

10 Controller

Nil	Without controller
C□1□□	With controller

C D 1 7 T

Interface (Communication protocol/Input/Output)

Symbol	Type	Number of axes, Special specification	
		Standard	With STO sub-function
5	Parallel input (NPN)	●	
6	Parallel input (PNP)	●	
E	EtherCAT	●	●
9	EtherNet/IP™	●	●
P	PROFINET	●	●
D	DeviceNet®	●	
L	IO-Link	●	●
M	CC-Link	●	

Mounting

7	Screw mounting
8*12	DIN rail

Number of axes, Special specification

Symbol	Number of axes	Specification
1	Single axis	Standard
F	Single axis	With STO sub-function

Communication plug connector I/O cable*13

Symbol	Type	Applicable interface
Nil	Without accessory	—
S	Straight type communication plug connector	DeviceNet™ CC-Link Ver1.10
T	T-branch type communication plug connector	DeviceNet™ CC-Link Ver1.10
1	I/O cable (1.5 m)	Parallel input (NPN) Parallel input (PNP)
3	I/O cable (3 m)	
5	I/O cable (5 m)	

LEC Series (For details, refer to page 461.)

AN 1 □

⑩ ⑪ ⑫

10 Controller/Driver type*7

Nil	Without controller/driver	
6N	LECA6	NPN
6P	(Step data input type)	PNP
1N	LECP1 *8	NPN
1P	(Programless type)	PNP
AN	LECPA *8 *9	NPN
AP	(Pulse input type)	PNP

11 I/O cable length*10

Nil	Without cable (Without communication plug connector)
1	1.5 m
3	3 m*11
5	5 m*11

12 Controller/Driver mounting

Nil	Screw mounting
D	DIN rail*12

- *1 LESH25DA is not available.
- *2 As the applicable motor mounting positions and motor options vary depending on the stroke, refer to the applicable motor option chart on page 459.
- *3 For R/L type (IP5X equivalent), a scraper is mounted on the rod cover, and gaskets are mounted on both the end covers. For D type, a scraper is mounted on the rod cover.
- *4 Refer to page 475 for details.
- *5 Produced upon receipt of order (Robotic cable only)
- *6 The standard cable should only be used on fixed parts.
For use on moving parts, select the robotic cable.
Refer to pages 758 and 759 if only the actuator cable is required.
- *7 For details on controllers/drivers and compatible motors, refer to the compatible controllers/drivers on the next page.

- *8 Only available for the motor type "Step motor"
- *9 When pulse signals are open collector, order the current limiting resistor (LEC-PA-R-□) on page 736 separately.
- *10 When "Without controller/driver" is selected for controller/driver types, I/O cable cannot be selected. Refer to page 713 (For LECA6), page 724 (For LECP1), or page 736 (For LECPA) if I/O cable is required.
- *11 When "Pulse input type" is selected for controller/driver types, pulse input usable only with differential. Only 1.5 m cables usable with open collector
- *12 The DIN rail is not included. It must be ordered separately.
- *13 Select "Nil" for anything other than DeviceNet™, CC-Link, or parallel input.
Select "Nil," "S," or "T" for DeviceNet™ or CC-Link.
Select "Nil," "1," "3," or "5" for parallel input.

⚠ Caution

[CE-compliant products]

- ① EMC compliance was tested by combining the electric actuator LES series and the controller LEC/JXC series.
The EMC depends on the configuration of the customer's control panel and the relationship with other electrical equipment and wiring. Therefore, compliance with the EMC directive cannot be certified for SMC components incorporated into the customer's equipment under actual operating conditions. As a result, it is necessary for the customer to verify compliance with the EMC directive for the machinery and equipment as a whole.
- ② For the servo motor (24 VDC) specification, EMC compliance was tested by installing a noise filter set (LEC-NFA). Refer to page 713 for the noise filter set. Refer to the LECA series Operation Manual for installation.

[UL-compliant products (For the LEC series)]

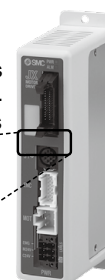
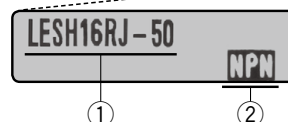
When compliance with UL is required, the electric actuator and controller/driver should be used with a UL1310 Class 2 power supply.

The actuator and controller/driver are sold as a package.

Confirm that the combination of the controller/driver and the actuator is correct.

<Check the following before use.>

- ① Check the actuator label for model number. This number should match that of the controller/driver.
- ② Check that the Parallel I/O configuration matches (NPN or PNP).



* Refer to the Operation Manual for using the products. Please download it via our website: <https://www.smcworld.com>

LEFS
LEFB

LEJS
LEJB

LEL

LEM

LEY
LEYG

LES
LESH

LEPY
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC□

JXC□

LECS□
LECS□-T

LECY□





Motorless











LAT3

LESH Series

Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

Compatible Controllers/Drivers

Type	Step data input type	Step data input type	Programless type	Pulse input type
				
Series	JXC51 JXC61	LECA6	LECP1	LECPA
Features	Parallel I/O	Parallel I/O	Capable of setting up operation (step data) without using a PC or teaching box	Operation by pulse signals
Compatible motor	Step motor (Servo/24 VDC)	Servo motor (24 VDC)	Step motor (Servo/24 VDC)	
Max. number of step data	64 points		14 points	—
Power supply voltage	24 VDC			
Reference page	706-1	707	719	731

Type	EtherCAT direct input type	EtherCAT direct input type with STO sub-function	EtherNet/IP™ direct input type	EtherNet/IP™ direct input type with STO sub-function	PROFINET direct input type	PROFINET direct input type with STO sub-function	DeviceNet® direct input type	IO-Link direct input type	IO-Link direct input type with STO sub-function	CC-Link direct input type
										
Series	JXCE1	JXCEF	JXC91	JXC9F	JXCP1	JXCPF	JXCD1	JXCL1	JXCLF	JXCM1
Features	EtherCAT direct input	EtherCAT direct input with STO sub-function	EtherNet/IP™ direct input	EtherNet/IP™ direct input with STO sub-function	PROFINET direct input	PROFINET direct input with STO sub-function	DeviceNet® direct input	IO-Link direct input	IO-Link direct input with STO sub-function	CC-Link direct input
Compatible motor	Step motor (Servo/24 VDC)									
Max. number of step data	64 points									
Power supply voltage	24 VDC									
Reference page	741									

Specifications

Step Motor (Servo/24 VDC)

Model		LESH8□		LESH16□		LESH25□		
Actuator specifications	Stroke [mm]	50, 75		50, 100		50, 100, 150		
	Work load [kg]*1 *3	Horizontal	2	1	8	5	12	8
		Vertical	0.5	0.25	2	1	4	2
	Pushing force [N] 30% to 70%*2 *3	6 to 15	4 to 10	23.5 to 55	15 to 35	77 to 180	43 to 100	
	Speed [mm/s]*1 *3	10 to 200	20 to 400	10 to 200	20 to 400	10 to 150	20 to 400	
	Pushing speed [mm/s]	10 to 20	20	10 to 20	20	10 to 20	20	
	Max. acceleration/deceleration [mm/s ²]	5000						
	Positioning repeatability [mm]	±0.05						
	Lost motion [mm]*4	0.15 or less						
	Screw lead [mm]	4	8	5	10	8	16	
	Impact/Vibration resistance [m/s ²]*5	50/20						
	Actuation type	Slide screw + Belt (R/L type), Slide screw (D type)						
	Guide type	Linear guide (Circulating type)						
Operating temperature range [°C]	5 to 40							
Operating humidity range [%RH]	90 or less (No condensation)							
Electric specifications	Motor size	□20		□28		□42		
	Motor type	Step motor (Servo/24 VDC)						
	Encoder	Incremental						
	Power supply voltage [V]	24 VDC ±10%						
Lock unit specifications	Power [W]*6 *8	Max. power 35		Max. power 60		Max. power 74		
	Type	Non-magnetizing lock						
	Holding force [N]	24	2.5	300	48	500	77	
	Power consumption [W]*8 *7	3.5		2.9		5		
	Rated voltage [V]	24 VDC ±10%						

*1 Speed changes according to the work load. Check the "Speed-Work Load Graph (Guide)" on page 451.

*2 Pushing force accuracy is ±20% (F.S.).

*3 The speed and force may change depending on the cable length, load, and mounting conditions. Furthermore, if the cable length exceeds 5 m, then it will decrease by up to 10% for each 5 m. (At 15 m: Reduced by up to 20%)

*4 A reference value for correcting an error in reciprocal operation

*5 Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)

Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)

*6 Indicates the max. power during operation (including the controller)

This value can be used for the selection of the power supply.

*7 With lock only

*8 For an actuator with lock, add the power consumption for the lock.

LEFS
LEFB

LEJS
LEJB

LEL

LEM

LEY
LEYG

LES
LESH

LEPY
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC□

JXC□

LECS□
LECS□-T

LECY□

Motorless

LAT3

LESH Series

Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

Specifications

Servo Motor (24 VDC)

Model		LESH8□A		LESH16□A		LESH25 ^R □A*1		
Actuator specifications	Stroke [mm]	50, 75		50, 100		50, 100, 150		
	Work load [kg]	Horizontal	2	1	5	2.5	6	4
		Vertical	0.5	0.25	2	1	2.5	1.5
	Pushing force 50 to 100% [N]*2	7.5 to 11	5 to 7.5	17.5 to 35	10 to 20	31 to 62	19 to 38	
	Speed [mm/s]	1 to 200	1 to 400	1 to 200	1 to 400	1 to 150	1 to 400	
	Pushing speed [mm/s]*2	1 to 20						
	Max. acceleration/deceleration [mm/s ²]	5000						
	Positioning repeatability [mm]	±0.05						
	Lost motion [mm]*3	0.15 or less						
	Screw lead [mm]	4	8	5	10	8	16	
	Impact/Vibration resistance [m/s ²]*4	50/20						
	Actuation type	Slide screw + Belt (R/L type), Slide screw (D type)						
	Guide type	Linear guide (Circulating type)						
	Operating temperature range [°C]	5 to 40						
Operating humidity range [%RH]	90 or less (No condensation)							
Electric specifications	Motor size	□20		□28		□42		
	Motor output [W]	10		30		36		
	Motor type	Servo motor (24 VDC)						
	Encoder	Incremental						
	Power supply voltage [V]	24 VDC ±10%						
Lock unit specifications	Power [W]*5 *7	Max. power 84		Max. power 124		Max. power 158		
	Type	Non-magnetizing lock						
	Holding force [N]	24	2.5	300	48	500	77	
	Power consumption [W]*7	3.5		2.9		5		
	Rated voltage [V]	24 VDC ±10%						

*1 LESH25DA is not available.

*2 The pushing force values for LESH8□A is 50% to 75%. Pushing force accuracy is ±20% (F.S.).

*3 A reference value for correcting an error in reciprocal operation

*4 Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)

Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)

*5 Indicates the max. power during operation (including the controller)

This value can be used for the selection of the power supply.

*6 With lock only

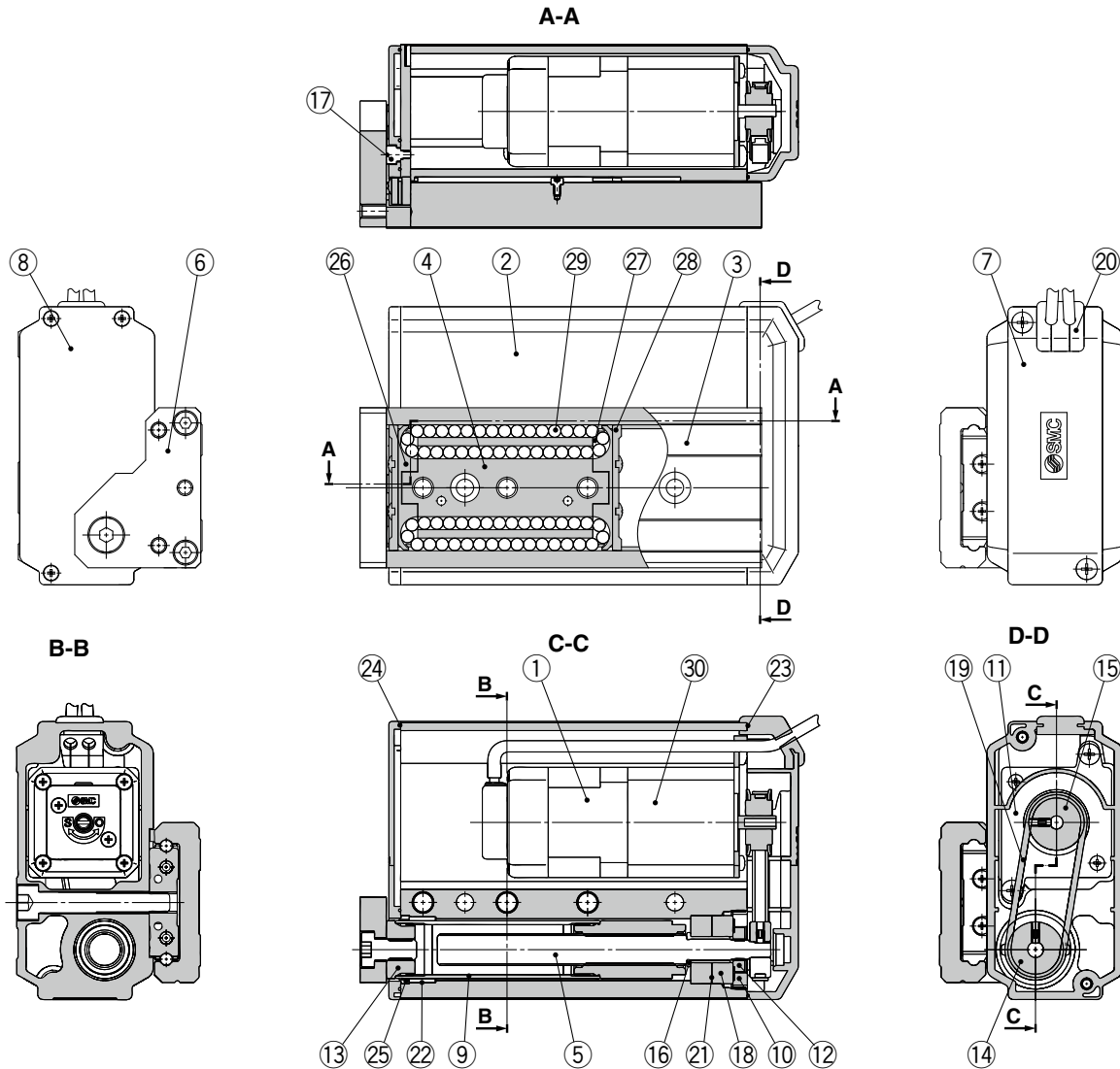
*7 For an actuator with lock, add the power consumption for the lock.

Weight

Step Motor (Servo/24 VDC), Servo Motor (24 VDC) Common

Model		Basic type/R type, Symmetrical type/L type						In-line motor type/D type							
		LESH8 ^R (A)		LESH16 ^R (A)		LESH25 ^R (A)		LESH8D(A)		LESH16D(A)		LESH25D			
Stroke [mm]		50	75	50	100	50	100	150	50	75	50	100	50	100	150
Product weight [kg]	Without lock	0.55	0.70	1.15	1.60	2.50	3.30	4.26	0.57	0.70	1.25	1.70	2.52	3.27	3.60
	With lock	—	0.76	—	1.71	2.84	3.64	4.60	0.63	0.76	1.36	1.81	2.86	3.61	3.94

Construction: Basic Type/R Type, Symmetrical Type/L Type



Component Parts

No.	Description	Material	Note
1	Motor	—	—
2	Body	Aluminum alloy	Anodized
3	Table	Stainless steel	Heat treatment + Electroless nickel plating
4	Guide block	Stainless steel	Heat treatment
5	Lead screw	Stainless steel	Heat treatment + Special treatment
6	End plate	Aluminum alloy	Anodized
7	Pulley cover	Synthetic resin	—
8	End cover	Synthetic resin	—
9	Rod	Stainless steel	—
10	Bearing stopper	Structural steel Brass	Electroless nickel plating Electroless nickel plating (LESH25R/L□ only)
11	Motor plate	Structural steel	—
12	Lock nut	Structural steel	Chromating
13	Socket	Structural steel	Electroless nickel plating
14	Lead screw pulley	Aluminum alloy	—
15	Motor pulley	Aluminum alloy	—
16	Spacer	Stainless steel	LESH25R/L□ only
17	Origin stopper	Structural steel	Electroless nickel plating
18	Bearing	—	—
19	Belt	—	—
20	Grommet	Synthetic resin	—
21	Sim ring	Structural steel	—

No.	Description	Material	Note
22	Bushing	—	Dust-protected option only
23	Pulley gasket	NBR	Dust-protected option only
24	End gasket	NBR	Dust-protected option only
25	Scraper	NBR	Dust-protected option only/Rod
26	Cover	Synthetic resin	—
27	Return guide	Synthetic resin	—
28	Scraper	Stainless steel + NBR	Linear guide
29	Steel ball	Special steel	—
30	Lock	—	With lock only

Replacement Parts/Belt

Model	Order no.
LESH8□	LE-D-1-1
LESH16□	LE-D-1-2
LESH25□	LE-D-1-3
LESH25□A	LE-D-1-4

Replacement Parts/Grease Pack

Applied portion	Order no.
Guide unit	GR-S-010 (10 g) GR-S-020 (20 g)

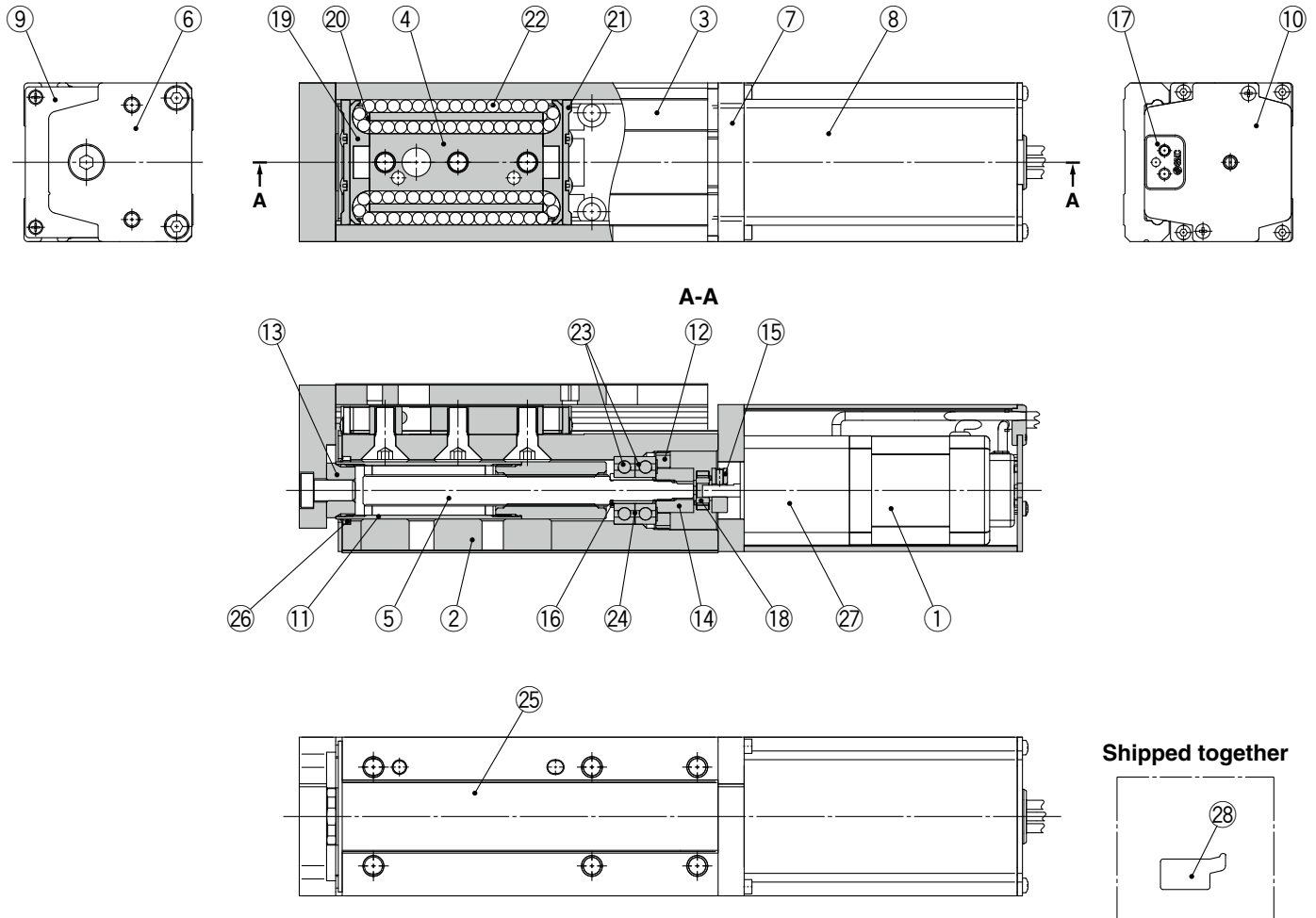
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- LES
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- LEPY
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- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 11-LEJS
- 25A-
- LEC□
- JXC□
- LECS□
- LECS□-T
- LECY□
- Motorless
- LAT3

LESH Series

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

Construction: In-line Motor Type/D Type



Shipped together

Component Parts

No.	Description	Material	Note
1	Motor	—	—
2	Body	Aluminum alloy	Anodized
3	Table	Stainless steel	Heat treatment + Electroless nickel plating
4	Guide block	Stainless steel	Heat treatment
5	Lead screw	Stainless steel	Heat treatment + Special treatment
6	End plate	Aluminum alloy	Anodized
7	Motor flange	Aluminum alloy	Anodized
8	Motor cover	Aluminum alloy	Anodized
9	End cover	Aluminum alloy	Anodized
10	Motor end cover	Aluminum alloy	Anodized
11	Rod	Stainless steel	—
12	Bearing stopper	Structural steel	Electroless nickel plating
		Brass	Electroless nickel plating (LESH25D□ only)
13	Socket	Structural steel	Electroless nickel plating
14	Hub (Lead screw side)	Aluminum alloy	—
15	Hub (Motor side)	Aluminum alloy	—
16	Spacer	Stainless steel	LESH25D□ only
17	Grommet	NBR	—
18	Spider	NBR	—
19	Cover	Synthetic resin	—
20	Return guide	Synthetic resin	—
21	Scraper	Stainless steel + NBR	Linear guide

No.	Description	Material	Note
22	Steel ball	Special steel	—
23	Bearing	—	—
24	Sim ring	Structural steel	—
25	Masking tape	—	—
26	Scraper	NBR	Dust-protected option only/ Rod
27	Lock	—	With lock only
28	Side holder	Aluminum alloy	Anodized

Optional Parts/Side Holder

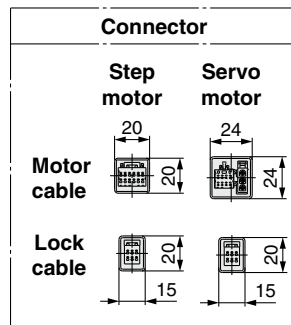
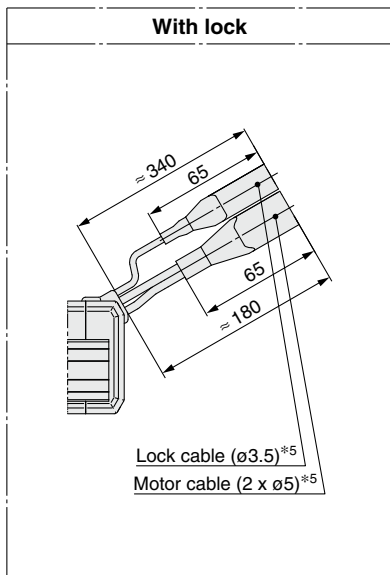
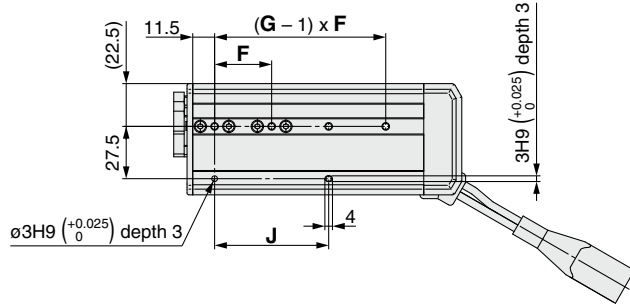
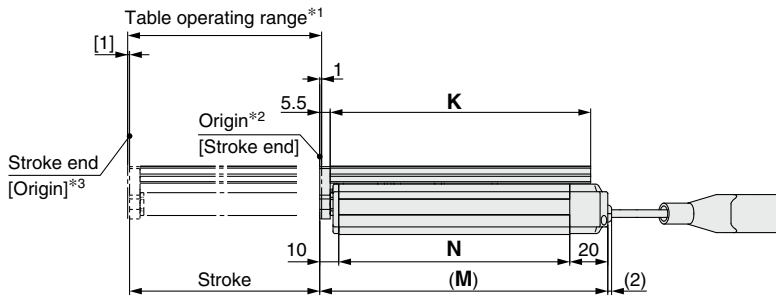
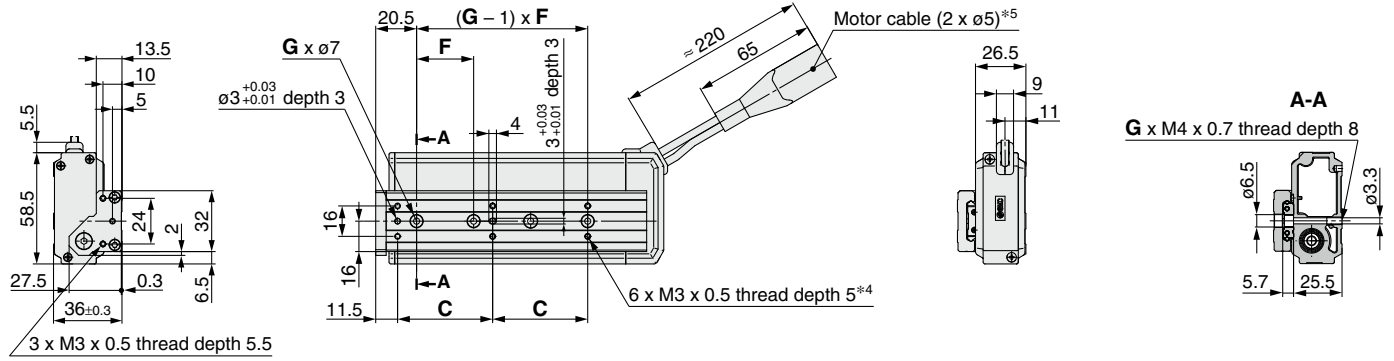
Model	Order no.
LESH8D	LE-D-3-1
LESH16D	LE-D-3-2
LESH25D	LE-D-3-3

Replacement Parts/Grease Pack

Applied portion	Order no.
Guide unit	GR-S-010 (10 g)
	GR-S-020 (20 g)

Dimensions: Basic Type/R Type

LESH8R



Model	C	F	G	J	K	M	N
LESH8R□□-50□□-□□□□□	46	29	3	58	111	125.5	95.5
LESH8R□□-75□□-□□□□□	50	30	4	60	137	151.5	121.5

[mm]

- *1 This is the range within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
- *2 Position after returning to origin
- *3 [] for when the direction of return to origin has changed
- *4 If workpiece retaining screws are too long, they can touch the guide block and cause a malfunction. Use screws that are between the maximum and minimum screw-in depths in length.
- *5 Secure the motor cable and lock cable so that the cables are not repeatedly bent.

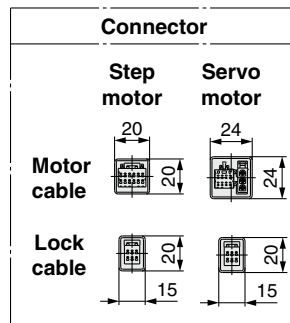
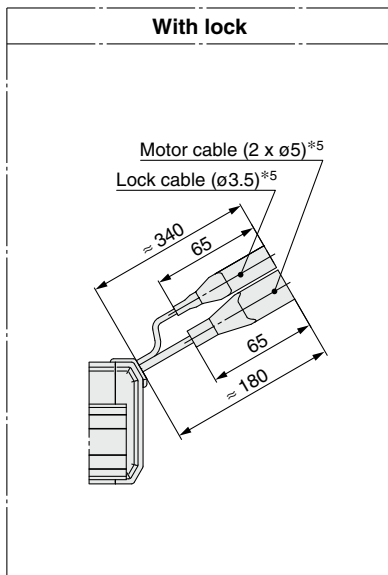
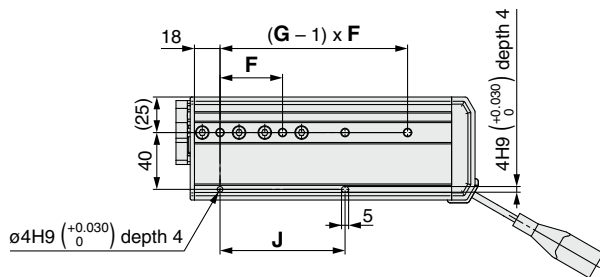
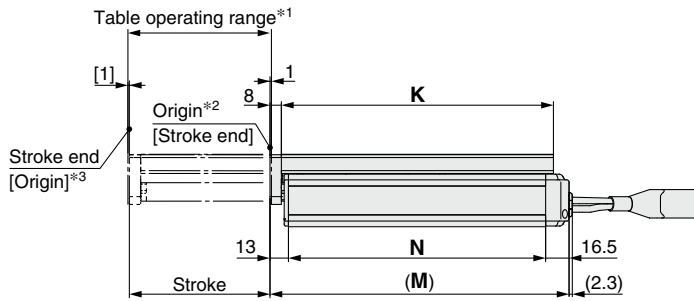
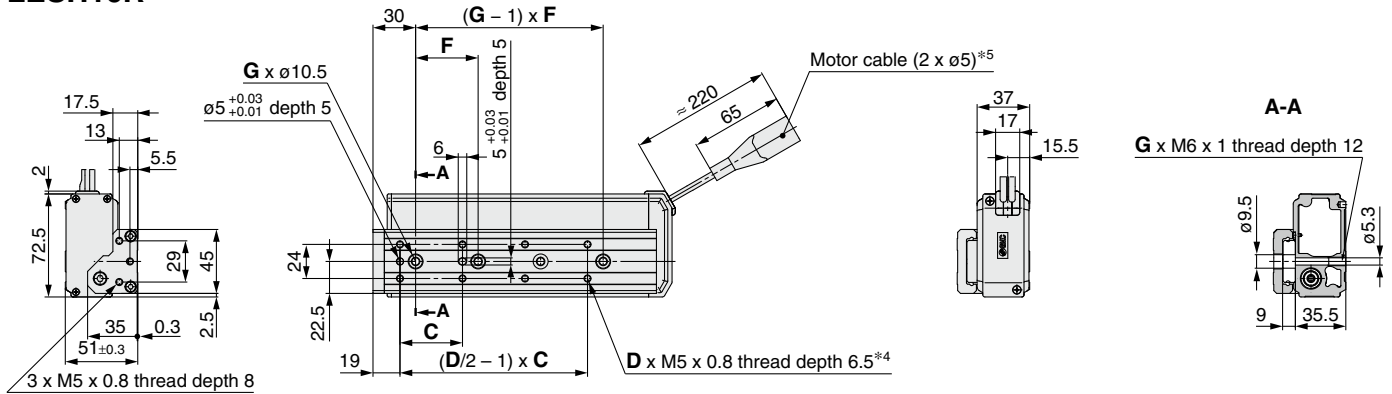
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- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC□
- JXC□
- LECS□
- LECS□-T
- LECY□
- Motorless
- LAT3

LESH Series

Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

Dimensions: Basic Type/R Type

LESH16R



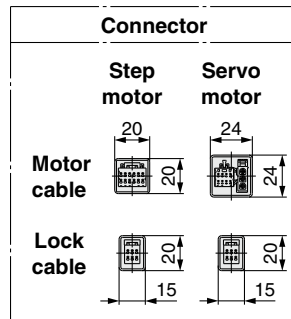
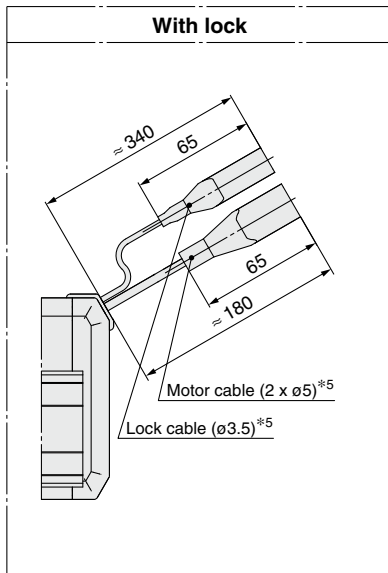
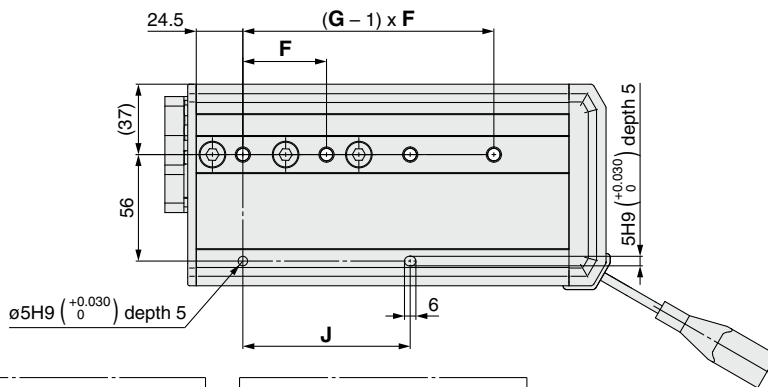
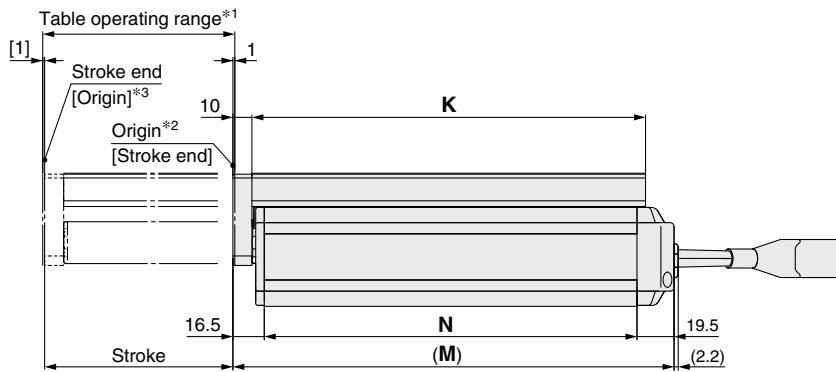
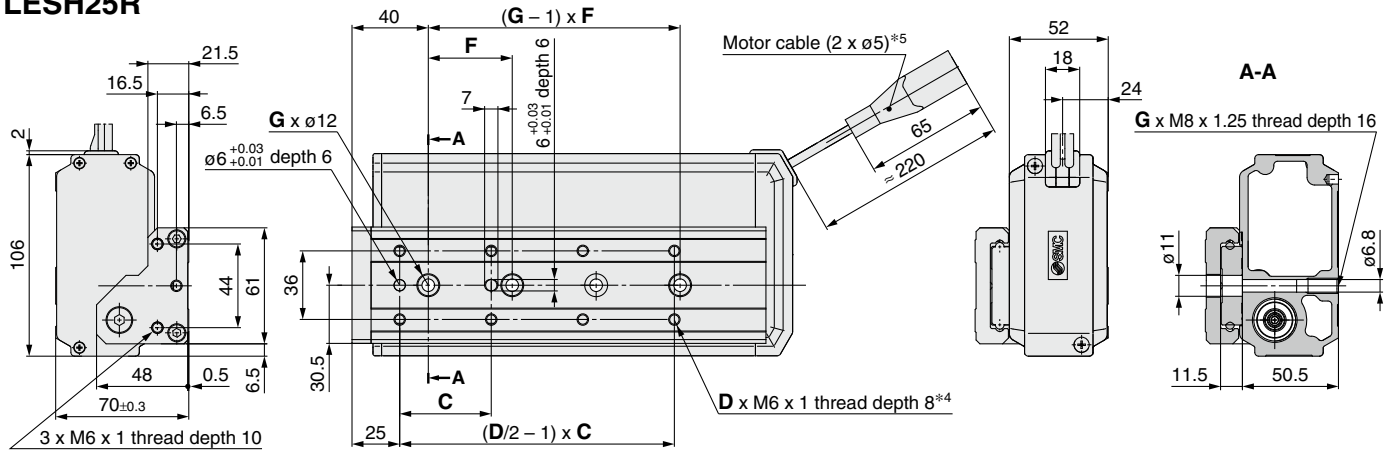
Model	C	D	F	G	J	K	M	N
LESH16R□□-50□□-□□□□□	40	6	45	2	45	116.5	135.5	106
LESH16R□□-100□□-□□□□□	44	8	44	4	88	191.5	210.5	181

[mm]

- *1 This is the range within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
- *2 Position after returning to origin
- *3 [] for when the direction of return to origin has changed
- *4 If workpiece retaining screws are too long, they can touch the guide block and cause a malfunction. Use screws that are between the maximum and minimum screw-in depths in length.
- *5 Secure the motor cable and lock cable so that the cables are not repeatedly bent.

Dimensions: Basic Type/R Type

LESH25R



Model	C	D	F	G	J	K	M	N
LESH25R□□-50□□-□□□□□	75	4	80	2	80	143	168	132
LESH25R□□-100□□-□□□□□	48	8	44	4	88	207	232	196
LESH25R□□-150□□-□□□□□	65	8	66	4	132	285	310	274

[mm]

*1 This is the range within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
 *2 Position after returning to origin
 *3 [] for when the direction of return to origin has changed
 *4 If workpiece retaining screws are too long, they can touch the guide block and cause a malfunction. Use screws that are between the maximum and minimum screw-in depths in length.
 *5 Secure the motor cable and lock cable so that the cables are not repeatedly bent.

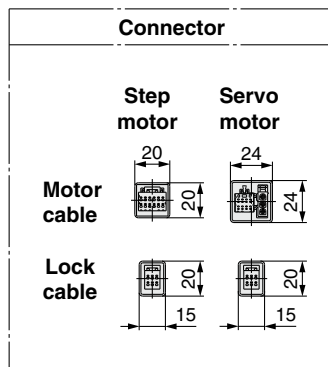
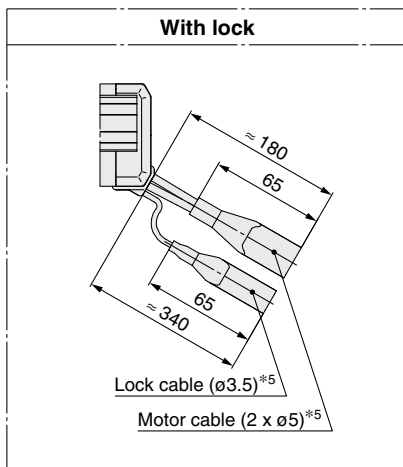
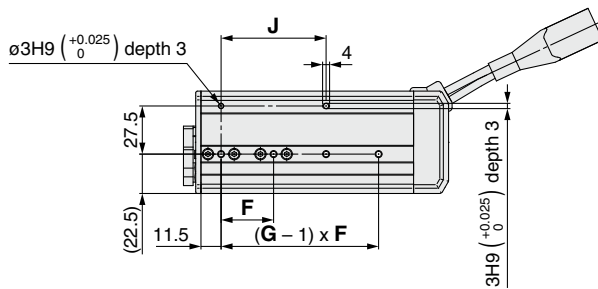
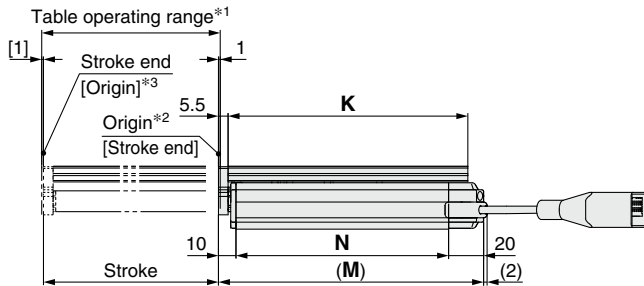
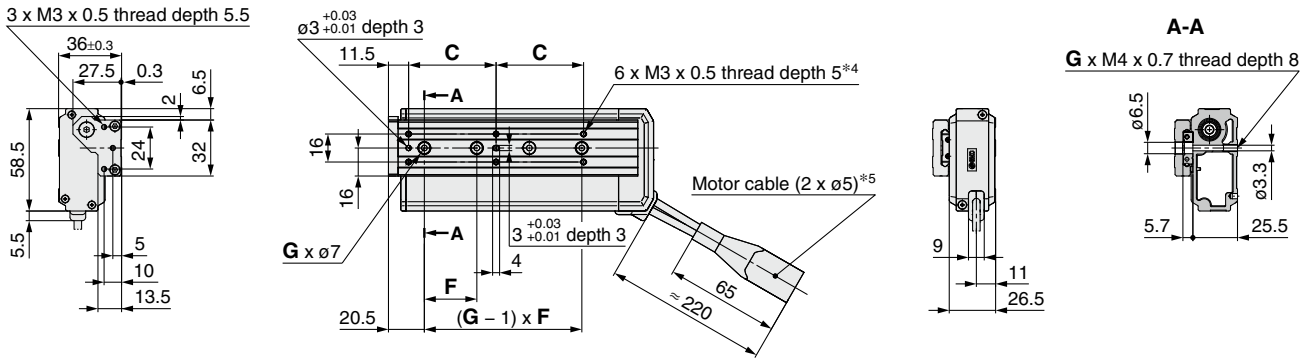
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- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC□
- JXC□
- LECS□
- LECS□-T
- LECY□
- Motorless
- LAT3

LESH Series

Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

Dimensions: Symmetrical Type/L Type

LESH8L



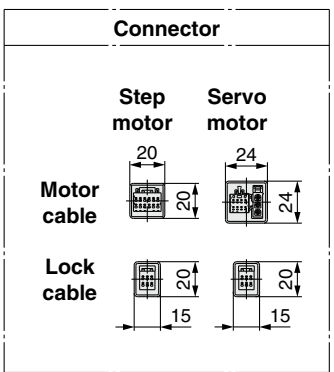
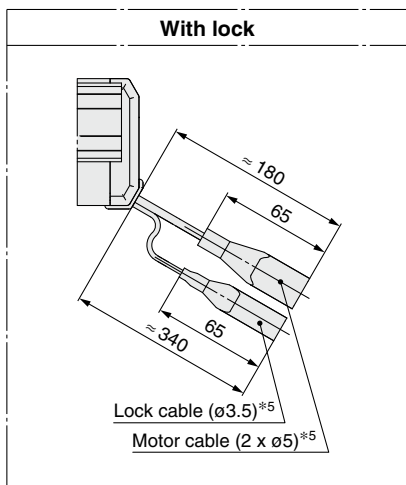
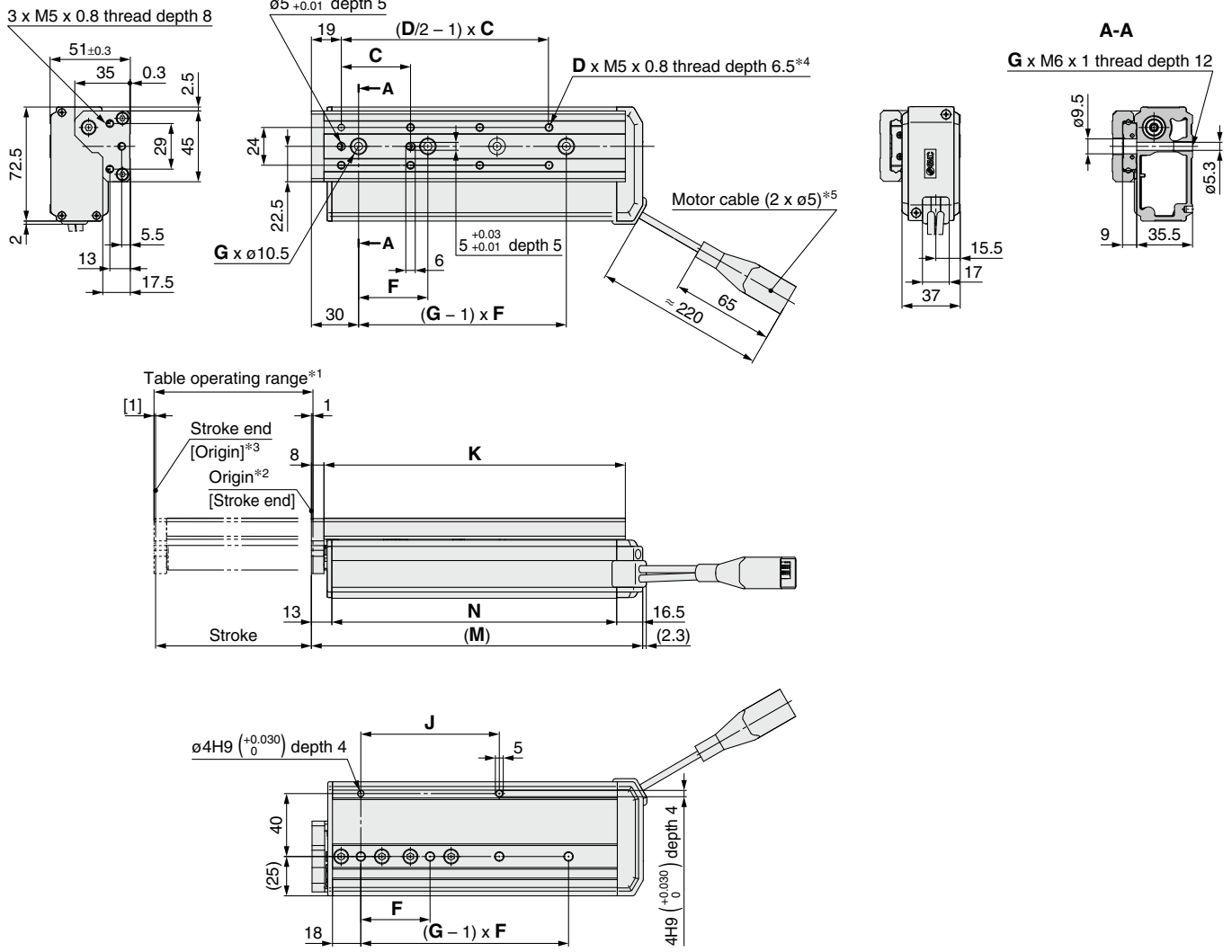
Model	C	F	G	J	K	M	N
LESH8L□□-50□□-□□□□□	46	29	3	58	111	125.5	95.5
LESH8L□□-75□□-□□□□□	50	30	4	60	137	151.5	121.5

[mm]

- *1 This is the range within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
- *2 Position after returning to origin
- *3 [] for when the direction of return to origin has changed
- *4 If workpiece retaining screws are too long, they can touch the guide block and cause a malfunction. Use screws that are between the maximum and minimum screw-in depths in length.
- *5 Secure the motor cable and lock cable so that the cables are not repeatedly bent.

Dimensions: Symmetrical Type/L Type

LESH16L



Model	C	D	F	G	J	K	M	N
LESH16L□□-50□□-□□□□□	40	6	45	2	45	116.5	135.5	106
LESH16L□□-100□□-□□□□□	44	8	44	4	88	191.5	210.5	181

*1 This is the range within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
 *2 Position after returning to origin
 *3 [] for when the direction of return to origin has changed
 *4 If workpiece retaining screws are too long, they can touch the guide block and cause a malfunction. Use screws that are between the maximum and minimum screw-in depths in length.
 *5 Secure the motor cable and lock cable so that the cables are not repeatedly bent.

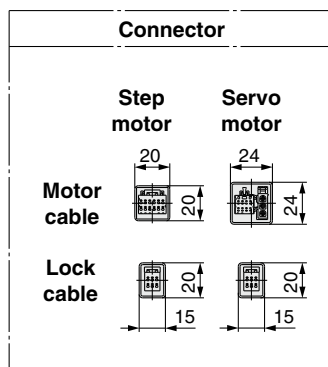
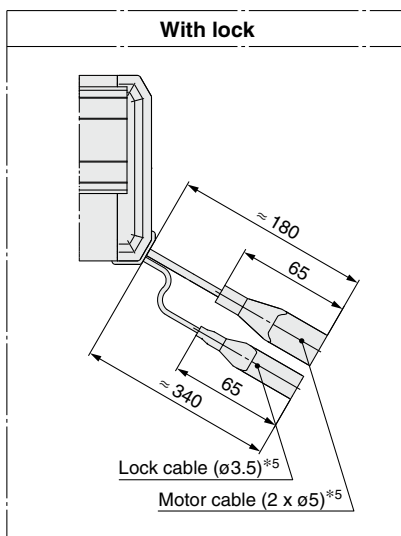
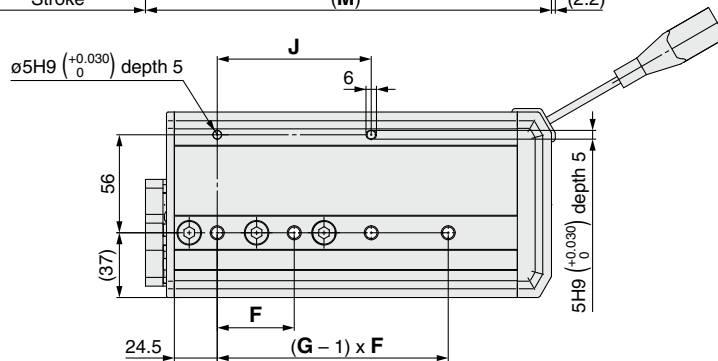
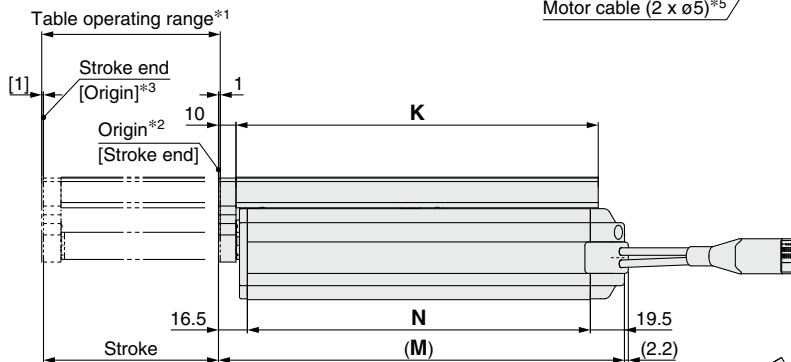
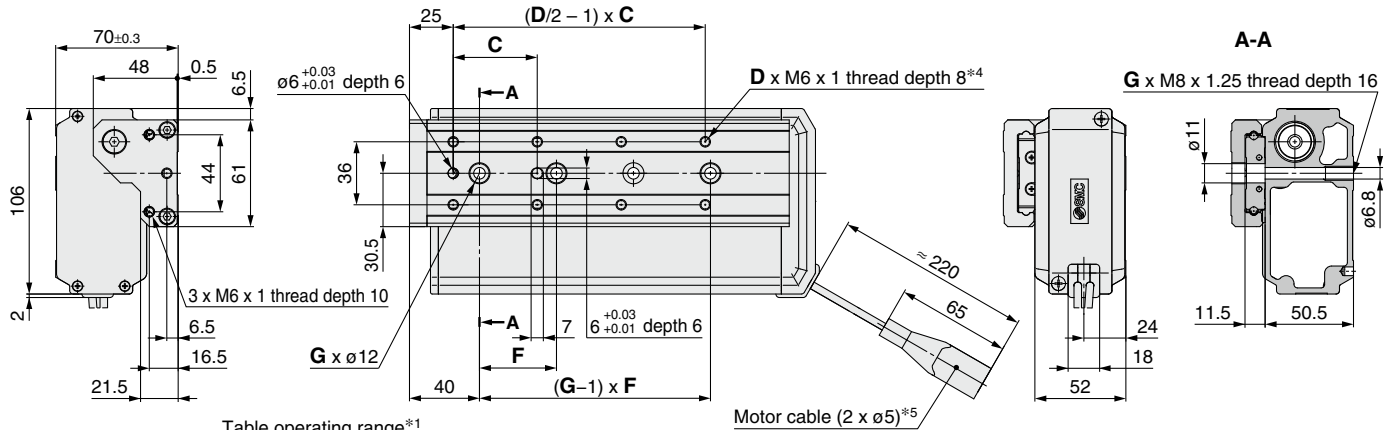
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- LESH
- LEPY
- LEPS
- LER
- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC□
- JXC□
- LECS□
- LECS□-T
- LECY□
- Motorless
- LAT3

LESH Series

Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

Dimensions: Symmetrical Type/L Type

LESH25L



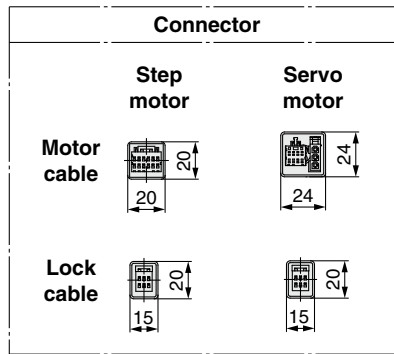
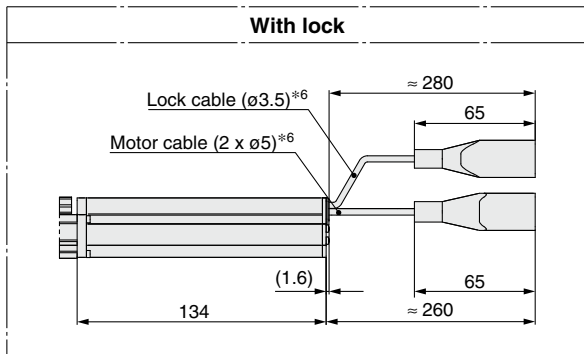
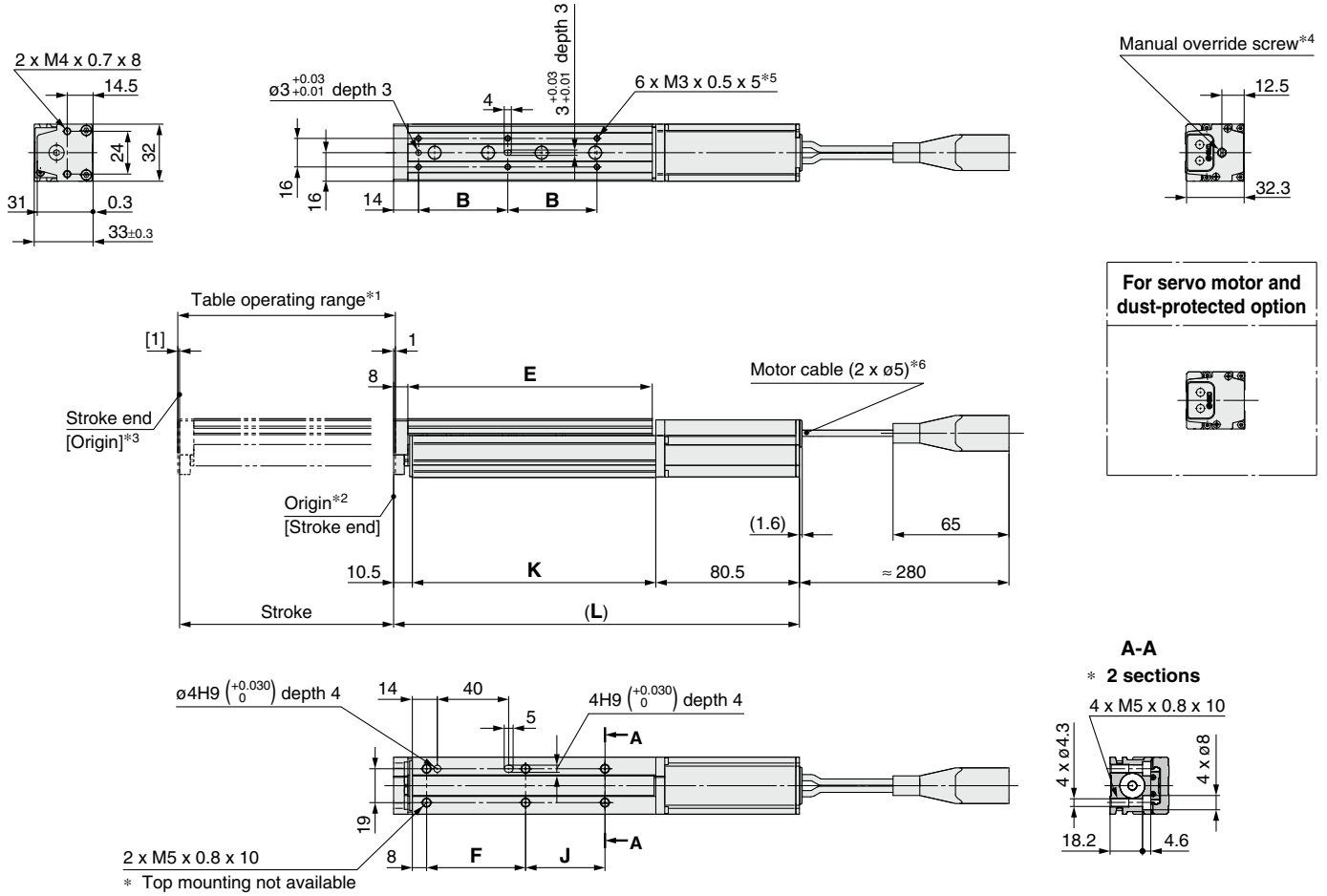
Model	C	D	F	G	J	K	M	N
LESH25L□□-50□□-□□□□	75	4	80	2	80	143	168	132
LESH25L□□-100□□-□□□□	48	8	44	4	88	207	232	196
LESH25L□□-150□□-□□□□	65	8	66	4	132	285	310	274

[mm]

- *1 This is the range within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
- *2 Position after returning to origin
- *3 [] for when the direction of return to origin has changed
- *4 If workpiece retaining screws are too long, they can touch the guide block and cause a malfunction. Use screws that are between the maximum and minimum screw-in depths in length.
- *5 Secure the motor cable and lock cable so that the cables are not repeatedly bent.

Dimensions: In-line Motor Type/D Type

LESH8D



Model	L	B	E	F	J	K
LESH8D□□-50□□-□□□□□□	201.5	46	111	54.5	19.5	110.5
LESH8D□□-50B□□-□□□□□□	255					
LESH8D□□-75□□-□□□□□□	227.5	50	137	55.5	44.5	136.5
LESH8D□□-75B□□-□□□□□□	281					

- *1 This is the range within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
- *2 Position after returning to origin
- *3 [] for when the direction of return to origin has changed
- *4 The distance between the motor end cover and the manual override screw is up to 16 mm. The motor end cover hole size is ø5.5.
- *5 If workpiece retaining screws are too long, they can touch the guide block and cause a malfunction. Use screws that are between the maximum and minimum screw-in depths in length.
- *6 Secure the motor cable and lock cable so that the cables are not repeatedly bent.

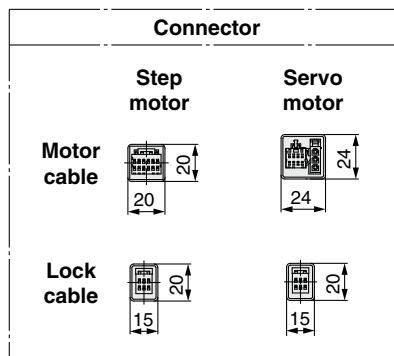
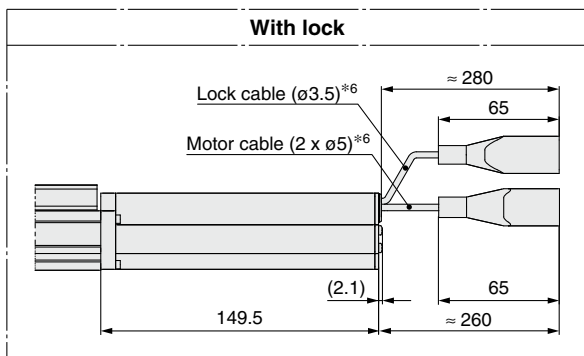
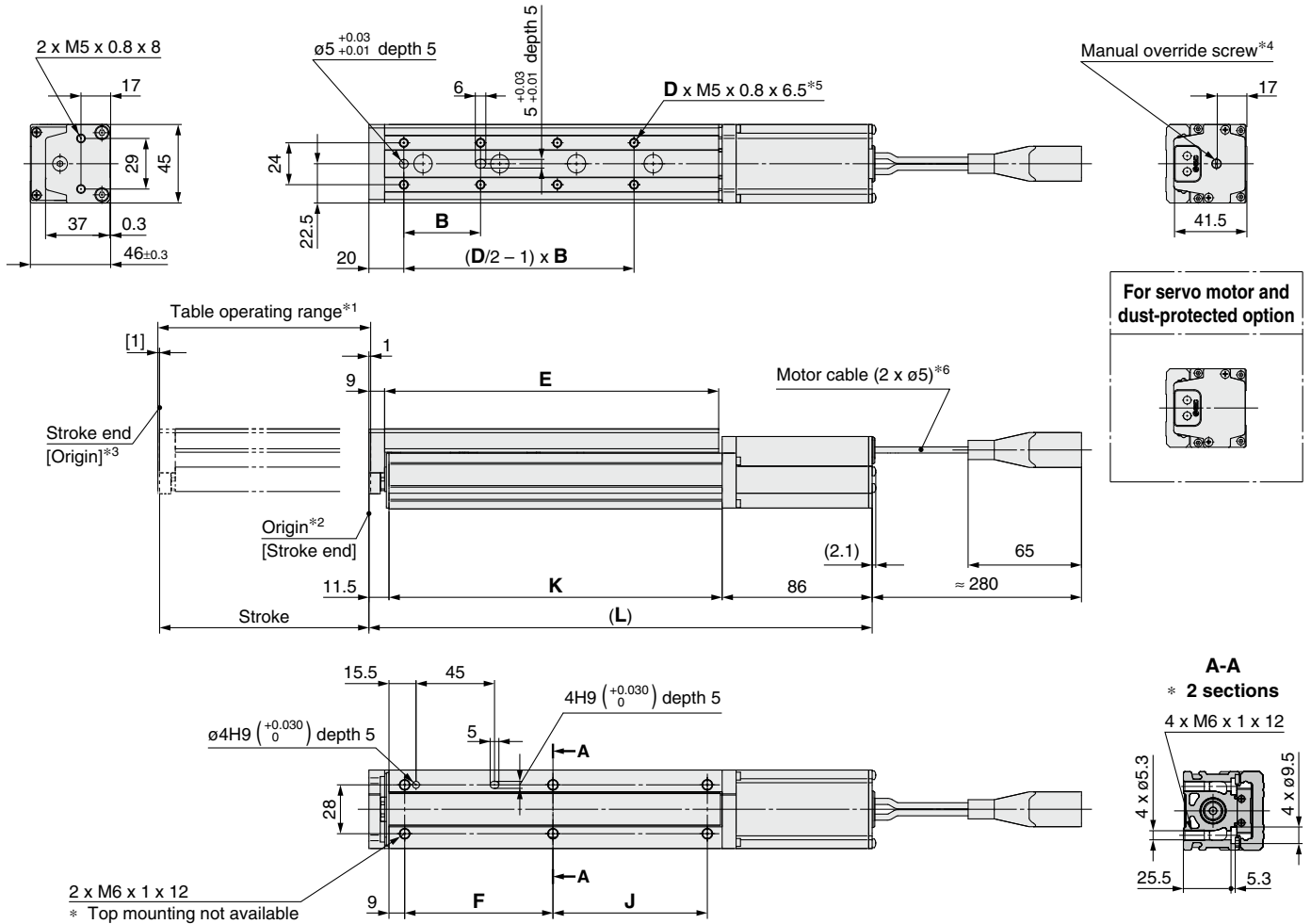
- LEFS
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEY
- LEYG
- LES
- LESH
- LEPY
- LEPS
- LER
- LEH
- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC□
- JXC□
- LECS□
- LECS□-T
- LECY□
- Motorless
- LAT3

LESH Series

Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

Dimensions: In-line Motor Type/D Type

LESH16D

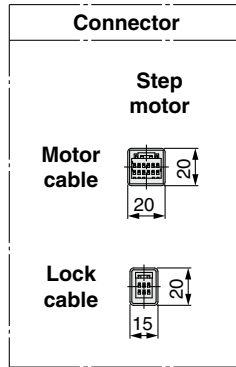
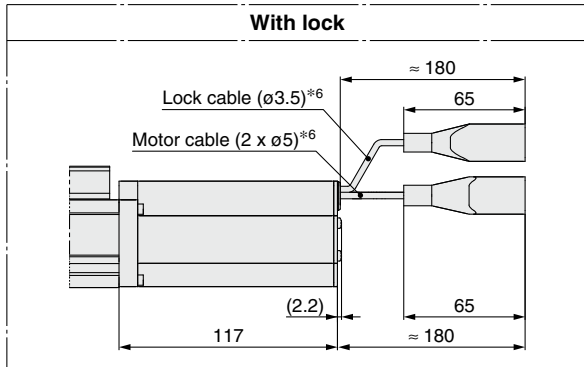
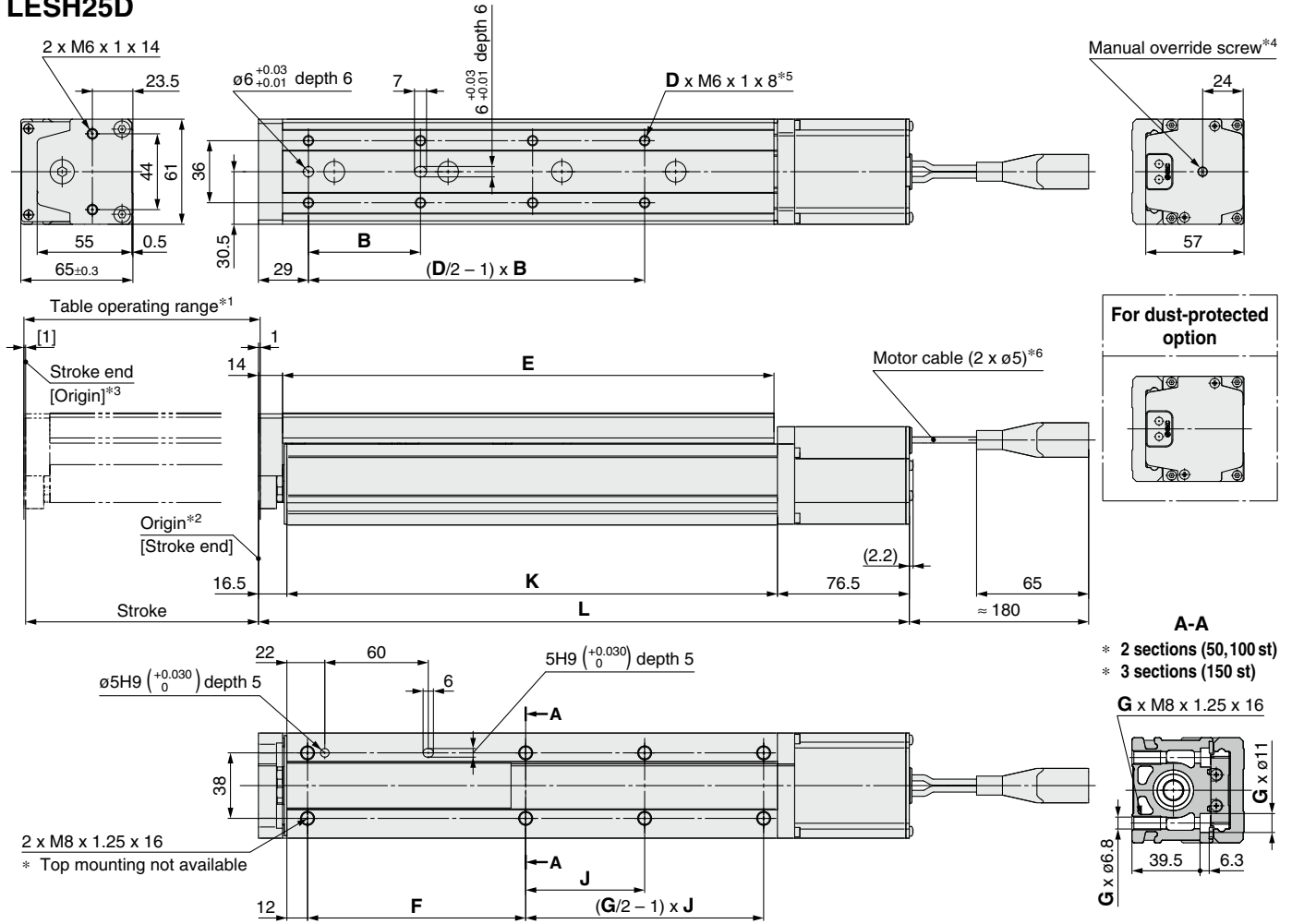


Model	L	B	D	E	F	J	K
LESH16D□□-50□□-□□□□□□	219.5	40	6	116.5	65	39.5	122
LESH16D□□-50B□□-□□□□□□	283						
LESH16D□□-100□□-□□□□□□	288.5	44	8	191.5	85	88.5	191
LESH16D□□-100B□□-□□□□□□	352						

- *1 This is the range within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
- *2 Position after returning to origin
- *3 [] for when the direction of return to origin has changed
- *4 The distance between the motor end cover and the manual override screw is up to 17 mm. The motor end cover hole size is ø5.5.
- *5 If workpiece retaining screws are too long, they can touch the guide block and cause a malfunction. Use screws that are between the maximum and minimum screw-in depths in length.
- *6 Secure the motor cable and lock cable so that the cables are not repeatedly bent.

Dimensions: In-line Motor Type/D Type

LESH25D



Model	L	B	D	E	F	G	J	K
LESH25D□-50□□-□□□□□□	237.5	75	4	143	84		40.5	144.5
LESH25D□-50B□□-□□□□□□	278							
LESH25D□-100□□-□□□□□□	299.5	48	8	207	98.5	4	88	206.5
LESH25D□-100B□□-□□□□□□	340							
LESH25D□-150□□-□□□□□□	377.5	65		285	126.5	6	69	284.5
LESH25D□-150B□□-□□□□□□	418							

- *1 This is the range within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
- *2 Position after returning to origin
- *3 [] for when the direction of return to origin has changed
- *4 The distance between the motor end cover and the manual override screw is up to 4 mm. The motor end cover hole size is ø5.5.
- *5 If workpiece retaining screws are too long, they can touch the guide block and cause a malfunction. Use screws that are between the maximum and minimum screw-in depths in length.
- *6 Secure the motor cable and lock cable so that the cables are not repeatedly bent.

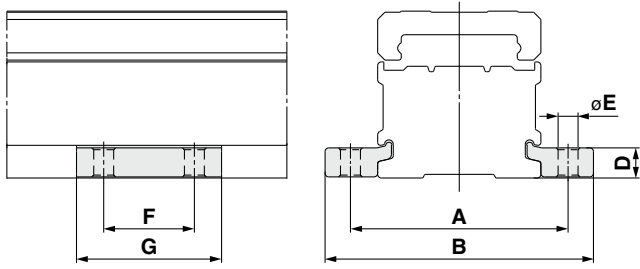
- LEFS
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEY
- LEYG
- LES
- LESH
- LEPY
- LEPS
- LER
- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC□
- JXC□
- LECS□
- LECS□-T
- LECY□
- Motorless
- LAT3

LESH Series

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

Side Holder (In-line Motor Type/D Type)



Part no.*1	A	B	D	E	F	G	Applicable model
LE-D-3-1	45	57.6	6.7	4.5	20	33	LESH8D
LE-D-3-2	60	74	8.3	5.5	25	40	LESH16D
LE-D-3-3	81	99	12	6.6	30	49	LESH25D

*1 Model numbers for 1 side holder.



LES/LESH Series Specific Product Precautions 1

Be sure to read this before handling the products. Refer to page 984 for safety instructions, pages 985 to 990 for electric actuator precautions.

Design

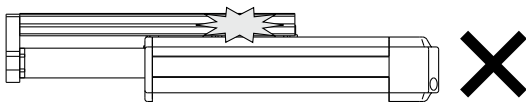
⚠ Caution

- Do not apply a load in excess of the specification limits.**
Select a suitable actuator by work load and allowable moment. If the product is used outside of the specification limits, the eccentric load applied to the guide will be excessive and have adverse effects such as the generation of play on the guide, reduced accuracy, reduced service life of the product.
- Do not use the product in applications where excessive external force or impact force is applied to it.**
This can cause a malfunction.

Handling

⚠ Caution

- INP output signal**
 - Positioning operation
When the product comes within the set range of the step data [In position], the INP output signal will turn ON.
Initial value: Set to [0.50] or higher.
 - Pushing operation
When the effective force exceeds the step data [Trigger LV], the INP output signal will turn ON. Use the product within the specified range of the [Pushing force] and [Trigger LV].
To ensure that the actuator pushes the workpieces with the set [Pushing force], it is recommended that the [Trigger LV] be set to the same value as the [Pushing force].
- When the pushing operation is used, be sure to set to [Pushing operation]. Never allow the table to collide with the stroke end except during return to origin.**
When incorrect instructions are inputted, such as those which cause the product to operate outside of the specification limits or outside of the actual stroke through changes in the controller/driver settings and/or origin position, the table may collide with the stroke end of the actuator. Be sure to check these points before use.
If the table collides with the stroke end of the actuator, the guide, belt, or internal stopper may break. This can result in abnormal operation.



Handle the actuator with care when it is used in the vertical direction as the workpiece will fall freely from its own weight.

3. Use the product with the following moving force.

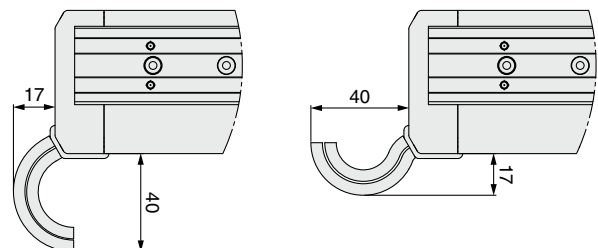
- Step motor (Servo/24 VDC): 100%
- Servo motor (24 VDC) : 250%

If the moving force is set below the values above, it may cause the generation of an alarm.

Handling

⚠ Caution

- The actual speed of this actuator is affected by the load.**
Check the model selection section of the catalog.
- Do not apply a load, impact, or resistance in addition to the transferred load during return to origin.**
Additional force will cause the displacement of the origin position since it is based on the detected motor torque.
- The table and guide block are made of special stainless steel, but can rust in an environment where droplets of water adhere to it.**
- Do not dent, scratch, or cause other damage to the body, table and end plate mounting surfaces.**
Doing so may cause unevenness in the mounting surface, play in the guide, or an increase in the sliding resistance.
- Do not dent, scratch or cause other damage to the surface over which the rail and guide will move.**
Doing so may cause play or an increase in the sliding resistance.
- Do not apply strong impact or an excessive moment while mounting a workpiece.**
If an external force over the allowable moment is applied, it may cause play in the guide or an increase in the sliding resistance.
- Keep the flatness of mounting surface within 0.02 mm.**
If a workpiece or base does not sit evenly on the body of the product, play in the guide or an increase in the sliding resistance may occur. Do not deform the mounting surface by mounting with workpieces tucked in.
- Do not drive the main body with the table fixed.**
- When mounting the product, for R/L type fixed cable, keep the following dimension or more for bends in the cable. For D type, keep a 40 mm or longer diameter for bends in the cable.**

LEFS
LEFBLEJS
LEJB

LEL

LEM

LEY
LEYGLES
LESHLEPY
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC

JXC

LECS
LECS-T

LECY

Motorless

LAT3



LES/LESH Series Specific Product Precautions 2

Be sure to read this before handling the products. Refer to page 984 for safety instructions, pages 985 to 990 for electric actuator precautions.

Handling

Caution

13. When mounting the product, use screws of adequate length and tighten them to the maximum torque or less.

Tightening the screws with a higher torque than recommended may result in a malfunction, while tightening with a lower torque can result in the displacement of the mounting position or, in extreme conditions, the actuator could become detached from its mounting position.

Body fixed/ Side mounting (Body tapped)	Model	Screw size	Max. tightening torque [N·m]	L (Max. screw-in depth) [mm]
	LES□8R/L	M4 x 0.7	1.5	8
	LES□8D	M5 x 0.8	3	10
	LES16R/L			12
	LES16D	M6 x 1	5.2	12
	LESH16□			12
	LES25R/L	M8 x 1.25	10	16
	LES25D			16
	LESH25□			16

Body fixed/ Side mounting (Through-hole)	Model	Screw size	Max. tightening torque [N·m]	L [mm]
	LES8R/L	M3 x 0.5	0.63	23.5
	LESH8R/L			25.5
	LES□8D			18.2
	LES16R/L	M4 x 0.7	1.5	33.5
	LES16D			25.2
	LESH16R/L			35.5
	LESH16D	M5 x 0.8	3	25.5
	LES25R/L			49
	LES25D			39.8
	LESH25R/L	M6 x 1	5.2	50.5
	LESH25D			39.5

Workpiece fixed/ Front mounting	Model	Screw size	Max. tightening torque [N·m]	L [mm]
	LES8R/L	M3 x 0.5	0.63	6
	LESH8R/L			5.5
	LES□8D			8
	LES16R/L	M4 x 0.7	1.5	8
	LES16D			12
	LESH16□			10
	LES25R/L	M6 x 1	5.2	14
	LESH25R/L			10
	LES□25D			14

To prevent the workpiece retaining screws from penetrating the end plate, use screws that are 0.5 mm or shorter than the maximum screw-in depth. If long screws are used, they may touch the end plate and cause a malfunction.

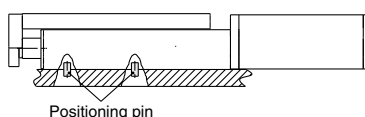
Workpiece fixed/ Top mounting	Model	Screw size	Max. tightening torque [N·m]	L (Min. to Max. screw-in depth) [mm]
	LES8□	M3 x 0.5	0.63	2.1 to 4.1
	LESH8□			5 (Max.)
	LES16□			2.7 to 5.7
	LESH16□	M5 x 0.8	3	6.5 (Max.)
	LES25□			3.3 to 7.3
	LESH25□	M6 x 1	5.2	8 (Max.)

To prevent the workpiece retaining screws from touching the guide block, use screws that are the maximum screw-in depth or less. If long screws are used, they may touch the guide block and cause a malfunction.

Body fixed/Side mounting (Side holder)

Body fixed/Side mounting (Side holder)	Model	Screw size	Max. tightening torque [N·m]	L [mm]
	LES□8D	M4 x 0.7	1.5	6.7
	LES□16D	M5 x 0.8	3	8.3
	LES□25D	M6 x 1	5.2	12

When using the side holders to install the actuator, be sure to use the positioning pin. It can be displaced when vibration or excessive external force is applied.



Positioning pin

14. For pushing operations, set the product to a position at least 0.5 mm away from a workpiece. (This position is referred to as the pushing start position.)

The following alarms may be generated and operation may become unstable if the product is set to the same position as a workpiece.

a. "Posn failed"

The product cannot reach the pushing start position due to variations in the width of workpieces.

b. "Pushing ALM"

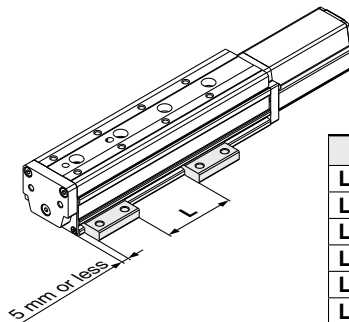
The product is pushed back from the pushing start position after starting to push.

15. When external force is to be applied to the table, it is necessary to reduce the work load for the sizing.

When a cable duct or flexible moving tube is attached to the actuator, the sliding resistance of the table will increase, which may lead to the malfunction of the product.

16. When using the side holders to install the actuator, use within the following dimension range.

Otherwise, installation balance will deteriorate and cause loosening.

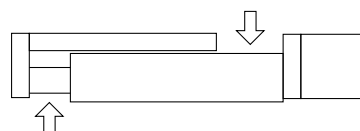


Model	L [mm]
LES□8D□-30	5 to 10
LES□8D□-50	20 to 30
LES□8D□-75	50 to 60
LES□16D□-30	5 to 10
LES□16D□-50	20 to 30
LES□16D□-75	60 to 75
LES□16D□-100	85 to 100
LES□25D□-30	5 to 15
LES□25D□-50	25 to 35
LES□25D□-75	60 to 75
LES□25D□-100	70 to 100
LES□25D□-125	155 to 170
LES□25D□-150	160 to 180

17. For the LES□□D, do not grasp or peel off a masking tape on the bottom of the body.

The masking tape may peel off and foreign matter may get inside the actuator.

18. For the LES□□D, a gap will form between the motor flange and table when the table moves (marked with the arrow below). Be careful not to put hands or fingers in a gap.





LES/LESH Series Specific Product Precautions 3

Be sure to read this before handling the products. Refer to page 984 for safety instructions, pages 985 to 990 for electric actuator precautions.

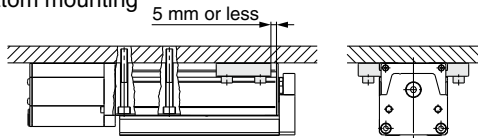
Handling

Caution

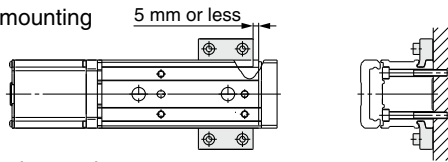
19. When mounting the body with through-holes in the following mounting orientations, make sure to use two side holders as shown in the figures.

Otherwise, installation balance will deteriorate and cause loosening.

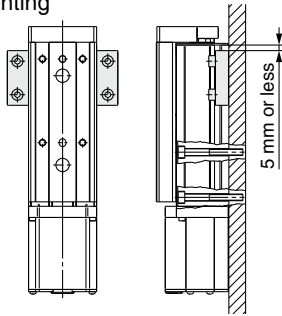
Bottom mounting



Wall mounting

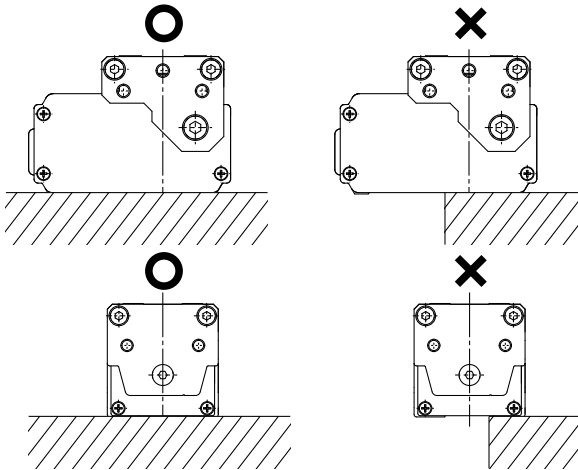


Vertical mounting



20. Install the body as shown below with the ○.

Since the product support becomes unstable, it may cause a malfunction, noise or an increase in the deflection.



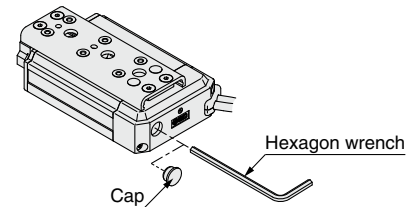
21. Even with the same product number, the table of some products can be moved by hand and the table of some products cannot be moved by hand. However, there is no abnormality with these products. (Without lock)

This difference is caused because there is a little variation with the positive efficiency (when the table is moved by the motor) and there is a large variation with the reverse-efficiency (when the table is moved manually) due to the product characteristics. There is hardly any difference among products when they are operated by the motor.

Handling

Caution

22. For LES□□□^R, remove the cap and operate the manual override screw with a hexagon wrench.



Maintenance

Warning

1. Ensure that the power supply is stopped before starting maintenance work or replacement of the product.
2. For lubrication, wear protective glasses.
3. Perform maintenance according to the following requirements.

Maintenance frequency

Perform maintenance according to the table below.

Frequency	Appearance check	Belt check
Inspection before daily operation	○	—
Inspection every 6 months*1	—	○
Inspection every 250 km*1	—	○
Inspection every 5 million cycles*1	—	○

*1 Select whichever comes first.

• Items for visual appearance check

1. Loose set screws, Abnormal amount of dirt, etc.
2. Check for visible damage, Check of cable joint
3. Vibration, Noise

• Items for belt check (R/L type only)

Stop operation immediately and replace the belt when any of the following occur.

a. Tooth shape canvas is worn out

Canvas fiber becomes fuzzy, Rubber is coming off and the fiber has become whitish, Lines of fibers have become unclear

b. Peeling off or wearing of the side of the belt

Belt corner has become rounded and frayed threads stick out

c. Belt partially cut

Belt is partially cut, Foreign matter caught in the teeth of other parts is causing damage

d. A vertical line on belt teeth is visible

Damage which is made when the belt runs on the flange

e. Rubber back of the belt is softened and sticky

f. Cracks on the back of the belt are visible