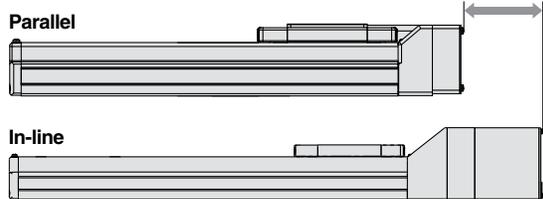


Electric Actuator/Slider Type Motor Parallel Type



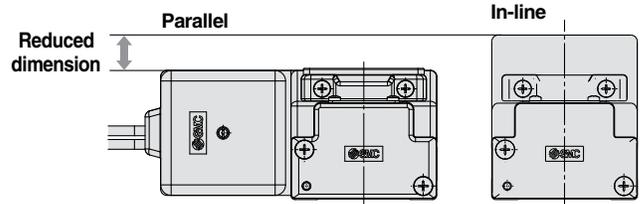
Reduced in overall length



Size	Length reduction (mm)	Motor mounting position (mm)	
		Parallel	In-line
16	80.5	416.5	497
25	75	460.5	535.5
32	87	495	582
40	102.6	553.4	656

* Step motor, Stroke: 300 mm

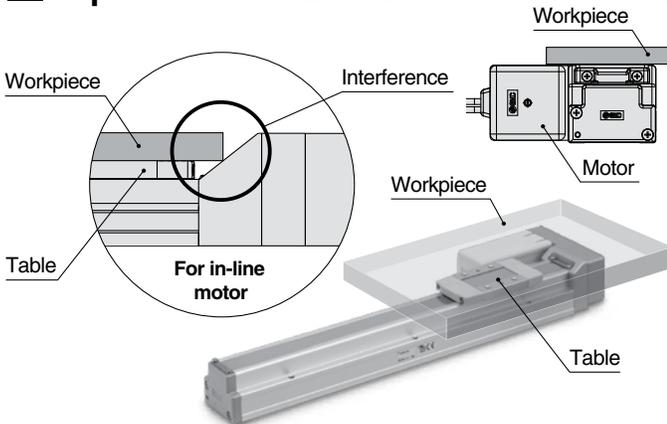
Reduced in height



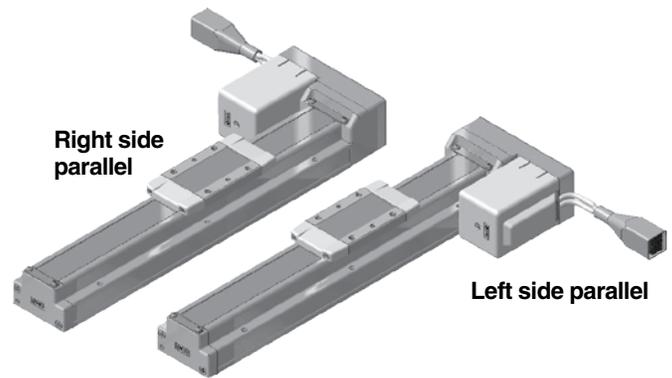
Size	Length reduction (mm)	Motor mounting position (mm)	
		Parallel	In-line
16	6	40	46
25	9.5	48	57.5
32	16	63	79
40	0	68	68

* Step motor

Top surface of table and motor are level.



Motor mounting position can be selected from two directions.



Ball Screw Drive Series LEFS

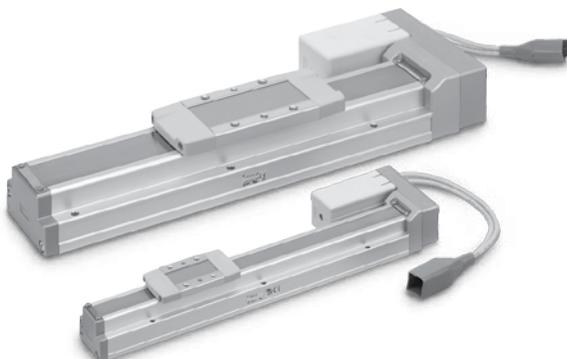
Size: 16, 25, 32, 40

Step Motor (Servo/24 VDC) Type

Servo Motor (24 VDC) Type

Max. work load: 132.3 lb (60 kg)

Positioning repeatability: ± 0.02 mm



Size: 25, 32, 40

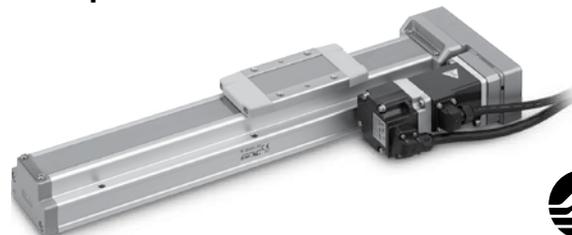
AC Servo Motor Type

* Not applicable to UL.

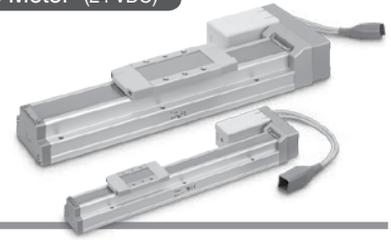
Improved high speed transfer ability Max. speed: 1,000mm/s

High acceleration/deceleration: 20,000mm/s²

- Pulse input type (For LECSA/B)
- With internal absolute encoder (For LECSB/C/S)
- Compatible with CC-Link and SSCNET III.



Electric Actuator/Slider Type Ball Screw Drive/Series **LEFS** Model Selection



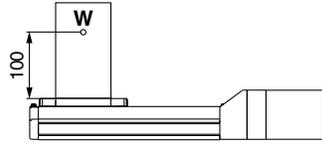
Selection Procedure



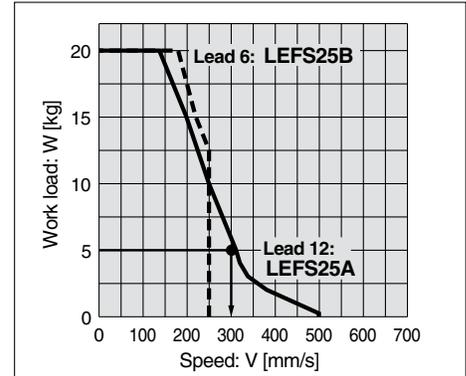
Selection Example

Operating conditions

- Workpiece mass: 5 [kg]
- Speed: 300 [mm/s]
- Acceleration/Deceleration: 3000 [mm/s²]
- Stroke: 200 [mm]
- Mounting orientation: Horizontal upward
- Workpiece mounting condition:



(1 kg = 2.2 lb)



<Speed-Work load graph>
(LEFS25/Step motor)

Step 1 Check the work load-speed. <Speed-Work load graph> (Pages 2 and 3)

Select the target model based on the workpiece mass and speed with reference to the <Speed-Work load graph>.

Selection example) The **LEFS25RA-200** is temporarily selected based on the graph shown on the right side.

Step 2 Check the cycle time.

Calculate the cycle time using the following calculation method.

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 obtained 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 positioning of the step data. Therefore, please calculate the settling time with reference to the following value.

$$T4 = 0.2 \text{ [s]}$$

Calculation example)

T1 to T4 can be calculated as follows.

$$T1 = V/a1 = 300/3000 = 0.1 \text{ [s]}$$

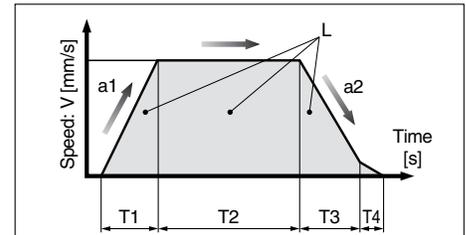
$$T3 = V/a2 = 300/3000 = 0.1 \text{ [s]}$$

$$T2 = \frac{L - 0.5 \cdot V \cdot (T1 + T3)}{V} = \frac{200 - 0.5 \cdot 300 \cdot (0.1 + 0.1)}{300} = 0.57 \text{ [s]}$$

$$T4 = 0.2 \text{ [s]}$$

Therefore, the cycle time can be obtained as follows.

$$T = T1 + T2 + T3 + T4 = 0.1 + 0.57 + 0.1 + 0.2 = 0.97 \text{ [s]}$$



- L : Stroke [mm] (Operating condition)
- V : Speed [mm/s] (Operating condition)
- a1: Acceleration [mm/s²] ... (Operating condition)
- a2: Deceleration [mm/s²] ... (Operating condition)

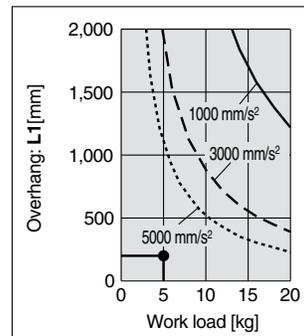
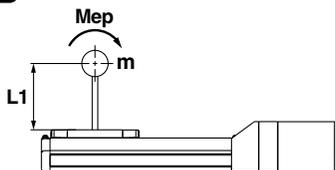
T1: Acceleration time [s]
Time until reaching the set speed

T2: Constant speed time [s]
Time while the actuator is operating at a constant speed

T3: Deceleration time [s]
Time from the beginning of the constant speed operation to stop

T4: Settling time [s]
Time until in position is completed

Step 3 Check the guide moment.



Based on the above calculation result, the **LEFS25RA-200** is selected.

* If the step motor and servo motors do not meet your specifications, please also consider the AC servo specifications (Page 16).

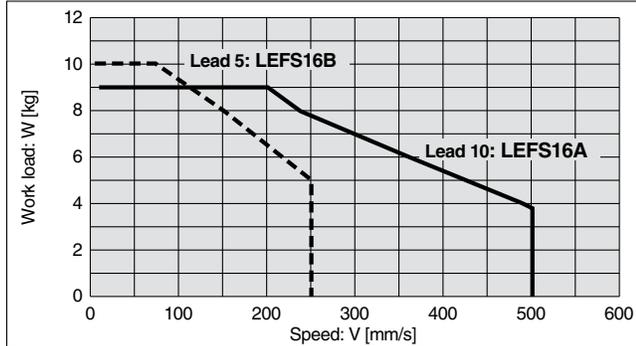
Speed-Work Load Graph (Guide) Step Motor (Servo/24 VDC)

* The following graph shows the values when moving force is 100%.

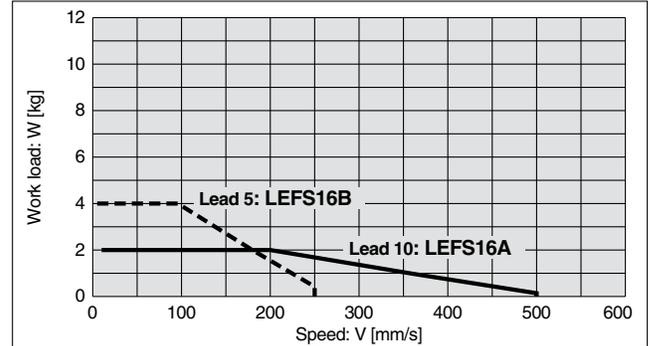
(1 kg = 2.2 lb)

LEFS16/Ball Screw Drive

Horizontal

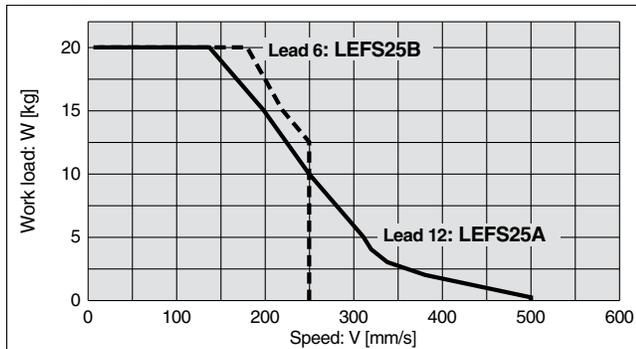


Vertical

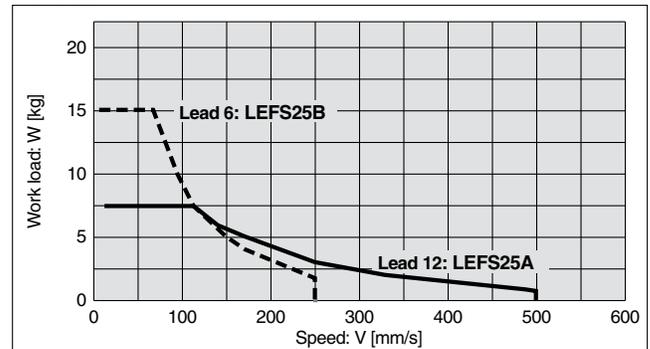


LEFS25/Ball Screw Drive

Horizontal

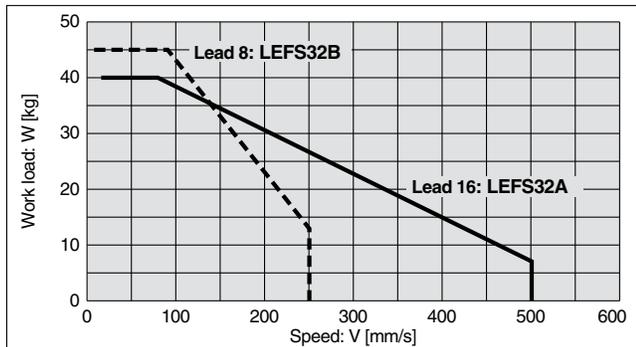


Vertical

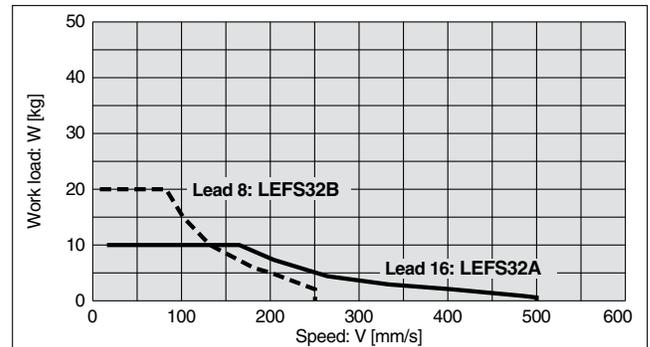


LEFS32/Ball Screw Drive

Horizontal

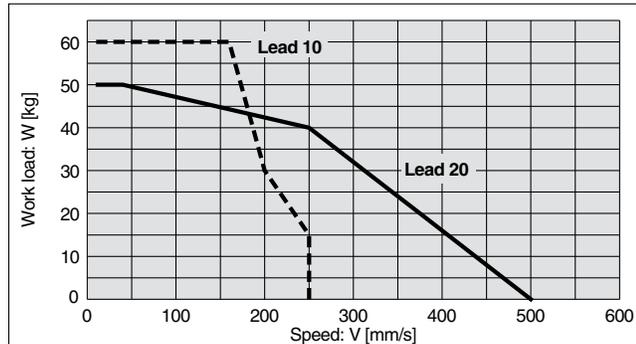


Vertical

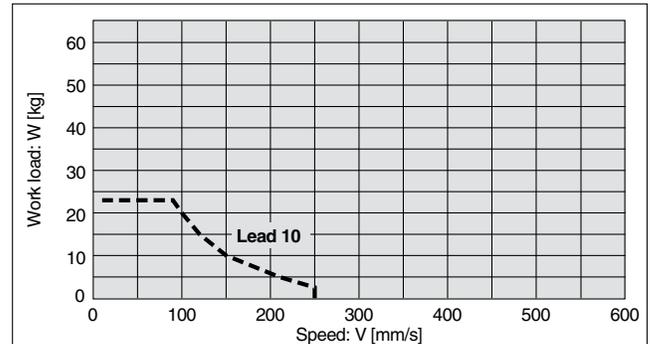


LEFS40/Ball Screw Drive

Horizontal



Vertical



Series LEFS

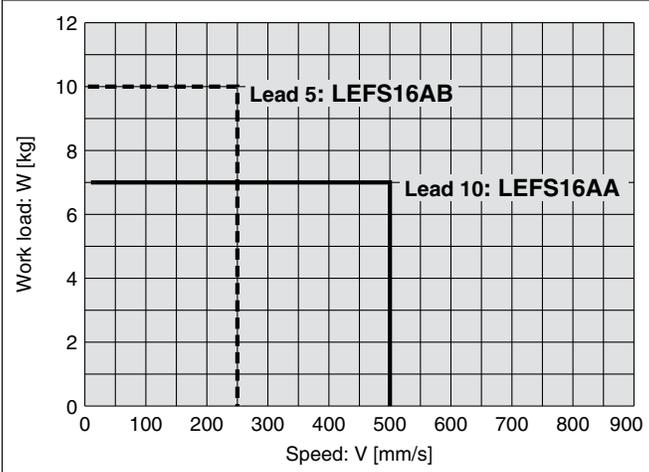
Speed-Work Load Graph (Guide) Step Motor (Servo/24 VDC)

* The following graph shows the values when moving force is 100%.

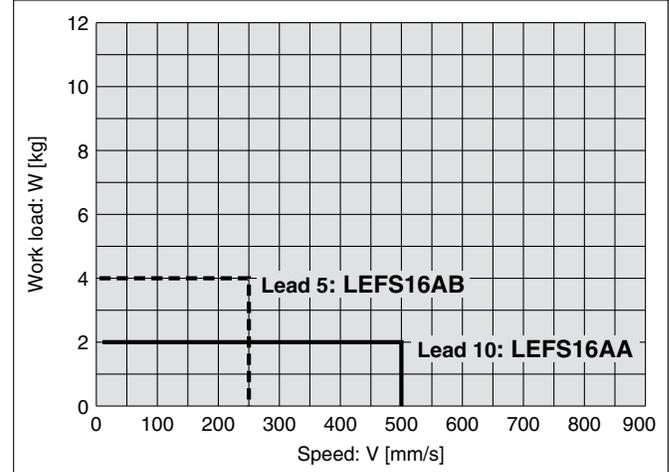
LEFS16A/Ball Screw Drive

(1 kg = 2.2 lb)

Horizontal

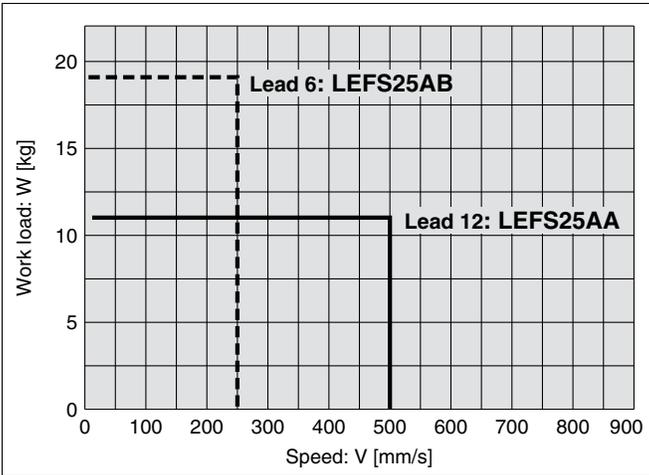


Vertical

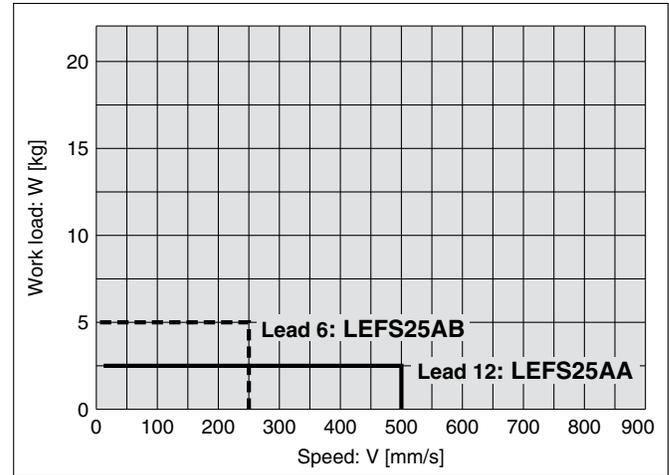


LEFS25A/Ball Screw Drive

Horizontal



Vertical



Dynamic Allowable Moment

* This graph shows the amount of allowable overhang when the center of gravity of the workpiece overhangs in one direction. When the center of gravity of the workpiece overhangs in two directions, refer to the Electric Actuator Selection Software for confirmation. <http://www.smcworld.com>

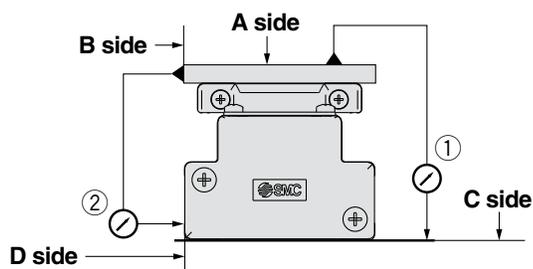
Acceleration/Deceleration — 1,000 mm/s² - - - 3,000 mm/s² 5,000 mm/s²

Orientation		Model			
Load overhanging direction m: Work load [kg] Me: Dynamic allowable moment [N·m] L: Overhang to the work load center of gravity [mm]		LEFS16	LEFS25	LEFS32	LEFS40
Horizontal	<p>Pitching L1 [mm]</p>				
	<p>Yawing L2 [mm]</p>				
	<p>Rolling L3 [mm]</p>				
Vertical	<p>Pitching L4 [mm]</p>				
	<p>Yawing L5 [mm]</p>				

(1 kg = 2.2 lbs)

Series LEFS

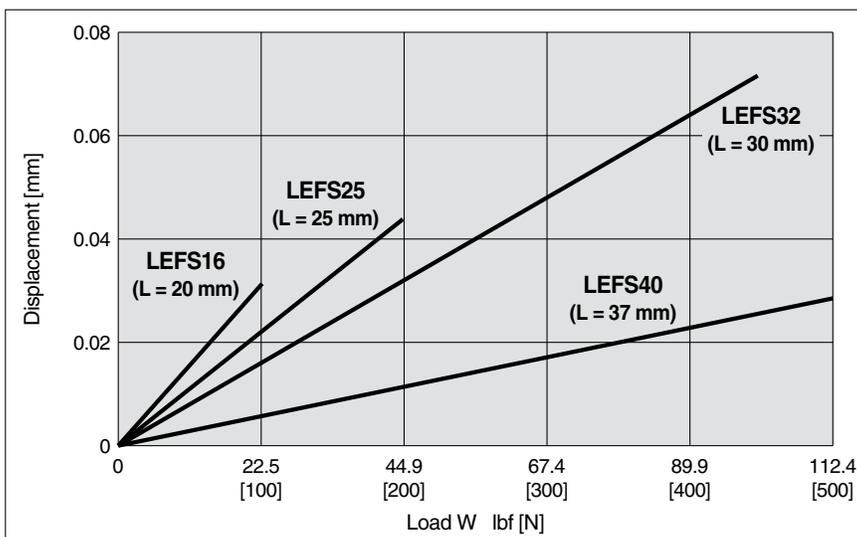
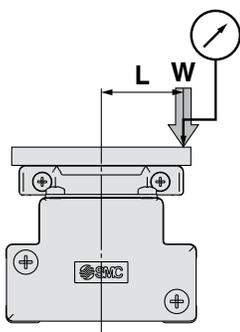
Table Accuracy



Model	Traveling parallelism [mm] (Every 300 mm)	
	① C side traveling parallelism to A	② D side traveling parallelism to B
LEFS16	0.05	0.03
LEFS25	0.05	0.03
LEFS32	0.05	0.03
LEFS40	0.05	0.03

Note) Traveling parallelism does not include the mounting surface accuracy.

Table Displacement (Reference Value)



Note 1) This displacement is measured when a 15 mm aluminum plate is mounted and fixed on the table.

Note 2) Please confirm the clearance and play of the guide separately.

Electric Actuator/Slider Type Motor Parallel Type

Step Motor (Servo/24 VDC)

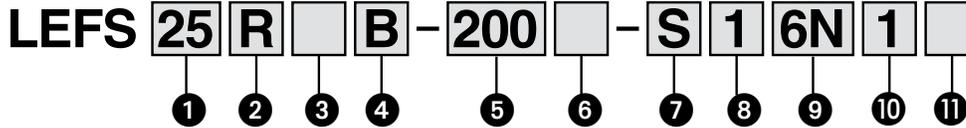
Servo Motor (24 VDC)

Series LEFS

LEFS16, 25, 32, 40



How to Order



1 Size

16
25
32
40

2 Motor mounting position

R	Right side parallel
L	Left side parallel

3 Motor type

Symbol	Type	Applicable size				Compatible controllers/ driver
		LEFS16	LEFS25	LEFS32	LEFS40	
Nil	Step motor (Servo/24 VDC)	●	●	●	●	LECP6 LECP1 LECPA
A	Servo motor (24 VDC)	●	●	—	—	LECA6

4 Lead [mm]

Symbol	LEFS16	LEFS25	LEFS32	LEFS40
A	10	12	16	20
B	5	6	8	10

5 Stroke [mm]

100	100
to	to
1000	1000

* Refer to the applicable stroke table.

⚠ Caution

[CE-compliant products]

① EMC compliance was tested by combining the electric actuator LEF series and the controller LEC series.

The EMC depends on the configuration of the customer's control panel and the relationship with other electrical equipment and wiring. Therefore conformity to 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 conformity to 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 the catalog CAT.ES100-87 for the noise filter set. Refer to the LECA Operation Manual for installation.

[UL-compliant products]

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

Applicable stroke table

● Standard

Model \ Stroke (mm)	100	200	300	400	500	600	700	800	900	1000	Manufacturable stroke range [mm]
LEFS16	●	●	●	●	—	—	—	—	—	—	100 to 400
LEFS25	●	●	●	●	●	●	—	—	—	—	100 to 600
LEFS32	●	●	●	●	●	●	●	●	—	—	100 to 800
LEFS40	—	●	●	●	●	●	●	●	●	●	200 to 1000

* Strokes are manufacturable in 1 mm increments. Refer to the manufacturable stroke range.

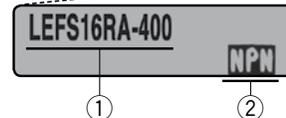
However, strokes other than those shown above are produced as special orders. Consult with SMC for lead times and prices.

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

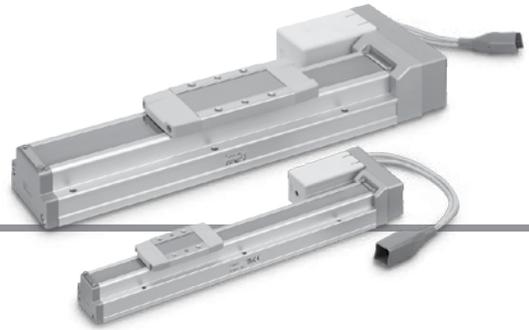
Confirm that the combination of the controller/driver and the actuator is correct.

<Check the following before use.>

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



* Refer to the operation manual for using the products. Please download it via our website, <http://www.smcworld.com>



6 Motor option

Nil	Without option
B	With lock

7 Actuator cable type¹

Nil	Without cable
S	Standard cable ^{*2}
R	Robotic cable (Flexible cable)

*1 The standard cable should be used on fixed parts. For using on moving parts, select the robotic cable.

*2 Only available for the motor type "Step motor."

8 Actuator cable length [m]

Nil	Without cable
1	1.5
3	3
5	5
8	8*
A	10*
B	15*
C	20*

* Produced upon receipt of order (Robotic cable only)
Refer to the specifications Note 2) on pages 9 and 10.

9 Controller/Driver type^{*1}

Nil	Without controller/driver	
6N	LECP6/LECA6 (Step data input type)	NPN
6P		PNP
1N	LECP1 ^{*2} (Programless type)	NPN
1P		PNP
AN	LECPA ^{*2} (Pulse input type)	NPN
AP		PNP

* 1 For details about controllers/driver and compatible motors, refer to the compatible controllers/driver below.

* 2 Only available for the motor type "Step motor."

10 I/O cable length [m]^{*1}

Nil	Without cable
1	1.5
3	3 ^{*2}
5	5 ^{*2}

*1 When "Without controller/driver" is selected for controller/driver types, I/O cable cannot be selected. When the I/O cable is required, order it separately.

*2 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.

11 Controller/Driver mounting

Nil	Screw mounting
D	DIN rail mounting*

* DIN rail is not included. Order it separately.

Compatible Controllers/Driver

Type	Step data input type 	Step data input type 	Programless type 	Pulse input type 
Series	LECP6	LECA6	LECP1	LECPA
Features	Value (Step data) input Standard controller		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			

Specifications

(1 kg = 2.2 lbs)

Step Motor (Servo/24 VDC)

Model		LEFS16		LEFS25		LEFS32		LEFS40		
Actuator specifications	Stroke [mm] ^{Note 1)}	100, 200, 300, 400		100, 200, 300 400, 500, 600		100, 200, 300, 400 500, 600, 700, 800		200, 300, 400, 500, 600 700, 800, 900, 1000		
	Work load [kg] ^{Note 2)}	Horizontal	9	10	20	20	40	45	50	60
		Vertical	2	4	7.5	15	10	20	—	23
	Speed [mm/s] ^{Note 2)}	10 to 500	5 to 250	12 to 500	6 to 250	16 to 500	8 to 250	20 to 500	10 to 250	
	Max. acceleration/deceleration [mm/s ²]	3,000								
	Positioning repeatability [mm]	±0.02								
	Lead [mm]	10	5	12	6	16	8	20	10	
	Impact/Vibration resistance [m/s ²] ^{Note 3)}	50/20								
	Actuation type	Ball screw								
	Guide type	Linear guide								
	Operating temperature range	41 to 104°F (5 to 40°C)								
Operating humidity range [%RH]	90 or less (No condensation)									
Electric	Motor size	□28		□42		□56.4				
	Motor type	Step motor (Servo/24 VDC)								
	Encoder	Incremental A/B phase (800 pulse/rotation)								
	Rated voltage [V]	24 VDC ±10%								
	Power consumption [W] ^{Note 4)}	22		38		50		100		
	Standby power consumption when operating [W] ^{Note 5)}	18		16		44		43		
	Max. instantaneous power consumption [W] ^{Note 6)}	51		57		123		141		
Lock unit specifications	Type ^{Note 7)}	Non-magnetizing lock								
	Holding force lbf [N]	4.5 [20]	8.8 [39]	17.5 [78]	35.3 [157]	24.3 [108]	48.6 [216]	25.4 [113]	50.6 [225]	
	Power consumption [W] ^{Note 8)}	2.9		5		5		5		
	Rated voltage [V]	24 VDC ±10%								

Note 1) Consult with SMC for non-standard strokes as they are produced as special orders.

Note 2) Speed changes according to the work load. Check "Speed-Work Load Graph (Guide)" on page 2.

Furthermore, if the cable length exceeds 5 m, then it will decrease by up to 10% for each 5 m.

Note 3) 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. (Test was performed with the actuator in the initial state.)

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

Note 4) The power consumption (including the controller) is for when the actuator is operating.

Note 5) The standby power consumption when operating (including the controller) is for when the actuator is stopped in the set position during the operation.

Note 6) The maximum instantaneous power consumption (including the controller) is for when the actuator is operating. This value can be used for the selection of the power supply.

Note 7) With lock only

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

Specifications

Servo Motor (24 VDC)

Model		LEFS16A		LEFS25A			
Actuator specifications	Stroke [mm] ^{Note 1)}	100, 200, 300, 400		100, 200, 300 400, 500, 600			
	Work load [kg] ^{Note 2)}	Horizontal		7	10	11	18
		Vertical		2	4	2.5	5
	Speed [mm/s] ^{Note 2)}	10 to 500	5 to 250	12 to 500	6 to 250		
	Max. acceleration/deceleration [mm/s ²]	3,000					
	Positioning repeatability [mm]	±0.02					
	Lead [mm]	10	5	12	6		
	Impact/Vibration resistance [m/s ²] ^{Note 3)}	50/20					
	Actuation type	Ball screw					
	Guide type	Linear guide					
	Operating temperature range	41 to 104°F (5 to 40°C)					
Operating humidity range [%RH]	90 or less (No condensation)						
Electric specifications	Motor size	□28		□42			
	Motor output [W]	30		36			
	Motor type	Servo motor (24 VDC)					
	Encoder	Incremental A/B (800 pulse/rotation)/Z phase					
	Rated voltage [V]	24 VDC ±10%					
	Power consumption [W] ^{Note 4)}	63		102			
	Standby power consumption when operating [W] ^{Note 5)}	Horizontal 4/Vertical 9		Horizontal 4/Vertical 9			
Lock unit specifications	Max. instantaneous power consumption [W] ^{Note 6)}	70		113			
	Type ^{Note 7)}	Non-magnetizing lock					
	Holding force lbf [N]	4.5 [20]	8.8 [39]	17.5 [78]	35.3 [157]		
Power consumption [W] ^{Note 8)}	2.9		5				
Rated voltage [V]	24 VDC ±10%						

Note 1) Consult with SMC for non-standard strokes as they are produced as special orders.

Note 2) For details, check "Speed-Work Load Graph (Guide)" on page 3.

Furthermore, if the cable length exceeds 5 m, then it will decrease by up to 10% for each 5 m.

Note 3) 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. (Test was performed with the actuator in the initial state.)

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

Note 4) The power consumption (including the controller) is for when the actuator is operating.

Note 5) The standby power consumption when operating (including the controller) is for when the actuator is stopped in the set position during the operation.

Note 6) The maximum instantaneous power consumption (including the controller) is for when the actuator is operating. This value can be used for the selection of the power supply.

Note 7) With lock only

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

Weight

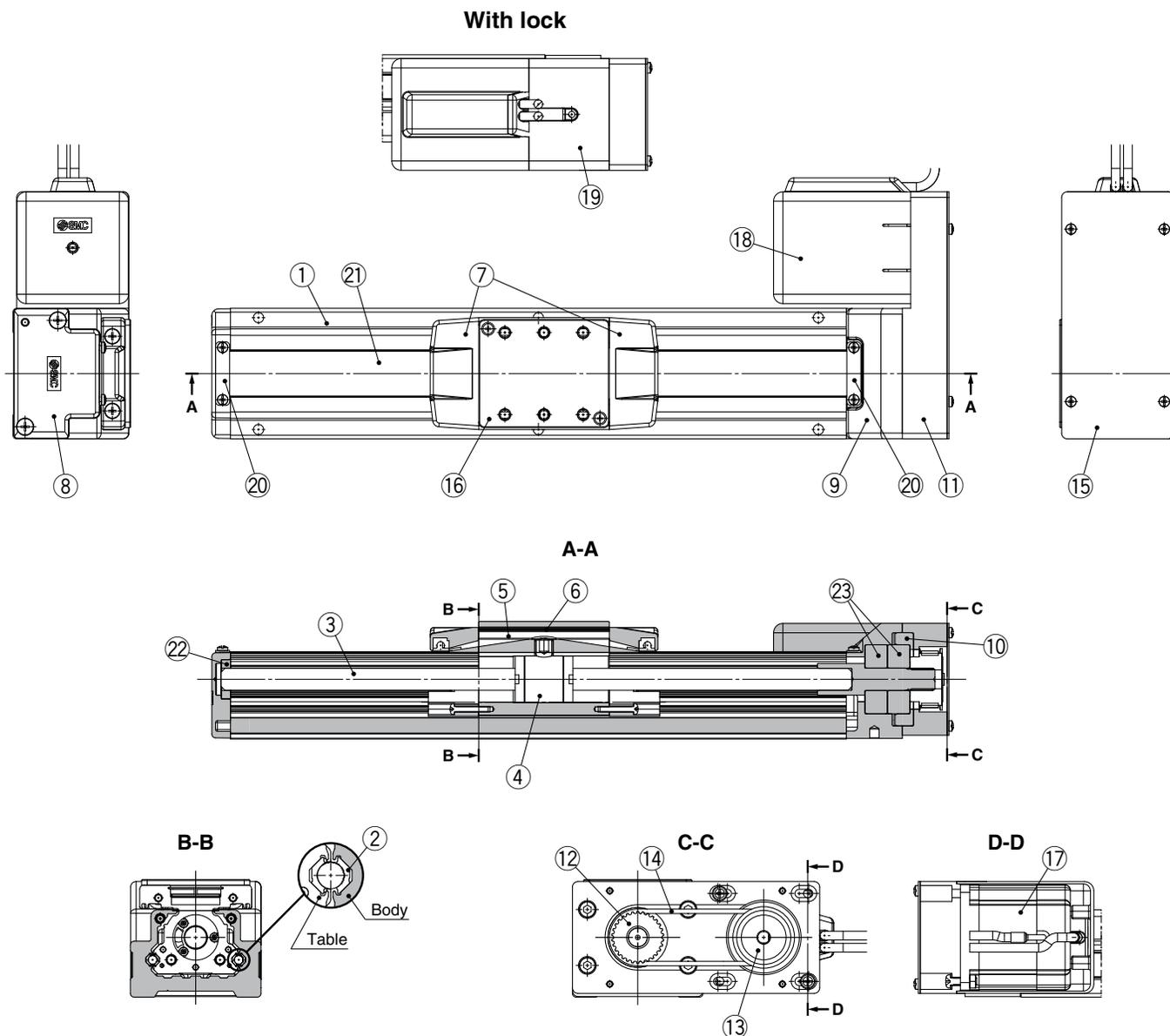
Model	LEFS16			
Stroke [mm]	100	200	300	400
Product weight [kg]	0.85	1.00	1.15	1.30
Additional weight with lock [kg]	0.09			

Model	LEFS25					
Stroke [mm]	100	200	300	400	500	600
Product weight [kg]	1.79	2.07	2.35	2.63	2.91	3.19
Additional weight with lock [kg]	0.22					

Model	LEFS32							
Stroke [mm]	100	200	300	400	500	600	700	800
Product weight [kg]	3.23	3.63	4.03	4.43	4.83	5.23	5.63	6.03
Additional weight with lock [kg]	0.46							

Model	LEFS40									
Stroke [mm]	200	300	400	500	600	700	800	900	1000	
Product weight [kg]	5.50	6.06	6.62	7.18	7.74	8.30	8.86	9.42	9.98	
Additional weight with lock [kg]	0.47									

(1 kg = 2.2 lbs)



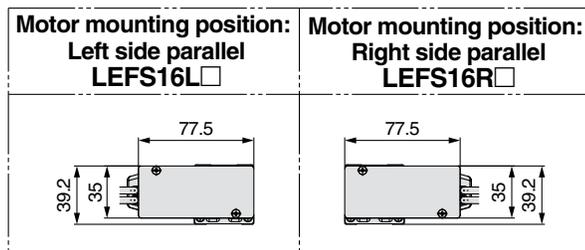
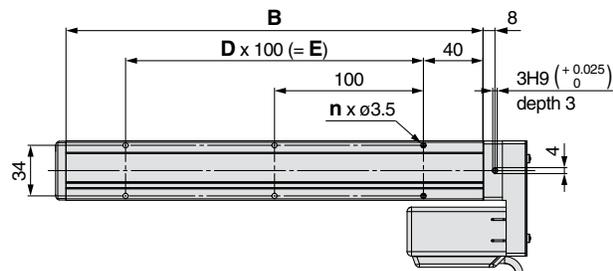
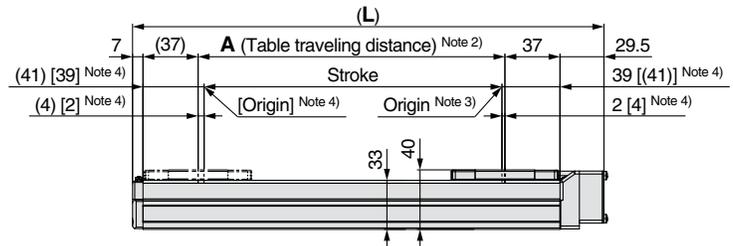
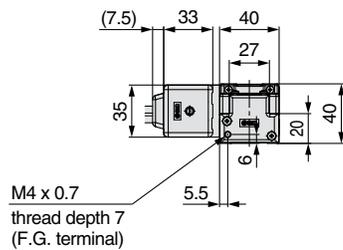
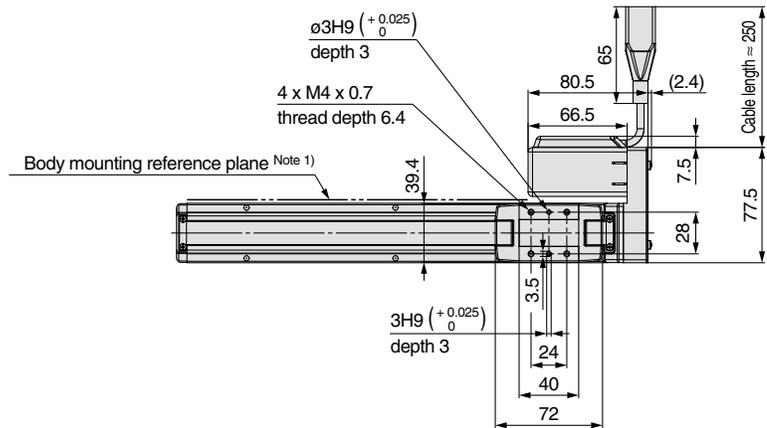
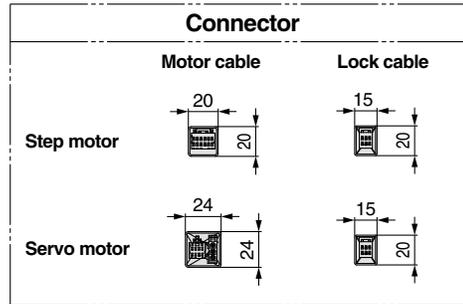
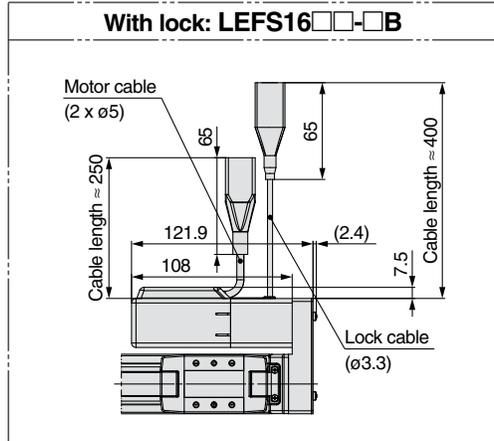
Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	Anodized
2	Rail guide	—	
3	Ball screw shaft	—	
4	Ball screw nut	—	
5	Table	Aluminum alloy	Anodized
6	Blanking plate	Aluminum alloy	Anodized
7	Seal band stopper	Synthetic resin	
8	Housing A	Aluminum die-casted	Coating
9	Housing B	Aluminum die-casted	Coating
10	Bearing stopper	Aluminum alloy	
11	Return plate	Aluminum alloy	Coating
12	Pulley	Aluminum alloy	
13	Pulley	Aluminum alloy	

No.	Description	Material	Note
15	Cover plate	Aluminum alloy	Coating
16	Table spacer	Aluminum alloy	Coating
17	Motor	—	
18	Motor cover	Synthetic resin	
19	Motor cover with lock	Aluminum alloy	Anodized
20	Band stopper	Stainless steel	
21	Dust seal band	Stainless steel	
22	Bearing	—	
23	Bearing	—	

Dimensions: Ball Screw Drive

LEFS16



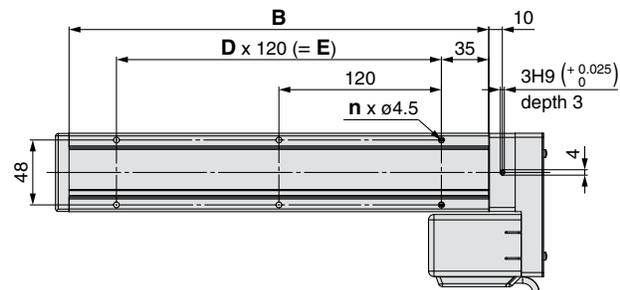
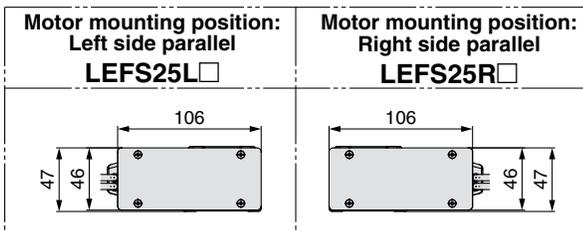
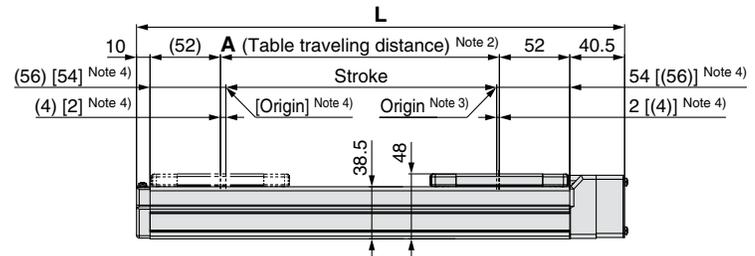
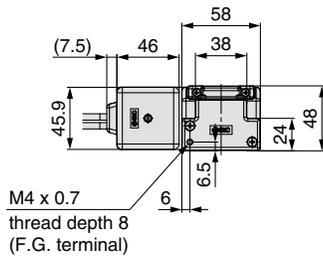
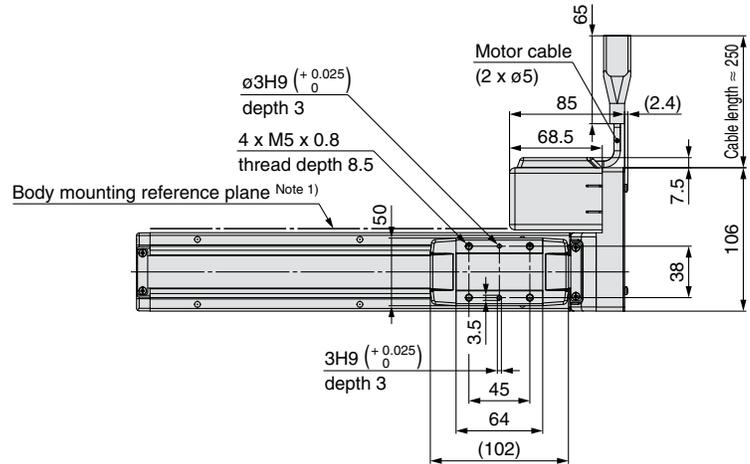
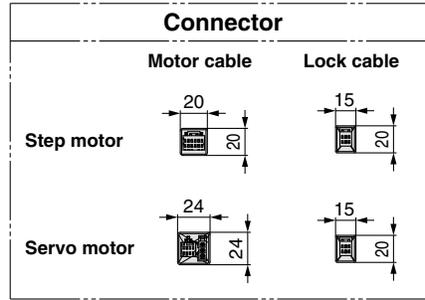
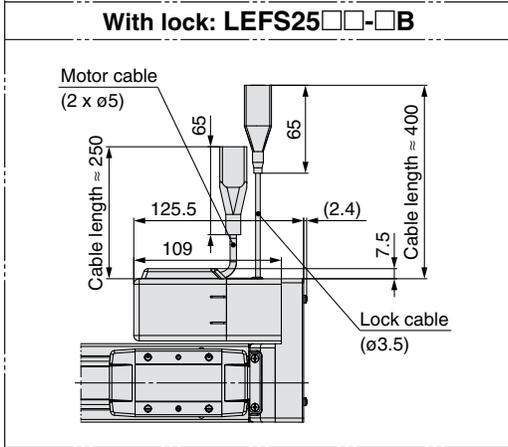
- Note 1) When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 2 mm or more. (Recommended height 5 mm)
 Note 2) Distance within which the table can move when it returns to origin. Make sure a workpiece mounted on the table does not interfere with the workpieces and facilities around the table.
 Note 3) Position after return to origin.
 Note 4) The number in brackets indicates when the direction of return to origin has changed.

Model	L	A	B	n	D	E
LEFS16□□-100□-□□□□□□	216.5	106	180	4	—	—
LEFS16□□-200□-□□□□□□	316.5	206	280	6	2	200
LEFS16□□-300□-□□□□□□	406.5	306	380	8	3	300
LEFS16□□-400□-□□□□□□	516.4	406	480	10	4	400

Series LEFS

Dimensions: Ball Screw Drive

Motor right side parallel type: LEFS25R

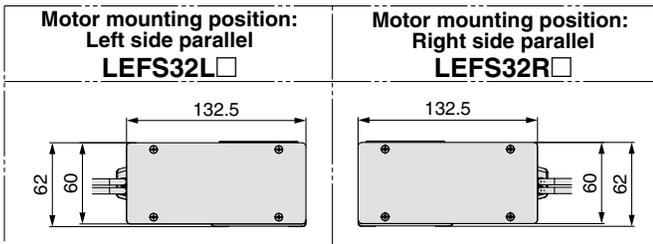
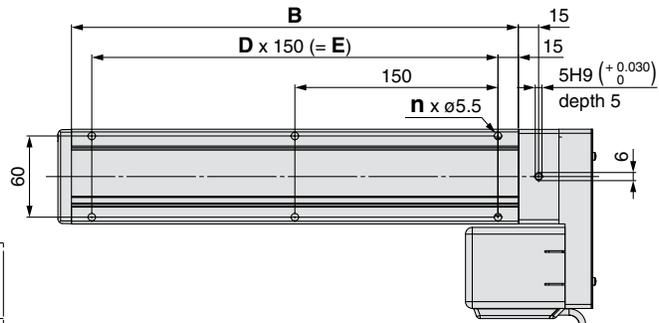
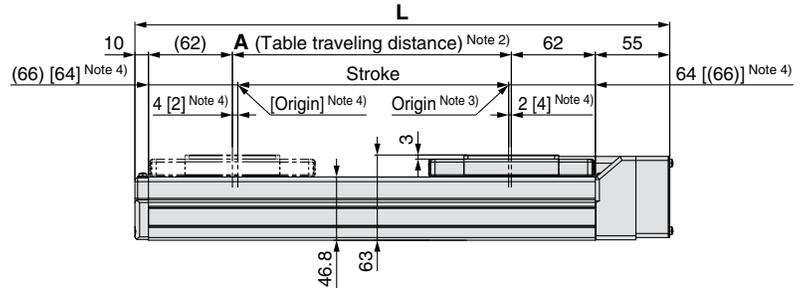
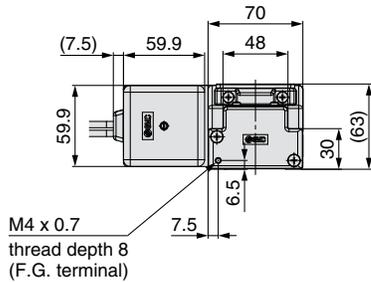
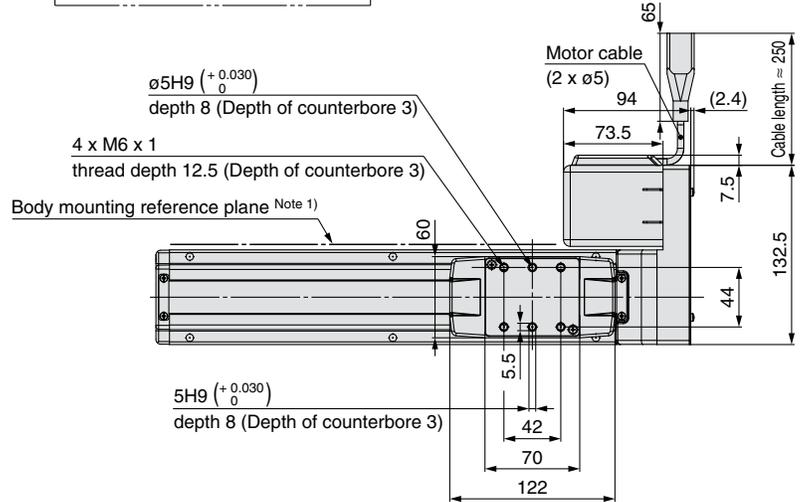
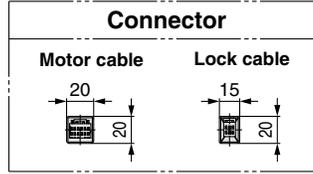
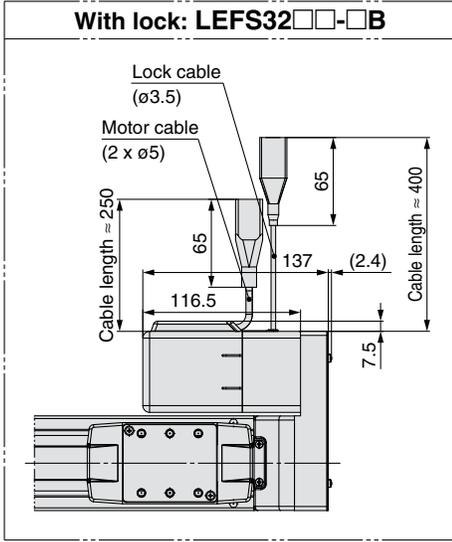


- Note 1) When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more. (Recommended height 5 mm)
- Note 2) Distance within which the table can move when it returns to origin. Make sure a workpiece mounted on the table does not interfere with the workpieces and facilities around the table.
- Note 3) Position after return to origin.
- Note 4) The number in brackets indicates when the direction of return to origin has changed.

Model	L	A	B	n	D	E
LEFS25□□-100□-□□□□	260.5	106	210	4	—	—
LEFS25□□-200□-□□□□	360.5	206	310	6	2	240
LEFS25□□-300□-□□□□	460.5	306	410	8	3	360
LEFS25□□-400□-□□□□	560.5	406	510	8	3	360
LEFS25□□-500□-□□□□	660.5	506	610	10	4	480
LEFS25□□-600□-□□□□	760.5	606	710	12	5	600

Dimensions: Ball Screw Drive

Motor right side parallel type: LEFS32R



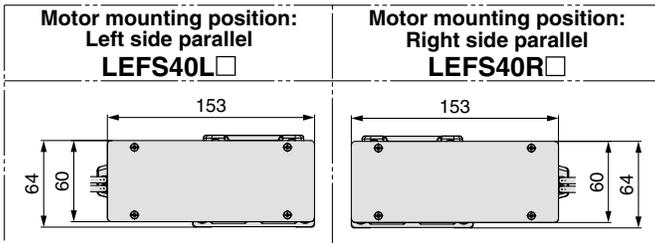
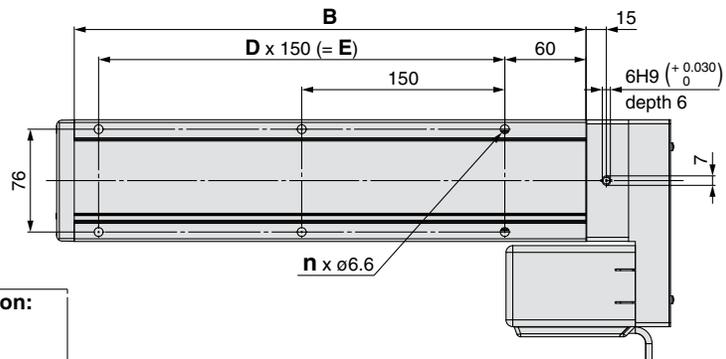
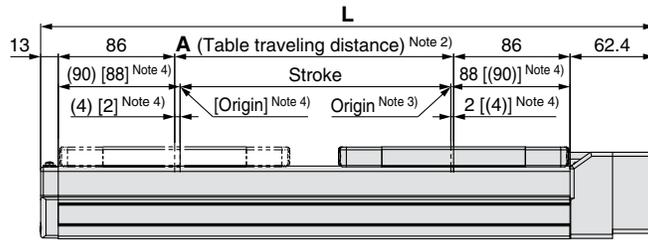
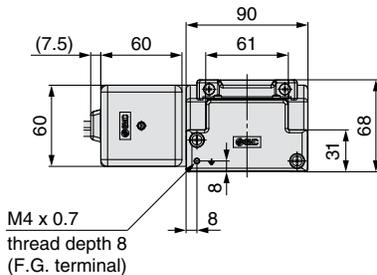
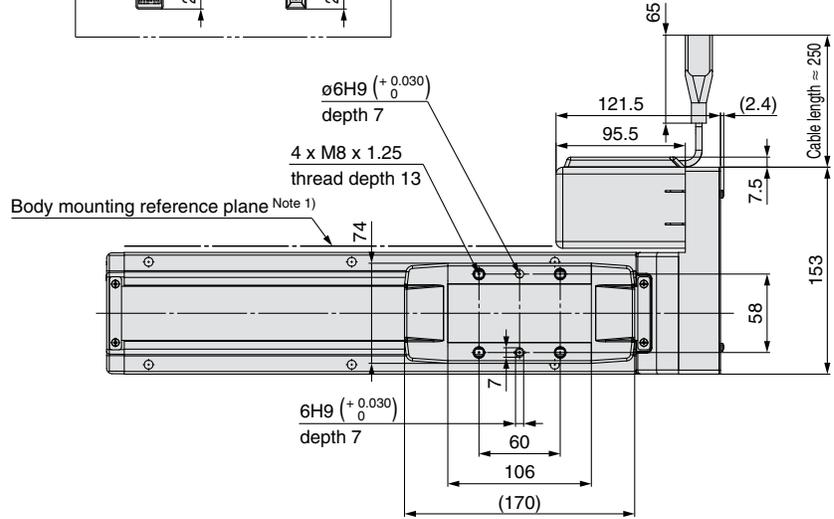
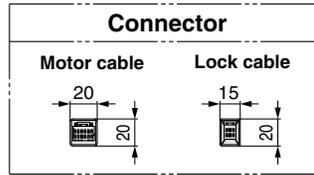
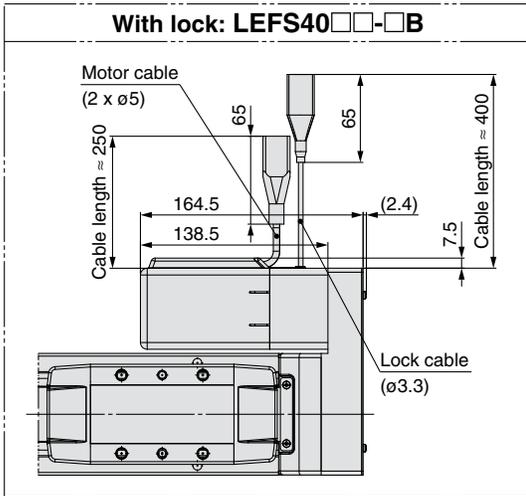
- Note 1) When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more. (Recommended height 5 mm)
- Note 2) Distance within which the table can move when it returns to origin. Make sure a workpiece mounted on the table does not interfere with the workpieces and facilities around the table.
- Note 3) Position after return to origin.
- Note 4) The number in brackets indicates when the direction of return to origin has changed.

Model	L	A	B	n	D	E
LEFS32□□-100□-□□□□□	295	106	230	4	—	—
LEFS32□□-200□-□□□□□	395	206	330	6	2	300
LEFS32□□-300□-□□□□□	495	306	430	6	2	300
LEFS32□□-400□-□□□□□	595	406	530	8	3	450
LEFS32□□-500□-□□□□□	695	506	630	10	4	600
LEFS32□□-600□-□□□□□	795	606	730	10	4	600
LEFS32□□-700□-□□□□□	895	706	830	12	5	750
LEFS32□□-800□-□□□□□	995	806	930	14	6	900

Series LEFS

Dimensions: Ball Screw Drive

Motor right side parallel type: LEFS40R



Note 1) When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more. (Recommended height 5 mm)

Note 2) Distance within which the table can move when it returns to origin. Make sure a workpiece mounted on the table does not interfere with the workpieces and facilities around the table.

Note 3) Position after return to origin.

Note 4) The number in brackets indicates when the direction of return to origin has changed.

Model	L	A	B	n	D	E
LEFS40□□-200-□□□□□□	453.4	206	378	6	2	300
LEFS40□□-300-□□□□□□	553.4	306	478	6	2	300
LEFS40□□-400-□□□□□□	653.4	406	578	8	3	450
LEFS40□□-500-□□□□□□	753.4	506	678	10	4	600
LEFS40□□-600-□□□□□□	853.4	606	778	10	4	600
LEFS40□□-700-□□□□□□	953.4	706	876	12	5	750
LEFS40□□-800-□□□□□□	1053.4	806	976	14	6	900
LEFS40□□-900-□□□□□□	1153.4	906	1078	14	6	900
LEFS40□□-1000-□□□□□□	1253.4	1006	1178	16	7	1050

Electric Actuator/Slider Type AC Servo Motor Ball Screw Drive/Series **LEFS** Model Selection

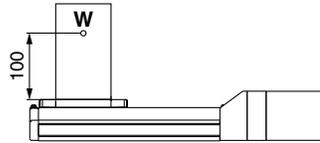
Selection Procedure

- Step 1** Check the work load–speed. → **Step 2** Check the cycle time. → **Step 3** Check the allowable moment.

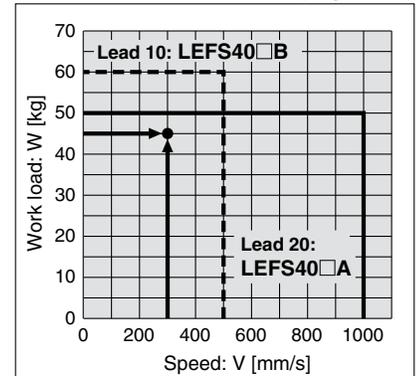
Selection Example

Operating conditions

- Workpiece mass: 45 [kg]
 - Speed: 300 [mm/s]
 - Acceleration/Deceleration: 3000 [mm/s²]
 - Stroke: 200 [mm]
 - Mounting orientation: Horizontal upward
- Workpiece mounting condition:



(1 kg = 2.2 lb)



<Speed-Work load graph>
(LEFS40)

Step 1 Check the work load–speed. <Speed-Work load graph> (Page 17)

Select the target model based on the workpiece mass and speed with reference to the <Speed-Work load graph>.

Selection example) **LEFS40RS4B-200** is temporarily selected based on the graph shown on the right side.

Step 2 Check the cycle time.

Calculate the cycle time using the following calculation method.

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 obtained 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 positioning of the step data. Therefore, please calculate the settling time with reference to the following value.

$$T4 = 0.05 \text{ [s]}$$

Calculation example)

T1 to T4 can be calculated as follows.

$$T1 = V/a1 = 300/3000 = 0.1 \text{ [s]}$$

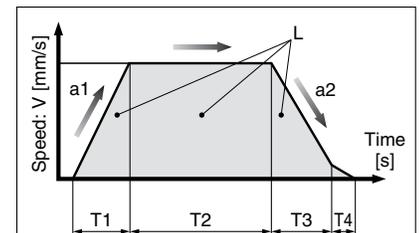
$$T3 = V/a2 = 300/3000 = 0.1 \text{ [s]}$$

$$T2 = \frac{L - 0.5 \cdot V \cdot (T1 + T3)}{V} \\ = \frac{200 - 0.5 \cdot 300 \cdot (0.1 + 0.1)}{300} \\ = 0.57 \text{ [s]}$$

$$T4 = 0.05 \text{ [s]}$$

Therefore, the cycle time can be obtained as follows.

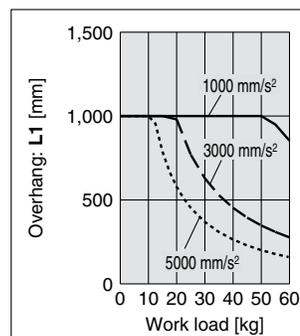
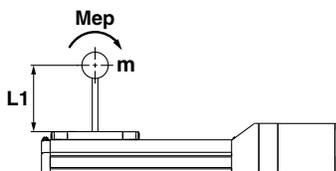
$$T = T1 + T2 + T3 + T4 \\ = 0.1 + 0.57 + 0.1 + 0.05 \\ = 0.82 \text{ [s]}$$



- L : Stroke [mm]..... (Operating condition)
- V : Speed [mm/s]..... (Operating condition)
- a1 : Acceleration [mm/s²] ... (Operating condition)
- a2 : Deceleration [mm/s²] ... (Operating condition)

- T1: Acceleration time [s]
Time until reaching the set speed
- T2: Constant speed time [s]
Time while the actuator is operating at a constant speed
- T3: Deceleration time [s]
Time from the beginning of the constant speed operation to stop
- T4: Settling time [s]
Time until in position is completed

Step 3 Check the guide moment.



Based on the above calculation result, the **LEFS40RS4B-200** is selected.

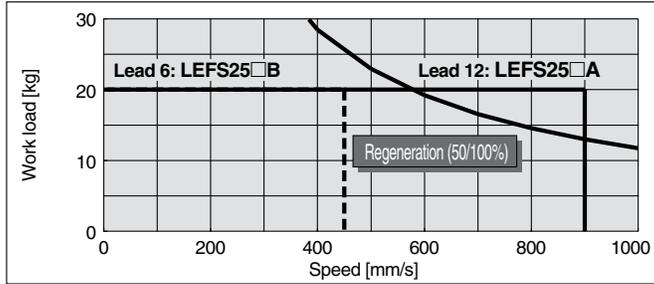
Series LEFS

Speed-Work Load Graph (Guide)

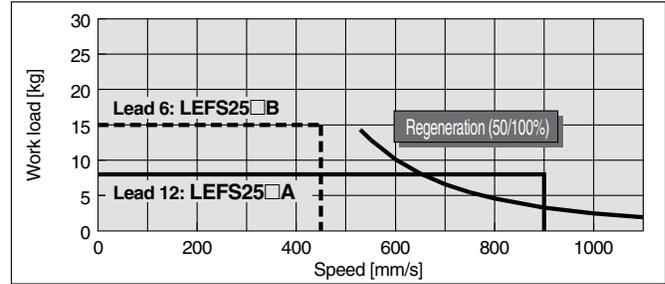
LEFS25/Ball Screw Drive

(1 kg = 2.2 lb)

Horizontal

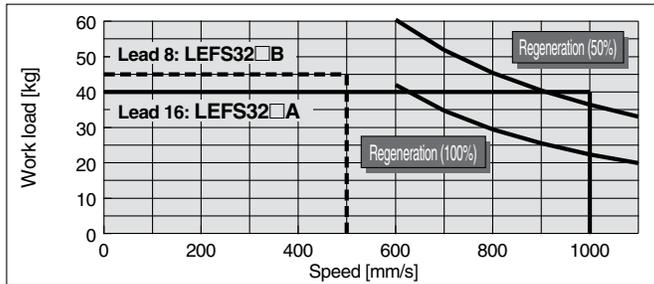


Vertical

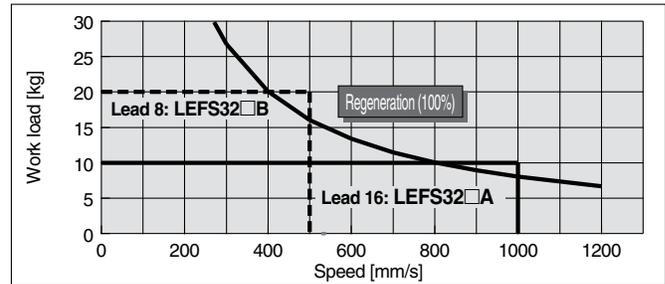


LEFS32/Ball Screw Drive

Horizontal

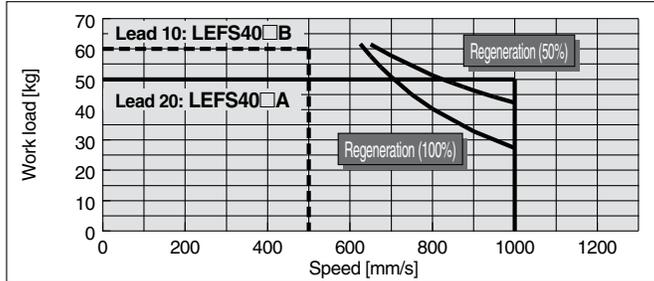


Vertical

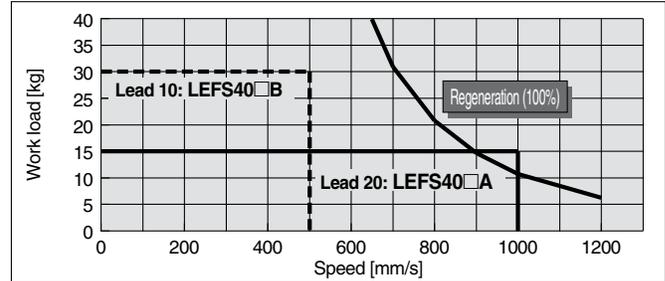


LEFS40/Ball Screw Drive

Horizontal



Vertical



Required conditions for "Regeneration option"

* Regeneration option required when using product above "Regeneration" line in graph. (Order separately)

[How to read the graph]

Required conditions change depending on the operating conditions.

Regeneration (50%): Duty ratio 50% or more

Regeneration (100%): Duty ratio 100%

"Regeneration Option" Models

Size	Model
LEFS25 □	LEC-MR-RB-032
LEFS32 □	LEC-MR-RB-032
LEFS40 □	LEC-MR-RB-032

Allowable Stroke Speed

[mm/s]

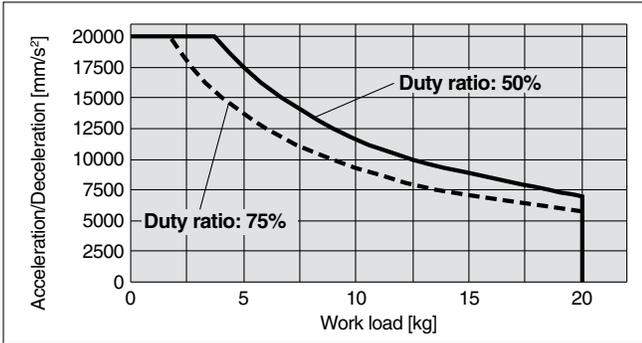
Model	AC servo	Lead		Stroke [mm]									
		Symbol	[mm]	Up to 100	Up to 200	Up to 300	Up to 400	Up to 500	Up to 600	Up to 700	Up to 800	Up to 900	Up to 1000
LEFS25	100 W / □40	A	12	900				720	540	—	—	—	—
		B	6	450				360	270	—	—	—	—
		(Motor rotation speed)		(4500 rpm)				(3650 rpm)	(2700 rpm)	—	—	—	—
LEFS32	200 W / □60	A	16	1000	1000	1000	1000	1000	800	620	500	—	—
		B	8	500	500	500	500	500	400	310	250	—	—
		(Motor rotation speed)		(3750 rpm)				(3000 rpm)	(2325 rpm)	(1875 rpm)	—	—	—
LEFS40	400 W / □60	A	20	—	1000			—	940	760	620	520	—
		B	10	—	500			—	470	380	310	260	—
		(Motor rotation speed)		—	(3000 rpm)				(2820 rpm)	(2280 rpm)	(1860 rpm)	(1560 rpm)	—

Work Load–Acceleration/Deceleration Graph (Guide)

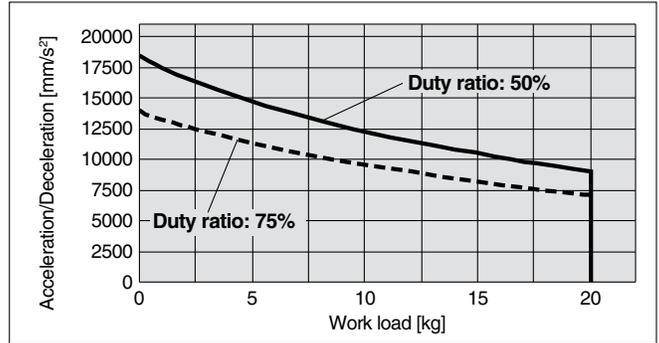
LEFS25/Ball Screw Drive: Horizontal

(1 kg = 2.2 lb)

LEFS25S□A

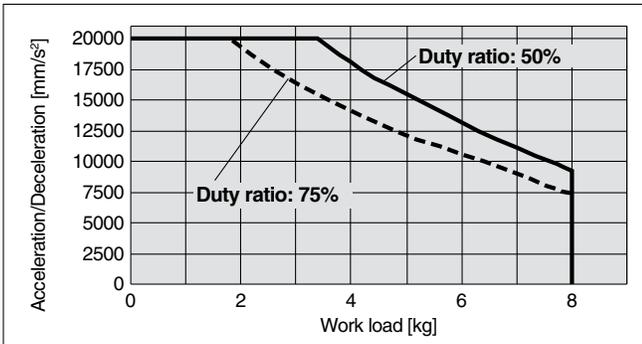


LEFS25S□B

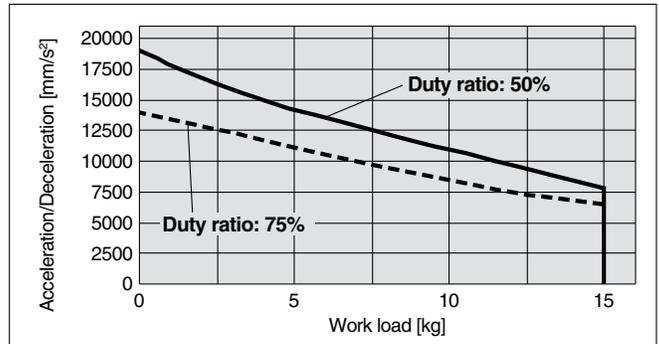


LEFS25/Ball Screw Drive: Vertical

LEFS25S□A

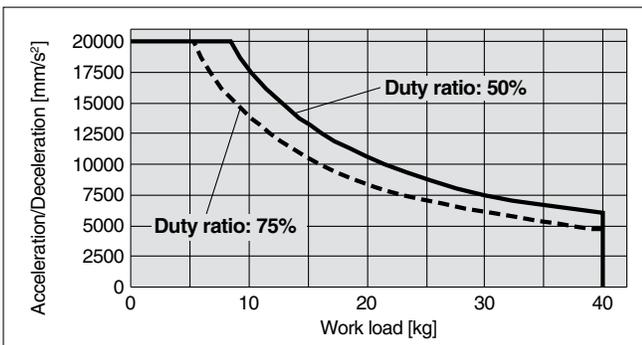


LEFS25S□B

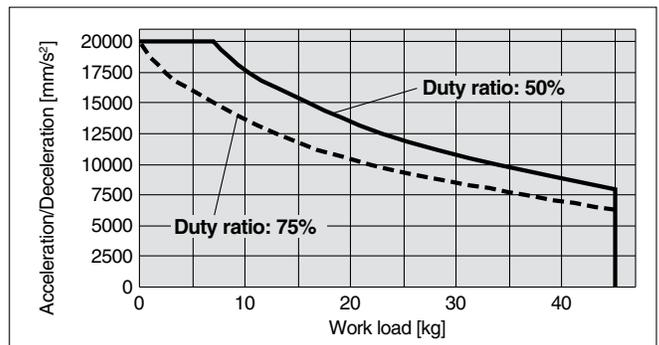


LEFS32/Ball Screw Drive: Horizontal

LEFS32S□A

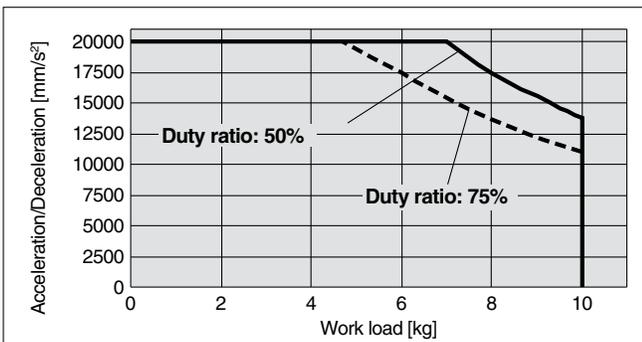


LEFS32S□B

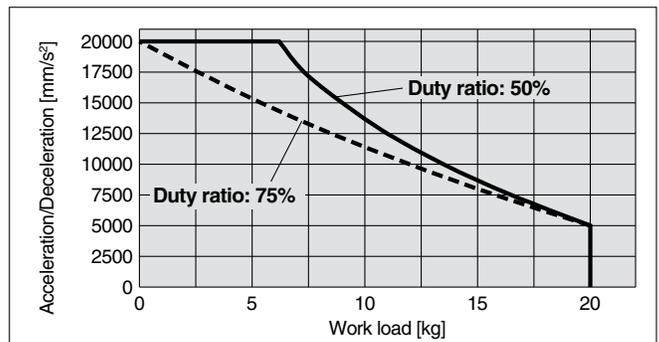


LEFS32/Ball Screw Drive: Vertical

LEFS32S□A



LEFS32S□B



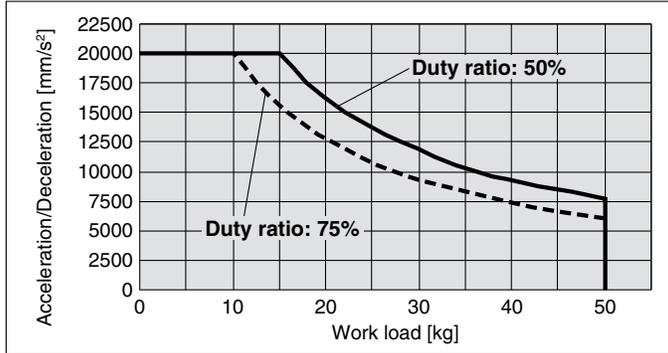
Series LEFS

Work Load–Acceleration/Deceleration Graph (Guide)

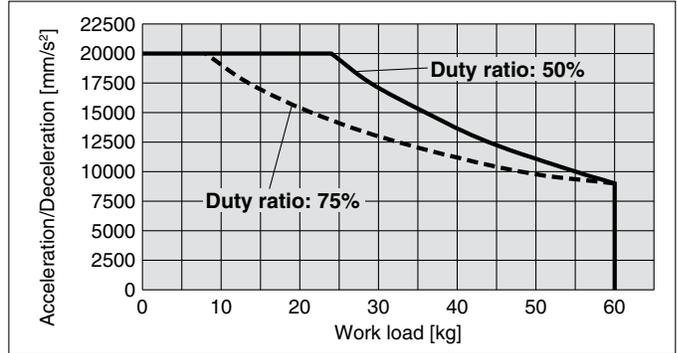
LEFS40/Ball Screw Drive: Horizontal

(1kg = 2.2 lb)

LEFS40S□A

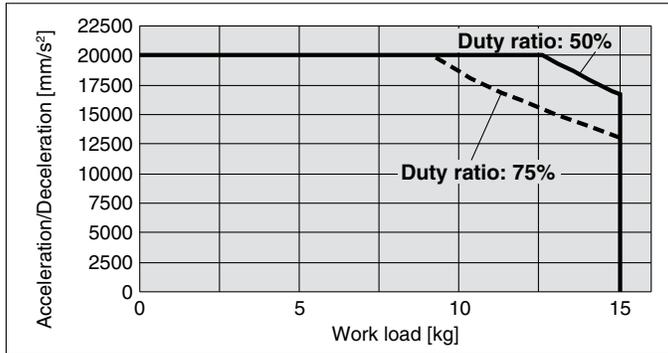


LEFS40S□B

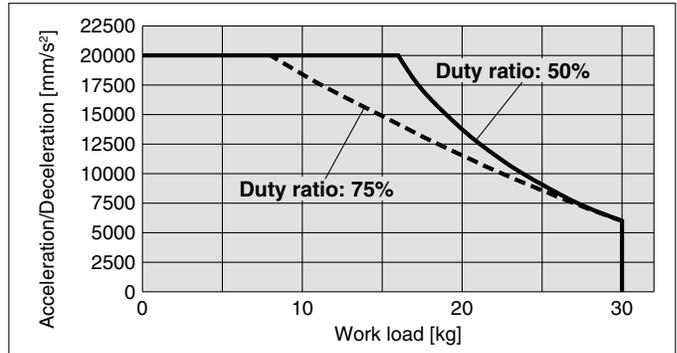


LEFS40/Ball Screw Drive: Vertical

LEFS40S□A



LEFS40S□B

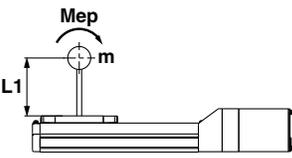
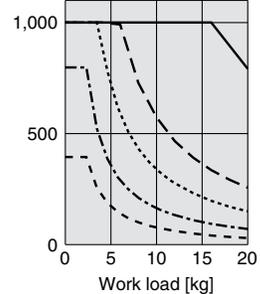
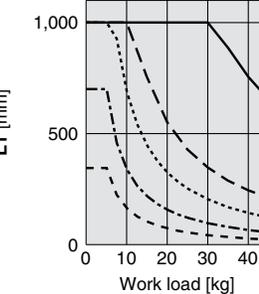
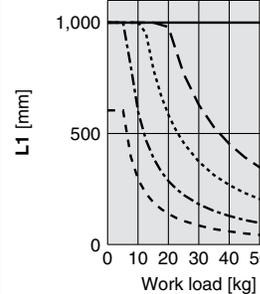
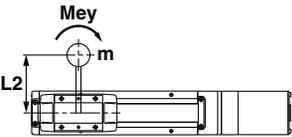
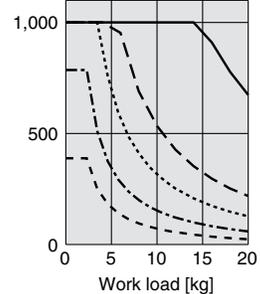
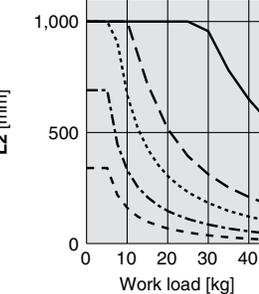
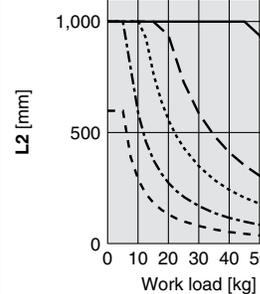
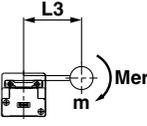
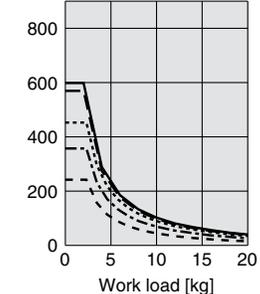
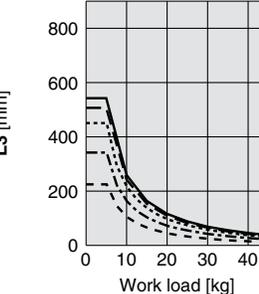
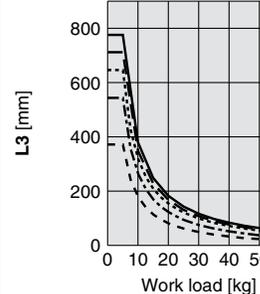
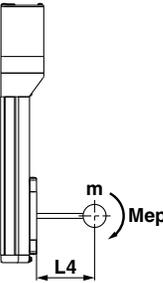
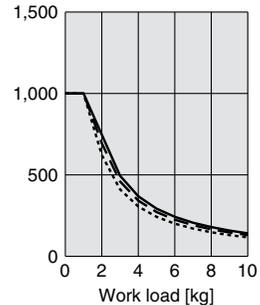
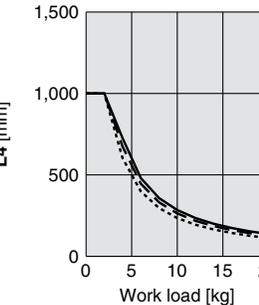
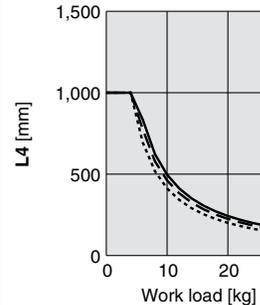
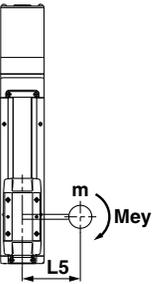
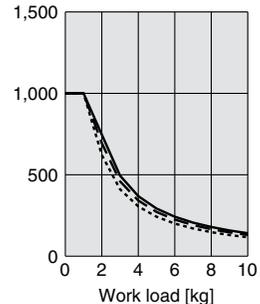
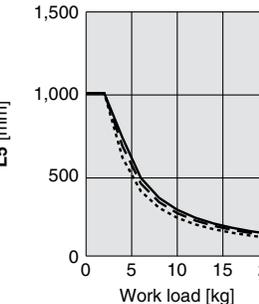
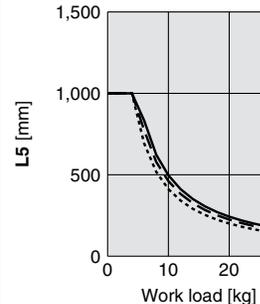


Dynamic Allowable Moment

* This graph shows the amount of allowable overhang when the center of gravity of the workpiece overhangs in one direction. When the center of gravity of the workpiece overhangs in two directions, refer to the Electric Actuator Selection Software for confirmation. <http://www.smcworld.com>

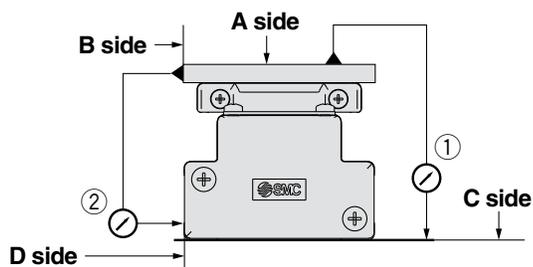
Acceleration/Deceleration

— 1,000 mm/s² - - - 3,000 mm/s² ····· 5,000 mm/s² - - - - 10,000 mm/s² - - - - 20,000 mm/s²

Orientation	Load overhanging direction m: Work load [kg] Me: Dynamic allowable moment [N·m] L: Overhang to the work load center of gravity [mm]	Model		
		LEFS25S□	LEFS32S□	LEFS40S□
Horizontal	 Pitching L1 [mm]			
	 Yawing L2 [mm]			
	 Rolling L3 [mm]			
Vertical	 Pitching L4 [mm]			
	 Yawing L5 [mm]			

Series LEFS

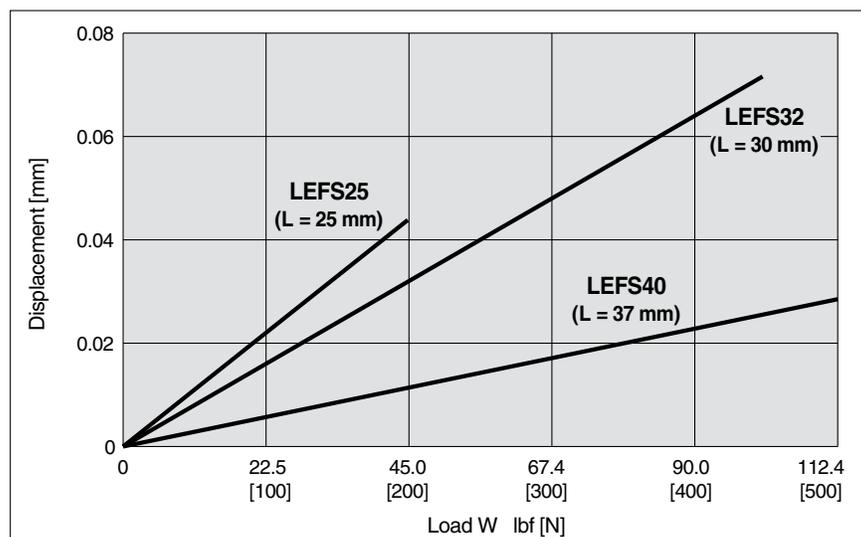
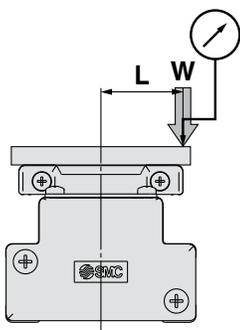
Table Accuracy



Model	Traveling parallelism [mm] (Every 300 mm)	
	① C side traveling parallelism to A	② D side traveling parallelism to B
LEFS25	0.05	0.03
LEFS32	0.05	0.03
LEFS40	0.05	0.03

Note) Traveling parallelism does not include the mounting surface accuracy.

Table Displacement (Reference Value)



Note 1) This displacement is measured when a 15 mm aluminum plate is mounted and fixed on the table.

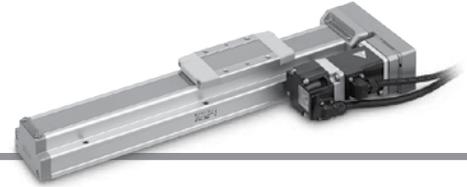
Note 2) Please confirm the clearance and play of the guide separately.

Electric Actuator/Slider Type Motor Parallel Type AC Servo Motor



Series **LEFS**

LEFS25, 32, 40



How to Order

LEFS **32** **R** **S3** **B** - **200** - **S** **2** **A2**

1
2
3
4
5
6
7
8
9
10

1 Size

25
32
40

2 Motor mounting position

R	Right side parallel
L	Left side parallel

3 Motor type

Symbol	Type	Output (W)	Actuator size	Compatible drivers
S2*	AC servo motor (Incremental encoder)	100	25	LECSA□-S1
S3		200	32	LECSA□-S3
S4		400	40	LECSA2-S4
S6*	AC servo motor (Absolute encoder)	100	25	LECSB□-S5 LECSC□-S5 LECSS□-S5
S7		200	32	LECSB□-S7 LECSC□-S7 LECSS□-S7
S8		400	40	LECSB2-S8 LECSC2-S8 LECSS2-S8

* For motor type S2 and S6, the compatible driver part number suffixes are S1 and S5 respectively.

4 Lead [mm]

Symbol	LEFS25	LEFS32	LEFS40
A	12	16	20
B	6	8	10

5 Stroke [mm]

100	100
to	to
1000	1000

* Refer to the applicable stroke table.

6 Motor option

Nil	Without option
B	With lock

Note 3)

9 Driver type

	Compatible drivers	Power supply voltage (V)	Size		
			25	32	40
Nil	Without driver	—	●	●	●
A1	LECSA1-S□	100 to 120	●	●	—
A2	LECSA2-S□	200 to 230	●	●	●
B1	LECSB1-S□	100 to 120	●	●	—
B2	LECSB2-S□	200 to 230	●	●	●
C1	LECSC1-S□	100 to 120	●	●	—
C2	LECSC2-S□	200 to 230	●	●	●
S1	LECSS1-S□	100 to 120	●	●	—
S2	LECSS2-S□	200 to 230	●	●	●

* When the driver type is selected, the cable is included. Select cable type and cable length.

Example) S2S2: Standard cable (2 m) + Driver (LECSS2)
S2: Standard cable (2 m)
Nil : Without cable and driver

10 I/O connector

Nil	Without connector
H	With connector

7 Cable type Note 1) Note 2)

Nil	Without cable
S	Standard cable
R	Robotic cable (Flexible cable)

Note 1) The motor and encoder cables are included. (The lock cable is also included when the motor with lock option is selected.)

Note 2) Standard cable entry direction is "(B) Counter axis side".

8 Cable length [m]

Nil	Without cable
2	2
5	5
A	10

Note 3) The length of the encoder, motor and lock cables are the same.

Applicable stroke table

● Standard

Model	Stroke (mm)	100	200	300	400	500	600	700	800	900	1000
LEFS25		●	●	●	●	●	●	—	—	—	—
LEFS32		●	●	●	●	●	●	●	●	—	—
LEFS40		—	●	●	●	●	●	●	●	●	●

* Strokes are manufacturable in 1 mm increments. Refer to the manufacturable stroke range. However, strokes other than those shown above are produced as special orders. Consult with SMC for lead times and prices.

Compatible Drivers

Driver type	Pulse input type/ Positioning type	Pulse input type	CC-Link direct input type	SSCNET III type
Series	LECSA	LECSB	LECSC	LECSS
Number of point tables	Up to 7	—	Up to 255 (2 stations occupied)	—
Pulse input	○	○	—	—
Applicable network	—	—	CC-Link	SSCNET III
Control encoder	Incremental 17-bit encoder	Absolute 18-bit encoder	Absolute 18-bit encoder	Absolute 18-bit encoder
Communication function	USB communication	USB communication, RS422 communication	USB communication, RS422 communication	USB communication
Power supply voltage (V)	100 to 120 VAC (50/60 Hz), 200 to 230 VAC (50/60 Hz)			

Specifications

LEFS25, 32, 40 AC Servo Motor

Model		LEFS25S $\frac{2}{6}$		LEFS32S $\frac{3}{7}$		LEFS40S $\frac{4}{8}$			
Actuator specifications	Stroke [mm] ^{Note 1)}	100, 200, 300, 400 500, 600		100, 200, 300, 400 500, 600, 700, 800		200, 300, 400, 500 600, 700, 800, 900 1000			
	Work load [kg] ^{Note 2)}	Horizontal	20	20	40	45	50	60	
		Vertical	8	15	10	20	15	30	
	Max. speed [mm/s] ^{Note 3)}	Stroke range	Up to 400	900	450	1000	500	1000	500
			401 to 500	720	360	1000	500	1000	500
			501 to 600	540	270	800	400	1000	500
			601 to 700	—	—	620	310	940	470
			701 to 800	—	—	500	250	760	380
			801 to 900	—	—	—	—	620	310
	Max. acceleration/deceleration [mm/s ²]		20,000 (Refer to page 17 for limit according to work load and duty ratio.)						
Positioning repeatability [mm]		±0.02							
Lead [mm]		12	6	16	8	20	10		
Impact/Vibration resistance [m/s ²] ^{Note 4)}		50/20							
Actuation type		Ball screw							
Guide type		Linear guide							
Operating temperature range		41 to 104°F (5 to 40°C)							
Operating humidity range [%RH]		90 or less (No condensation)							
Electric specifications	Motor output/Size		100 W/□40		200 W/□60		400 W/□60		
	Motor type		AC servo motor (100/200 VAC)						
	Encoder		Motor type S2, S3, S4: Incremental 17-bit encoder (Resolution: 131072 p/rev) Motor type S6, S7, S8: Absolute 18-bit encoder (Resolution: 262144 p/rev)						
	Power consumption [W] ^{Note 5)}	Horizontal	45		65		210		
		Vertical	145		175		230		
	Standby power consumption when operating [W] ^{Note 6)}	Horizontal	2		2		2		
		Vertical	8		8		18		
Max. instantaneous power consumption [W] ^{Note 7)}		445		725		1275			
Type ^{Note 8)}		Non-magnetizing lock							
Holding force lbf [N]		29.4 [131]	57.3 [255]	44.3 [197]	86.8 [385]	74.2 [330]	148 [660]		
Power consumption [W] at 68°F (20°C) ^{Note 9)}		6.3		7.9		7.9			
Rated voltage [V]		24 VDC $\frac{0}{-10\%}$							

Note 1) Consult with SMC for non-standard strokes as they are produced as special orders.

Note 2) For details, refer to "Speed-Work Load Graph (Guide)" on page 17.

Note 3) The allowable speed changes according to the stroke.

Note 4) 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. (Test was performed with the actuator in the initial state.)

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

Note 5) The power consumption (including the driver) is for when the actuator is operating.

Note 6) The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.

Note 7) The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.

Note 8) Only when motor option "With lock" is selected.

Note 9) For an actuator with lock, add the power consumption for the lock.

Weight

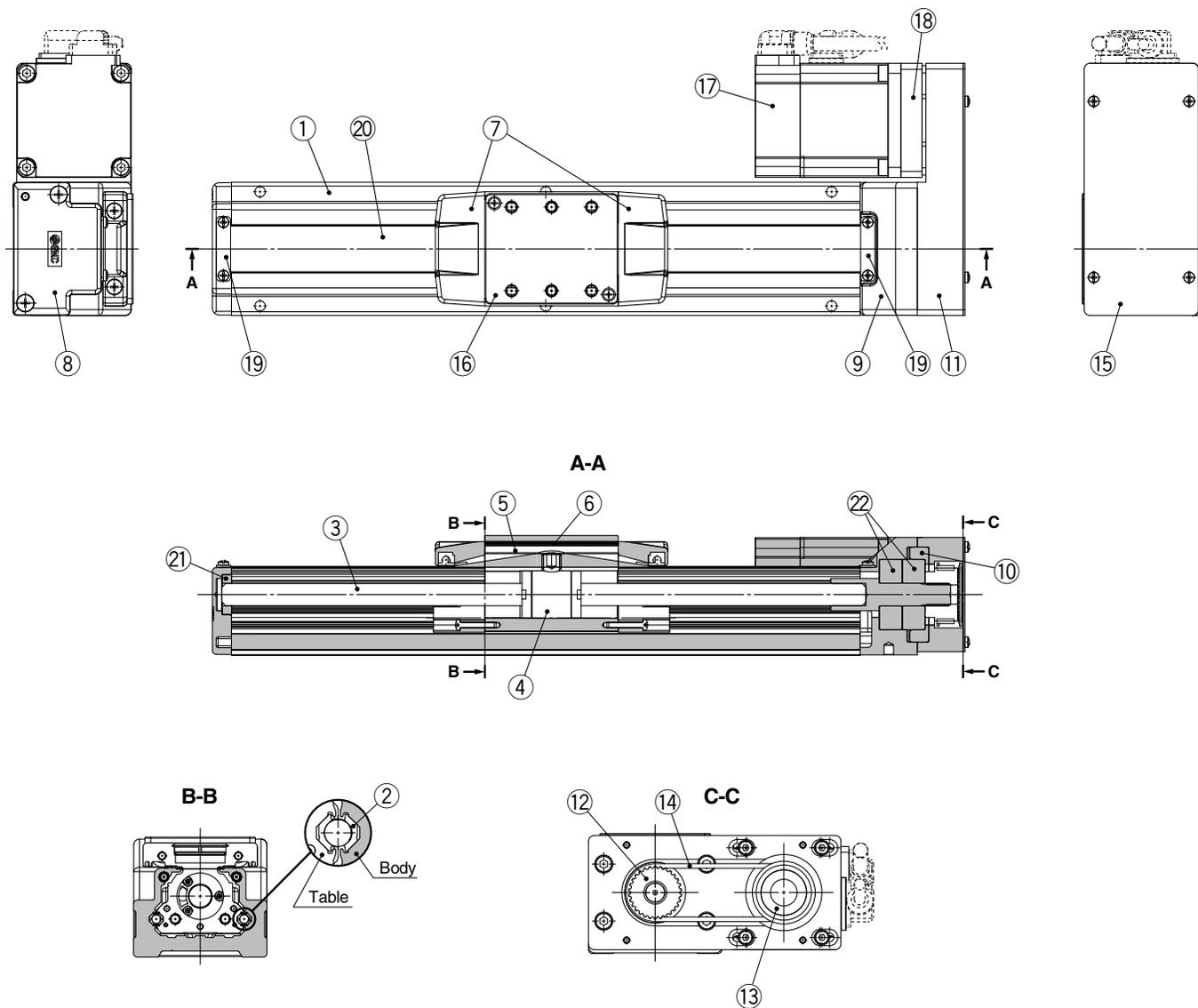
(1 kg = 2.2 lb)

Model	LEFS25					
Stroke [mm]	100	200	300	400	500	600
Product weight [kg]	1.79	2.07	2.35	2.63	2.91	3.19
Additional weight with lock [kg]	0.29					

Model	LEFS32							
Stroke [mm]	100	200	300	400	500	600	700	800
Product weight [kg]	3.25	3.65	4.05	4.45	4.85	5.25	5.65	6.05
Additional weight with lock [kg]	0.64							

Model	LEFS40									
Stroke [mm]	200	300	400	500	600	700	800	900	1000	
Product weight [kg]	5.15	5.71	6.27	6.83	7.39	7.95	8.51	9.07	9.63	
Additional weight with lock [kg]	0.61									

Construction



Component Parts

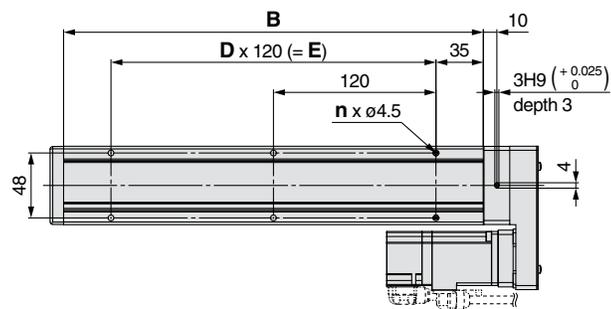
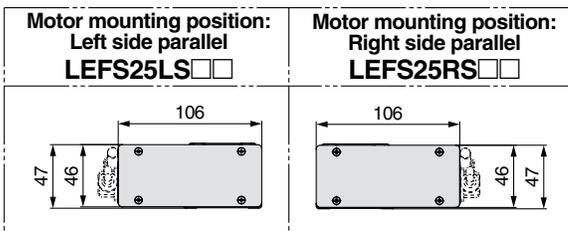
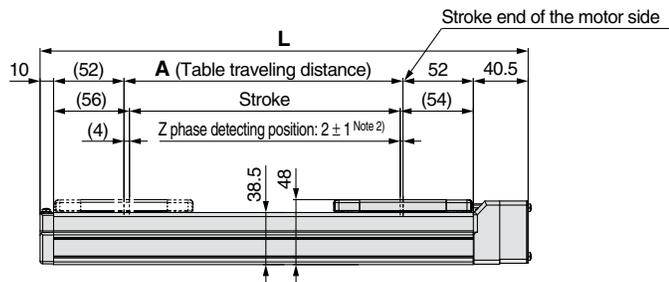
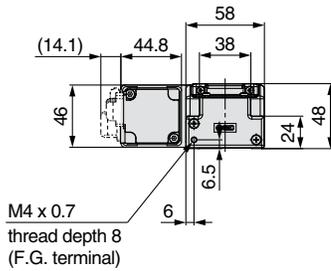
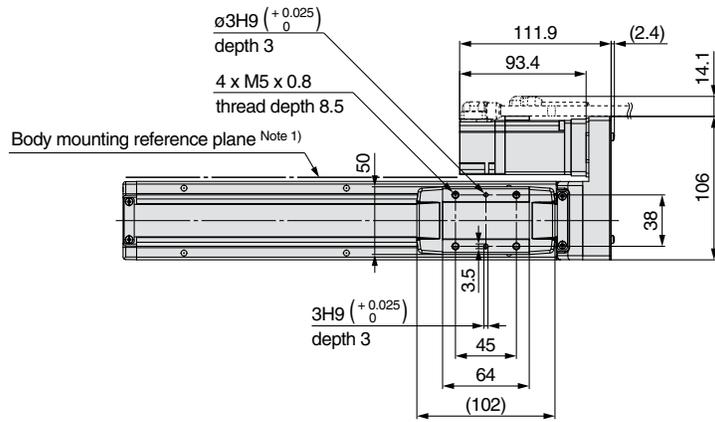
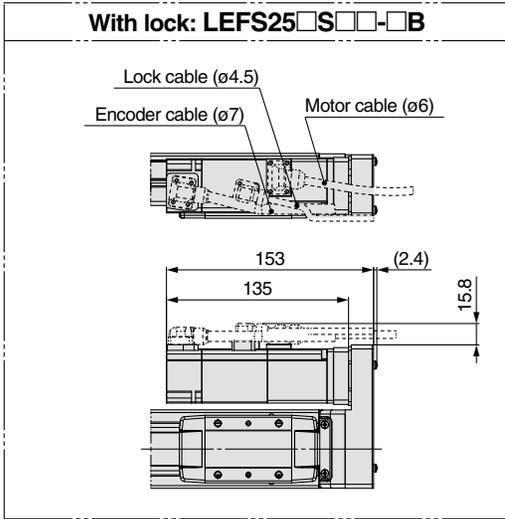
No.	Description	Material	Note
1	Body	Aluminum alloy	Anodized
2	Rail guide	—	
3	Ball screw shaft	—	
4	Ball screw nut	—	
5	Table	Aluminum alloy	Anodized
6	Blanking plate	Aluminum alloy	Anodized
7	Seal band stopper	Synthetic resin	
8	Housing A	Aluminum die-casted	Coating
9	Housing B	Aluminum die-casted	Coating
10	Bearing stopper	Aluminum alloy	
11	Return plate	Aluminum alloy	Coating
12	Pulley	Aluminum alloy	
13	Pulley	Aluminum alloy	
14	Timing belt	—	
15	Cover plate	Aluminum alloy	Coating

No.	Description	Material	Note
17	Motor (Absolute encoder)	—	
	Motor (Incremental encoder)	—	
18	Motor adapter	Aluminum alloy	Anodized
19	Band stopper	Stainless steel	
20	Dust seal band	Stainless steel	
21	Bearing	—	
22	Bearing	—	

Series LEFS

Dimensions: Ball Screw Drive

Motor right side parallel type: LEFS25R



Note 1) When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more.
(Recommended height 5 mm)

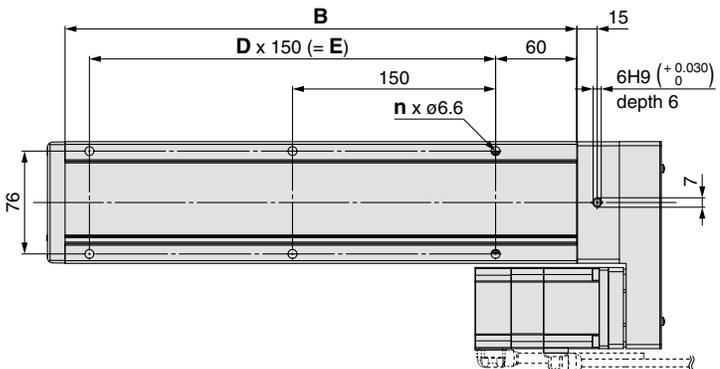
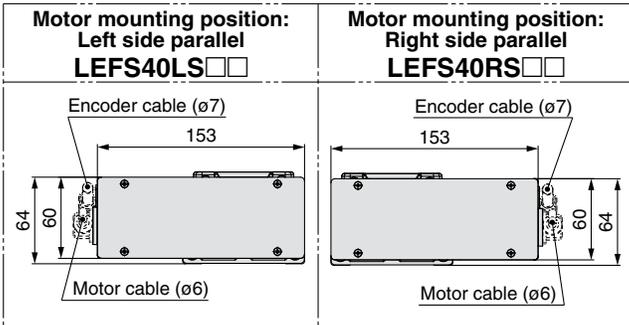
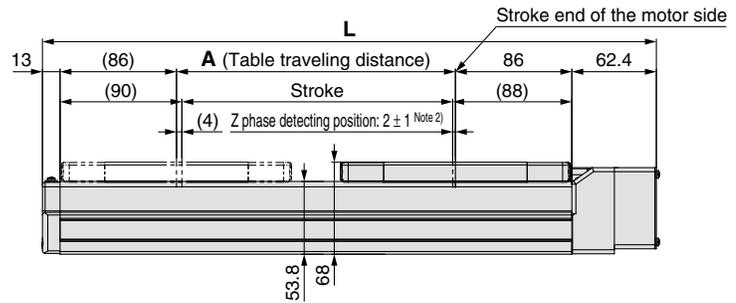
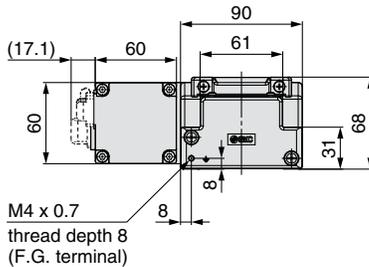
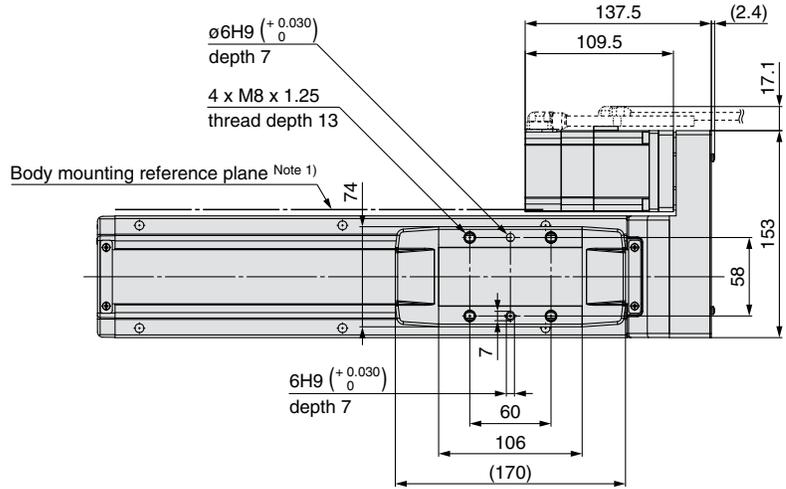
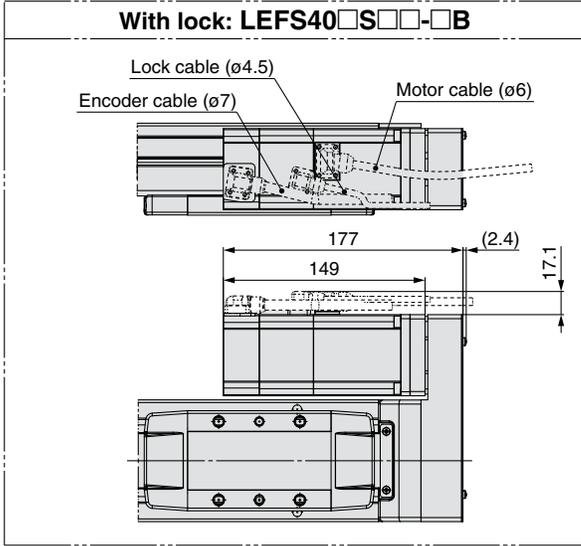
Note 2) The Z phase first detecting position from the stroke end of the motor side. Consult with SMC for adjusting the Z phase detecting position at the stroke end of the end side.

Model	L	A	B	n	D	E
LEFS25□S□□-100□-□□□□□□	260.5	106	210	4	—	—
LEFS25□S□□-200□-□□□□□□	360.5	206	310	6	2	240
LEFS25□S□□-300□-□□□□□□	460.5	306	410	8	3	360
LEFS25□S□□-400□-□□□□□□	560.5	406	510	8	3	360
LEFS25□S□□-500□-□□□□□□	660.5	506	610	10	4	480
LEFS25□S□□-600□-□□□□□□	760.5	606	710	12	5	600

Series LEFS

Dimensions: Ball Screw Drive

Motor right side parallel type: LEFS40R



Note 1) When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more.
(Recommended height 5 mm)

Note 2) The Z phase first detecting position from the stroke end of the motor side. Consult with SMC for adjusting the Z phase detecting position at the stroke end of the end side.

Model	L	A	B	n	D	E
LEFS40□S□□-200-□□□□□□	453.4	206	378	6	2	300
LEFS40□S□□-300-□□□□□□	553.4	306	478	6	2	300
LEFS40□S□□-400-□□□□□□	653.4	406	578	8	3	450
LEFS40□S□□-500-□□□□□□	753.4	506	678	10	4	600
LEFS40□S□□-600-□□□□□□	853.4	606	778	10	4	600
LEFS40□S□□-700-□□□□□□	953.4	706	878	12	5	750
LEFS40□S□□-800-□□□□□□	1053.4	806	978	14	6	900
LEFS40□S□□-900-□□□□□□	1153.4	906	1078	14	6	900
LEFS40□S□□-1000-□□□□□□	1253.4	1006	1178	16	7	1050

SMC Corporation of America
10100 SMC Blvd., Noblesville, IN 46060
www.smcusa.com
SMC Pneumatics (Canada) Ltd.
www.smc Pneumatics.ca

(800) SMC.SMC1 (762-7621)
e-mail: sales@smcusa.com
For International inquiries: www.smcworld.com

AC Servo Motor Driver

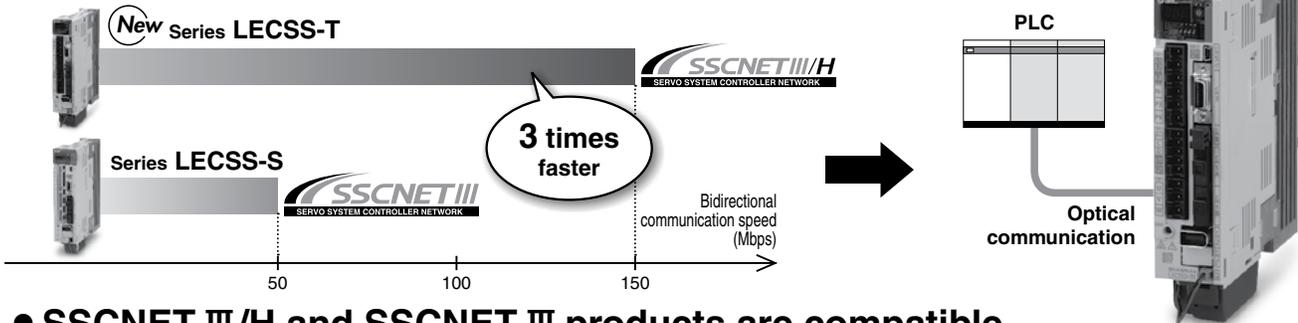


Power supply voltage (V)
200 to 240 VAC

Motor capacity (W)
100/200/400



- Applicable Fieldbus protocol: **SSCNET III/H** (High-speed optical communication, max. bidirectional communication speed: 150 Mbps)
- Bidirectional communication speed: **3 times**



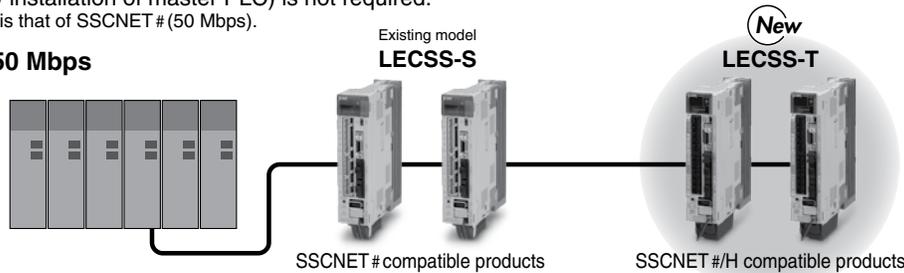
• **SSCNET III/H and SSCNET III products are compatible.**

SSCNET #/H compatible products can be added to existing SSCNET # systems for system expansion. Reassembly of the system (new installation of master PLC) is not required.

* Note that the communication speed is that of SSCNET # (50 Mbps).

■ **Communication speed: 50 Mbps**

SSCNET #/H compatible controllers
SSCNET # compatible controllers



- Improved noise resistance
- **STO (Safe Torque Off) safety function available**
- **Control encoder: Absolute 22-bit encoder** (Resolution: 4194304 p/rev)

Compatible Actuators

Slider Type

Ball screw drive
Series LEFS

- Clean room compatible
- Secondary battery compatible



Series LEFS

Size	Max. work load (kg)	Stroke (mm)
25	20	Up to 600
32	45	Up to 800
40	60	Up to 1000

Belt drive
Series LEFB



Series LEFB

Size	Max. work load (kg)	Stroke (mm)
25	5	Up to 2000
32	15	Up to 2500
40	25	Up to 3000

High Rigidity Slider Type

Ball screw drive
Series LEJS

- Clean room compatible
- Secondary battery compatible



Series LEJS

Size	Max. work load (kg)	Stroke (mm)
40	55	Up to 1200
63	85	Up to 1500

Belt drive
Series LEJB



Series LEJB

Size	Max. work load (kg)	Stroke (mm)
40	20	Up to 2000
63	30	Up to 3000

Rod Type

Basic type
Series LEY

- Secondary battery compatible
- Dust/Drip proof (IP65) specification



Series LEY

Size	Pushing force lbf (N)	Stroke (mm)
25	109 (485)	Up to 400
32	132 (588)	Up to 500
63	752 (3343)	Up to 800

In-line motor type
Series LEY□D

- Secondary battery compatible
- Dust/Drip proof (IP65) specification



Series LEY

Size	Pushing force lbf (N)	Stroke (mm)
25	109 (485)	Up to 400
32	165 (736)	Up to 500
63	429 (1910)	Up to 800

Guide rod type
Series LEYG



Series LEYG

Size	Pushing force lbf (N)	Stroke (mm)
25	109 (485)	Up to 300
32	132 (588)	

**Guide rod type/
In-line motor type**
Series LEYG□D



Series LEYG

Size	Pushing force lbf (N)	Stroke (mm)
25	109 (485)	Up to 300
32	165 (736)	

Absolute encoder compatible Series LECSS-T



Provided by customer

Power supply

Single phase 200 to 240 VAC (50/60 Hz)
Three phase 200 to 240 VAC (50/60 Hz)

Option
Regeneration option
Part no.: LEC-MR-RB-□

Motor cable

Standard cable	Robotic cable
LE-CSM-S□□	LE-CSM-R□□

Lock cable

Standard cable	Robotic cable
LE-CSB-S□□	LE-CSB-R□□

Motor connector
(Accessory)

Encoder cable

Standard cable	Robotic cable
LE-CSE-S□□	LE-CSE-R□□

Electric actuator Pages 3, 5, 7, 15

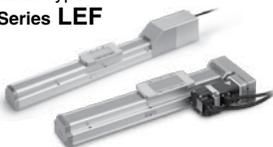
Rod type
Series LEY



Guide rod type
Series LEYG



Slider type
Series LEF



High rigidity slider type
Series LEJ



* The LECSS2-T□ cannot be used with the LEC-MR-SETUP221□.

Main circuit
power supply connector
(Accessory)

Driver



Control circuit
power supply connector
(Accessory)

Option

Setup software Page 25^{*}
(MR Configurator2™)
Part no.: LEC-MRC2□



PC

USB cable Page 26
Part no.: LEC-MR-J3USB

Option
I/O connector Page 24
Part no.: LE-CSNS

Option
STO cable (3 m) Page 26
Part no.: LEC-MR-D05UDL3M

Option
SSCNET III
optical cable
Part no.: LE-CSS-□

Battery (Accessory) Page 26
Part no.: (LEC-MR-BAT6V1SET)

Provided by customer

PLC

(Positioning unit/Motion controller)

Power supply
for I/O signal
24 VDC



Electric Actuator/Slider Type Ball Screw Drive

Series **LEFS**

LEFS25, 32, 40

AC Servo Motor



There are changes in the How to Order. Refer to the WEB catalog or the Electric Actuators catalog (CAT.E102) for other details.

Clean room compatible Secondary battery compatible

Consult with SMC for details.



How to Order

LEFS **32** **R** **T7** **B** - **200** **B** - **S** **5** **S2** **□**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

① Size

25
32
40

② Motor mounting position

Symbol	In-line
R	Right side parallel
L	Left side parallel

③ Motor type *1

Symbol	Type	Output [W]	Actuator size	Compatible driver
T6	AC servo motor (Absolute encoder)	100	25	LECSS2-T5
T7		200	32	LECSS2-T7
T8		400	40	LECSS2-T8

*1 For motor type T6, the compatible driver part number suffix is T5.

④ Lead [mm]

Symbol	LEFS25	LEFS32	LEFS40
H	20	24	30
A	12	16	20
B	6	8	10

⑤ Stroke [mm] *2

50	50
to	to
1000	1000

*2 Refer to the applicable stroke table.

⑦ Cable type *4, *6

Nil	Without cable
S	Standard cable
R	Robotic cable (Flexible cable)

*4 The motor and encoder cables are included. (The lock cable is also included when the motor with lock option is selected.)

⑧ Cable length [m] *5, *6

Nil	Without cable
2	2
5	5
A	10

*5 The length of the encoder, motor and lock cables are the same.

⑨ Driver type *6

	Compatible driver	Power supply voltage [V]
Nil	Without driver	—
S2	LECSS2-T□	200 to 240

*6 When the driver type is selected, the cable is included. Select cable type and cable length.

Example)

S2S2: Standard cable (2 m) + Driver (LECSS2)

S2 : Standard cable (2 m)

Nil : Without cable and driver

⑥ Motor option

Nil	Without option
B	With lock

⑩ I/O connector

Nil	Without connector
H	With connector

Applicable Stroke Table *3

●: Standard

Model	Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	Manufacturable stroke range [mm]	
LEFS25		●	●	●	●	●	●	●	●	●	●	●	●	—	—	—	—	—	—	—	—	—	50 to 600
LEFS32		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	—	—	—	—	—	50 to 800
LEFS40		—	—	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	150 to 1000

*3 Please consult with SMC for non-standard strokes as they are produced as special orders.

Compatible Driver

Driver type	
Series	LECSS-T
Applicable network	SSCNET #/H
Control encoder	Absolute 22-bit encoder
Communication function	USB communication
Power supply voltage (V)	200 to 240 VAC (50/60 Hz)
Reference page	Page 21

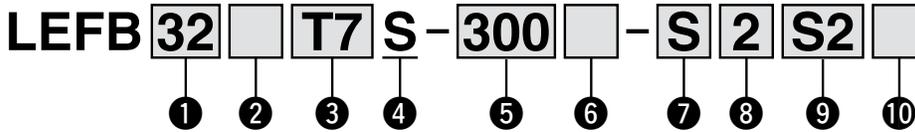
Electric Actuator/Slider Type Belt Drive AC Servo Motor



There are changes in the How to Order. Refer to the WEB catalog or the Electric Actuators catalog (CAT.E102) for other details.

Series **LEFB** LEFB25, 32, 40

How to Order



1 Size

25
32
40

2 Motor mounting position

Nil	Top mounting
U	Bottom mounting

3 Motor type *

Symbol	Type	Output [W]	Actuator size	Compatible driver
T6	AC servo motor (Absolute encoder)	100	25	LECSS2-T5
T7		200	32	LECSS2-T7
T8		400	40	LECSS2-T8

* For motor type T6, the compatible driver part number suffix is T5.

4 Lead [mm]

S	54
---	----

6 Motor option

Nil	Without option
B	With lock

5 Stroke [mm]

300	300
to	to
3000	3000

* Refer to the applicable stroke table.

7 Cable type *1, *2

Nil	Without cable
S	Standard cable
R	Robotic cable (Flexible cable)

*1 The motor and encoder cables are included. (The lock cable is also included when the motor with lock option is selected.)

*2 Standard cable entry direction is "(A) Axis side". (Refer to page 24 for details.)

8 Cable length [m]

Nil	Without cable
2	2
5	5
A	10

* The length of the encoder, motor and lock cables are the same.

9 Driver type *

	Compatible driver	Power supply voltage [V]
Nil	Without driver	—
S2	LECSS2-T□	200 to 240

* When the driver type is selected, the cable is included. Select cable type and cable length.

Example)
S2S2: Standard cable (2 m) + Driver (LECSS2)
S2 : Standard cable (2 m)
Nil : Without cable and driver

10 I/O connector

Nil	Without connector
H	With connector

Applicable Stroke Table *

●: Standard/○: Produced upon receipt of order

Stroke (mm) \ Model	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500	3000
LEFB25	●	●	●	●	●	●	●	●	○	●	○	○	●	○	○	○	○	●	—	—
LEFB32	●	●	●	●	●	●	●	●	○	●	○	○	●	○	○	○	○	●	●	—
LEFB40	●	●	●	●	●	●	●	●	○	●	○	○	●	○	○	○	○	●	●	●

* Please consult with SMC for strokes other than those shown above as they are produced as special orders.

Compatible Driver

Driver type	
Series	LECSS-T
Applicable network	SSCNET #/H
Control encoder	Absolute 22-bit encoder
Communication function	USB communication
Power supply voltage (V)	200 to 240 VAC (50/60 Hz)
Reference page	Page 21

LEFS/LEFB
LEJS/LEJB
LEY
LEYG
LECSS-T

Electric Actuator/High Rigidity Slider Type Ball Screw Drive

AC Servo Motor



Series **LEJS** LEJS40, 63

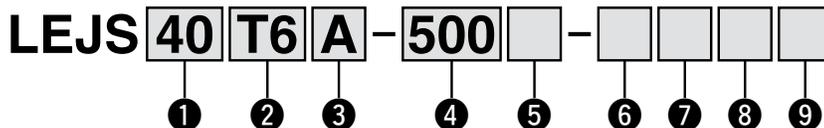
There are changes in the How to Order. Refer to the WEB catalog or the Electric Actuators catalog (CAT.E102) for other details.

Clean room compatible Secondary battery compatible

Consult with SMC for details.



How to Order



1 Size

40
63

2 Motor type *1

Symbol	Type	Output [W]	Actuator size	Compatible driver
T6	AC servo motor	100	40	LECSS2-T5
T7	(Absolute encoder)	200	63	LECSS2-T7

*1 For motor type T6, the compatible driver part number suffix is T5.

3 Lead [mm]

Symbol	LEJS40	LEJS63
H	24	30
A	16	20
B	8	10

4 Stroke [mm] *2

200
to
1500

*2 Refer to the applicable stroke table.

6 Cable type *4, *6

Nil	Without cable
S	Standard cable
R	Robotic cable (Flexible cable)

*4 The motor and encoder cables are included. (The lock cable is also included when the motor with lock option is selected.)

7 Cable length [m] *5, *6

Nil	Without cable
2	2
5	5
A	10

*5 The length of the encoder, motor and lock cables are the same.

8 Driver type *6

	Compatible driver	Power supply voltage [V]
Nil	Without driver	—
S2	LECSS2-T□	200 to 240

*6 When the driver type is selected, the cable is included. Select cable type and cable length.

Example
S2S2: Standard cable (2 m) + Driver (LECSS2)
S2 : Standard cable (2 m)
Nil : Without cable and driver

5 Motor option

Nil	Without option
B	With lock

9 I/O connector

Nil	Without connector
H	With connector

Applicable Stroke Table *3

●: Standard

Model \ Stroke (mm)	200	300	400	500	600	700	800	900	1000	1200	1500
LEJS40	●	●	●	●	●	●	●	●	●	●	—
LEJS63	—	●	●	●	●	●	●	●	●	●	●

*3 Please consult with SMC for non-standard strokes as they are produced as special orders.

Compatible Driver

Driver type	
Series	LECSS-T
Applicable network	SSCNET #/H
Control encoder	Absolute 22-bit encoder
Communication function	USB communication
Power supply voltage (V)	200 to 240 VAC (50/60 Hz)
Reference page	Page 21

Electric Actuator/High Rigidity Slider Type Belt Drive AC Servo Motor

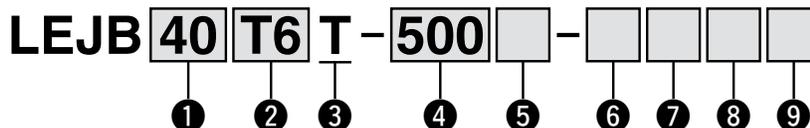


Series **LEJB** LEJB40, 63

There are changes in the How to Order. Refer to the WEB catalog or the Electric Actuators catalog (CAT.E102) for other details.



How to Order



1 Size

40
63

2 Motor type *1

Symbol	Type	Output [W]	Actuator size	Compatible driver
T6	AC servo motor	100	40	LECSS2-T5
T7	(Absolute encoder)	200	63	LECSS2-T7

*1 For motor type T6, the compatible driver part number suffix is T5.

3 Lead [mm]

Symbol	LEJB40	LEJB63
T	27	42

4 Stroke [mm] *2

200
to
3000

*2 Refer to the applicable stroke table.

6 Cable type *4, *6

Nil	Without cable
S	Standard cable
R	Robotic cable (Flexible cable)

*4 The motor and encoder cables are included. (The lock cable is also included when the motor with lock option is selected.)

7 Cable length [m] *5, *6

Nil	Without cable
2	2
5	5
A	10

*5 The length of the encoder, motor and lock cables are the same.

8 Driver type *6

	Compatible driver	Power supply voltage [V]
Nil	Without driver	—
S2	LECSS2-T□	200 to 240

*6 When the driver type is selected, the cable is included. Select cable type and cable length.

Example)
S2S2: Standard cable (2 m) + Driver (LECSS2)
S2 : Standard cable (2 m)
Nil : Without cable and driver

5 Motor option

Nil	Without option
B	With lock

9 I/O connector

Nil	Without connector
H	With connector

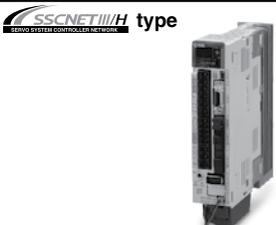
Applicable Stroke Table *3

Stroke (mm)	200	300	400	500	600	700	800	900	1000	1200	1500	2000	3000
Model													
LEJB40	●	●	●	●	●	●	●	●	●	●	●	●	—
LEJB63	—	●	●	●	●	●	●	●	●	●	●	●	●

●: Standard

*3 Please consult with SMC for non-standard strokes as they are produced as special orders.

Compatible Driver

Driver type	
Series	LECSS-T
Applicable network	SSCNET #/H
Control encoder	Absolute 22-bit encoder
Communication function	USB communication
Power supply voltage (V)	200 to 240 VAC (50/60 Hz)
Reference page	Page 21

LEFS/LEFB
 LEJS/LEJB
 LEY
 LEYG
 LECSS-T

Electric Actuator/Rod Type

AC Servo Motor

Series LEY

LEY25, 32, 63

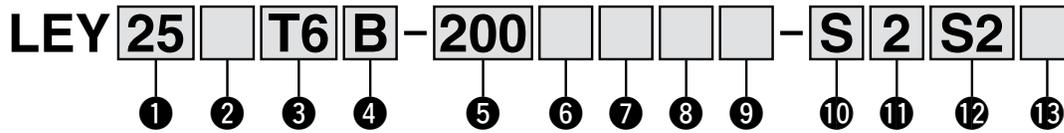


There are changes in the How to Order, force conversion graph, specifications, weight and dimensions. Refer to the WEB catalog or the Electric Actuators catalog (CAT.E102) for other details.

Secondary battery compatible Dust/Drip proof (IP65) specification

Consult with SMC for details.

How to Order



1 Size

25
32
63

2 Motor mounting position

Nil	Top mounting
R	Right side parallel
L	Left side parallel
D	In-line

3 Motor type *

Symbol	Type	Output [W]	Actuator size	Compatible driver
T6	AC servo motor (Absolute encoder)	100	25	LECSS2-T5
T7		200	32	LECSS2-T7
T8		400	63	LECSS2-T8

* For motor type T6, the compatible driver part number suffix is T5.

4 Lead [mm]

Symbol	LEY25	LEY32 *1	LEY63
A	12	16 (20)	20
B	6	8 (10)	10
C	3	4 (5)	5
L	—	—	2.86 *2

*1 The values shown in () are the lead for top mounting, right/left side parallel types. (Equivalent lead which includes the pulley ratio [1.25:1])

*2 Only available for top mounting and right/left side parallel types. (Equivalent lead which includes the pulley ratio [4:7])

5 Stroke [mm]

30	30
to	to
800	800

* Refer to the applicable stroke table.

6 Dust/Drip proof (Only available for LEY63)

Symbol	LEY25/32	LEY63
Nil	Equivalent to IP4x	IP5x (Dust proof specification)
P	—	IP65 (Dust/Drip proof specification)/ With vent hole tap

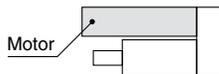
* When using the dust/drip proof (IP65), correctly mount the fitting and tubing to the vent hole tap, and then place the end of the tubing in an area not exposed to dust or water.

* The fitting and tubing should be provided separately by the customer. Select [Applicable tubing O.D.: ø4 or more, Connection thread: Rc1/8].

7 Motor option

Nil	Without option
B	With lock

* When "With lock" is selected for the top mounting and right/left side parallel types, the motor body will stick out of the end of the body for size 25 with strokes 30 or less. Check for interference with workpieces before selecting a model.



8 Rod end thread

Nil	Rod end female thread
M	Rod end male thread (1 rod end nut is included.)

9 Mounting *1

Symbol	Type	Motor mounting position	
		Top/Parallel	In-line
Nil	Ends tapped (Standard) *2	●	●
U	Body bottom tapped	●	●
L	Foot	●	—
F	Rod flange *2	● *4	●
G	Head flange *2	● *5	—
D	Double clevis *3	●	—

*1 Mounting bracket is shipped together, (but not assembled).

*2 For horizontal cantilever mounting with the rod flange, head flange and ends tapped, use the actuator within the following stroke range.

· LEY25: 200 or less · LEY32: 100 or less · LEY63: 400 or less

*3 For mounting with the double clevis, use the actuator within the following stroke range.

· LEY25: 200 or less · LEY32: 200 or less · LEY63: 300 or less

*4 Rod flange is not available for the LEY25 with strokes 30 and motor option "With lock".

*5 Head flange is not available for the LEY32/63.

Applicable Stroke Table

Model	Stroke (mm)	30	50	100	150	200	250	300	350	400	450	500	600	700	800	Manufacturable stroke range
		●	●	●	●	●	●	●	●	●	●	●	●	●	●	
LEY25		●	●	●	●	●	●	●	●	●	—	—	—	—	—	15 to 400
LEY32		●	●	●	●	●	●	●	●	●	●	●	—	—	—	20 to 500
LEY63		—	—	●	—	●	—	●	—	●	—	●	●	●	●	50 to 800

* Please consult with SMC for the manufacture of intermediate strokes.





Motor mounting position: Top/Parallel



Motor mounting position: In-line

10 Cable type

Nil	Without cable
S	Standard cable
R	Robotic cable (Flexible cable)

11 Cable length [m]

Nil	Without cable
2	2
5	5
A	10

12 Driver type

	Compatible driver	Power supply voltage (V)
Nil	Without driver	—
S2	LECSS2-T□	200 to 240

* When the driver type is selected, the cable is included. Select cable type and cable length.
Example)

S2S2: Standard cable (2 m) + Driver (LECSS2)

S2 : Standard cable (2 m)

Nil : Without cable and driver

13 I/O connector

Nil	Without connector
H	With connector

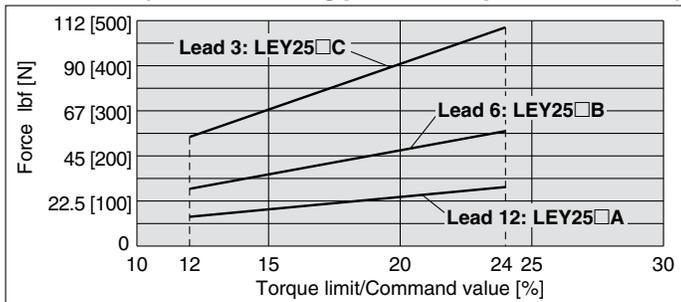
Compatible Driver

Driver type	
Series	LECSS-T
Applicable network	SSCNET #/H
Control encoder	Absolute 22-bit encoder
Communication function	USB communication
Power supply voltage (V)	200 to 240 VAC (50/60 Hz)
Reference page	Page 21

Series LEY

Force Conversion Graph (Guide)

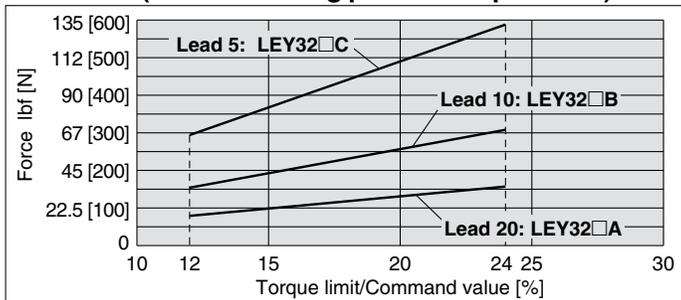
LEY25□T6 (Motor mounting position: Top/Parallel, In-line)



Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time [minute]
20 or less	100	—
24	100 (60)	— (1.5)

* The values in () are for a closely-mounted driver.

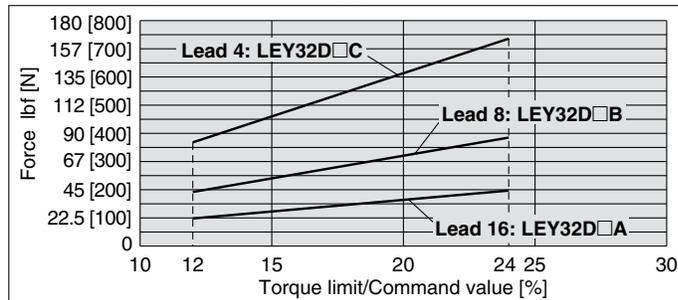
LEY32□T7 (Motor mounting position: Top/Parallel)



Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time [minute]
20 or less	100	—
24	100 (60)	— (1.5)

* The values in () are for a closely-mounted driver.

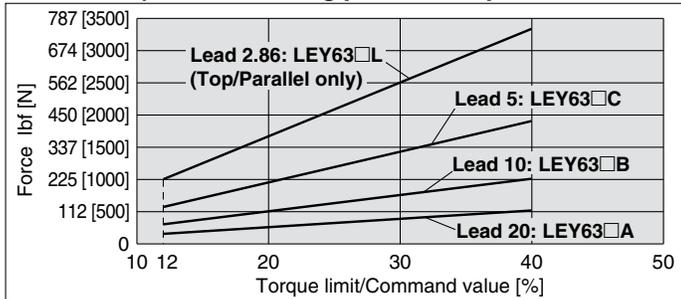
LEY32DT7 (Motor mounting position: In-line)



Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time [minute]
20 or less	100	—
24	100 (60)	— (1.5)

* The values in () are for a closely-mounted driver.

LEY63□T8 (Motor mounting position: Top/Parallel, In-line)



Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time [minute]
20 or less	100	—
24	100 (60)	— (1.5)
32	50 (30)	1.5 (0.5)
40	30 (20)	0.5 (0.16)

* The values in () are for a closely-mounted driver.

Specifications

Model		LEY25 (Top/Parallel)/LEY25D (In-line)				LEY32 (Top/Parallel)			LEY32D (In-line)				
Actuator specifications	Stroke [mm] ^{Note 1)}	30, 50, 100, 150, 200, 250, 300, 350, 400				30, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500			30, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500				
	Work load [kg]	Horizontal ^{Note 2)}		18	50	50	30	60	60	30	60	60	
		Vertical		8	16	30	9	19	37	12	24	46	
	Pushing force lbf [N] (Set value: 12 to 24%) ^{Note 3)}		15 to 29 [65 to 131]	28 to 57 [127 to 255]	54 to 109 [242 to 485]	18 to 35 [79 to 157]	35 to 69 [154 to 308]	67 to 132 [294 to 588]	22 to 44 [98 to 197]	43 to 87 [192 to 385]	83 to 165 [368 to 736]		
	Max. ^{Note 4)} speed [mm/s]	Stroke range	Up to 300	900	450	225	1200	600	300	1000	500	250	
			305 to 400	600	300	150							
			405 to 500	—	—	—							
	Pushing speed [mm/s] ^{Note 5)}		35 or less				30 or less			30 or less			
	Max. acceleration/deceleration [mm/s ²]		5000				5000						
	Positioning repeatability [mm]		±0.02				±0.02						
	Lost motion [mm] ^{Note 6)}		0.1 or less										
	Lead [mm] (including pulley ratio)		12	6	3	20	10	5	16	8	4		
	Impact/Vibration resistance [m/s ²] ^{Note 7)}		50/20				50/20						
	Actuation type		Ball screw + Belt (LEY□)/Ball screw (LEY□D)				Ball screw + Belt [1.25:1]			Ball screw			
Guide type		Sliding bushing (Piston rod)				Sliding bushing (Piston rod)							
Operating temperature range		41 to 104°F [5 to 40°C]				41 to 104°F [5 to 40°C]							
Operating humidity range [%RH]		90 or less (No condensation)				90 or less (No condensation)							
Required conditions for ^{Note 8)} "Regeneration option" [kg]	Horizontal	8 or more	31 or more	Not required	15 or more	Not required	Not required	23 or more	Not required	Not required			
	Vertical	3 or more	2 or more	2 or more	6 or more	7 or more	11 or more	6 or more	7 or more	12 or more			
Motor output/Size		100 W/□40				200 W/□60							
Motor type		AC servo motor (200 VAC)				AC servo motor (200 VAC)							
Encoder		Motor type T6, T7: Absolute 22-bit encoder (Resolution: 4194304 p/rev)											
Power consumption [W] ^{Note 9)}	Horizontal	45				65			65				
	Vertical	145				175			175				
Standby power consumption when operating [W] ^{Note 10)}	Horizontal	2				2			2				
	Vertical	8				8			8				
Max. instantaneous power consumption [W] ^{Note 11)}		445				724			724				
Lock unit specifications	Type ^{Note 12)}	Non-magnetizing lock											
	Holding force lbf [N]	29 [131]	57 [255]	109 [485]	35 [157]	69 [308]	132 [588]	44 [197]	87 [385]	165 [736]			
	Power consumption [W] at 68°F (20°C) ^{Note 13)}	6.3				7.9			7.9				
	Rated voltage [V]	24 VDC ⁰ / _{-10%}											

Note 1) Please consult with SMC for non-standard strokes as they are produced as special orders.

Note 2) The maximum value of the horizontal work load. An external guide is necessary to support the load. The actual work load changes according to the condition of the external guide. Please confirm using actual device.

Note 3) The force setting range (set values for the driver) for the pushing operation with the torque control mode, etc. Set it with reference to "Force Conversion Graph (Guide)" on page 9.

Note 4) The allowable speed changes according to the stroke.

Note 5) The allowable collision speed for the pushing operation with the torque control mode, etc.

Note 6) A reference value for correcting an error in reciprocal operation.

Note 7) 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.

(Test was performed with the actuator in the initial state.)

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

Note 8) The work load conditions which require "Regeneration option" when operating at the maximum speed (Duty ratio: 100%). Order the regeneration option separately. For details and order numbers, refer to the WEB catalog or "Required Conditions for Regeneration Option" of Series LEY in the Electric Actuators catalog (CAT.E102).

Note 9) The power consumption (including the driver) is for when the actuator is operating.

Note 10) The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.

Note 11) The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.

Note 12) Only when motor option "With lock" is selected.

Note 13) For an actuator with lock, add the power consumption for the lock.

Weight

Product Weight

Series		LEY25□ (Motor mounting position: Top/Parallel)									LEY32□ (Motor mounting position: Top/Parallel)										
Stroke [mm]		30	50	100	150	200	250	300	350	400	30	50	100	150	200	250	300	350	400	450	500
Motor type	Absolute encoder	1.4	1.5	1.6	1.9	2.0	2.2	2.4	2.6	2.7	2.3	2.4	2.7	3.2	3.5	3.8	4.1	4.3	4.6	4.9	5.2

Series		LEY25D□ (Motor mounting position: In-line)									LEY32D□ (Motor mounting position: In-line)										
Stroke [mm]		30	50	100	150	200	250	300	350	400	30	50	100	150	200	250	300	350	400	450	500
Motor type	Absolute encoder	1.4	1.5	1.6	1.9	2.1	2.2	2.4	2.6	2.8	2.4	2.5	2.8	3.2	3.5	3.8	4.1	4.4	4.6	4.9	5.2

Additional Weight

Size		25	32
Lock	Absolute encoder	0.3	0.4
	Male thread	0.03	0.03
Rod end male thread	Nut	0.02	0.02
	Foot (2 sets including mounting bolt)	0.08	0.14
Rod flange (including mounting bolt)		0.17	0.20
Head flange (including mounting bolt)			
Double clevis (including pin, retaining ring and mounting bolt)		0.16	0.22

Specifications

Model		LEY63□ (Top/Parallel)				LEY63D□ (In-line)			
Stroke [mm] ^{Note 1)}		100, 200, 300, 400, 500, 600, 700, 800							
Work load [kg]	Horizontal ^{Note 2)}	40	70	80	200	40	70	80	
	Vertical	19	38	72	115	19	38	72	
Pushing force lbf [N] ^{Note 3)} (Set value: 12 to 40%)		35 to 117 [156 to 521]	68 to 228 [304 to 1012]	129 to 429 [573 to 1910]	225 to 752 [1003 to 3343]	35 to 117 [156 to 521]	68 to 228 [304 to 1012]	129 to 429 [573 to 1910]	
Max. speed [mm/s] ^{Note 4)}	Stroke range	Up to 500	1000	500	250	70	1000	500	250
		505 to 600	800	400	200		800	400	200
		605 to 700	600	300	150		600	300	150
		705 to 800	500	250	125		500	250	125
Pushing speed [mm/s] ^{Note 5)}		30 or less							
Max. acceleration/deceleration [mm/s ²]		5000				3000			
Positioning repeatability [mm]		±0.02							
Lost motion [mm] ^{Note 6)}		0.1 or less							
Screw lead [mm] (including pulley ratio)		20	10	5	5 (2.86)	20	10	5	
Impact/Vibration resistance [m/s ²] ^{Note 7)}		50/20							
Actuation type		Ball screw + Belt			Ball screw + Belt [Pulley ratio 4:7]		Ball screw		
Guide type		Sliding bushing (Piston rod)							
Operating temperature range		41 to 104°F (5 to 40°C)							
Operating humidity range [%RH]		90 or less (No condensation)							
Required conditions for "Regeneration option" [kg] ^{Note 8)}	Horizontal	Not required	Not required	Not required	Not required	Not required	Not required	Not required	
	Vertical	2 or more	5 or more	12 or more	46 or more	2 or more	5 or more	12 or more	
Motor output/Size		400 W/□60							
Motor type		AC servo motor (200 VAC)							
Encoder		Motor type T8: Absolute 22-bit encoder (Resolution: 4194304 p/rev)							
Power consumption [W] ^{Note 9)}	Horizontal	210							
	Vertical	230							
Standby power consumption when operating [W] ^{Note 10)}	Horizontal	2							
	Vertical	18							
Max. instantaneous power consumption [W] ^{Note 11)}		1275							
Type ^{Note 12)}		Non-magnetizing lock							
Holding force lbf[N]		70 [313]	136 [607]	258 [1146]	451 [2006]	70 [313]	136 [607]	258 [1146]	
Power consumption [W] at 68°F (20°C) ^{Note 13)}		7.9							
Rated voltage [V]		24 VDC ⁰ _{-10%}							

- Note 1) Please consult with SMC for non-standard strokes as they are produced as special orders.
- Note 2) The maximum value of the horizontal work load. An external guide is necessary to support the load. The actual work load changes according to the condition of the external guide. Please confirm using actual device.
- Note 3) The force setting range (set values for the driver) for the pushing operation with the torque control mode, etc. The pushing force and duty ratio change according to the set value. Set it with reference to "Force Conversion Graph (Guide)" on page 9.
- Note 4) The allowable speed changes according to the stroke.
- Note 5) The allowable collision speed for the pushing operation with the torque control mode, etc.
- Note 6) A reference value for correcting an error in reciprocal operation.
- Note 7) 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. (Test was performed with the actuator in the initial state.)
Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. Test was performed in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)
- Note 8) The work load conditions which require "Regeneration option" when operating at the maximum speed (Duty ratio: 100%).
Order the regeneration option separately. For details and order numbers, refer to the WEB catalog or "Required Conditions for Regeneration Option" of Series LEY in the Electric Actuators catalog (CAT.E102).
- Note 9) The power consumption (including the driver) is for when the actuator is operating.
- Note 10) The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.
- Note 11) The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.
- Note 12) Only when motor option "With lock" is selected.
- Note 13) For an actuator with lock, add the power consumption for the lock.

Weight

Product Weight

[kg]

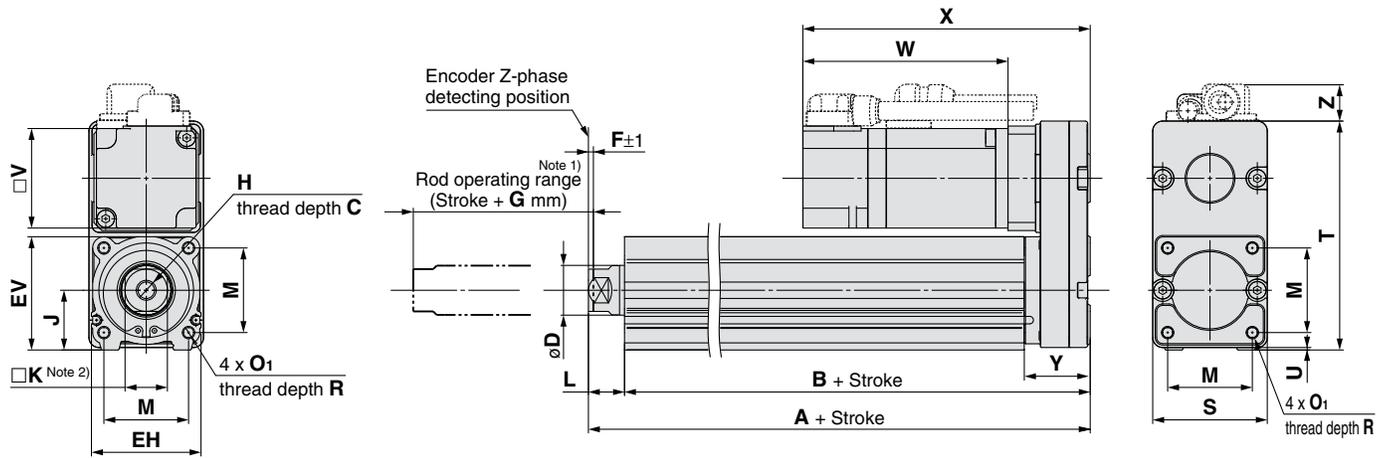
Series		LEY63□ (Motor mounting position: Top/Parallel)							
Stroke [mm]		100	200	300	400	500	600	700	800
Motor type	Absolute encoder	5.4	6.6	8.3	9.4	10.5	12.2	13.4	14.5
Series		LEY63D□□ (Motor mounting position: In-line)							
Stroke [mm]		100	200	300	400	500	600	700	800
Motor type	Absolute encoder	5.6	6.7	8.4	9.6	10.7	12.4	13.5	14.7

Additional Weight

[kg]

Size		63
Lock	Absolute encoder	0.4
Rod end male thread	Male thread	0.12
	Nut	0.04
Foot (2 sets including mounting bolt)		0.26
Rod flange (including mounting bolt)		0.51
Double clevis (including pin, retaining ring and mounting bolt)		0.58

Dimensions: Motor Top/Parallel



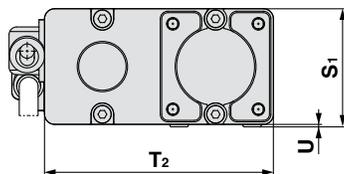
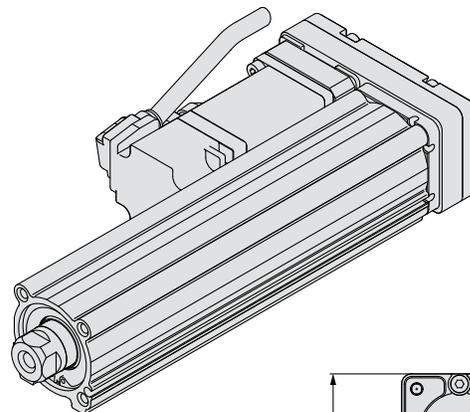
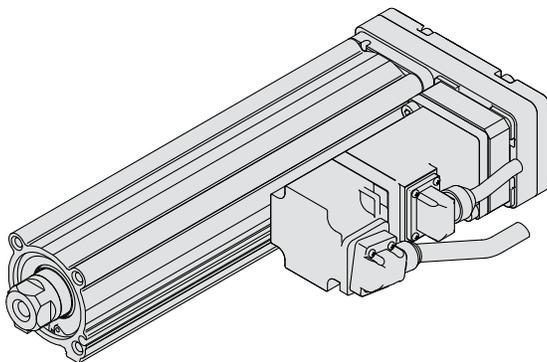
Note 1) Range within which the rod can move. Make sure a workpiece mounted on the rod does not interfere with the workpieces and facilities around the rod.
 Note 2) The direction of rod end width across flats (□K) differs depending on the products.

Size	Stroke range (mm)	A	B	C	D	EH	EV	F	G	H	J	K	L	M	O ₁
25	15 to 100	130.5	116	13	20	44	45.5	2	4	M8 x 1.25	24	17	14.5	34	M5 x 0.8
	105 to 400	155.5	141												
32	20 to 100	148.5	130	13	25	51	56.5	2	4	M8 x 1.25	31	22	18.5	40	M6 x 1.0
	105 to 500	178.5	160												
63	Up to 200	192.6	155.2	21	40	76	82	4	8	M16 x 2	44	36	37.4	60	M8 x 1.25
	205 to 500	227.6	190.2												
	505 to 800	262.6	225.2												

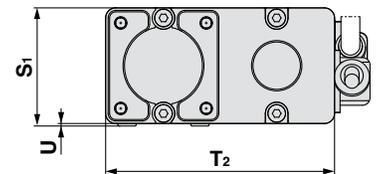
Size	Stroke range (mm)	R	S	T	U	Y	V	Without lock			With lock		
								W	X	Z	W	X	Z
25	15 to 100	8	46	92	1	26.5	40	82.4	115.4	14.1	123	156	15.8
	105 to 400												
32	20 to 100	10	60	118	1	34	60	76.6	116.6	17.1	113.4	153.4	17.1
	105 to 500												
63	Up to 200	16	80	146	4	32.2	60	98.3	138.3	15.6 (16.6)	135.1	175.1	15.6 (16.6)
	205 to 500												
	505 to 800												

Motor left side parallel type: **25 LEY32 L**
63

Motor right side parallel type: **25 LEY32 R**
63



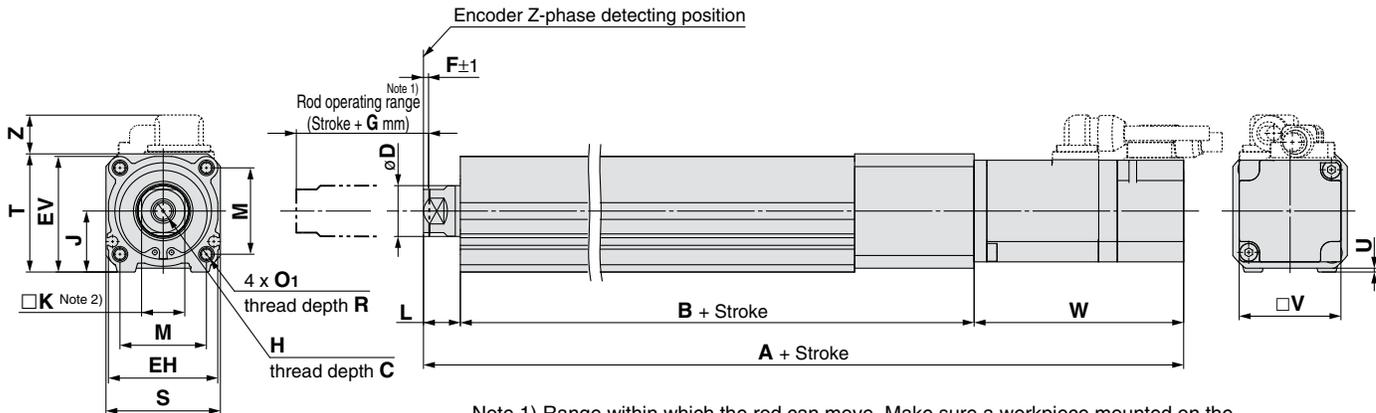
Size	S ₁	T ₂	U
25	47	91	1
32	61	117	1
63	84	142	4



Note) When the motor is mounted on the left or right side in parallel, the groove for auto switch on the side to which the motor is mounted is hidden.

Series LEY

Dimensions: In-line Motor



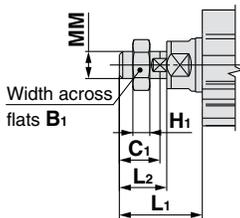
Note 1) Range within which the rod can move. Make sure a workpiece mounted on the rod does not interfere with the workpieces and facilities around the rod.
 Note 2) The direction of rod end width across flats (□K) differs depending on the products.

[mm]

Size	Stroke range (mm)	C	D	EH	EV	F	G	H	J	K	L	M	O ₁	R	S
25	15 to 100	13	20	44	45.5	2	4	M8 x 1.25	24	17	14.5	34	M5 x 0.8	8	45
	105 to 400														
32	20 to 100	13	25	51	56.5	2	4	M8 x 1.25	31	22	18.5	40	M6 x 1.0	10	60
	105 to 500														
63	Up to 200	21	40	76	82	4	8	M16 x 2	44	36	37.4	60	M8 x 1.25	16	78
	205 to 500														
	505 to 800														

Size	Stroke range (mm)	T	U	B	V	Without lock			With lock		
						A	W	Z	A	W	Z
25	15 to 100	46.5	1.5	136.5	40	233.4	82.4	14.6	274	123	16.3
	105 to 400			161.5		258.4			299		
32	20 to 100	61	1	156	60	251.1	76.6	17.1	287.9	113.4	17.1
	105 to 500			186		281.1			317.9		
63	Up to 200	83	5	190.7	60	326.4	98.3	8.1	363.2	135.1	8.1
	205 to 500			225.7		361.4			398.2		
	505 to 800			260.7		396.4			433.2		

End male thread: LEY 25 A
 32 □□ B-□□ M
 63 C



* Refer to the **WEB catalog** for details about the rod end nut and mounting bracket.
 Note) Refer to the "Mounting" precautions on the **WEB catalog** when mounting end brackets such as knuckle joint or workpieces.

[mm]

Size	B ₁	C ₁	H ₁	L ₁ *	L ₂	MM
25	22	20.5	8	38	23.5	M14 x 1.5
32	22	20.5	8	42.0	23.5	M14 x 1.5
63	27	26	11	76.4	39	M18 x 1.5

* The L₁ measurement is when the unit is in the Z-phase first detecting position. At this position, 2 mm at the end (size 25, 32) and 4 mm at the end (size 63).

Electric Actuator/Guide Rod Type

AC Servo Motor

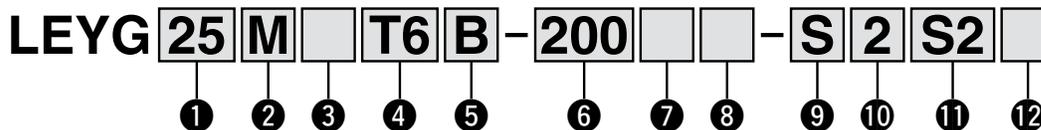
Series LEYG

LEYG25, 32



There are changes in the How to Order, force conversion graph, specifications, weight and dimensions. Refer to the WEB catalog or the Electric Actuators catalog (CAT.E102) for other details.

How to Order



1 Size

25
32

2 Bearing type

M	Sliding bearing
L	Ball bushing bearing

3 Motor mounting position

Nil	Top mounting
D	In-line

4 Motor type *

Symbol	Type	Output [W]	Actuator size	Compatible driver
T6	AC servo motor (Absolute encoder)	100	25	LECSS2-T5
T7		200	32	LECSS2-T7

* For motor type T6, the compatible driver part number suffix is T5.

5 Lead [mm]

Symbol	LEYG25	LEYG32*
A	12	16 (20)
B	6	8 (10)
C	3	4 (5)

* The values shown in () are the lead for top mounting type. (Equivalent lead which includes the pulley ratio [1.25:1])

6 Stroke [mm]

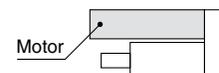
30	30
to	to
300	300

* Refer to the applicable stroke table.

7 Motor option

Nil	Without option
B	With lock

* When "With lock" is selected for the top mounting type, the motor body will stick out of the end of the body for size 25 with strokes 30 or less. Check for interference with workpieces before selecting a model.



8 Guide option

Nil	Without option
F	With grease retaining function

* Only available for sliding bearing.

9 Cable type

Nil	Without cable
S	Standard cable
R	Robotic cable (Flexible cable)

10 Cable length [m]

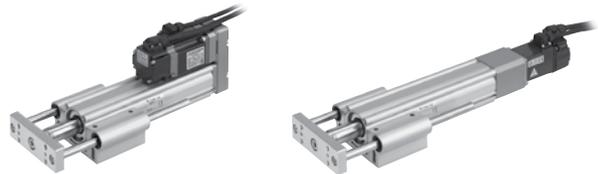
Nil	Without cable
2	2
5	5
A	10

Applicable Stroke Table

●: Standard

Model \ Stroke (mm)	30	50	100	150	200	250	300	Manufacturable stroke range
LEYG25	●	●	●	●	●	●	●	15 to 300
LEYG32	●	●	●	●	●	●	●	20 to 300

* Please consult with SMC for the manufacture of intermediate strokes.



Motor mounting position: Top mounting Motor mounting position: In-line

① Driver type

	Compatible driver	Power supply voltage (V)
Nil	Without driver	—
S2	LECSS2-T□	200 to 240

② I/O connector

Nil	Without connector
H	With connector

* When the driver type is selected, the cable is included.

Select cable type and cable length.

Example)

S2S2 : Standard cable (2 m) + Driver (LECSS2)

S2 : Standard cable (2 m)

Nil : Without cable and driver

Use of auto switches for the guide rod type LEYG series

- Insert the auto switch from the front side with rod (plate) sticking out.
- For the parts hidden behind the guide attachment (Rod stick out side), the auto switch cannot be fixed.
- Consult with SMC when using auto switch on the rod stick out side.

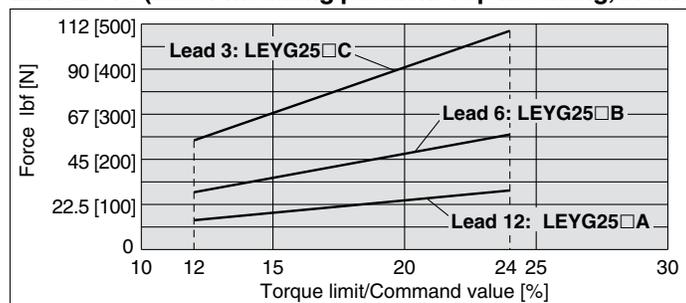
Compatible Driver

Driver type	
Series	LECSS-T
Applicable network	SSCNET #/H
Control encoder	Absolute 22-bit encoder
Communication function	USB communication
Power supply voltage (V)	200 to 240 VAC (50/60 Hz)
Reference page	Page 21

Series LEYG

Force Conversion Graph

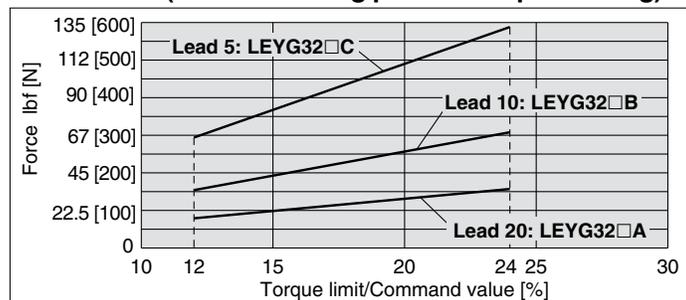
LEYG25 T6 (Motor mounting position: Top mounting, In-line)



Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time [minute]
20 or less	100	—
24	100 (60)	— (1.5)

* The values in () are for a closely-mounted driver.

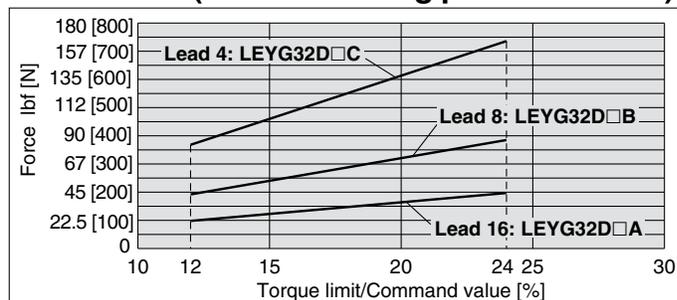
LEYG32□T7 (Motor mounting position: Top mounting)



Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time [minute]
20 or less	100	—
24	100 (60)	— (1.5)

* The values in () are for a closely-mounted driver.

LEYG32DT7 (Motor mounting position: In-line)



Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time [minute]
20 or less	100	—
24	100 (60)	— (1.5)

* The values in () are for a closely-mounted driver.

Specifications

Model		LEYG25 ^M (Top mounting) LEYG25 ^M D (In-line)			LEYG32 ^M (Top mounting)			LEYG32 ^M D (In-line)			
Actuator specifications	Stroke [mm] ^{Note 1)}	30, 50, 100, 150, 200, 250, 300			30, 50, 100, 150, 200, 250, 300			30, 50, 100, 150, 200, 250, 300			
	Work load [kg]	Horizontal ^{Note 2)}	18	50	50	30	60	60	30	60	60
		Vertical	7	15	29	7	17	35	10	22	44
	Pushing force lbf [N] ^{Note 3)} (Set value: 12 to 24%)	15 to 29 [65 to 131]	28 to 57 [127 to 255]	54 to 109 [242 to 485]	18 to 35 [79 to 157]	35 to 69 [154 to 308]	66 to 132 [294 to 588]	22 to 44 [98 to 197]	43 to 87 [192 to 385]	83 to 165 [368 to 736]	
	Max. speed [mm/s]	900	450	225	1200	600	300	1000	500	250	
	Pushing speed [mm/s] ^{Note 4)}	35 or less			30 or less			30 or less			
	Max. acceleration/deceleration [mm/s ²]	5000						5000			
	Positioning repeatability [mm]	±0.02						±0.02			
	Lost motion [mm] ^{Note 5)}				0.1 or less						
	Lead [mm] (including pulley ratio)	12	6	3	20	10	5	16	8	4	
	Impact/Vibration resistance [m/s ²] ^{Note 6)}	50/20			50/20			50/20			
	Actuation type	Ball screw + Belt [1:1]/Ball screw			Ball screw + Belt [1:1.25]			Ball screw			
	Guide type	Sliding bearing (LEYG□M), Ball bushing bearing (LEYG□L)									
	Operating temperature range	41 to 104°F (5 to 40°C)			41 to 104°F (5 to 40°C)						
Operating humidity range [%RH]	90 or less (No condensation)			90 or less (No condensation)							
Required conditions for "Regeneration option" [kg] ^{Note 7)}	Horizontal	8 or more	31 or more	Not required	15 or more	Not required	Not required	23 or more	Not required	Not required	
	Vertical	2 or more	1 or more	1 or more	4 or more	5 or more	9 or more	4 or more	5 or more	9 or more	
Motor output/Size	100 W/□40			200 W/□60							
Motor type	AC servo motor (200 VAC)			AC servo motor (200 VAC)							
Encoder	Motor type T6, T7: Absolute 22-bit encoder (Resolution: 4194304 p/rev)										
Power consumption [W] ^{Note 8)}	Horizontal	45			65			65			
	Vertical	145			175			175			
Standby power consumption when operating [W] ^{Note 9)}	Horizontal	2			2			2			
	Vertical	8			8			8			
Max. instantaneous power consumption [W] ^{Note 10)}	445			724			724				
Type ^{Note 11)}	Non-magnetizing lock			Non-magnetizing lock							
Holding force lbf [N]	29 [131]	57 [255]	109 [485]	35 [157]	69 [308]	132 [588]	44 [197]	87 [385]	165 [736]		
Power consumption [W] at 68°F (20°C) ^{Note 12)}	6.3			7.9			7.9				
Rated voltage [V]	24 VDC ⁰ _{-10%}										

Note 1) Please consult with SMC for non-standard strokes as they are produced as special orders.

Note 2) The maximum value of the horizontal work load. An external guide is necessary to support the load. The actual work load changes according to the condition of the external guide. Please confirm using actual device.

Note 3) The force setting range (set values for the driver) for the pushing operation with the torque control mode, etc. Set it with reference to "Force Conversion Graph" on page 17.

Note 4) The allowable collision speed for the pushing operation with the torque control mode, etc.

Note 5) A reference value for correcting an error in reciprocal operation.

Note 6) 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. (Test was performed with the actuator in the initial state.)

Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. Test

was performed in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)

Note 7) The work load conditions which require "Regeneration option" when operating at the maximum speed (Duty ratio: 100%). Order the regeneration option separately. For details and order numbers, refer to the WEB catalog or "Required Conditions for Regeneration Option" of Series LEYG in the Electric Actuators catalog (CATE102).

Note 8) The power consumption (including the driver) is for when the actuator is operating.

Note 9) The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.

Note 10) The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.

Note 11) Only when motor option "With lock" is selected.

Note 12) For an actuator with lock, add the power consumption for the lock.

Weight

Weight: Top Mounting Type

Series		LEYG25M						LEYG32M							
Stroke [mm]		30	50	100	150	200	250	300	30	50	100	150	200	250	300
Motor type	Absolute encoder	1.8	2.0	2.4	2.8	3.1	3.5	3.7	3.2	3.4	4.0	4.7	5.3	5.7	6.2

Series		LEYG25L						LEYG32L							
Stroke [mm]		30	50	100	150	200	250	300	30	50	100	150	200	250	300
Motor type	Absolute encoder	1.9	2.1	2.3	2.7	3.0	3.3	3.6	3.2	3.4	3.8	4.6	5.0	5.5	5.9

Weight: In-line Motor Type

Series		LEYG25MD						LEYG32MD							
Stroke [mm]		30	50	100	150	200	250	300	30	50	100	150	200	250	300
Motor type	Absolute encoder	1.9	2.1	2.4	2.8	3.1	3.5	3.7	3.2	3.4	4.0	4.7	5.3	5.8	6.2

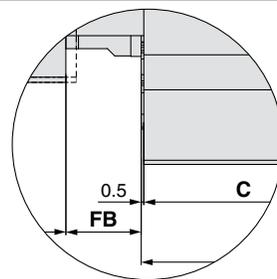
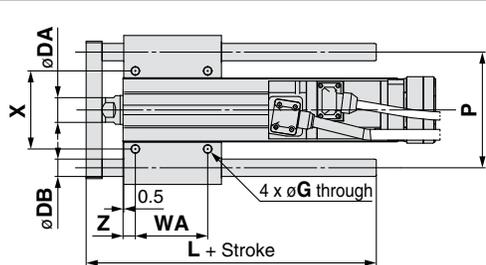
Series		LEYG25LD						LEYG32LD							
Stroke [mm]		30	50	100	150	200	250	300	30	50	100	150	200	250	300
Motor type	Absolute encoder	1.9	2.1	2.3	2.8	3.0	3.3	3.6	3.2	3.4	3.8	4.6	5.0	5.5	5.9

Additional Weight

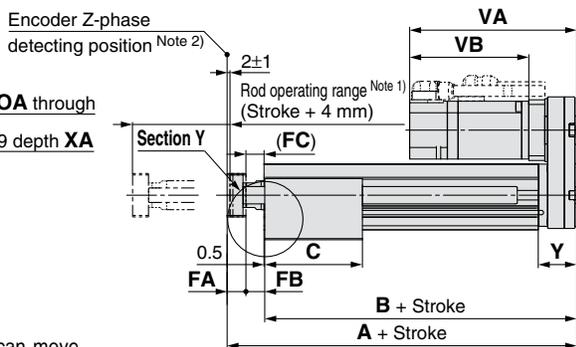
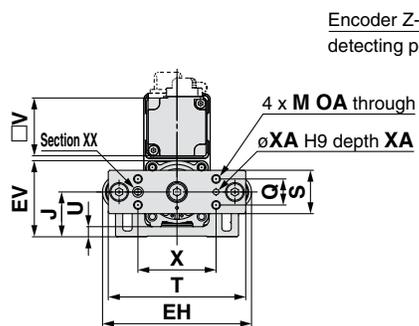
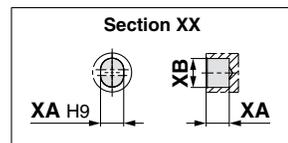
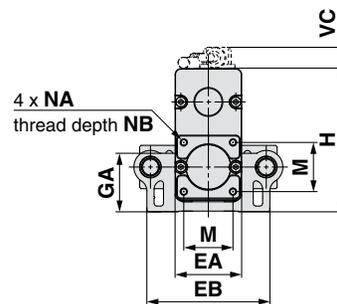
Size		25	32
Lock	Absolute encoder	0.3	0.7

Series LEYG

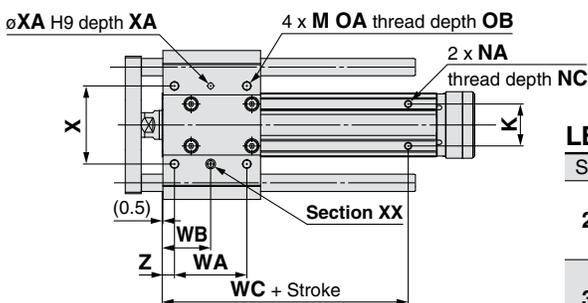
Dimensions: Top Mounting



Section Y details



Note 1) Range within which the rod can move. Make sure a workpiece mounted on the rod does not interfere with the workpieces and facilities around the rod.
 Note 2) The Z-phase first detecting position from the stroke end of the motor side.



LEYG□L (Ball bushing bearing) [mm]

Size	Stroke range (mm)	L	DB
25	15 to 110	91	10
	115 to 190	115	
	195 to 300	133	
32	20 to 110	97.5	13
	115 to 190	116.5	
	195 to 300	134	

LEYG□M (Sliding bearing) [mm]

Size	Stroke range (mm)	L	DB
25	15 to 55	67.5	12
	60 to 185	100.5	
	190 to 300	138	
32	20 to 55	74	16
	60 to 185	107	
	190 to 300	144	

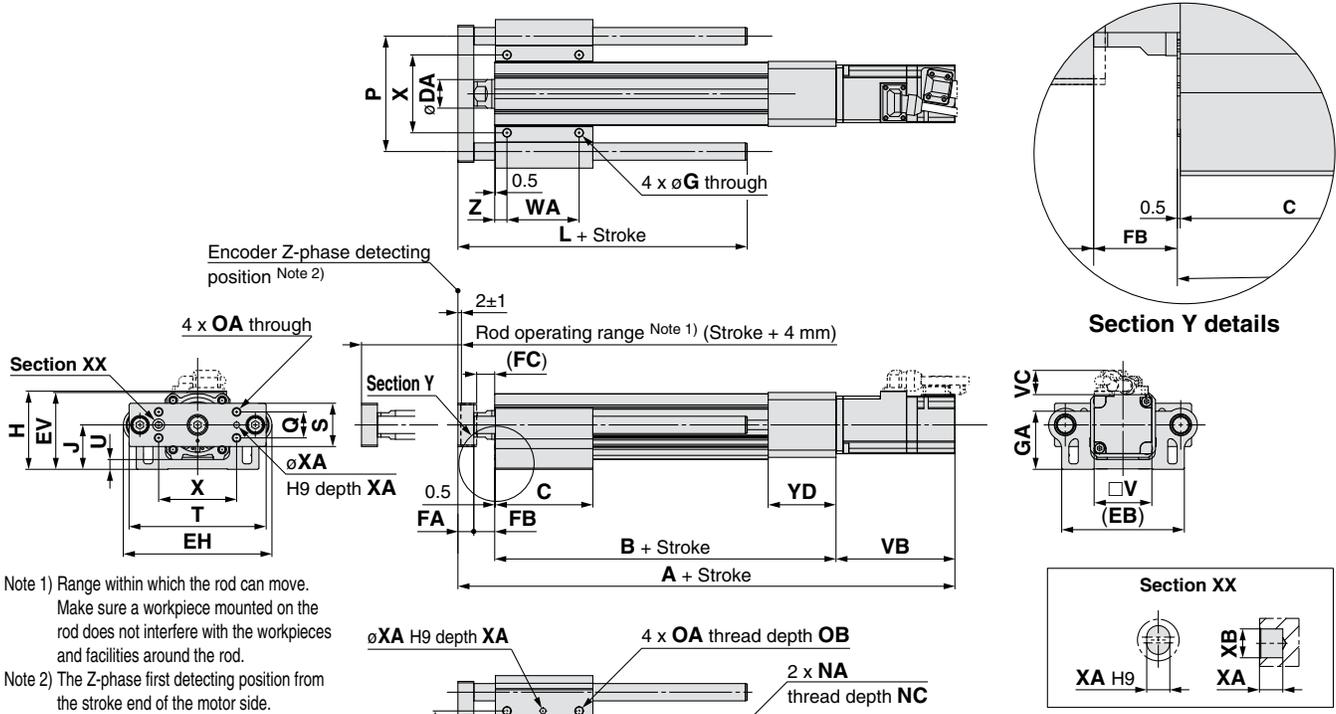
LEYG□M, LEYG□L Common [mm]

Size	Stroke range (mm)	A	B	C	DA	EA	EB	EH	EV	FA	FB	FC	G	GA	H	J	K	M	NA	NB	NC
25	15 to 35	141.5	116	50	20	46	85	103	52.3	11	14.5	12.5	5.4	40.3	98.8	30.8	29	34	M5 x 0.8	8	6.5
	40 to 100			67.5																	
	105 to 120			84.5																	
	125 to 200			102																	
	205 to 300			102																	
32	20 to 35	160.5	130	55	25	60	101	123	63.8	12	18.5	16.5	5.4	50.3	125.3	38.3	30	40	M6 x 1.0	10	8.5
	40 to 100			68																	
	105 to 120			85																	
	125 to 200			85																	
	205 to 300			102																	

Size	Stroke range (mm)	OA	OB	P	Q	S	T	U	V	WA	WB	WC	X	XA	XB	Y	Z
25	15 to 35	M6 x 1.0	12	80	18	30	95	6.8	40	35	26	70	54	4	5	26.5	8.5
	40 to 100									50	33.5						
	105 to 120									70	43.5						
	125 to 200									85	51						
	205 to 300									40	28.5						
32	20 to 35	M6 x 1.0	12	95	28	40	117	7.3	60	40	28.5	75	64	5	6	34	8.5
	40 to 100									50	33.5						
	105 to 120									70	43.5						
	125 to 200									85	51						
	205 to 300									85	51						

Size	Without lock			With lock		
	VA	VB	VC	VA	VB	VC
25	115.4	82.4	14.1	156	123	15.8
32	116.6	76.6	17.1	153.4	113.4	17.1

Dimensions: In-line Motor



Note 1) Range within which the rod can move. Make sure a workpiece mounted on the rod does not interfere with the workpieces and facilities around the rod.

Note 2) The Z-phase first detecting position from the stroke end of the motor side.

LEYG□L (Ball bushing bearing) [mm]

Size	Stroke range (mm)	L	DB
25	15 to 110	91	10
	115 to 190	115	
	195 to 300	133	
32	20 to 110	97.5	13
	115 to 190	116.5	
	195 to 300	134	

LEYG□M (Sliding bearing) [mm]

Size	Stroke range (mm)	L	DB
25	15 to 55	67.5	12
	60 to 185	100.5	
	190 to 300	138	
32	20 to 55	74	16
	60 to 185	107	
	190 to 300	144	

LEYG□M, LEYG□L Common

Size	Stroke range (mm)	B	C	DA	EB	EH	EV	FA	FB	FC	G	GA	H	J	K	NA	NC
25	15 to 35	136.5	50	20	85	103	52.3	11	14.5	12.5	5.4	40.3	53.3	30.8	29	M5 x 0.8	6.5
	40 to 100		67.5														
	105 to 120		84.5														
	125 to 200		102														
32	20 to 35	156	55	25	101	123	63.8	12	18.5	16.5	5.4	50.3	68.3	38.3	30	M6 x 1.0	8.5
	40 to 100		68														
	105 to 120		85														
	125 to 200		102														

Size	Stroke range (mm)	OA	OB	P	Q	S	T	U	V	WA	WB	WC	X	XA	XB	YD	Z
25	15 to 35	M6 x 1.0	12	80	18	30	95	6.8	40	35	26	70	54	4	5	47	8.5
	40 to 100									50	33.5						
	105 to 120									70	43.5	95					
	125 to 200									85	51						
32	20 to 35	M6 x 1.0	12	95	28	40	117	7.3	60	40	28.5	75	64	5	6	60	8.5
	40 to 100									50	33.5						
	105 to 120									70	43.5	105					
	125 to 200									85	51						

Size	Stroke range (mm)	Without lock			With lock		
		A	VB	VC	A	VB	VC
25	15 to 100	244.4	82.4	14.6	285	123	16.3
	105 to 300	269.4			310		
32	15 to 100	263.1	76.6	17.1	299.9	113.4	17.1
	105 to 300	293.1			329.9		

LEFS/LEFB

LEJS/LEJB

LEY

LEYG

LECS-T

AC Servo Motor Driver Absolute Type Series **LECSS-T**

(SSCNET III/H Type)
SERVO SYSTEM CONTROLLER NETWORK



RoHS



How to Order

Driver

LECSS2-T5

Driver type

S	SSCNET #/H type (For absolute encoder)
----------	---

Power supply voltage

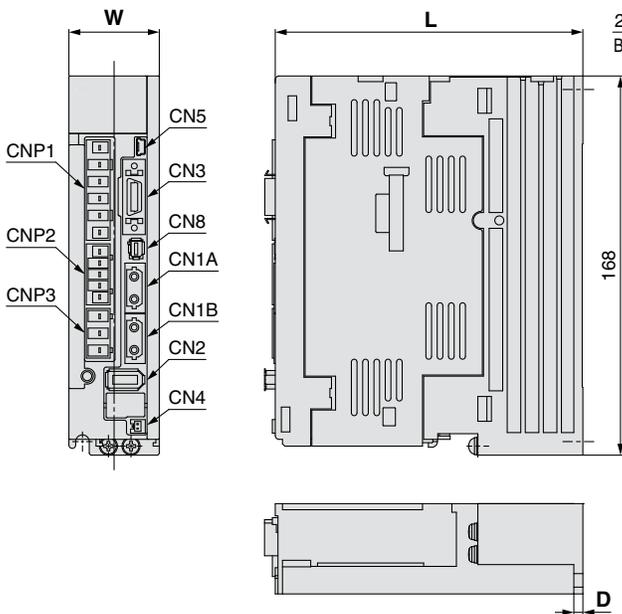
2	200 to 240 VAC, 50/60 Hz
----------	--------------------------

Compatible motor type

Symbol	Type	Capacity	Encoder
T5	AC servo motor (T6)	100 W	Absolute
T7	AC servo motor (T7)	200 W	
T8	AC servo motor (T8)	400 W	

Dimensions

LECSS2-T□



Connector name	Description
CN1A	Front axis connector for SSCNET IIIH
CN1B	Rear axis connector for SSCNET IIIH
CN2	Encoder connector
CN3	I/O signal connector
CN4	Battery connector
CN5	USB communication connector
CN8	STO input signal connector
CNP1	Main circuit power supply connector
CNP2	Control circuit power supply connector
CNP3	Servo motor power connector

Dimensions (mm)

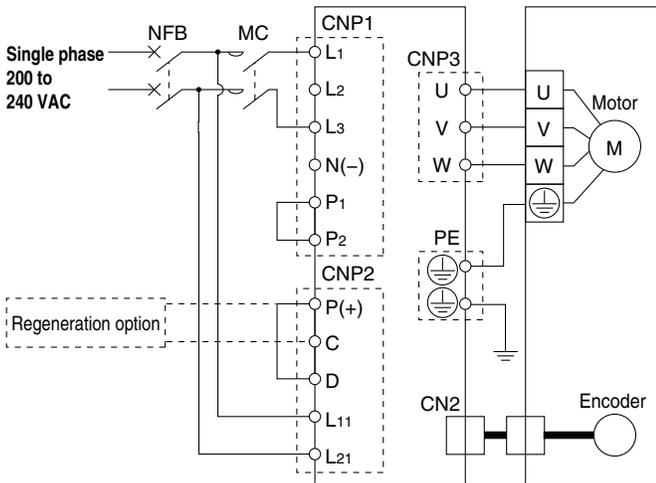
Model	W	L	D	M
LECSS2-T5	40	135	4	6
LECSS2-T7		170	5	
LECSS2-T8			5	

Specifications

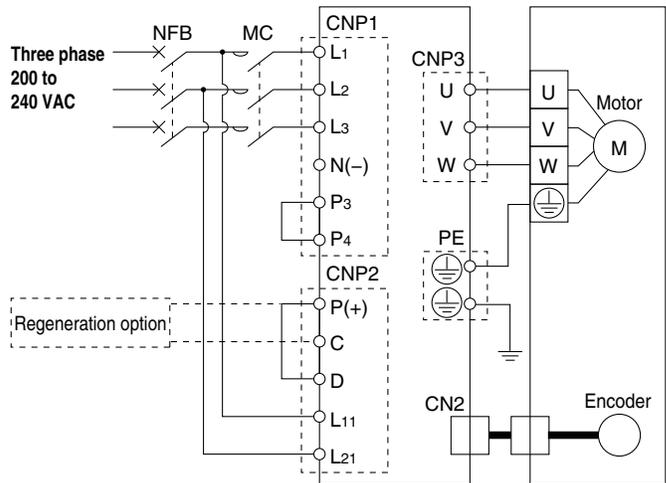
Model		LECSS2-T5	LECSS2-T7	LECSS2-T8
Compatible motor capacity [W]		100	200	400
Compatible encoder		Absolute 22-bit encoder (Resolution: 4194304 p/rev)		
Main power supply	Power voltage [V]	Three phase 200 to 240 VAC (50/60 Hz), Single phase 200 to 240 VAC (50/60 Hz)		
	Allowable voltage fluctuation [V]	Three phase 170 to 264 VAC (50/60 Hz), Single phase 170 to 264 VAC (50/60 Hz)		
	Rated current [A]	0.9	1.5	2.6
Control power supply	Control power supply voltage [V]	Single phase 200 to 240 VAC (50/60 Hz)		
	Allowable voltage fluctuation [V]	Single phase 170 to 264 VAC		
	Rated current [A]	0.2		
Applicable Fieldbus protocol		SSCNET #/H (High-speed optical communication)		
Communication function		USB communication		
Operating temperature range		32 to 131°F (0 to 55°C) (No freezing)		
Operating humidity range [%RH]		90 or less (No condensation)		
Storage temperature range		-4 to 149°F (-20 to 65°C) (No freezing)		
Storage humidity range [%RH]		90 or less (No condensation)		
Insulation resistance [MΩ]		Between the housing and SG: 10 (500 VDC)		
Weight [g]		800		1000

Power Supply Wiring Example: LECSS2-T□

For single phase 200 VAC



For three phase 200 VAC



Note) For single phase 200 to 240 VAC, power supply should be connected to L1 and L3 terminals, with nothing connected to L2.

Main Circuit Power Supply Connector: CNP1 * Accessory

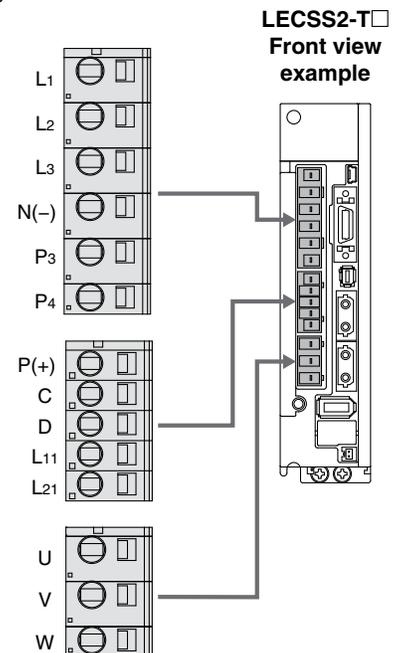
Terminal name	Function	Details
L1		
L2		
L3		
N(-)		
P3		
P4		
PE		
P(+)		
C		
D		
L11		
L21		

Control Circuit Power Supply Connector: CNP2 * Accessory

Terminal name	Function	Details
P(+)	Regeneration option	Connect between P(+) and D. (Connected at time of shipping.) * If regeneration option is required for "Model Selection", connect to this terminal.
C		
D		
L11	Control circuit power supply	Connect the control circuit power supply. LECSS2: Single phase 200 to 240 VAC, 50/60 Hz Connection terminal: L11, L21 Three phase 200 to 240 VAC, 50/60 Hz Connection terminal: L11, L21
L21		

Motor Connector: CNP3 * Accessory

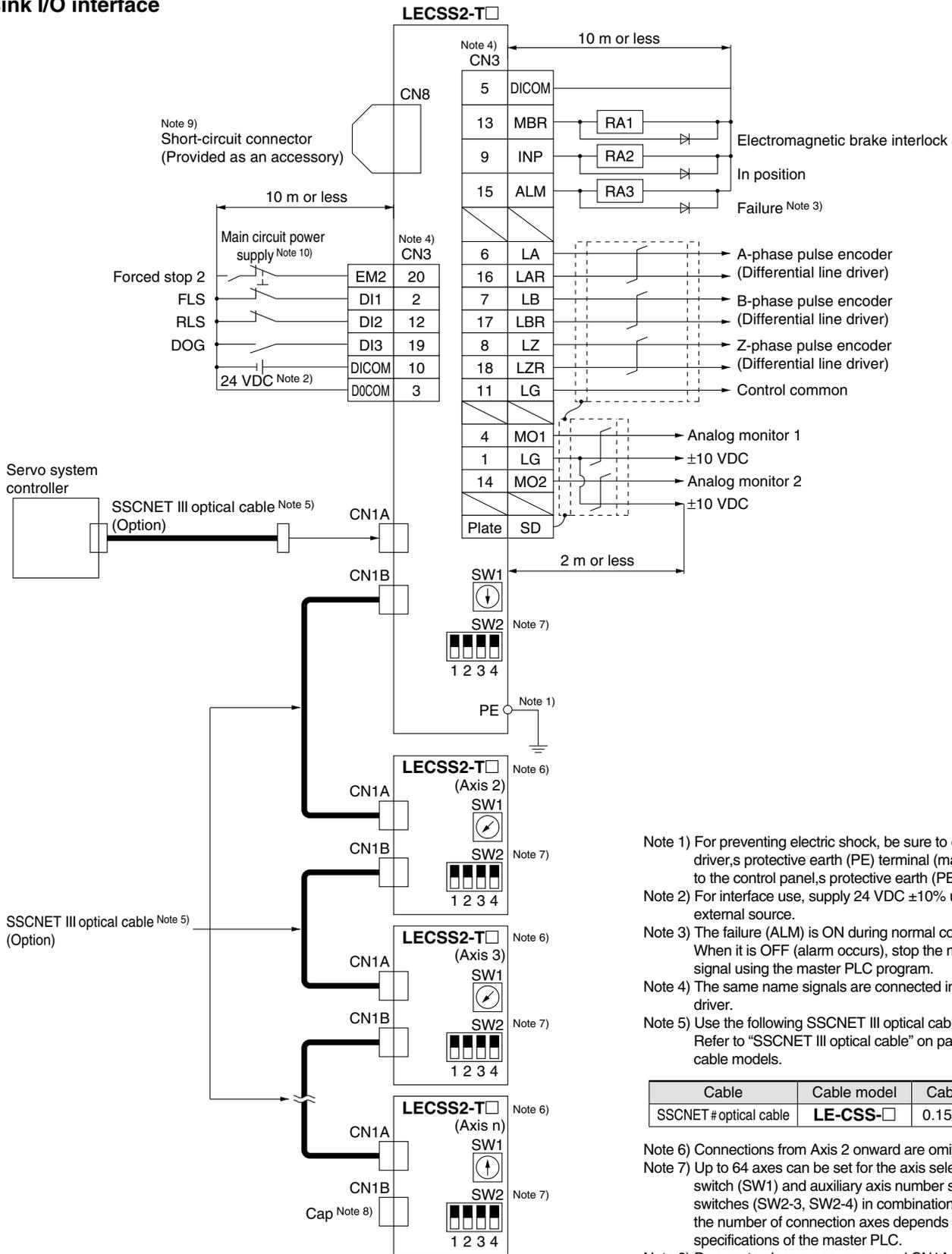
Terminal name	Function	Details
U	Servo motor power (U)	Connect to motor cable (U, V, W).
V	Servo motor power (V)	
W	Servo motor power (W)	



Series LECSS-T

Control Signal Wiring Example: LECSS2-T□

For sink I/O interface



- Note 1) For preventing electric shock, be sure to connect the driver's protective earth (PE) terminal (marked ⊕) to the control panel's protective earth (PE).
- Note 2) For interface use, supply 24 VDC ±10% using an external source.
- Note 3) The failure (ALM) is ON during normal conditions. When it is OFF (alarm occurs), stop the master PLC signal using the master PLC program.
- Note 4) The same name signals are connected inside the driver.
- Note 5) Use the following SSCNET III optical cables. Refer to "SSCNET III optical cable" on page 24 for cable models.

Cable	Cable model	Cable length
SSCNET# optical cable	LE-CSS-□	0.15 m to 3 m

- Note 6) Connections from Axis 2 onward are omitted.
- Note 7) Up to 64 axes can be set for the axis selection rotary switch (SW1) and auxiliary axis number setting switches (SW2-3, SW2-4) in combination. Note that the number of connection axes depends on the specifications of the master PLC.
- Note 8) Be sure to place a cap on unused CN1A/CN1B.
- Note 9) When not using the STO function, use the driver with the short-circuit connector (provided as an accessory) inserted.
- Note 10) Configure a circuit to turn off EM2 when the main circuit power is turned off to prevent an unexpected restart of the driver.

Options

Motor cable, Lock cable, Encoder cable (LECS□ common)

LE - CSM - S 5 A

Motor type
S AC servo motor

Cable description

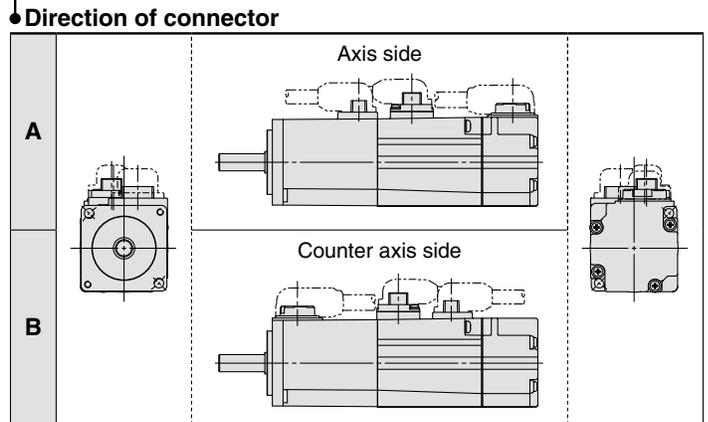
M	Motor cable
B	Lock cable
E	Encoder cable

Cable type

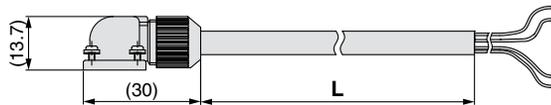
S	Standard cable
R	Robotic cable

Cable length (L) [m]

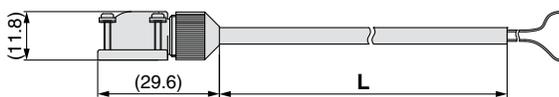
2	2
5	5
A	10



LE-CSM-□□: Motor cable



LE-CSB-□□: Lock cable



LE-CSE-□□: Encoder cable



* LE-CSM-□□ is MR-PWS1CBL□M-A□-L manufactured by Mitsubishi Electric Corporation.
 LE-CSB-□□ is MR-BKS1CBL□M-A□-L manufactured by Mitsubishi Electric Corporation.
 LE-CSE-□□ is MR-J3ENCBL□M-A□-L manufactured by Mitsubishi Electric Corporation.
 LE-CSM-R□□ is MR-PWS1CBL□M-A□-H manufactured by Mitsubishi Electric Corporation.
 LE-CSB-R□□ is MR-BKS1CBL□M-A□-H manufactured by Mitsubishi Electric Corporation.
 LE-CSE-R□□ is MR-J3ENCBL□M-A□-H manufactured by Mitsubishi Electric Corporation.

SSCNET III optical cable (LECSS□-S□, LECSS2-T□)

LE - CSS - 1

Motor type
S AC servo motor

Cable description
S SSCNET III optical cable

Cable length

L	0.15 m
K	0.3 m
J	0.5 m
1	1 m
3	3 m

* LE-CSS-□ is MR-J3BUS□M manufactured by Mitsubishi Electric Corporation.

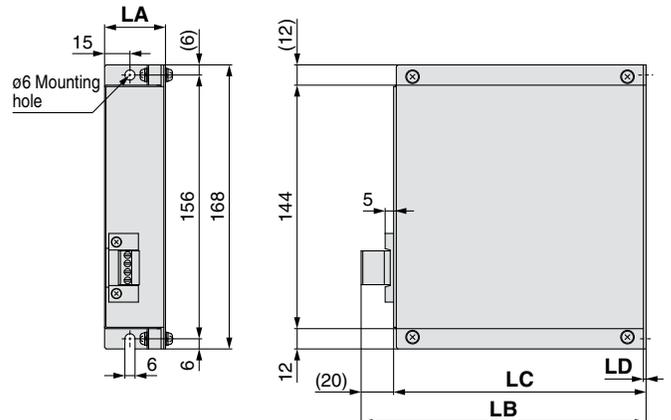
Regeneration option (LECS□ common)

LEC - MR - RB - 12

Regeneration option type

032	Allowable regenerative power 30 W
12	Allowable regenerative power 100 W

* Confirm regeneration option to be used in "Model Selection".



Dimensions [mm]

Model	LA	LB	LC	LD
LEC-MR-RB-032	30	119	99	1.6
LEC-MR-RB-12	40	169	149	2

* MR-RB□ manufactured by Mitsubishi Electric Corporation.

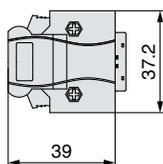
I/O connector

LE - CSN A

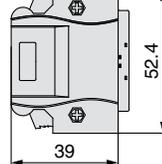
Driver type

A	LECSA□, LECS□
B	LECSB□
S	LECSS□-S□, LECSS2-T□

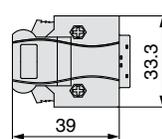
LE-CSNA



LE-CSNB



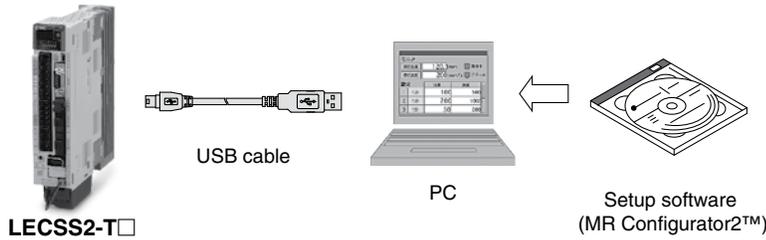
LE-CSNS



* LE-CSNA: 10126-3000PE (connector)/10326-52F0-008 (shell kit) manufactured by Sumitomo 3M Limited or equivalent item.
 LE-CSNB: 10150-3000PE (connector)/10350-52F0-008 (shell kit) manufactured by Sumitomo 3M Limited or equivalent item.
 LE-CSNS: 10120-3000PE (connector)/10320-52F0-008 (shell kit) manufactured by Sumitomo 3M Limited or equivalent item.

* Conductor size: AWG24 to 30

Options



Setup software (MR Configurator2™) (LECSA, LECSB, LECSC, LECSS common)

LEC-MRC2 □

Display language

N il	Japanese version
E	English version
C	Chinese version

* SW1DNC-MRC2-□ manufactured by Mitsubishi Electric Corporation. Refer to Mitsubishi Electric Corporation's website for operating environment and version upgrade information. MR Configurator2™ is a registered trademark or trademark of Mitsubishi Electric Corporation.

Adjustment, waveform display, diagnostics, parameter read/write, and test operation can be performed upon a PC.

Compatible PC

When using setup software (MR Configurator2™), use an IBM PC/AT compatible PC that meets the following operating conditions.

Hardware Requirements

Equipment		Setup software (MR Configurator2™) LEC-MRC2 □
Note 1) 2) 3) 4) 5) 6) 7) PC	OS	Microsoft® Windows®8 Enterprise Operating System Microsoft® Windows®8 Pro Operating System Microsoft® Windows®8 Operating System Microsoft® Windows®7 Enterprise Operating System Microsoft® Windows®7 Ultimate Operating System Microsoft® Windows®7 Professional Operating System Microsoft® Windows®7 Home Premium Operating System Microsoft® Windows®7 Starter Operating System Microsoft® Windows Vista® Enterprise Operating System Microsoft® Windows Vista® Ultimate Operating System Microsoft® Windows Vista® Business Operating System Microsoft® Windows Vista® Home Premium Operating System Microsoft® Windows Vista® Home Basic Operating System Microsoft® Windows®XP Professional Operating System, Service Pack 2 or later Microsoft® Windows®XP Home Edition Operating System, Service Pack 2 or later Microsoft® Windows®2000 Professional Operating System, Service Pack 4 or later
	Available HD space	1 GB or more
	Communication interface	Use USB port.
Display	Resolution 1024 x 768 or more Must be capable of high color (16-bit) display. The connectable with the above PC	
Keyboard	The connectable with the above PC	
Mouse	The connectable with the above PC	
Printer	The connectable with the above PC	
USB cable Note 8)	LEC-MR-J3USB	

- Note 1) Before using a PC for setting LECSA point table method/program method, upgrade to version 1.18U (Japanese version)/version 1.19V (English version). Refer to Mitsubishi Electric Corporation's website for version upgrade information.
- Note 2) Windows and Windows Vista are registered trademarks of Microsoft Corporation in the United States and other countries.
- Note 3) On some PCs, MR Configurator2 may not run properly.
- Note 4) When Windows®XP or later is used, the following functions cannot be used.
- Windows Program Compatibility mode
 - Fast User Switching
 - Remote Desktop
 - Large Fonts Mode (Display property)
 - DPI settings other than 96 DPI (Display property)
- For 64-bit operating system, this software is compatible with Windows®7 and Windows®8.
- Note 5) When Windows®7 is used, the following functions cannot be used.
- Windows XP Mode
 - Windows Touch
- Note 6) When using this software with Windows Vista® or later, log in as a user having USER authority or higher.
- Note 7) When Windows®8 is used, the following functions cannot be used.
- Hyper-V
 - Modern UI style
- Note 8) Order USB cable separately.

Setup Software Compatible Driver

Compatible driver	Setup software	
	MR Configurator	MR Configurator2™
	LEC-MR-SETUP221 □	LEC-MRC2 □
LECSA	○	○
LECSB	○	○
LECSC	○	○
LECSS □-S □	○	○
LECSS2-T □	—	○

Options

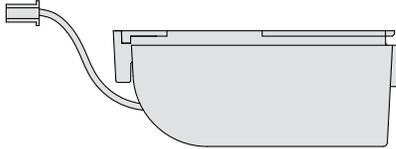
Battery (only for LECSS2-T□)

LEC-MR-BAT6V1SET

* MR-BAT6V1SET manufactured by Mitsubishi Electric Corporation.

Battery for replacement.

Absolute position data is maintained by installing the battery to the driver.



Note) The LEC-MR-BAT6V1SET is an assembled battery that uses lithium metal battery 2CR17335A. This battery is not applicable to UN regulation Dangerous Goods (Class 9). When transporting lithium metal batteries and devices with built-in lithium metal batteries by a method subject to UN regulations, it is necessary to apply measures according to the regulations stipulated in the United Nations Recommendations on the Transport of Dangerous Goods, the Technical Instructions (ICAO-TI) of the International Civil Aviation Organization (ICAO), and the International Maritime Dangerous Goods Code (IMDG CODE) of the International Maritime Organization (IMO). If a customer is transporting products such as shown above, it is necessary to confirm the latest regulations, or the laws and regulations of the country of transport on your own, in order to apply the proper measures. Please contact SMC sales representative for details.

USB cable (3 m)

LEC-MR-J3USB

* MR-J3USB manufactured by Mitsubishi Electric Corporation.

Cable for connecting PC and driver when using the setup software (MR Configurator2™).

Do not use any cable other than this cable.

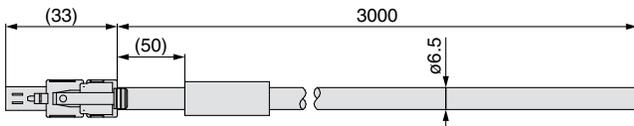
STO cable (3 m)

LEC-MR-D05UDL3M

* MR-D05UDL3M manufactured by Mitsubishi Electric Corporation.

Cable for connecting the driver and device, when using the safety function.

Do not use any cable other than this cable.



LEFS/LEFB

LEJS/LEJB

LEY

LEYG

LECSS-T

⚠ Safety Instructions Be sure to read "Handling Precautions for SMC Products" (M-E03-3) before using.

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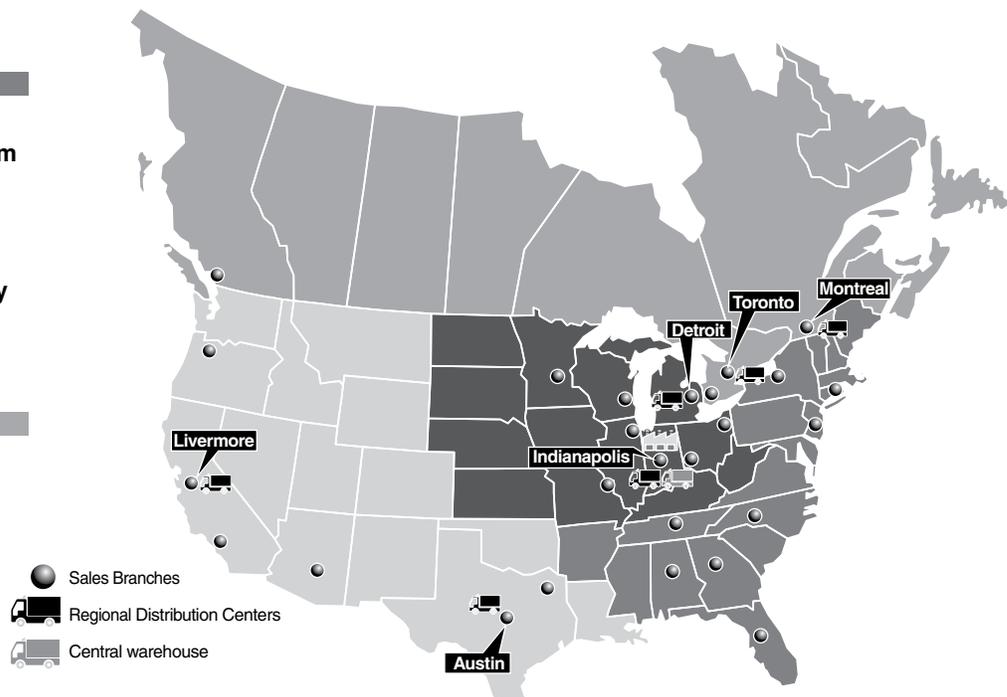
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MECHATROLINK Compatible

AC Servo Motor Driver



Power supply voltage (V)
200 to 230 VAC

Motor capacity (W)
100/200/400

- Position control, speed control and torque control can be used.
- Control encoder: Absolute 20-bit encoder (Resolution: 1048576 p/rev)



MECHATROLINK-II Type

Series LECYM

- Applicable Fieldbus protocol: MECHATROLINK-II
- Number of connectable drivers: 30 units (Transmission distance: Max. 50 m in total)

Max. communication speed
10 Mbps

Max. communication speed
250 μs

MECHATROLINK-III Type

Series LECYU

- Applicable Fieldbus protocol: MECHATROLINK-III
- Number of connectable drivers: 62 units (Transmission distance: Max. 75 m between stations)

Max. communication speed
100 Mbps

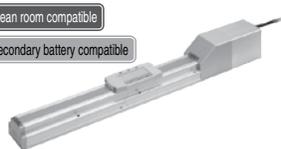
Max. communication speed
125 μs

Compatible Actuators

Slider Type

Ball screw drive
Series LEFS

- Clean room compatible
- Secondary battery compatible



Belt drive
Series LEFB



Size	Max. work load (kg)	Stroke (mm)
25	20	Up to 600
32	45	Up to 800
40	60	Up to 1000

Size	Max. work load (kg)	Stroke (mm)
25	5	Up to 2000
32	15	Up to 2500
40	25	Up to 3000

High Rigidity Slider Type

Ball screw drive
Series LEJS

- Clean room compatible
- Secondary battery compatible



Belt drive
Series LEJB



Size	Max. work load (kg)	Stroke (mm)
40	55	Up to 1200
63	85	Up to 1500

Size	Max. work load (kg)	Stroke (mm)
40	20	Up to 2000
63	30	Up to 3000

Rod Type

Basic type
Series LEY

- Secondary battery compatible
- Dust/Drip proof compatible



In-line motor type
Series LEY□D

- Secondary battery compatible
- Dust/Drip proof compatible



Size	Pushing force lbf (N)	Stroke (mm)
25	109 (485)	Up to 400
32	132 (588)	Up to 500
63	752 (3343)	Up to 800

Size	Pushing force lbf (N)	Stroke (mm)
25	109 (485)	Up to 400
32	165 (736)	Up to 500
63	429 (1910)	Up to 800

Guide Rod Type

Guide rod type
Series LEYG



Guide rod type/
In-line motor type
Series LEYG□D



Size	Pushing force lbf (N)	Stroke (mm)
25	109 (485)	Up to 300
32	132 (588)	

Size	Pushing force lbf (N)	Stroke (mm)
25	109 (485)	Up to 300
32	165 (736)	

Series LECYM/LECYU

System Construction

Absolute encoder compatible Series *LECYM*

(MECHATROLINK-II type)

Provided by customer

Power supply

Single phase 200 to 230 VAC (50/60 Hz)
Three phase 200 to 230 VAC (50/60 Hz)

Provided by customer

External regenerative resistor

* If the external regenerative resistor is required, it should be provided by the customer. For selection of the external regenerative resistor, refer to the compatible actuator catalog.

Motor cable

Standard cable	Robotic cable
LE-CYM-S□□-□	LE-CYM-R□□-□
Motor cable for lock option	Motor cable for lock option
Standard cable	Robotic cable
LE-CYB-S□□-□	LE-CYB-R□□-□

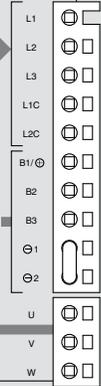
Electric actuator

Slider type Series LEF
High rigidity slider type Series LEJ
Rod type Series LEY/LEYG

Encoder cable

Standard cable	Robotic cable
LE-CYE-S□□	LE-CYE-R□□

Main circuit power supply connector (Accessory) Page 106



Motor connector (Accessory) Page 106

Driver



2nd driver

Provided by customer

PLC (Positioning unit/Motion controller)

Power supply for I/O signal 24 VDC



Option

USB cable Page 111
Part no.: LEC-JZ-CVUSB

Setup software

(SigmaWin+™)
Please download it via our website.



PC

* Order USB cable (Part no.: LEC-JZ-CVUSB) separately to use this software.

Option I/O Page 110 connector

Part no.: LE-CYNA

Cable for safety function device (3 m) Page 111
Part no.: LEC-JZ-CVSAF

Absolute encoder compatible Series *LECYU*

(MECHATROLINK-III type)

Provided by customer

Power supply

Single phase 200 to 230 VAC (50/60 Hz)
Three phase 200 to 230 VAC (50/60 Hz)

Provided by customer

External regenerative resistor

* If the external regenerative resistor is required, it should be provided by the customer. For selection of the external regenerative resistor, refer to the compatible actuator catalog.

Motor cable

Standard cable	Robotic cable
LE-CYM-S□□-□	LE-CYM-R□□-□
Motor cable for lock option	Motor cable for lock option
Standard cable	Robotic cable
LE-CYB-S□□-□	LE-CYB-R□□-□

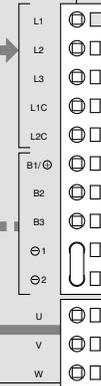
Electric actuator

Slider type Series LEF
High rigidity slider type Series LEJ
Rod type Series LEY/LEYG

Encoder cable

Standard cable	Robotic cable
LE-CYE-S□□	LE-CYE-R□□

Main circuit power supply connector (Accessory) Page 106



Motor connector (Accessory) Page 106

Driver



2nd driver

Provided by customer

PLC (Positioning unit/Motion controller)

Power supply for I/O signal 24 VDC



Option

USB cable Page 111
Part no.: LEC-JZ-CVUSB

Setup software

(SigmaWin+™)
Please download it via our website.



PC

* Order USB cable (Part no.: LEC-JZ-CVUSB) separately to use this software.

Option I/O Page 110 connector

Part no.: LE-CYNA

Cable for safety function device (3 m) Page 111
Part no.: LEC-JZ-CVSAF

AC Servo Motor Driver

Model Selection

LEFS

LEFB

LEJS

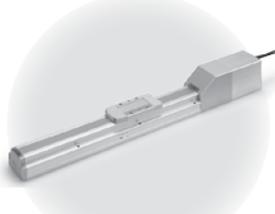
LEJB

LEY

LEYG

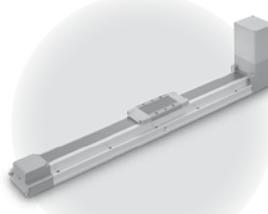
LECYM/LECYU

■ Electric Actuator/ Slider Type, Ball Screw Drive Series LEFS



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 How to Order Page 13
 Specifications Page 14
 Construction Page 15
 Dimensions Page 16

■ Electric Actuator/ Slider Type, Belt Drive Series LEFB



Model Selection Page 23
 How to Order Page 27
 Specifications Page 28
 Construction Page 29
 Dimensions Page 31

Specific Product Precautions Page 37

■ Electric Actuator/ High Rigidity Slider Type, Ball Screw Drive Series LEJS



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 Dimensions Page 54

■ Electric Actuator/ High Rigidity Slider Type, Belt Drive Series LEJB



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 Dimensions Page 59

Auto Switch Page 61
 Specific Product Precautions Page 64

■ Electric Actuator/Rod Type Series LEY



Model Selection Page 67
 How to Order Page 73
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 Dimensions Page 78

■ Electric Actuator/Guide Rod Type Series LEYG



Model Selection Page 83
 How to Order Page 89
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Auto Switch Page 96
 Specific Product Precautions Page 98

■ AC Servo Motor Driver Series LECYM/LECYU Page 102



How to Order Page 103
 Dimensions Page 103
 Specifications Page 104
 Power Supply Wiring Example Page 106
 Control Signal Wiring Example Page 107
 Options Page 109
 Specific Product Precautions Page 112

Electric Actuator/Slider Type AC Servo Motor Ball Screw Drive/*Series LEFS* Model Selection



Selection Procedure

Step 1 Check the work load–speed.

Step 2 Check the cycle time.

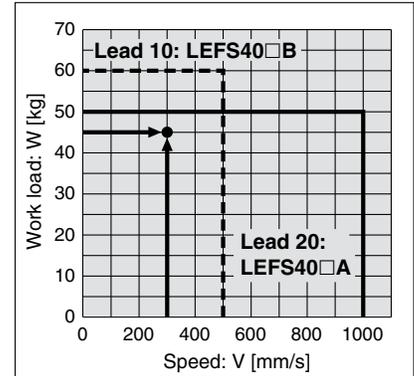
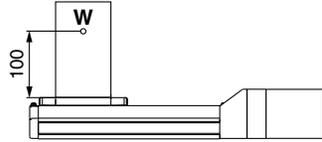
Step 3 Check the allowable moment.

Selection Example

Operating conditions

- Workpiece mass: 45 [kg]
- Speed: 300 [mm/s]
- Acceleration/Deceleration: 3000 [mm/s²]
- Stroke: 200 [mm]
- Mounting position: Horizontal upward

• Workpiece mounting condition:



<Speed-Work load graph>
(LEFS40)

Step 1 Check the work load–speed. <Speed-Work load graph> (Page 6)

Select the target model based on the workpiece mass and speed with reference to the <Speed-Work load graph>.

Selection example) The **LEFS40V8B-200** is temporarily selected based on the graph shown on the right side.

Step 2 Check the cycle time.

Calculate the cycle time using the following calculation method.

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 obtained 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 positioning of the step data. Therefore, calculate the settling time with reference to the following value.

$$T4 = 0.05 \text{ [s]}$$

Calculation example)

T1 to T4 can be calculated as follows.

$$T1 = V/a1 = 300/3000 = 0.1 \text{ [s]}$$

$$T3 = V/a2 = 300/3000 = 0.1 \text{ [s]}$$

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

$$= \frac{200 - 0.5 \cdot 300 \cdot (0.1 + 0.1)}{300}$$

$$= 0.57 \text{ [s]}$$

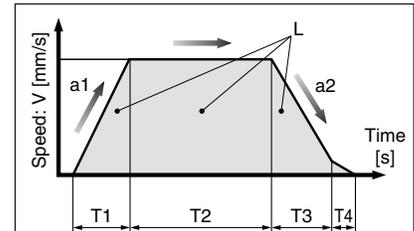
$$T4 = 0.05 \text{ [s]}$$

Therefore, the cycle time can be obtained as follows.

$$T = T1 + T2 + T3 + T4$$

$$= 0.1 + 0.57 + 0.1 + 0.05$$

$$= \mathbf{0.82 \text{ [s]}}$$



L : Stroke [mm]
... (Operating condition)

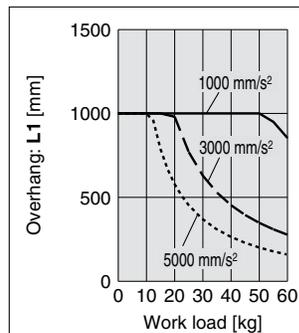
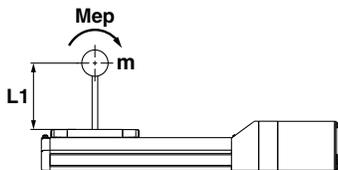
V : Speed [mm/s]
... (Operating condition)

a1: Acceleration [mm/s²]
... (Operating condition)

a2: Deceleration [mm/s²]
... (Operating condition)

- T1: Acceleration time [s]
Time until reaching the set speed
- T2: Constant speed time [s]
Time while the actuator is operating at a constant speed
- T3: Deceleration time [s]
Time from the beginning of the constant speed operation to stop
- T4: Settling time [s]
Time until in position is completed

Step 3 Check the guide moment.



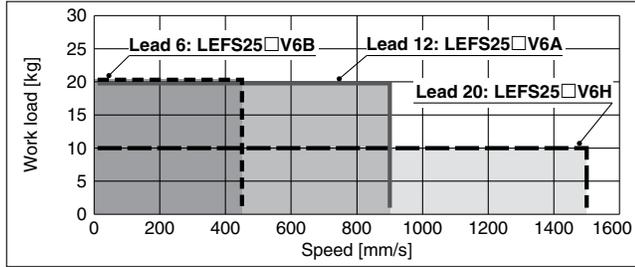
Based on the above calculation result,
the **LEFS40V8B-200** is selected.

Speed-Work Load Graph/Conditions for "Regenerative Resistor" (Guide)

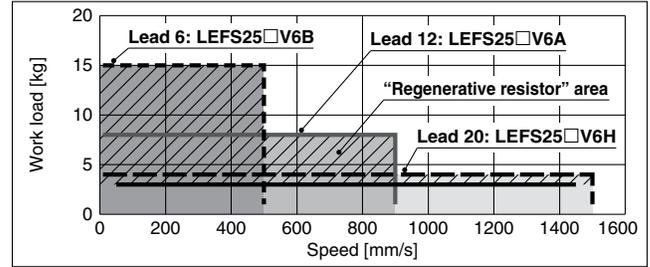
* The allowable speed is restricted depending on the stroke. Select it by referring to "Allowable Stroke Speed" below.

LEFS25/Ball Screw Drive

Horizontal

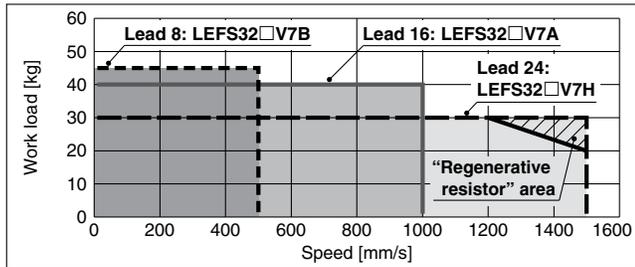


Vertical

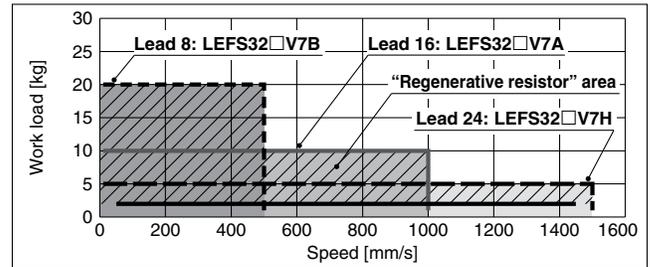


LEFS32/Ball Screw Drive

Horizontal

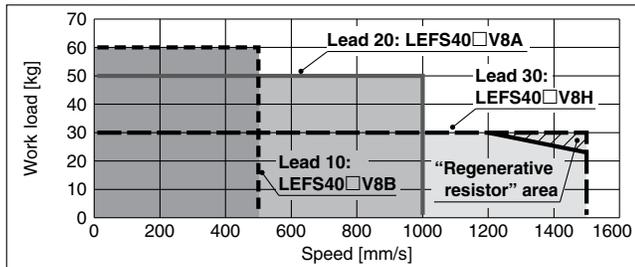


Vertical

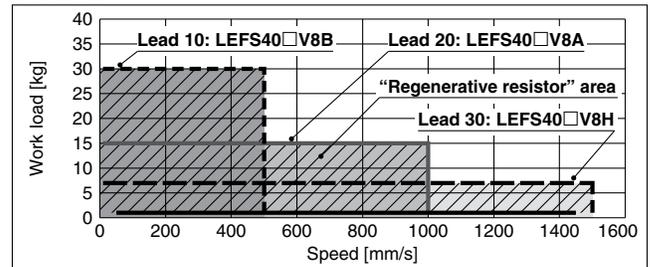


LEFS40/Ball Screw Drive

Horizontal



Vertical



"Regenerative resistor" area

* When using the actuator in the "Regenerative resistor" area, download the "AC servo capacity selection program/SigmaJunmaSize+" from the SMC website. Then, calculate the necessary regenerative resistor capacity to prepare an appropriate external regenerative resistor.

* Regenerative resistor should be provided by the customer.

Applicable Motor/Driver

Model	Applicable model	
	Motor	Servopack (SMC driver)
LEFS25□	SGMJV-01A3A	SGDV-R90A11□ (LECYM2-V5) SGDV-R90A21□ (LECYU2-V5)
LEFS32□	SGMJV-02A3A	SGDV-1R6A11□ (LECYM2-V7) SGDV-1R6A21□ (LECYU2-V7)
LEFS40□	SGMJV-04A3A	SGDV-2R8A11□ (LECYM2-V8) SGDV-2R8A21□ (LECYU2-V8)

Allowable Stroke Speed

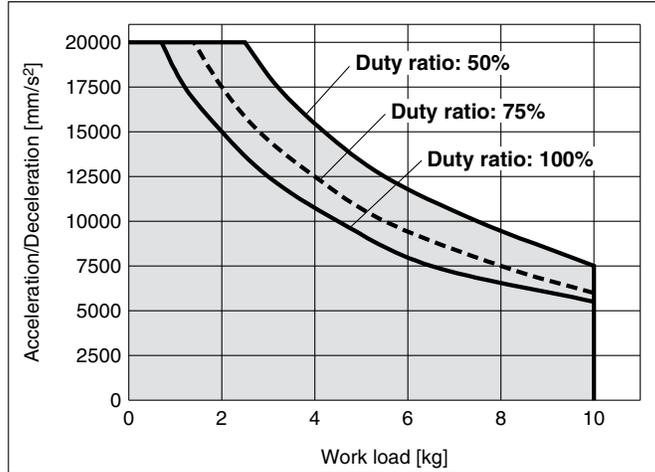
Model	AC servo motor	Lead		Stroke [mm]									
		Symbol	[mm]	Up to 100	Up to 200	Up to 300	Up to 400	Up to 500	Up to 600	Up to 700	Up to 800	Up to 900	Up to 1000
LEFS25	100 W /□40	H	20			1500		1100	860	—	—	—	—
		A	12			900		720	540	—	—	—	—
		B	6			450		360	270	—	—	—	—
		(Motor rotation speed)				(4500 rpm)		(3650 rpm)	(2700 rpm)	—	—	—	—
LEFS32	200 W /□60	H	24			1500		1200	930	750	—	—	—
		A	16			1000		800	620	500	—	—	—
		B	8			500		400	310	250	—	—	—
		(Motor rotation speed)				(3750 rpm)		(3000 rpm)	(2325 rpm)	(1875 rpm)	—	—	—
LEFS40	400 W /□60	H	30	—		1500		1410	1140	930	780	—	—
		A	20	—		1000		940	760	620	520	—	—
		B	10	—		500		470	380	310	260	—	—
		(Motor rotation speed)				(3000 rpm)		(2820 rpm)	(2280 rpm)	(1860 rpm)	(1560 rpm)	—	—

Series LEFS

Work Load–Acceleration/Deceleration Graph (Guide)

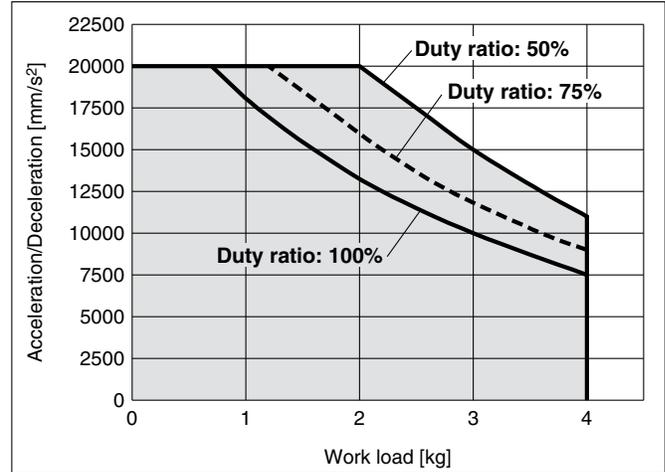
LEFS25 □ V6H/Ball Screw Drive

Horizontal



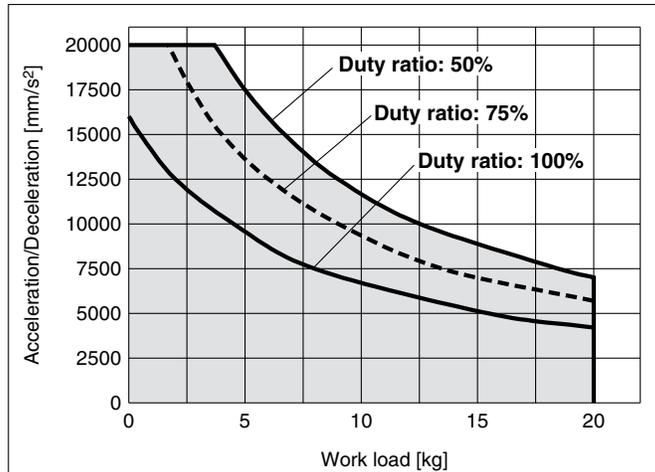
LEFS25 □ V6H/Ball Screw Drive

Vertical



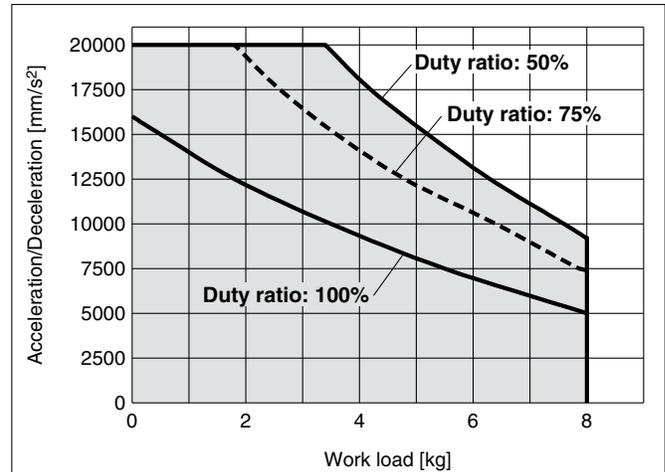
LEFS25 □ V6A/Ball Screw Drive

Horizontal



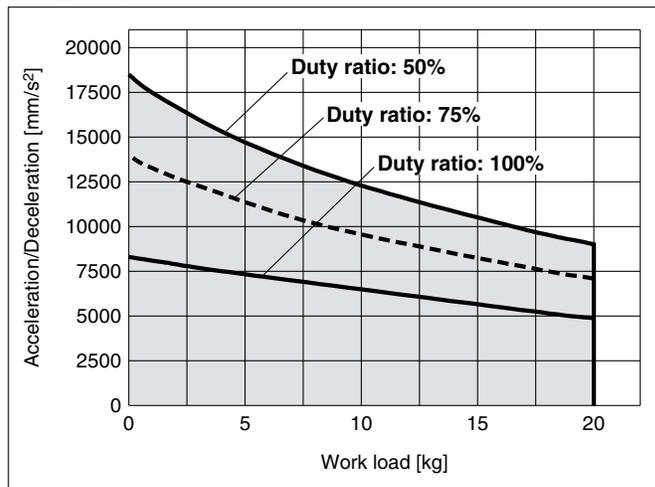
LEFS25 □ V6A/Ball Screw Drive

Vertical



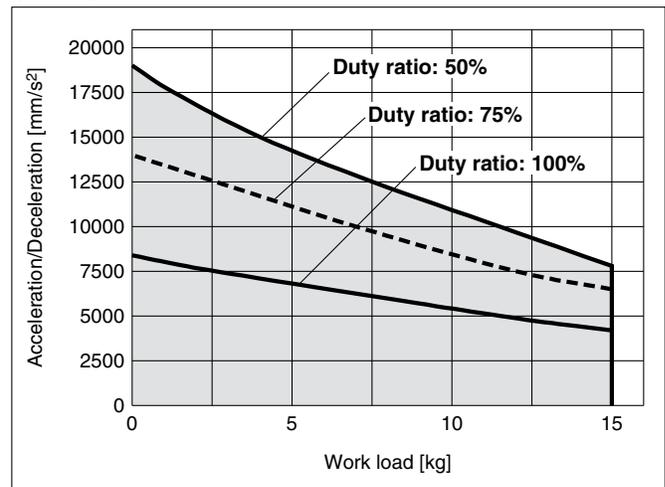
LEFS25 □ V6B/Ball Screw Drive

Horizontal



LEFS25 □ V6B/Ball Screw Drive

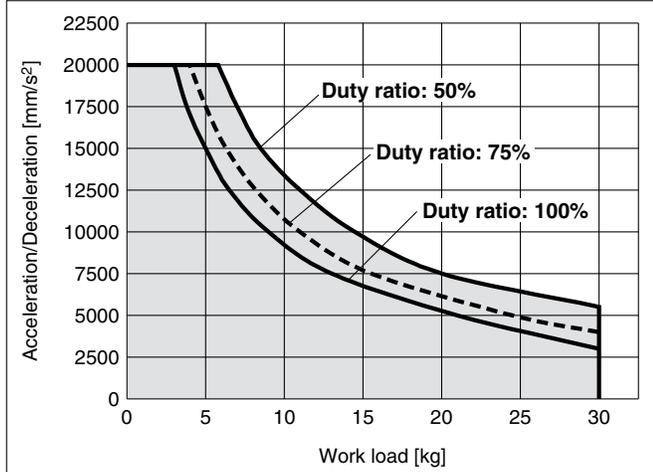
Vertical



Work Load–Acceleration/Deceleration Graph (Guide)

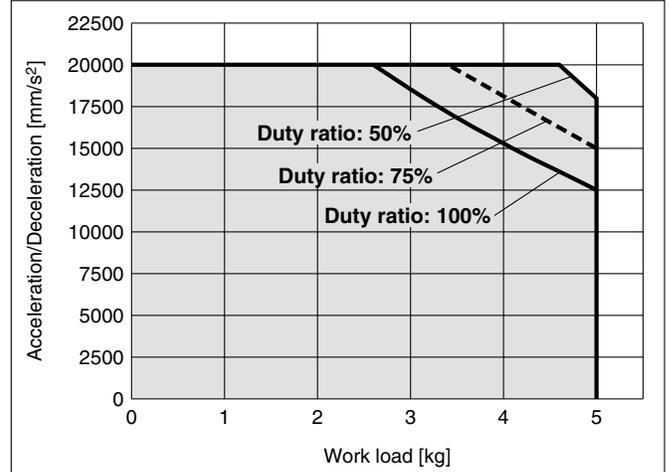
LEFS32□V7H/Ball Screw Drive

Horizontal



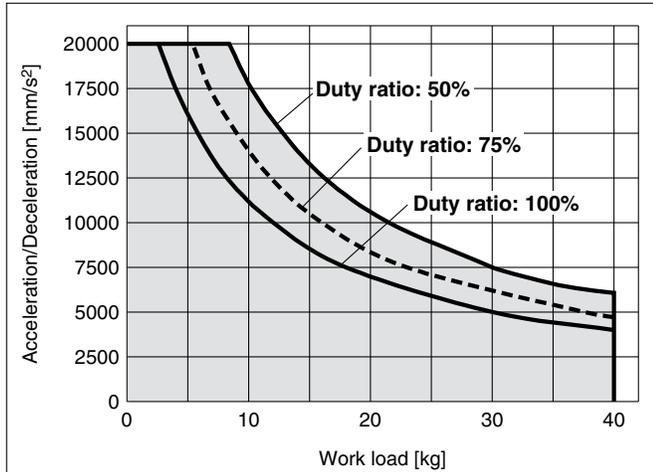
LEFS32□V7H/Ball Screw Drive

Vertical



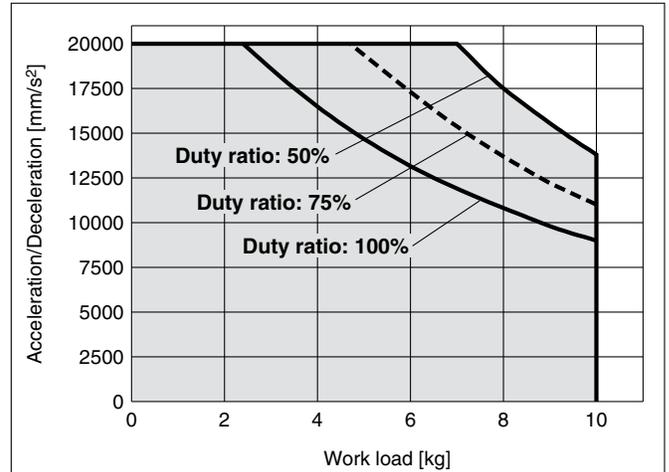
LEFS32□V7A/Ball Screw Drive

Horizontal



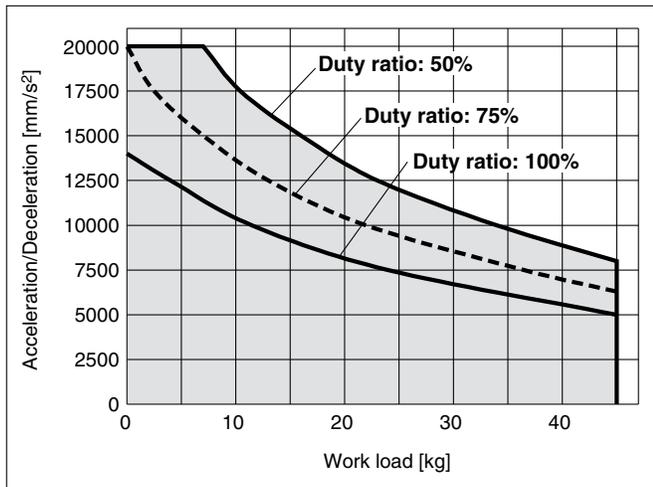
LEFS32□V7A/Ball Screw Drive

Vertical



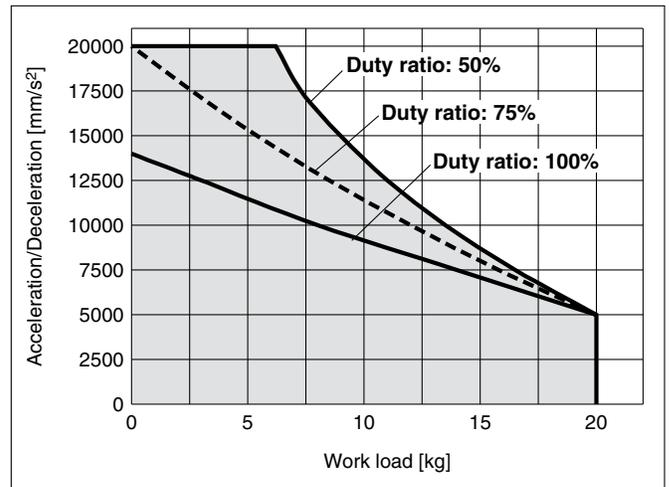
LEFS32□V7B/Ball Screw Drive

Horizontal



LEFS32□V7B/Ball Screw Drive

Vertical



Model Selection

LEFS

LEFB

LEJS

LEJB

LEY

LEYG

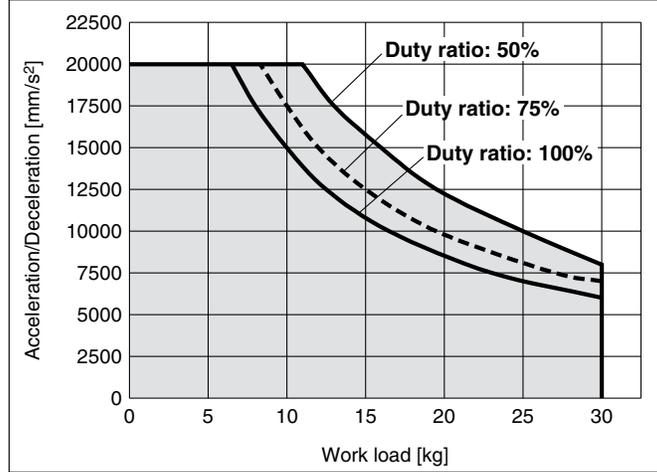
LECYM/LECYU

Series LEFS

Work Load–Acceleration/Deceleration Graph (Guide)

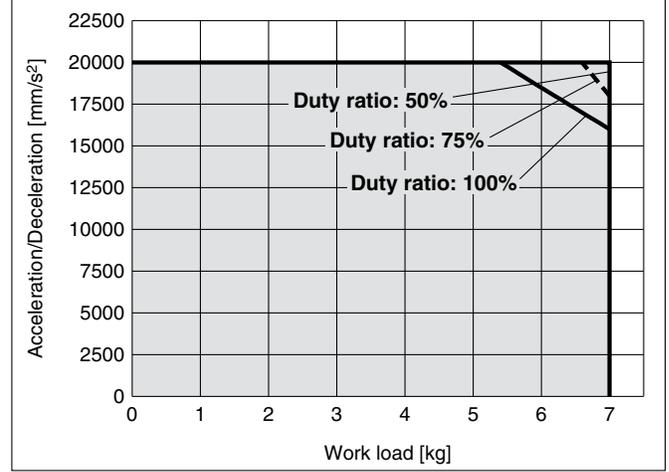
LEFS40□V8H/Ball Screw Drive

Horizontal



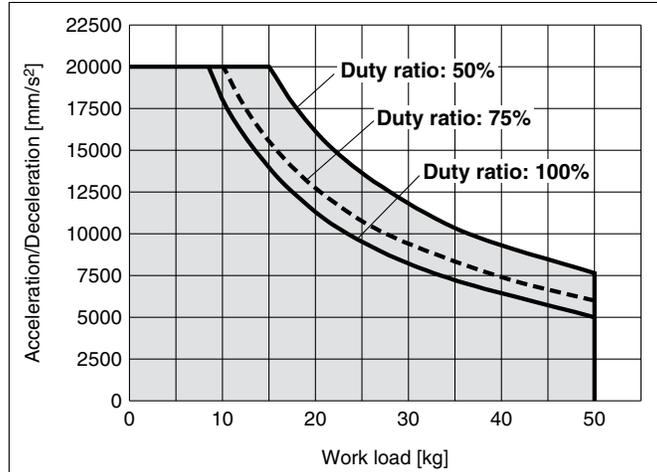
LEFS40□V8H/Ball Screw Drive

Vertical



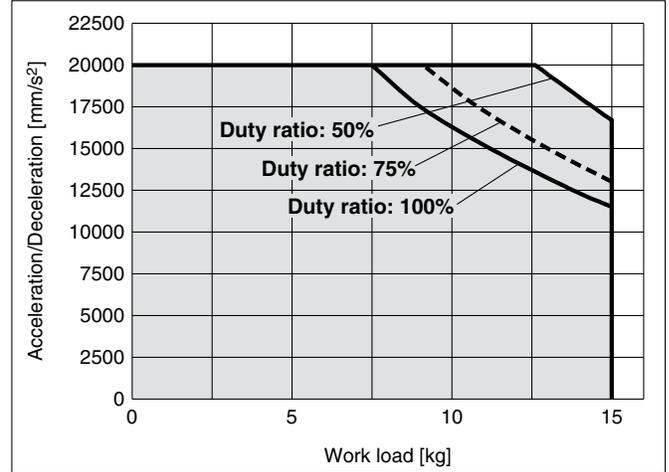
LEFS40□V8A/Ball Screw Drive

Horizontal



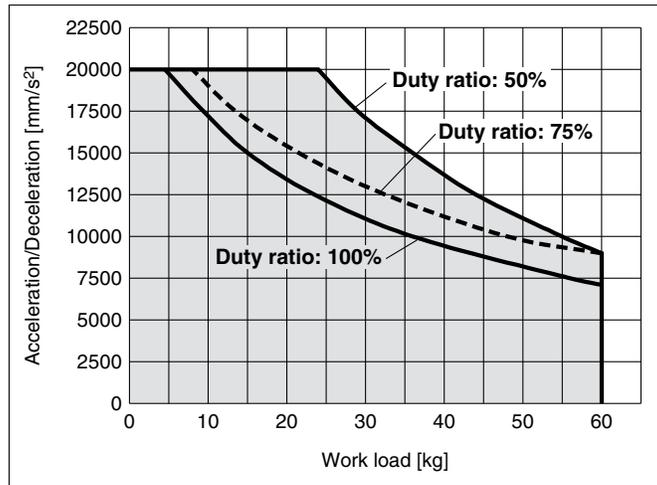
LEFS40□V8A/Ball Screw Drive

Vertical



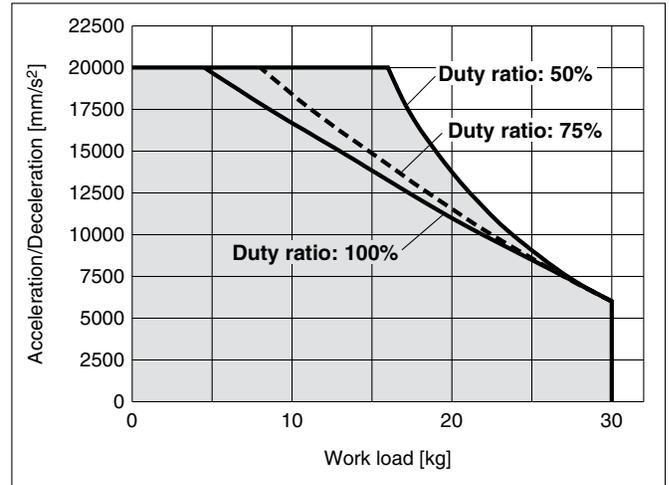
LEFS40□V8B/Ball Screw Drive

Horizontal



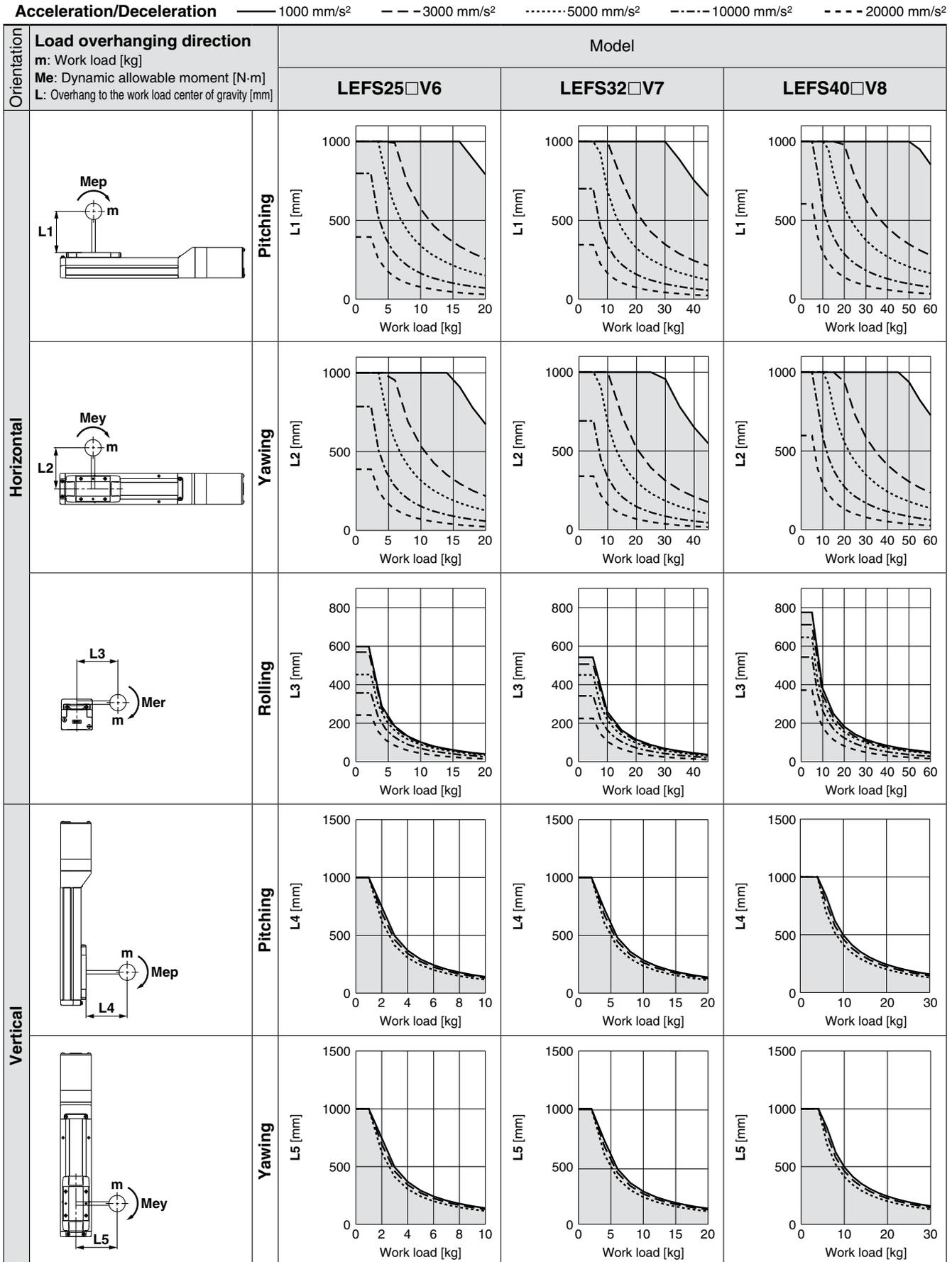
LEFS40□V8B/Ball Screw Drive

Vertical



Dynamic Allowable Moment

* This graph shows the amount of allowable overhang when the center of gravity of the workpiece overhangs in one direction. When the center of gravity of the workpiece overhangs in two directions, refer to the Electric Actuator Selection Software for confirmation, <http://www.smcworld.com>



Model Selection

LEFS

LEFB

LEJS

LEJB

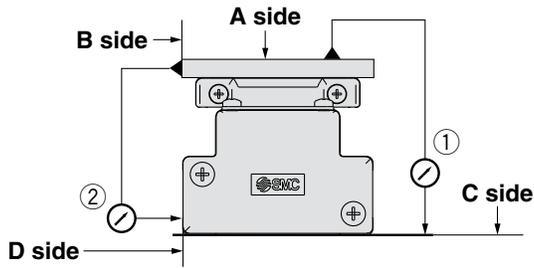
LEY

LEYG

LECYM/LECYU

Series LEFS

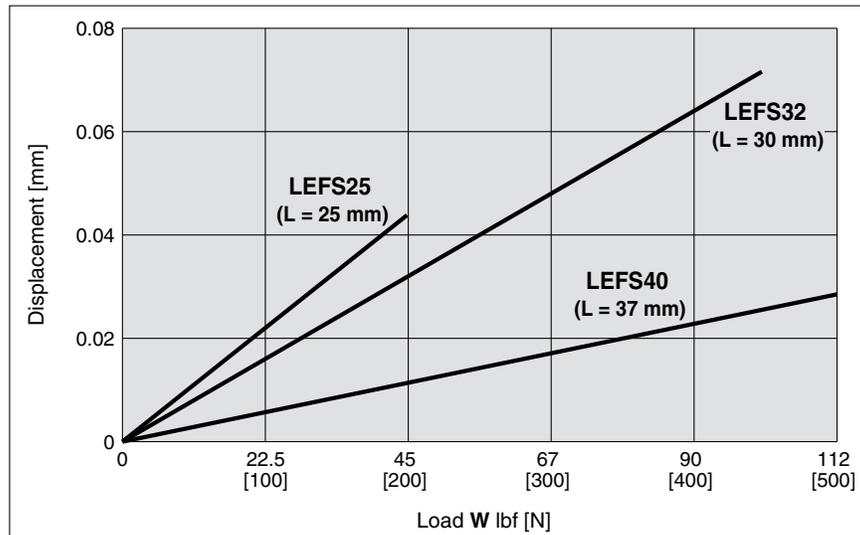
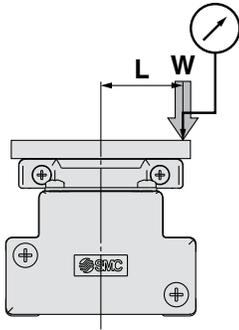
Table Accuracy



Model	Traveling parallelism [mm] (Every 300 mm)	
	① C side traveling parallelism to A side	② D side traveling parallelism to B side
LEFS25	0.05	0.03
LEFS32	0.05	0.03
LEFS40	0.05	0.03

Note) Traveling parallelism does not include the mounting surface accuracy.

Table Displacement (Reference Value)



Note 1) This displacement is measured when a 15 mm aluminum plate is mounted and fixed on the table.

Note 2) Check the clearance and play of the guide separately.

Electric Actuator/Slider Type Ball Screw Drive

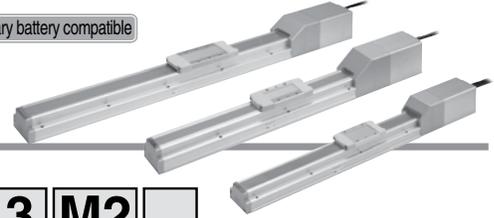
AC Servo Motor

Series **LEFS** LEFS25, 32, 40

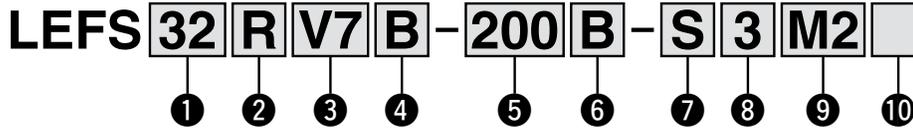


Clean room compatible Secondary battery compatible

Consult with SMC for details.



How to Order



① Size

25
32
40

② Motor mounting position

Nil	In-line
R	Right side parallel
L	Left side parallel

③ Motor type

Symbol	Type	Output [W]	Size	Compatible driver
V6	AC servo motor (Absolute encoder)	100	25	LECYM2-V5/LECYU2-V5
V7		200	32	LECYM2-V7/LECYU2-V7
V8		400	40	LECYM2-V8/LECYU2-V8

④ Lead [mm]

Symbol	LEFS25	LEFS32	LEFS40
H	20	24	30
A	12	16	20
B	6	8	10

⑤ Stroke [mm]

50	50
to	to
1000	1000

⑥ Motor option

Nil	Without option
B	With lock

⑦ Cable type

Nil	Without cable
S	Standard cable
R	Robotic cable (Flexible cable)

⑧ Actuator cable length [m]

Nil	Without cable
3	3
5	5
A	10
C	20

⑨ Driver type

	Compatible driver	Power supply voltage [V]
Nil	Without driver	—
M2	LECYM2-V□	200 to 230
U2	LECYU2-V□	200 to 230

⑩ I/O connector

Nil	Without connector
H	With connector

Applicable Stroke Table

●: Standard

Model \ Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	Manufacturable stroke range [mm]	
LEFS25	●	●	●	●	●	●	●	●	●	●	●	●	—	—	—	—	—	—	—	—	—	50 to 600
LEFS32	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	—	—	—	—	—	50 to 800
LEFS40	—	—	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	150 to 1000

* Please consult with SMC for non-standard strokes as they are produced as special orders.

Compatible Drivers

Driver type	MECHATROLINK-II type	MECHATROLINK-III type
		
Series	LECYM	LECYU
Applicable network	MECHATROLINK-II	MECHATROLINK-III
Control encoder	Absolute 20-bit encoder	
Communication device	USB communication, RS-422 communication	
Power supply voltage (V)	200 to 230 VAC (50/60 Hz)	
Reference page	Page 103	

Specifications

LEFS25, 32, 40 AC Servo Motor

Model		LEFS25□V6			LEFS32□V7			LEFS40□V8				
Actuator specifications	Stroke [mm] ^{Note 1)}	50 to 600			50 to 800			150 to 1000				
	Work load [kg] ^{Note 2)}	Horizontal	10	20	20	30	40	45	30	50	60	
		Vertical	4	8	15	5	10	20	7	15	30	
	Max. speed [mm/s] ^{Note 3)}	Stroke range	Up to 400	1500	900	450	1500	1000	500	1500	1000	500
			401 to 500	1200	720	360	1500	1000	500	1500	1000	500
			501 to 600	900	540	270	1200	800	400	1500	1000	500
			601 to 700	—	—	—	930	620	310	1410	940	470
			701 to 800	—	—	—	750	500	250	1140	760	380
			801 to 900	—	—	—	—	—	—	930	620	310
			901 to 1000	—	—	—	—	—	—	780	520	260
	Max. acceleration/deceleration [mm/s ²]	20000 (Refer to pages 7 to 9 for limit according to work load and duty ratio.)										
	Positioning repeatability [mm]	±0.02										
	Lost motion [mm] ^{Note 4)}	0.1 or less										
Lead [mm]	20	12	6	24	16	8	30	20	10			
Impact/Vibration resistance [m/s ²] ^{Note 5)}	50/20											
Actuation type	Ball screw (LEFS□), Ball screw + Belt (LEFS□ [Ⓡ])											
Guide type	Linear guide											
Operating temperature range	41 to 104°F [5 to 40°C]											
Operating humidity range [%RH]	90 or less (No condensation)											
Electric specifications	Motor output/Size	100 W/□40			200 W/□60			400 W/□60				
	Motor type	AC servo motor (200 VAC)										
	Encoder	Absolute 20-bit encoder (Resolution: 1048576 p/rev)										
	Power consumption [W] ^{Note 6)}	Horizontal	45			65			210			
		Vertical	145			175			230			
	Standby power consumption when operating [W] ^{Note 7)}	Horizontal	2			2			2			
Vertical		8			8			18				
Max. instantaneous power consumption [W] ^{Note 8)}	445			725			1275					
Lock unit	Type ^{Note 9)}	Non-magnetizing lock										
	Holding force lbf [N]	18 [78]	29 [131]	57 [255]	29 [131]	44 [197]	87 [385]	49 [220]	74 [330]	148 [660]		
	Power consumption at 68°F (20°C) [W] ^{Note 10)}	5.5			6			6				
	Rated voltage [V]	24 VDC ±10%										

Note 1) Please consult with SMC for non-standard strokes as they are produced as special orders.

Note 2) For details, refer to “Speed–Work Load Graph (Guide)” on page 6.

Note 3) The allowable speed changes according to the stroke.

Note 4) A reference value for correcting an error in reciprocal operation.

Note 5) 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. (Test was performed with the actuator in the initial state.)

Vibration resistance: No malfunction occurred in a test ranging between 45 to

2000 Hz. Test was performed in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)

Note 6) The power consumption (including the driver) is for when the actuator is operating.

Note 7) The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.

Note 8) The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.

Note 9) Only when motor option “With lock” is selected.

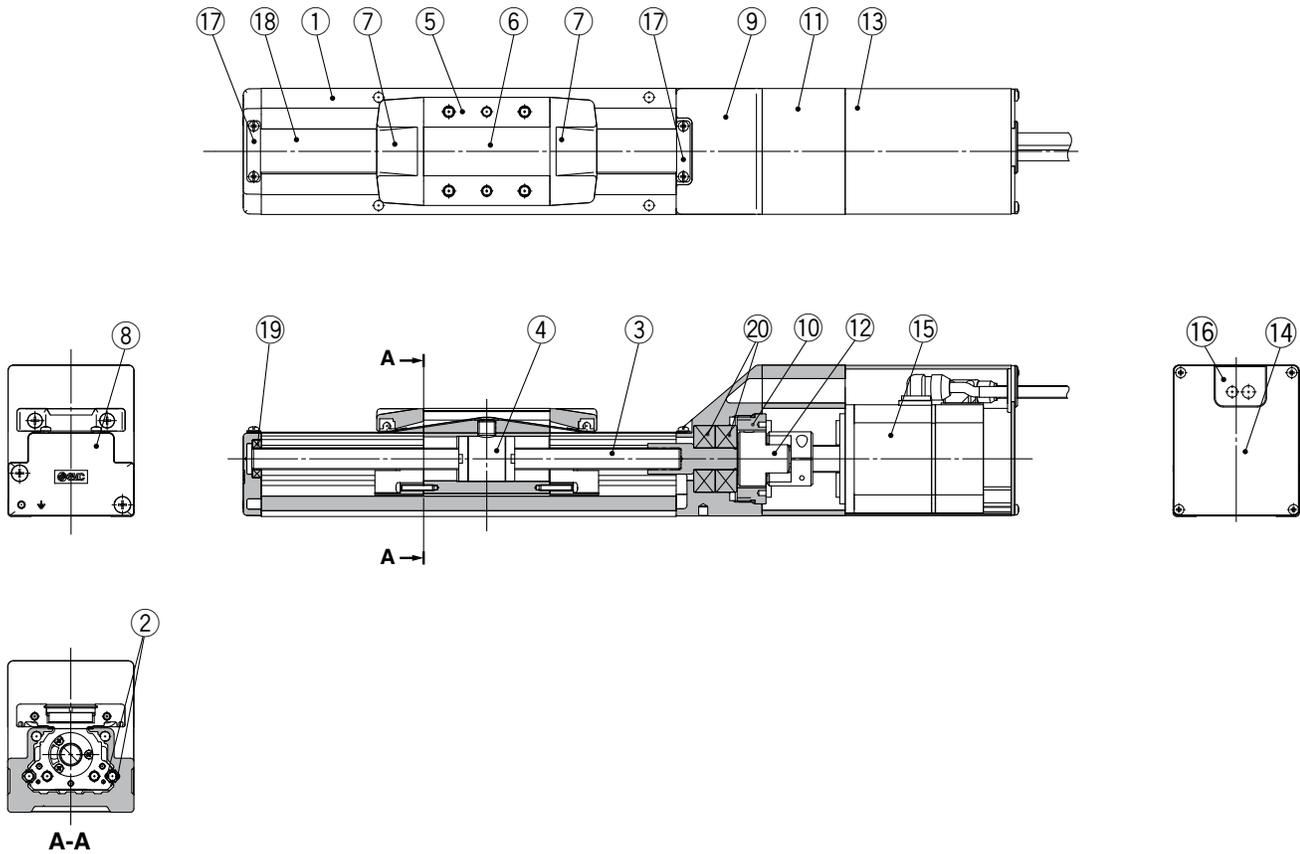
Note 10) For an actuator with lock, add the power consumption for the lock.

Weight

Series	LEFS25□V6											
Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600
Product weight [kg]	2.06	2.20	2.34	2.50	2.62	2.75	2.90	3.05	3.18	3.30	3.46	3.60
Additional weight with lock [kg]	0.3											

Series	LEFS32□V7															
Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Product weight [kg]	3.40	3.60	3.80	4.00	4.20	4.40	4.60	4.80	5.00	5.20	5.40	5.60	5.80	6.00	6.20	6.40
Additional weight with lock [kg]	0.7															

Series	LEFS40□V8																	
Stroke [mm]	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Product weight [kg]	5.92	6.20	6.48	6.75	7.05	7.35	7.61	7.90	8.17	8.35	8.73	9.00	9.30	9.55	9.86	10.15	10.42	10.70
Additional weight with lock [kg]	0.7																	



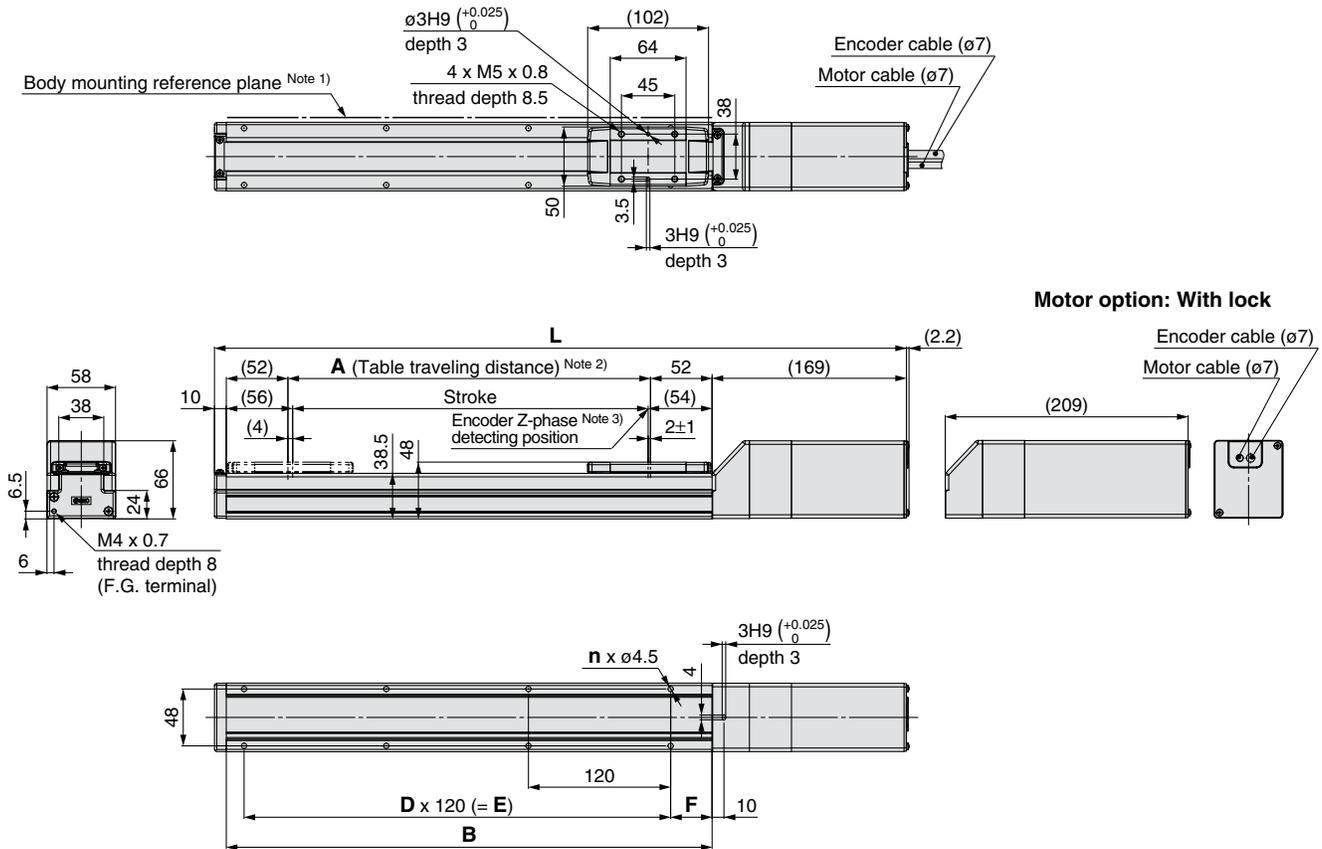
Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	Anodized
2	Rail guide	—	
3	Ball screw shaft	—	
4	Ball screw nut	—	
5	Table	Aluminum alloy	Anodized
6	Blanking plate	Aluminum alloy	Anodized
7	Seal band stopper	Synthetic resin	
8	Housing A	Aluminum die-cast	Coating
9	Housing B	Aluminum die-cast	Coating
10	Bearing stopper	Aluminum alloy	

No.	Description	Material	Note
11	Motor mount	Aluminum alloy	Coating
12	Coupling	—	
13	Motor cover	Aluminum alloy	Anodized
14	Motor end cover	Aluminum alloy	Anodized
15	Motor	—	
16	Grommet	NBR	
17	Band stopper	Stainless steel	
18	Dust seal band	Stainless steel	
19	Bearing	—	
20	Bearing	—	

Dimensions: In-line Motor

LEFS25



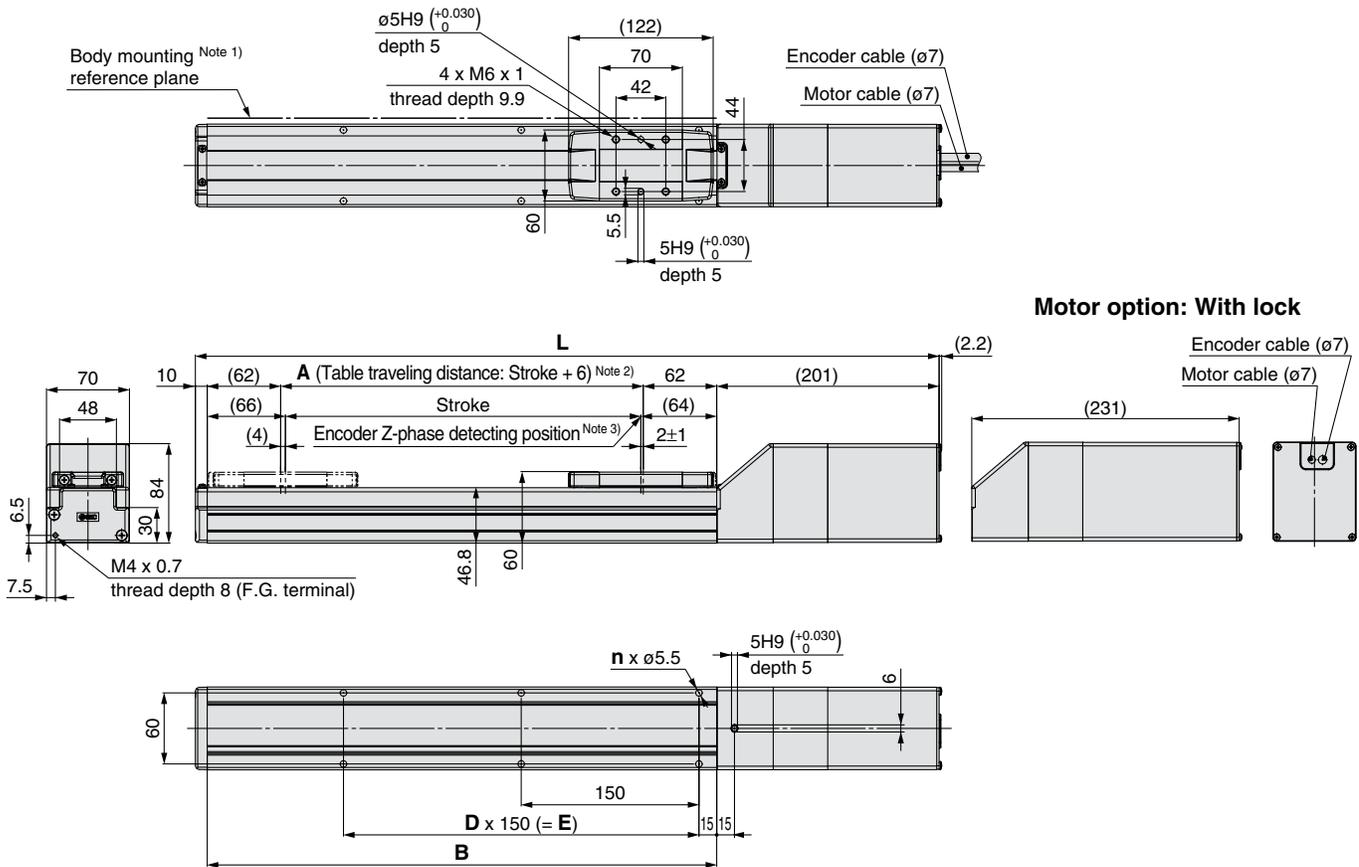
- Note 1) When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of R chamfering. (Recommended height 5 mm)
- Note 2) Distance within which the table can move when it returns to origin. Make sure a workpiece mounted on the table does not interfere with the work pieces and facilities around the table.
- Note 3) The Z-phase first detecting position from the stroke end of the motor side.

Dimensions

Model	L		A	B	n	D	E	F
	Without	With						
LEFS25□□-50□	339	379	56	160	4	—	—	20
LEFS25□□-100□	389	429	106	210	4	—	—	35
LEFS25□□-150□	439	479	156	260	4	—	—	
LEFS25□□-200□	489	529	206	310	6	2	240	
LEFS25□□-250□	539	579	256	360	6	2	240	
LEFS25□□-300□	589	629	306	410	8	3	360	
LEFS25□□-350□	639	679	356	460	8	3	360	
LEFS25□□-400□	689	729	406	510	8	3	360	
LEFS25□□-450□	739	779	456	560	10	4	480	
LEFS25□□-500□	789	829	506	610	10	4	480	
LEFS25□□-550□	839	879	556	660	12	5	600	
LEFS25□□-600□	889	929	606	710	12	5	600	

Dimensions: In-line Motor

LEFS32



Note 1) When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of R chamfering. (Recommended height 5 mm)

Note 2) Distance within which the table can move when it returns to origin. Make sure a workpiece mounted on the table does not interfere with the work pieces and facilities around the table.

Note 3) The Z-phase first detecting position from the stroke end of the motor side.

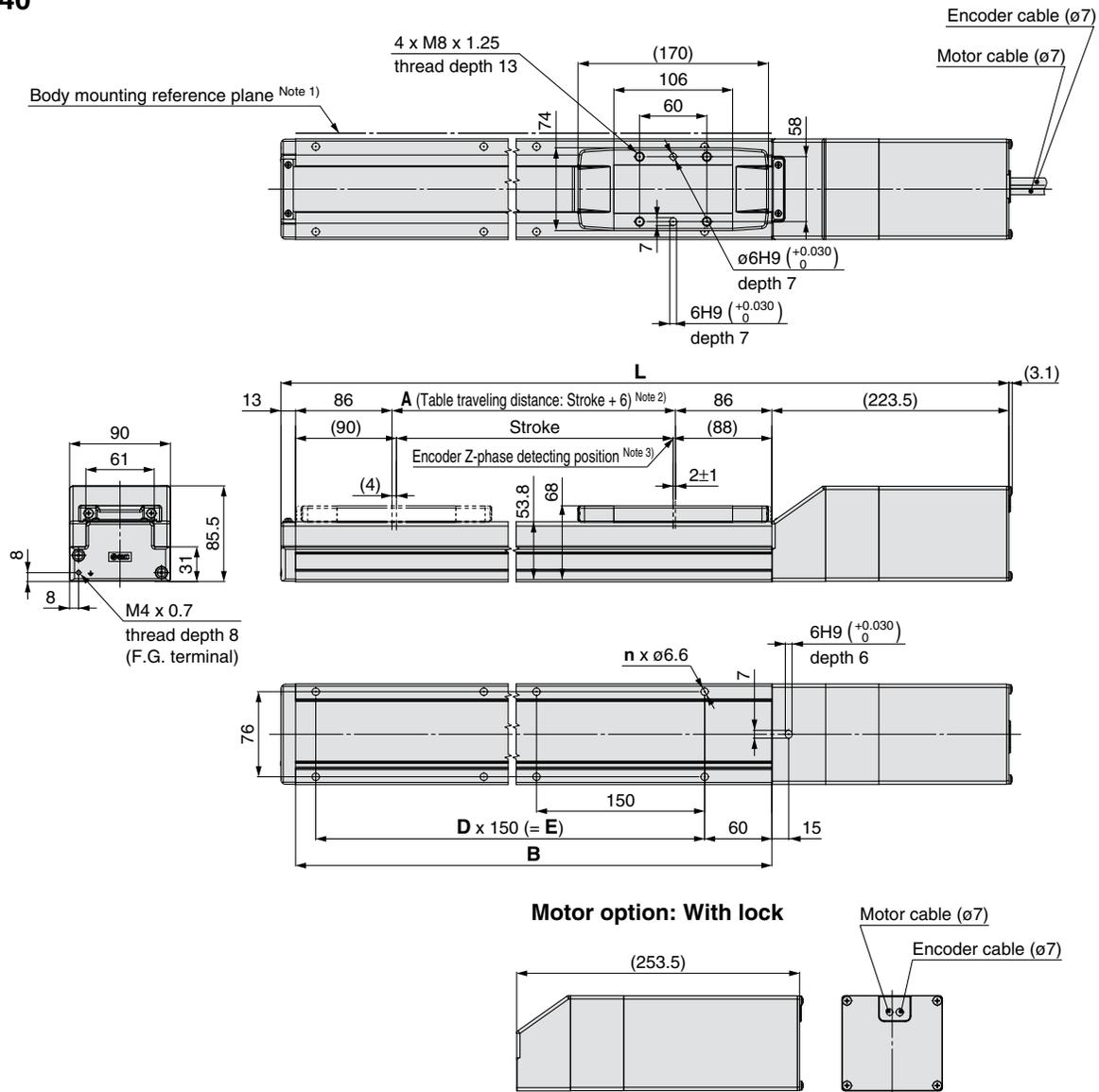
Dimensions

[mm]

Model	L		A	B	n	D	E
	Without	With					
LEFS32□□-50□	391	421	56	180	4	—	—
LEFS32□□-100□	441	471	106	230	4	—	—
LEFS32□□-150□	491	521	156	280	4	—	—
LEFS32□□-200□	541	571	206	330	6	2	300
LEFS32□□-250□	591	621	256	380	6	2	300
LEFS32□□-300□	641	671	306	430	6	2	300
LEFS32□□-350□	691	721	356	480	8	3	450
LEFS32□□-400□	741	771	406	530	8	3	450
LEFS32□□-450□	791	821	456	580	8	3	450
LEFS32□□-500□	841	871	506	630	10	4	600
LEFS32□□-550□	891	921	556	680	10	4	600
LEFS32□□-600□	941	971	606	730	10	4	600
LEFS32□□-650□	991	1021	656	780	12	5	750
LEFS32□□-700□	1041	1071	706	830	12	5	750
LEFS32□□-750□	1091	1121	756	880	12	5	750
LEFS32□□-800□	1141	1171	806	930	14	6	900

Dimensions: In-line Motor

LEFS40



- Note 1) When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of R chamfering. (Recommended height 5 mm)
- Note 2) Distance within which the table can move when it returns to origin. Make sure a workpiece mounted on the table does not interfere with the work pieces and facilities around the table.
- Note 3) The Z-phase first detecting position from the stroke end of the motor side.

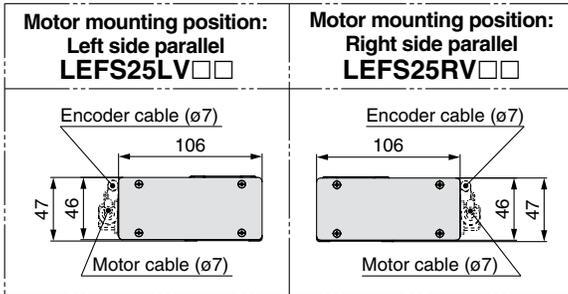
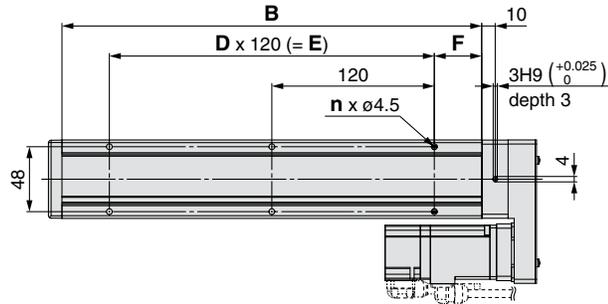
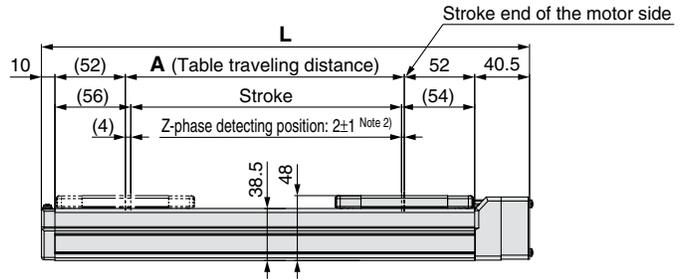
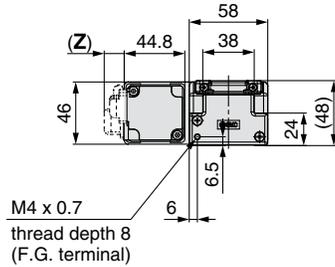
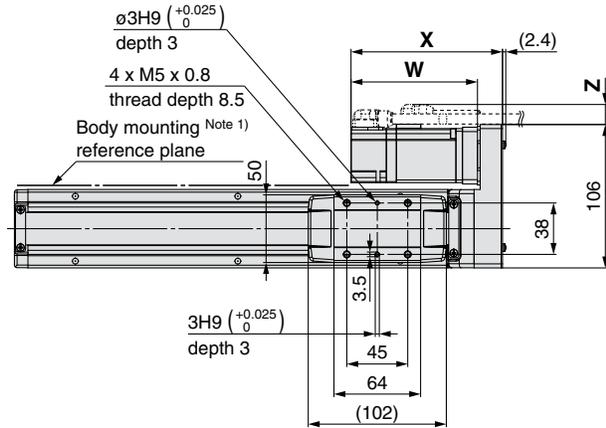
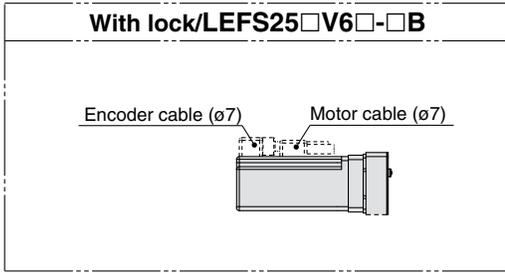
Dimensions

Model	L		A	B	n	D	E
	Without	With					
LEFS40□□-150□	564.5	594.5	156	328	4	—	150
LEFS40□□-200□	614.5	644.5	206	378	6	2	300
LEFS40□□-250□	664.5	694.5	256	428	6	2	300
LEFS40□□-300□	714.5	744.5	306	478	6	2	300
LEFS40□□-350□	764.5	794.5	356	528	8	3	450
LEFS40□□-400□	814.5	844.5	406	578	8	3	450
LEFS40□□-450□	864.5	894.5	456	628	8	3	450
LEFS40□□-500□	914.5	944.5	506	678	10	4	600
LEFS40□□-550□	964.5	994.5	556	728	10	4	600
LEFS40□□-600□	1014.5	1044.5	606	778	10	4	600
LEFS40□□-650□	1064.5	1094.5	656	828	12	5	750
LEFS40□□-700□	1114.5	1144.5	706	878	12	5	750
LEFS40□□-750□	1164.5	1194.5	756	928	12	5	750
LEFS40□□-800□	1214.5	1144.5	806	978	14	6	900
LEFS40□□-850□	1264.5	1294.5	856	1028	14	6	900
LEFS40□□-900□	1314.5	1344.5	906	1078	14	6	900
LEFS40□□-950□	1364.5	1394.5	956	1128	16	7	1050
LEFS40□□-1000□	1414.5	1444.5	1006	1178	16	7	1050

Series LEFS

Dimensions: Motor Parallel

LEFS25R



Motor Dimensions [mm]

Motor type	X		W		Z	
	Without	With	Without	With	Without	With
V6	112	157	82.5	127.5	11	

Dimensions [mm]

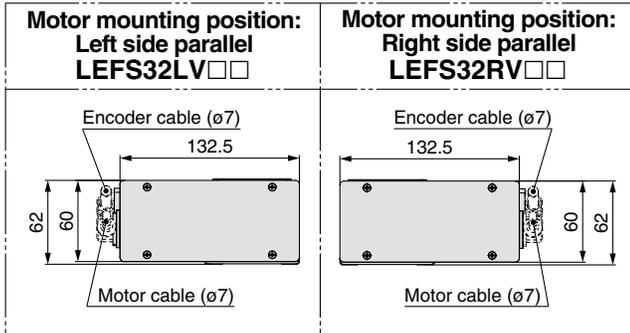
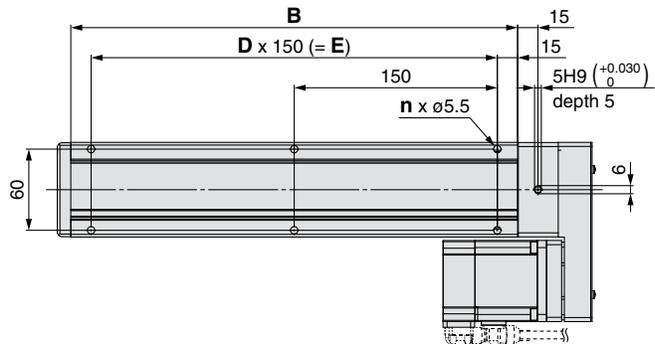
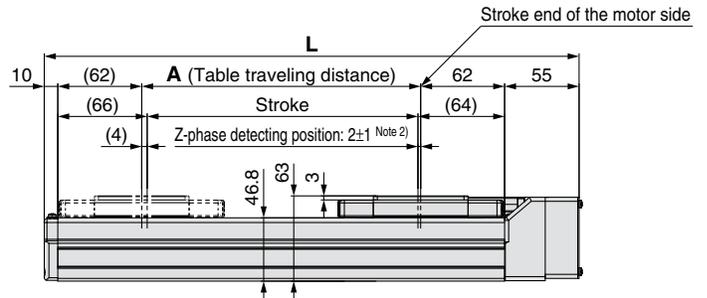
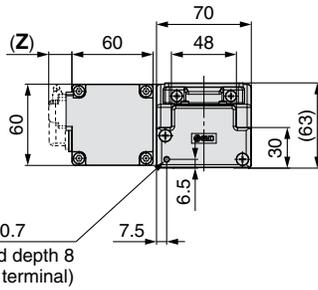
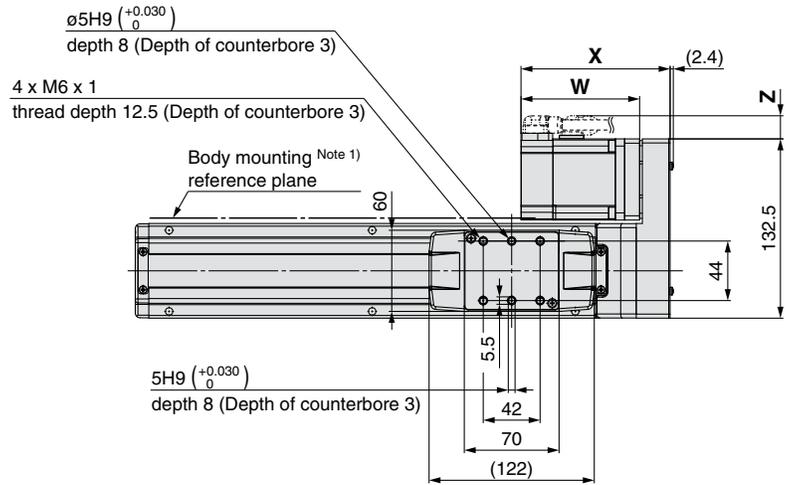
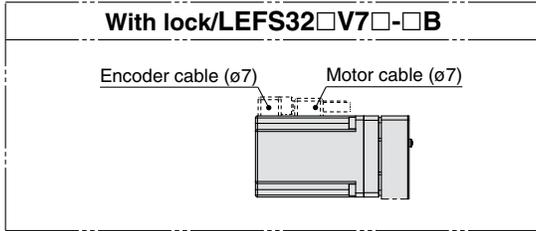
Model	L	A	B	n	D	E	F
LEFS25□□□-50□	210.5	56	160	4	—	—	20
LEFS25□□□-100□	260.5	106	210	4	—	—	
LEFS25□□□-150□	310.5	156	260	4	—	—	
LEFS25□□□-200□	360.5	206	310	6	2	240	
LEFS25□□□-250□	410.5	256	360	6	2	240	
LEFS25□□□-300□	460.5	306	410	8	3	360	
LEFS25□□□-350□	510.5	356	460	8	3	360	35
LEFS25□□□-400□	560.5	406	510	8	3	360	
LEFS25□□□-450□	610.5	456	560	10	4	480	
LEFS25□□□-500□	660.5	506	610	10	4	480	
LEFS25□□□-550□	710.5	556	660	12	5	600	
LEFS25□□□-600□	760.5	606	710	12	5	600	

Note 1) When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more.
(Recommended height 5 mm)

Note 2) The Z-phase first detecting position from the stroke end of the motor side. Please consult with SMC for adjusting the Z-phase detecting position at the stroke end of the end side.

Dimensions: Motor Parallel

LEFS32R



Note 1) When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more.
(Recommended height 5 mm)

Note 2) The Z-phase first detecting position from the stroke end of the motor side. Please consult with SMC for adjusting the Z-phase detecting position at the stroke end of the end side.

Motor Dimensions

Motor type	X		W		Z	
	Without	With	Without	With	Without	With
V7	113.5	153.5	80	120	14	14

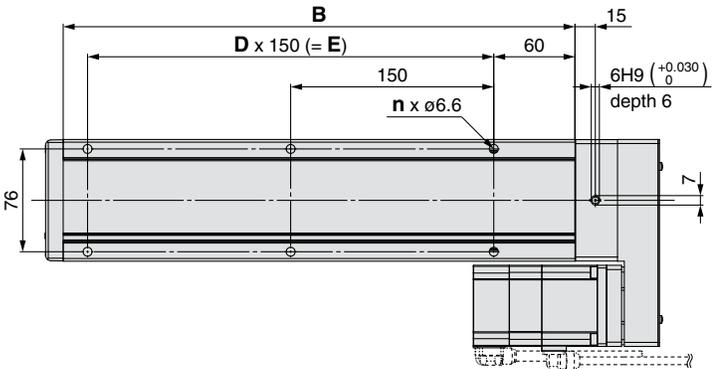
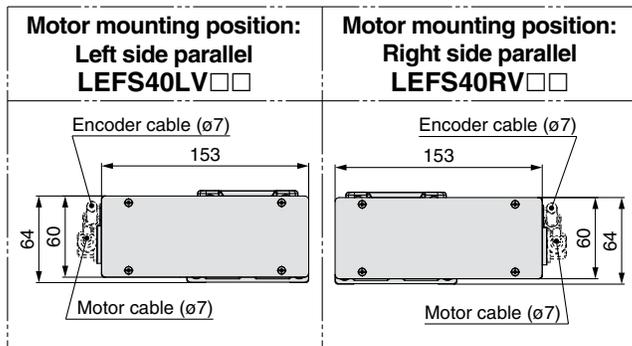
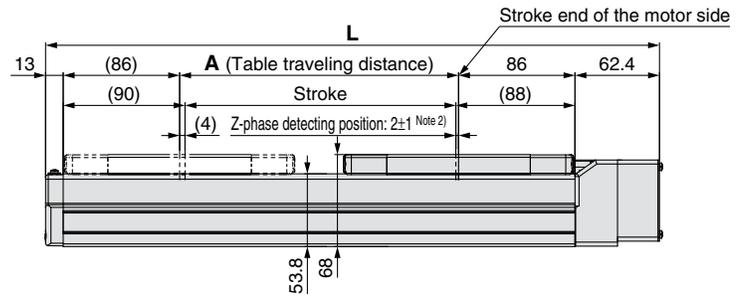
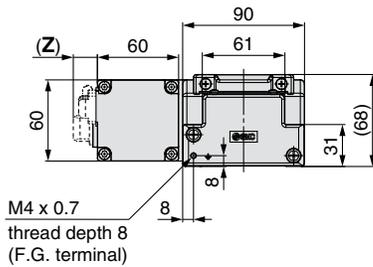
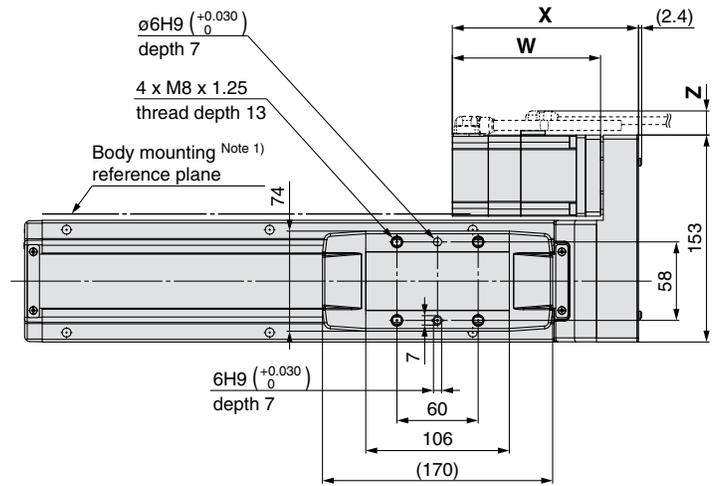
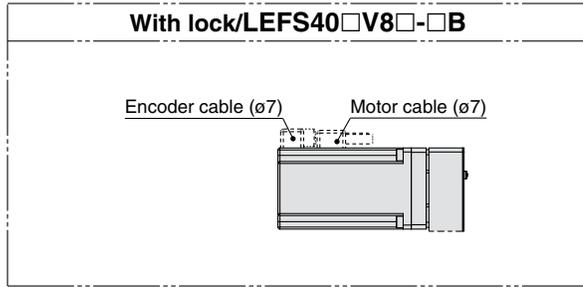
Dimensions

Model	L	A	B	n	D	E
LEFS32□□□-50□	245	56	180	4	—	—
LEFS32□□□-100□	295	106	230	4	—	—
LEFS32□□□-150□	345	156	280	4	—	—
LEFS32□□□-200□	395	206	330	6	2	300
LEFS32□□□-250□	445	256	380	6	2	300
LEFS32□□□-300□	495	306	430	6	2	300
LEFS32□□□-350□	545	356	480	8	3	450
LEFS32□□□-400□	595	406	530	8	3	450
LEFS32□□□-450□	645	456	580	8	3	450
LEFS32□□□-500□	695	506	630	10	4	600
LEFS32□□□-550□	745	556	680	10	4	600
LEFS32□□□-600□	795	606	730	10	4	600
LEFS32□□□-650□	845	656	780	12	5	750
LEFS32□□□-700□	895	706	830	12	5	750
LEFS32□□□-750□	945	756	880	12	5	750
LEFS32□□□-800□	995	806	930	14	6	900

Series LEFS

Dimensions: Motor Parallel

LEFS40R



Note 1) When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more. (Recommended height 5 mm)

Note 2) The Z-phase first detecting position from the stroke end of the motor side. Please consult with SMC for adjusting the Z-phase detecting position at the stroke end of the end side.

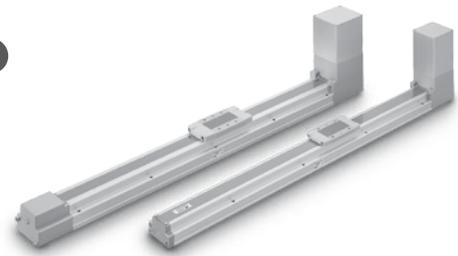
Motor Dimensions

Motor type	X		W		Z	
	Without	With	Without	With	Without	With
V8	137.5	177.5	98.5	138.5	14	14

Dimensions

Model	L	A	B	n	D	E
LEFS40□□□-150□	403.4	156	328	4	—	150
LEFS40□□□-200□	453.4	206	378	6	2	300
LEFS40□□□-250□	503.4	256	428	6	2	300
LEFS40□□□-300□	553.4	306	478	6	2	300
LEFS40□□□-350□	603.4	356	528	8	3	450
LEFS40□□□-400□	653.4	406	578	8	3	450
LEFS40□□□-450□	703.4	456	628	8	3	450
LEFS40□□□-500□	753.4	506	678	10	4	600
LEFS40□□□-550□	803.4	556	728	10	4	600
LEFS40□□□-600□	853.4	606	778	10	4	600
LEFS40□□□-650□	903.4	656	828	12	5	750
LEFS40□□□-700□	953.4	706	878	12	5	750
LEFS40□□□-750□	1003.4	756	928	12	5	750
LEFS40□□□-800□	1053.4	806	978	14	6	900
LEFS40□□□-850□	1103.4	856	1028	14	6	900
LEFS40□□□-900□	1153.4	906	1078	14	6	900
LEFS40□□□-950□	1203.4	956	1128	16	7	1050
LEFS40□□□-1000□	1253.4	1006	1178	16	7	1050

Electric Actuator/Slider Type **AC Servo Motor** Belt Drive/*Series LEFB* Model Selection



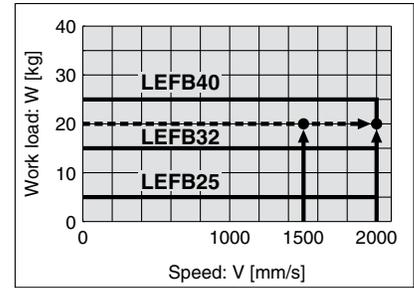
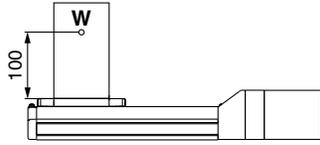
Selection Procedure

- Step 1** Check the work load–speed. → **Step 2** Check the cycle time. → **Step 3** Check the allowable moment.

Selection Example

Operating conditions

- Workpiece mass: 20 [kg]
- Speed: 1500 [mm/s]
- Acceleration/Deceleration: 3000 [mm/s²]
- Stroke: 2000 [mm]
- Mounting position: Horizontal upward
- Workpiece mounting condition:



<Speed-Work load graph>
(LEFB40)

Step 1 Check the work load–speed. <Speed-Work load graph> (Page 24)

Select the target model based on the workpiece mass and speed with reference to the <Speed-Work load graph>.

Selection example) The **LEFB40V8S-2000** is temporarily selected based on the graph shown on the right side.

Step 2 Check the cycle time.

Calculate the cycle time using the following calculation method.

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 obtained by the following equation.

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

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

- 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 positioning of the step data. Therefore, calculate the settling time with reference to the following value.

$$T4 = 0.05 \text{ [s]}$$

Calculation example)

T1 to T4 can be calculated as follows.

$$T1 = V/a1 = 1500/3000 = 0.5 \text{ [s]}$$

$$T3 = V/a2 = 1500/3000 = 0.5 \text{ [s]}$$

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

$$= \frac{2000 - 0.5 \cdot 1500 \cdot (0.5 + 0.5)}{1500}$$

$$= 0.83 \text{ [s]}$$

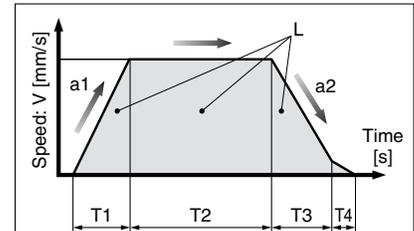
$$T4 = 0.05 \text{ [s]}$$

Therefore, the cycle time can be obtained as follows.

$$T = T1 + T2 + T3 + T4$$

$$= 0.5 + 0.83 + 0.5 + 0.05$$

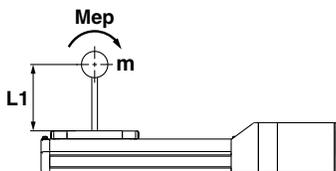
$$= \mathbf{1.88 \text{ [s]}}$$



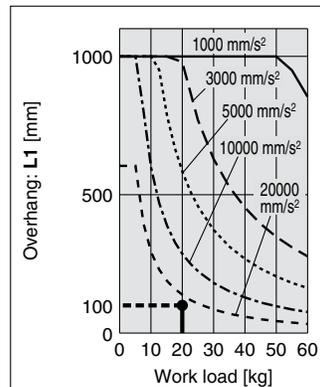
- L : Stroke [mm]
... (Operating condition)
- V : Speed [mm/s]
... (Operating condition)
- a1: Acceleration [mm/s²]
... (Operating condition)
- a2: Deceleration [mm/s²]
... (Operating condition)

- T1: Acceleration time [s]
Time until reaching the set speed
- T2: Constant speed time [s]
Time while the actuator is operating at a constant speed
- T3: Deceleration time [s]
Time from the beginning of the constant speed operation to stop
- T4: Settling time [s]
Time until in position is completed

Step 3 Check the guide moment.

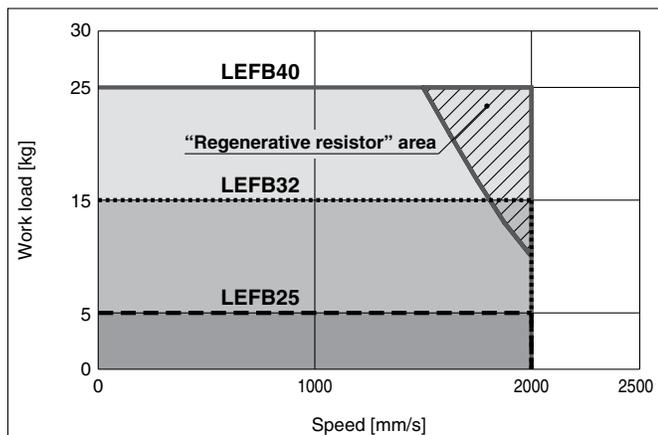


Based on the above calculation result, the **LEFB40V8S-2000** is selected.



Speed-Work Load Graph (Guide)

LEFB□/Belt Drive

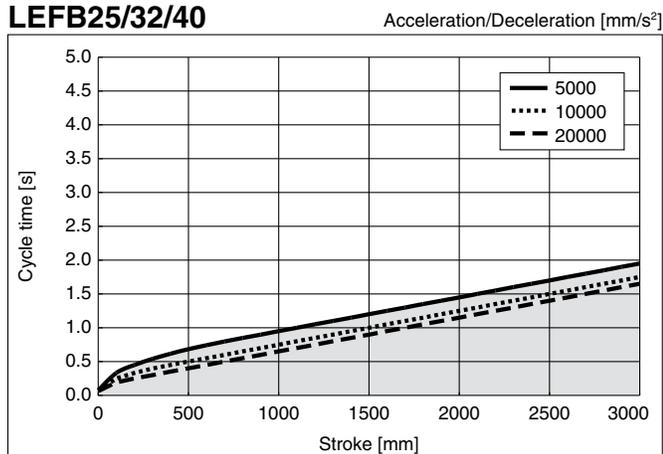


* The shaded area in the graph requires the regenerative resistor.

Cycle Time Graph (Guide)

LEFB□/Belt Drive

LEFB25/32/40



* Cycle time is for when maximum speed.

* Maximum stroke: LEFB25: 2000 mm
LEFB32: 2500 mm
LEFB40: 3000 mm

"Regenerative resistor" area

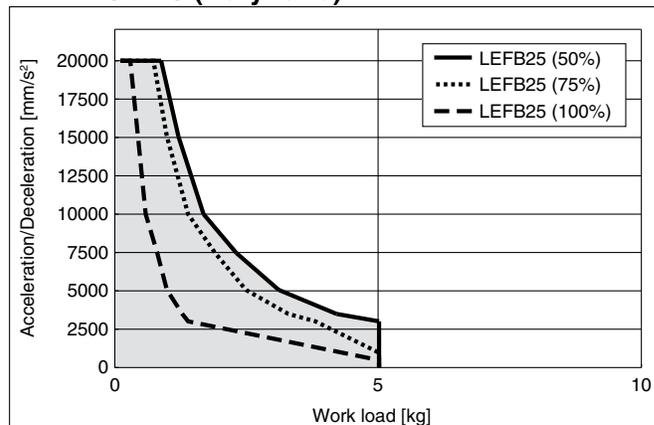
* When using the actuator in the "Regenerative resistor" area, download the "AC servo capacity selection program/SigmaJunmaSize+" from the SMC website. Then, calculate the necessary regenerative resistor capacity to prepare an appropriate external regenerative resistor.

* Regenerative resistor should be provided by the customer.

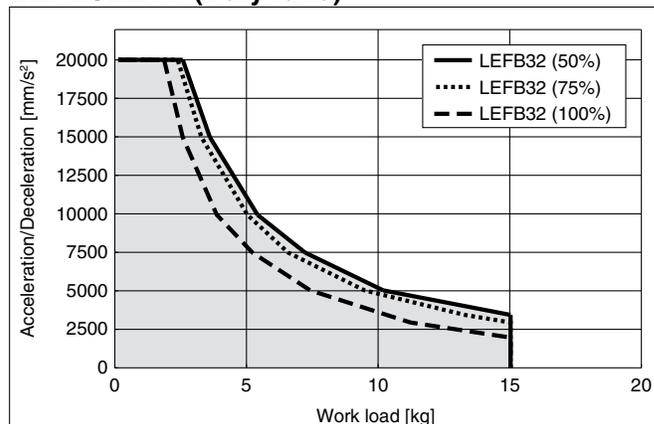
Work Load-Acceleration/Deceleration Graph (Guide)

LEFB□/Belt Drive

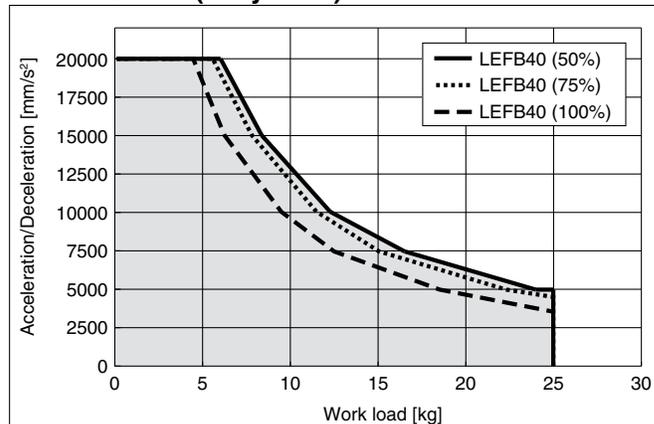
LEFB25□V6 (Duty ratio)



LEFB32□V7 (Duty ratio)



LEFB40□V8 (Duty ratio)



Applicable Motor/Driver

Model	Applicable model	
	Motor	Servopack (SMC driver)
LEFB25□	SGMJV-01A3A	SGDV-R90A11□ (LECYM2-V5) SGDV-R90A21□ (LECYU2-V5)
LEFB32□	SGMJV-02A3A	SGDV-1R6A11□ (LECYM2-V7) SGDV-1R6A21□ (LECYU2-V7)
LEFB40□	SGMJV-04A3A	SGDV-2R8A11□ (LECYM2-V8) SGDV-2R8A21□ (LECYU2-V8)

Series LEFB

* This graph shows the amount of allowable overhang when the center of gravity of the workpiece overhangs in one direction. When the center of gravity of the workpiece overhangs in two directions, refer to the Electric Actuator Selection Software for confirmation, <http://www.smcworld.com>

Dynamic Allowable Moment

Acceleration/Deceleration ——— 1000 mm/s² - - - 3000 mm/s² 5000 mm/s² - - - - 10000 mm/s² - - - - 20000 mm/s²

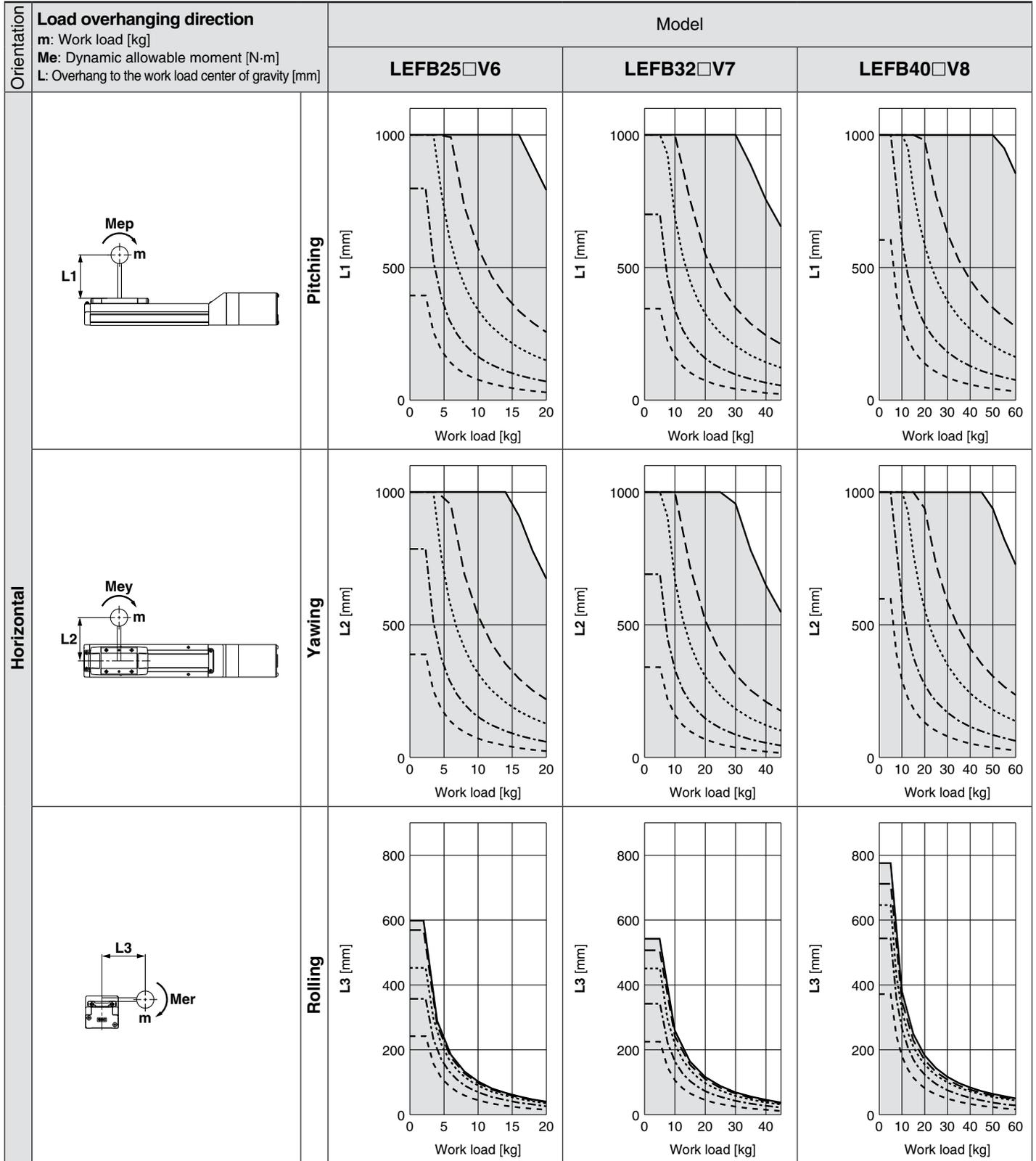
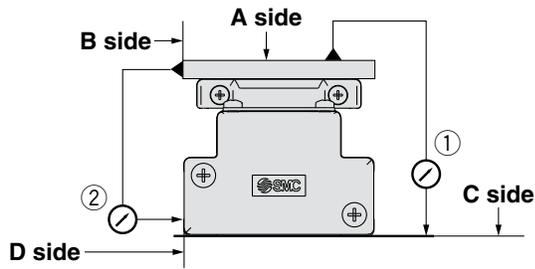


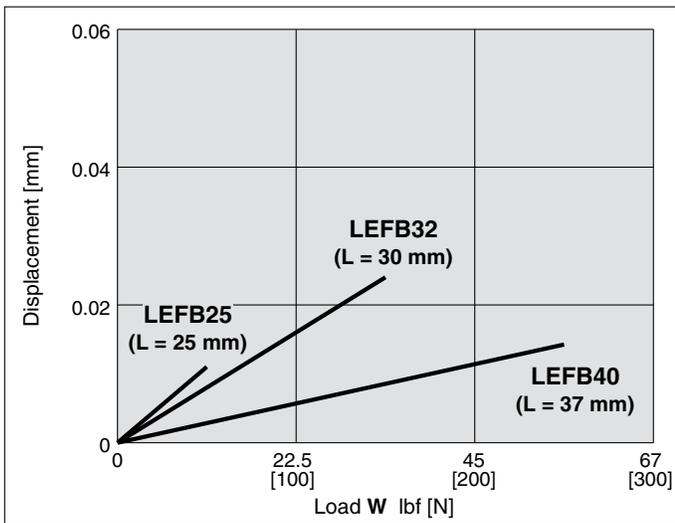
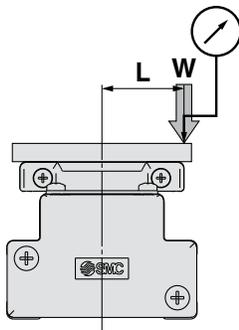
Table Accuracy



Model	Traveling parallelism [mm] (Every 300 mm)	
	① C side traveling parallelism to A side	② D side traveling parallelism to B side
LEFB25	0.05	0.03
LEFB32	0.05	0.03
LEFB40	0.05	0.03

Note) Traveling parallelism does not include the mounting surface accuracy.

Table Displacement (Reference Value)



Note 1) This displacement is measured when a 15 mm aluminum plate is mounted and fixed on the table.
 Note 2) Check the clearance and play of the guide separately.

Electric Actuator/Slider Type Belt Drive AC Servo Motor

Series **LEFB** LEFS25, 32, 40



How to Order

LEFB 32 V7 S - 300 B - S 3 M2

1
 2
 3
 4
 5
 6
 7
 8
 9
 10

1 Size

25
32
40

3 Motor type

Symbol	Type	Output [W]	Size	Compatible driver
V6	AC servo motor (Absolute encoder)	100	25	LECYM2-V5/LECYU2-V5
V7		200	32	LECYM2-V7/LECYU2-V7
V8		400	40	LECYM2-V8/LECYU2-V8

2 Motor mounting position

Nil	Top mounting
U	Bottom mounting

9 Driver type

	Compatible driver	Power supply voltage [V]
Nil	Without driver	—
M2	LECYM2-V□	200 to 230
U2	LECYU2-V□	200 to 230

10 I/O connector

Nil	Without connector
H	With connector

4 Equivalent lead [mm]

S	54
---	----

6 Motor option

Nil	Without option
B	With lock

5 Stroke [mm]

300	300
to	to
3000	3000

7 Cable type

Nil	Without cable
S	Standard cable
R	Robotic cable (Flexible cable)

8 Actuator cable length [m]

Nil	Without cable
3	3
5	5
A	10
C	20

Applicable Stroke Table

●: Standard/○: Produced upon receipt of order

	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500	3000	Manufacturable stroke range [mm]
LEFB25	●	●	●	●	●	●	●	●	○	●	○	○	●	○	○	○	○	●	—	—	300 to 2000
LEFB32	●	●	●	●	●	●	●	●	○	●	○	○	●	○	○	○	○	●	●	—	300 to 2500
LEFB40	●	●	●	●	●	●	●	●	○	●	○	○	●	○	○	○	○	●	●	●	300 to 3000

* Please consult with SMC for strokes other than those shown above as they are produced as special orders.

Compatible Drivers

Driver type	MECHATROLINK-II type	MECHATROLINK-III type
		
Series	LECYM	LECYU
Applicable network	MECHATROLINK-II	MECHATROLINK-III
Control encoder	Absolute 20-bit encoder	
Communication device	USB communication, RS-422 communication	
Power supply voltage (V)	200 to 230 VAC (50/60 Hz)	
Reference page	Page 103	

Specifications

LEFB25, 32, 40 AC Servo Motor

Model		LEFB25V6	LEFB32V7	LEFB40V8	
Actuator specifications	Stroke [mm] ^{Note 1)}	300, 400, 500 600, 700, 800 900, 1000, (1100) 1200, (1300, 1400) 1500, (1600, 1700) (1800, 1900), 2000	300, 400, 500 600, 700, 800 900, 1000, (1100) 1200, (1300, 1400) 1500, (1600, 1700) (1800, 1900), 2000 2500	300, 400, 500 600, 700, 800 900, 1000, (1100) 1200, (1300, 1400) 1500, (1600, 1700) (1800, 1900), 2000 2500, 3000	
	Work load [kg] ^{Note 2)}	Horizontal	5	15	25
	Max. speed [mm/s]		2000	2000	2000
	Max. acceleration/deceleration [mm/s ²]		20000 (Refer to page 24 for limit according to work load and duty ratio.) ^{Note 3)}		
	Positioning repeatability [mm]		±0.06		
	Lost motion [mm] ^{Note 4)}		0.1 or less		
	Equivalent lead [mm]		54		
	Impact/Vibration resistance [m/s ²] ^{Note 5)}		50/20		
	Actuation type		Belt		
	Guide type		Linear guide		
	Operating temperature range		41 to 104°F (5 to 40°C)		
	Operating humidity range [%RH]		90 or less (No condensation)		
Electric specifications	Motor output/Size	100 W/□40	200 W/□60	400 W/□60	
	Motor type	AC servo motor (200 VAC)			
	Encoder	Absolute 20-bit encoder (Resolution: 1048576 p/rev)			
	Power consumption [W] ^{Note 6)}	Horizontal	29	41	72
		Vertical	—	—	—
	Standby power consumption when operating [W] ^{Note 7)}	Horizontal	2	2	2
		Vertical	—	—	—
Max. instantaneous power consumption [W] ^{Note 8)}		445	725	1275	
Lock unit specifications	Type ^{Note 9)}	Non-magnetizing lock			
	Holding force lbf [N]	6.1 [27]	12 [54]	25 [110]	
	Power consumption at 68°F (20°C) [W] ^{Note 10)}	5.5	6.0	6.0	
	Rated voltage [V]	24 VDC $\pm 0.1\%$			

Note 1) Please consult with SMC as all non-standard and non-made-to-order strokes are produced as special orders.

Note 2) For details, refer to "Speed-Work Load Graph (Guide)" on page 24.

Note 3) Maximum acceleration/deceleration changes according to the work load. Check "Work Load-Acceleration/Deceleration Graph (Guide)" of the catalog.

Note 4) A reference value for correcting an error in reciprocal operation.

Note 5) 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. (Test was performed with the actuator in the initial state.)

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

Note 6) The power consumption (including the driver) is for when the actuator is operating.

Note 7) The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.

Note 8) The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.

Note 9) Only when motor option "With lock" is selected.

Note 10) For an actuator with lock, add the power consumption for the lock.

Weight

Series	LEFB25																	
Stroke [mm]	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Product weight [kg]	3.06	3.31	3.56	3.81	4.06	4.31	4.56	4.81	5.06	5.31	5.56	5.81	6.06	6.31	6.56	6.81	7.06	7.31
Additional weight with lock [kg]	0.3																	

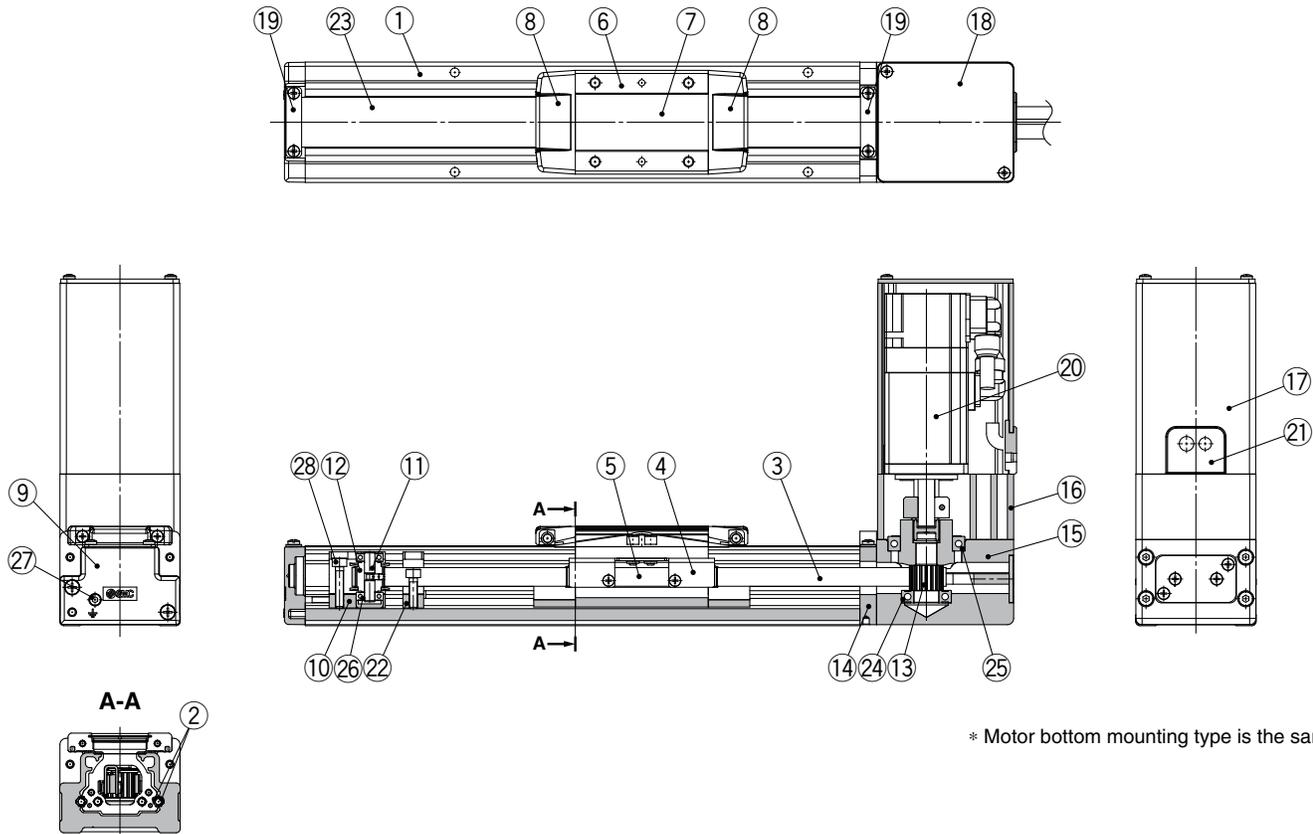
Series	LEFB32																		
Stroke [mm]	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500
Product weight [kg]	4.90	5.25	5.60	5.95	6.30	6.65	7.00	7.35	7.70	8.05	8.40	8.75	9.10	9.45	9.80	10.15	10.50	10.85	12.60
Additional weight with lock [kg]	0.7																		

Series	LEFB40																			
Stroke [mm]	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500	3000
Product weight [kg]	7.20	7.65	8.10	8.55	9.00	9.45	9.90	10.35	10.80	11.25	11.70	12.15	12.60	13.05	13.50	13.95	14.40	14.85	17.10	19.35
Additional weight with lock [kg]	0.7																			

Series LEFB

Construction

LEFB25V6S



* Motor bottom mounting type is the same.

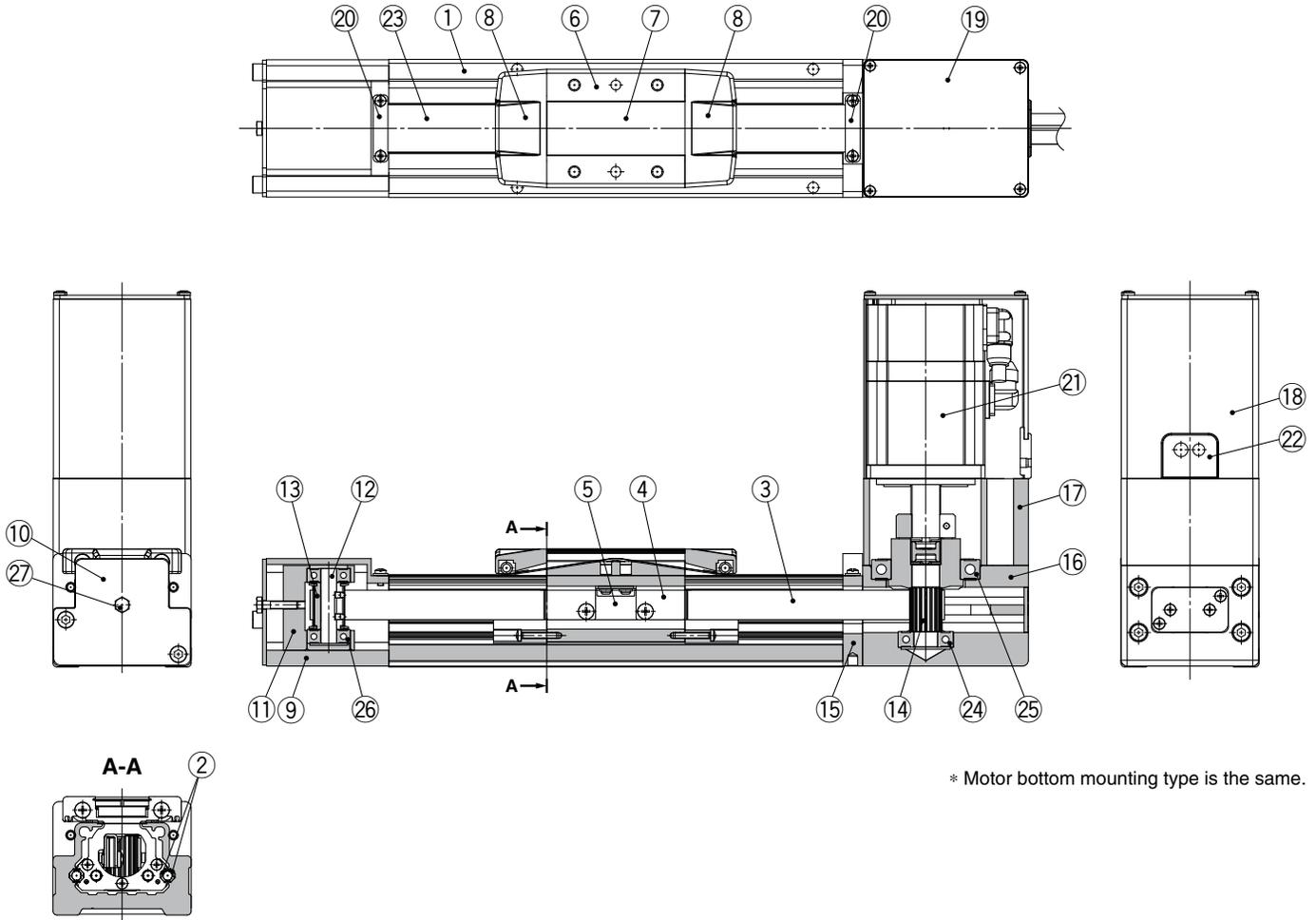
Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	Anodized
2	Rail guide		
3	Belt		
4	Belt holder	Carbon steel	Chromating
5	Belt stopper	Aluminum alloy	Anodized
6	Table	Aluminum alloy	Anodized
7	Blanking plate	Aluminum alloy	Anodized
8	Seal band stopper	Synthetic resin	
9	Housing A	Aluminum die-cast	Coating
10	Pulley holder	Aluminum alloy	
11	Pulley shaft	Stainless steel	
12	End pulley	Aluminum alloy	Anodized
13	Motor pulley	Aluminum alloy	Anodized
14	Return flange	Aluminum alloy	Coating

No.	Description	Material	Note
15	Housing	Aluminum alloy	Coating
16	Motor mount	Aluminum alloy	Coating
17	Motor cover	Aluminum alloy	Anodized
18	Motor end cover	Aluminum alloy	Anodized
19	Band stopper	Stainless steel	
20	Motor		
21	Rubber bushing	NBR	
22	Stopper	Aluminum alloy	
23	Dust seal band	Stainless steel	
24	Bearing		
25	Bearing		
26	Spacer	Aluminum alloy	
27	Tension adjustment bolt	Chromium molybdenum steel	Chromating
28	Pulley fixing bolt	Chromium molybdenum steel	Chromating

Construction

LEFB32/40V□S



Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	Anodized
2	Rail guide		
3	Belt		
4	Belt holder	Carbon steel	Chromating
5	Belt stopper	Aluminum alloy	Anodized
6	Table	Aluminum alloy	Anodized
7	Blanking plate	Aluminum alloy	Anodized
8	Seal band stopper	Synthetic resin	
9	End block	Aluminum alloy	Coating
10	End block cover		
11	Pulley holder	Aluminum alloy	
12	Pulley shaft	Stainless steel	
13	End pulley	Aluminum alloy	Anodized
14	Motor pulley	Aluminum alloy	Anodized

No.	Description	Material	Note
15	Return flange	Aluminum alloy	Coating
16	Housing	Aluminum alloy	Coating
17	Motor mount	Aluminum alloy	Coating
18	Motor cover	Aluminum alloy	Anodized
19	Motor end cover	Aluminum alloy	Anodized
20	Band stopper	Stainless steel	
21	Motor		
22	Rubber bushing	NBR	
23	Dust seal band	Stainless steel	
24	Bearing		
25	Bearing		
26	Bearing		
27	Tension adjustment bolt	Chromium molybdenum steel	Chromating

Model Selection

LEFS

LEFB

LEJS

LEJB

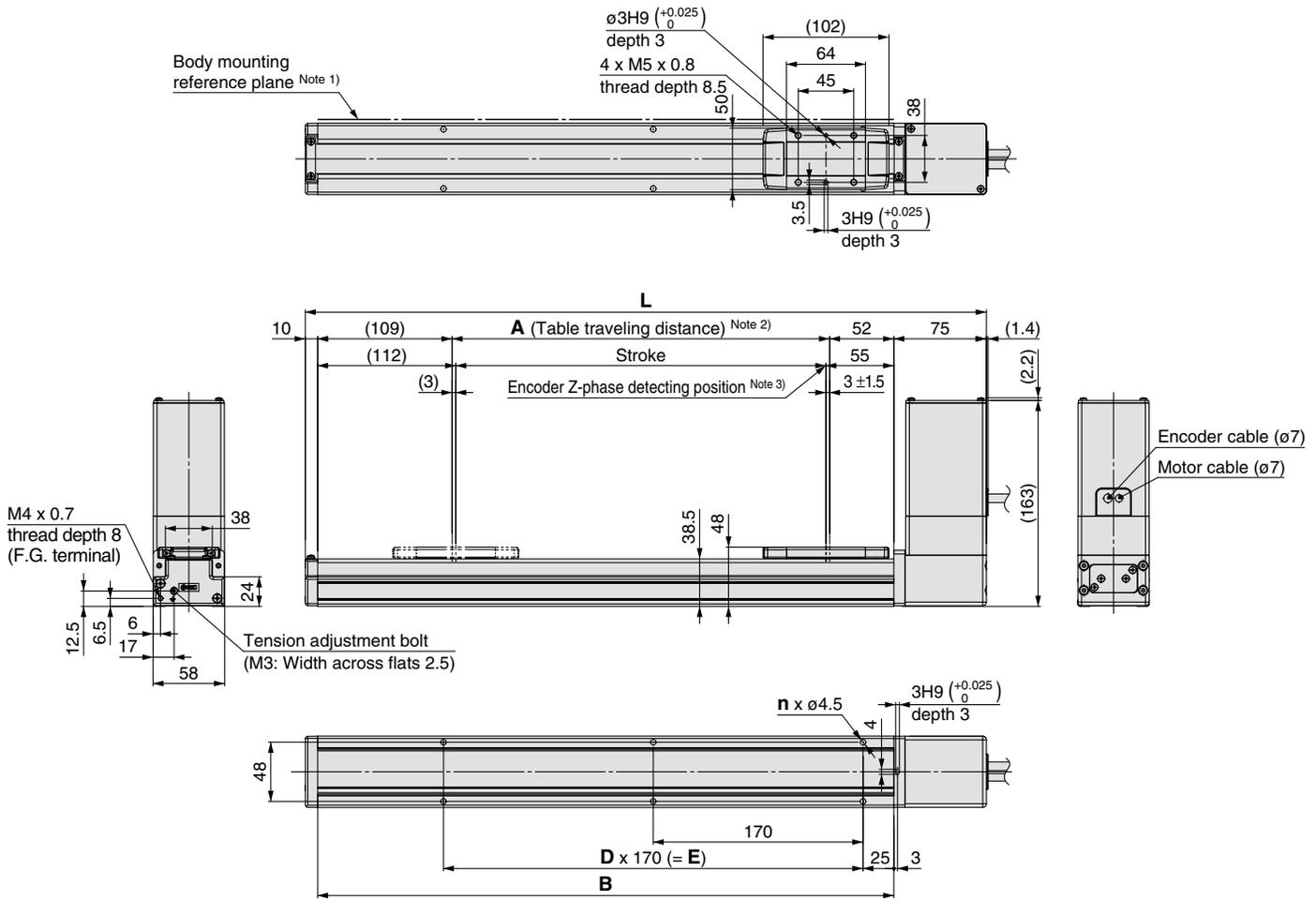
LEY

LEYG

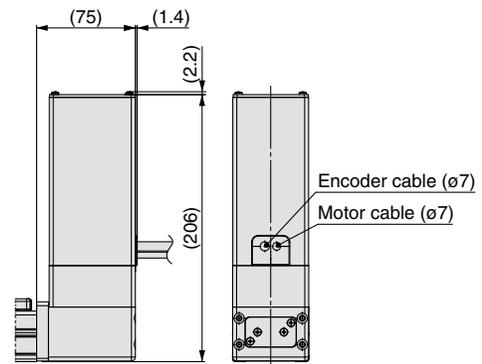
LECYM/LECYU

Dimensions: Belt Drive

LEFB25/Motor top mounting type



Motor option: With lock



Dimensions

[mm]

Stroke	L	A	B	n	D	E
300	552	306	467	6	2	340
400	652	406	567	8	3	510
500	752	506	667	8	3	510
600	852	606	767	10	4	680
700	952	706	867	10	4	680
800	1052	806	967	12	5	850
900	1152	906	1067	14	6	1020
1000	1252	1006	1167	14	6	1020
1100	1352	1106	1267	16	7	1190
1200	1452	1206	1367	16	7	1190
1300	1552	1306	1467	18	8	1360
1400	1652	1406	1567	20	9	1530
1500	1752	1506	1667	20	9	1530
1600	1852	1606	1767	22	10	1700
1700	1952	1706	1867	22	10	1700
1800	2052	1806	1967	24	11	1870
1900	2152	1906	2067	24	11	1870
2000	2252	2006	2167	26	12	2040

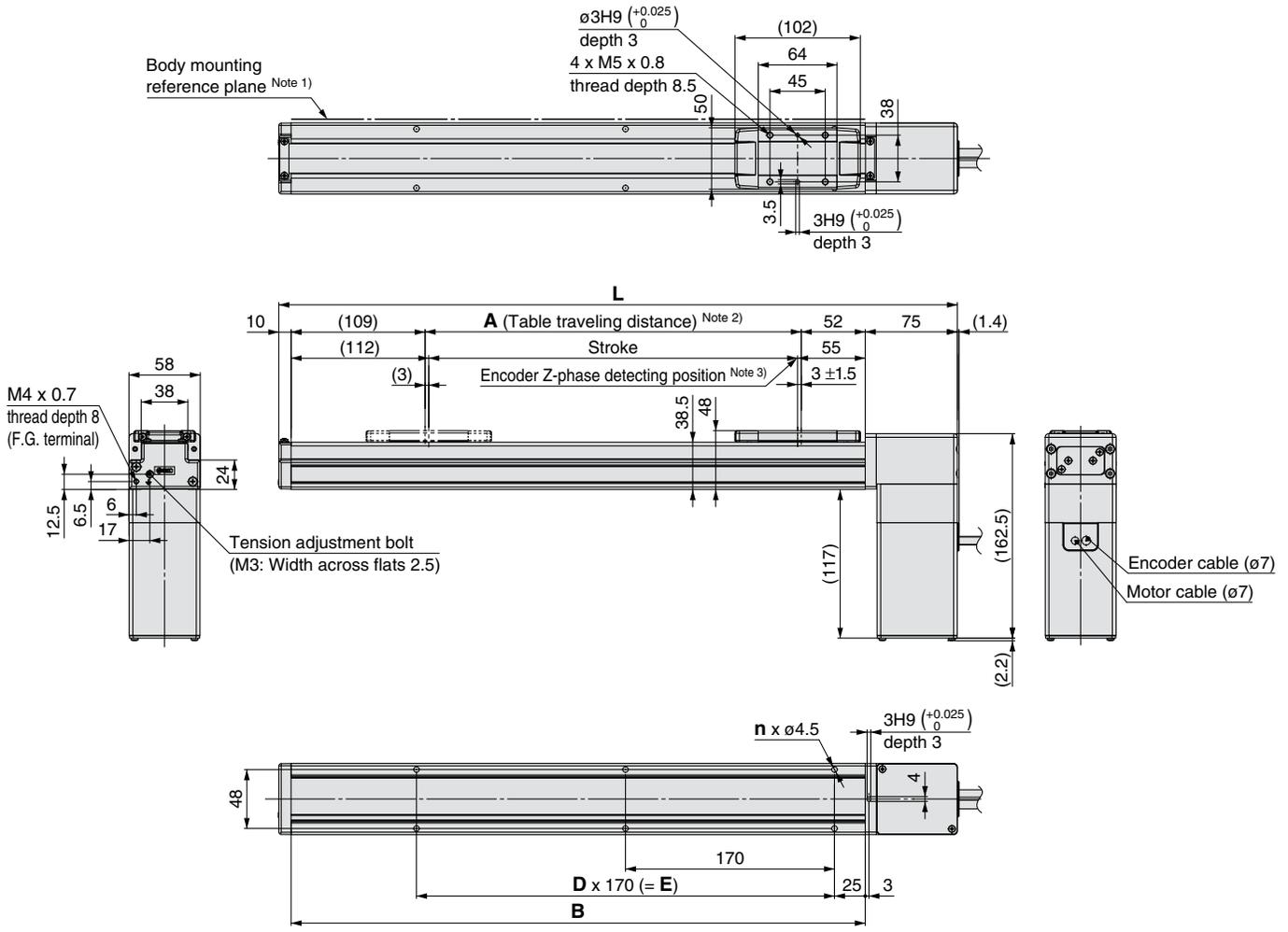
Note 1) When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of R chamfering. (Recommended height 5 mm)

Note 2) Distance within which the table can move when it returns to origin. Make sure a workpiece mounted on the table does not interfere with the work pieces and facilities around the table.

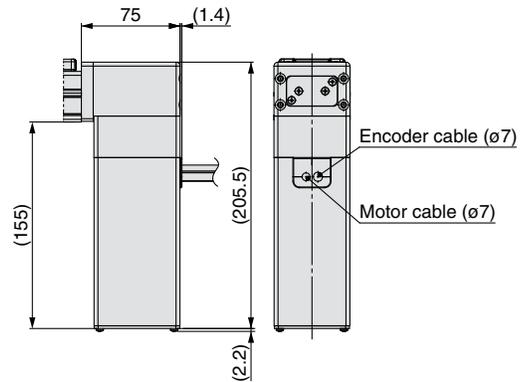
Note 3) The Z-phase first detecting position from the stroke end of the motor side

Dimensions: Belt Drive

LEFB25U/Motor bottom mounting type



Motor option: With lock



Dimensions

Stroke	L	A	B	n	D	E
300	552	306	467	6	2	340
400	652	406	567	8	3	510
500	752	506	667	8	3	510
600	852	606	767	10	4	680
700	952	706	867	10	4	680
800	1052	806	967	12	5	850
900	1152	906	1067	14	6	1020
1000	1252	1006	1167	14	6	1020
1100	1352	1106	1267	16	7	1190
1200	1452	1206	1367	16	7	1190
1300	1552	1306	1467	18	8	1360
1400	1652	1406	1567	20	9	1530
1500	1752	1506	1667	20	9	1530
1600	1852	1606	1767	22	10	1700
1700	1952	1706	1867	22	10	1700
1800	2052	1806	1967	24	11	1870
1900	2152	1906	2067	24	11	1870
2000	2252	2006	2167	26	12	2040

- Note 1) When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of R chamfering. (Recommended height 5 mm)
- Note 2) Distance within which the table can move when it returns to origin. Make sure a workpiece mounted on the table does not interfere with the work pieces and facilities around the table.
- Note 3) The Z-phase first detecting position from the stroke end of the motor side

Model Selection

LEFS

LEFB

LEJS

LEJB

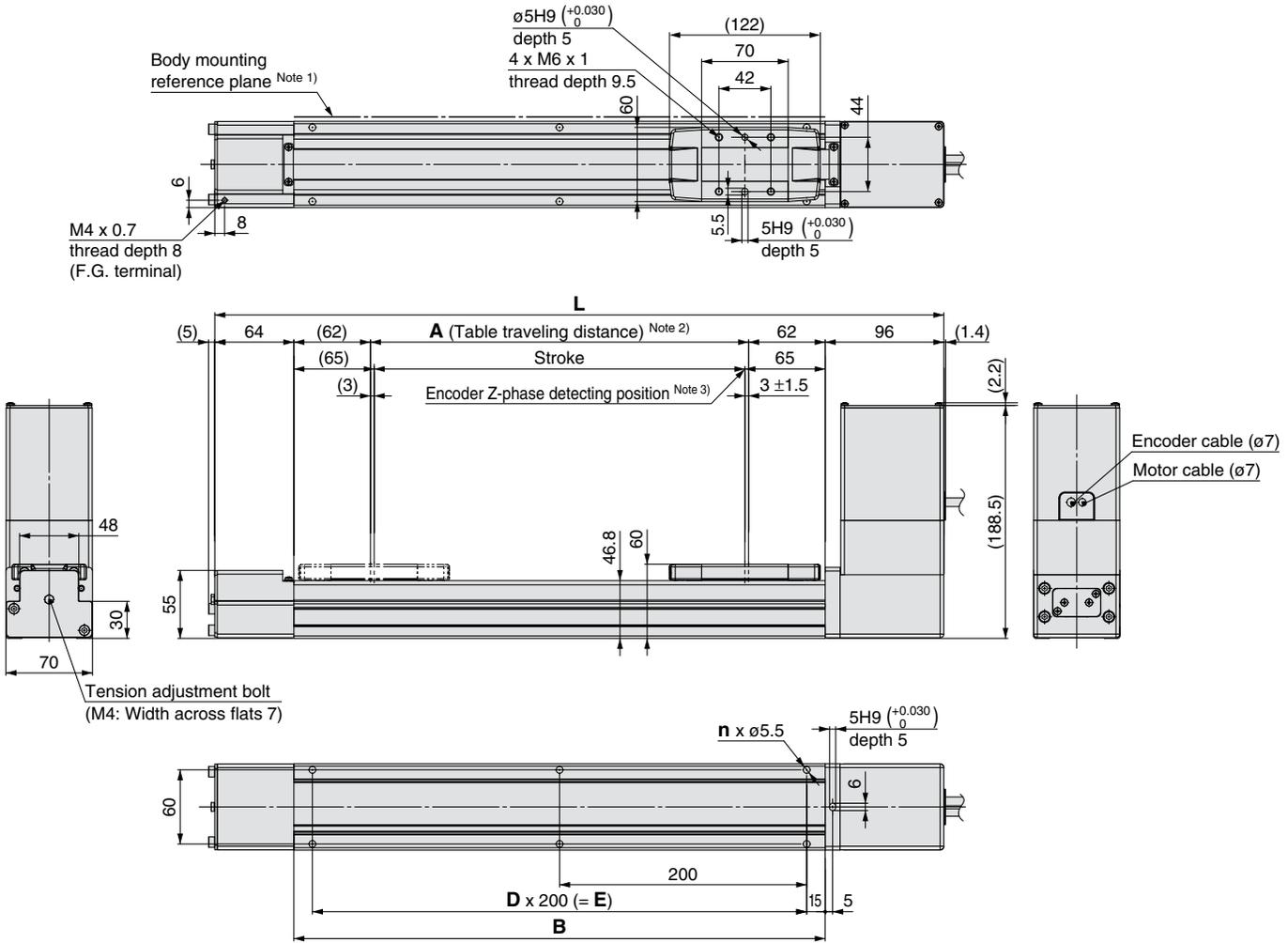
LEY

LEYG

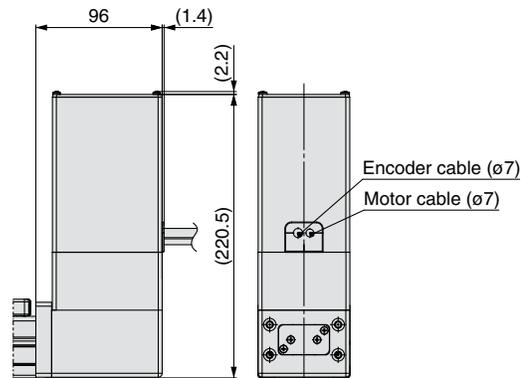
LECYM/LECYU

Dimensions: Belt Drive

LEFB32/Motor top mounting type



Motor option: With lock



Dimensions

Stroke	L	A	B	n	D	E
300	590	306	430	6	2	400
400	690	406	530	6	2	400
500	790	506	630	8	3	600
600	890	606	730	8	3	600
700	990	706	830	10	4	800
800	1090	806	930	10	4	800
900	1190	906	1030	12	5	1000
1000	1290	1006	1130	12	5	1000
1100	1390	1106	1230	14	6	1200
1200	1490	1206	1330	14	6	1200
1300	1590	1306	1430	16	7	1400
1400	1690	1406	1530	16	7	1400
1500	1790	1506	1630	18	8	1600
1600	1890	1606	1730	18	8	1600
1700	1990	1706	1830	20	9	1800
1800	2090	1806	1930	20	9	1800
1900	2190	1906	2030	22	10	2000
2000	2290	2006	2130	22	10	2000
2500	2790	2506	2630	28	13	2600

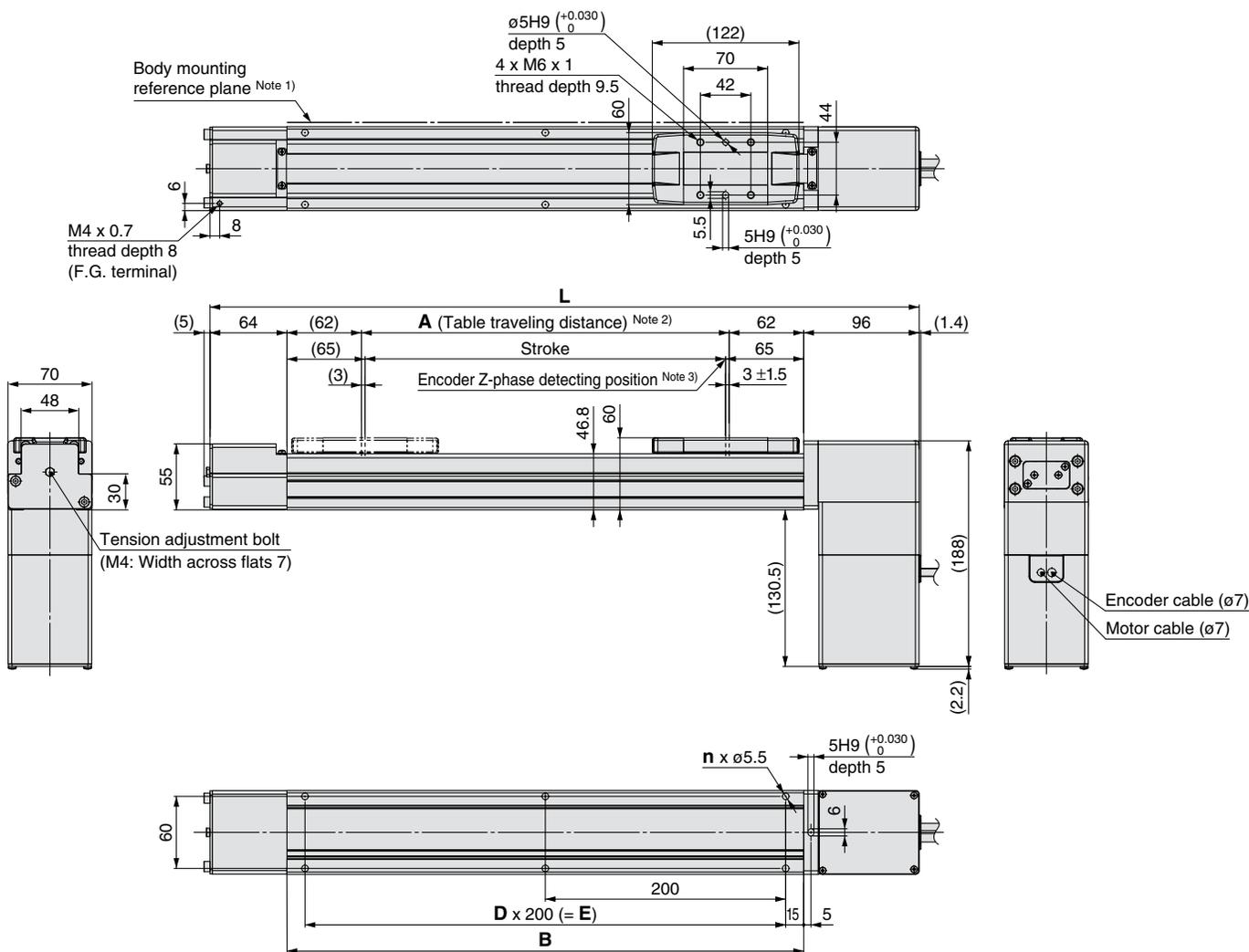
Note 1) When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of R chamfering. (Recommended height 5 mm)

Note 2) Distance within which the table can move when it returns to origin. Make sure a workpiece mounted on the table does not interfere with the work pieces and facilities around the table.

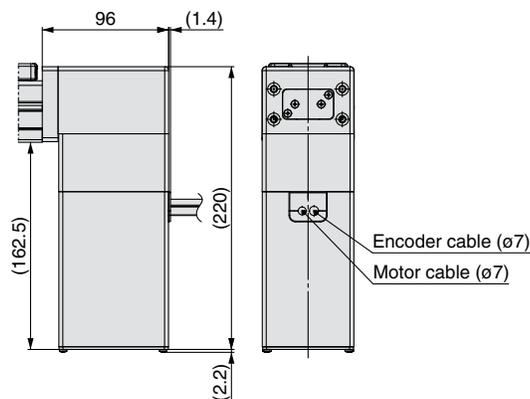
Note 3) The Z-phase first detecting position from the stroke end of the motor side

Dimensions: Belt Drive

LEFB32U/Motor bottom mounting type



Motor option: With lock



Dimensions

Stroke	L	A	B	n	D	E
300	590	306	430	6	2	400
400	690	406	530	6	2	400
500	790	506	630	8	3	600
600	890	606	730	8	3	600
700	990	706	830	10	4	800
800	1090	806	930	10	4	800
900	1190	906	1030	12	5	1000
1000	1290	1006	1130	12	5	1000
1100	1390	1106	1230	14	6	1200
1200	1490	1206	1330	14	6	1200
1300	1590	1306	1430	16	7	1400
1400	1690	1406	1530	16	7	1400
1500	1790	1506	1630	18	8	1600
1600	1890	1606	1730	18	8	1600
1700	1990	1706	1830	20	9	1800
1800	2090	1806	1930	20	9	1800
1900	2190	1906	2030	22	10	2000
2000	2290	2006	2130	22	10	2000
2500	2790	2506	2630	28	13	2600

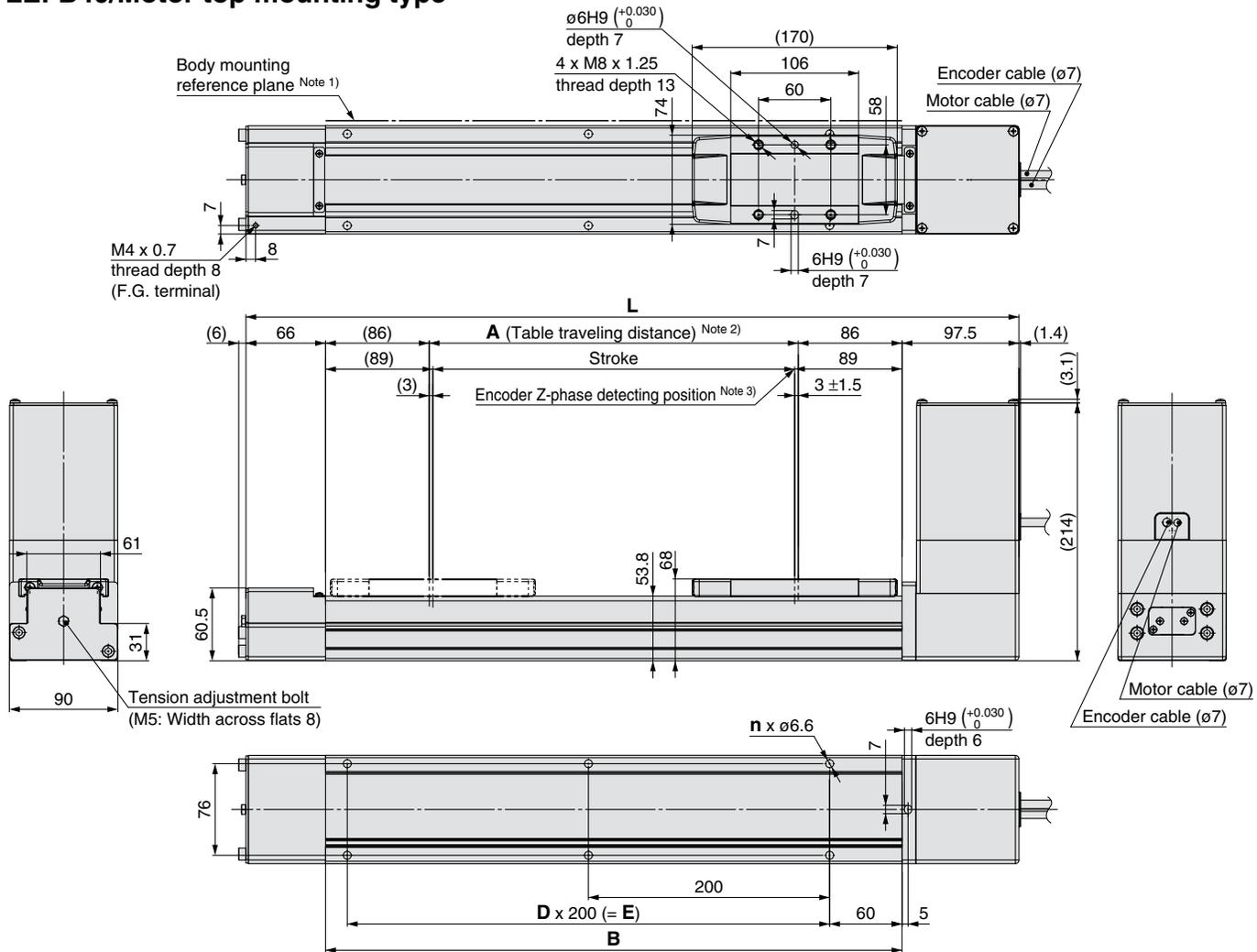
Note 1) When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of R chamfering. (Recommended height 5 mm)

Note 2) Distance within which the table can move when it returns to origin. Make sure a workpiece mounted on the table does not interfere with the work pieces and facilities around the table.

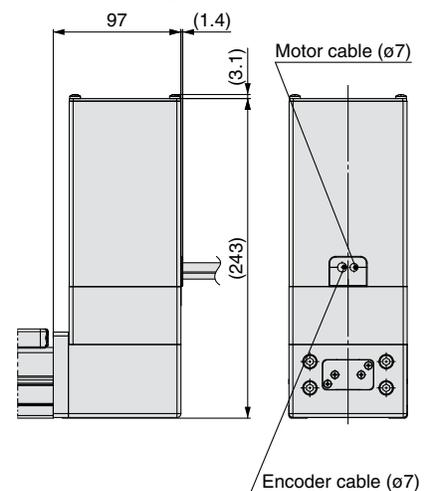
Note 3) The Z-phase first detecting position from the stroke end of the motor side

Dimensions: Belt Drive

LEFB40/Motor top mounting type



Motor option: With lock



Dimensions

[mm]

Stroke	L	A	B	n	D	E
300	641.5	306	478	6	2	400
400	741.5	406	578	6	2	400
500	841.5	506	678	8	3	600
600	941.5	606	778	8	3	600
700	1041.5	706	878	10	4	800
800	1141.5	806	978	10	4	800
900	1241.5	906	1078	12	5	1000
1000	1341.5	1006	1178	12	5	1000
1100	1441.5	1106	1278	14	6	1200
1200	1541.5	1206	1378	14	6	1200
1300	1641.5	1306	1478	16	7	1400
1400	1741.5	1406	1578	16	7	1400
1500	1841.5	1506	1678	18	8	1600
1600	1941.5	1606	1778	18	8	1600
1700	2041.5	1706	1878	20	9	1800
1800	2141.5	1806	1978	20	9	1800
1900	2241.5	1906	2078	22	10	2000
2000	2341.5	2006	2178	22	10	2000
2500	2841.5	2506	2678	28	13	2600
3000	3341.5	3006	3178	32	15	3000

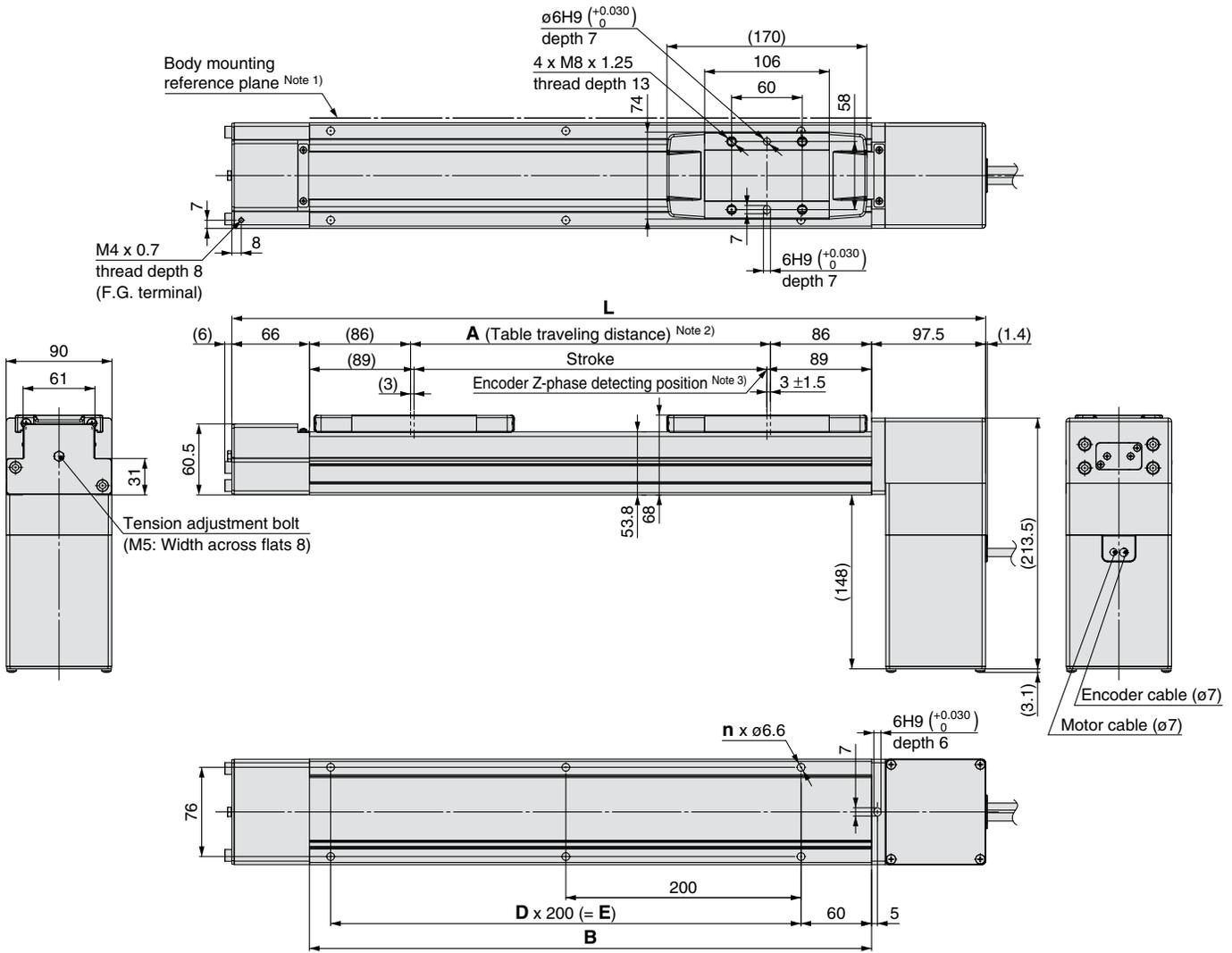
Note 1) When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of R chamfering. (Recommended height 5 mm)

Note 2) Distance within which the table can move when it returns to origin. Make sure a workpiece mounted on the table does not interfere with the work pieces and facilities around the table.

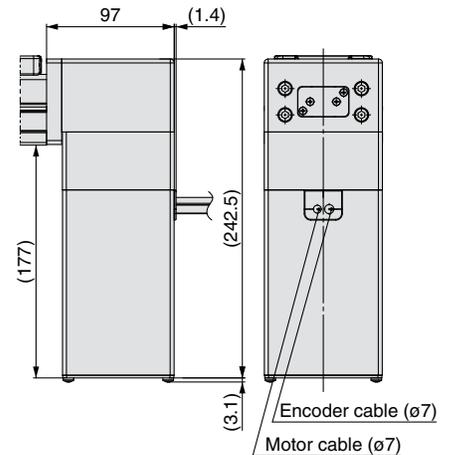
Note 3) The Z-phase first detecting position from the stroke end of the motor side

Dimensions: Belt Drive

LEFB40U/Motor bottom mounting type



Motor option: With lock



Dimensions

	[mm]					
Stroke	L	A	B	n	D	E
300	641.5	306	478	6	2	400
400	741.5	406	578	6	2	400
500	841.5	506	678	8	3	600
600	941.5	606	778	8	3	600
700	1041.5	706	878	10	4	800
800	1141.5	806	978	10	4	800
900	1241.5	906	1078	12	5	1000
1000	1341.5	1006	1178	12	5	1000
1100	1441.5	1106	1278	14	6	1200
1200	1541.5	1206	1378	14	6	1200
1300	1641.5	1306	1478	16	7	1400
1400	1741.5	1406	1578	16	7	1400
1500	1841.5	1506	1678	18	8	1600
1600	1941.5	1606	1778	18	8	1600
1700	2041.5	1706	1878	20	9	1800
1800	2141.5	1806	1978	20	9	1800
1900	2241.5	1906	2078	22	10	2000
2000	2341.5	2006	2178	22	10	2000
2500	2841.5	2506	2678	28	13	2600
3000	3341.5	3006	3178	32	15	3000

Note 1) When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of R chamfering. (Recommended height 5 mm)

Note 2) Distance within which the table can move when it returns to origin. Make sure a workpiece mounted on the table does not interfere with the work pieces and facilities around the table.

Note 3) The Z-phase first detecting position from the stroke end of the motor side



Series LEF Electric Actuator/ Specific Product Precautions 1

Be sure to read this before handling. For Safety Instructions and Electric Actuator Precautions, refer to "Handling Precautions for SMC Products" and the Operation Manual on SMC website, <http://www.smcworld.com>

Design

⚠ Caution

1. Do not apply a load in excess of the operating limit.

Select a suitable actuator by load and allowable moment. If the product is used outside of the operating limit, the eccentric load applied to the guide will be excessive and have adverse effects such as creating play on the guide, degrading accuracy and shortening the life of the product.

2. Do not use the product in applications where excessive external force or impact force is applied to it.

This can cause a failure.

Selection

⚠ Warning

1. Do not increase the speed in excess of the operating limit.

Select a suitable actuator by the relationship between the allowable work load and speed, and the allowable speed of each stroke. If the product is used outside of the operating limit, it will have adverse effects such as creating noise, degrading accuracy and shortening the life of the product.

2. Do not use the product in applications where excessive external force or impact force is applied to it.

This can cause a failure.

3. When the product repeatedly cycles with partial strokes (see the table below), operate it at a full stroke at least once every 10 strokes.

Otherwise, lubrication can run out.

Model	Partial stroke
LEFS25	65 mm or less
LEFS32	70 mm or less
LEFS40	105 mm or less

4. When external force is applied to the table, it is necessary to add external force to the work load as the total carried load for the sizing.

When a cable duct or flexible moving tube is attached to the actuator, the sliding resistance of the table increases and may lead to operational failure of the product.

5. The forward/reverse torque limit is set to 800% as default.

When the product is operated with a smaller value than 300%, acceleration when driving can decrease. Set the value after confirming the actual device to be used.

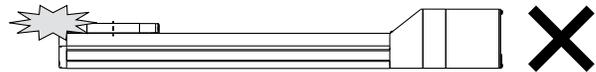
Handling

⚠ Caution

1. Do not allow the table to hit the end of stroke.

When incorrect instructions are inputted, such as using the product outside of the operating limit or operation outside of actual stroke through changes in the controller/driver setting and/or origin position, the table may collide against the stroke end of the actuator. Check these points before use.

If the table collides against the stroke end of the actuator, the guide, belt or internal stopper can be broken. This may lead to 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.

2. The actual speed of this actuator is affected by the work load and stroke.

Check the specifications with reference to the model selection section of the catalog.

3. Do not apply a load, impact or resistance in addition to the transferred load during return to origin.

4. Do not dent, scratch or cause other damage to the body and table mounting surfaces.

This may cause unevenness in the mounting surface, play in the guide or an increase in the sliding resistance.

5. 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.

6. Keep the flatness of mounting surface 0.1 mm or less.

Unevenness of a workpiece or base mounted on the body of the product may cause play in the guide and an increase in the sliding resistance.

7. When mounting the product, keep a 40 mm or longer diameter for bends in the cable.

8. Do not hit the table with the workpiece in the positioning operation and positioning range.



Series LEF Electric Actuator/ Specific Product Precautions 2

Be sure to read this before handling. For Safety Instructions and Electric Actuator Precautions, refer to "Handling Precautions for SMC Products" and the Operation Manual on SMC website, <http://www.smcworld.com>

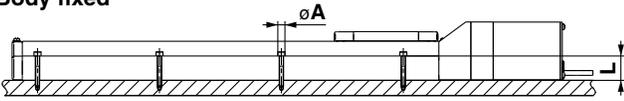
Handling

⚠ Caution

9. When mounting the product, use screws with adequate length and tighten them with adequate torque.

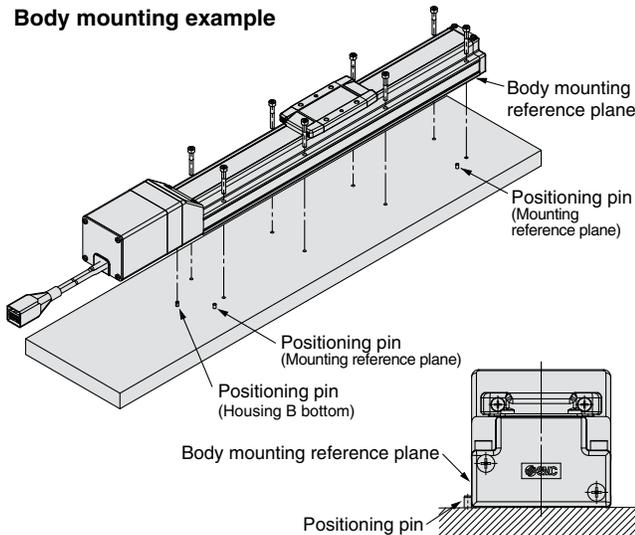
Tightening the screws with a higher torque than recommended may cause a malfunction, whilst the tightening with a lower torque can cause the displacement of the mounting position or in extreme conditions the actuator could become detached from its mounting position.

Body fixed



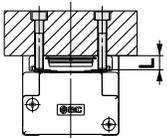
Model	Bolt	Max. tightening torque lbf-ft (N-m)	ϕA (mm)	L (mm)
LEF□25	M4	1.1 (1.5)	4.5	24
LEF□32	M5	2.2 (3)	5.5	30
LEF□40	M6	3.8 (5.2)	6.6	31

Body mounting example



The traveling parallelism is the reference plane for the body mounting reference plane. If the traveling parallelism for a table is required, set the reference plane against positioning pins etc.

Workpiece fixed



Model	Bolt	Max. tightening torque lbf-ft (N-m)	L (Max. screw-in depth) (mm)
LEF□25	M5 x 0.8	2.2 (3.0)	8
LEF□32	M6 x 1	3.8 (5.2)	9
LEF□40	M8 x 1.25	9.2 (12.5)	13

To prevent the workpiece fixing bolts from touching the body, use bolts that are 0.5 mm or shorter than the maximum screw-in depth. If long bolts are used, they can touch the body and cause a malfunction etc.

10. Do not operate by fixing the table and moving the actuator body.

11. Check the specifications for the minimum speed of each actuator.

Otherwise, unexpected malfunctions, such as knocking, may occur.

Maintenance

⚠ Warning

Maintenance frequency

Perform maintenance according to the table below.

Frequency	Appearance check	Internal check
Inspection before daily operation	○	—
Inspection every 6 months/1000 km/5 million cycles*	○	○

* Select whichever comes sooner.

• Items for visual appearance check

1. Loose set screws, Abnormal dirt
2. Check of flaw and cable joint
3. Vibration, Noise

• Items for internal check

1. Lubricant condition on moving parts.
2. Loose or mechanical play in fixed parts or fixing screws.

• Belt replacement for motor parallel type (Guide)

It is recommended that the belt be replaced after being in service for 2 years, or before reaching the following distance.

Model	Distance
LEFS25□H	4100 km
LEFS25□A	2500 km
LEFS25□B	1200 km

Model	Distance
LEFS32□H	6000 km
LEFS32□A	4000 km
LEFS32□B	2000 km

Model	Distance
LEFS40□H	6000 km
LEFS40□A	4000 km
LEFS40□B	2000 km

Ball Screw Drive/Series LEJS Belt Drive/Series LEJB Model Selection



Selection Procedure

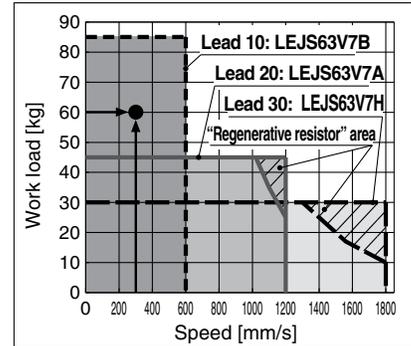
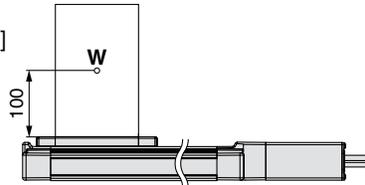


Selection Example

Operating conditions

- Work load: 60 [kg]
- Speed: 300 [mm/s]
- Acceleration/Deceleration: 3000 [mm/s²]
- Stroke: 300 [mm]
- Mounting orientation: Horizontal
- External force: 10 [N]

• Workpiece mounting condition:



<Speed-Work load graph> (LEJS63)

Step 1 Check the speed-work load.

Select the product by referring to “Speed-Work Load Graph” (Page 42). Selection example) The **LEJS63V7B-300** is temporarily selected based on the graph shown on the right side.

The regenerative resistor may be necessary. Refer to page 42 for “Conditions for Regenerative Resistor (Guide)”.

Step 2 Check the cycle time.

Refer to method 1 for a rough estimate, and method 2 for a more precise value.

Method 1: Check the cycle time graph (Pages 43 and 44)

The graph is based on the maximum speed of each size.

Method 2: Calculation

Cycle time T can be found from the following equation.

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

- T1 and T3 can be obtained by the following equation.

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

The acceleration and deceleration values have upper limits depending on the workpiece mass and the duty ratio. Check that they do not exceed the upper limit, by referring to “Work load-Acceleration/Deceleration Graph (Guide)” (Pages 45 to 47).

For the ball screw type, there is an upper limit of the speed depending on the stroke. Check that it does not exceed the upper limit, by referring to the specifications (Page 52).

- T2 can be found from the following equation.

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

- T4 varies depending on the motor type and load. The value below is recommended.

$$T4 = 0.05 \text{ [s]}$$

Calculation example)

T1 to T4 can be calculated as follows.

$$T1 = V/a1 = 300/3000 = 0.1 \text{ [s]}$$

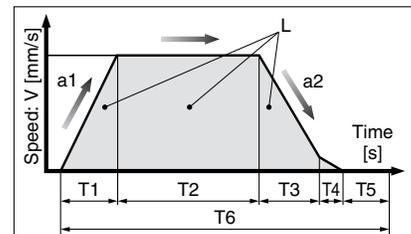
$$T3 = V/a2 = 300/3000 = 0.1 \text{ [s]}$$

$$T2 = \frac{L - 0.5 \cdot V \cdot (T1 + T3)}{V} = \frac{300 - 0.5 \cdot 300 \cdot (0.1 + 0.1)}{300} = 0.90 \text{ [s]}$$

$$T4 = 0.05 \text{ [s]}$$

Therefore, the cycle time can be obtained as follows.

$$T = T1 + T2 + T3 + T4 = 0.1 + 0.90 + 0.1 + 0.05 = 1.15 \text{ [s]}$$



- L : Stroke [mm]
- V : Speed [mm/s]
- a1 : Acceleration [mm/s²]

- T1: Acceleration time [s]
Time until reaching the set speed
- T2: Constant speed time [s]
Time while the actuator is operating at a constant speed
- T3: Deceleration time [s]
Time from the beginning of the constant speed operation to stop
- T4: Settling time [s]
Time until in position is completed
- T5: Resting time [s]
Time the product is not running
- T6: Total time [s]
Total time from T1 to T5

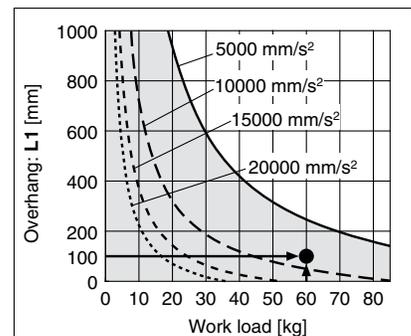
Duty ratio: Ratio of T to T6
 $T \div T6 \times 100$

Step 3 Check the allowable moment.

Refer to “Dynamic Allowable Moment” graphs (Pages 48 and 49).



Selection example) Select the **LEJS63V7B-300** from the graph on the right side. Confirm that the external force is 20 [N] or less. (The external force is the resistance due to cable duct, flexible trunking or air tubing.)

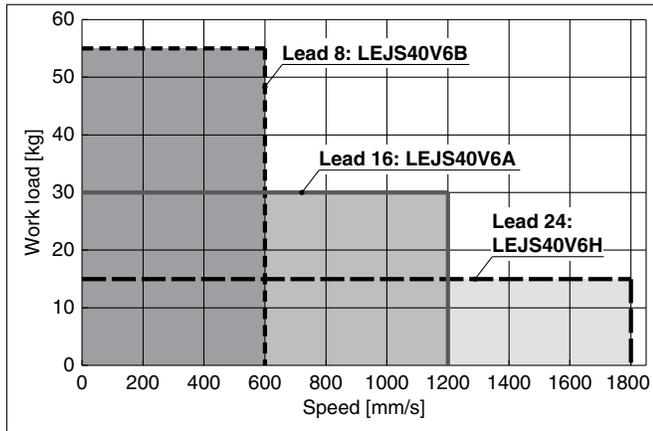


<Dynamic allowable moment> (LEJS63)

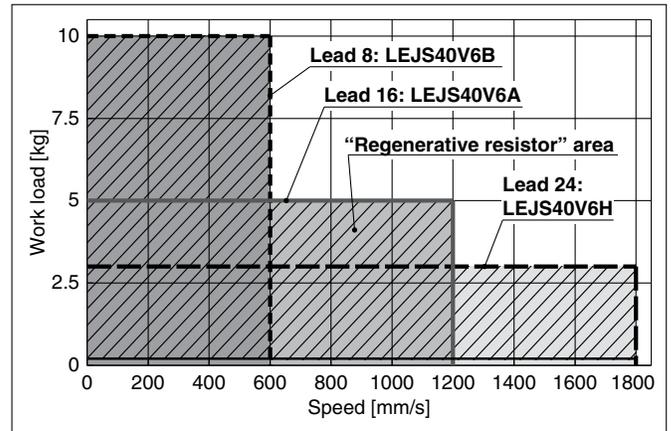
Speed-Work Load Graph/Conditions for "Regenerative Resistor" (Guide)

LEJS40V6□/Ball Screw Drive

Horizontal

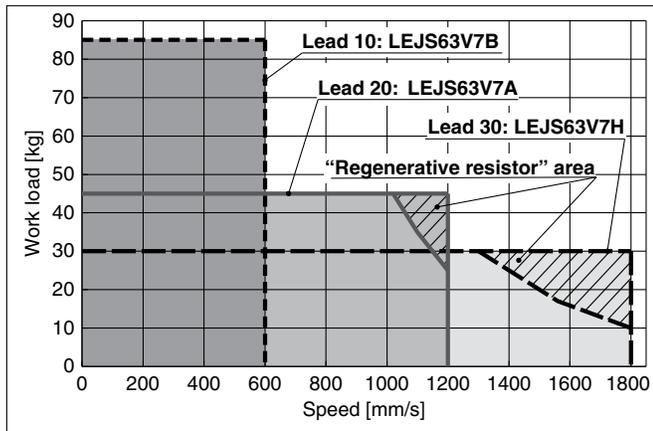


Vertical

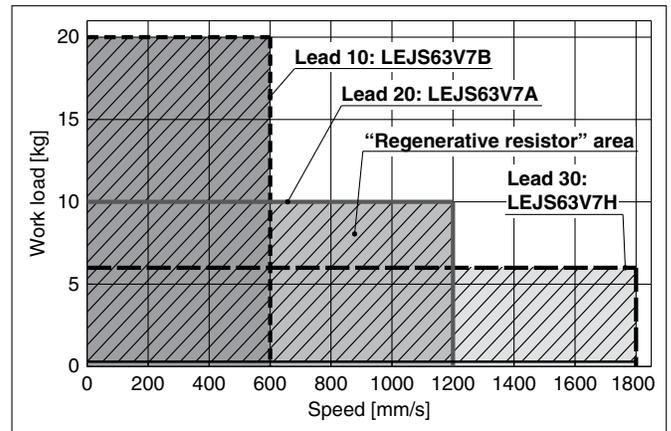


LEJS63V7□/Ball Screw Drive

Horizontal

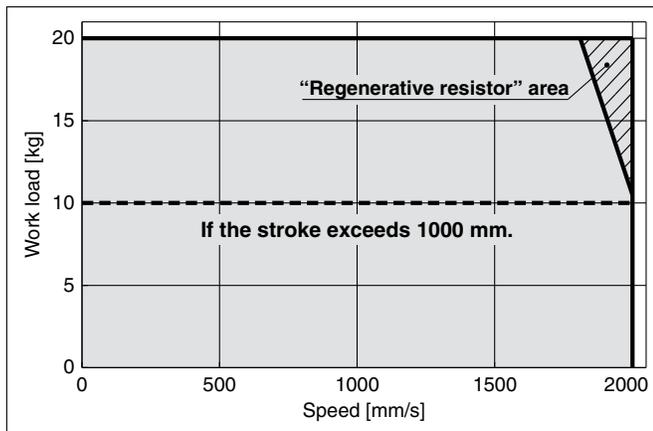


Vertical



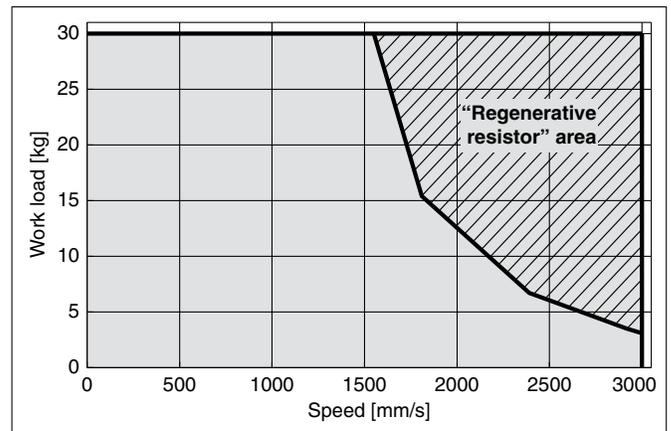
LEJB40V6T/Belt Drive

Horizontal



LEJB63V7T/Belt Drive

Horizontal



* When the stroke of the LEJB40 series exceeds 1000 mm, the work load is 10 kg.

"Regenerative resistor" area

- * When using the actuator in the "Regenerative resistor" area, download the "AC servo capacity selection program/SigmaJunmaSize+" from the SMC website. Then, calculate the necessary regenerative resistor capacity to prepare an appropriate external regenerative resistor.
- * Regenerative resistor should be provided by the customer.

Applicable Motor/Driver

Model	Applicable model	
	Motor	Servopack (SMC driver)
LEJ□40□	SGMJV-01A3A	SGDV-R90A11□ (LECYM2-V5) SGDV-R90A21□ (LECYU2-V5)
LEJ□63□	SGMJV-02A3A	SGDV-1R6A11□ (LECYM2-V7) SGDV-1R6A21□ (LECYU2-V7)

Model Selection

LEFS

LEFB

LEJS

LEJB

LEY

LEYG

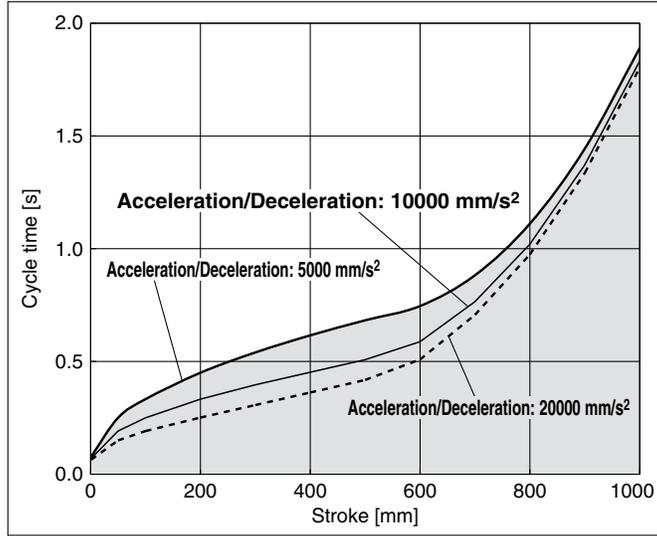
LECYM/LECYU

Series LEJ

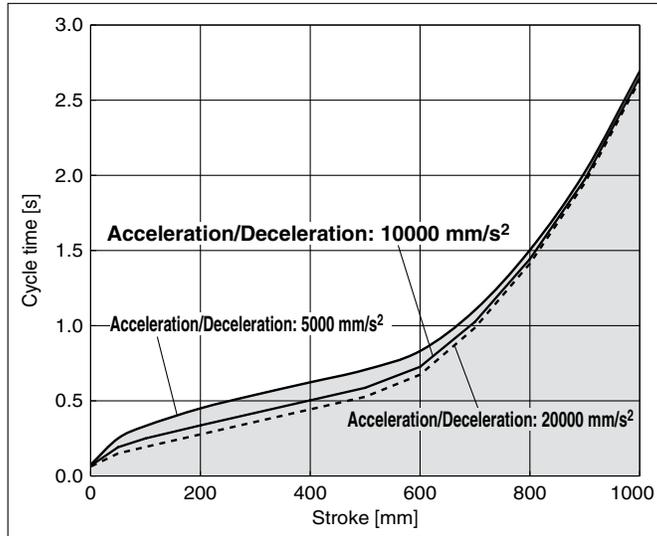
Cycle Time Graph (Guide)

LEJS40/Ball Screw Drive

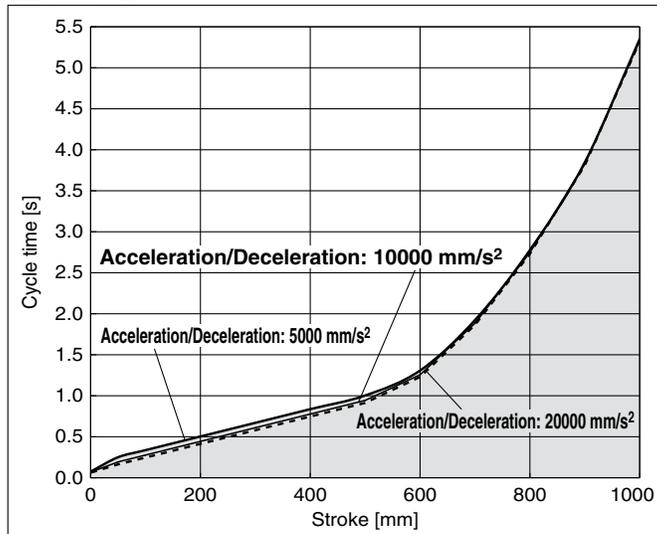
LEJS40□H



LEJS40□A

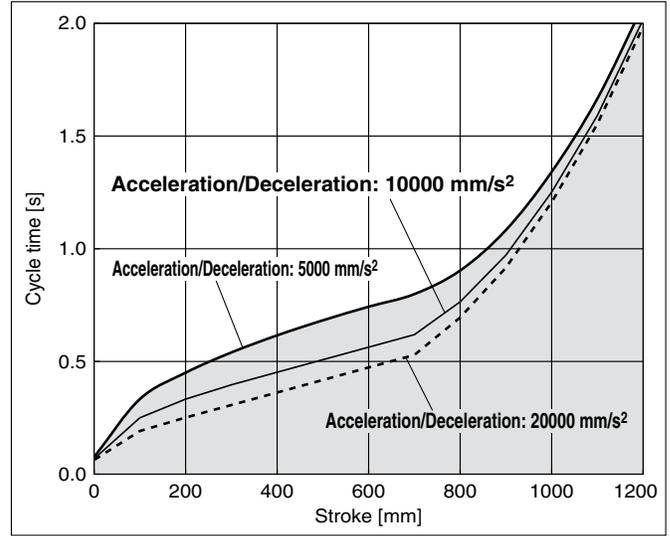


LEJS40□B

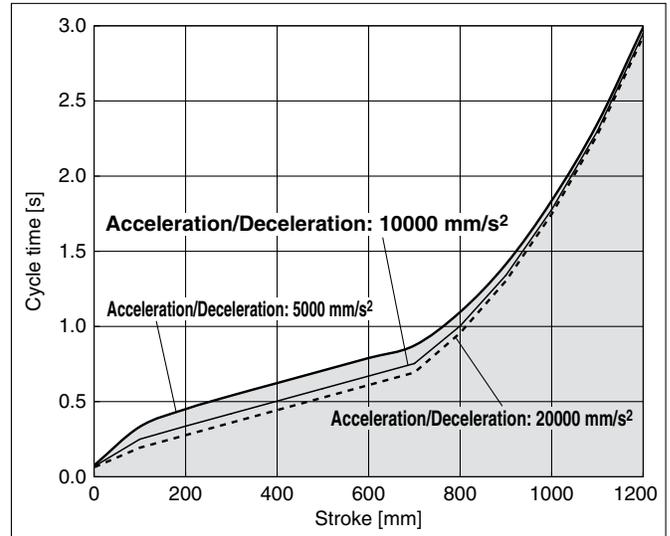


LEJS63/Ball Screw Drive

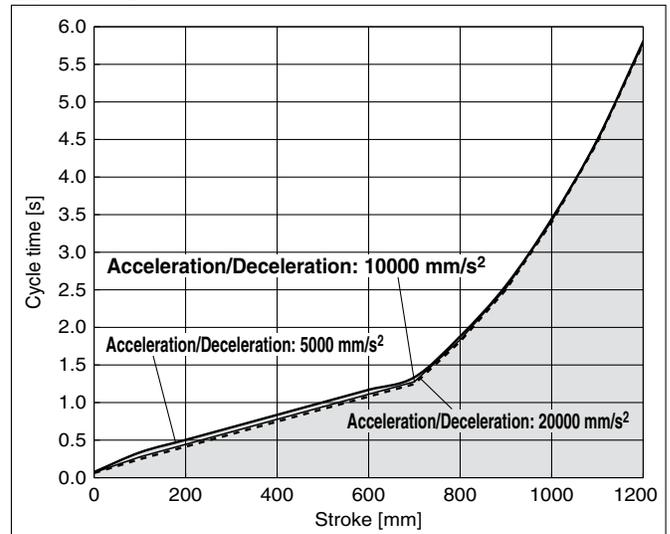
LEJS63□H



LEJS63□A



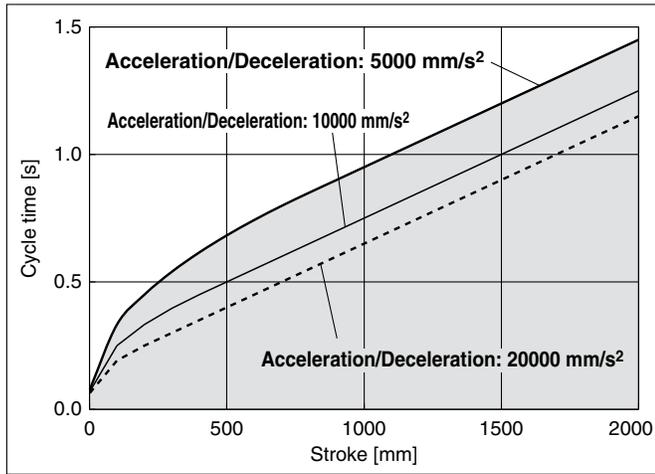
LEJS63□B



* Work load/acceleration/deceleration graph
 * Maximum speed/acceleration/deceleration values graph for each stroke

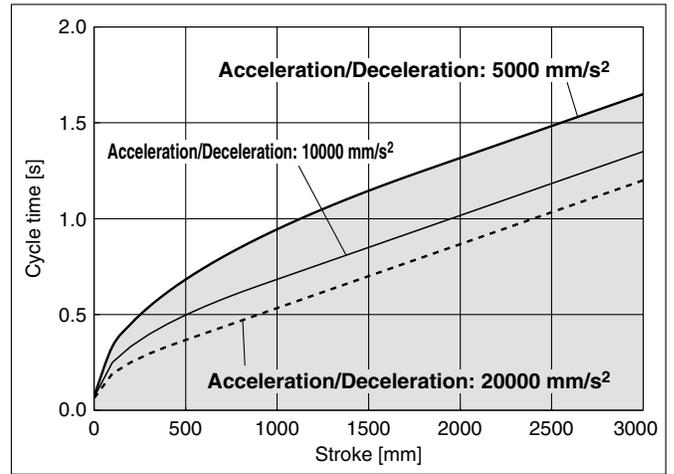
Cycle Time Graph (Guide)

LEJB40/Belt Drive



- * Work load/acceleration/deceleration graph
- * Maximum speed/acceleration/deceleration values graph for each stroke

LEJB63/Belt Drive



Model Selection

LEFS

LEFB

LEJS

LEJB

LEY

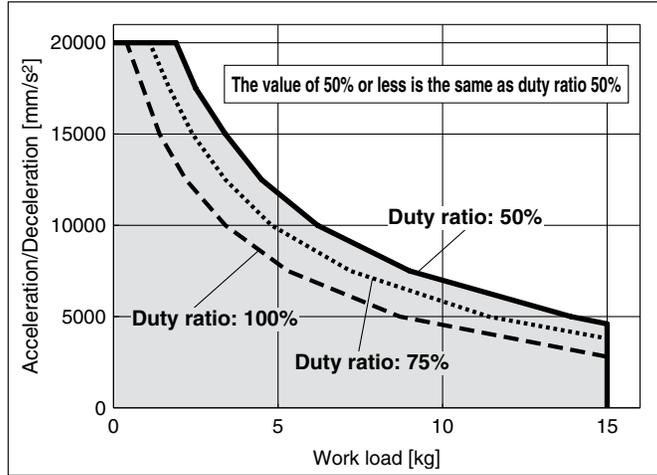
LEYG

LECYM/LECYU

Work Load–Acceleration/Deceleration Graph (Guide)

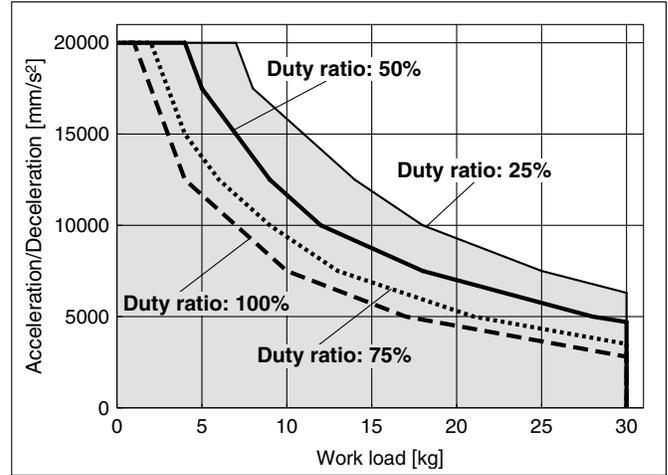
LEJS40/Ball Screw Drive: Horizontal

LEJS40□H

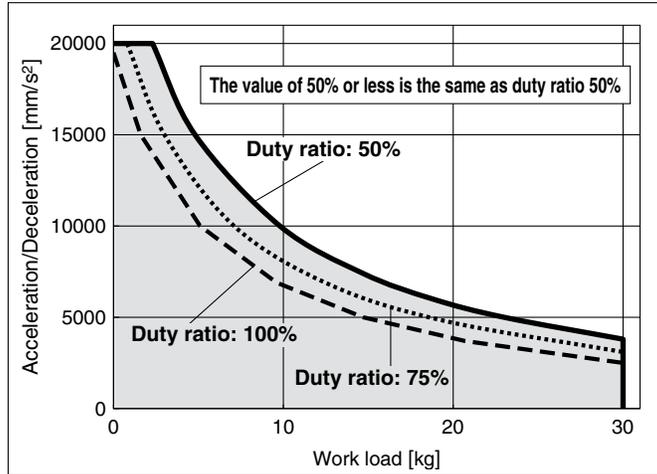


LEJS63/Ball Screw Drive: Horizontal

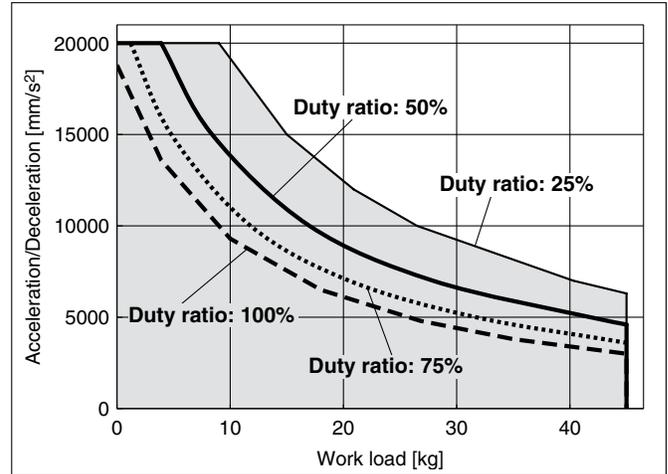
LEJS63□H



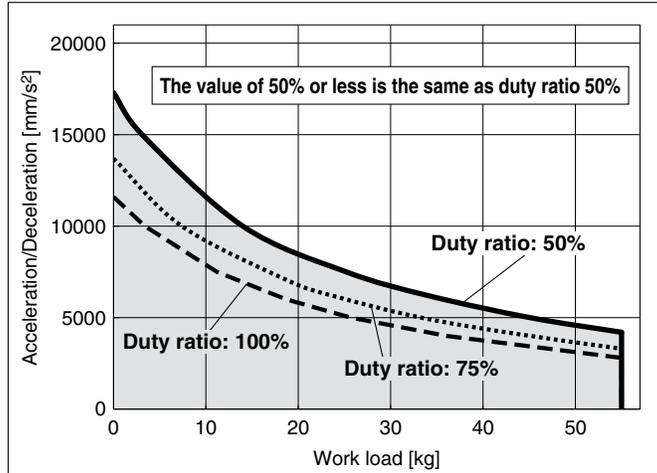
LEJS40□A



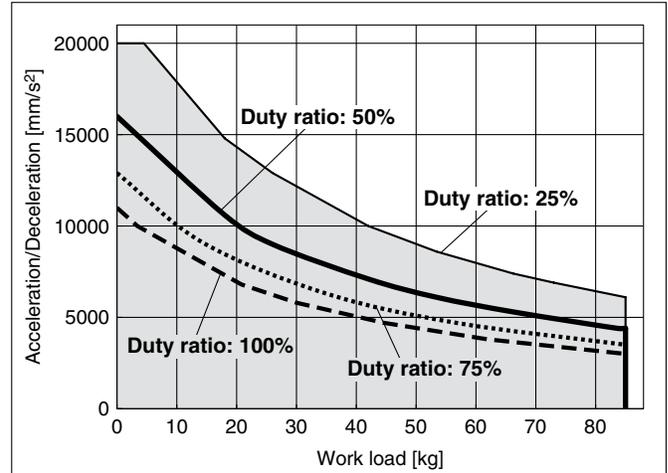
LEJS63□A



LEJS40□B



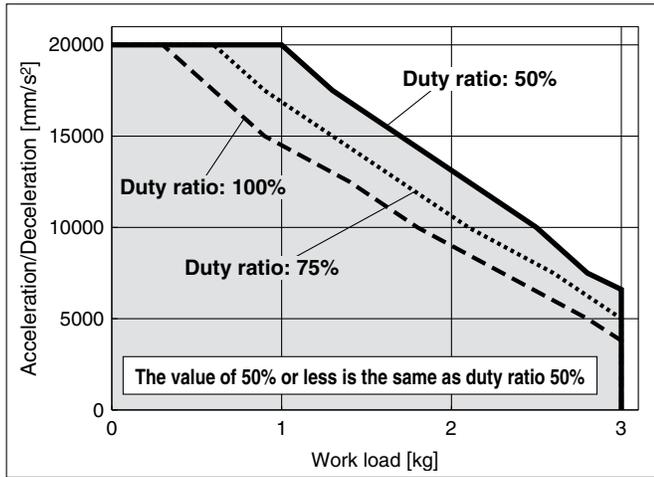
LEJS63□B



Work Load–Acceleration/Deceleration Graph (Guide)

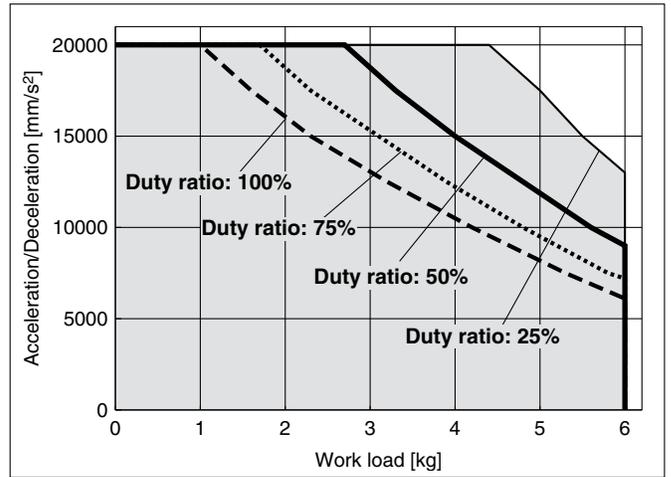
LEJS40/Ball Screw Drive: Vertical

LEJS40□H

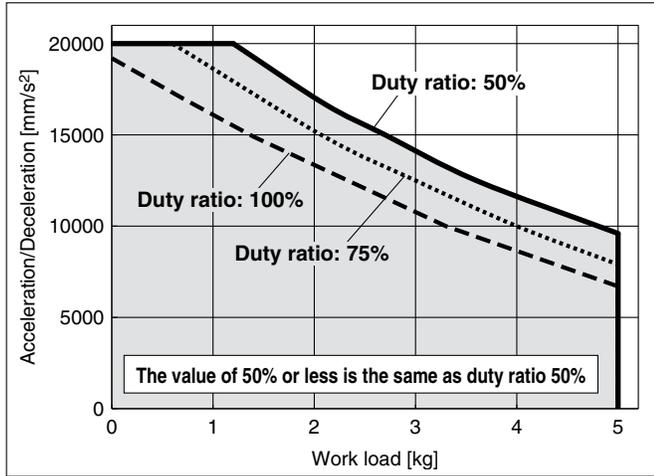


LEJS63/Ball Screw Drive: Vertical

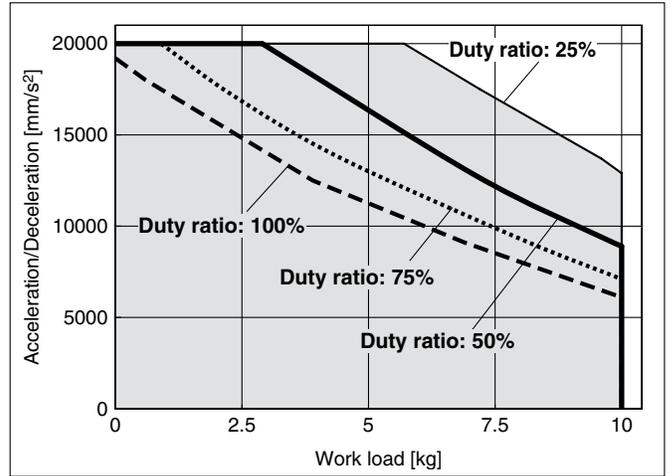
LEJS63□H



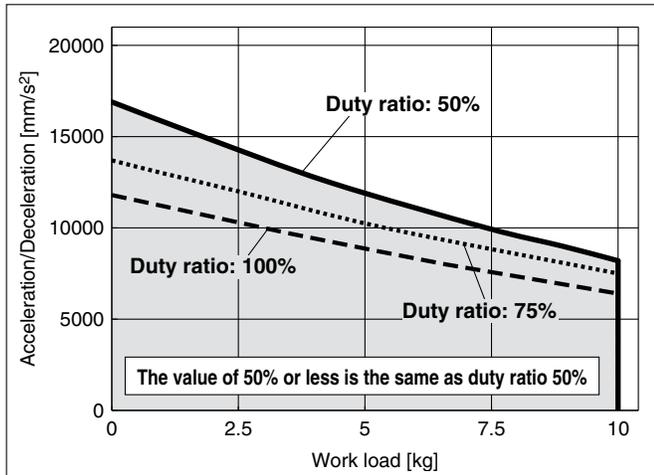
LEJS40□A



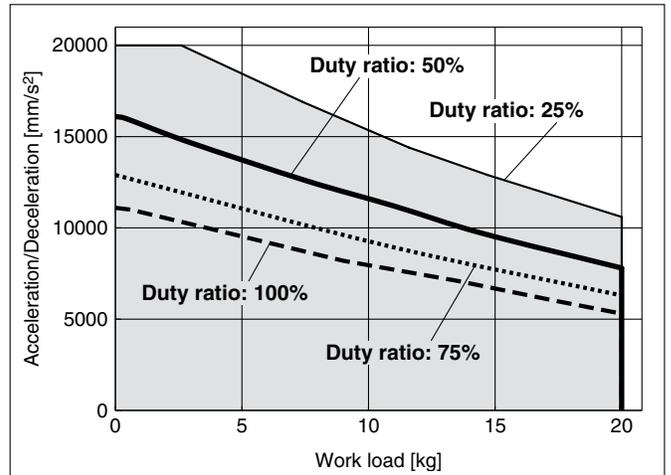
LEJS63□A



LEJS40□B



LEJS63□B

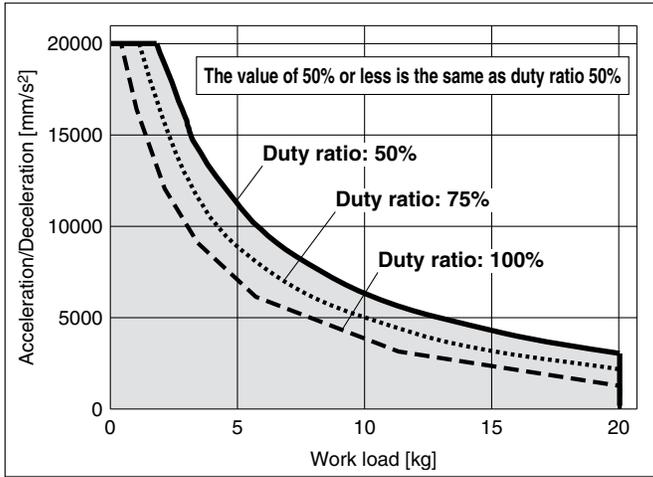


- Model Selection
- LEFS
- LEFB
- LEJS
- LEJB
- LEY
- LEYG
- LECYM/LECYU

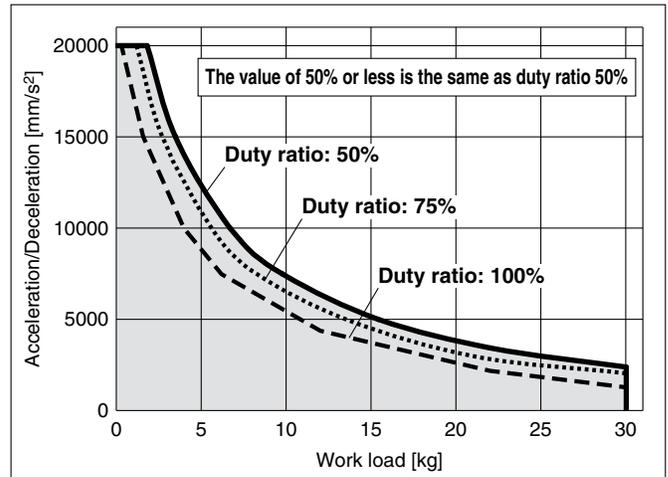
Series LEJ

Work Load–Acceleration/Deceleration Graph (Guide)

LEJB40/Belt Drive: Horizontal



LEJB63/Belt Drive: Horizontal



Dynamic Allowable Moment

* This graph shows the amount of allowable overhang when the center of gravity of the workpiece overhangs in one direction. When the center of gravity of the workpiece overhangs in two directions, refer to the Electric Actuator Selection Software for confirmation, <http://www.smcworld.com>

Acceleration/Deceleration — 5000 mm/s² - - - 10000 mm/s²
 - - - - 15000 mm/s² ····· 20000 mm/s²

Orientation	Load overhanging direction m: Work load [kg] Me: Dynamic allowable moment [N·m] L: Overhang to the work load center of gravity [mm]	Model			
		LEJS40	LEJS63	LEJB40	LEJB63
Horizontal/Bottom	X 				
	Y 				
	Z 				
Wall	X 				
	Y 				
	Z 				

Model Selection

LEFS

LEFB

LEJS

LEJB

LEY

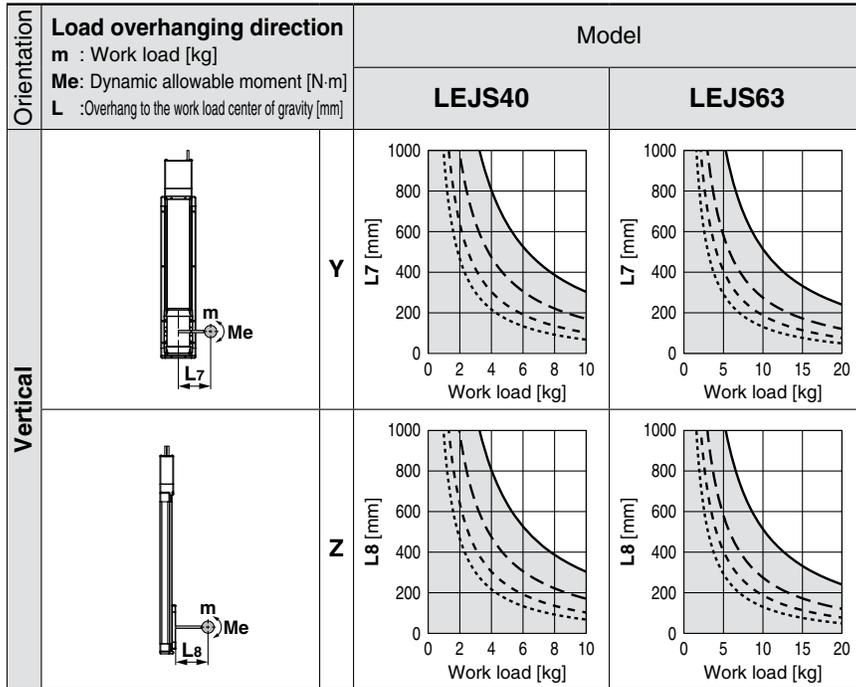
LEYG

LECYM/LECYU

Dynamic Allowable Moment

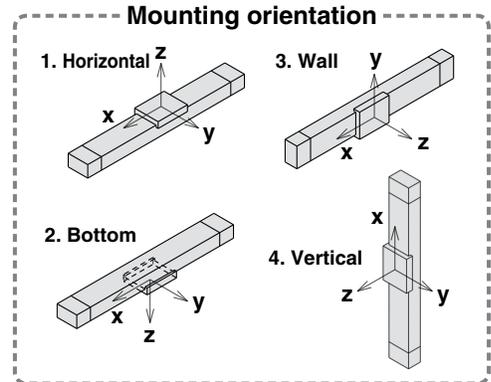
* This graph shows the amount of allowable overhang when the center of gravity of the workpiece overhangs in one direction. When the center of gravity of the workpiece overhangs in two directions, refer to the Electric Actuator Selection Software for confirmation, <http://www.smcworld.com>

Acceleration/Deceleration — 5000 mm/s² - - - 10000 mm/s²
 - - - 15000 mm/s² ····· 20000 mm/s²



Calculation of Guide Load Factor

- Decide operating conditions.
 Model: LEJS/LEJB
 Size: 40/63
 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 with reference to the model, size and mounting orientation.
- Based on the acceleration and work load, obtain 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.



Example

- Operating conditions
 Model: LEJS
 Size: 40
 Mounting orientation: Horizontal
 Acceleration [mm/s²]: 5000
 Work load [kg]: 20
 Work load center position [mm]: Xc = 0, Yc = 50, Zc = 200
- Select the graph on page 48, top and left side first row.

- Lx = 180 mm, Ly = 170 mm, Lz = 360 mm
- The load factor for each direction can be obtained as follows.
 $\alpha_x = 0/180 = 0$
 $\alpha_y = 50/170 = 0.29$
 $\alpha_z = 200/360 = 0.56$

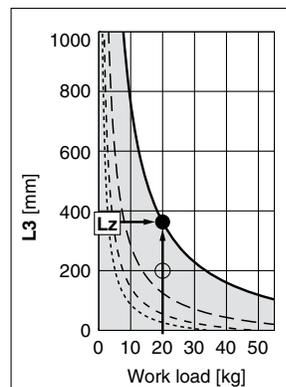
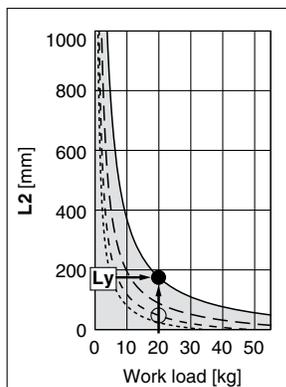
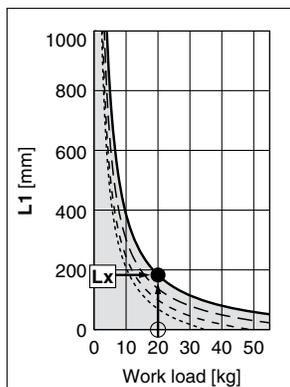
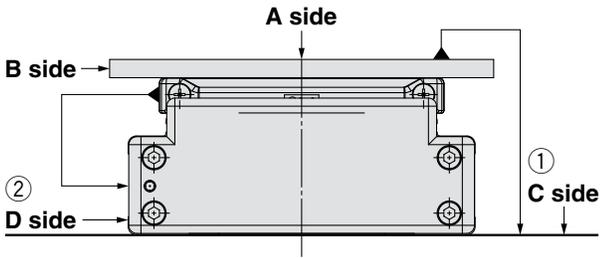


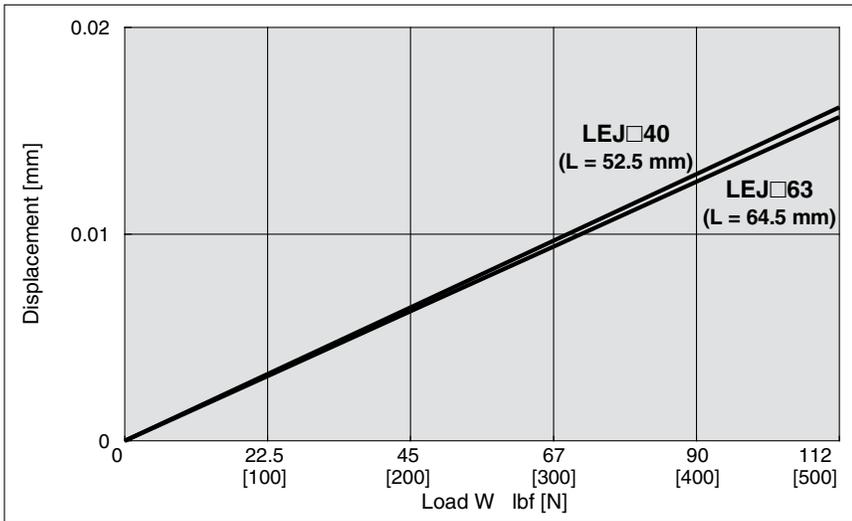
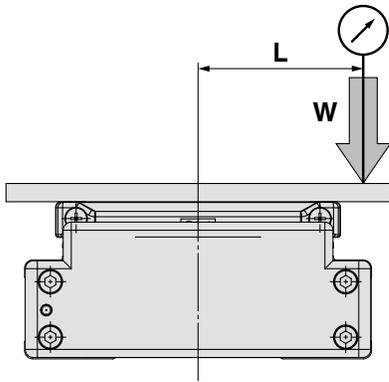
Table Accuracy (Reference Value)



Model	Traveling parallelism [mm] (Every 300 mm)	
	① C side traveling parallelism to A side	② D side traveling parallelism to B side
LEJ□40	0.05	0.03
LEJ□63	0.05	0.03

Note) Traveling parallelism does not include the mounting surface accuracy.

Table Displacement (Reference Value)



Note) This displacement is measured when a 15 mm aluminum plate is mounted and fixed on the table. (Table clearance is included.)

- Model Selection
- LEFS
- LEFB
- LEJS
- LEJB
- LEY
- LEYG
- LECYM/LECYU

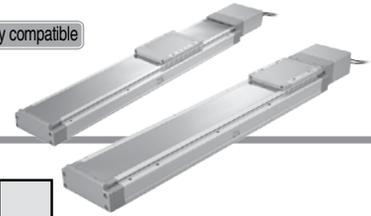
Electric Actuator/High Rigidity Slider Type Ball Screw Drive AC Servo Motor

Series *LEJS*

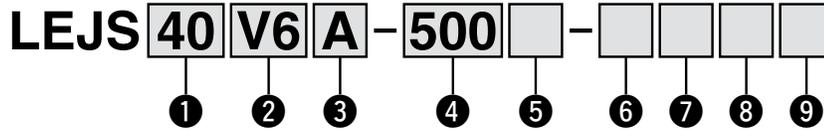


Clean room compatible Secondary battery compatible

Consult with SMC for details.



How to Order



1 Size

40
63

2 Motor type *1

Symbol	Type	Output [W]	Actuator size	Compatible driver
V6	AC servo motor (Absolute encoder)	100	40	LECYM2-V5 LECYU2-V5
V7	AC servo motor (Absolute encoder)	200	63	LECYM2-V7 LECYU2-V7

*1: For motor type V6, the compatible driver part number suffix is V5.

3 Lead [mm]

Symbol	LEJS40	LEJS63
H	24	30
A	16	20
B	8	10

4 Stroke [mm] *2

200
to
1500

*2: Refer to the table below for details.

5 Motor option

Nil	Without option
B	With lock

6 Cable type *4, *5

Nil	Without cable
S	Standard cable
R	Robotic cable (Flexible cable)

*5: The motor and encoder cables are included. (The lock cable is included when the motor with lock option is selected.)

7 Cable length [m] *4, *6

Nil	Without cable
3	3 m
5	5 m
A	10 m
C	20 m

*6: The length of the motor, encoder and lock cables are the same.

8 Driver type *4

	Compatible driver	Power supply voltage [V]
Nil	Without driver	—
M2	LECYM2-V□	200 to 230
U2	LECYU2-V□	200 to 230

9 I/O connector

Nil	Without connector
H	With connector

Applicable Stroke Table *3

●: Standard

Model	Stroke (mm)										
	200	300	400	500	600	700	800	900	1000	1200	1500
LEJS40	●	●	●	●	●	●	●	●	●	●	—
LEJS63	—	●	●	●	●	●	●	●	●	●	●

*3: Please consult with SMC for non-standard strokes as they are produced as special orders.

*4: When the driver type is selected, the cable is included. Select cable type and cable length.

For auto switches, refer to pages 61 to 63.

Compatible Drivers

Driver type	MECHATROLINK-II type	MECHATROLINK-III type
		
Series	LECYM	
Applicable network	MECHATROLINK-II	MECHATROLINK-III
Control encoder	Absolute 20-bit encoder	
Communication device	USB communication, RS-422 communication	
Power supply voltage (V)	200 to 230 VAC (50/60 Hz)	
Reference page	Page 103	

Specifications

LEJS40/63 AC Servo Motor (100/200 W)

Model			LEJS40V6				LEJS63V7		
Actuator specifications	Stroke [mm] ^{Note 1)}		200, 300, 400, 500, 600, 700, 800 900, 1000, 1200				300, 400, 500, 600, 700, 800, 900 1000, 1200, 1500		
	Work load [kg] ^{Note 2)}		Horizontal	15	30	55	30	45	85
			Vertical	3	5	10	6	10	20
	Speed ^{Note 3)} [mm/s]	Stroke range	Up to 500	1800	1200	600	1800	1200	600
			501 to 600	1580	1050	520	1800	1200	600
			601 to 700	1170	780	390	1800	1200	600
			701 to 800	910	600	300	1390	930	460
			801 to 900	720	480	240	1110	740	370
			901 to 1000	580	390	190	900	600	300
			1001 to 1100	480	320	160	750	500	250
			1101 to 1200	410	270	130	630	420	210
			1201 to 1300	—	—	—	540	360	180
	1301 to 1400	—	—	—	470	310	150		
	1401 to 1500	—	—	—	410	270	130		
Max. acceleration/deceleration [mm/s ²]		20000 (Refer to pages 45 to 47 for limit according to work load and duty ratio.)							
Positioning repeatability [mm] ^{Note 4)}		±0.02							
Lost motion [mm] ^{Note 5)}		0.1 or less							
Lead [mm]		24	16	8	30	20	10		
Impact/Vibration resistance [m/s ²] ^{Note 6)}		50/20							
Actuation type		Ball screw							
Guide type		Linear guide							
Operating temperature range		41 to 104°F (5 to 40°C)							
Operating humidity range [%RH]		90 or less (No condensation)							
Regenerative resistor		May be required depending on speed and work load. (Refer to page 42.)							
Electric specifications	Motor output [W]/Size [mm]		100/□40			200/□60			
	Motor type		AC servo motor (200 VAC)						
	Encoder		Absolute 20-bit encoder (Resolution: 1048576 p/rev)						
	Power consumption [W] ^{Note 7)}	Horizontal	65						80
		Vertical	165						235
	Standby power consumption when operating [W] ^{Note 8)}	Horizontal	2						2
		Vertical	10						12
Max. instantaneous power consumption [W] ^{Note 9)}		445						725	
Lock unit specifications	Type ^{Note 10)}		Non-magnetizing lock						
	Holding force lbf [N]		15 [67]	23 [101]	45 [202]	24 [108]	36 [162]	73 [324]	
	Power consumption at 68°F (20°C) [W] ^{Note 11)}		5.5			6			
	Rated voltage [V]		24 VDC ⁰ / _{-10%}						

Note 1) Please consult with SMC for non-standard strokes as they are produced as special orders.

Note 2) Check "Speed-Work Load Graph (Guide)" on page 42.

Note 3) The allowable speed changes according to the stroke.

Note 4) Conforming to JIS B 6191-1999

Note 5) A reference value for correcting an error in reciprocal operation.

Note 6) 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. (Test was performed with the actuator in the initial state.)

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

Note 7) The power consumption (including the driver) is for when the actuator is operating.

Note 8) The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.

Note 9) The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.

Note 10) Only when motor option "With lock" is selected.

Note 11) For an actuator with lock, add the power consumption for the lock.

Note 12) Sensor magnet position is located in the table center. For detailed dimensions, refer to "Auto Switch Mounting Position".

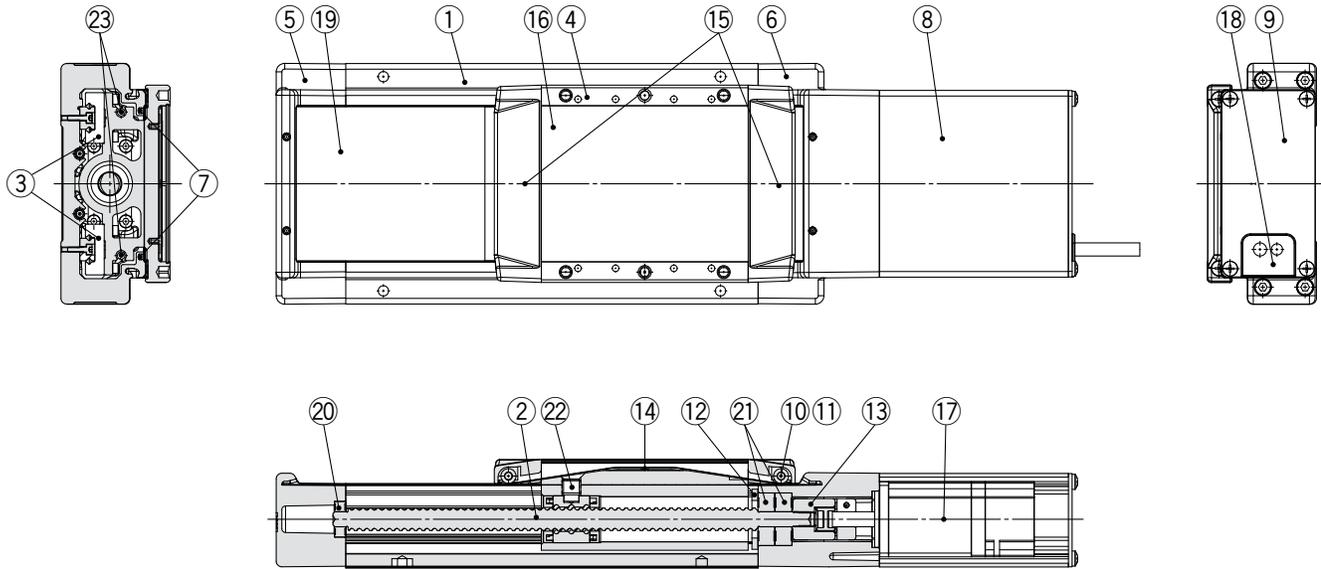
Note 13) Do not allow collisions at either end of the table traveling distance. Additionally, when running the positioning operation, do not set within 2 mm of both ends.

Note 14) For the manufacture of intermediate strokes, please contact SMC. (LEJS40/Manufacturable stroke range: 200 to 1200 mm, LEJS63/Manufacturable stroke range: 300 to 1500 mm)

Weight

Model	LEJS40									
Stroke [mm]	200	300	400	500	600	700	800	900	1000	1200
Product weight [kg]	5.6	6.4	7.1	7.9	8.7	9.4	10.2	11.0	11.7	13.3
Additional weight with lock [kg]	0.3 (Absolute encoder)									

Model	LEJS63									
Stroke [mm]	300	400	500	600	700	800	900	1000	1200	1500
Product weight [kg]	11.4	12.7	13.9	15.2	16.4	17.7	18.9	20.1	22.6	26.4
Additional weight with lock [kg]	0.7 (Absolute encoder)									



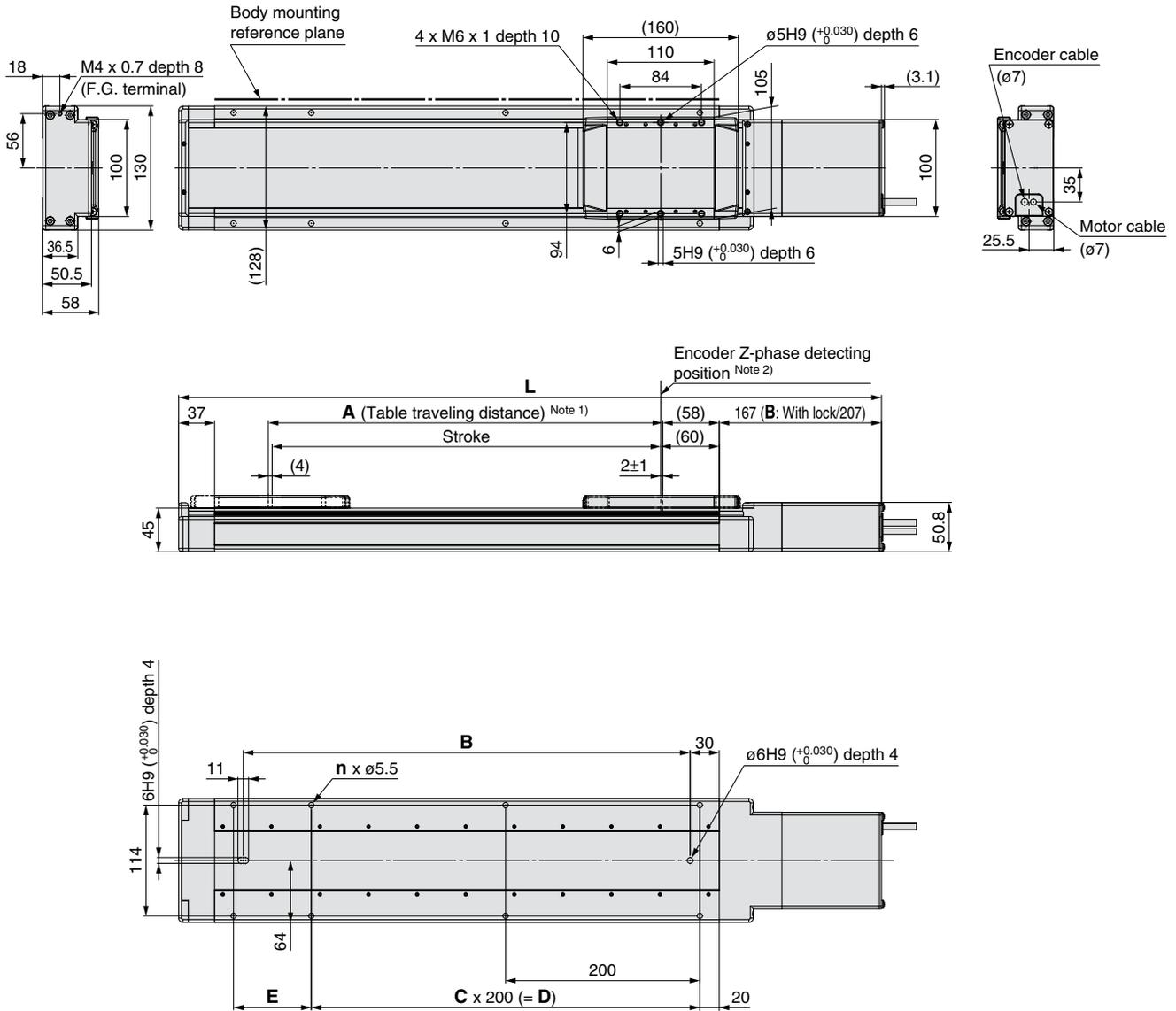
Component Parts

No	Description	Material	Note
1	Body	Aluminum alloy	Anodized
2	Ball screw assembly	—	
3	Linear guide assembly	—	
4	Table	Aluminum alloy	Anodized
5	Housing A	Aluminum alloy	Coating
6	Housing B	Aluminum alloy	Coating
7	Seal magnet	—	
8	Motor cover	Aluminum alloy	Anodized
9	End cover A	Aluminum alloy	Anodized
10	Roller shaft	Stainless steel	
11	Roller	Synthetic resin	
12	Bearing stopper	Carbon steel	

No	Description	Material	Note
13	Coupling	—	
14	Table cap	Synthetic resin	
15	Seal band stopper	Synthetic resin	
16	Blanking plate	Aluminum alloy	Anodized
17	Motor	—	
18	Grommet	NBR	
19	Dust seal band	Stainless steel	
20	Bearing	—	
21	Bearing	—	
22	Nut fixing pin	Carbon steel	
23	Magnet	—	

Dimensions: Ball Screw Drive

LEJS40



Note 1) Distance within which the table can move when it returns to origin. Make sure a workpiece mounted on the table does not interfere with the workpieces and facilities around the table.

Note 2) The Z-phase first detecting position from the stroke end of the motor side

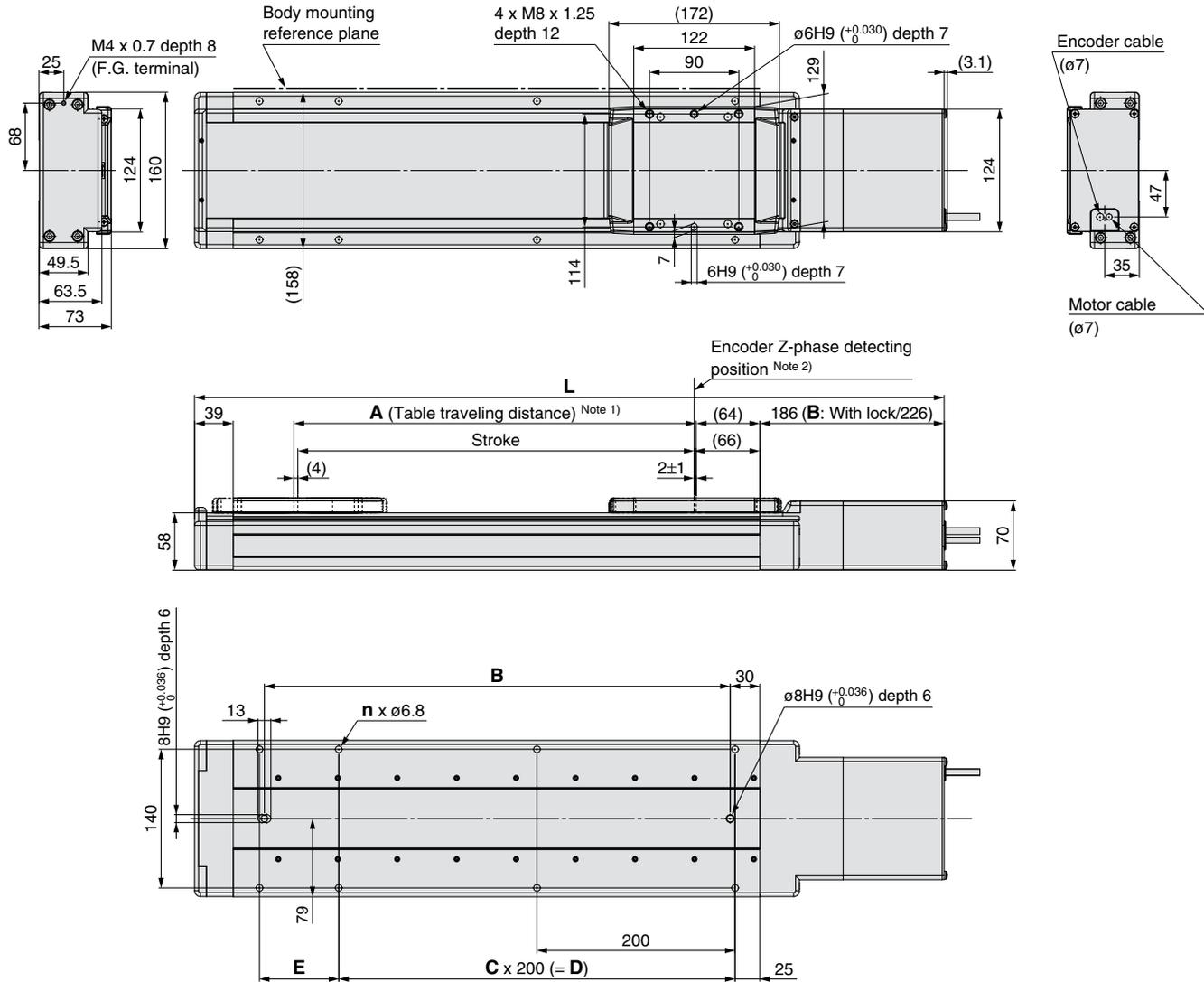
Note 3) Auto switch magnet is located in the table center.

Model	L		A	B	n	C	D	E
	Without lock	With lock						
LEJS40V□□-200□-□□□□	523.5	563.5	206	260	6	1	200	80
LEJS40V□□-300□-□□□□	623.5	663.5	306	360	6	1	200	180
LEJS40V□□-400□-□□□□	723.5	763.5	406	460	8	2	400	80
LEJS40V□□-500□-□□□□	823.5	863.5	506	560	8	2	400	180
LEJS40V□□-600□-□□□□	923.5	963.5	606	660	10	3	600	80
LEJS40V□□-700□-□□□□	1023.5	1063.5	706	760	10	3	600	180
LEJS40V□□-800□-□□□□	1123.5	1163.5	806	860	12	4	800	80
LEJS40V□□-900□-□□□□	1223.5	1263.5	906	960	12	4	800	180
LEJS40V□□-1000□-□□□□	1323.5	1363.5	1006	1060	14	5	1000	80
LEJS40V□□-1200□-□□□□	1523.5	1563.5	1206	1260	16	6	1200	80

Series LEJS

Dimensions: Ball Screw Drive

LEJS63



Note 1) Distance within which the table can move when it returns to origin. Make sure a workpiece mounted on the table does not interfere with the workpieces and facilities around the table.

Note 2) The Z-phase first detecting position from the stroke end of the motor side

Note 3) Auto switch magnet is located in the table center.

Model	L		A	B	n	C	D	E
	Without lock	With lock						
LEJS63V□□-300□-□□□□	656.5	696.5	306	370	6	1	200	180
LEJS63V□□-400□-□□□□	756.5	796.5	406	470	8	2	400	80
LEJS63V□□-500□-□□□□	856.5	896.5	506	570	8	2	400	180
LEJS63V□□-600□-□□□□	956.5	996.5	606	670	10	3	600	80
LEJS63V□□-700□-□□□□	1056.5	1096.5	706	770	10	3	600	180
LEJS63V□□-800□-□□□□	1156.5	1196.5	806	870	12	4	800	80
LEJS63V□□-900□-□□□□	1256.5	1296.5	906	970	12	4	800	180
LEJS63V□□-1000□-□□□□	1356.5	1396.5	1006	1070	14	5	1000	80
LEJS63V□□-1200□-□□□□	1556.5	1596.5	1206	1270	16	6	1200	80
LEJS63V□□-1500□-□□□□	1856.5	1896.5	1506	1570	18	7	1400	180

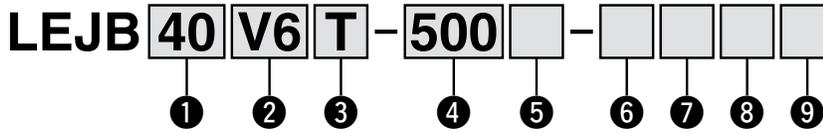
[mm]

Electric Actuator/High Rigidity Slider Type Belt Drive AC Servo Motor

Series **LEJB**



How to Order



1 Size

40
63

2 Motor type *1

Symbol	Type	Output [W]	Actuator size	Compatible driver
V6	AC servo motor (Absolute encoder)	100	40	LECYM2-V5 LECYU2-V5
V7	AC servo motor (Absolute encoder)	200	63	LECYM2-V7 LECYU2-V7

*1: For motor type V6, the compatible driver part number suffix is V5.

3 Lead [mm]

Symbol	LEJB40	LEJB63
T	27	42

4 Stroke [mm] *2

200
to
3000

*2: Refer to the table below for details.

5 Motor option

Nil	Without option
B	With lock

6 Cable type *4, *5

Nil	Without cable
S	Standard cable
R	Robotic cable (Flexible cable)

*5: The motor and encoder cables are included. (The lock cable is included when the motor with lock option is selected.)

7 Cable length [m] *4, *6

Nil	Without cable
3	3 m
5	5 m
A	10 m
C	20 m

*6: The length of the motor, encoder and lock cables are the same.

8 Driver type *4

	Compatible driver	Power supply voltage [V]
Nil	Without driver	—
M2	LECYM2-V□	200 to 230
U2	LECYU2-V□	200 to 230

9 I/O connector

Nil	Without connector
H	With connector

Applicable Stroke Table *3

●: Standard

Model \ Stroke (mm)	200	300	400	500	600	700	800	900	1000	1200	1500	2000	3000
LEJB40	●	●	●	●	●	●	●	●	●	●	●	●	—
LEJB63	—	●	●	●	●	●	●	●	●	●	●	●	●

*3: Please consult with SMC for non-standard strokes as they are produced as special orders.

*4: When the driver type is selected, the cable is included. Select cable type and cable length.

For auto switches, refer to pages 61 to 63.

Compatible Drivers

Driver type	MECHATROLINK-II type	MECHATROLINK-III type
		
Series	LECYM	
Applicable network	MECHATROLINK-II	MECHATROLINK-III
Control encoder	Absolute 20-bit encoder	
Communication device	USB communication, RS-422 communication	
Power supply voltage (V)	200 to 230 VAC (50/60 Hz)	
Reference page	Page 103	

Specifications

LEJB40/63 AC Servo Motor

Model		LEJB40V6	LEJB63V7	
Actuator specifications	Stroke [mm] ^{Note 1)}	200, 300, 400, 500, 600, 700, 800 900, 1000, 1200, 1500, 2000	300, 400, 500, 600, 700, 800 900, 1000, 1200, 1500, 2000, 3000	
	Work load [kg]	Horizontal		
	Speed [mm/s] ^{Note 2)}	20 (If the stroke exceeds 1000 mm: 10)	30	
	Max. acceleration/deceleration [mm/s ²]	2000		
	Positioning repeatability [mm] ^{Note 3)}	20000 (Refer to pages 45 to 47 for limit according to work load and duty ratio.)		
	Lost motion [mm] ^{Note 4)}	±0.04		
	Lead [mm]	0.1 or less		
	Lead [mm]	27	42	
	Impact/Vibration resistance [m/s ²] ^{Note 5)}	50/20		
	Actuation type	Belt		
	Guide type	Linear guide		
	Allowable external force lbf [N]	4.5 [20]		
	Operating temperature range	41 to 104°F (5 to 40°C)		
Operating humidity range [%RH]	90 or less (No condensation)			
Regenerative resistor	May be required depending on speed and work load. (Refer to page 42.)			
Electric specifications	Motor output [W]/Size [mm]	100/□40	200/□60	
	Motor type	AC servo motor (200 VAC)		
	Encoder	Absolute 20-bit encoder (Resolution: 1048576 p/rev)		
	Power consumption [W] ^{Note 6)}	Horizontal	65	190
		Vertical	—	—
	Standby power consumption when operating [W] ^{Note 7)}	Horizontal	2	2
		Vertical	—	—
Max. instantaneous power consumption [W] ^{Note 8)}	445	725		
Lock unit specifications	Type ^{Note 9)}	Non-magnetizing lock		
	Holding force lbf [N]	13 [59]	17 [77]	
	Power consumption at 68°F (20°C) [W] ^{Note 10)}	5.5	6	
	Rated voltage [V]	24 VDC ⁰ _{-10%}		

Note 1) Please consult with SMC for non-standard strokes as they are produced as special orders.

Note 2) Check "Speed-Work Load Graph (Guide)" on page 42.

Note 3) Conforming to JIS B 6191-1999

Note 4) A reference value for correcting an error in reciprocal operation.

Note 5) 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. (Test was performed with the actuator in the initial state.)

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

Note 6) The power consumption (including the driver) is for when the actuator is operating.

Note 7) The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.

Note 8) The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.

Note 9) Only when motor option "With lock" is selected.

Note 10) For an actuator with lock, add the power consumption for the lock.

Note 11) Sensor magnet position is located in the table center.

For detailed dimensions, refer to "Auto Switch Mounting Position".

Note 12) Do not allow collisions at either end of the table traveling distance. Additionally, when running the positioning operation, do not set within 2 mm of both ends.

Note 13) For the manufacture of intermediate strokes, please contact SMC.

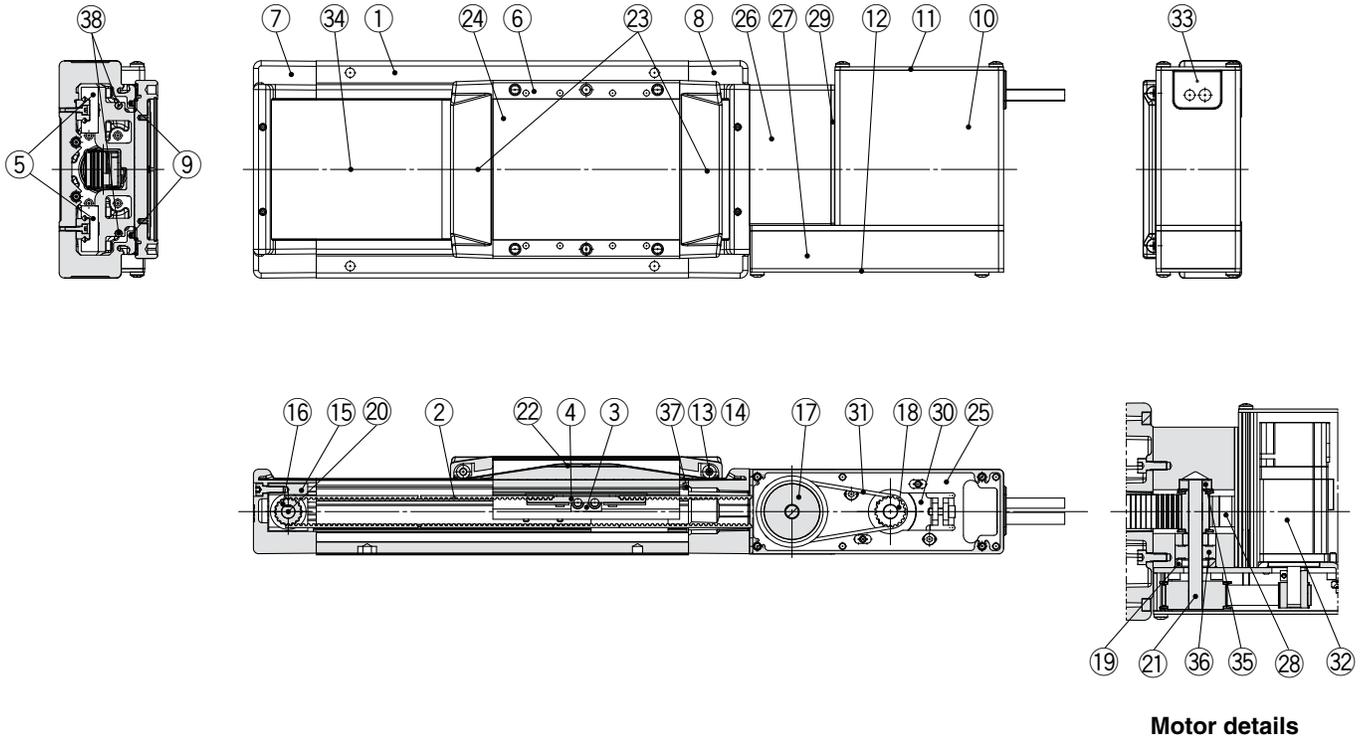
(LEJB40/Manufacturable stroke range: 200 to 2000 mm, LEJB63/Manufacturable stroke range: 300 to 3000 mm)

Weight

Model	LEJB40											
Stroke [mm]	200	300	400	500	600	700	800	900	1000	1200	1500	2000
Product weight [kg]	5.7	6.4	7.1	7.7	8.4	9.1	9.8	10.5	11.2	12.6	14.7	18.1
Additional weight with lock [kg]	0.3 (Absolute encoder)											

Model	LEJB63											
Stroke [mm]	300	400	500	600	700	800	900	1000	1200	1500	2000	3000
Product weight [kg]	11.5	12.7	13.8	15.0	16.2	17.4	18.6	19.7	22.1	25.7	31.6	43.4
Additional weight with lock [kg]	0.7 (Absolute encoder)											

Construction



Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	Anodized
2	Belt	—	
3	Belt holder	Carbon steel	
4	Belt stopper	Aluminum alloy	
5	Linear guide assembly	—	
6	Table	Aluminum alloy	Anodized
7	Housing A	Aluminum alloy	Coating
8	Housing B	Aluminum alloy	Coating
9	Seal magnet	—	
10	Motor cover	Aluminum alloy	Anodized
11	End cover A	Aluminum alloy	Anodized
12	End cover B	Aluminum alloy	Anodized
13	Roller shaft	Stainless steel	
14	Roller	Synthetic resin	
15	Pulley holder	Aluminum alloy	
16	Drive pulley	Aluminum alloy	
17	Speed reduction pulley	Aluminum alloy	
18	Motor pulley	Aluminum alloy	
19	Spacer	Aluminum alloy	

No.	Description	Material	Note
20	Pulley shaft A	Stainless steel	
21	Pulley shaft B	Stainless steel	
22	Table cap	Synthetic resin	
23	Seal band stopper	Synthetic resin	
24	Blanking plate	Aluminum alloy	Anodized
25	Motor mount plate	Carbon steel	
26	Pulley block	Aluminum alloy	Anodized
27	Pulley cover	Aluminum alloy	Anodized
28	Belt stopper	Aluminum alloy	
29	Side plate	Aluminum alloy	Anodized
30	Motor plate	Carbon steel	
31	Belt	—	
32	Motor	—	
33	Grommet	NBR	
34	Dust seal band	Stainless steel	
35	Bearing	—	
36	Bearing	—	
37	Stopper pin	Stainless steel	
38	Magnet	—	

Model Selection

LEFS

LEFB

LEJS

LEJB

LEY

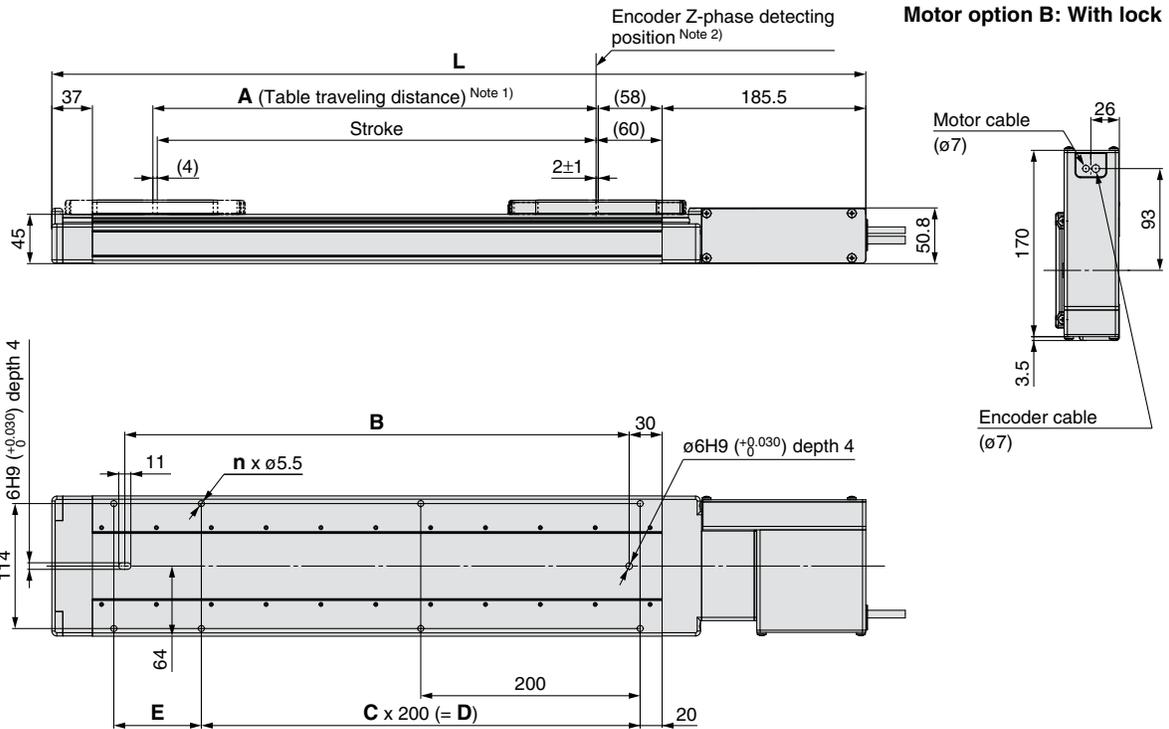
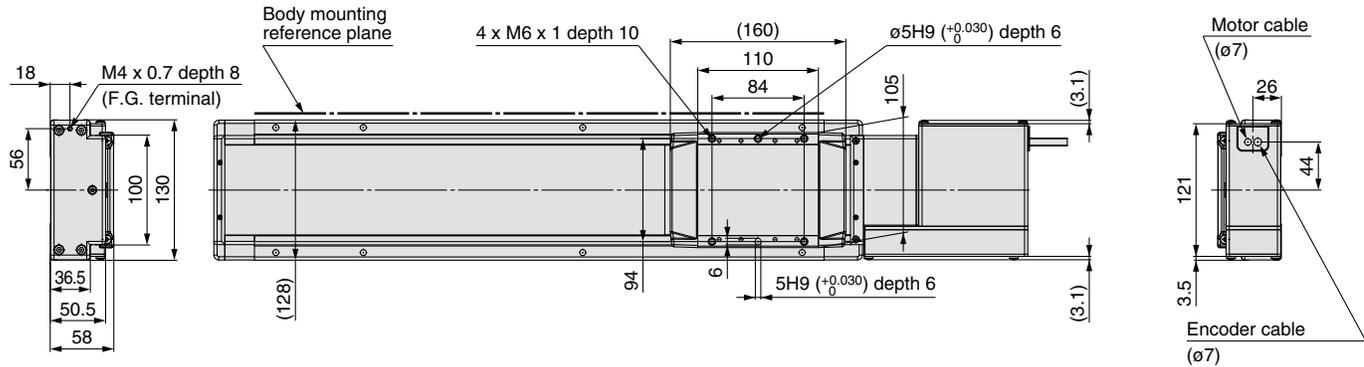
LEYG

LECYM/LECYU

Series LEJB

Dimensions: Belt Drive

LEJB40



Note 1) Distance within which the table can move when it returns to origin. Make sure a workpiece mounted on the table does not interfere with the workpieces and facilities around the table.

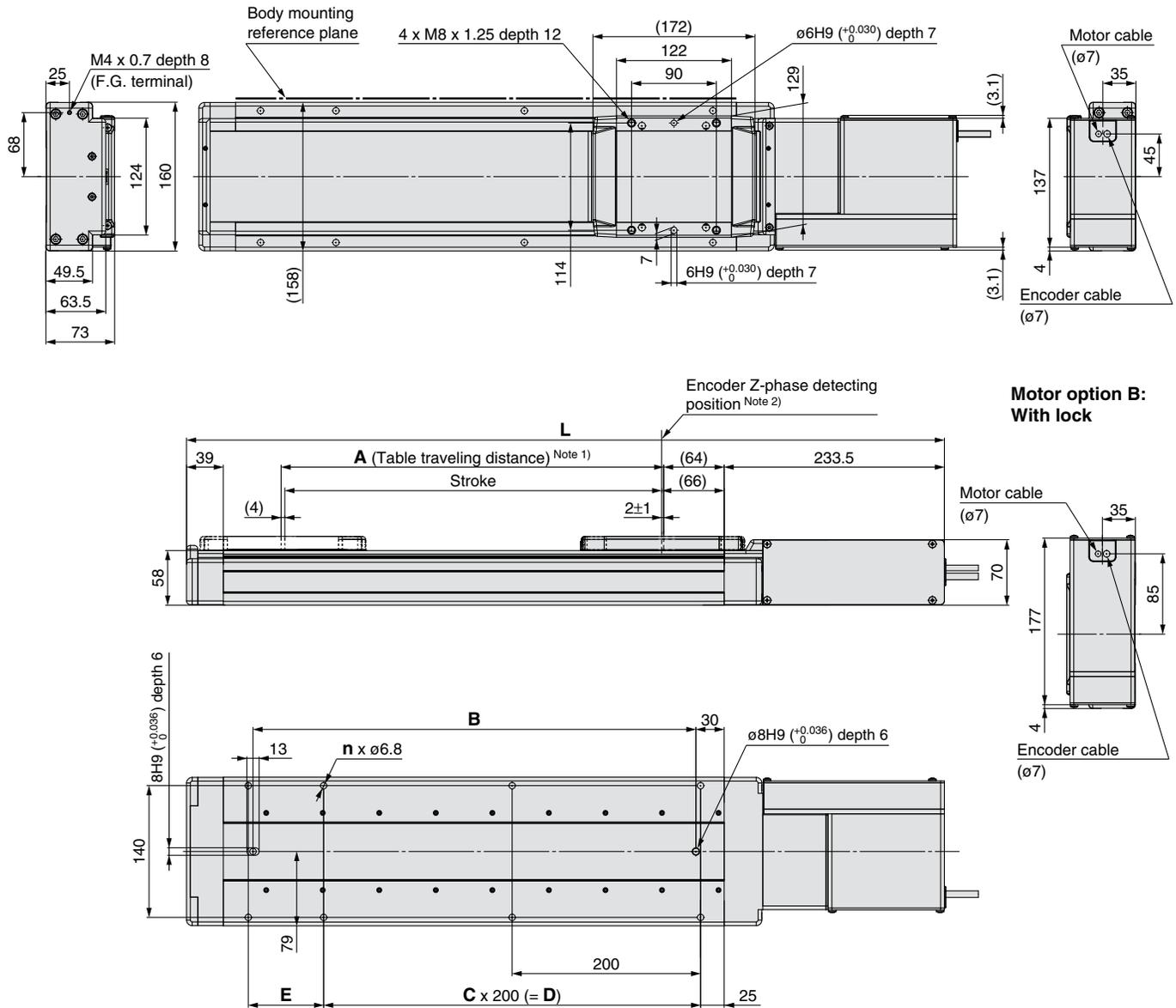
Note 2) The Z-phase first detecting position from the stroke end of the motor side

Note 3) Auto switch magnet is located in the table center.

Model	L	A	B	n	C	D	E
LEJB40V□□-200□-□□□□	542	206	260	6	1	200	80
LEJB40V□□-300□-□□□□	642	306	360	6	1	200	180
LEJB40V□□-400□-□□□□	742	406	460	8	2	400	80
LEJB40V□□-500□-□□□□	842	506	560	8	2	400	180
LEJB40V□□-600□-□□□□	942	606	660	10	3	600	80
LEJB40V□□-700□-□□□□	1042	706	760	10	3	600	180
LEJB40V□□-800□-□□□□	1142	806	860	12	4	800	80
LEJB40V□□-900□-□□□□	1242	906	960	12	4	800	180
LEJB40V□□-1000□-□□□□	1342	1006	1060	14	5	1000	80
LEJB40V□□-1200□-□□□□	1542	1206	1260	16	6	1200	80
LEJB40V□□-1500□-□□□□	1842	1506	1560	18	7	1400	180
LEJB40V□□-2000□-□□□□	2342	2006	2060	24	10	2000	80

Dimensions: Belt Drive

LEJB63



Note 1) Distance within which the table can move when it returns to origin. Make sure a workpiece mounted on the table does not interfere with the workpieces and facilities around the table.

Note 2) The Z-phase first detecting position from the stroke end of the motor side

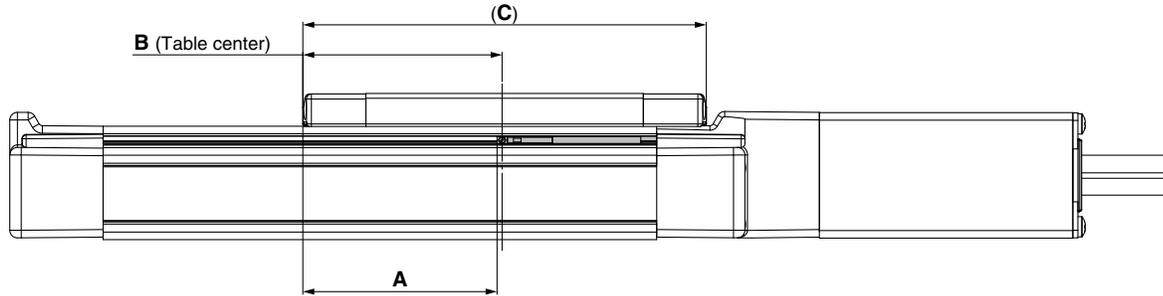
Note 3) Auto switch magnet is located in the table center.

Model	L	A	B	n	C	D	E
LEJB63V□□-300□-□□□□	704	306	370	6	1	200	180
LEJB63V□□-400□-□□□□	804	406	470	8	2	400	80
LEJB63V□□-500□-□□□□	904	506	570	8	2	400	180
LEJB63V□□-600□-□□□□	1004	606	670	10	3	600	80
LEJB63V□□-700□-□□□□	1104	706	770	10	3	600	180
LEJB63V□□-800□-□□□□	1204	806	870	12	4	800	80
LEJB63V□□-900□-□□□□	1304	906	970	12	4	800	180
LEJB63V□□-1000□-□□□□	1404	1006	1070	14	5	1000	80
LEJB63V□□-1200□-□□□□	1604	1206	1270	16	6	1200	80
LEJB63V□□-1500□-□□□□	1904	1506	1570	18	7	1400	180
LEJB63V□□-2000□-□□□□	2404	2006	2070	24	10	2000	80
LEJB63V□□-3000□-□□□□	3404	3006	3070	34	15	3000	80

Series LEJ

Auto Switch Mounting

Auto Switch Mounting Position



(mm)

Model	Size	A	B	C	Operating range
LEJS	40	77	80	160	5.5
LEJB					5.0
LEJS	63	83	86	172	7.0
LEJB					6.5

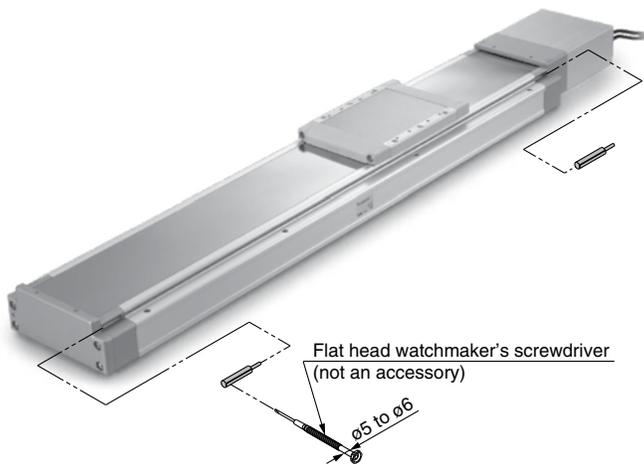
Note) The operating range is a guideline including hysteresis, not meant to be guaranteed. There may be large variations (as much as $\pm 30\%$) depending on the ambient environment.

Auto Switch Mounting

When mounting the auto switches, they should be inserted into the actuator's auto switches mounting groove from the direction shown in the drawing on the below. Once in the mounting position, use a flat head watchmaker's screwdriver to tighten the included auto switch mounting screw.

Auto Switch Mounting Screw Tightening Torque

Auto switch model	Tightening torque
D-M9□(V) D-M9□W(V)	0.89 to 1.33 lbf in (0.10 to 0.15 N·m)



Note) When tightening the auto switch mounting screw, use a watchmaker's screwdriver with a handle diameter of about 5 to 6 mm.

Solid State Auto Switch Direct Mounting Style

D-M9N(V)/D-M9P(V)/D-M9B(V)



Refer to SMC website for the details about products conforming to the international standards.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-M9□, D-M9□V (With indicator light)						
Auto switch model	D-M9N	D-M9NV	D-M9P	D-M9PV	D-M9B	D-M9BV
Electrical entry	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring type	3-wire			2-wire		
Output type	NPN		PNP		—	
Applicable load	IC circuit, Relay, PLC				24 VDC relay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V)					—
Current consumption	10 mA or less					—
Load voltage	28 VDC or less		—		24 VDC (10 to 28 VDC)	
Load current	40 mA or less				2.5 to 40 mA	
Internal voltage drop	0.8 V or less at 10 mA (2 V or less at 40 mA)				4 V or less	
Leakage current	100 μA or less at 24 VDC				0.8 mA or less	
Indicator light	Red LED lights up when turned ON.					
Standards	CE marking, RoHS					

Grommet

- 2-wire load current is reduced (2.5 to 40 mA).
- Flexibility is 1.5 times greater than the conventional model (SMC comparison).
- Using flexible cable as standard.



Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-M9N□	D-M9P□	D-M9B□
Sheath	Outside diameter [mm]	2.7 x 3.2 (ellipse)		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø0.9		
Conductor	Effective area [mm ²]	0.15		
	Strand diameter [mm]	ø0.05		
Minimum bending radius [mm] (Reference value)		20		

Note 1) Refer to the Best Pneumatics No. 2 for solid state auto switch common specifications.
Note 2) Refer to the Best Pneumatics No. 2 for lead wire lengths.

Caution

Precautions

Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Weight

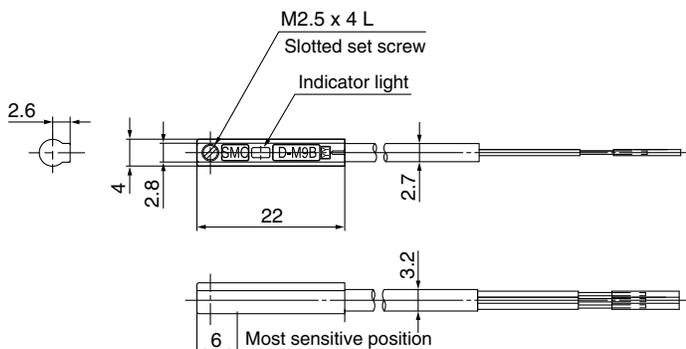
(g)

Auto switch model		D-M9N(V)	D-M9P(V)	D-M9B(V)
Lead wire length	0.5 m (Nil)	8	—	7
	1 m (M)	14	—	13
	3 m (L)	41	—	38
	5 m (Z)	68	—	63

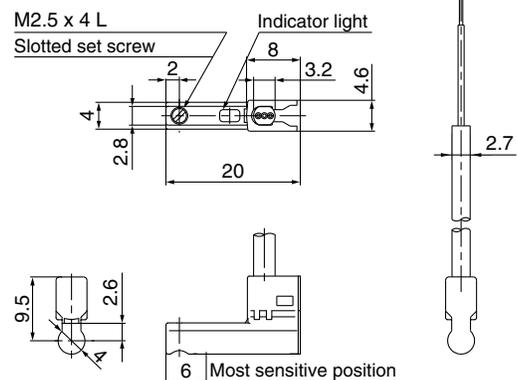
Dimensions

(mm)

D-M9□



D-M9□V



2-Color Indication Solid State Auto Switch Direct Mounting Style

D-M9NW(V)/D-M9PW(V)/D-M9BW(V)



Refer to SMC website for the details about products conforming to the international standards.

Grommet

- 2-wire load current is reduced (2.5 to 40 mA).
- Flexibility is 1.5 times greater than the conventional model (SMC comparison).
- Using flexible cable as standard.
- The optimum operating range can be determined by the color of the light. (Red→Green←Red)



Caution

Precautions

Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-M9□W, D-M9□WV (With indicator light)						
Auto switch model	D-M9NW	D-M9NWV	D-M9PW	D-M9PWV	D-M9BW	D-M9BWV
Electrical entry	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring type	3-wire				2-wire	
Output type	NPN		PNP		—	
Applicable load	IC circuit, Relay, PLC				24 VDC relay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V)				—	
Current consumption	10 mA or less				—	
Load voltage	28 VDC or less		—		24 VDC (10 to 28 VDC)	
Load current	40 mA or less				2.5 to 40 mA	
Internal voltage drop	0.8 V or less at 10 mA (2 V or less at 40 mA)				4 V or less	
Leakage current	100 μA or less at 24 VDC				0.8 mA or less	
Indicator light	Operating range Red LED lights up. Optimum operating range Green LED lights up.					
Standards	CE marking, RoHS					

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		D-M9NW□	D-M9PW□	D-M9BW□
Sheath	Outside diameter [mm]	2.7 x 3.2 (ellipse)		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø0.9		
Conductor	Effective area [mm ²]	0.15		
	Strand diameter [mm]	ø0.05		
Minimum bending radius [mm] (Reference value)		20		

Note 1) Refer to the Best Pneumatics No. 2 for solid state auto switch common specifications.
Note 2) Refer to the Best Pneumatics No. 2 for lead wire lengths.

Weight

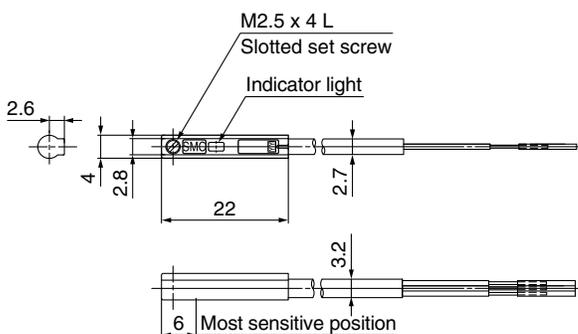
(g)

Auto switch model		D-M9NW(V)	D-M9PW(V)	D-M9BW(V)
Lead wire length	0.5 m (Nil)	8	7	7
	1 m (M)	14	13	13
	3 m (L)	41	38	38
	5 m (Z)	68	63	63

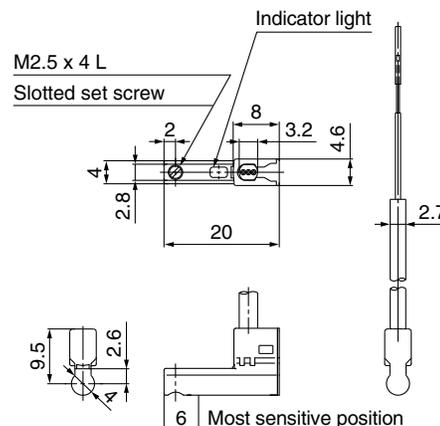
Dimensions

[mm]

D-M9□W



D-M9□WV





Series LEJ Electric Actuator/ Specific Product Precautions 1

Be sure to read this before handling. For Safety Instructions and Electric Actuator Precautions, refer to “Handling Precautions for SMC Products” and the Operation Manual on SMC website, <http://www.smcworld.com>

Design

⚠ Caution

1. Do not apply a load in excess of the operating limit.

Select a suitable actuator by work load and allowable moment. If the product is used outside of the operating limit, the eccentric load applied to the guide will be excessive and have adverse effects such as creating play on the guide, degrading accuracy and shortening the life of the product.

2. Do not use the product in applications where excessive external force or impact force is applied to it.

The product can be damaged.

The components including the motor are manufactured to precise tolerances. So that even a slight deformation may cause a malfunction or seizure.

Selection

⚠ Warning

1. Do not increase the speed in excess of the operating limit.

Select a suitable actuator by the relationship of the allowable work load and speed, and the allowable speed of each stroke. If the product is used outside of the operating limit, it will have adverse effects such as creating noise, degrading accuracy and shortening the life of the product.

2. When the product repeatedly cycles with partial strokes (100 mm or less), lubrication can run out. Operate it at a full stroke at least once a day or every 1000 strokes.

3. When external force is applied to the table, it is necessary to add external force to the work load as the total carried load for the sizing.

When a cable duct or flexible moving tube is attached to the actuator, the sliding resistance of the table increases and may lead to operational failure of the product.

Handling

⚠ Caution

1. Do not allow the table to hit the end of stroke.

When incorrect instructions are inputted, such as using the product outside of the operating limit or operation outside of actual stroke through changes in the controller/driver setting and/or origin position, the table may collide against the stroke end of the actuator. Please check these points before use.

If the table collides against the stroke end of the actuator, the guide, belt or internal stopper can be broken. This may lead to 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.

2. The actual speed of this actuator is affected by the work load and stroke.

Check specifications with reference to the model selection section of the catalog.

3. Do not apply a load, impact or resistance in addition to the transferred load during return to origin.

4. Do not dent, scratch or cause other damage to the body and table mounting surfaces.

This may cause unevenness in the mounting surface, play in the guide or an increase in the sliding resistance.

5. Do not apply strong impact or an excessive moment while mounting the product or 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.

6. Keep the flatness of mounting surface 0.1 mm or less.

Unevenness of a workpiece or base mounted on the body of the product may cause play in the guide and an increase in the sliding resistance.

In the case of overhang mounting (including cantilever), to avoid deflection of the actuator body, use a support plate or support guide.

7. When mounting the actuator, use all mounting holes.

If all mounting holes are not used, it influences the specifications, e.g., the amount of displacement of the table increases.

8. Do not hit the table with the workpiece in the positioning operation and positioning range.

9. Do not apply external force to the dust seal band.

Particularly during the transportation.

Model Selection

LEFS

LEFB

LEJS

LEJB

LEY

LEYG

LECYM/LECYU



Series LEJ Electric Actuator/ Specific Product Precautions 2

Be sure to read this before handling. For Safety Instructions and Electric Actuator Precautions, refer to "Handling Precautions for SMC Products" and the Operation Manual on SMC website, <http://www.smcworld.com>

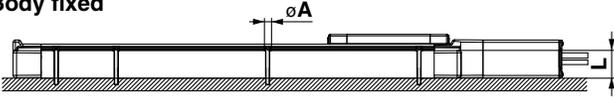
Handling

⚠ Caution

10. When mounting the product, use screws with adequate length and tighten them with adequate torque.

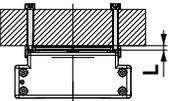
Tightening the screws with a higher torque than recommended may cause a malfunction, whilst the tightening with a lower torque can cause the displacement of the mounting position or in extreme conditions the actuator could become detached from its mounting position.

Body fixed



Model	Bolt	Max. tightening torque lbf-ft (N-m)	ϕA (mm)	L (mm)
LEJ□40	M5	2.2 (3.0)	5.5	36.5
LEJ□63	M6	3.8 (5.2)	6.8	49.5

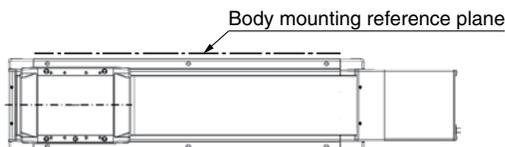
Workpiece fixed



Model	Bolt	Max. tightening torque lbf-ft (N-m)	L (Max. screw-in depth) (mm)
LEJ□40	M6 x 1	3.8 (5.2)	10
LEJ□63	M8 x 1.25	9.2 (12.5)	12

To prevent the workpiece fixing bolts from touching the body, use bolts that are 0.5 mm or shorter than the maximum screw-in depth. If long bolts are used, they can touch the body and cause a malfunction, etc.

11. Do not operate by fixing the table and moving the actuator body.
12. The belt drive actuator cannot be used vertically for applications.
13. Vibration may occur during operation, this could be caused by the operating conditions.
If it occurs, refer to the operation manuals of the driver and actuator.
14. When mounting the actuator using the body mounting reference plane, use a pin. Set the height of the pin to be 5 mm or more because of chamfering. (Recommended height 6 mm)



Maintenance

⚠ Warning

Maintenance frequency

Perform maintenance according to the table below.

Frequency	Appearance check	Internal check	Belt check
Inspection before daily operation	○	—	—
Inspection every 6 months/1000 km/ 5 million cycles*	○	○	○

* Select whichever comes sooner.

• Items for visual appearance check

1. Loose set screws, Abnormal dirt
2. Check of flaw and cable joint
3. Vibration, Noise

• Items for internal check

1. Lubricant condition on moving parts.
* For lubrication, use lithium grease No. 2.
2. Loose or mechanical play in fixed parts or fixing screws.

• Items for belt check

Stop operation immediately and replace the belt when belt appear to be below. Further, ensure your operating environment and conditions satisfy the requirements specified for the product.

a. Tooth shape canvas is worn out.

Canvas fiber becomes fuzzy. Rubber is removed and the fiber becomes whitish. Lines of fibers become unclear.

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

Belt corner becomes round and frayed thread sticks out.

c. Belt partially cut

Belt is partially cut. Foreign matter caught in teeth other than cut part causes flaw.

d. Vertical line of belt teeth

Flaw which is made when the belt runs on the flange.

e. Rubber back of the belt is softened and sticky.

f. Crack on the back of the belt

Model Selection



Selection Procedure

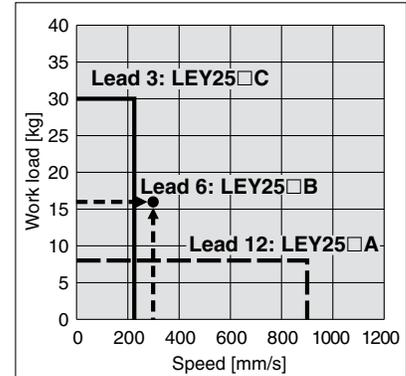
Positioning Control Selection Procedure



Selection Example

Operating conditions

- Workpiece mass: 16 [kg]
- Speed: 300 [mm/s]
- Acceleration/Deceleration: 5000 [mm/s²]
- Stroke: 300 [mm]
- Workpiece mounting condition: Vertical upward downward transfer



<Speed-Vertical work load graph>

Step 1 Check the work load-speed. <Speed-Vertical work load graph>

Select the target model based on the workpiece mass and speed with reference to the <Speed-Vertical work load graph>.

Selection example) The **LEY25□B** is temporarily selected based on the graph shown on the right side.

* It is necessary to mount a guide outside the actuator when used for horizontal transfer. When selecting the target model, refer to pages 75 and 76 for the horizontal work load in the specifications, and page 98 for the precautions.

The regenerative resistor may be necessary. Refer to pages 69 and 70 for "Conditions for Regenerative Resistor (Guide)".

Step 2 Check the cycle time.

Calculate the cycle time using the following calculation method.

- 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 obtained by the following equation.

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

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

- 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 positioning of the step data. Therefore, please calculate the settling time with reference to the following value.

$$T4 = 0.05 \text{ [s]}$$

Calculation example)

T1 to T4 can be calculated as follows.

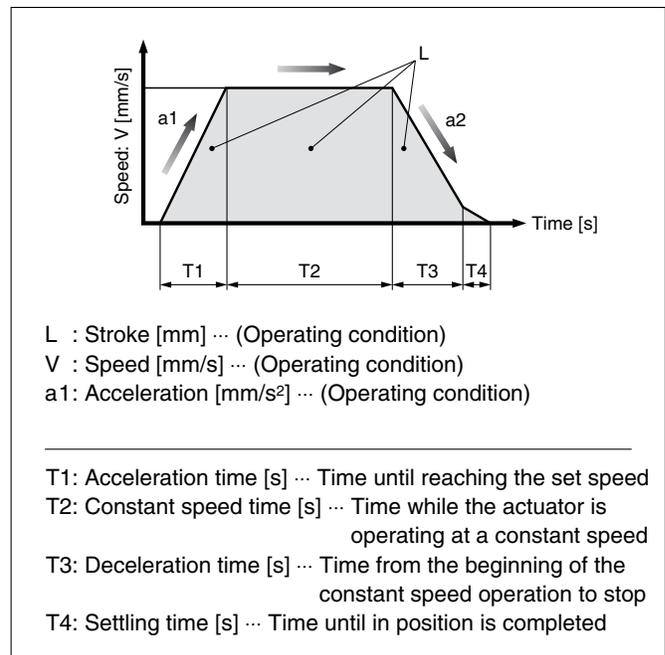
$$T1 = V/a1 = 300/5000 = 0.06 \text{ [s]}, T3 = V/a2 = 300/5000 = 0.06 \text{ [s]}$$

$$T2 = \frac{L - 0.5 \cdot V \cdot (T1 + T3)}{V} = \frac{300 - 0.5 \cdot 300 \cdot (0.06 + 0.06)}{300} = 0.94 \text{ [s]}$$

$$T4 = 0.05 \text{ [s]}$$

Therefore, the cycle time can be obtained as follows.

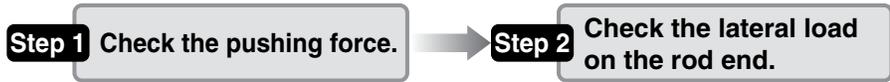
$$T = T1 + T2 + T3 + T4 = 0.06 + 0.94 + 0.06 + 0.05 = 1.11 \text{ [s]}$$



Based on the above calculation result, the **LEY25□B-300** is selected.

Selection Procedure

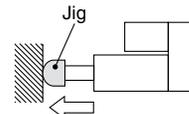
Pushing Control Selection Procedure



Selection Example

Operating conditions

- Mounting condition: Horizontal (pushing)
- Pushing speed: 35 [mm/s]
- Jig weight: 0.5 [kg]
- Stroke: 300 [mm]
- Pushing force: 200 [N]



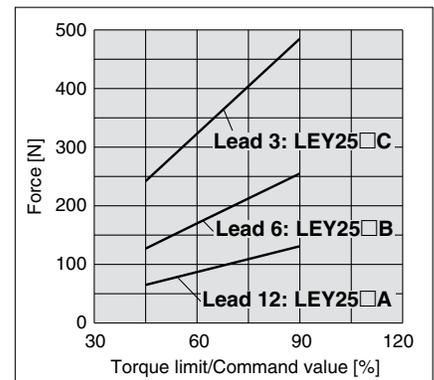
Step 1 Check the pushing force. <Force conversion graph>

Select the target model based on the torque limit/command value and pushing force with reference to the <Force conversion graph>.

Selection example)

Based on the graph shown on the right side,

- Torque limit/Command value: 72 [%]
- Pushing force: 200 [N]



<Force conversion graph>

Step 2 Check the lateral load on the rod end. <Graph of allowable lateral load on the rod end>

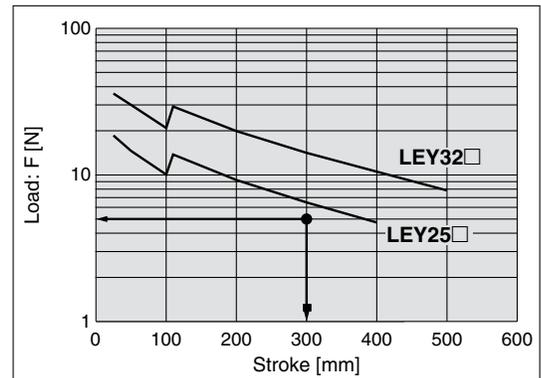
Confirm the allowable lateral load on the rod end of the actuator: LEY25B, which has been selected temporarily with reference to the <Graph of allowable lateral load on the rod end>.

Selection example)

Based on the graph shown on the right side,

- Jig weight: 0.5 [kg] ≈ 5 [N]
- Product stroke: 300 [mm]

Therefore, the lateral load on the rod end is in the allowable range.



<Graph of allowable lateral load on the rod end>

Based on the above calculation result, the LEY25B-300 is selected.

Model Selection

LEFS

LEFB

LEJS

LEJB

LEY

LEYG

LECYM/LECYU

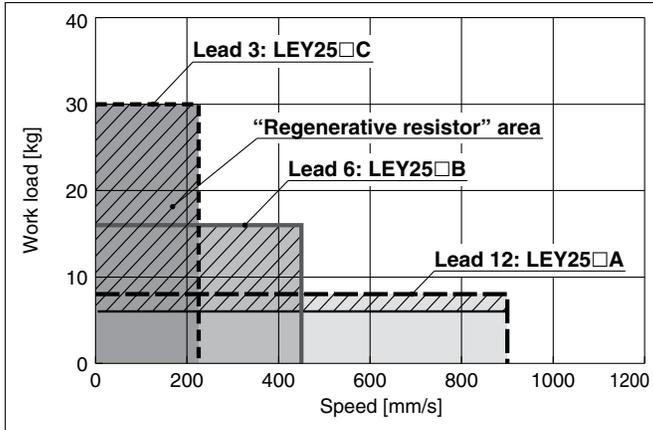
Series LEY

Size 25, 32, 63

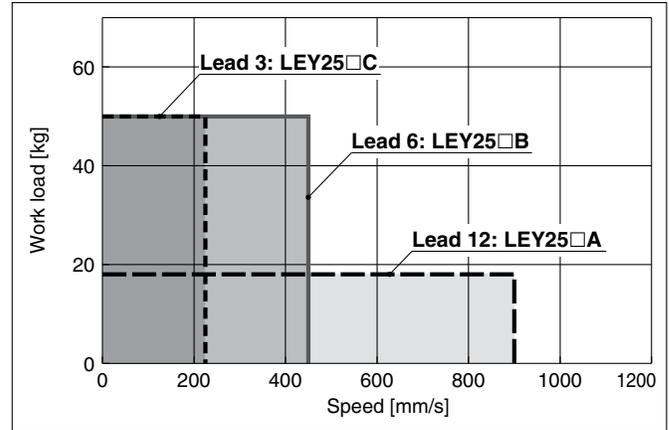
Speed-Work Load Graph/Conditions for “Regenerative Resistor” (Guide)

LEY25□V6 (Motor mounting position: Top/Parallel, In-line)

Vertical

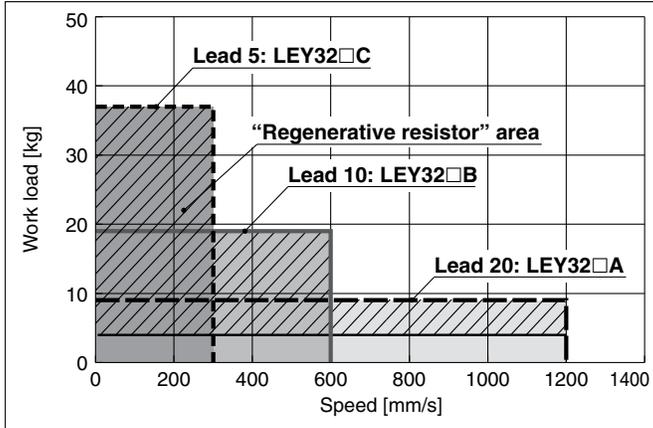


Horizontal

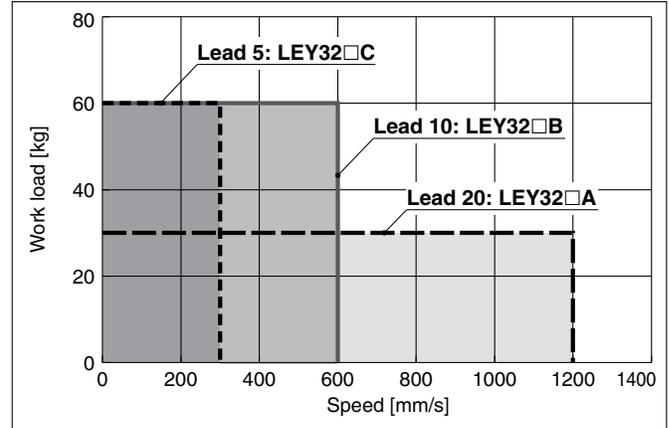


LEY32□V7 (Motor mounting position: Top/Parallel)

Vertical

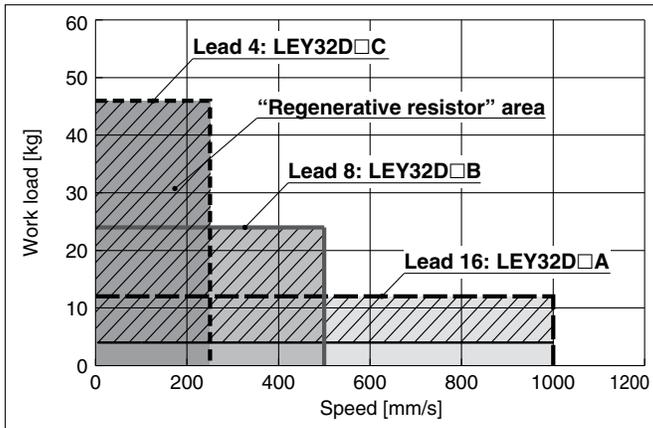


Horizontal

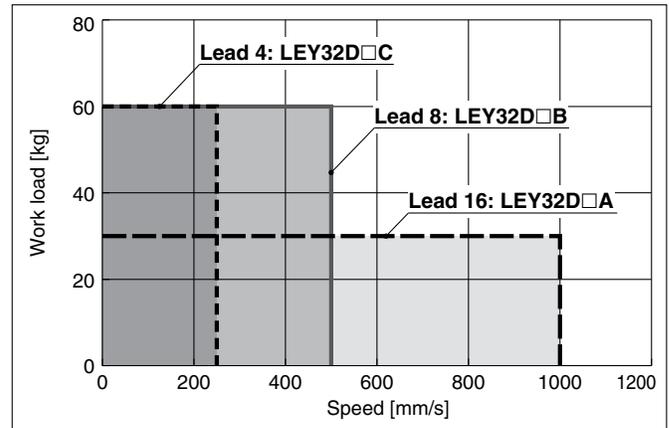


LEY32DV7 (Motor mounting position: In-line)

Vertical



Horizontal



“Regenerative resistor” area

* When using the actuator in the “Regenerative resistor” area, download the “AC servo capacity selection program/SigmaJunmaSize+” from the SMC website. Then, calculate the necessary regenerative resistor capacity to prepare an appropriate external regenerative resistor.

* Regenerative resistor should be provided by the customer.

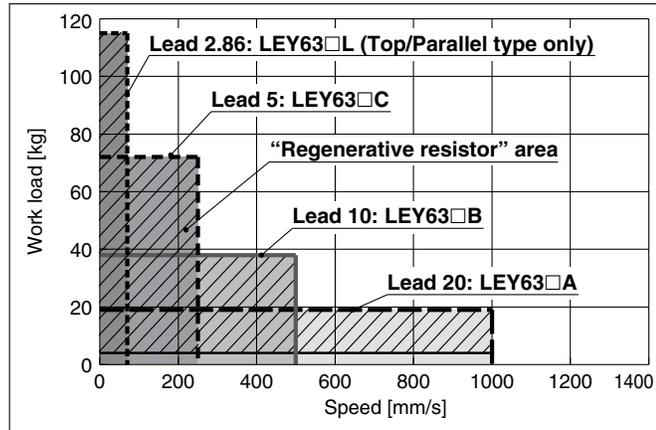
Applicable Motor/Driver

Model	Applicable model	
	Motor	Servopack (SMC driver)
LEY25□	SGMJV-01A3A	SGDV-R90A11□ (LECYM2-V5) SGDV-R90A21□ (LECYU2-V5)
LEY32□	SGMJV-02A3A	SGDV-1R6A11□ (LECYM2-V7) SGDV-1R6A21□ (LECYU2-V7)

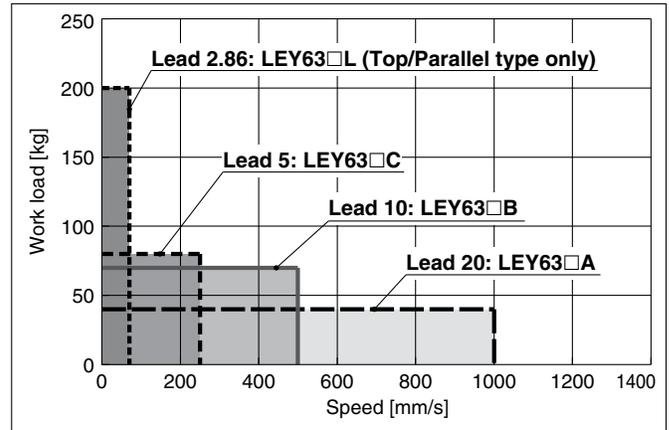
Speed-Work Load Graph/Conditions for “Regenerative Resistor” (Guide)

LEY63□V8 (Motor mounting position: Top/Parallel, In-line)

Vertical



Horizontal



“Regenerative resistor” area

- * When using the actuator in the “Regenerative resistor” area, download the “AC servo capacity selection program/SigmaJunmaSize+” from the SMC website. Then, calculate the necessary regenerative resistor capacity to prepare an appropriate external regenerative resistor.
- * Regenerative resistor should be provided by the customer.

Applicable Motor/Driver

Product no.	Applicable model	
	Motor	Servopack (SMC driver)
LEY63□	SGMJV-04A3A	SGDV-2R8A11□ (LECYM2-V8) SGDV-2R8A21□ (LECYU2-V8)

Allowable Stroke Speed

[mm/s]

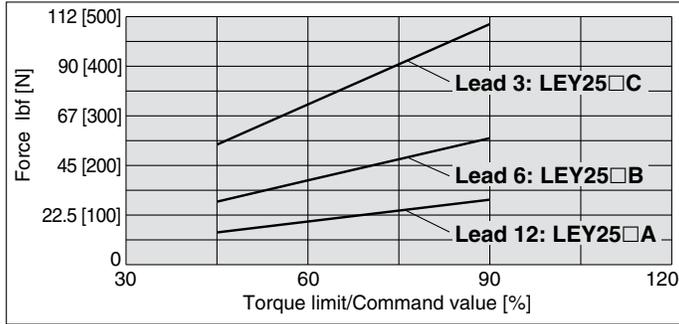
Model	AC servo motor	Lead		Stroke [mm]														
		Symbol	[mm]	Up to 30	Up to 50	Up to 100	Up to 150	Up to 200	Up to 250	Up to 300	Up to 350	Up to 400	Up to 450	Up to 500	Up to 600	Up to 700	Up to 800	
LEY25□ (Motor mounting position: Top/Parallel, In-line)	100 W /□40	A	12					900					600	—	—	—	—	—
		B	6					450					300	—	—	—	—	—
		C	3					225					150	—	—	—	—	—
		(Motor rotation speed)						(4500 rpm)					(3000 rpm)	—	—	—	—	—
LEY32□ (Motor mounting position: Top/Parallel)	200 W /□60	A	20					1200					800	—	—	—	—	—
		B	10					600					400	—	—	—	—	—
		C	5					300					200	—	—	—	—	—
		(Motor rotation speed)						(3600 rpm)					(2400 rpm)	—	—	—	—	—
LEY32D (Motor mounting position: In-line)	200 W /□60	A	16					1000					640	—	—	—	—	—
		B	8					500					320	—	—	—	—	—
		C	4					250					160	—	—	—	—	—
		(Motor rotation speed)						(3750 rpm)					(2400 rpm)	—	—	—	—	—
LEY63□ (Motor mounting position: Top/Parallel, In-line)	400 W /□60	A	20	—				1000					800	600	500			
		B	10	—				500					400	300	250			
		C	5	—				250					200	150	125			
		(Motor rotation speed)		—				(3000 rpm)					(2400 rpm)	(1800 rpm)	(1500 rpm)			
		L	2.86	—				70										
(Motor rotation speed)		—				(1470 rpm)												

Series LEY

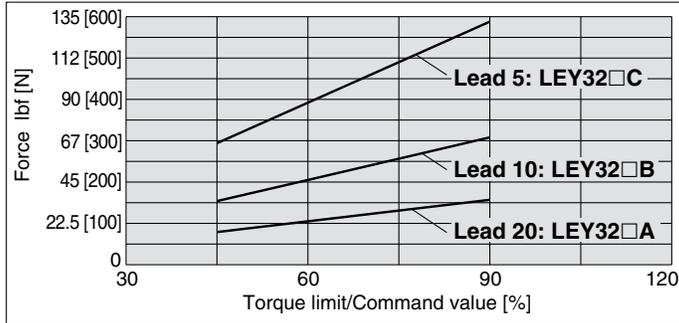
Size 25, 32, 63

Force Conversion Graph (Guide)

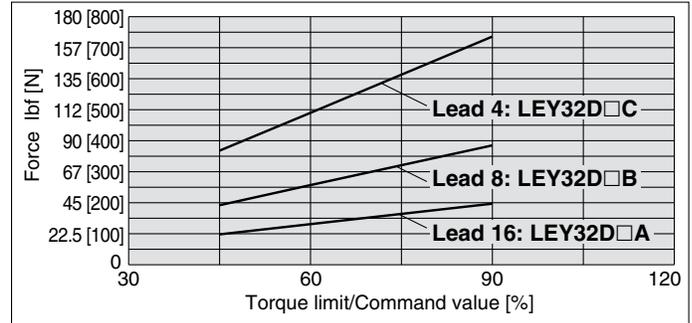
LEY25□ (Motor mounting position: Top/Parallel, In-line)



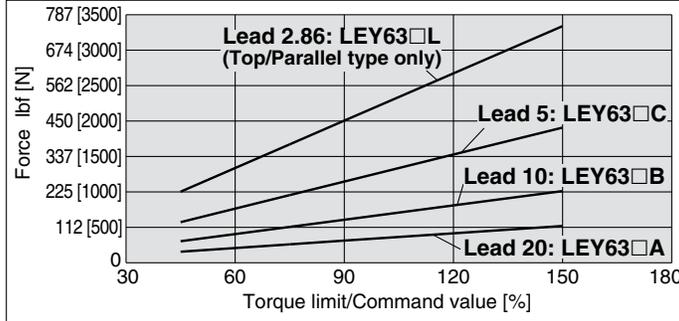
LEY32□ (Motor mounting position: Top/Parallel)



LEY32D□ (Motor mounting position: In-line)



LEY63□ (Motor mounting position: Top/Parallel, In-line)



Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time [minute]
75 or less	100	—
90	100 (60)	— (1.5)
120	50 (30)	1.5 (0.5)
150	30 (20)	0.5 (0.16)

* The values in () are for a closely-mounted driver.

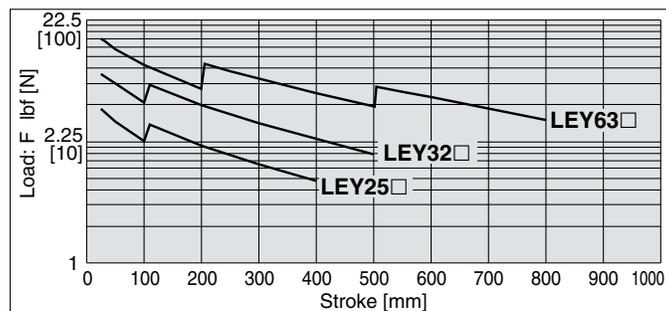
*1 When limiting the torque with LEY25/32, the value of the internal torque limit or external torque should be set to 90% or less.

- Internal torque limit: Parameter No. Pn402/Forward torque limit, No. Pn403/Reverse torque limit
- External torque limit: Parameter No. Pn404/Forward external torque limit, No. Pn405/Reverse external torque limit

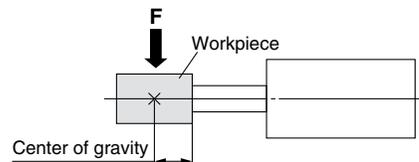
*2 When limiting the torque with LEY63, the value of the internal torque limit or external torque should be set to 150% or less.

- Internal torque limit: Parameter No. Pn402/Forward torque limit, No. Pn403/Reverse torque limit
- External torque limit: Parameter No. Pn404/Forward external torque limit, No. Pn405/Reverse external torque limit

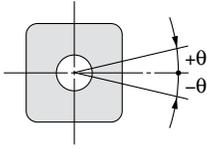
Graph of Allowable Lateral Load on the Rod End (Guide)



[Stroke] = [Product stroke] + [Distance from the rod end to the center of gravity of the workpiece]

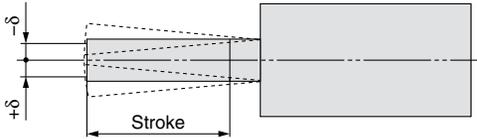


Non-rotating Accuracy: θ



Size	Non-rotating accuracy θ
25	$\pm 0.8^\circ$
32	$\pm 0.7^\circ$
63	$\pm 0.6^\circ$

Rod Displacement: δ



Size	Stroke [mm]													
	30	50	100	150	200	250	300	350	400	450	500	600	700	800
25	± 0.3	± 0.4	± 0.7	± 0.7	± 0.9	± 1.1	± 1.3	± 1.5	± 1.7	—	—	—	—	—
32	± 0.3	± 0.4	± 0.7	± 0.6	± 0.8	± 1.0	± 1.1	± 1.3	± 1.5	± 1.7	± 1.8	—	—	—
63	—	—	± 1.0	—	± 1.7	—	± 1.3	—	± 1.7	—	± 2.1	± 1.7	± 2.0	± 2.2

Model Selection

LEFS

LEFB

LEJS

LEJB

LEY

LEYG

LECYM/LECYU

Electric Actuator/Rod Type Belt Drive

AC Servo Motor

Series LEY

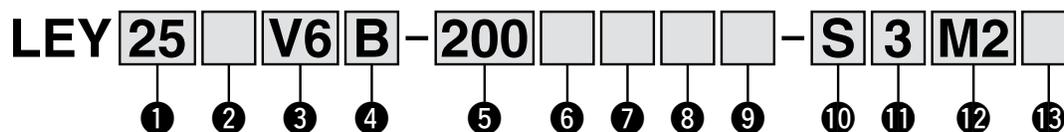
LEY25, 32, 63 Size 25, 32, 63



Secondary battery compatible Dust/Drip proof (IP65) specification

Consult with SMC for details.

How to Order



1 Size

25
32
63

2 Motor mounting position

Nil	Top mounting
R	Right side parallel
L	Left side parallel
D	In-line

3 Motor type

Symbol	Type	Output [W]	Size	Compatible driver
V6	AC servo motor (Absolute encoder)	100	25	LECYM2-V5 LECYU2-V5
V7		200	32	LECYM2-V7 LECYU2-V7
V8		400	63	LECYM2-V8 LECYU2-V8

4 Lead [mm]

Symbol	LEY25	LEY32 *1	LEY63
A	12	16 (20)	20
B	6	8 (10)	10
C	3	4 (5)	5
L	—	—	2.86 *2

*1 The values shown in () are the lead for top mounting, right/left side parallel types. (Equivalent lead which includes the pulley ratio [1.25:1])

*2 Only available for top mounting and right/left side parallel types. (Equivalent lead which includes the pulley ratio [4:7])

5 Stroke [mm]

30	30
to	to
800	800

* Refer to the applicable stroke table.

6 Dust/Drip proof (Only available for LEY63)

Symbol	LEY25/32	LEY63
Nil	Equivalent to IP4x	IP5x (Dust proof specification)
P	—	IP65 (Dust/Drip proof specification)/ With vent hole tap

* When using the dust/drip proof (IP65), correctly mount the fitting and tubing to the vent hole tap, and then place the end of the tubing in an area not exposed to dust or water.

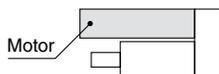
* The fitting and tubing should be provided separately by the customer. Select [Applicable tubing O.D.: $\phi 4$ or more, Connection thread: Rc1/8].

7 Motor option

Nil	Without option
B	With lock

* When "With lock" is selected for the top mounting and right/left side parallel types, the motor body will stick out of the end of the body for size 25 with strokes 30 or less.

Check for interference with workpieces before selecting a model.



8 Rod end thread

Nil	Rod end female thread
M	Rod end male thread (1 rod end nut is included.)

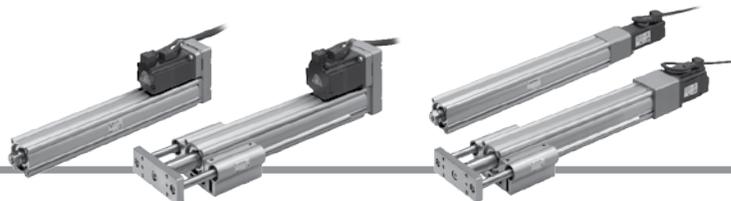
Applicable Stroke Table

●: Standard

Model \ Stroke (mm)	30	50	100	150	200	250	300	350	400	450	500	600	700	800	Manufacturable stroke range
LEY25	●	●	●	●	●	●	●	●	●	—	—	—	—	—	15 to 400
LEY32	●	●	●	●	●	●	●	●	●	●	●	—	—	—	20 to 500
LEY63	—	—	●	—	●	—	●	—	●	—	●	●	●	●	50 to 800

* Please consult with SMC for the manufacture of intermediate strokes.

For auto switches, refer to pages 96 and 97.



Motor mounting position: Top/Parallel Motor mounting position: In-line

9 Mounting *1

Symbol	Type	Motor mounting position	
		Top/Parallel	In-line
Nil	Ends tapped (Standard) *2	●	●
U	Body bottom tapped	●	●
L	Foot	●	—
F	Rod flange *2	● *4	●
G	Head flange *2	● *5	—
D	Double clevis *3	●	—

- *1 Mounting bracket is shipped together, (but not assembled).
- *2 For horizontal cantilever mounting with the ends tapped and rod/head flange, use the actuator within the following stroke range.
· LEY25: 200 or less · LEY32: 100 or less · LEY63: 400 or less
- *3 For mounting with the double clevis, use the actuator within the following stroke range.
· LEY25: 200 or less · LEY32: 200 or less · LEY63: 300 or less
- *4 Rod flange is not available for the LEY 25 with strokes 30 and motor option "With lock".
- *5 Head flange is not available for the LEY32/LEY63.

10 Cable type

Nil	Without cable
S	Standard cable
R	Robotic cable (Flexible cable)

11 Cable length [m]

Nil	Without cable
3	3
5	5
A	10
C	20

12 Driver type

	Compatible driver	Power supply voltage [V]
Nil	Without driver	—
M2	LECYM2-V□	200 to 230
U2	LECYU2-V□	200 to 230

* When the driver type is selected, the cable is included. Select cable type and cable length.

13 I/O connector

Nil	Without connector
H	With connector

Compatible Drivers

Driver type	MECHATROLINK-II type	MECHATROLINK-III type
		
Series	LECYM	LECYU
Applicable network	MECHATROLINK-II	MECHATROLINK-III
Control encoder	Absolute 20-bit encoder	
Communication device	USB communication, RS-422 communication	
Power supply voltage (V)	200 to 230 VAC (50/60 Hz)	
Reference page	Page 103	

Specifications

Model		LEY25 (Top/Parallel)/LEY25D (In-line)			LEY32 (Top/Parallel)			LEY32D (In-line)				
Actuator specifications	Stroke [mm] ^{Note 1)}	30, 50, 100, 150, 200, 250, 300, 350, 400			30, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500			30, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500				
	Work load [kg]	Horizontal ^{Note 2)}		18	50	50	30	60	60	30	60	60
		Vertical		8	16	30	9	19	37	12	24	46
	Pushing force lbf [N] (Set value: 45 to 90%) ^{Note 3)}		15 to 29 [65 to 131]	29 to 57 [127 to 255]	54 to 109 [242 to 485]	18 to 35 [79 to 157]	35 to 69 [154 to 308]	66 to 132 [294 to 588]	22 to 44 [98 to 197]	43 to 87 [192 to 385]	83 to 165 [368 to 736]	
	Max. speed [mm/s] ^{Note 4)}	Stroke range	Up to 300	900	450	225	1200	600	300	1000	500	250
			305 to 400	600	300	150	800	400	200	640	320	160
			405 to 500	—	—	—	—	—	—	—	—	—
	Pushing speed [mm/s] ^{Note 5)}		35 or less			30 or less			30 or less			
	Max. acceleration/deceleration [mm/s ²]		5000			5000			5000			
	Positioning repeatability [mm]		±0.02			±0.02			±0.02			
	Lost motion [mm] ^{Note 6)}		0.1 or less			0.1 or less			0.1 or less			
	Lead [mm] (including pulley ratio)		12	6	3	20	10	5	16	8	4	
	Impact/Vibration resistance [m/s ²] ^{Note 7)}		50/20			50/20			50/20			
Actuation type		Ball screw + Belt (LEY□□)/Ball screw (LEY□D)			Ball screw + Belt [1.25:1]			Ball screw				
Guide type		Sliding bushing (Piston rod)			Sliding bushing (Piston rod)			Ball screw				
Operating temperature range		41 to 104°F [95 to 40°C]			41 to 104°F [95 to 40°C]			41 to 104°F [95 to 40°C]				
Operating humidity range [%RH]		90 or less (No condensation)			90 or less (No condensation)			90 or less (No condensation)				
Conditions for "Regenerative resistor" [kg] ^{Note 8)}	Horizontal	Not required			Not required			Not required				
	Vertical	6 or more			4 or more			4 or more				
Motor output/Size		100 W/□40			200 W/□60			200 W/□60				
Motor type		AC servo motor (200 VAC)			AC servo motor (200 VAC)			AC servo motor (200 VAC)				
Encoder		Absolute 20-bit encoder (Resolution: 1048576 p/rev)										
Power consumption [W] ^{Note 9)}	Horizontal	45			65			65				
	Vertical	145			175			175				
Standby power consumption when operating [W] ^{Note 10)}	Horizontal	2			2			2				
	Vertical	8			8			8				
Max. instantaneous power consumption [W] ^{Note 11)}		445			724			724				
Type ^{Note 12)}		Non-magnetizing lock										
Holding force lbf [N]		29 [131]	57 [255]	109 [485]	35 [157]	69 [308]	132 [588]	44 [197]	87 [385]	165 [736]		
Power consumption [W] at 68°F (20°C) ^{Note 13)}		5.5			6			6				
Rated voltage [V]		24 VDC ⁰ / _{-10%}										

Note 1) Please consult with SMC for non-standard strokes as they are produced as special orders.

Note 2) The maximum value of the horizontal work load. An external guide is necessary to support the load. The actual work load changes according to the condition of the external guide. Please confirm using actual device.

Note 3) The force setting range (set values for the driver) for the pushing operation with the torque control mode, etc. Set it with reference to "Force Conversion Graph (Guide)" on page 71.

Note 4) The allowable speed changes according to the stroke.

Note 5) The allowable collision speed for the pushing operation with the torque control mode, etc.

Note 6) A reference value for correcting an error in reciprocal operation.

Note 7) 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. (Test was performed with the actuator in the initial state.)

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

Note 8) The work load conditions which require "Regenerative resistor" when operating at the maximum speed (Duty ratio: 100%). Order the regenerative resistor separately. For details, refer to "Conditions for Regenerative Resistor (Guide)" on pages 69 and 70.

Note 9) The power consumption (including the driver) is for when the actuator is operating.

Note 10) The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.

Note 11) The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.

Note 12) Only when motor option "With lock" is selected.

Note 13) For an actuator with lock, add the power consumption for the lock.

Weight

Product Weight

Series	LEY25□ (Motor mounting position: Top/Parallel)										LEY32□ (Motor mounting position: Top/Parallel)									
Stroke [mm]	30	50	100	150	200	250	300	350	400	30	50	100	150	200	250	300	350	400	450	500
Weight [kg]	1.2	1.3	1.6	1.7	1.9	2.1	2.2	2.4	2.6	2.3	2.4	2.7	3.2	3.5	3.8	4.0	4.3	4.6	4.9	5.2

Series	LEY25D□ (Motor mounting position: In-line)										LEY32D□ (Motor mounting position: In-line)									
Stroke [mm]	30	50	100	150	200	250	300	350	400	30	50	100	150	200	250	300	350	400	450	500
Weight [kg]	1.2	1.3	1.5	1.7	1.9	2.1	2.3	2.4	2.6	2.3	2.4	2.7	3.2	3.5	3.8	4.1	4.3	4.6	4.9	5.2

Additional Weight

Size		25	32
Lock		0.30	0.60
Rod end male thread	Male thread	0.03	0.03
	Nut	0.02	0.02
Foot (2 sets including mounting bolt)		0.08	0.14
Rod flange (including mounting bolt)		0.17	0.20
Head flange (including mounting bolt)			
Double clevis (including pin, retaining ring and mounting bolt)		0.16	0.22

Specifications

Model		LEY63□ (Top/Parallel)				LEY63D□ (In-line)			
Stroke [mm] ^{Note 1)}		100, 200, 300, 400, 500, 600, 700, 800							
Work load [kg]	Horizontal ^{Note 2)}	40	70	80	200	40	70	80	
	Vertical	19	38	72	115	19	38	72	
Pushing force lbf [N]/Set value ^{Note 3)} : 45 to 150% ^{Note 4)}		35 to 117 [156 to 521]	68 to 228 [304 to 1012]	129 to 429 [573 to 1910]	225 to 752 [1003 to 3343]	35 to 117 [156 to 521]	68 to 228 [304 to 1012]	129 to 429 [573 to 1910]	
Max. speed [mm/s] ^{Note 5)}	Stroke range	Up to 500	1000	500	250	70	1000	500	250
		505 to 600	800	400	200		800	400	200
		605 to 700	600	300	150		600	300	150
		705 to 800	500	250	125		500	250	125
Pushing speed [mm/s] ^{Note 6)}		30 or less							
Max. acceleration/deceleration [mm/s ²]		5000			3000		5000		
Positioning repeatability [mm]		±0.02							
Lost motion [mm] ^{Note 7)}		0.1 or less							
Screw lead [mm] (including pulley ratio)		20	10	5	5 (2.86)	20	10	5	
Impact/Vibration resistance [m/s ²] ^{Note 8)}		50/20							
Actuation type		Ball screw			Ball screw + Belt [Pulley ratio 4:7]	Ball screw			
Guide type		Sliding bushing (Piston rod)							
Operating temperature range		41 to 104°F (5 to 40°C)							
Operating humidity range [%RH]		90 or less (No condensation)							
Conditions for ^{Note 9)} "Regenerative resistor" [kg]		Horizontal		Not required					
		Vertical		2.5 or more					
Motor output/Size		400 W/□60							
Motor type		AC servo motor (200 VAC)							
Encoder		Absolute 20-bit encoder (Resolution: 1048576 p/rev)							
Power consumption [W] ^{Note 10)}	Horizontal	210							
	Vertical	230							
Standby power consumption when operating [W] ^{Note 11)}	Horizontal	2							
	Vertical	18							
Max. instantaneous power consumption [W] ^{Note 12)}		1275							
Type ^{Note 13)}		Non-magnetizing lock							
Holding force lbf [N]		70 [313]	136 [607]	258 [1146]	451 [2006]	70 [313]	136 [607]	258 [1146]	
Power consumption [W] at 68°F (20°C) ^{Note 14)}		6							
Rated voltage [V]		24 VDC _{-10%}							

- Note 1) Please consult with SMC for non-standard strokes as they are produced as special orders.
 Note 2) The maximum value of the horizontal work load. An external guide is necessary to support the load. The actual work load changes according to the condition of the external guide. Please confirm using actual device.
 Note 3) Set values for the driver.
 Note 4) The force setting range (set values for the driver) for the pushing operation with the torque control mode etc. The pushing force and duty ratio change according to the set value. Set it with reference to "Force Conversion Graph (Guide)" on page 71.
 Note 5) The allowable speed changes according to the stroke.
 Note 6) The allowable collision speed for the pushing operation with the torque control mode etc.
 Note 7) A reference value for correcting an error in reciprocal operation.
 Note 8) 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. (Test was performed with the actuator in the initial state.)
 Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. Test was performed in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)
 Note 9) The work load conditions which require "Regenerative resistor" when operating at the maximum speed (Duty ratio: 100%).
 Note 10) The power consumption (including the driver) is for when the actuator is operating.
 Note 11) The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.
 Note 12) The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.
 Note 13) Only when motor option "With lock" is selected.
 Note 14) For an actuator with lock, add the power consumption for the lock.

Weight

Product Weight

Series	LEY63□ (Motor mounting position: Top/Parallel)							
Stroke [mm]	100	200	300	400	500	600	700	800
Weight [kg]	5.3	6.5	8.2	9.3	10.4	12.1	13.3	14.4

Series	LEY63D□ (Motor mounting position: In-line)							
Stroke [mm]	100	200	300	400	500	600	700	800
Weight [kg]	5.5	6.6	8.3	9.5	10.6	12.3	13.4	14.6

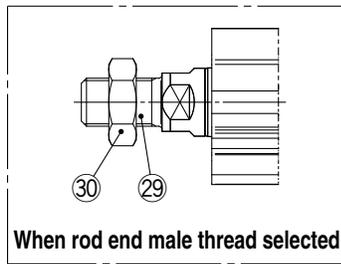
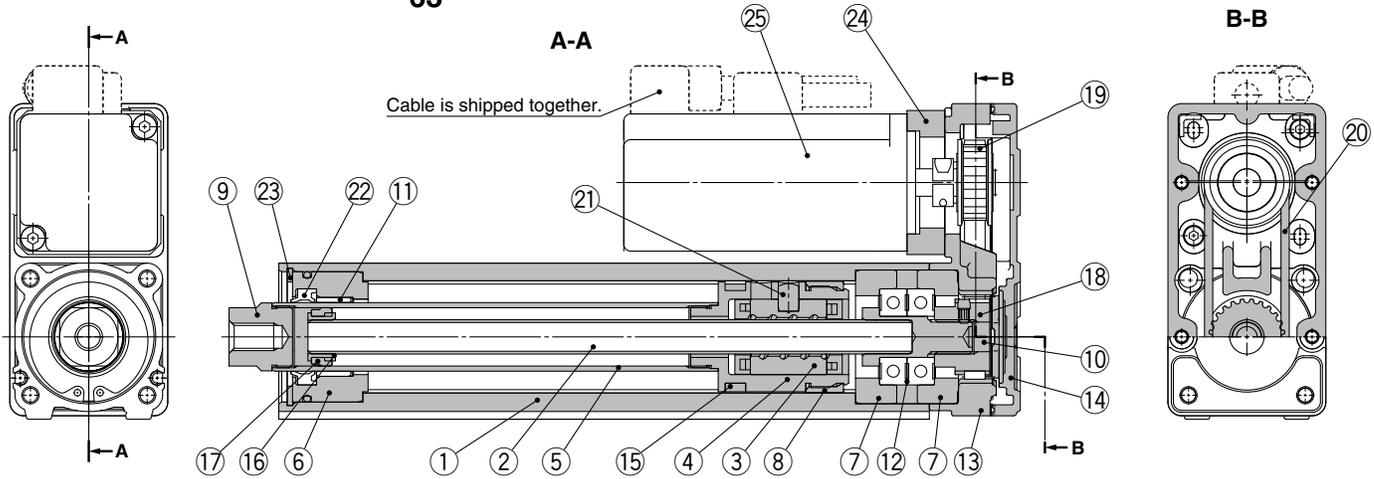
Additional Weight

Size	[kg]
Lock	63
Lock	0.6
Rod end male thread	Male thread
	Nut
Foot (2 sets including mounting bolt)	0.12
Rod flange (including mounting bolt)	0.04
Double clevis (including pin, retaining ring and mounting bolt)	0.26
	0.51
	0.58

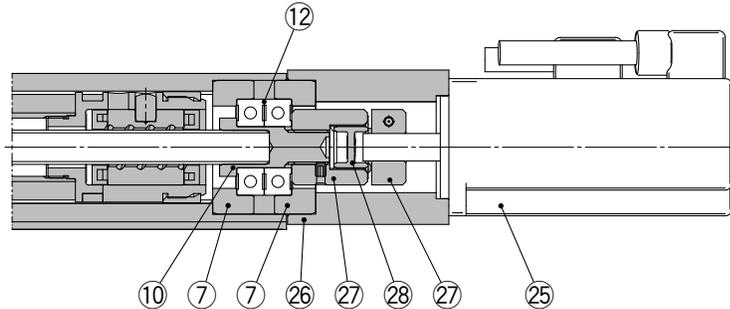
Model Selection
 LEFS
 LEFB
 LEJS
 LEJB
 LEY
 LEYG
 LECYM/LECYU

Construction

Motor top mounting type: LEY32 25 63



In-line motor type: LEY32D 25 63



Component Parts

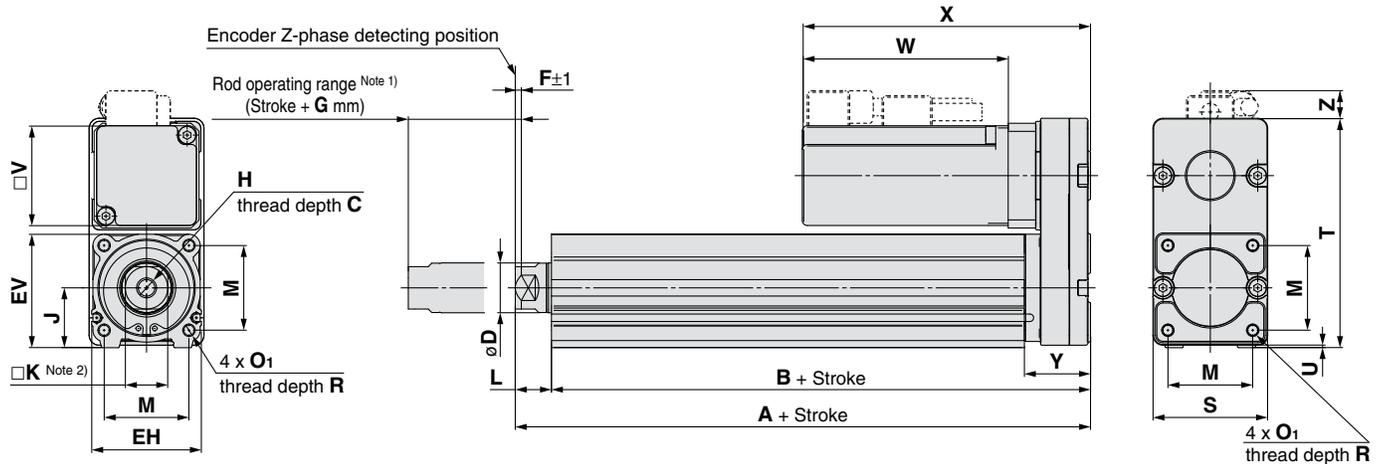
No.	Description	Material	Note
1	Body	Aluminum alloy	Anodized
2	Ball screw shaft	Alloy steel	
3	Ball screw nut	Resin/Alloy steel	
4	Piston	Aluminum alloy	
5	Piston rod	Stainless steel	Hard chrome plated
6	Rod cover	Aluminum alloy	
7	Bearing holder	Aluminum alloy	
8	Rotation stopper	POM	
9	Socket	Free cutting carbon steel	Nickel plated
10	Connected shaft	Free cutting carbon steel	Nickel plated
11	Bushing	Lead bronze cast	
12	Bearing	—	
13	Return box	Aluminum die-cast	Coating
14	Return plate	Aluminum die-cast	Coating
15	Magnet	—	
16	Wear ring holder	Stainless steel	Stroke 101 mm or more
17	Wear ring	POM	Stroke 101 mm or more
18	Screw shaft pulley	Aluminum alloy	

No.	Description	Material	Note
19	Motor pulley	Aluminum alloy	
20	Belt	—	
21	Parallel pin	Stainless steel	
22	Seal	NBR	
23	Retaining ring	Steel for spring	Phosphate coated
24	Motor adapter	Aluminum alloy	Coating
25	Motor	—	
26	Motor block	Aluminum alloy	Coating
27	Hub	Aluminum alloy	
28	Spider	Urethane	
29	Socket (Male thread)	Free cutting carbon steel	Nickel plated
30	Nut	Alloy steel	Zinc chromated

Replacement Parts (Top/Parallel only)/Belt

No.	Size	Order no.	No.	Size	Lead	Order no.
20	25	LE-D-2-2	20	63	A/B/C	LE-D-2-5
	32	LE-D-2-4			L	LE-D-2-6

Dimensions: Motor Top/Parallel



Note 1) Range within which the rod can move. Make sure a workpiece mounted on the rod does not interfere with the workpieces and facilities around the rod.

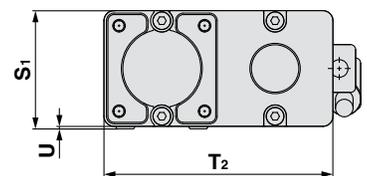
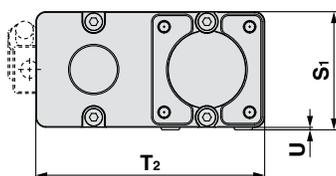
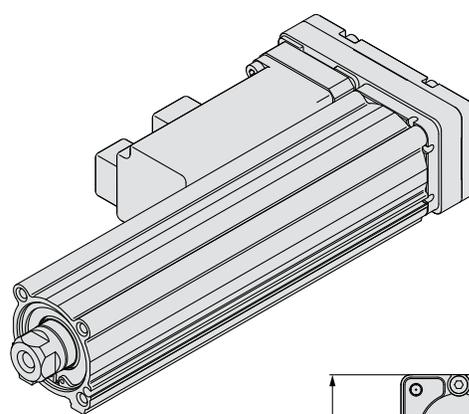
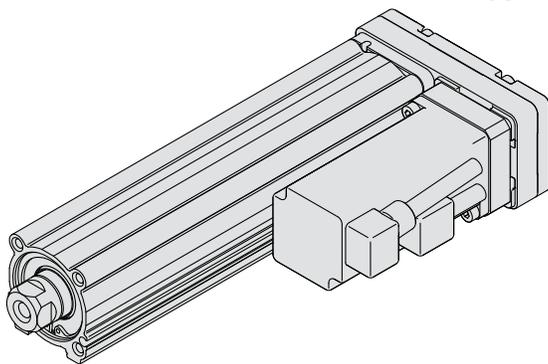
Note 2) The direction of rod end width across flats (□K) differs depending on the products.

Size	Stroke range (mm)	A	B	C	D	EH	EV	H	J	K	L	M	O ₁	R	S
25	15 to 100	130.5	116	13	20	44	45.5	M8 x 1.25	24	17	14.5	34	M5 x 0.8	8	46
	105 to 400	155.5	141												
32	20 to 100	148.5	130	13	25	51	56.5	M8 x 1.25	31	22	18.5	40	M6 x 1.0	10	60
	105 to 500	178.5	160												
63	50 to 200	192.6	155.2	21	40	76	82	M16 x 2	44	36	37.4	60	M8 x 1.25	16	80
	205 to 500	227.6	190.2												
	505 to 800	262.6	225.2												

Size	Stroke range (mm)	T	U	Y	V	Without lock			With lock			F	G
						W	X	Z	W	X	Z		
25	15 to 100	92	1	26.5	40	82.5	115.5	11	127.5	160.5	11	2	4
	105 to 400												
32	20 to 100	118	1	34	60	80	120	14	120	160	14	2	4
	105 to 500												
63	50 to 200	146	4	32.2	60	98.5	138.5	12.5 (13.5)*	138.5	178.5	12.5 (13.5)*	4	8
	205 to 500												
	505 to 800												

25
Motor left side parallel type: LEY 32 L
63

25
Motor right side parallel type: LEY 32 R
63



Size	S ₁	T ₂	U
25	47	91	1
32	61	117	1
63	84	142	4

Note) When the motor is mounted on the left or right side in parallel, the groove for auto switch on the side to which the motor is mounted is hidden.

Model Selection

LEFS

LEFB

LEJS

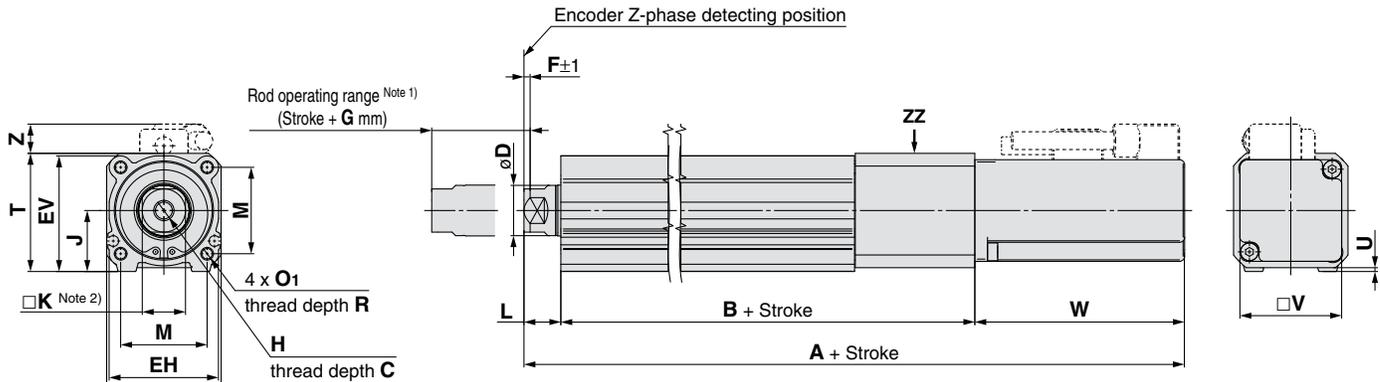
LEJB

LEY

LEYG

LECYM/LECYU

Dimensions: In-line Motor



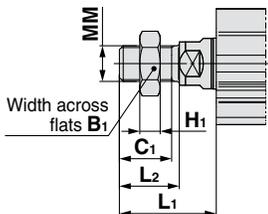
Note 1) Range within which the rod can move.
Make sure a workpiece mounted on the rod does not interfere with the workpieces and facilities around the rod.

[mm]

Size	Stroke range (mm)	C	D	EH	EV	H	J	K	L	M	O ₁	R	S	T	U
25	15 to 100	13	20	44	45.5	M8 × 1.25	24	17	14.5	34	M5 × 0.8	8	45	46.5	1.5
	105 to 400														
32	20 to 100	13	25	51	56.5	M8 × 1.25	31	22	18.5	40	M6 × 1.0	10	60	61	1
	105 to 500														
63	50 to 200	21	40	76	82	M16 × 2	44	36	37.4	60	M8 × 1.25	16	78	83	5
	205 to 500														
	505 to 800														

Size	Stroke range (mm)	B	V	Without lock			With lock			F	G
				A	W	Z	A	W	Z		
25	15 to 100	136.5	40	233.5	82.5	11.5	278.5	127.5	11.5	2	4
	105 to 400	161.5	258.5	303.5							
32	20 to 100	156	60	254.5	80	14	294.5	120	14	2	4
	105 to 500	186	284.5	324.5							
63	50 to 200	190.7	60	326.6	98.5	5	366.6	138.5	5	4	8
	205 to 500	225.7		361.6			401.6				
	505 to 800	260.7		396.6			436.6				

End male thread: LEY **25** **A** **B** **C** - **□□** **M**
63 **L**



* Refer to Electric Actuators catalog (CAT.E102) for details about the rod end nut and mounting bracket.
Note) Refer to the "Mounting" precautions on page 99 when mounting end brackets such as knuckle joint or workpieces.

[mm]

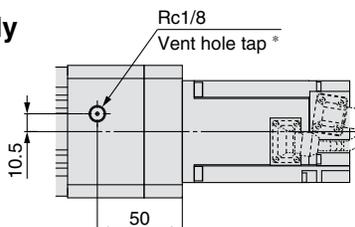
Size	B ₁	C ₁	H ₁	L ₁ *	L ₂	MM
25	22	20.5	8	38	23.5	M14 x 1.5
32	22	20.5	8	42.0	23.5	M14 x 1.5
63	27	26	11	76.4	39	M18 x 1.5

* The L₁ measurement is when the unit is in the Z-phase first detecting position. At this position, 2 mm at the end (size 25, 32) and 4 mm at the end (size 63).

IP65 (Dust/Drip proof specification): LEY63D□□-□P

(View ZZ)

* LEY63 only



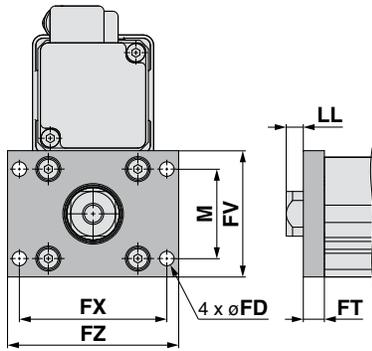
* When using the dust/drip proof (IP 65), correctly mount the fitting and tubing to the vent hole tap, and then place the end of the tubing in an area not exposed to dust or water. The fitting and tubing should be provided separately by the customer.
Select [Applicable tubing O.D.: ø4 or more, Connection thread: Rc1/8].

Series LEY

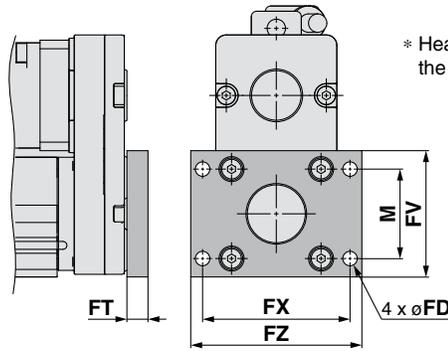
Size 25, 32, 63

Dimensions

Rod flange: LEY 25 32 63 $\square \square \square \square$ ABC-L $\square \square \square \square$ F



Head flange: LEY 25 32 63 $\square \square \square \square$ ABC-L $\square \square \square \square$ G



* Head flange is not available for the LEY32/LEY63.

Included parts
· Flange
· Body mounting bolt

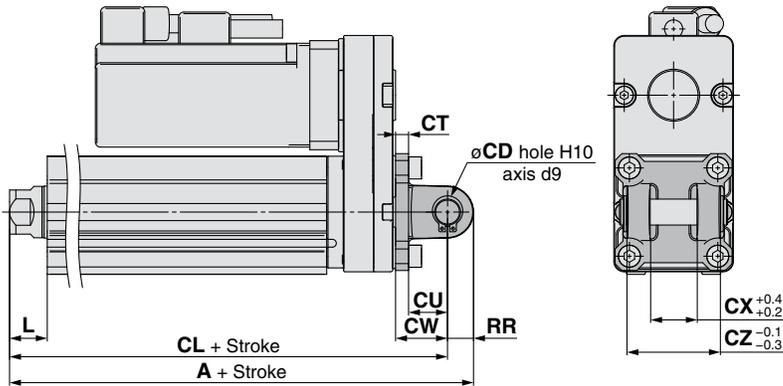
Rod/Head Flange [mm]

Size	FD	FT	FV	FX	FZ	LL	M
25	5.5	8	48	56	65	6.5	34
32	5.5	8	54	62	72	10.5	40
63	9	9	80	92	108	28.4	60

Material: Carbon steel (Nickel plated)

* The LL measurement is when the unit is in the Z-phase first detecting position. At this position, 2 mm at the end (size 25, 32) and 4 mm at the end (size 63).

Double clevis: LEY 25 32 63 $\square \square \square \square$ ABC-L $\square \square \square \square$ D



Included parts
· Double clevis
· Body mounting bolt
· Clevis pin
· Retaining ring

* Refer to Electric Actuators catalog (CAT.E102) for details about the rod end nut and mounting bracket.

Double Clevis [mm]

Size	Stroke range (mm)	A	CL	CD	CT
25	15 to 100	160.5	150.5	10	5
	105 to 200	185.5	175.5		
32	20 to 100	180.5	170.5	10	6
	105 to 200	210.5	200.5		
63	50 to 200	236.6	222.6	14	8
	205 to 500	271.6	257.6	—	—
	505 to 800	306.6	292.6	—	—

Size	Stroke range (mm)	CU	CW	CX	CZ	L	RR
25	15 to 100	14	20	18	36	14.5	10
	105 to 200						
32	20 to 100	14	22	18	36	18.5	10
	105 to 200						
63	50 to 200	22	30	22	44	37.4	14
	205 to 500						
	505 to 800						

Material: Cast iron (Coating)

* The A and CL measurements are when the unit is in the Z-phase first detecting position. At this position, 2 mm at the end (size 25, 32) and 4 mm at the end (size 63).

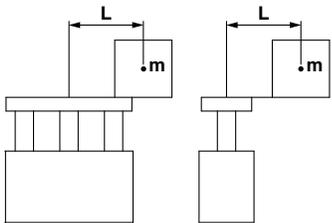
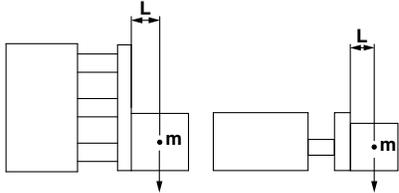
Series **LEYG**

Model Selection



Moment Load Graph

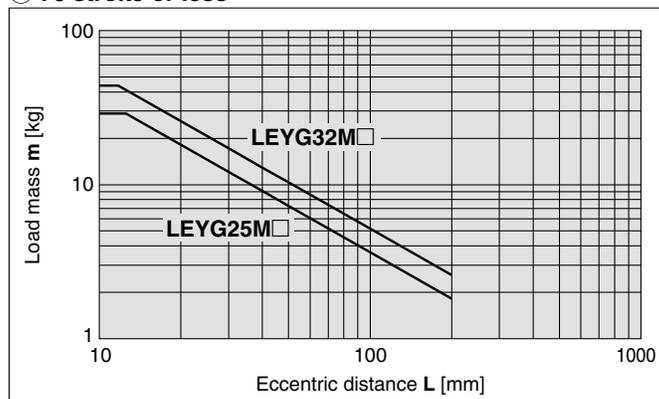
Selection conditions

Mounting position	Vertical	Horizontal	
			
Max. speed [mm/s]	"Speed-Work Load Graph"		200 or less
Graph (Sliding bearing type)	①, ②	⑤, ⑥*	⑦, ⑧
Graph (Ball bushing bearing type)	③, ④	⑨, ⑩	⑪, ⑫

* For the sliding bearing type, the speed is restricted with a horizontal/moment load.

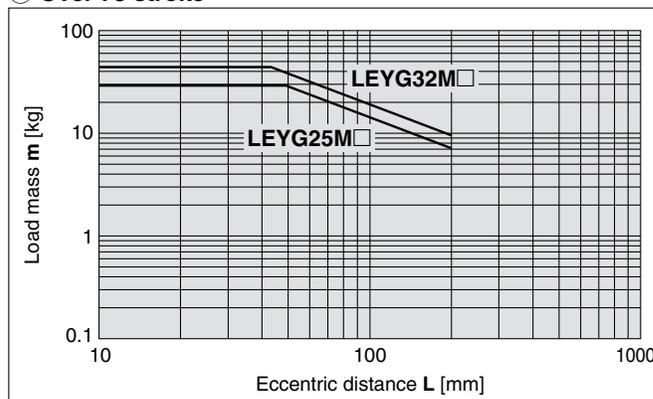
Vertical Mounting, Sliding Bearing

① 70 stroke or less



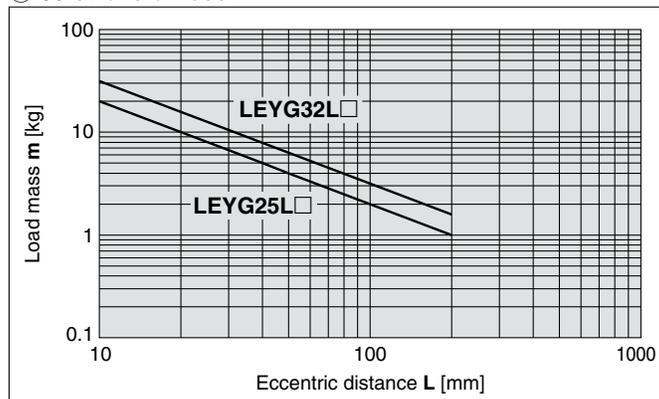
* The limit of vertical load mass varies depending on "lead" and "speed". Check "Speed-Work Load Graph" on page 85.

② Over 75 stroke



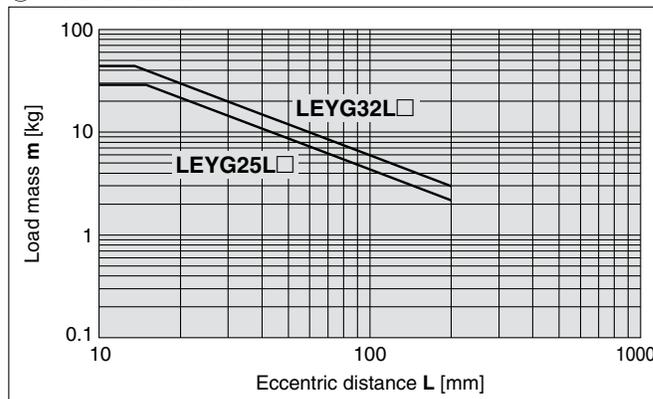
Vertical Mounting, Ball Bushing Bearing

③ 35 stroke or less



* The limit of vertical load mass varies depending on "lead" and "speed". Check "Speed-Work Load Graph" on page 85.

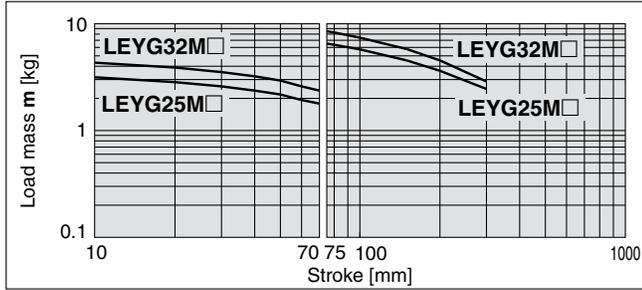
④ Over 40 stroke



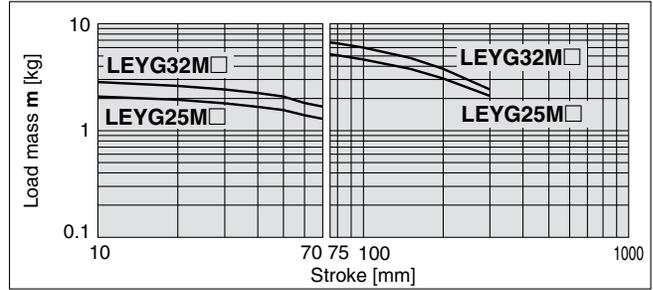
Moment Load Graph

Horizontal Mounting, Sliding Bearing

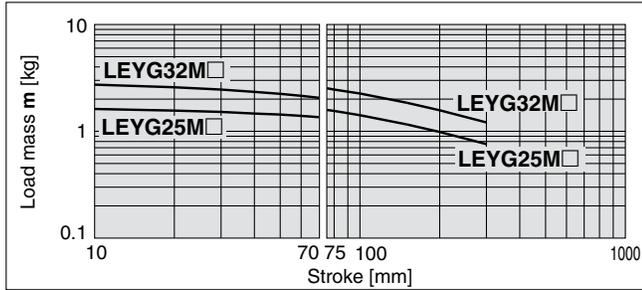
⑤ L = 50 mm Max. speed = 200 mm/s or less



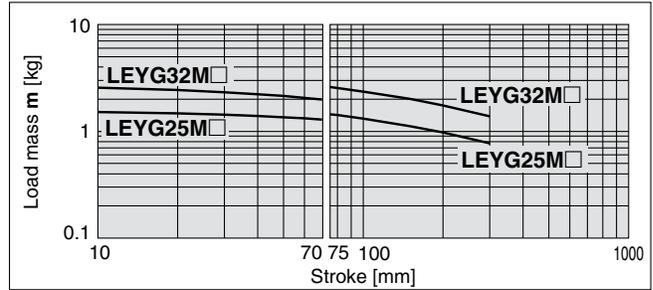
⑥ L = 100 mm Max. speed = 200 mm/s or less



⑦ L = 50 mm Max. speed = Over 200 mm/s

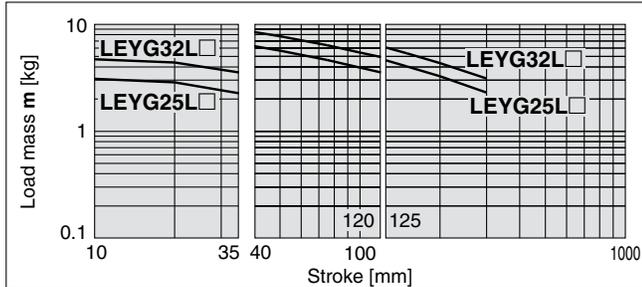


⑧ L = 100 mm Max. speed = Over 200 mm/s

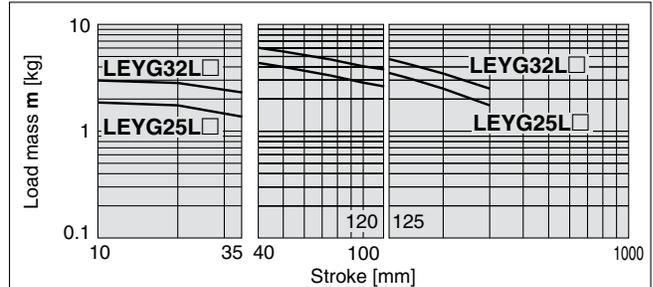


Horizontal Mounting, Ball Bushing Bearing

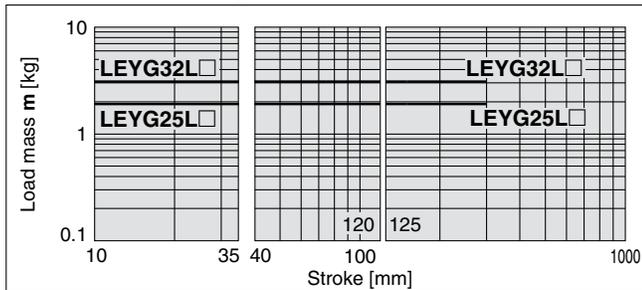
⑨ L = 50 mm Max. speed = 200 mm/s or less



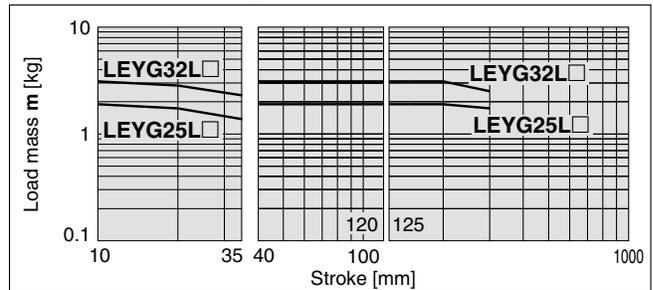
⑩ L = 100 mm Max. speed = 200 mm/s or less



⑪ L = 50 mm Max. speed = Over 200 mm/s

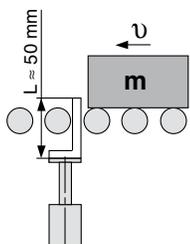


⑫ L = 100 mm Max. speed = Over 200 mm/s



Operating Range when Used as Stopper

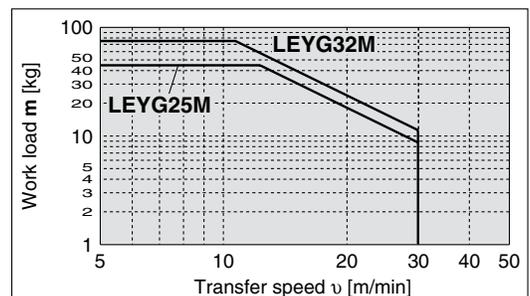
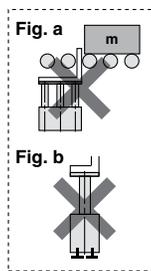
LEYG□M (Sliding bearing)



⚠ Caution

Handling Precautions

- Note 1) When used as a stopper, select a model with 30 stroke or less.
- Note 2) LEYG□L (ball bushing bearing) cannot be used as a stopper.
- Note 3) Workpiece collision in series with guide rod cannot be permitted (Fig. a).
- Note 4) The body should not be mounted on the end. It must be mounted on the top or bottom (Fig. b).

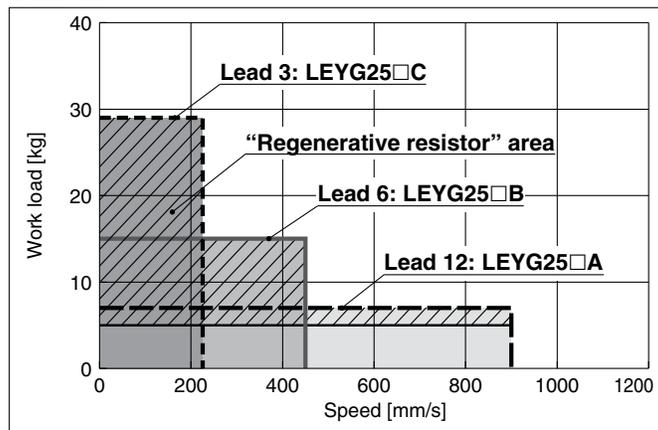


Series LEYG

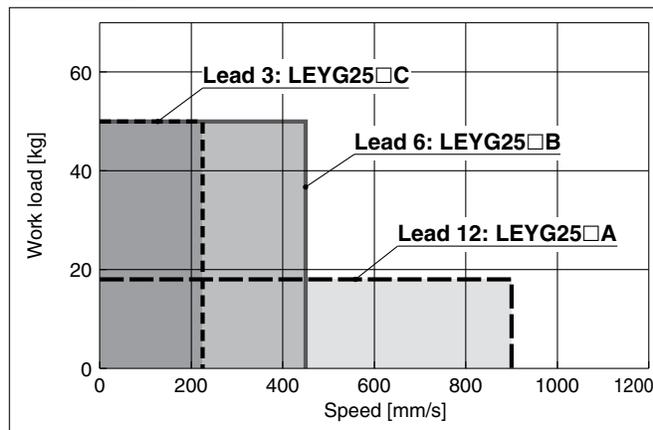
Speed-Work Load Graph/Conditions for “Regenerative Resistor” (Guide)

LEYG25□V6 (Motor mounting position: Top mounting/In-line)

Vertical

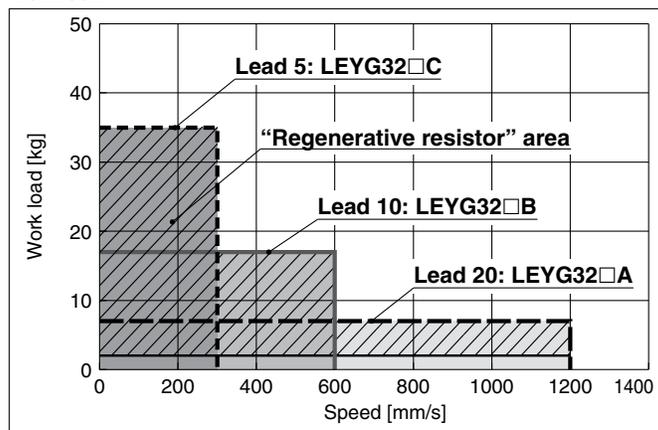


Horizontal

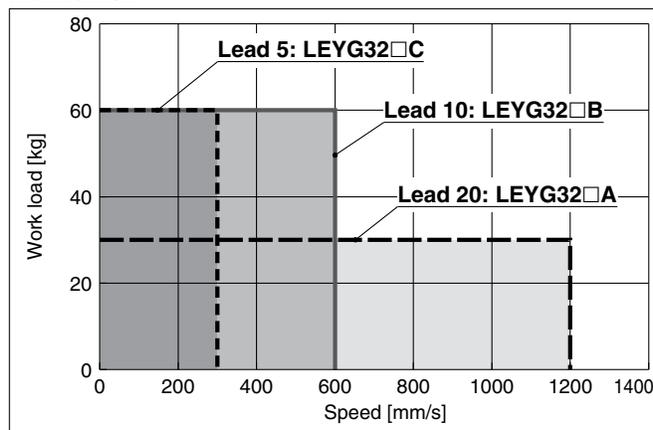


LEYG32□V7 (Motor mounting position: Top mounting)

Vertical

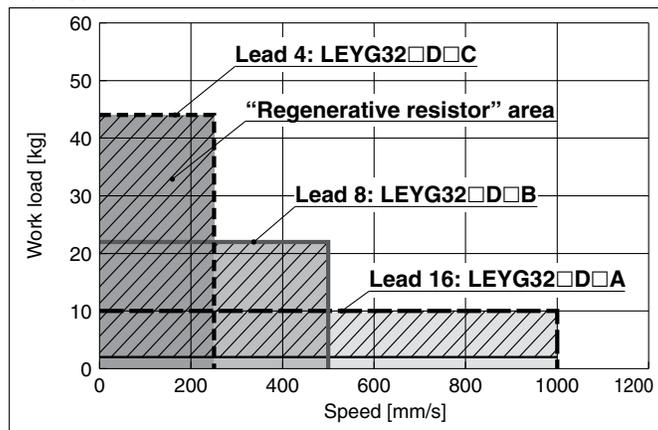


Horizontal

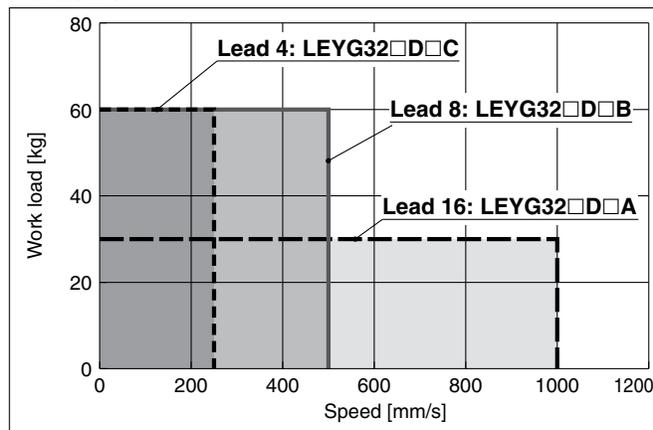


LEYG32□DV7 (Motor mounting position: In-line)

Vertical



Horizontal



“Regenerative resistor” area

* When using the actuator in the “Regenerative resistor” area, download the “AC servo capacity selection program/SigmaJunmaSize+” from the SMC website. Then, calculate the necessary regenerative resistor capacity to prepare an appropriate external regenerative resistor.

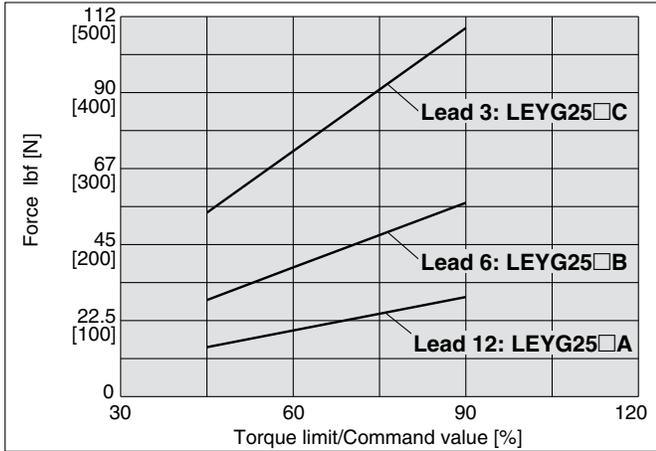
* Regenerative resistor should be provided by the customer.

Applicable Motor/Driver

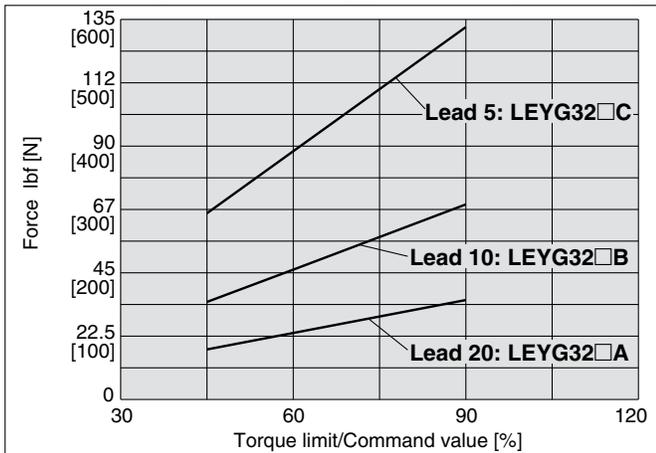
Model	Applicable model	
	Motor	Servopack (SMC driver)
LEYG25□	SGMJV-01A3A	SGDV-R90A11□ (LECYM2-V5) SGDV-R90A21□ (LECYU2-V5)
LEYG32□	SGMJV-02A3A	SGDV-1R6A11□ (LECYM2-V7) SGDV-1R6A21□ (LECYU2-V7)

Force Conversion Graph

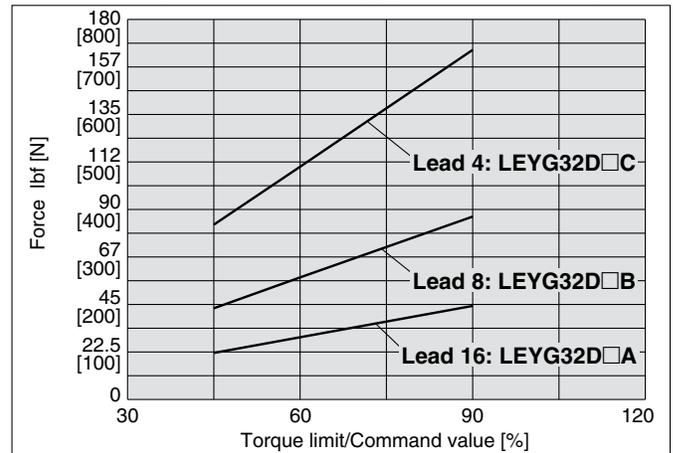
LEYG25 (Motor mounting position: Top mounting/In-line)



LEYG32 (Motor mounting position: Top mounting)



LEYG32D (Motor mounting position: In-line)



*1 When limiting the torque with incremental encoder, parameter No. PC12/the value of the internal torque command should be set to 90% or less.

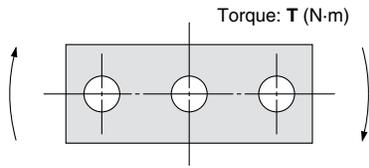
*2 When limiting the torque with absolute encoder, parameter No. PC13/the value of the maximum output command for analog torque should be set to 90% or less.

Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time [minute]
75 or less	100	—
90	100 (60)	— (1.5)

* The values in () are for a closely-mounted driver.

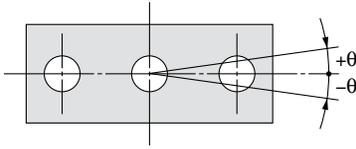
Series LEYG

Allowable Rotational Torque of Plate: T



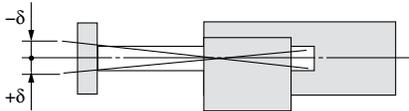
Model	Stroke [mm]					T lbf-ft [N·m]
	30	50	100	200	300	
LEYG25M	1.15 [1.56]	0.95 [1.29]	2.58 [3.50]	1.61 [2.18]	1.00 [1.36]	
LEYG25L	1.12 [1.52]	2.63 [3.57]	1.82 [2.47]	1.51 [2.05]	1.06 [1.44]	
LEYG32M	1.88 [2.55]	1.54 [2.09]	3.98 [5.39]	2.40 [3.26]	1.39 [1.88]	
LEYG32L	2.07 [2.80]	4.25 [5.76]	2.99 [4.05]	2.38 [3.23]	1.71 [2.32]	

Non-rotating Accuracy of Plate: θ



Size	LEYG□M	LEYG□L
25	±0.05°	±0.06°
32		

Plate Displacement: δ



Model	Stroke [mm]					[mm]
	30	50	100	200	300	
LEYG25M	±0.26	±0.31	±0.25	±0.38	±0.36	
LEYG25L	±0.13	±0.13	±0.17	±0.20	±0.23	
LEYG32M	±0.23	±0.29	±0.23	±0.36	±0.34	
LEYG32L	±0.11	±0.11	±0.15	±0.19	±0.22	

Electric Actuator/Guide Rod Type

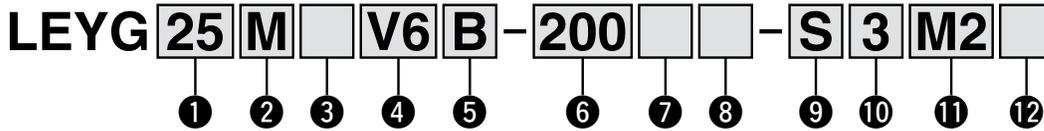
AC Servo Motor

Series LEYG

LEYG25, 32



How to Order



① Size

25
32

② Bearing type

M	Sliding bearing
L	Ball bushing bearing

③ Motor mounting position

Nil	Top mounting
D	In-line

④ Motor type

Symbol	Type	Output [W]	Actuator size	Compatible driver
V6	AC servo motor (Absolute encoder)	100	25	LECYM2-V5 LECYU2-V5
V7		200	32	LECYM2-V7 LECYU2-V7

⑤ Lead [mm]

Symbol	LEYG25	LEYG32 *
A	12	16 (20)
B	6	8 (10)
C	3	4 (5)

* The values shown in () are the lead for top mounting type. (Equivalent lead which includes the pulley ratio [1.25:1])

⑥ Stroke [mm]

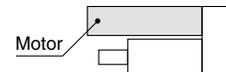
30	30
to	to
300	300

* Refer to the applicable stroke table.

⑦ Motor option

Nil	Without option
B	With lock

* When "With lock" is selected for the top mounting type, the motor body will stick out of the end of the body for size 25 with strokes 30 or less. Check for interference with workpieces before selecting a model.



⑧ Guide option

Nil	Without option
F	With grease retaining function

* Only available for the sliding bearing.

⑨ Cable type

Nil	Without cable
S	Standard cable
R	Robotic cable (Flexible cable)

⑩ Cable length [m]

Nil	Without cable
3	3
5	5
A	10
C	20

Applicable Stroke Table

●: Standard

Model	Stroke (mm)	30	50	100	150	200	250	300	Manufacturable stroke range
LEYG25		●	●	●	●	●	●	●	15 to 300
LEYG32		●	●	●	●	●	●	●	20 to 300

* Please consult with SMC for the manufacture of intermediate strokes.

Electric Actuator/Guide Rod Type *Series LEYG*



Motor mounting position: Top mounting

Motor mounting position: In-line

11 Driver type

	Compatible driver	Power supply voltage [V]
Nil	Without driver	—
M2	LECYM2-V□	200 to 230
U2	LECYU2-V□	200 to 230

* When the driver type is selected, the cable is included.
Select cable type and cable length.

12 I/O connector

Nil	Without connector
H	With connector

Use of auto switches for the guide rod type LEYG series

- Insert the auto switch from the front side with rod (plate) sticking out.
- For the parts hidden behind the guide attachment (Rod stick out side), the auto switch cannot be fixed.
- Consult with SMC when using auto switch on the rod stick out side.

Compatible Drivers

Driver type	MECHATROLINK-II type	MECHATROLINK-III type
		
Series	LECYM	LECYU
Applicable network	MECHATROLINK-II	MECHATROLINK-III
Control encoder	Absolute 20-bit encoder	
Communication device	USB communication, RS-422 communication	
Power supply voltage (V)	200 to 230 VAC (50/60 Hz)	
Reference page	Page 103	

Series LEYG

Specifications

Model		LEYG25 ^M (Top mounting) LEYG25 ^{LD} (In-line)			LEYG32 ^M (Top mounting)			LEYG32 ^{MD} (In-line)			
Actuator specifications	Stroke [mm] ^{Note 1)}	30, 50, 100, 150, 200, 250, 300			30, 50, 100, 150, 200, 250, 300			30, 50, 100, 150, 200, 250, 300			
	Work load [kg]	Horizontal ^{Note 2)}	18	50	50	30	60	60	30	60	60
		Vertical	7	15	29	7	17	35	10	22	44
	Pushing force lbf [N] ^{Note 3)} (Set value: 45 to 90%)		15 to 29 [65 to 131]	28 to 57 [127 to 255]	54 to 109 [242 to 485]	18 to 35 [79 to 157]	35 to 69 [154 to 308]	66 to 132 [294 to 588]	22 to 44 [98 to 197]	43 to 87 [192 to 385]	83 to 165 [368 to 736]
	Max. speed [mm/s]		900	450	225	1200	600	300	1000	500	250
	Pushing speed [mm/s] ^{Note 4)}		35 or less			30 or less			30 or less		
	Max. acceleration/deceleration [mm/s ²]		5000			5000			5000		
	Positioning repeatability [mm]		±0.02			±0.02			±0.02		
	Lead [mm] (including pulley ratio)		12	6	3	20	10	5	16	8	4
	Impact/Vibration resistance [m/s ²] ^{Note 5)}		50/20			50/20			50/20		
Actuation type		Ball screw + Belt [1:1]/Ball screw			Ball screw + Belt [1:1.25]			Ball screw			
Guide type		Sliding bearing (LEYG□M), Ball bushing bearing (LEYG□L)									
Operating temperature range		41 to 105°F (5 to 40°C)			41 to 105°F (5 to 40°C)						
Operating humidity range [%RH]		90 or less (No condensation)			90 or less (No condensation)						
Conditions for ^{Note 6)} "Regenerative resistor" [kg]	Horizontal	Not required			Not required						
	Vertical	5 or more			2 or more						
Motor output/Size		100 W/□40			200 W/□60						
Motor type		AC servo motor (200 VAC)			AC servo motor (200 VAC)						
Encoder		Absolute 20-bit encoder (Resolution: 1048576 p/rev)									
Electric specifications	Power consumption [W] ^{Note 7)}	Horizontal	45			65			65		
		Vertical	145			175			175		
	Standby power consumption when operating [W] ^{Note 8)}	Horizontal	2			2			2		
		Vertical	8			8			8		
Max. instantaneous power consumption [W] ^{Note 9)}		445			724			724			
Lock unit specifications	Type ^{Note 10)}	Non-magnetizing lock			Non-magnetizing lock						
	Holding force lbf [N]	29 [131]	57 [255]	109 [485]	35 [157]	69 [308]	132 [588]	44 [197]	87 [385]	165 [736]	
	Power consumption at 68°F (20°C) [W] ^{Note 11)}	5.5			6			6			
Rated voltage [V]		24 VDC ⁰ / _{-10%}									

- Note 1) Please consult with SMC for non-standard strokes as they are produced as special orders.
- Note 2) The maximum value of the horizontal work load. An external guide is necessary to support the load. The actual work load changes according to the condition of the external guide. Please confirm using actual device.
- Note 3) The force setting range (set values for the driver) for the pushing operation with the torque control mode, etc. Set it with reference to "Force Conversion Graph" on page 86.
- Note 4) The allowable collision speed for the pushing operation with the torque control mode, etc.
- Note 5) 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. (Test was performed with the actuator in the initial state.)
Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz.

- Test was performed in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)
- Note 6) The work load conditions which require "Regenerative resistor" when operating at the maximum speed (Duty ratio: 100%). Order the regenerative resistor separately. For details, refer to "Conditions for Regenerative Resistor (Guide)" on page 85.
- Note 7) The power consumption (including the driver) is for when the actuator is operating.
- Note 8) The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during operation.
- Note 9) The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.
- Note 10) Only when motor option "With lock" is selected.
- Note 11) For an actuator with lock, add the power consumption for the lock.

Weight

Product Weight: Top Mounting Type

Series	LEYG25 ^M							LEYG32 ^M						
	30	50	100	150	200	250	300	30	50	100	150	200	250	300
Stroke [mm]	30	50	100	150	200	250	300	30	50	100	150	200	250	300
Weight [kg]	1.7	1.9	2.2	2.6	3.0	3.3	3.6	3.1	3.4	4.0	4.7	5.3	5.7	6.2

Series	LEYG25 ^L							LEYG32 ^L						
	30	50	100	150	200	250	300	30	50	100	150	200	250	300
Stroke [mm]	30	50	100	150	200	250	300	30	50	100	150	200	250	300
Weight [kg]	1.7	1.9	2.2	2.6	2.9	3.2	3.4	3.1	3.4	3.8	4.5	5.0	5.5	5.9

Product Weight: In-line Motor Type

Series	LEYG25 ^{MD}							LEYG32 ^{MD}						
	30	50	100	150	200	250	300	30	50	100	150	200	250	300
Stroke [mm]	30	50	100	150	200	250	300	30	50	100	150	200	250	300
Weight [kg]	1.7	1.9	2.2	2.6	3.0	3.3	3.6	3.2	3.4	4.0	4.7	5.3	5.8	6.2

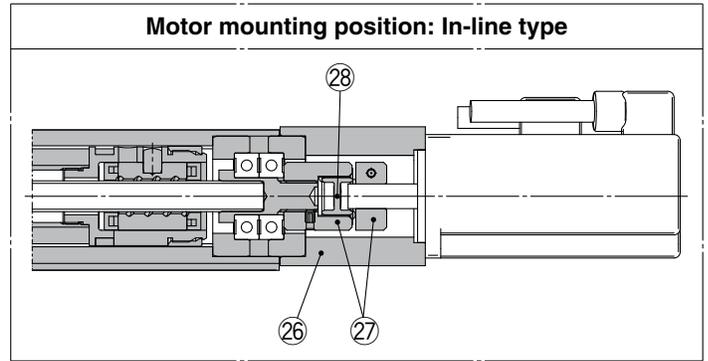
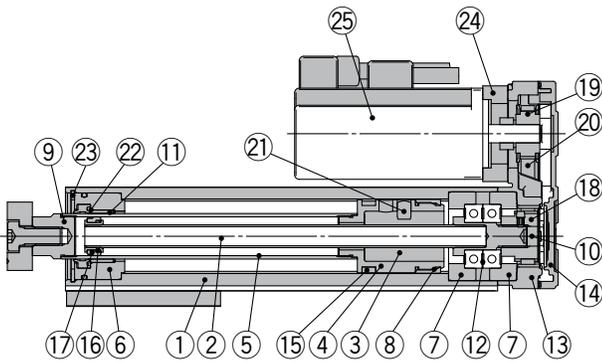
Series	LEYG25 ^{LD}							LEYG32 ^{LD}						
	30	50	100	150	200	250	300	30	50	100	150	200	250	300
Stroke [mm]	30	50	100	150	200	250	300	30	50	100	150	200	250	300
Weight [kg]	1.7	2.0	2.2	2.6	2.9	3.2	3.4	3.2	3.4	3.8	4.6	5.0	5.5	5.9

Additional Weight

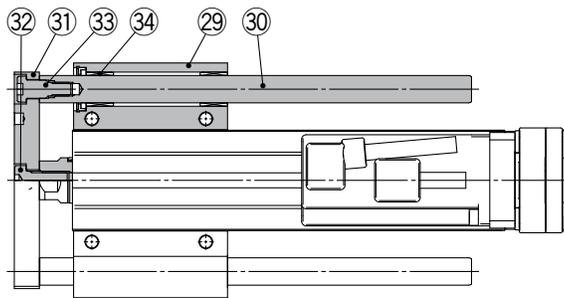
Size	25	32
Lock	0.3	0.6

Construction

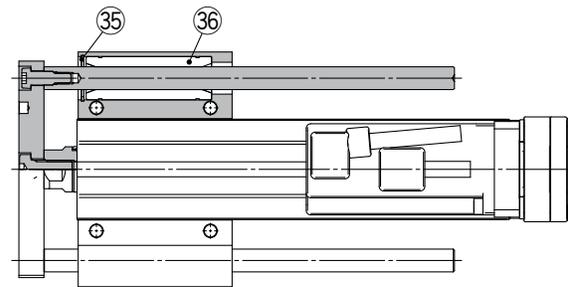
Motor mounting position: Top mounting type



LEYG□M



LEYG□L



Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	Anodized
2	Ball screw shaft	Alloy steel	
3	Ball screw nut	—	
4	Piston	Aluminum alloy	
5	Piston rod	Stainless steel	Hard chrome plated
6	Rod cover	Aluminum alloy	
7	Bearing holder	Aluminum alloy	
8	Rotation stopper	POM	
9	Socket	Free cutting carbon steel	Nickel plated
10	Connected shaft	Free cutting carbon steel	Nickel plated
11	Bushing	Lead bronze cast	
12	Bearing	—	
13	Return box	Aluminum die-cast	Trivalent chromated
14	Return plate	Aluminum die-cast	Trivalent chromated
15	Magnet	—	
16	Wear ring holder	Stainless steel	Stroke 101 mm or more
17	Wear ring	POM	Stroke 101 mm or more
18	Screw shaft pulley	Aluminum alloy	

No.	Description	Material	Note
19	Motor pulley	Aluminum alloy	
20	Belt	—	
21	Parallel pin	Stainless steel	
22	Seal	NBR	
23	Retaining ring	Steel for spring	Phosphate coated
24	Motor adapter	Aluminum alloy	Anodized
25	Motor	—	
26	Motor block	Aluminum alloy	Anodized
27	Hub	Aluminum alloy	
28	Spider	Urethane	
29	Guide attachment	Aluminum alloy	Anodized
30	Guide rod	Carbon steel	
31	Plate	Aluminum alloy	Anodized
32	Plate mounting bolt	Carbon steel	Nickel plated
33	Guide bolt	Carbon steel	Nickel plated
34	Sliding bearing	—	
35	Retaining ring	Steel for spring	Phosphate coated
36	Ball bushing	—	

Support Block

Size	Order no.
25	LEYG-S025
32	LEYG-S032

* Two body mounting bolts are included with the support block.

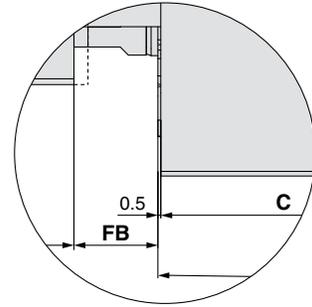
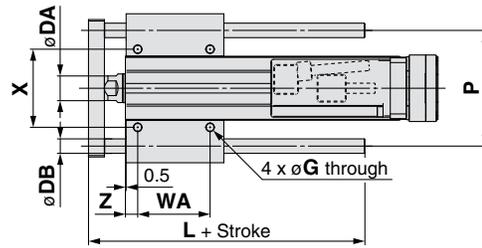
Replacement Parts/Belt

Size	Order no.
25	LE-D-2-2
32	LE-D-2-4

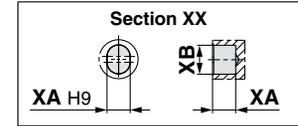
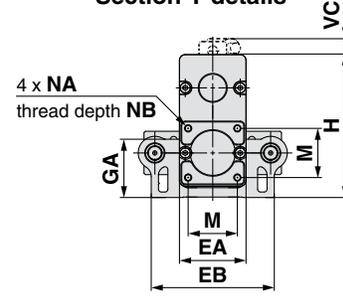
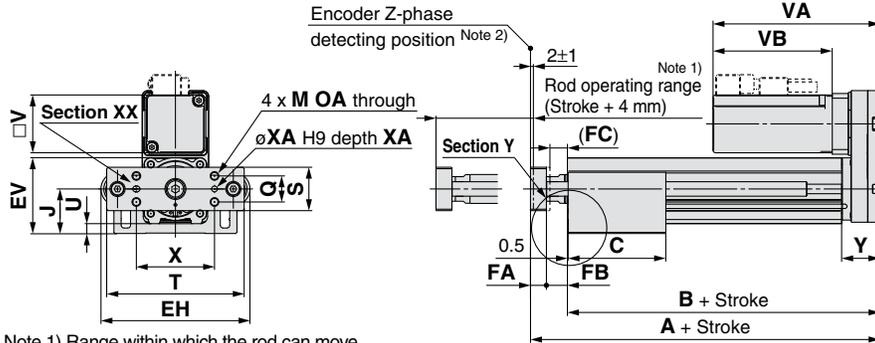
Model Selection
 LEFS
 LEFB
 LEJS
 LEJB
 LEY
 LEYG
 LECYM/LECYU

Series LEYG

Dimensions: Top Mounting



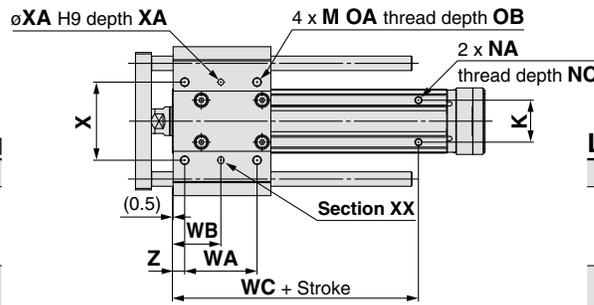
Section Y details



Note 1) Range within which the rod can move. Make sure a workpiece mounted on the rod does not interfere with the workpieces and facilities around the rod.

Note 2) The Z-phase first detecting position from the stroke end of the motor side

LEYG□L (Ball bushing bearing) [mm]			
Size	Stroke range (mm)	L	DB
25	15 to 110	91	10
	115 to 190	115	
	195 to 300	133	
32	20 to 110	97.5	13
	115 to 190	116.5	
	195 to 300	134	



LEYG□M (Sliding bearing) [mm]			
Size	Stroke range (mm)	L	DB
25	15 to 55	67.5	12
	60 to 185	100.5	
	190 to 300	138	
32	20 to 55	74	16
	60 to 185	107	
	190 to 300	144	

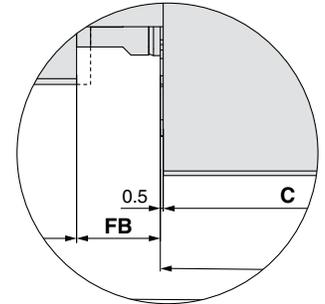
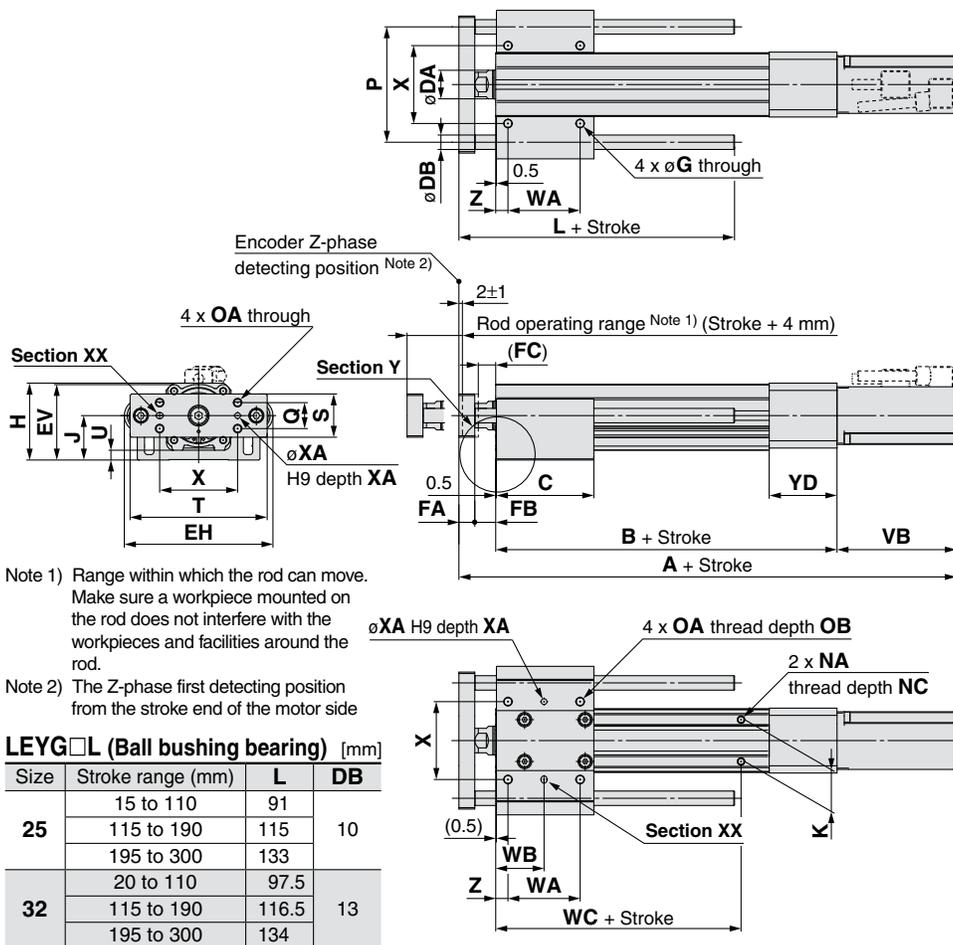
LEYG□M, LEYG□L Common

Size	Stroke range (mm)	A	B	C	DA	EA	EB	EH	EV	FA	FB	FC	G	GA	H	J	K	M	NA	NB	NC
25	15 to 35	141.5	116	50	20	46	85	103	52.3	11	14.5	12.5	5.4	40.3	98.8	30.8	29	34	M5 x 0.8	8	6.5
	40 to 100			67.5																	
	105 to 120	166.5	141	84.5																	
	125 to 200			102																	
	205 to 300			102																	
32	20 to 35	160.5	130	55	25	60	101	123	63.8	12	18.5	16.5	5.4	50.3	125.8	38.3	30	40	M6 x 1.0	10	8.5
	40 to 100			68																	
	105 to 120	190.5	160	85																	
	125 to 200			102																	
	205 to 300			102																	

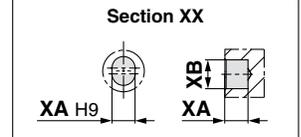
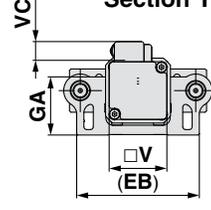
Size	Stroke range (mm)	OA	OB	P	Q	S	T	U	V	WA	WB	WC	X	XA	XB	Y	Z
25	15 to 35	M6 x 1.0	12	80	18	30	95	6.8	40	35	26	70	54	4	5	26.5	8.5
	40 to 100									50	33.5						
	105 to 120									70	43.5	95					
	125 to 200									85	51						
	205 to 300									85	51						
32	20 to 35	M6 x 1.0	12	95	28	40	117	7.3	60	40	28.5	75	64	5	6	34	8.5
	40 to 100									50	33.5						
	105 to 120									70	43.5	105					
	125 to 200									85	51						
	205 to 300									85	51						

Size	Without lock			With lock		
	VA	VB	VC	VA	VB	VC
25	115.5	82.5	11	160.5	127.5	11
32	120	80	14	160	120	14

Dimensions: In-line Motor



Section Y details



Encoder Z-phase detecting position Note 2)

Section XX

Section Y

Note 1) Range within which the rod can move. Make sure a workpiece mounted on the rod does not interfere with the workpieces and facilities around the rod.

Note 2) The Z-phase first detecting position from the stroke end of the motor side

LEYG□L (Ball bushing bearing) [mm]

Size	Stroke range (mm)	L	DB
25	15 to 110	91	10
	115 to 190	115	
	195 to 300	133	
32	20 to 110	97.5	13
	115 to 190	116.5	
	195 to 300	134	

LEYG□M (Sliding bearing) [mm]

Size	Stroke range (mm)	L	DB
25	15 to 55	67.5	12
	60 to 185	100.5	
	190 to 300	138	
32	20 to 55	74	16
	60 to 185	107	
	190 to 300	144	

LEYG□M, LEYG□L Common

Size	Stroke range (mm)	B	C	DA	EB	EH	EV	FA	FB	FC	G	GA	H	J	K	NA	NC
25	15 to 35	136.5	50	20	85	103	52.3	11	14.5	12.5	5.4	40.3	53.3	30.8	29	M5 x 0.8	6.5
	40 to 100		67.5														
	105 to 120	161.5	84.5														
	125 to 200	102															
	205 to 300	156	55														
32	20 to 35	156	55	25	101	123	63.8	12	18.5	16.5	5.4	50.3	68.3	38.3	30	M6 x 1.0	8.5
	40 to 100		68														
	105 to 120	186	85														
	125 to 200	102															
	205 to 300	102															
Size	Stroke range (mm)	OA	OB	P	Q	S	T	U	V	WA	WB	WC	X	XA	XB	YD	Z
25	15 to 35	M6 x 1.0	12	80	18	30	95	6.8	40	35	26	70	54	4	5	47	8.5
	40 to 100									50	33.5						
	105 to 120									70	43.5	95					
	125 to 200									85	51						
	205 to 300									40	28.5	75					
32	20 to 35	M6 x 1.0	12	95	28	40	117	7.3	60	50	33.5		105	64	5	6	60
	40 to 100									50	33.5						
	105 to 120									70	43.5	105					
	125 to 200									85	51						
	205 to 300									40	28.5	105					
Size	Stroke range (mm)	Without lock			With lock												
25	15 to 100	255.5	82.5	11.5	300.5	127.5	11.5										
	105 to 300	280.5			325.5												
32	15 to 100	266.5	80	14	306.5	120	14										
	105 to 300	296.5			336.5												

Model Selection

LEFS

LEFB

LEJS

LEJB

LEY

LEYG

LECYM/LECYU

Series LEYG

Support Block

• Guide for support block application

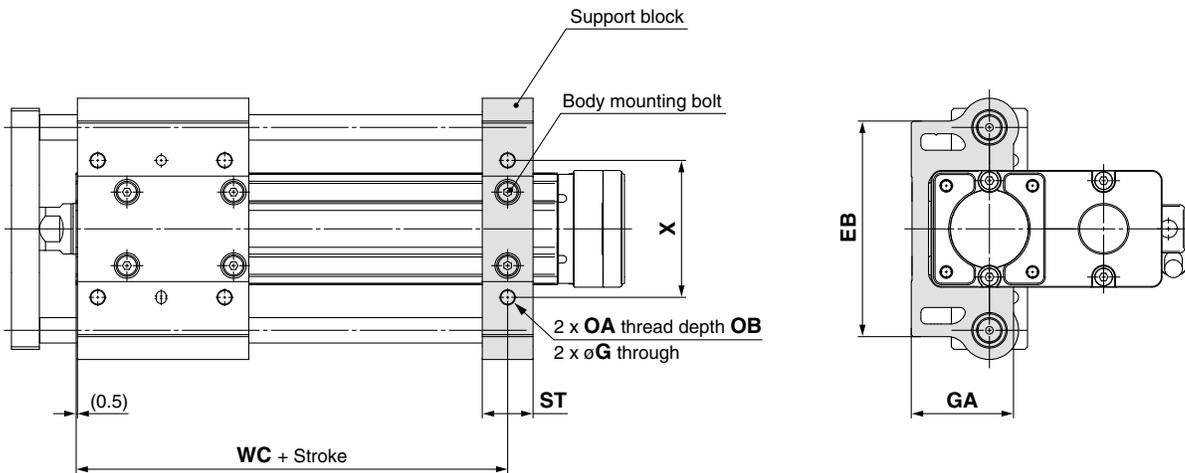
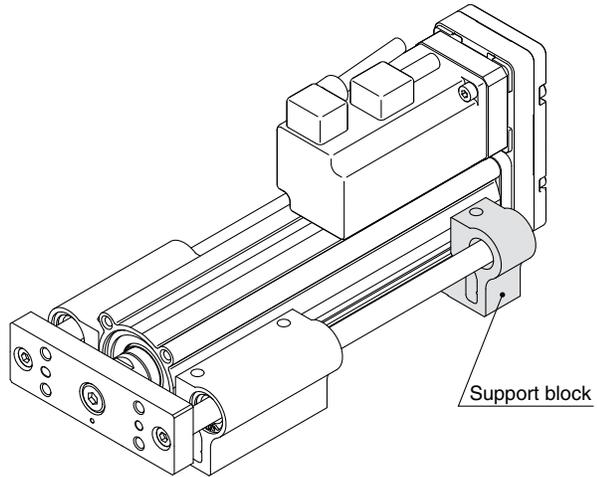
When the stroke exceeds 100 mm and the mounting orientation is horizontal, the body will be bent. Mounting the support block is recommended. (Please order it separately from the models shown below.)

Support Block Model

LEYG-S 025

• Size

025	For size 25
032	For size 32



⚠ Caution

Do not install the body using only a support block. The support block should be used only for support.

Size	Model	Stroke range	EB	G	GA	OA	OB	ST	WC	X
25	LEYG-S025	15 to 100	85	5.4	40.3	M6 x 1.0	12	20	70	54
		105 to 300							95	
32	LEYG-S032	20 to 100	101	5.4	50.3	M6 x 1.0	12	22	75	64
		105 to 300							105	

* Two body mounting bolts are included with the support block.

Solid State Auto Switch / Direct Mounting Style

D-M9N(V)/D-M9P(V)/D-M9B(V)

Refer to SMC website for details about products conforming to the international standards.

PLC: Programmable Logic Controller

Grommet

- 2-wire load current is reduced (2.5 to 40 mA).
- Flexibility is 1.5 times greater than the conventional model (SMC comparison).
- Using flexible cable as standard.



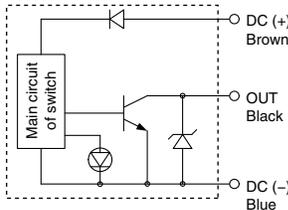
Caution

Precautions

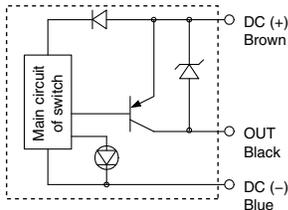
Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Internal Circuit

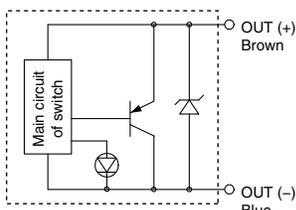
D-M9N/M9NV



D-M9P/M9PV



D-M9B/M9BV



Auto Switch Specifications

D-M9□, D-M9□V (With indicator light)

Auto switch model	D-M9N	D-M9NV	D-M9P	D-M9PV	D-M9B	D-M9BV
Electrical entry	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring type	3-wire				2-wire	
Output type	NPN		PNP		—	
Applicable load	IC circuit, Relay, PLC				24 VDC relay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V)				—	
Current consumption	10 mA or less				—	
Load voltage	28 VDC or less		—		24 VDC (10 to 28 VDC)	
Load current	40 mA or less				2.5 to 40 mA	
Internal voltage drop	0.8 V or less at 10 mA (2 V or less at 40 mA)				4 V or less	
Leakage current	100 μA or less at 24 VDC				0.8 mA or less	
Indicator light	Red LED lights up when turned ON.					
Standards	CE marking, RoHS					

- Lead wires — Oilproof flexible heavy-duty vinyl cord: $\phi 2.7 \times 3.2$ ellipse, 0.15 mm², 2 cores (D-M9B(V)), 3 cores (D-M9N(V)/D-M9P(V))

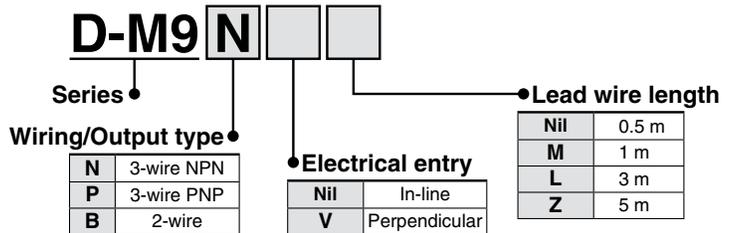
Note) Refer to the Best Pneumatics No. 2 for solid state auto switch common specifications.

Weight

[g]

Auto switch model	D-M9N(V)	D-M9P(V)	D-M9B(V)	
Lead wire length (m)	0.5	8	8	7
	1	14	14	13
	3	41	41	38
	5	68	68	63

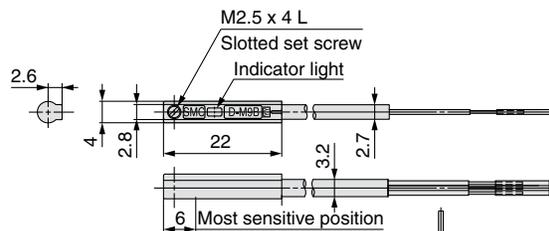
How to Order



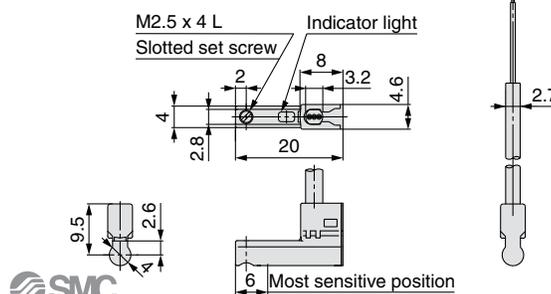
Dimensions

[mm]

D-M9□



D-M9□V



2-Color Indication Solid State Auto Switch Direct Mounting Style D-M9NW(V)/D-M9PW(V)/D-M9BW(V)



RoHS

Grommet

- 2-wire load current is reduced (2.5 to 40 mA).
- Flexibility is 1.5 times greater than the conventional model (SMC comparison).
- Using flexible cable as standard.
- The optimum operating range can be determined by the color of the light. (Red → Green ← Red)



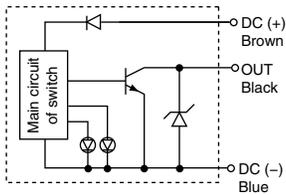
Caution

Precautions

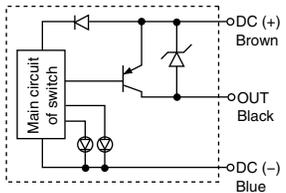
Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Internal Circuit

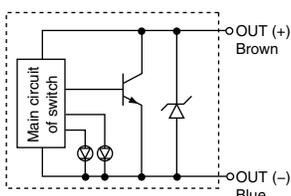
D-M9NW/M9NWV



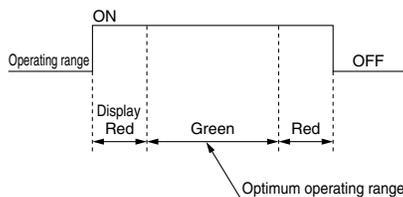
D-M9PW/M9PWV



D-M9BW/M9BWV



Indicator light/Indication method



Auto Switch Specifications

Refer to SMC website for details about products conforming to the international standards.

PLC: Programmable Logic Controller

D-M9□W, D-M9□WV (With indicator light)						
Auto switch model	D-M9NW	D-M9NWV	D-M9PW	D-M9PWV	D-M9BW	D-M9BWV
Electrical entry	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring type	3-wire				2-wire	
Output type	NPN		PNP		—	
Applicable load	IC circuit, Relay, PLC				24 VDC relay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V)				—	
Current consumption	10 mA or less				—	
Load voltage	28 VDC or less		—		24 VDC (10 to 28 VDC)	
Load current	40 mA or less				2.5 to 40 mA	
Internal voltage drop	0.8 V or less at 10 mA (2 V or less at 40 mA)				4 V or less	
Leakage current	100 μA or less at 24 VDC				0.8 mA or less	
Indicator light	Operating range Red LED lights up. Optimum operating range Green LED lights up.					
Standards	CE marking, RoHS					

- Lead wires — Oilproof flexible heavy-duty vinyl cord: $\phi 2.7 \times 3.2$ ellipse, 0.15 mm², 2 cores (D-M9BW(V)), 3 cores (D-M9NW(V), D-M9PW(V))

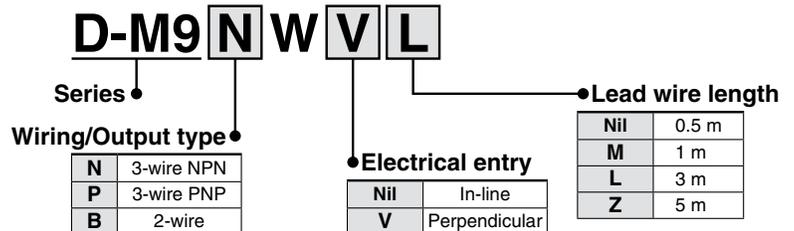
Note) Refer to the Best Pneumatics No. 2 for solid state auto switch common specifications.

Weight

[g]

Auto switch model	D-M9NW(V)	D-M9PW(V)	D-M9BW(V)	
Lead wire length (m)	0.5	8	8	7
	1	14	14	13
	3	41	41	38
	5	68	68	63

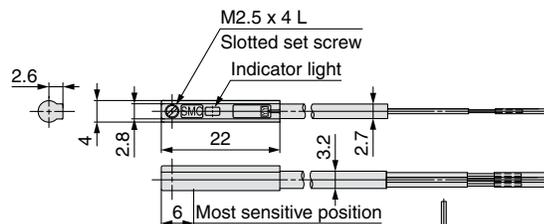
How to Order



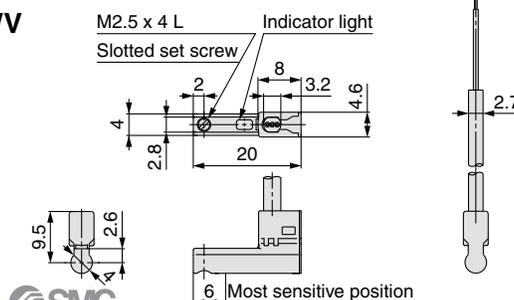
Dimensions

[mm]

D-M9□W



D-M9□WV





Series LEY/LEYG

Electric Actuators/ Specific Product Precautions 1

Be sure to read this before handling. For Safety Instructions and Electric Actuator Precautions, refer to "Handling Precautions for SMC Products" and the Operation Manual on SMC website, <http://www.smcworld.com>

Design/Selection

⚠ Warning

- Do not apply a load in excess of the operating limit.**
Select a suitable actuator by work load and allowable lateral load on the rod end. If the product is used outside of the operating limit, the eccentric load applied to the piston rod will be excessive and have adverse effects such as creating play on the sliding parts of the piston rod, degrading accuracy and shortening the 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 failure.
- When used as a stopper, select the LEYG series "Sliding bearing" for a stroke of 30 mm or less.**
- When used as a stopper, fix the main body with a guide attachment ("Top mounting" or "Bottom mounting").**
If the end of the actuator is used to fix the main body (end mounting), the excessive load acts on the actuator, which adversely affects the operation and life of the product.

Handling

⚠ Caution

- When the pushing operation is used, be sure to set to "Torque control mode", and use within the specified pushing speed range for each series.**
Do not allow the piston rod to hit the workpiece and end of the stroke in the "Position control mode", "Speed control mode" or "Positioning mode". The lead screw, bearing and internal stopper may be damaged and lead to malfunction.
- When operating with "Torque control mode", the value of the internal torque limit or the external torque limit (LECY) should be set to 90% or less. (150% or less only for the LEY63)**
It may lead to damage and malfunction.
- The forward/reverse torque limit is set to 800% as default.**
When the product is operated with a smaller value than 300%, acceleration when driving can decrease. Set the value after confirming the actual device to be used.
- The maximum speed of this actuator is affected by the product stroke.**
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.
- Do not scratch or dent the sliding parts of the piston rod, by striking or attaching objects.**
The piston rod and guide rod are manufactured to precise tolerances, even a slight deformation may cause malfunction.
- When an external guide is used, connect it in such a way that no impact or load is applied to it.**
Use a freely moving connector (such as a floating joint).
- Do not operate by fixing the piston rod and moving the actuator body.**
Excessive load will be applied to the piston rod, leading to damage to the actuator and reduced the life of the product.

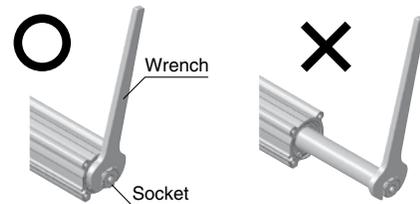
Handling

⚠ Caution

- When an actuator is operated with one end fixed and the other free (ends tapped (standard), flange type), a bending moment may act on the actuator due to vibration generated at the stroke end, which can damage the actuator. In such a case, install a mounting bracket to suppress the vibration of the actuator body or reduce the speed so that the actuator does not vibrate.**
Also, use a mounting bracket when moving the actuator body or when a long stroke actuator is mounted horizontally and fixed at one end.
- Avoid using the electric actuator in such a way that rotational torque would be applied to the piston rod.**
This may cause deformation of the non-rotating guide, abnormal responses of the auto switch, play in the internal guide or an increase in the sliding resistance.
Refer to the table below for the approximate values of the allowable range of rotational torque.

Allowable rotational torque lbf [N·m] or less	LEY25□	LEY32	LEY63
	0.81 [1.1]	1.03 [1.4]	2.07 [2.8]

When screwing in a bracket or nut to the end of the piston rod, hold the flats of the rod end with a wrench (the piston rod should be fully retracted). Do not apply tightening torque to the non-rotating mechanism.



- When using auto switch with the guide rod type LEYG series, the following limits will be in effect. Please select the product while paying attention to this.**
 - Insert the auto switch from the front side with rod (plate) sticking out.
 - The auto switches with perpendicular electrical entry cannot be used.
 - For the parts hidden behind the guide attachment (Rod stick out side), the auto switch cannot be fixed.
 - Consult with SMC when using auto switch on the rod stick out side.

Enclosure

IP-□□

First characteristic numeral • Second characteristic numeral

- First Characteristics:**
Degrees of protection against solid foreign objects

0	Non-protected
1	Protected against solid foreign objects of 50 mmø and greater
2	Protected against solid foreign objects of 12 mmø and greater
3	Protected against solid foreign objects of 2.5 mmø and greater
4	Protected against solid foreign objects of 1.0 mmø and greater
5	Dust-protected
6	Dust-tight



Series LEY/LEYG

Electric Actuators/ Specific Product Precautions 2

Be sure to read this before handling. For Safety Instructions and Electric Actuator Precautions, refer to "Handling Precautions for SMC Products" and the Operation Manual on SMC website, <http://www.smcworld.com>

Enclosure

• Second Characteristics:

Degrees of protection against water

0	Non-protected	—
1	Protected against vertically falling water drops	Dripproof type 1
2	Protected against vertically falling water drops when enclosure tilted up to 15°	Dripproof type 2
3	Protected against rainfall when enclosure tilted up to 60°	Rainproof type
4	Protected against splashing water	Splashproof type
5	Protected against water jets	Water-jet-proof type
6	Protected against powerful water jets	Powerful water-jet-proof type
7	Protected against the effects of temporary immersion in water	Immersible type
8	Protected against the effects of continuous immersion in water	Submersible type

Example) IP65: Dust-tight, Water-jet-proof type

"Water-jet-proof type" means that no water intrudes inside an equipment that could hinder from operating normally by means of applying water for 3 minutes in the prescribed manner. Take appropriate protection measures, since a device is not usable in an environment where a droplet of water is splashed constantly.

Mounting

⚠ Caution

- When mounting workpieces or jigs to the piston rod end, hold the flats of the piston rod end with a wrench so that the piston rod does not rotate. The bolt should be tightened within the specified torque range.

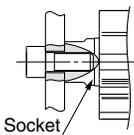
This may cause abnormal responses of the auto switch, play in the internal guide or an increase in the sliding resistance.

- When mounting the product and/or a workpiece, tighten the mounting screws within the specified torque range.

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

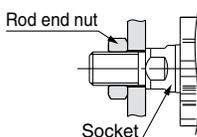
<Series LEY>

Workpiece fixed/Rod end female thread

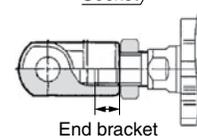


Model	Bolt	Max. tightening torque lbf-ft(N·m)	Max. screw-in depth (mm)	End socket width across flats (mm)
LEY25	M8 x 1.25	9.2 [12.5]	13	17
LEY32	M8 x 1.25	9.2 [12.5]	13	22
LEY63	M16 x 2	78 [106]	21	36

Workpiece fixed/Rod end male thread



Model	Bolt	Max. tightening torque lbf-ft(N·m)	Effective thread length (mm)	End socket width across flats (mm)
LEY25	M14 x 1.5	37 [50]	20.5	17
LEY32	M14 x 1.5	37 [50]	20.5	22
LEY63	M18 x 1.5	71 [97]	26	36



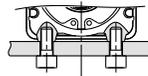
Model	Rod end nut		End bracket screw-in depth (mm)
	Width across flats (mm)	Length (mm)	
LEY25	22	8	14
LEY32	22	8	14
LEY63	27	11	18

* Rod end nut is an accessory.

Mounting

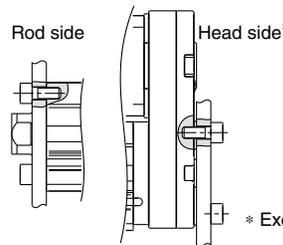
⚠ Caution

Body fixed/Body bottom tapped style (When "Body bottom tapped" is selected.)



Model	Bolt	Max. tightening torque lbf-ft(N·m)	Max. screw-in depth (mm)
LEY25	M5 x 0.8	2.2 [3.0]	6.5
LEY32	M6 x 1.0	3.8 [5.2]	8.8
LEY63	M8 x 1.25	9.2 [12.5]	10

Body fixed/Rod side/Head side tapped style

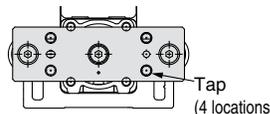


Model	Bolt	Max. tightening torque lbf-ft(N·m)	Max. screw-in depth (mm)
LEY25	M5 x 0.8	2.2 [3.0]	8
LEY32	M6 x 1.0	3.8 [5.2]	10
LEY63	M8 x 1.25	9.2 [12.5]	16

* Except the LEY□D.

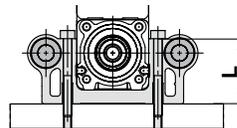
<Series LEYG>

Workpiece fixed/Plate tapped style



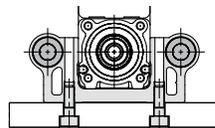
Model	Bolt	Max. tightening torque lbf-ft(N·m)	Max. screw-in depth (mm)
LEYG25 ^M _L	M6 x 1.0	3.8 [5.2]	11
LEYG32 ^M _L	M6 x 1.0	3.8 [5.2]	12

Body fixed/Top mounting



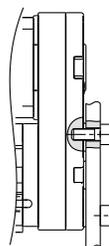
Model	Bolt	Max. tightening torque lbf-ft(N·m)	Length: L (mm)
LEYG25 ^M _L	M5 x 0.8	2.2 [3.0]	40.5
LEYG32 ^M _L	M5 x 0.8	2.2 [3.0]	50.5

Body fixed/Bottom mounting



Model	Bolt	Max. tightening torque lbf-ft(N·m)	Max. screw-in depth (mm)
LEYG25 ^M _L	M6 x 1.0	3.8 [5.2]	12
LEYG32 ^M _L	M6 x 1.0	3.8 [5.2]	12

Body fixed/Head side tapped style



Model	Bolt	Max. tightening torque lbf-ft(N·m)	Max. screw-in depth (mm)
LEYG25 ^M _L	M5 x 0.8	2.2 [3.0]	8
LEYG32 ^M _L	M6 x 1.0	3.8 [5.2]	10



Series LEY/LEYG

Electric Actuators/ Specific Product Precautions 3

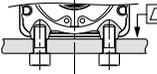
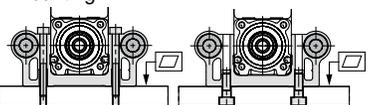
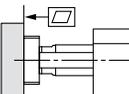
Be sure to read this before handling. For Safety Instructions and Electric Actuator Precautions, refer to “Handling Precautions for SMC Products” and the Operation Manual on SMC website, <http://www.smcworld.com>

Mounting

⚠ Caution

3. Keep the flatness of the mounting surface within the following ranges when mounting the actuator body and workpiece.

Unevenness of a workpiece or base mounted on the body of the product may cause an increase in the sliding resistance.

Model	Mounting position	Flatness
LEY□	Body/Body bottom 	0.1 mm or less
LEYG□	Bottom mounting 	0.05 mm or less
	Workpiece/Plate mounting 	0.05 mm or less

Maintenance

⚠ Warning

1. Ensure that the power supply is stopped and the workpiece is removed before starting maintenance work or replacement of the product.

• Maintenance frequency

Perform maintenance according to the table below.

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

* Select whichever comes sooner.

• Items for visual appearance check

1. Loose set screws, Abnormal dirt
2. Check of flaw and cable joint
3. Vibration, Noise

• Items for belt check

Stop operation immediately and replace the belt when belt appear to be below. Further, ensure your operating environment and conditions satisfy the requirements specified for the product.

a. Tooth shape canvas is worn out

Canvas fiber becomes fuzzy. Rubber is removed and the fiber becomes whitish. Lines of fibers become unclear.

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

Belt corner becomes round and frayed thread sticks out.

c. Belt partially cut

Belt is partially cut. Foreign matter caught in teeth other than cut part causes flaw.

d. Vertical line of belt teeth

Flaw which is made when the belt runs on the flange.

e. Rubber back of the belt is softened and sticky

f. Crack on the back of the belt

MECHATROLINK Compatible

AC Servo Motor Driver

Absolute Type

Series LECYM/LECYU

(MECHATROLINK-II Type)

(MECHATROLINK-III Type)



How to Order

Driver

LECYM 2 -

Driver type

M	MECHATROLINK-II type (For absolute encoder)
U	MECHATROLINK-III type (For absolute encoder)

Power supply voltage

2	200 to 230 VAC, 50/60 Hz
---	--------------------------

Compatible motor type

Symbol	Type	Capacity	Encoder
V5	AC servo motor (V6 *2)	100 W	Absolute
V7	AC servo motor (V7 *2)	200 W	
V8	AC servo motor (V8 *2)	400 W	

*1 If the I/O signal connector (CN 1) is required, order the part number "LECYNA" separately.

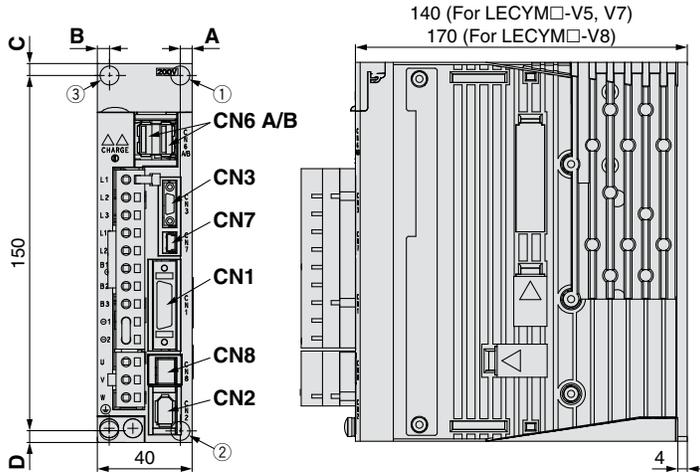
*2 The symbol shows the motor type (actuator).



Dimensions

MECHATROLINK-II type

LECYM2-V



Connector name	Description
CN1	I/O signal connector
CN2	Encoder connector
CN3 ^{Note)}	Digital operator connector
CN6A	MECHATROLINK-II communication connector
CN6B	MECHATROLINK-II communication connector
CN7	PC connector
CN8	Safety connector

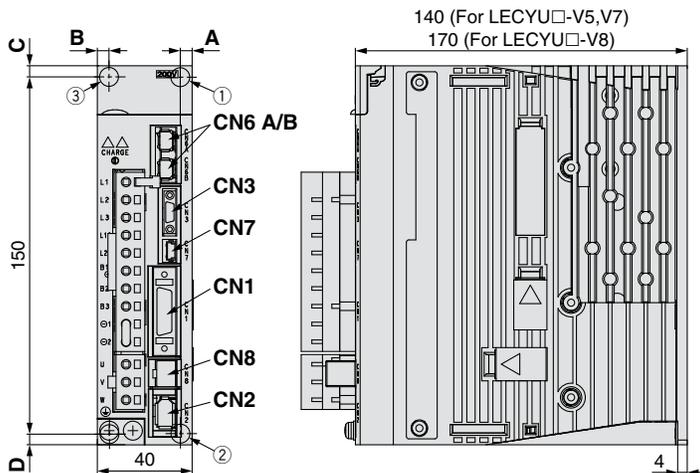
Note) Digital operator is JUSP-OP05A-1-E manufactured by YASKAWA Electric Corporation. When using the digital operator, it should be provided by the customer.

Motor capacity	Hole position	Mounting dimensions				Mounting hole
		A	B	C	D	
V5 (100 W)	①②	5	—	5	5	ø5
V7 (200 W)	①②	5	—	5	5	
V8 (400 W)	②③	5	5	5	5	

* The mounting hole position varies depending on the motor capacity.

MECHATROLINK-III type

LECYU2-V



Connector name	Description
CN1	I/O signal connector
CN2	Encoder connector
CN3 ^{Note)}	Digital operator connector
CN6A	MECHATROLINK-III communication connector
CN6B	MECHATROLINK-III communication connector
CN7	PC connector
CN8	Safety connector

Note) Digital operator is JUSP-OP05A-1-E manufactured by YASKAWA Electric Corporation. When using the digital operator, it should be provided by the customer.

Motor capacity	Hole position	Mounting dimensions				Mounting hole
		A	B	C	D	
V5 (100 W)	①②	5	—	5	5	ø5
V7 (200 W)	①②	5	—	5	5	
V8 (400 W)	②③	5	5	5	5	

* The mounting hole position varies depending on the motor capacity.

Specifications

MECHATROLINK-Ⅱ Type

Model		LECYM2-V5	LECYM2-V7	LECYM2-V8
Compatible motor capacity [W]		100	200	400
Compatible encoder		Absolute 20-bit encoder (Resolution: 1048576 p/rev)		
Main circuit power supply	Power voltage [V]	Three phase 200 to 230 VAC (50/60 Hz)		
	Allowable voltage fluctuation [V]	Three phase 170 to 253 VAC		
Control power supply	Power voltage [V]	Single phase 200 to 230 VAC (50/60 Hz)		
	Allowable voltage fluctuation [V]	Single phase 170 to 253 VAC		
Power supply capacity (at rated output) [A]		0.91	1.6	2.8
Input circuit		NPN (Sink circuit)/PNP (Source circuit)		
Parallel input (7 inputs)	Number of optional allocations	7 inputs	[Initial allocation] · Homing deceleration switch (/DEC) · External latch (/EXT 1 to 3) · Forward run prohibited (P-OT), reverse run prohibited (N-OT) [Can be allocated by setting the parameters.] · Forward external torque limit (/P-CL), reverse external torque limit (/N-CL) Signal allocations can be performed, and positive and negative logic can be changed.	
	Number of fixed allocations	1 output	· Servo alarm (ALM)	
Parallel output (4 outputs)	Number of optional allocations	3 outputs	[Initial allocation] · Lock (/BK) [Can be allocated by setting the parameters.] · Positioning completion (/COIN) · Speed limit detection (/VLT) · Speed coincidence detection (/V-CMP) · Rotation detection (/TGON) · Warning (/WARN) · Servo ready (/S-RDY) · Near (/NEAR) · Torque limit detection (/CLT) Signal allocations can be performed, and positive and negative logic can be changed.	
	Number of fixed allocations			
MECHATROLINK communication	Communication protocol	MECHATROLINK-Ⅱ		
	Station address	41H to 5FH		
	Communication speed	10 Mbps		
	Communication cycle	250 μs, 0.5 ms to 4 ms (Multiples of 0.5 ms)		
	Number of transmission bytes	17 bytes, 32 bytes		
	Max. number of stations	30		
	Cable length	Overall cable length: 50 m or less, Cable length between the stations: 0.5 m or more		
Command method	Control method	Position, speed, or torque control with MECHATROLINK-Ⅱ communication		
	Command input	MECHATROLINK-Ⅱ command (Motion, data setting, monitoring or adjustment)		
Function	Gain adjustment	Tuning-less/Advanced autotuning/One-parameter tuning		
	Communication setting	USB communication, RS-422 communication		
	Torque limit	Internal torque limit, external torque limit, and torque limit by analog command		
	Encoder output	Phase A, B, C: Line driver output		
	Emergency stop	CN8 Safety function		
	Overtravel	Dynamic brake stop, deceleration to a stop, or free run to a stop at P-OT or N-OT		
	Alarm	Alarm signal, MECHATROLINK-Ⅱ command		
Operating temperature range		32 to 131°F (0 to 55°C) (No freezing)		
Operating humidity range [%RH]		90 or less (No condensation)		
Storage temperature range		-4 to 185°F (-20 to 85°C) (No freezing)		
Storage humidity range [%RH]		90 or less (No condensation)		
Insulation resistance [MΩ]		10 MΩ (500 VDC)		
Weight [g]		900		1000

Model Selection

LEFS

LEFB

LEJS

LEJB

LEY

LEYG

LECYM/LECYU

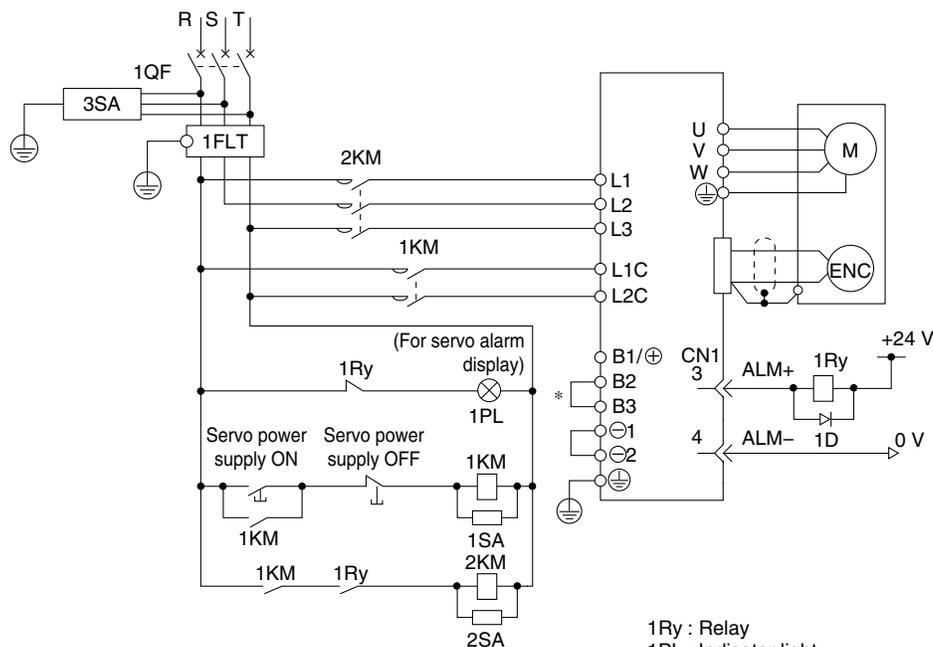
Specifications

MECHATROLINK-III Type

Model		LECYU2-V5	LECYU2-V7	LECYU2-V8
Compatible motor capacity [W]		100	200	400
Compatible encoder		Absolute 20-bit encoder (Resolution: 1048576 p/rev)		
Main circuit power supply	Power voltage [V]	Three phase 200 to 230 VAC (50/60 Hz)		
	Allowable voltage fluctuation [V]	Three phase 170 to 253 VAC		
Control power supply	Power voltage [V]	Single phase 200 to 230 VAC (50/60 Hz)		
	Allowable voltage fluctuation [V]	Single phase 170 to 253 VAC		
Power supply capacity (at rated output) [A]		0.91	1.6	2.8
Input circuit		NPN (Sink circuit)/PNP (Source circuit)		
Parallel input (7 inputs)	Number of optional allocations	7 inputs	[Initial allocation] · Homing deceleration switch (/DEC) · External latch (/EXT 1 to 3) · Forward run prohibited (P-OT), reverse run prohibited (N-OT) [Can be allocated by setting the parameters.] · Forward external torque limit (/P-CL), reverse external torque limit (/N-CL) Signal allocations can be performed, and positive and negative logic can be changed.	
Parallel output (4 outputs)	Number of fixed allocations	1 output	· Servo alarm (ALM)	
	Number of optional allocations	3 outputs	[Initial allocation] · Lock (/BK) [Can be allocated by setting the parameters.] · Positioning completion (/COIN) · Speed limit detection (/VLT) · Speed coincidence detection (/V-CMP) · Rotation detection (/TGON) · Warning (/WARN) · Servo ready (/S-RDY) · Near (/NEAR) · Torque limit detection (/CLT) Signal allocations can be performed, and positive and negative logic can be changed.	
MECHATROLINK communication	Communication protocol	MECHATROLINK-III		
	Station address	03H to EFH		
	Communication speed	100 Mbps		
	Communication cycle	125 μs, 250 μs, 500 μs, 750 μs, 1 ms to 4 ms (Multiples of 0.5 ms)		
	Number of transmission bytes	16 bytes, 32 bytes, 48 bytes,		
	Max. number of stations	62		
	Cable length	Cable length between the stations: 0.5 m or more, 75 m or less		
Command method	Control method	Position, speed, or torque control with MECHATROLINK-III communication		
	Command input	MECHATROLINK-III command (Motion, data setting, monitoring or adjustment)		
Function	Gain adjustment	Tuning-less/Advanced autotuning/One-parameter tuning		
	Communication setting	USB communication, RS-422 communication		
	Torque limit	Internal torque limit, external torque limit, and torque limit by analog command		
	Encoder output	Phase A, B, C: Line driver output		
	Emergency stop	CN8 Safety function		
	Overtravel	Dynamic brake stop, deceleration to a stop, or free run to a stop at P-OT or N-OT		
Alarm	Alarm signal, MECHATROLINK-III command			
Operating temperature range		32 to 131°F (0 to 55°C) (No freezing)		
Operating humidity range [%RH]		90 or less (No condensation)		
Storage temperature range		-4 to 185°F (-20 to 85°C) (No freezing)		
Storage humidity range [%RH]		90 or less (No condensation)		
Insulation resistance [MΩ]		10 MΩ (500 VDC)		
Weight [g]		900		1000

Power Supply Wiring Example: LECY□

■ Three phase 200 V **LECYM2-□**
LECYU2-□



1QF : Molded-case circuit breaker
1FLT: Noise filter
1KM : Magnetic contactor (for control power supply)
2KM : Magnetic contactor (for main circuit power supply)

1Ry : Relay
1PL : Indicator light
1SA : Surge absorber
2SA : Surge absorber
3SA : Surge absorber
1D : Flywheel diode

* For the LECY□2-V5, LECY□2-V7 and LECY□2-V8, terminals B2 and B3 are not short-circuited. Do not short-circuit these terminals.

Main Circuit Power Supply Connector * Accessory

Terminal name	Function	Details
L1	Main circuit power supply	Connect the main circuit power supply. Single phase 200 to 230 VAC, 50/60 Hz Connection terminal: L1, L2 Three phase 200 to 230 VAC, 50/60 Hz Connection terminal: L1, L2, L3
L2		
L3		
L1C	Control power supply	Connect the control power supply. Single phase 200 to 230 VAC, 50/60 Hz Connection terminal: L1C, L2C
L2C		
B1/⊕	External regenerative resistor connection terminal	When the regenerative resistor is required, connect it between terminals B1/⊕ and B2.
B2		
B3	Main circuit negative terminal	⊖1 and ⊖2 are connected at shipment.
⊖1		
⊖2		

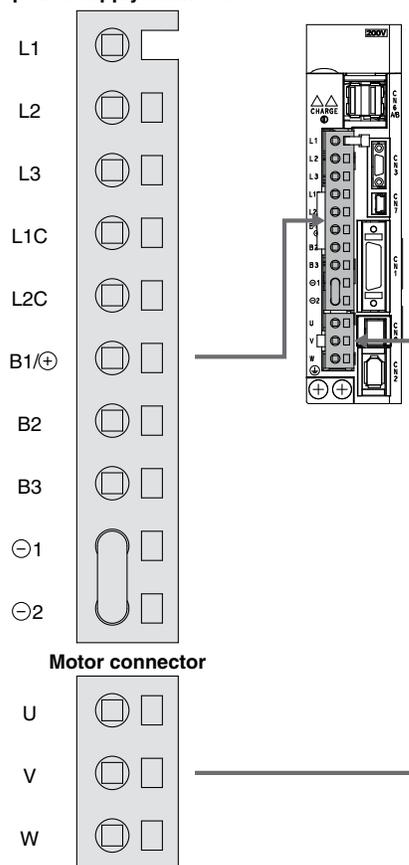
Motor Connector * Accessory

Terminal name	Function	Details
U	Servo motor power (U)	Connect to motor cable (U, V, W).
V	Servo motor power (V)	
W	Servo motor power (W)	

Power Supply Wire Specifications

Item	Specifications
Applicable wire size	L1, L2, L3, L1C, L2C Single wire, Twisted wire, AWG14 (2.0 mm ²)
Stripped wire length	8 to 9 mm

Main circuit power supply connector



Motor connector

Model Selection

LEFS

LEFB

LEJS

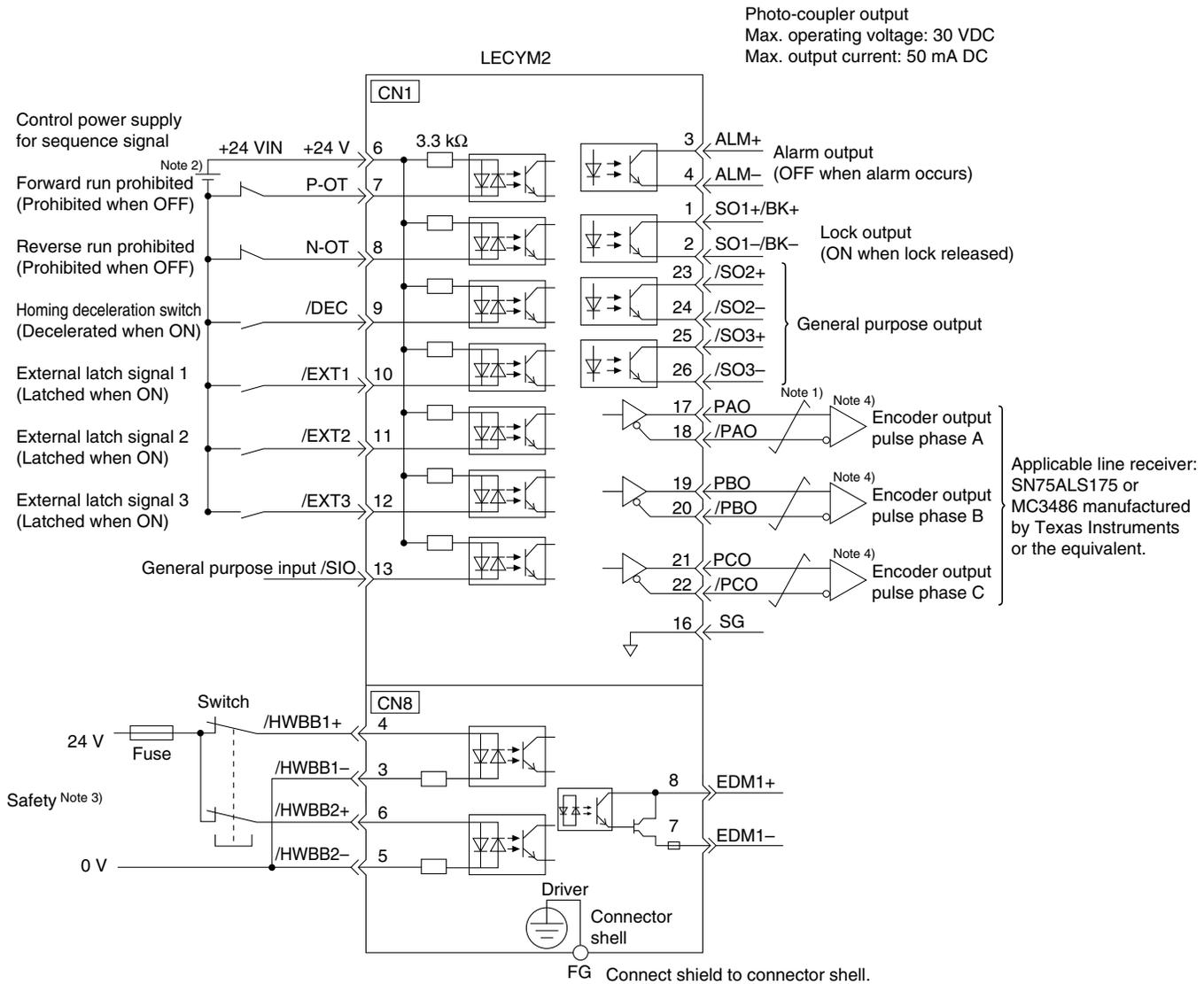
LEJB

LEY

LEYG

LECYM/LECYU

Control Signal Wiring Example: LECYM



Note 1) $\overline{\text{---}}$ shows twisted-pair wires.

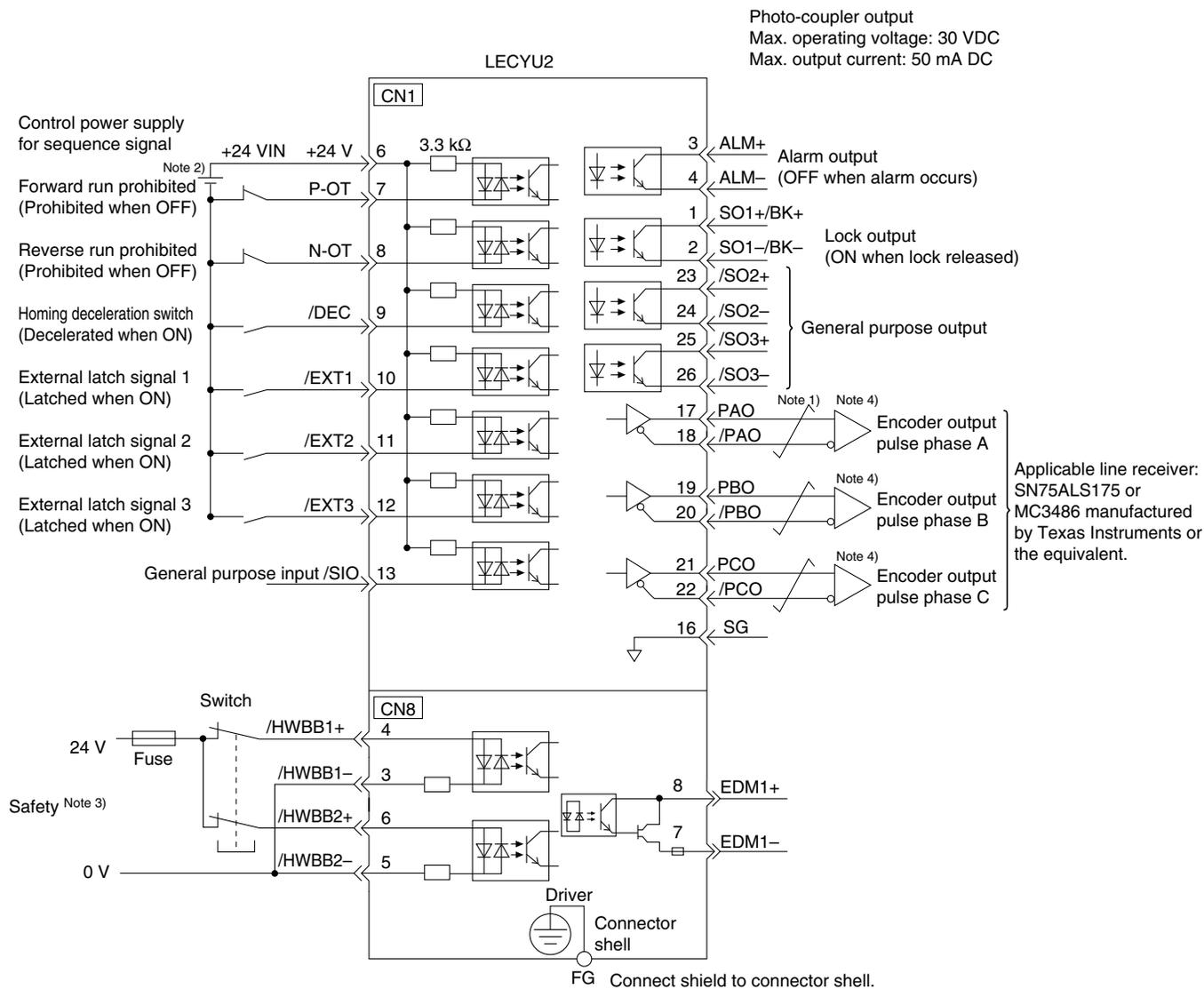
Note 2) The 24 VDC power supply is not included. Use a 24 VDC power supply with double insulation or reinforced insulation.

Note 3) When using the safety function, a safety function device must be connected to the wiring that is necessary to activate the safety function. Otherwise, the servo motor is not turned ON. When not using the safety function, use the driver with the Safety Jumper Connector (provided as an accessory) inserted into the CN8.

Note 4) Always use line receivers to receive the output signals.

* The functions allocated to the input signals /DEC, P-OT, N-OT, /EXT1, /EXT2 and /EXT3, and the output signals /SO1, /SO2 and /SO3 can be changed by setting the parameters.

Control Signal Wiring Example: LECYU



Note 1) $\overline{\text{---}}$ shows twisted-pair wires.

Note 2) The 24 VDC power supply is not included. Use a 24 VDC power supply with double insulation or reinforced insulation.

Note 3) When using the safety function, a safety function device must be connected to the wiring that is necessary to activate the safety function. Otherwise, the servo motor is not turned ON. When not using the safety function, use the driver with the Safety Jumper Connector (provided as an accessory) inserted into the CN8.

Note 4) Always use line receivers to receive the output signals.

* The functions allocated to the input signals /DEC, P-OT, N-OT, /EXT1, /EXT2 and /EXT3, and the output signals /SO1, /SO2 and /SO3 can be changed by setting the parameters.

Model Selection

LEFS

LEFB

LEJS

LEJB

LEY

LEYG

LECYM/LECYU

Options

Motor cable, Motor cable for lock option, Encoder cable (LECYM/LECYU common)

LE - CYM - S5A - 5

Motor type

Y	AC servo motor
----------	----------------

Motor capacity

5	100 W
7	200/400 W

* For encoder cable, the suffix "□" (Motor capacity) is not necessary.

Cable description

M	Motor cable
B	Motor cable for lock option
E	Encoder cable (With battery case)

Direction of connector

* The cable entry direction is axis side only.

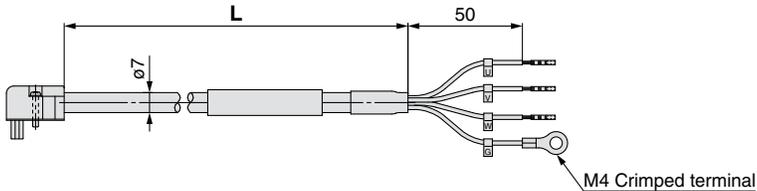
Cable type

S	Standard cable
R	Robotic cable

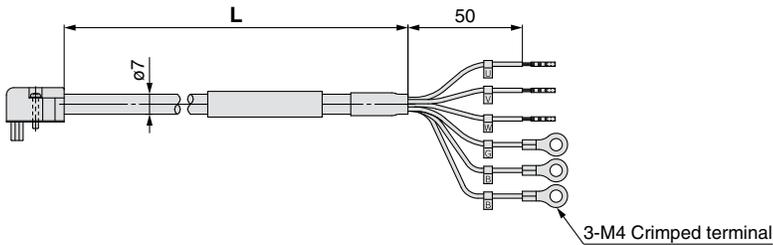
Cable length (L) [m]

3	3
5	5
A	10
C	20

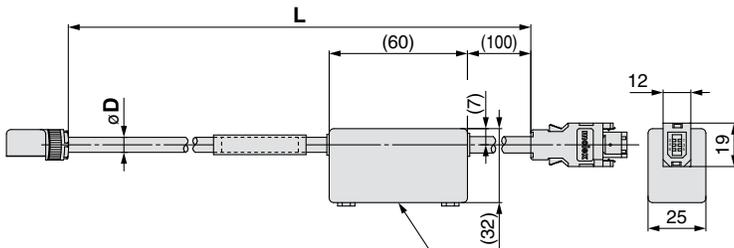
LE-CYM-□□A-□: Motor cable



LE-CYB-□□A-□: Motor cable for lock option



LE-CYE-□□A: Encoder cable



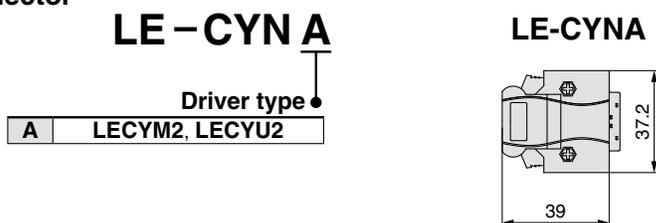
Products no.	øD
LE-CYE-S□A	6.5
LE-CYE-R□A	6.8

Battery case
Depth dimension: 25 mm

* LE-CYM-S□A-□ is JZSP-CSM0□-□□-E manufactured by YASKAWA CONTROLS CO., LTD.
 LE-CYB-S□A-□ is JZSP-CSM1□-□□-E manufactured by YASKAWA CONTROLS CO., LTD.
 LE-CYE-S□A is JZSP-CSP05-□□-E manufactured by YASKAWA CONTROLS CO., LTD.
 LE-CYM-R□A-□ is JZSP-CSM2□-□□-E manufactured by YASKAWA CONTROLS CO., LTD.
 LE-CYB-R□A-□ is JZSP-CSM3□-□□-E manufactured by YASKAWA CONTROLS CO., LTD.
 LE-CYE-R□A is JZSP-CSP25-□□-E manufactured by YASKAWA CONTROLS CO., LTD.

Options

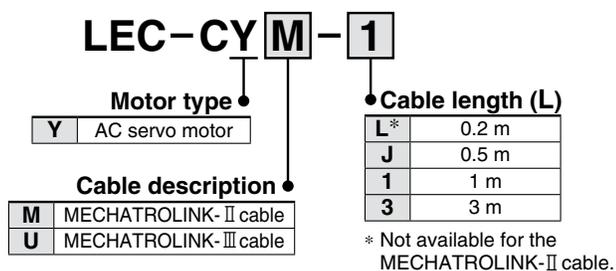
I/O connector



* LE-CYNA: 10126-3000PE (connector)/10326-52F0-008 (shell kit) manufactured by Sumitomo 3M Limited or equivalent item.

* Conductor size: AWG24

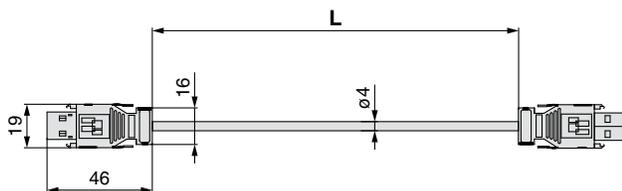
MECHATROLINK cable type



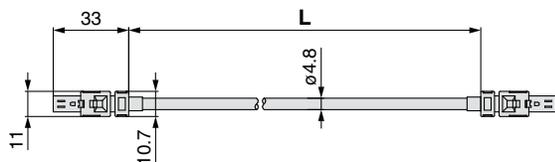
* LEC-CYM-□ is JEPMC-W6002-□□-E manufactured by YASKAWA CONTROLS CO., LTD.

* LEC-CYU-□ is JEPMC-W6012-□□-E manufactured by YASKAWA CONTROLS CO., LTD.

MECHATROLINK-II cable



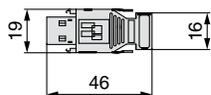
MECHATROLINK-III cable



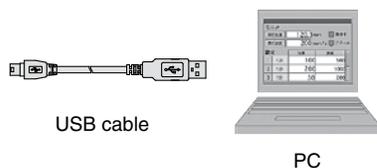
Terminating connector for MECHATROLINK-II

LEC-CYRM

* LEC-CYRM is JEPMC-W6022-E manufactured by YASKAWA CONTROLS CO., LTD.



Options



Setup software (SigmaWin+™) (LECYM/LECYU common)

* Please download the SigmaWin+™ via our website.
SigmaWin+™ is a registered trademark or trademark of YASKAWA Electric Corporation.

Adjustment, waveform display, diagnostics, parameter read/write, and test operation can be performed upon a PC. Compatible PC

When using setup software (SigmaWin+™), use an IBM PC/AT compatible PC that meets the following operating conditions.

Hardware Requirements

Equipment		Setup software (SigmaWin+™)
PC <small>Note 1) 2) 3) 4)</small>	OS	Windows® XP <small>Note 5)</small> , Windows Vista®, Windows® 7 (32-bit/64-bit)
	Available HD space	350 MB or more (When the software is installed, 400 MB or more is recommended.)
	Communication interface	Use USB port.
Display		XVGA monitor (1024 x 768 or more, "The small font is used.") 256 color or more (65536 color or more is recommended.) The connectable with the above PC
Keyboard		The connectable with the above PC
Mouse		The connectable with the above PC
Printer		The connectable with the above PC
USB cable		LEC-JZ-CVUSB <small>Note 6)</small>
Other		Adobe Reader Ver. 5.0 or higher (* Except Ver. 6.0)

Note 1) Windows, Windows Vista®, Windows® 7 are registered trademarks of Microsoft Corporation in the United States and/or other countries.

Note 2) On some PCs, this software may not run properly.

Note 3) Not compatible with 64-bit Windows® XP and 64-bit Windows Vista®.

Note 4) For Windows® XP, please use it by the administrator authority (When installing and using it.).

Note 5) In PC that uses the program to correct the problem of HotfixQ328310, it is likely to fail in the installation. In that case, please use the program to correct the problem of HotfixQ329623.

Note 6) Order USB cable separately.

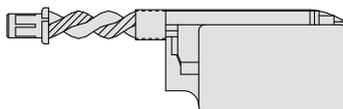
Battery (LECYM/LECYU common)

LEC-JZ-CVBAT

* JZSP-BA01 manufactured by YASKAWA CONTROLS CO., LTD.

Battery for replacement.

Absolute position data is maintained by installing the battery to the battery case of the encoder cable.



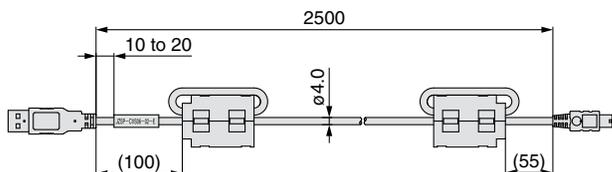
USB cable (2.5 m)

LEC-JZ-CVUSB

* JZSP-CVS06-02-E manufactured by YASKAWA CONTROLS CO., LTD.

Cable for connecting PC and driver when using the setup software (SigmaWin+™).

Do not use any cable other than this cable.



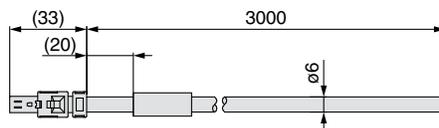
Cable for safety function device (3 m)

LEC-JZ-CVSAF

* JZSP-CVH03-03-E manufactured by YASKAWA CONTROLS CO., LTD.

Cable for connecting the driver and device when using the safety function.

Do not use any cable other than this cable.





Series LECYM/LECYU

AC Servo Motor Driver/ Specific Product Precautions 1

Be sure to read this before handling. For Safety Instructions and Electric Actuator Precautions, refer to “Handling Precautions for SMC Products” and the Operation Manual on SMC website, <http://www.smcworld.com>

Design/Selection

Warning

1. Use the specified voltage.

If the applied voltage is higher than the specified voltage, malfunction and damage to the driver may result. If the applied voltage is lower than the specified voltage, there is a possibility that the load cannot be moved due to internal voltage drop. Check the operating voltage prior to start. Also, confirm that the operating voltage does not drop below the specified voltage during operation.

2. Do not use the products outside the specifications.

Otherwise, fire, malfunction or damage to the driver/actuator can result. Check the specifications before use.

3. Install an emergency stop circuit.

Install an emergency stop outside the enclosure in easy reach to the operator so that the operator can stop the system operation immediately and intercept the power supply.

4. To prevent danger and damage due to a breakdown or malfunction of these products, which may occur at a certain probability, a backup system should be arranged in advance by using a multiple-layered structure or by making a fail-safe equipment design etc.

5. If there is a risk of fire or personal injury due to abnormal heat generation, sparking, smoke generated by the product, etc., cut off the power supply from this product and the system immediately.

Handling

Warning

1. Never touch the inside of the driver and its peripheral devices.

Otherwise, electric shock or failure can result.

2. Do not operate or set up this equipment with wet hands.

Otherwise, electric shock can result.

3. Do not use a product that is damaged or missing any components.

Electric shock, fire or injury can result.

4. Use only the specified combination between the electric actuator and driver.

Otherwise, it may cause damage to the driver or to the other equipment.

5. Be careful not to touch, get caught or hit by the workpiece while the actuator is moving.

An injury can result.

6. Do not connect the power supply or power up the product until it is confirmed that the workpiece can be moved safely within the area that can be reached by the workpiece.

Otherwise, the movement of the workpiece may cause an accident.

7. Do not touch the product when it is energized and for some time after the power has been disconnected, as it is very hot.

Otherwise, it may cause burns due to the high temperature.

8. Check the voltage using a tester at least 5 minutes after power-off when performing installation, wiring and maintenance.

Otherwise, electric shock, fire or injury can result.

Handling

Warning

9. Static electricity may cause a malfunction or damage the driver. Do not touch the driver while power is supplied to it.

Take sufficient safety measures to eliminate static electricity when it is necessary to touch the driver for maintenance.

10. Do not use the products in an area where they could be exposed to dust, metallic powder, machining chips or splashes of water, oil or chemicals.

Otherwise, a failure or malfunction can result.

11. Do not use the products in a magnetic field.

Otherwise, a malfunction or failure can result.

12. Do not use the products in an environment where flammable, explosive or corrosive gases, liquids or other substances are present.

Otherwise, fire, explosion or corrosion can result.

13. Avoid heat radiation from strong heat sources, such as direct sunlight or a hot furnace.

Otherwise, it will cause a failure to the driver or its peripheral devices.

14. Do not use the products in an environment with cyclic temperature changes.

Otherwise, it will cause a failure to the driver or its peripheral devices.

15. Do not use the products in an environment where surges are generated.

Devices (solenoid type lifters, high frequency induction furnaces, motors, etc.) that generate a large amount of surge around the product may lead to deterioration or damage to the internal circuits of the products. Avoid supplies of surge generation and crossed lines.

16. Do not install these products in a place subject to vibration and impact.

Otherwise, a malfunction or failure can result.

17. When a surge generating load such as a relay or solenoid valve is directly driven, use a product that incorporates a surge absorption element.

Mounting

Warning

1. Install the driver and its peripheral devices on fireproof material.

Direct installation on or near flammable material may cause fire.

2. Do not install these products in a place subject to vibration and impact.

Otherwise, a malfunction or failure can result.

3. The driver should be mounted on a vertical wall in a vertical direction.

Also, do not cover the driver's suction/exhaust ports.

4. Install the driver and its peripheral devices on a flat surface.

If the mounting surface is not flat or uneven, excessive force may be applied to the housing and other parts resulting in a malfunction.

Model Selection

LEFS

LEFB

LEJS

LEJB

LEY

LEYG

LECYM/LECYU



Series **LECYM/LECYU**

AC Servo Motor Driver/ Specific Product Precautions 2

Be sure to read this before handling. For Safety Instructions and Electric Actuator Precautions, refer to “Handling Precautions for SMC Products” and the Operation Manual on SMC website, <http://www.smcworld.com>

Power Supply

⚠ Caution

1. Use a power supply with low noise between lines and between power and ground.
In cases where noise is high, use an isolation transformer.
2. Take appropriate measures to prevent surges from lightning. Ground the surge absorber for lightning separately from the grounding of the driver and its peripheral devices.

Wiring

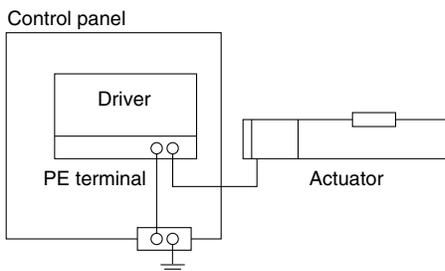
⚠ Warning

1. The driver will be damaged if a commercial power supply (100V/200V) is added to the driver,s servo motor power (U, V, W). Be sure to check wiring such as wiring mistakes when the power supply is turned on.
2. Connect the ends of the U, V, W wires from the motor cable correctly to the phases (U, V, W) of the servo motor power. If these wires do not match up, it is unable to control the servo motor.

Grounding

⚠ Warning

1. For grounding actuator, connect the copper wire of the actuator to the driver,s protective earth (PE) terminal and connect the copper wire of the driver to the earth via the control panel,s protective earth (PE) terminal.
Do not connect them directly to the control panel,s protective earth (PE) terminal.



2. In the unlikely event that malfunction is caused by the ground, it may be disconnected.

Maintenance

⚠ Warning

1. Perform maintenance checks periodically.
Confirm wiring and screws are not loose.
Loose screws or wires may cause unexpected malfunction.
2. Conduct an appropriate functional inspection and test after completed maintenance.
In case of any abnormalities (if the actuator does not move or the equipment does not operate properly etc.), stop the operation of the system.
Otherwise, unexpected malfunction may occur and safety cannot be assured.
Conduct a test of the emergency stop to confirm the safety of the equipment.
3. Do not disassemble, modify or repair the driver or its peripheral devices.
4. Do not put anything conductive or flammable inside the driver.
Otherwise, fire can result.
5. Do not conduct an insulation resistance test or insulation withstand voltage test.
6. Reserve sufficient space for maintenance.
Design the system so that it allows required space for maintenance.

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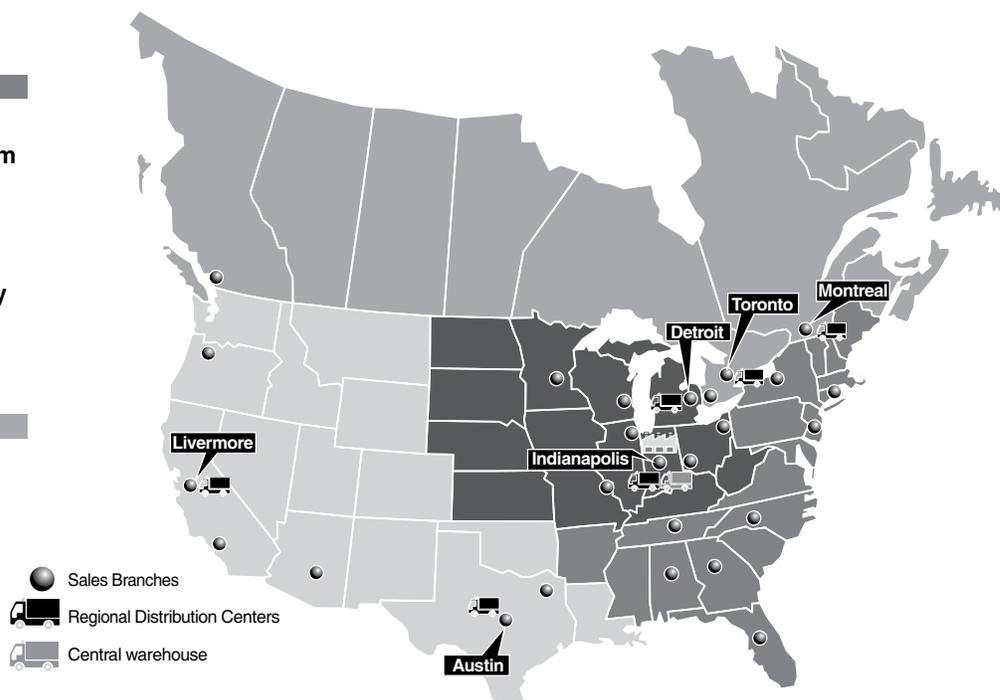
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