

# Electric Actuator

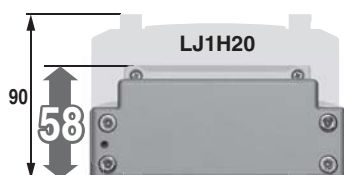
## Series LEJ



Slider Type/High Rigidity

## Low-profile/Low center of gravity

Height dimension reduced by approx. **36%** (Reduced by 32 mm)



LEJS40

Series	Work load [kg]	Speed [mm/s]	Motor output [W]
<b>New LEJS40</b>	55	600	100
(Former model) <b>LJ1H20</b>	30	500	100

### AC Servo Motor Type

#### Ball Screw Drive Series LEJS

Size: 40, 63 ▶Page 111

Work load: **85 kg**

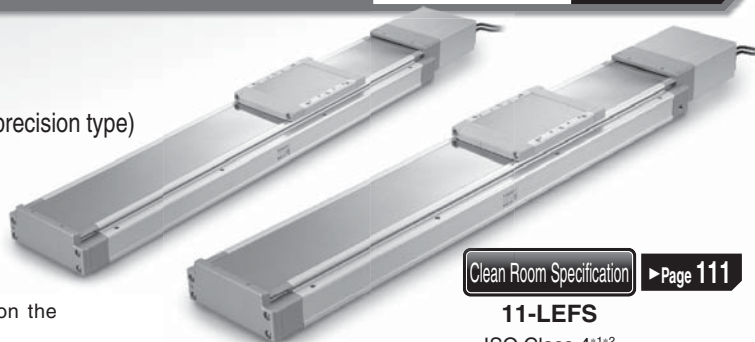
Positioning repeatability: **±0.01 mm** (High precision type)

Max. speed: **1800 mm/s**

Max. acceleration/deceleration: **20000 mm/s<sup>2</sup>**

\*1 ISO14644-1

\*2 The particle generation characteristics change depending on the suction flow rate.



Clean Room Specification

▶Page 111

**11-LEFS**

ISO Class 4\*1\*2

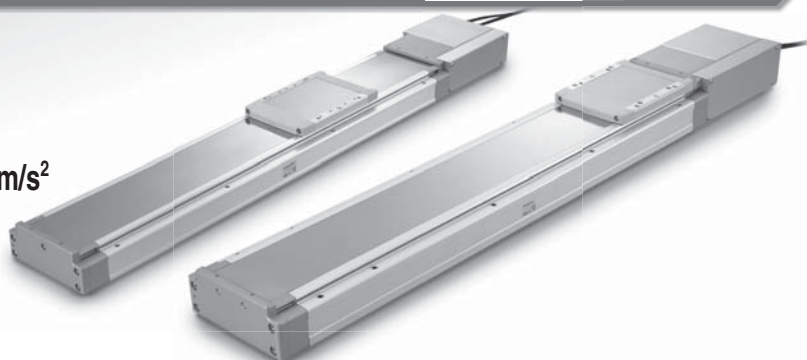
#### Belt Drive Series LEJB

Size: 40, 63 ▶Page 111

Max. stroke: **3000 mm**

Max. speed: **3000 mm/s**

Max. acceleration/deceleration: **20000 mm/s<sup>2</sup>**



### AC Servo Motor Driver

\* Not applicable to UL.

#### ►For absolute encoder

- Pulse input type  
Series **LECSB**
- CC-Link direct input type  
Series **LECS**
- SSCNET III type  
Series **LECSS**
- SSCNET III/H type  
Series **LECS-T**
- MECHATROLINK type  
Series **LECY**□



▶Pages 598, 620, 648

#### ►For incremental encoder

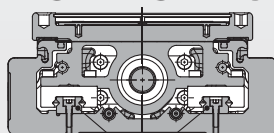
- Pulse input type/  
Positioning type  
Series **LECSA**



# Series LEJ

## ●High precision/High rigidity

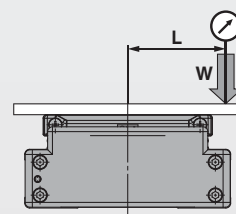
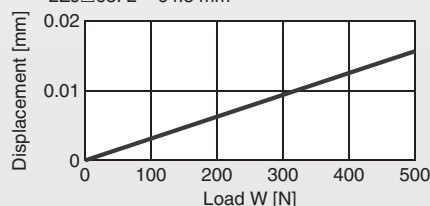
Double axis linear guide reduces deflection



Linear guide (Double axis)

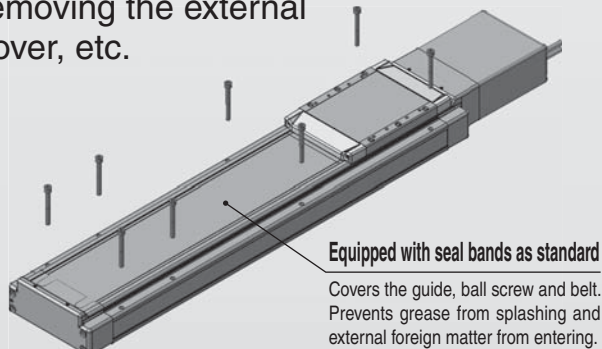
### Table displacement

\* LEJ□63: L = 64.5 mm



## ●Reduction of the installation labor

Possible to mount the main body without removing the external cover, etc.



Equipped with seal bands as standard

Covers the guide, ball screw and belt. Prevents grease from splashing and external foreign matter from entering.

## ●Weight reduction

Weight reduced by approx. **37%**

\* Stroke: 600 mm

LJ1H30

24.0 kg

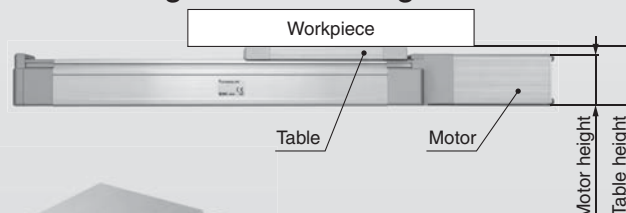
LEJS63

15.2 kg

37%

## ●Workpiece does not interfere with the motor

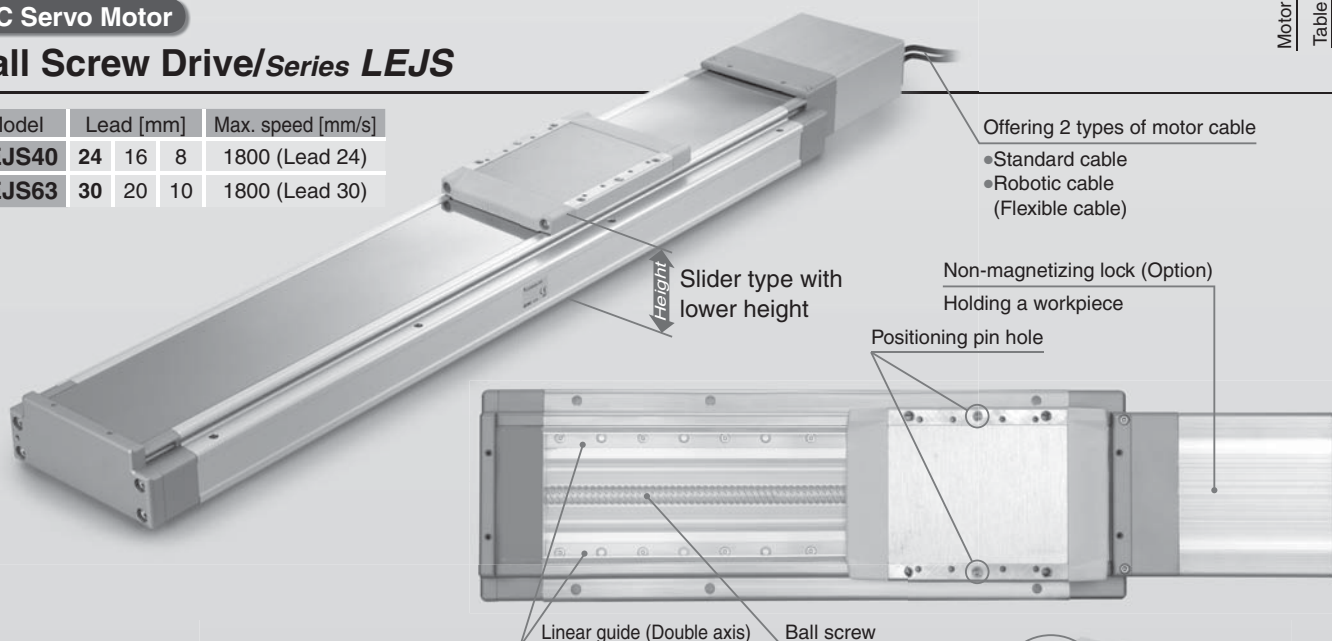
Table height > Motor height



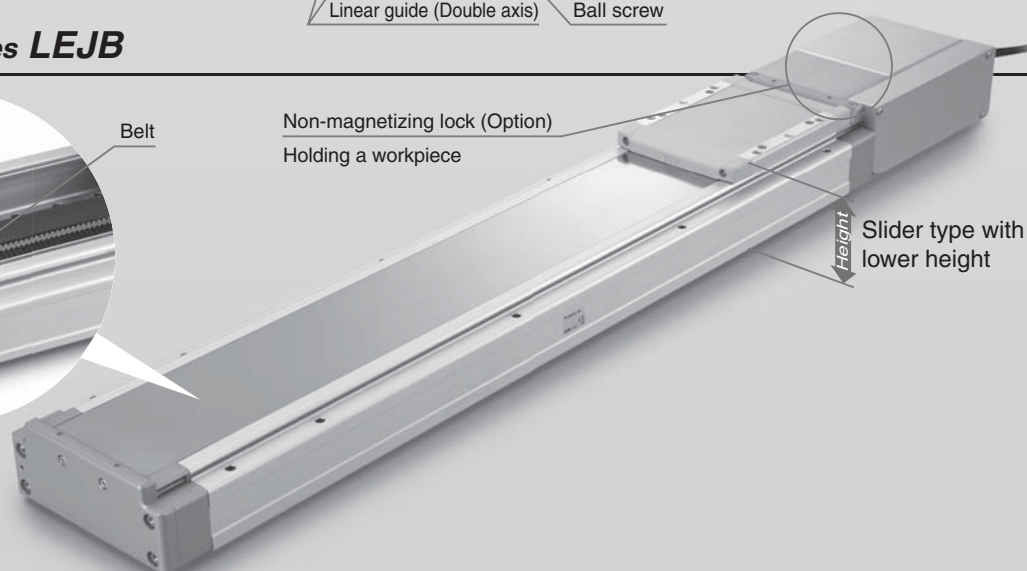
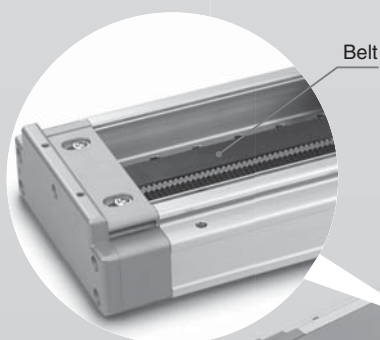
### AC Servo Motor

## Ball Screw Drive/Series LEJS

Model	Lead [mm]			Max. speed [mm/s]
LEJS40	24	16	8	1800 (Lead 24)
LEJS63	30	20	10	1800 (Lead 30)



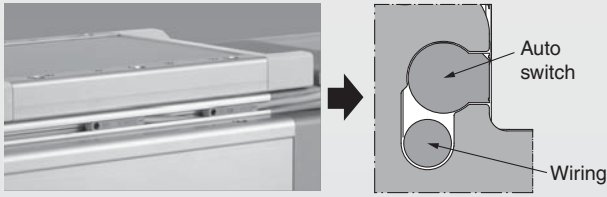
## Belt Drive/Series LEJB



# Electric Actuator/High Rigidity Slider Type

## ●Solid state auto switch can be mounted (For checking the limit and intermediate signal)

- Switch wiring can be placed in the body
- D-M9□W (2-color indication), D-M9□



### 2-color indication solid state auto switch

Appropriate setting of the mounting position can be performed without mistakes.



### Clean Room Specification

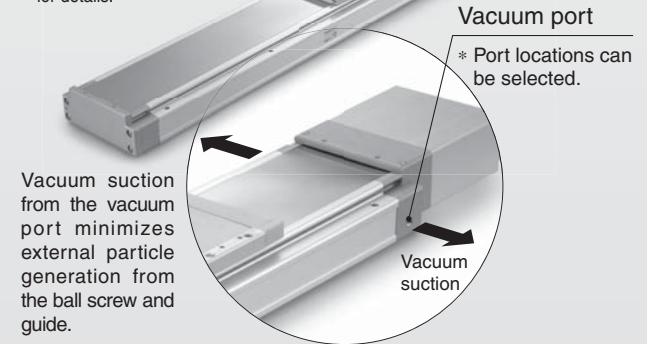
## Ball Screw Drive Series 11-LEJS Size: 40, 63

### ISO Class 4<sup>\*1, \*2</sup>

- Built-in vacuum piping
- Possible to mount the main body without removing the external cover, etc.

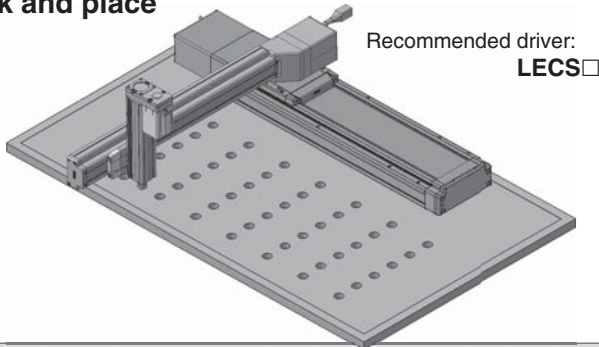
<sup>\*1</sup> ISO14644-1

<sup>\*2</sup> The particle generation characteristics change depending on the suction flow rate. Refer to page 523 for details.

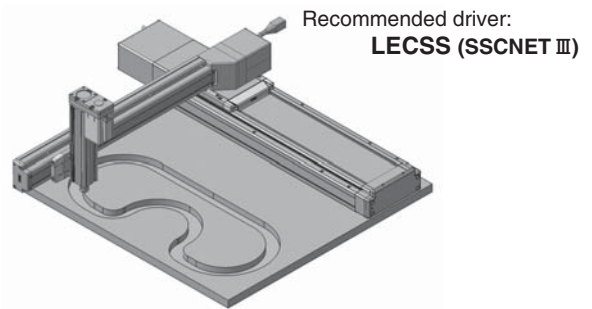


## Application Examples

### Pick and place





















### Glue dispensing/High speed trajectory is available



## Series Variations

### Ball Screw Drive/Series LEJS Clean room compatible<sup>\*2</sup>

Size	Lead [mm]	Stroke [mm] <sup>*1</sup>	Work load: Horizontal [kg]									Work load: Vertical [kg]			Speed [mm/s]										Page
			10	20	30	40	50	60	70	80	90	10	20	30	200	400	600	800	1000	1200	1400	1600	1800		
40	8	200, 300, 400 500, 600, 700 800, 900 1000, 1200																							Page 111
	16																								
	24																								
63	10	300, 400, 500 600, 700, 800 900, 1000 1200, 1500																							Page 111
	20																								
	30																								

<sup>\*1</sup> Please consult with SMC for non-standard strokes as they are produced as special orders.

<sup>\*2</sup> Except lead 24 and 30 mm

### Belt Drive/Series LEJB

Size	Equivalent lead [mm]	Stroke [mm] <sup>*1</sup>	Work load: Horizontal [kg] <sup>*2</sup>						Speed [mm/s]						Page
			5	10	15	20	25	30	500	1000	1500	2000	2500	3000	
40	27	200, 300, 400, 500, 600, 700, 800													Page 111
		900, 1000, 1200, 1500, 2000													
63	42	300, 400, 500, 600, 700, 800													Page 111
		900, 1000, 1200, 1500, 2000, 3000													

<sup>\*1</sup> Please consult with SMC for non-standard strokes as they are produced as special orders.

<sup>\*2</sup> The belt drive actuator cannot be used vertically for applications.

## AC Servo Motor

### Electric Actuator/High Rigidity Slider Type Ball Screw Drive *Series LEJS*



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Construction .....	Page 125
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## AC Servo Motor

### Electric Actuator/High Rigidity Slider Type Ball Screw Drive *Series 11-LEJS*

Clean Room Specification



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Particle Generation Characteristics .....	Page 522
How to Order .....	Page 524
Specifications .....	Page 525
Dimensions .....	Page 526

## AC Servo Motor

### Electric Actuator/High Rigidity Slider Type Belt Drive *Series LEJB*



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Auto Switch .....	Page 133
Specific Product Precautions .....	Page 136

## AC Servo Motor Driver



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<i>Series LECSA-T</i> .....	Page 620
<i>Series LECYM/LECYU</i> .....	Page 648



# High Rigidity Slider Type

## Ball Screw Drive Series LEJS

AC Servo Motor



Clean Room Specification

Series 11-LEJS



## Belt Drive Series LEJB

AC Servo Motor



LEFS  
LEFB

LEJS  
LEJB

LEL

LEM

LEY  
LEYG

LES  
LESH

LEPY  
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC□

LECS□

LECSS-T

LECYM  
LECYU

Motorless

LAT3

# Model Selection



Series LEJS ▶ Page 123    Series LEJB ▶ Page 128    Series 11-LEJS ▶ Page 524

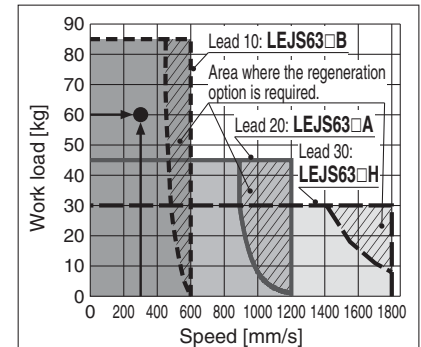
## Selection Procedure

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

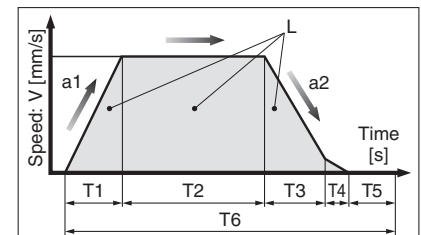
## Selection Example

### Operating conditions

- Work load: 60 [kg]
  - Speed: 300 [mm/s]
  - Acceleration/Deceleration: 3000 [mm/s<sup>2</sup>]
  - Stroke: 300 [mm]
  - Mounting orientation: Horizontal
  - Motor type: Incremental encoder
  - External force: 10 [N]
- Workpiece mounting condition:
- 



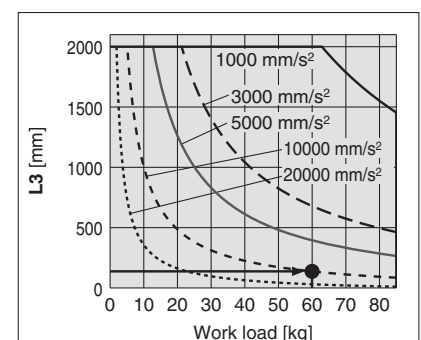
<Speed-Work load graph>  
(LEJS63)



L : Stroke [mm]  
 V : Speed [mm/s]  
 a1 : Acceleration [mm/s<sup>2</sup>]  
 a2 : Deceleration [mm/s<sup>2</sup>]

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 positioning 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  
 $T \div T6 \times 100$



<Dynamic allowable moment>  
(LEJS63)

### Step 1 Check the speed-work load.

Select the product by referring to "Speed-Work Load Graph" (Page 112).  
 Selection example) The **LEJS63S3B-300** is temporarily selected based on the graph shown on the right side.

The regeneration option may be necessary.  
 Refer to page 112 for "Required Conditions for Regeneration Option".

### 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 (Page 113)

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 115 to 117).

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 124).

- 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.

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

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

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

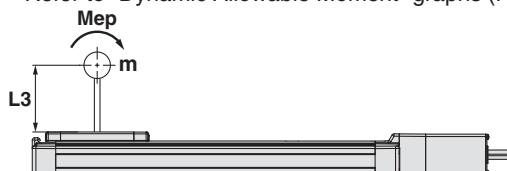
$$T4 = 0.05 \text{ [s]}$$

Therefore, the cycle time can be obtained as follows.

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

### Step 3 Check the allowable moment.

Refer to "Dynamic Allowable Moment" graphs (Pages 118 and 119).



Selection example) Select the **LEJS63S3B-300** from the graph on the right side.

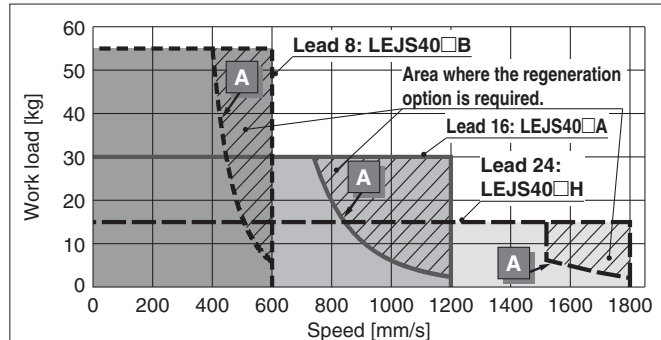
Confirm that the external force is 20 [N] or less.

(The external force is the resistance due to cable duct, flexible trunking or air tubing.)

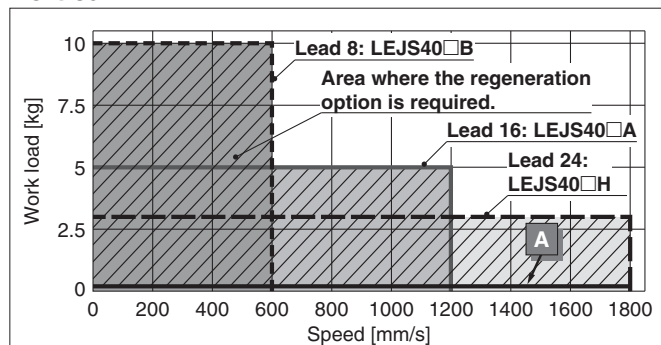
## Speed-Work Load Graph/Required Conditions for “Regeneration Option”(Guide)

### LEJS40/Ball Screw Drive

#### Horizontal

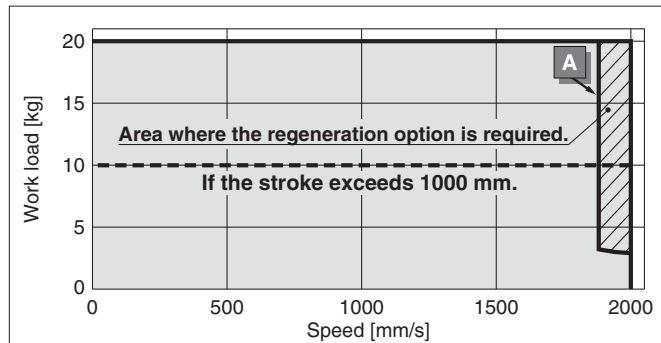


#### Vertical



### LEJB40/Belt Drive

#### Horizontal



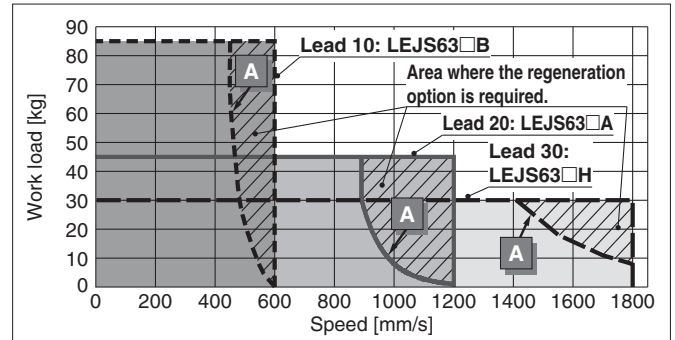
\* When the stroke of the LEJB40 series exceeds 1000 mm, the work load is 10 kg.

#### Required conditions for “Regeneration option”

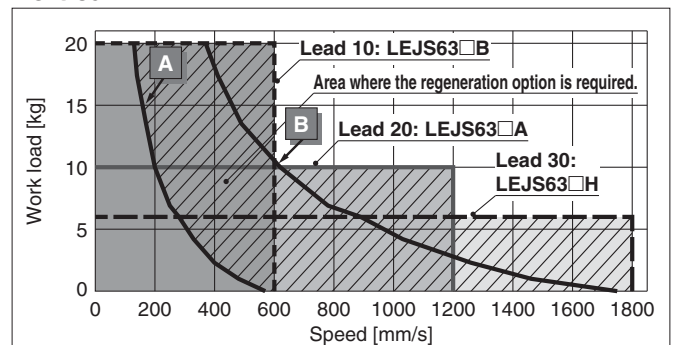
\* Regeneration option is required when using product above regeneration line in graph.  
(Order separately.)

### LEJS63/Ball Screw Drive

#### Horizontal

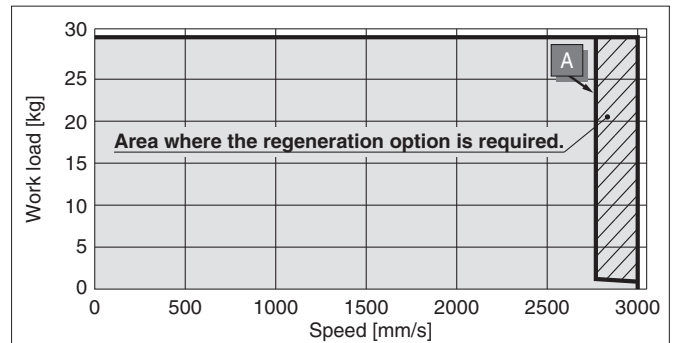


#### Vertical



### LEJB63/Belt Drive

#### Horizontal



#### “Regeneration Option” Models

Operating condition	Regenerative condition	Regeneration option
<b>A</b>	Duty ratio	LEC-MR-RB-032
<b>B</b>	100%	LEC-MR-RB-12

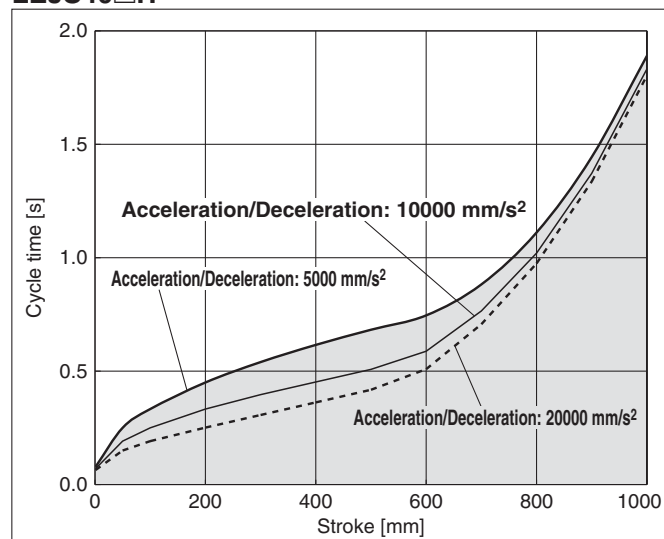
### Allowable Stroke Speed

[mm/s]																		
Model	AC servo motor	Lead		Stroke [mm]														
		Symbol	[mm]	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	Up to 1100	Up to 1200	Up to 1300	Up to 1400	Up to 1500	
LEJS40	100 W/ □40	H	24	1800				1580	1170	910	720	580	480	410	—	—	—	
		A	16	1200				1050	780	600	480	390	320	270	—	—	—	
		B	8	600				520	390	300	240	190	160	130	—	—	—	
		(Motor rotation speed)		(4500 rpm)				(3938 rpm)	(2925 rpm)	(2250 rpm)	(1800 rpm)	(1463 rpm)	(1200 rpm)	(1013 rpm)	—	—	—	
LEJS63	200 W/ □60	H	30	—	1800						1390	1110	900	750	630	540	470	410
		A	20	—	1200						930	740	600	500	420	360	310	270
		B	10	—	600						460	370	300	250	210	180	150	130
		(Motor rotation speed)		—	(3600 rpm)						(2790 rpm)	(2220 rpm)	(1800 rpm)	(1500 rpm)	(1260 rpm)	(1080 rpm)	(930 rpm)	(810 rpm)

## Cycle Time Graph (Guide)

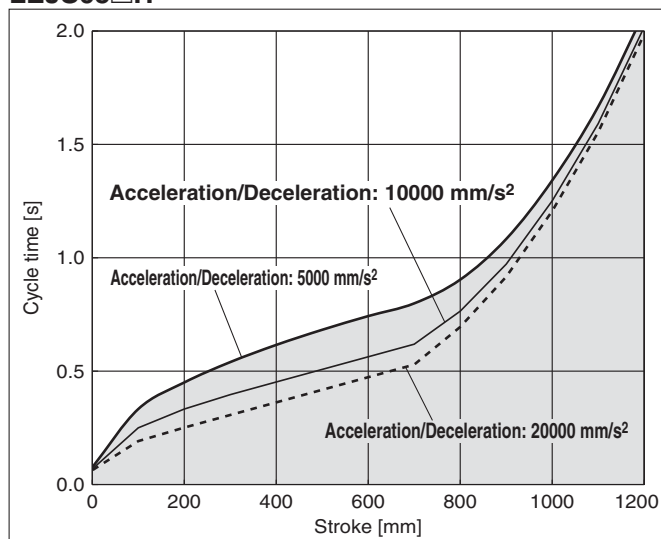
### LEJS40/Ball Screw Drive

#### LEJS40□H

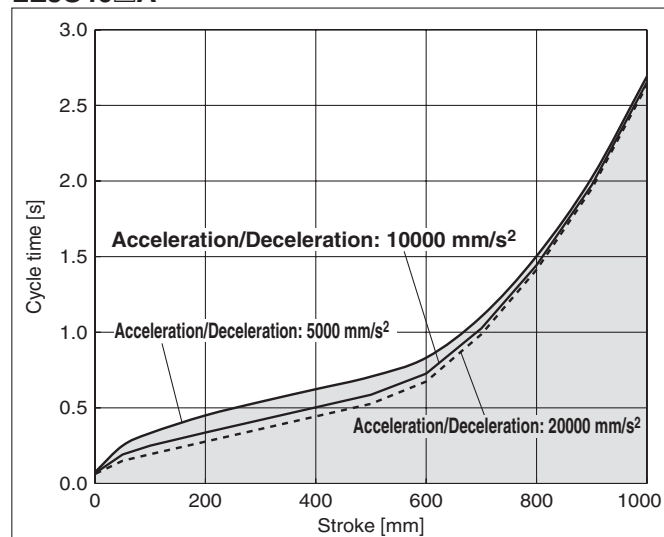


### LEJS63/Ball Screw Drive

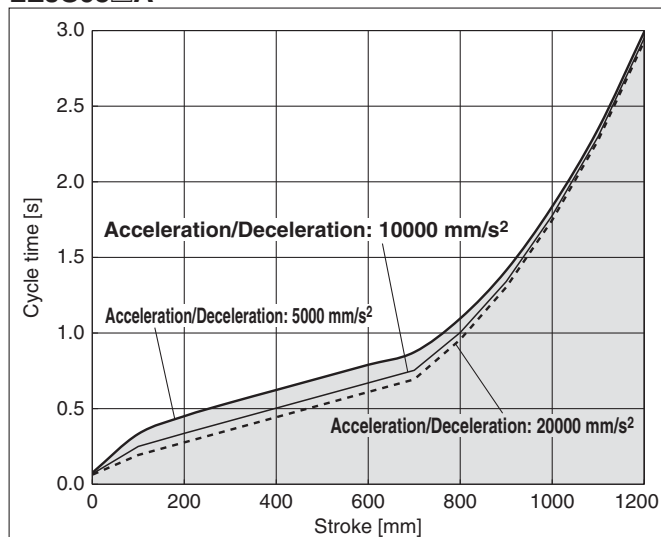
#### LEJS63□H



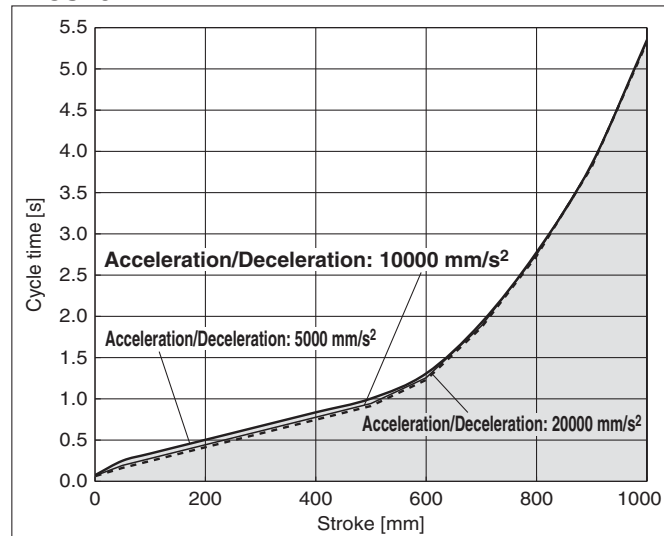
#### LEJS40□A



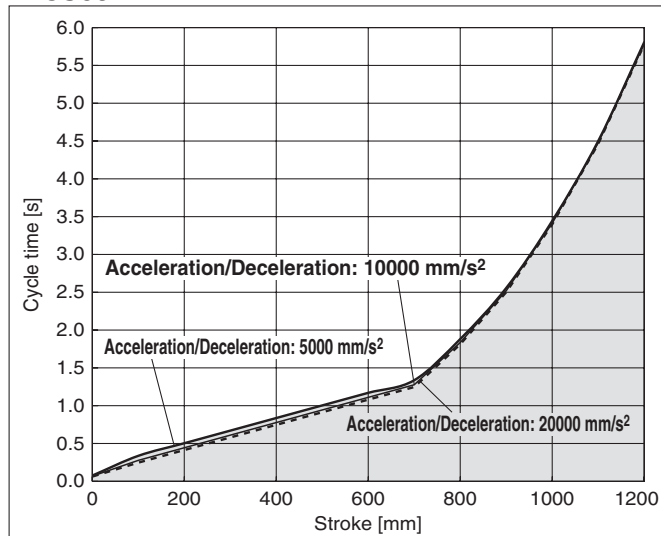
#### LEJS63□A



#### LEJS40□B



#### LEJS63□B

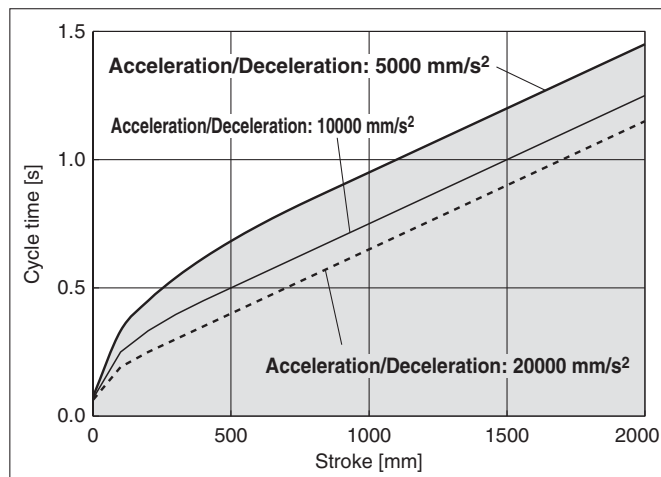


\* Maximum speed/acceleration/deceleration values graph for each stroke



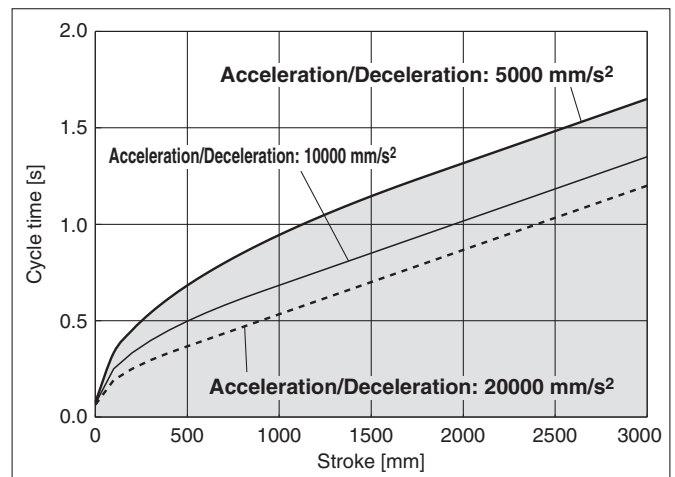
## Cycle Time Graph (Guide)

### LEJB40/Belt Drive



\* Maximum speed/acceleration/deceleration values graph for each stroke

### LEJB63/Belt Drive



LEFS  
LEFB

LEJS  
LEJB

LEL

LEM

LEY  
LEYG

LES  
LESH

LEPY  
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC□

LECS□

LECSS-T

LECYM  
LECYU

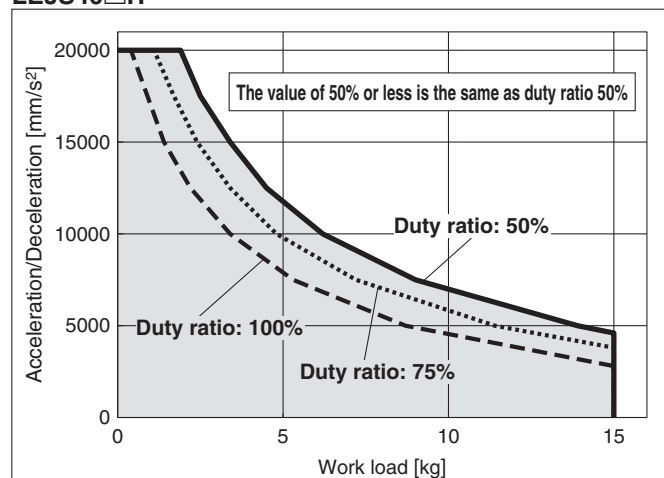
Motorless

LAT3

## Work Load–Acceleration/Deceleration Graph (Guide)

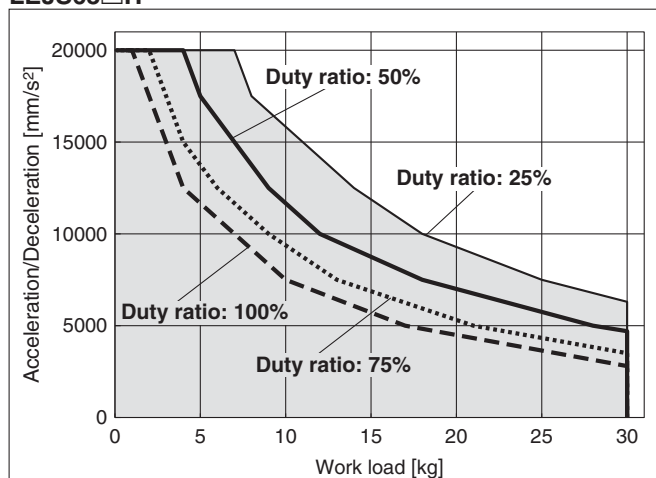
### LEJS40/Ball Screw Drive: Horizontal

#### LEJS40□H

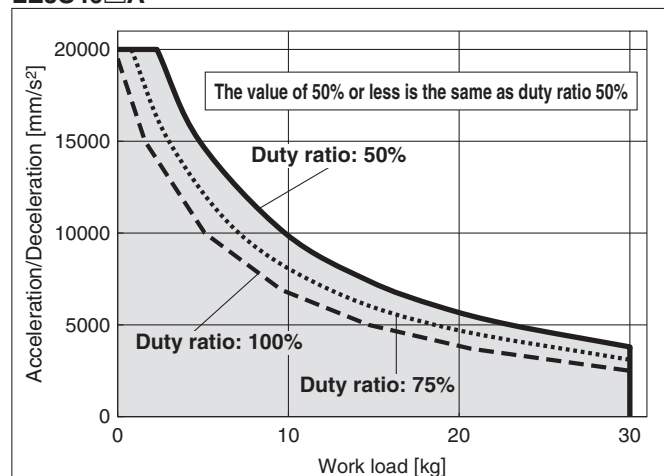


### LEJS63/Ball Screw Drive: Horizontal

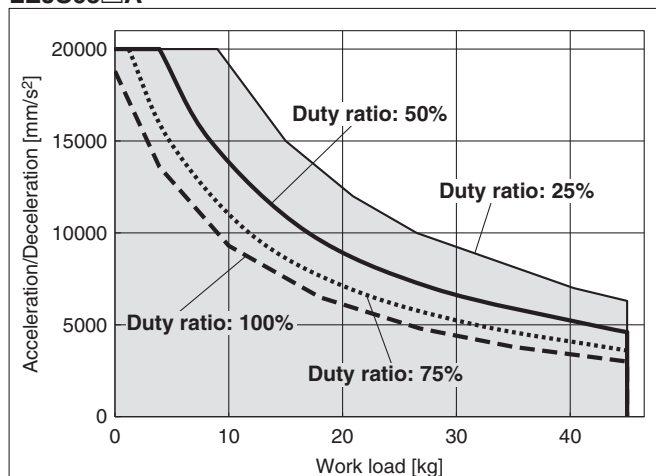
#### LEJS63□H



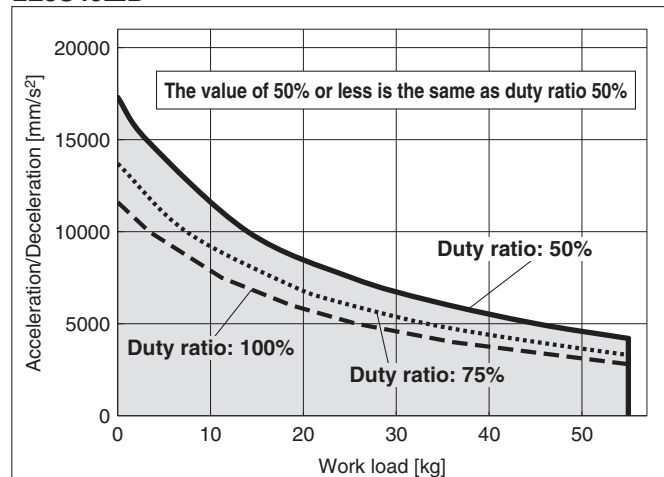
#### LEJS40□A



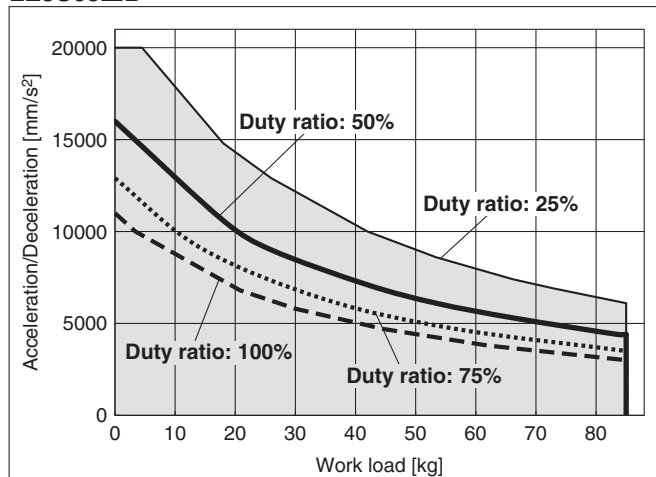
#### LEJS63□A



#### LEJS40□B



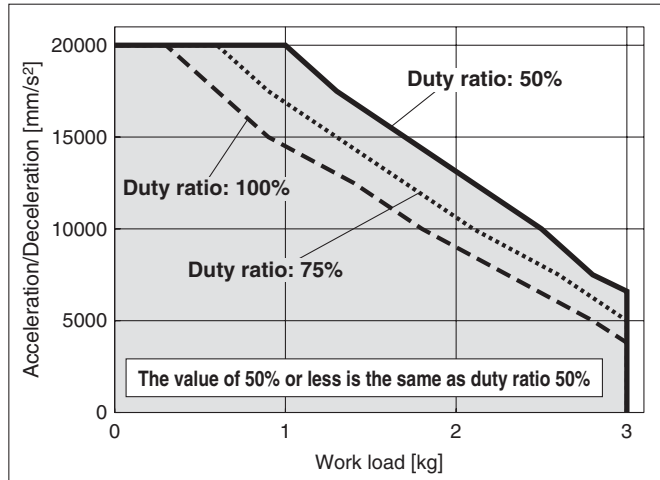
#### LEJS63□B



## Work Load–Acceleration/Deceleration Graph (Guide)

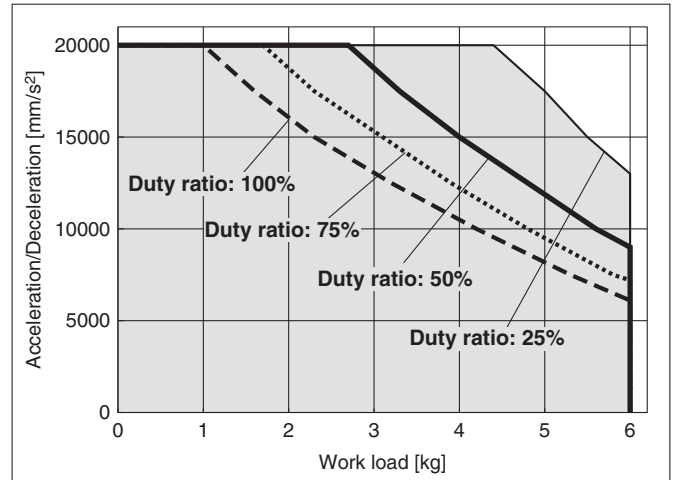
### LEJS40/Ball Screw Drive: Vertical

#### LEJS40□H

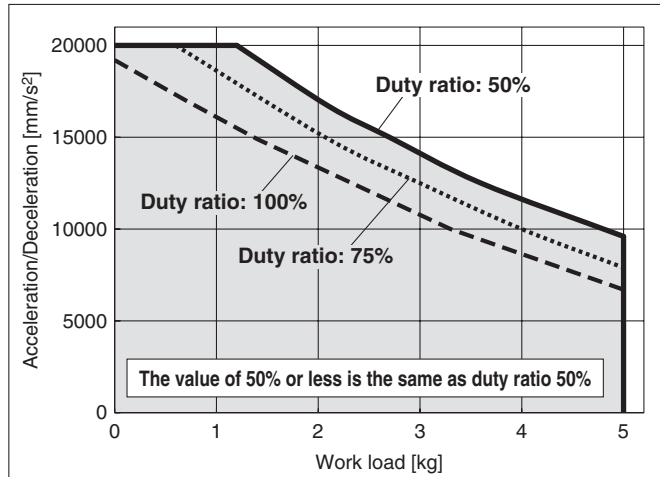


### LEJS63/Ball Screw Drive: Vertical

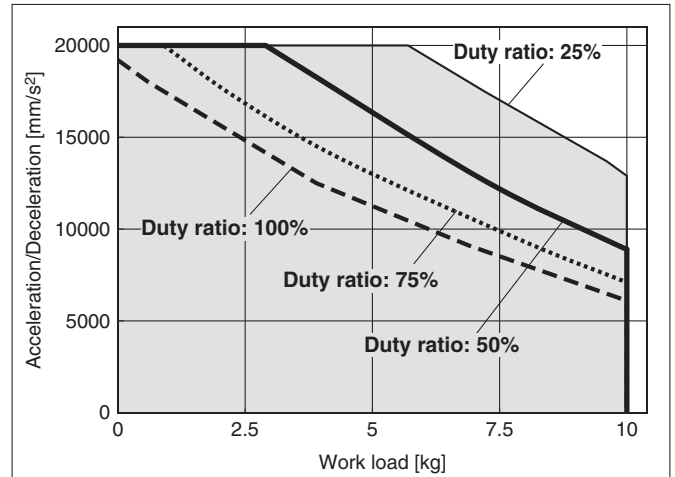
#### LEJS63□H



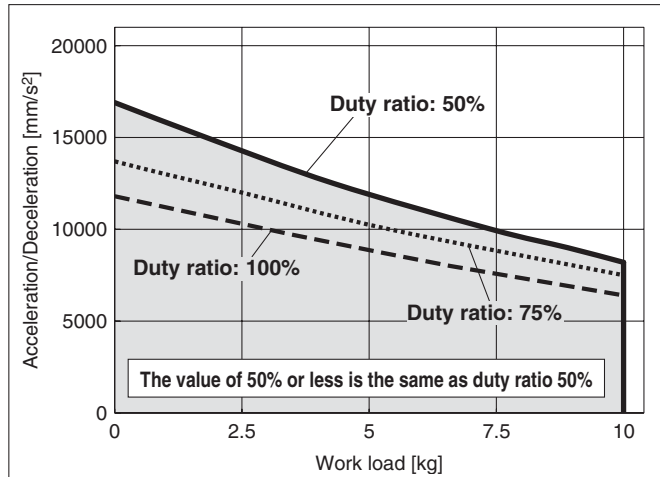
#### LEJS40□A



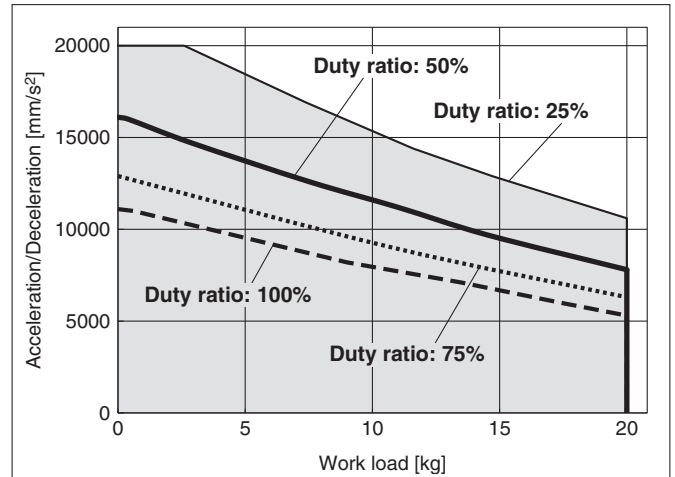
#### LEJS63□A



#### LEJS40□B



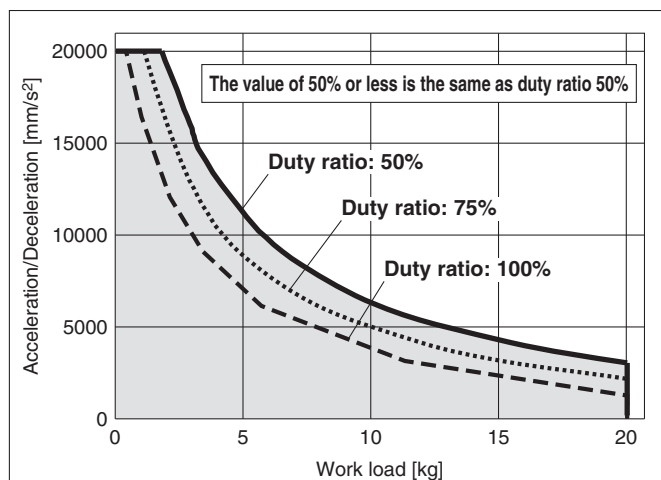
#### LEJS63□B



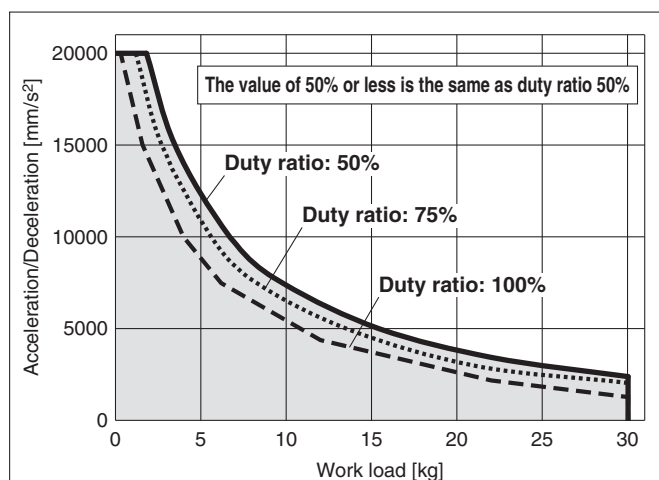
LEFS  
 LEJB  
 LEL  
 LEM  
 LEY  
 LEYG  
 LES  
 LESH  
 LEPY  
 LEPS  
 LER  
 LEH  
 LEY-X5  
 11-LEFS  
 11-LEJS  
 25A-  
 LEC□  
 LECSS-T  
 LECYU  
 Motorless  
 LAT3

## Work Load–Acceleration/Deceleration Graph (Guide)

### LEJB40/Belt Drive: Horizontal

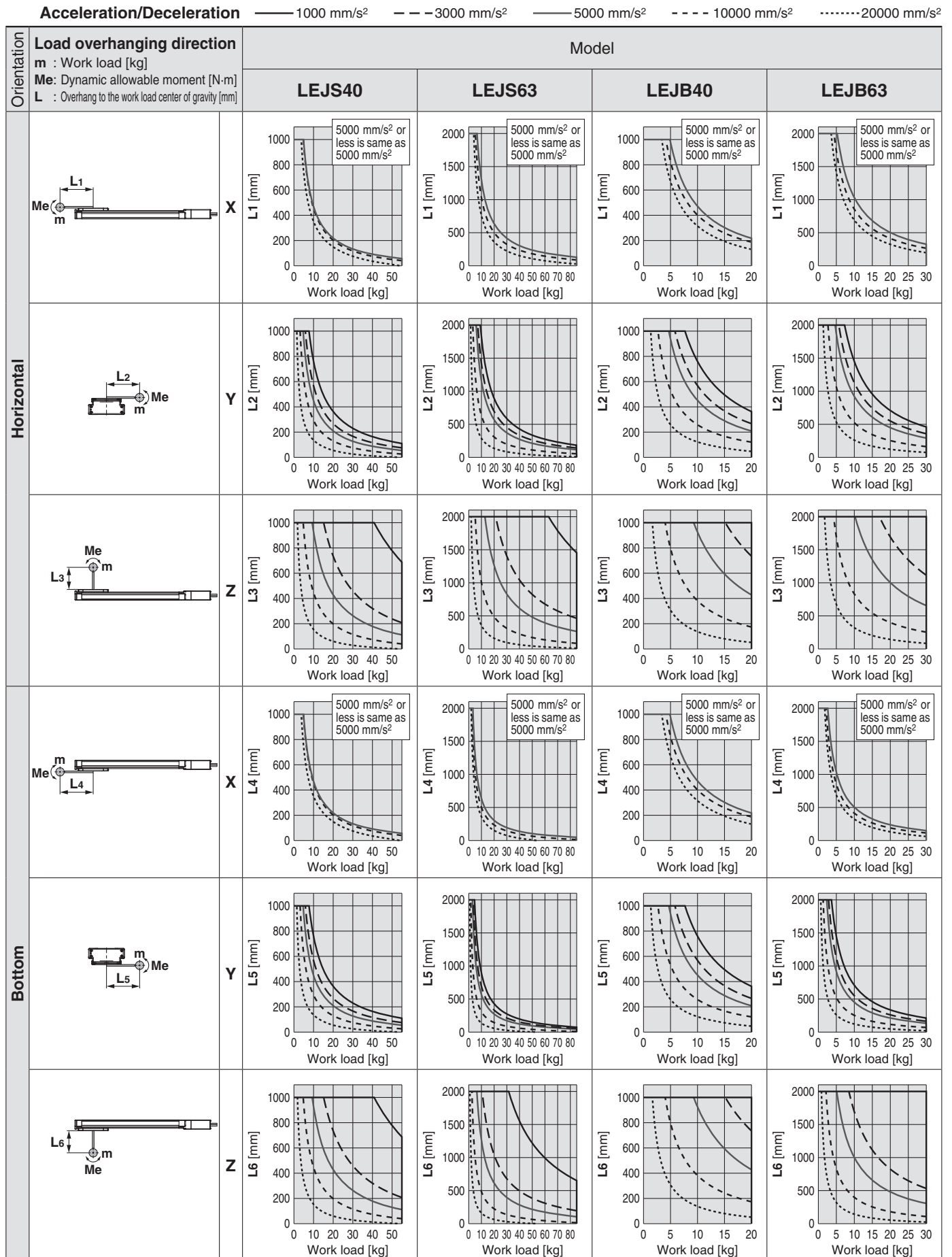


### LEJB63/Belt Drive: Horizontal



## Dynamic Allowable Moment

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



LEFS  
LEFB

LEJS  
LEJB

LEL

LEM

LEY  
LEYG

LES  
LESH

LEPY  
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC□

LECS□

LECS-T

LECYM  
LECYU

Motorless

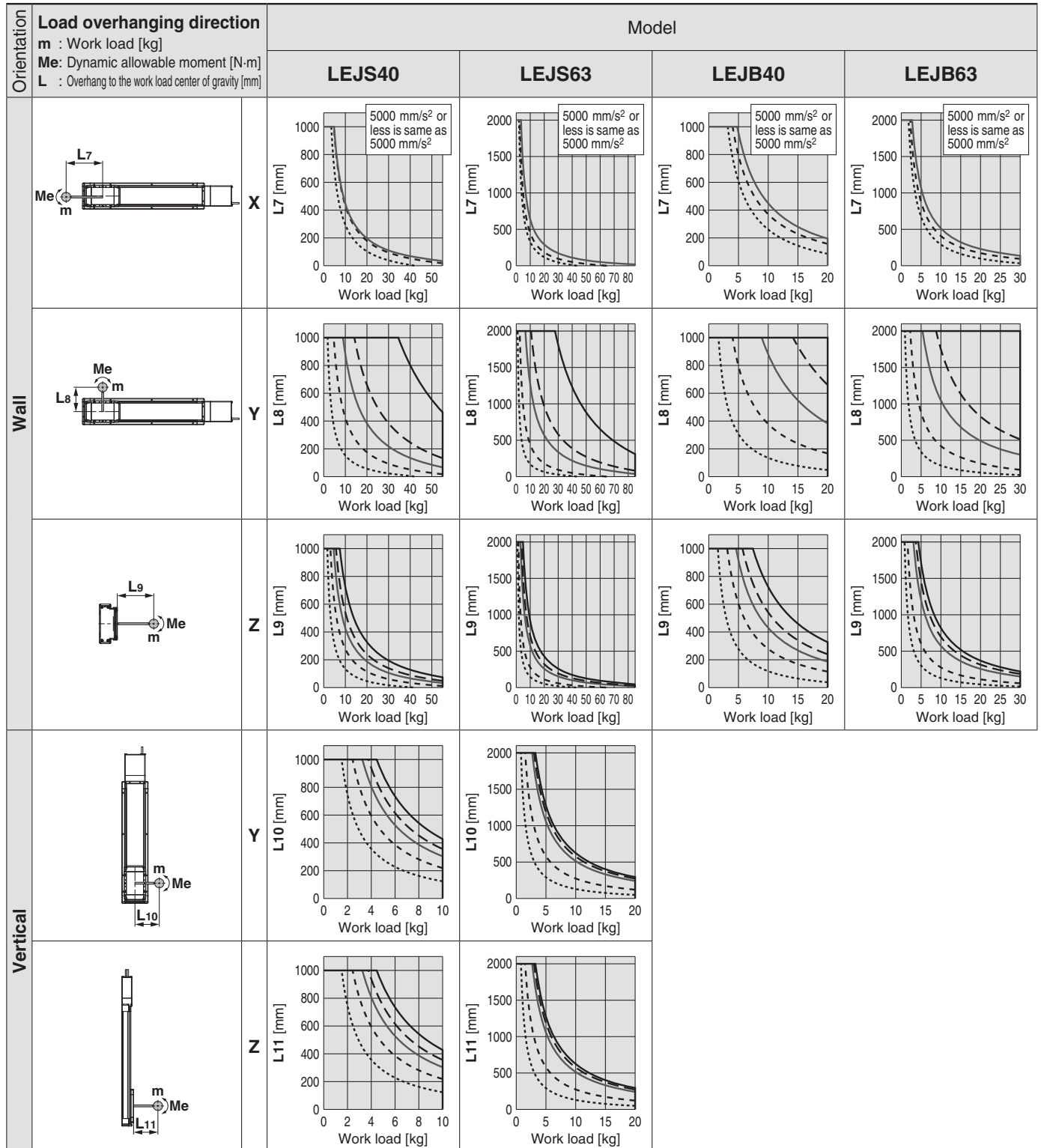
LAT3



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

## Dynamic Allowable Moment

Acceleration/Deceleration ——— 1000 mm/s<sup>2</sup> --- 3000 mm/s<sup>2</sup> ——— 5000 mm/s<sup>2</sup> - - - - 10000 mm/s<sup>2</sup> ..... 20000 mm/s<sup>2</sup>



## Calculation of Guide Load Factor

1. Decide operating conditions.

Model: LEJS/LEJB

Size: 40/63

Mounting orientation: Horizontal/Bottom/Wall/Vertical

Acceleration [mm/s<sup>2</sup>]: **a**

Work load [kg]: **m**

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

2. Select the target graph with reference to the model, size and mounting orientation.

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

4. Calculate the load factor for each direction.

$$\alpha x = Xc/Lx, \alpha y = Yc/Ly, \alpha z = Zc/Lz$$

5. Confirm the total of  $\alpha x$ ,  $\alpha y$  and  $\alpha z$  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

1. Operating conditions

Model: LEJS

Size: 40

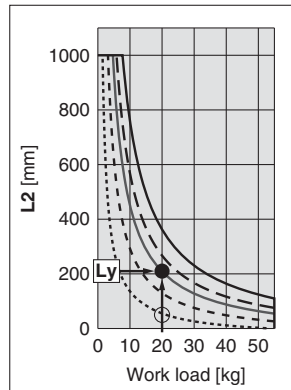
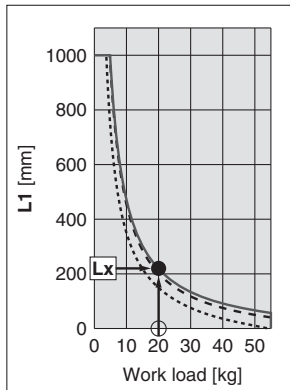
Mounting orientation: Horizontal

Acceleration [mm/s<sup>2</sup>]: 5000

Work load [kg]: 20

Work load center position [mm]: **Xc = 0, Yc = 50, Zc = 200**

2. Select the graph on page 118, top and left side first row.



3. **Lx = 220 mm, Ly = 210 mm, Lz = 430 mm**

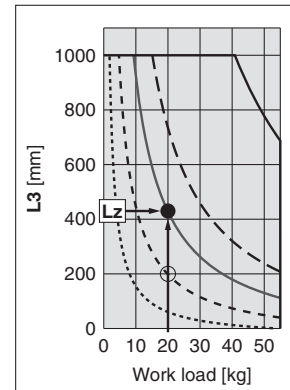
4. The load factor for each direction can be obtained as follows.

$$\alpha x = 0/220 = 0$$

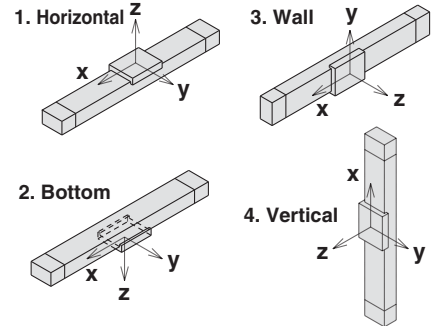
$$\alpha y = 50/210 = 0.24$$

$$\alpha z = 200/430 = 0.47$$

5.  $\alpha x + \alpha y + \alpha z = 0.71 \leq 1$



### Mounting orientation



LEJS  
LEJB

LEJ  
LEJB

LEJ

LEM

LEY  
LEYG

LES  
LESH

LEPY  
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC

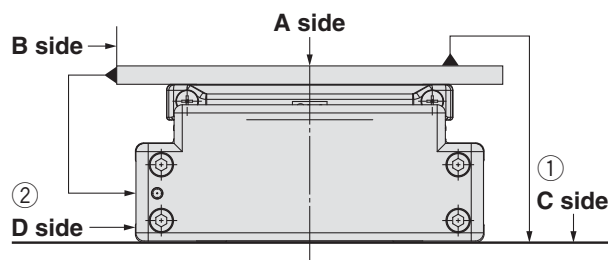
LECS

LECYM  
LECYU

Motorless

LAT3

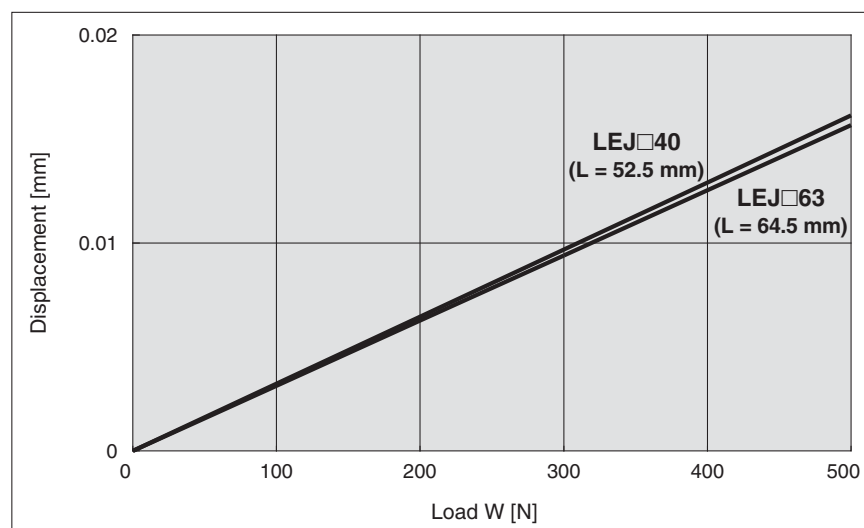
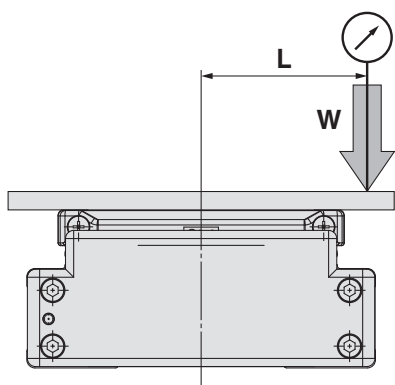
## Table Accuracy (Reference Value)



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.)

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

# Electric Actuator/High Rigidity Slider Type Ball Screw Drive

## Series LEJS



Clean Room Specification ▶ Page 524

Secondary Battery Compatible ▶ Page 532

Motorless Type ▶ Page 815



SSCNET III/H Compatible ▶ Page 625

MECHATROLINK Compatible ▶ Page 703

### How to Order

LEJS **H** **40** **S2** **A** - **500** - - - - -

1 2 3 4 5 6 7 8 9 10

#### 1 Accuracy

Nil	Basic type
H	High precision type

#### 2 Size

40
63

#### 3 Motor type<sup>\*1</sup>

Symbol	Type	Output [W]	Actuator size	Compatible driver <sup>*2</sup>
S2	AC servo motor (Incremental encoder)	100	40	LECSA□-S1
S3	AC servo motor (Incremental encoder)	200	63	LECSA□-S3
S6	AC servo motor (Absolute encoder)	100	40	LECSB□-S5 LECSC□-S5 LECSS□-S5
S7	AC servo motor (Absolute encoder)	200	63	LECSB□-S7 LECSC□-S7 LECSS□-S7

\*1 For motor type S2 and S6, the compatible driver part number suffixes are S1 and S5 respectively.

\*2 For details of the driver, refer to page 598.

#### 4 Lead [mm]

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

#### 5 Stroke [mm]<sup>\*3</sup>

200
to
1500

\*3 Refer to the applicable stroke table for details.

#### 6 Motor option

Nil	Without option
B	With lock

#### 7 Cable type<sup>\*5, \*6, \*7</sup>

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

\*6 The motor and encoder cables are included. (The lock cable is included when the motor with lock option is selected.)

\*7 Standard cable entry direction is "(A) Axis side". (Refer to page 614 for details.)

#### 8 Cable length [m]<sup>\*5, \*8</sup>

Nil	Without cable
2	2 m
5	5 m
A	10 m

\*8 The length of the motor, encoder and lock cables are the same.

#### 9 Driver type<sup>\*5</sup>

	Compatible driver	Power supply voltage [V]
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

#### 10 I/O cable length [m]<sup>\*9</sup>

Nil	Without cable
H	Without cable (Connector only)
1	1.5

\*9 When "Without driver" is selected for driver type, only "Nil: Without cable" can be selected. Refer to page 615 if I/O cable is required. (Options are shown on page 615.)

#### Applicable Stroke Table<sup>\*4</sup>

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

\*4 Please consult with SMC for non-standard strokes as they are produced as special orders.

\*5 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

#### Compatible Driver

For auto switches, refer to pages 133 to 135.

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	—
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)			
Reference page	Page 598			



## Specifications

### AC Servo Motor (100/200 W)

Model			LEJS40S <sup>2</sup> <sub>6</sub>			LEJS63S <sup>3</sup> <sub>7</sub>			
Actuator specifications	Stroke [mm] <sup>Note 1)</sup>		200, 300, 400, 500, 600, 700, 800 900, 1000, 1200			300, 400, 500, 600, 700, 800, 900 1000, 1200, 1500			
	Work load [kg] <sup>Note 2)</sup>		Horizontal	15	30	55	30	45	85
			Vertical	3	5	10	6	10	20
	Speed <sup>Note 3)</sup> [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 <sup>2</sup> ]		20000 (Refer to pages 115 and 116 for limit according to work load and duty ratio.)						
	Positioning repeatability [mm]		Basic type	±0.02					
			High precision type	±0.01					
	Lost motion [mm] <sup>Note 4)</sup>		Basic type	0.1 or less					
			High precision type	0.05 or less					
Lead [mm]		24	16	8	30	20	10		
Impact/Vibration resistance [m/s <sup>2</sup> ] <sup>Note 5)</sup>		50/20							
Actuation type		Ball screw							
Guide type		Linear guide							
Operating temperature range [°C]		5 to 40							
Operating humidity range [%RH]		90 or less (No condensation)							
Regeneration option		May be required depending on speed and work load. (Refer to page 112.)							
Electric specifications	Motor output [W]/Size [mm]		100/□40			200/□60			
	Motor type		AC servo motor (100/200 VAC)						
	Encoder		Motor type S2, S3: Incremental 17-bit encoder (Resolution: 131072 p/rev) Motor type S6, S7: Absolute 18-bit encoder (Resolution: 262144 p/rev)						
	Power consumption [W] <sup>Note 6)</sup>		Horizontal	65			80		
			Vertical	165			235		
	Standby power consumption when operating [W] <sup>Note 7)</sup>		Horizontal	2			2		
			Vertical	10			12		
Max. instantaneous power consumption [W] <sup>Note 8)</sup>		445			725				
Lock unit specifications	Type <sup>Note 9)</sup>		Non-magnetizing lock						
	Holding force [N]		67	101	203	220	330	660	
	Power consumption at 20°C [W] <sup>Note 10)</sup>		6.3			7.9			
	Rated voltage [V]		24 VDC <sup>0</sup> <sub>-10%</sub>						

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 112.

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.

Note 11) Sensor magnet position is located in the table center. For detailed dimensions, refer to "Auto Switch Mounting Position" on page 133.

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. (LEJS40/Manufacturable stroke range: 200 to 1200 mm, LEJS63/Manufacturable stroke range: 300 to 1500 mm)

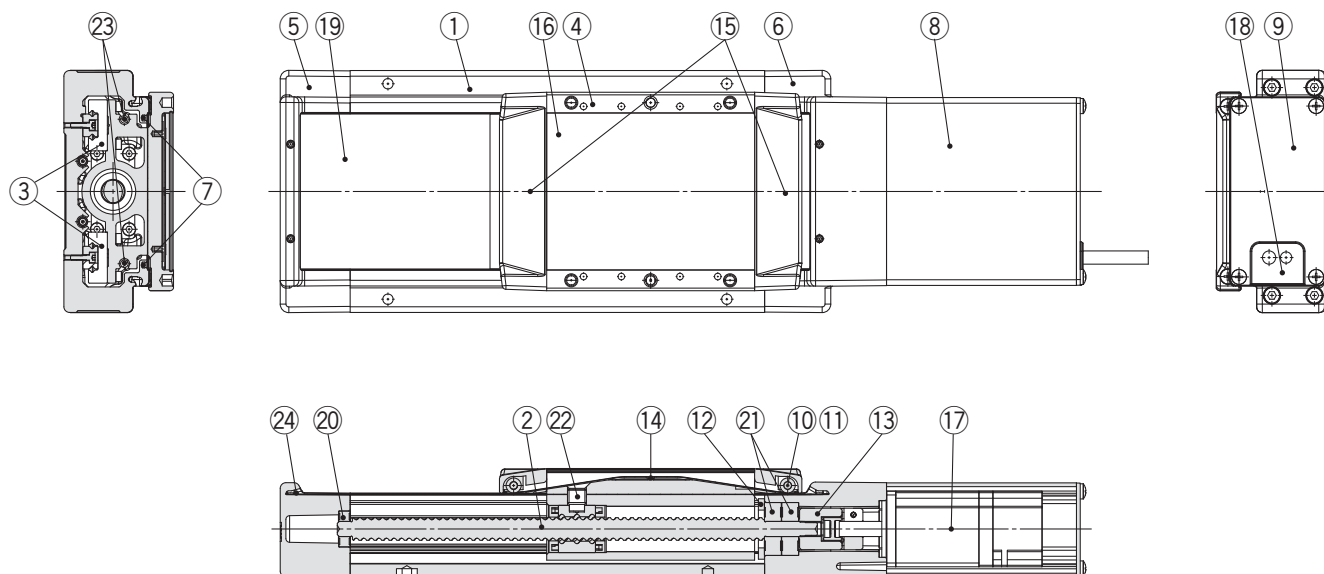
## Weight

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]	0.2 (Incremental encoder)/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]	0.4 (Incremental encoder)/0.7 (Absolute encoder)									

### Construction



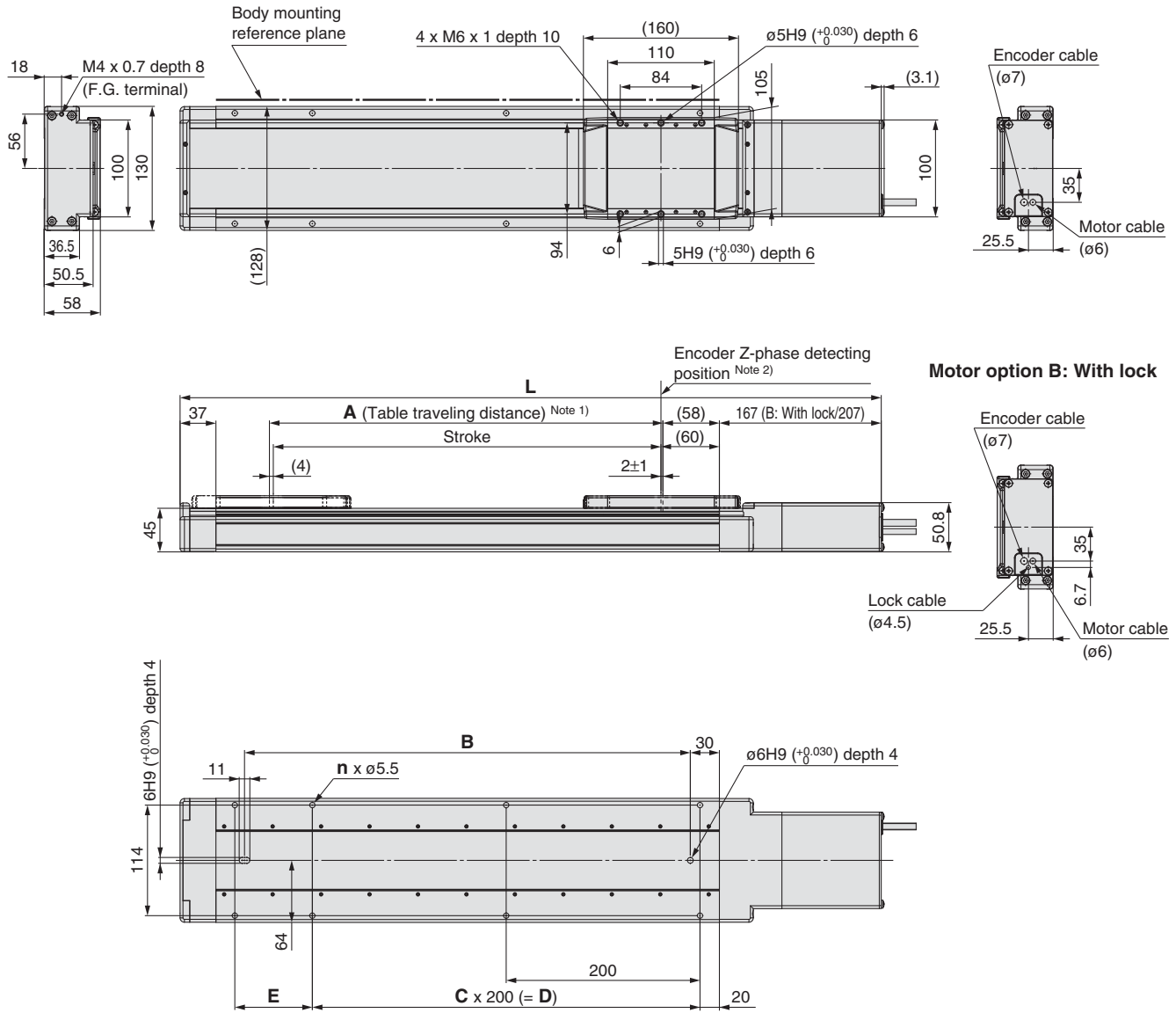
### Component Parts

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

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

## 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.

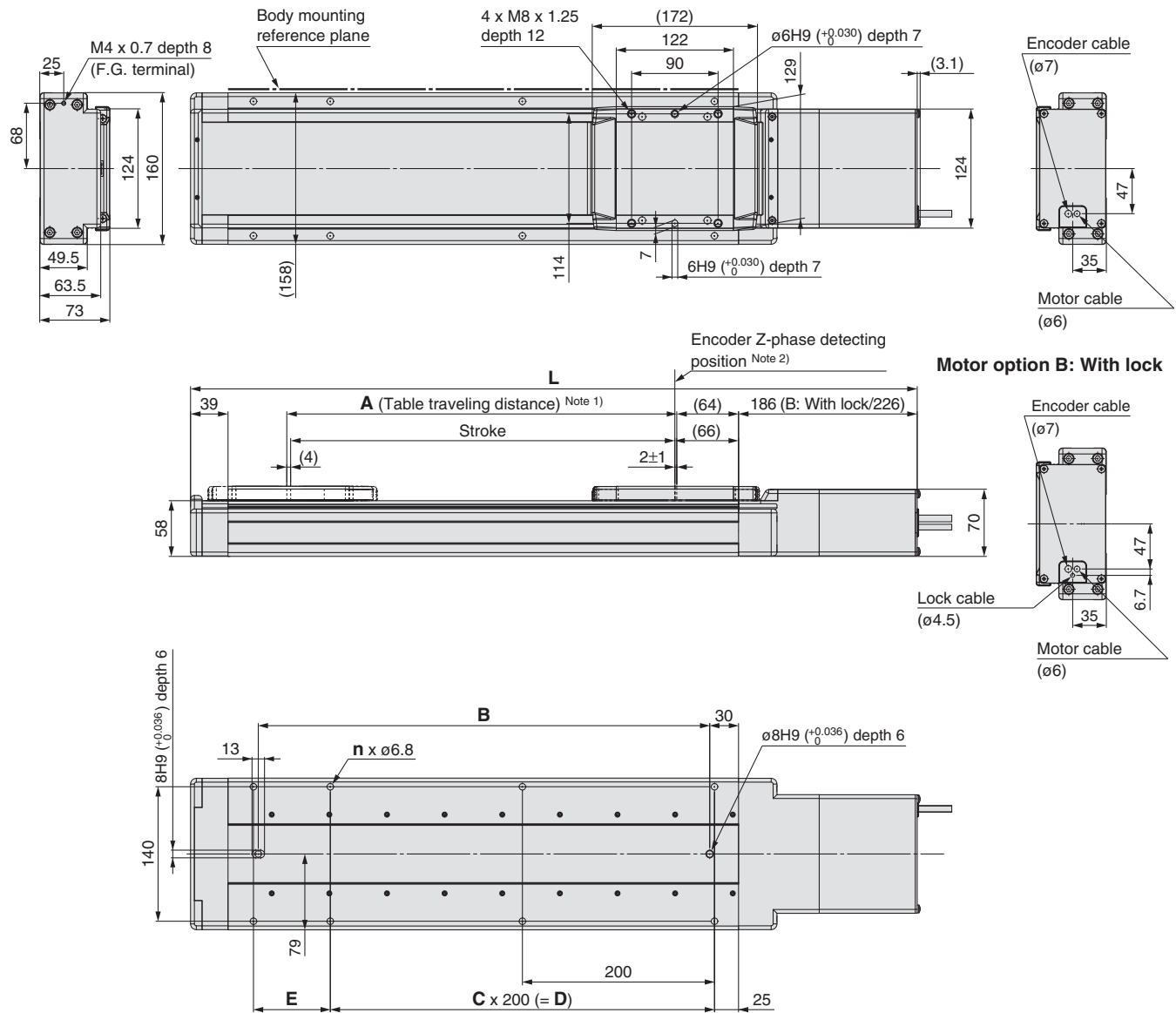
Note 2) The Z-phase first detecting position from the stroke end of the motor side.

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

Model	L		A	B	n	C	D	E
	Without lock	With lock						
LEJS40S□□-200□-□□□□	523.5	563.5	206	260	6	1	200	80
LEJS40S□□-300□-□□□□	623.5	663.5	306	360	6	1	200	180
LEJS40S□□-400□-□□□□	723.5	763.5	406	460	8	2	400	80
LEJS40S□□-500□-□□□□	823.5	863.5	506	560	8	2	400	180
LEJS40S□□-600□-□□□□	923.5	963.5	606	660	10	3	600	80
LEJS40S□□-700□-□□□□	1023.5	1063.5	706	760	10	3	600	180
LEJS40S□□-800□-□□□□	1123.5	1163.5	806	860	12	4	800	80
LEJS40S□□-900□-□□□□	1223.5	1263.5	906	960	12	4	800	180
LEJS40S□□-1000□-□□□□	1323.5	1363.5	1006	1060	14	5	1000	80
LEJS40S□□-1200□-□□□□	1523.5	1563.5	1206	1260	16	6	1200	80

### 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						
LEJS63S□□-300□-□□□□	656.5	696.5	306	370	6	1	200	180
LEJS63S□□-400□-□□□□	756.5	796.5	406	470	8	2	400	80
LEJS63S□□-500□-□□□□	856.5	896.5	506	570	8	2	400	180
LEJS63S□□-600□-□□□□	956.5	996.5	606	670	10	3	600	80
LEJS63S□□-700□-□□□□	1056.5	1096.5	706	770	10	3	600	180
LEJS63S□□-800□-□□□□	1156.5	1196.5	806	870	12	4	800	80
LEJS63S□□-900□-□□□□	1256.5	1296.5	906	970	12	4	800	180
LEJS63S□□-1000□-□□□□	1356.5	1396.5	1006	1070	14	5	1000	80
LEJS63S□□-1200□-□□□□	1556.5	1596.5	1206	1270	16	6	1200	80
LEJS63S□□-1500□-□□□□	1856.5	1896.5	1506	1570	18	7	1400	180

# Electric Actuator/High Rigidity Slider Type Belt Drive

## Series LEJB



SSCNET III/H Compatible ▶ Page 626

MECHATROLINK Compatible ▶ Page 708



RoHS

### How to Order

LEJB **40** **S2** **T** - **500** - - - - -

1 2 3 4 5 6 7 8 9

#### 1 Size

40
63

#### 2 Motor type\*1

Symbol	Type	Output [W]	Actuator size	Compatible driver
<b>S2</b>	AC servo motor (Incremental encoder)	100	40	LECSA□-S1
<b>S3</b>	AC servo motor (Incremental encoder)	200	63	LECSA□-S3
<b>S6</b>	AC servo motor (Absolute encoder)	100	40	LECSB□-S5 LECSC□-S5 LECSS□-S5
<b>S7</b>	AC servo motor (Absolute encoder)	200	63	LECSB□-S7 LECSC□-S7 LECSS□-S7

\*1 For motor type S2 and S6, the compatible driver part number suffixes are S1 and S5 respectively.

#### 3 Lead [mm]

Symbol	LEJB40	LEJB63
<b>T</b>	27	42

#### 4 Stroke [mm]\*2

200
to
3000

\*2 Refer to the applicable stroke table for details.

#### 5 Motor option

<b>Nil</b>	Without option
<b>B</b>	With lock

#### 6 Cable type\*4, \*5, \*6

<b>Nil</b>	Without cable
<b>S</b>	Standard cable
<b>R</b>	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.)

\*6 Standard cable entry direction is "(A) Axis side". (Refer to page 614 for details.)

#### 7 Cable length [m]\*4, \*7

<b>Nil</b>	Without cable
<b>2</b>	2 m
<b>5</b>	5 m
<b>A</b>	10 m

\*7 The length of the motor, encoder and lock cables are the same.

#### 8 Driver type\*4

	Compatible driver	Power supply voltage [V]
<b>Nil</b>	Without driver	—
<b>A1</b>	LECSA1	100 to 120
<b>A2</b>	LECSA2	200 to 230
<b>B1</b>	LECSB1	100 to 120
<b>B2</b>	LECSB2	200 to 230
<b>C1</b>	LECSC1	100 to 120
<b>C2</b>	LECSC2	200 to 230
<b>S1</b>	LECSS1	100 to 120
<b>S2</b>	LECSS2	200 to 230

#### 9 I/O cable length [m]\*8

<b>Nil</b>	Without cable
<b>H</b>	Without cable (Connector only)
<b>1</b>	1.5

\*8 When "Without driver" is selected for driver type, only "Nil: Without cable" can be selected. Refer to page 615 if I/O cable is required. (Options are shown on page 615.)

#### Applicable Stroke Table\*3

Model	Stroke [mm]	200	300	400	500	600	700	800	900	1000	1200	1500	2000	3000
<b>LEJB40</b>	●	●	●	●	●	●	●	●	●	●	●	●	●	—
<b>LEJB63</b>	—	●	●	●	●	●	●	●	●	●	●	●	●	●

\*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.

Example)

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

S2 : Standard cable (2 m)

Nil : Without cable and driver

For auto switches, refer to pages 133 to 135.

#### Compatible Driver

Driver type	Pulse input type /Positioning type	Pulse input type	CC-Link direct input type	SSCNET III type
<b>Series</b>	<b>LECSA</b>	<b>LECSB</b>	<b>LECSC</b>	<b>LECSS</b>
<b>Number of point tables</b>	Up to 7	—	Up to 255	—
<b>Pulse input</b>	○	○	—	—
<b>Applicable network</b>	—	—	CC-Link	SSCNET III
<b>Control encoder</b>	Incremental 17-bit encoder	Absolute 18-bit encoder	Absolute 18-bit encoder	Absolute 18-bit encoder
<b>Communication function</b>	USB communication	USB communication, RS422 communication	USB communication, RS422 communication	USB communication
<b>Power supply voltage [V]</b>	100 to 120 VAC (50/60 Hz) 200 to 230 VAC (50/60 Hz)			
<b>Reference page</b>	Page 598			



## Specifications

### AC Servo Motor

Model			LEJB40S <sub>6</sub> <sup>2</sup>	LEJB63S <sub>7</sub> <sup>3</sup>
Actuator specifications	Stroke [mm] <sup>Note 1)</sup>		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	20 (If the stroke exceeds 1000 mm: 10)	30
	Speed [mm/s] <sup>Note 2)</sup>		2000	3000
	Max. acceleration/deceleration [mm/s <sup>2</sup> ]		20000 (Refer to page 117 for limit according to work load and duty ratio.)	
	Positioning repeatability [mm]		±0.04	
	Lost motion [mm] <sup>Note 3)</sup>		0.1 or less	
	Lead [mm]		27	42
	Impact/Vibration resistance [m/s <sup>2</sup> ] <sup>Note 4)</sup>		50/20	
	Actuation type		Belt	
	Guide type		Linear guide	
	Allowable external force [N]		20	
	Operating temperature range [°C]		5 to 40	
	Operating humidity range [%RH]		90 or less (No condensation)	
	Regeneration option		May be required depending on speed and work load. (Refer to page 112.)	
Electric specifications	Motor output [W]/Size [mm]		100/□40	200/□60
	Motor type		AC servo motor (100/200 VAC)	
	Encoder		Motor type S2, S3: Incremental 17-bit encoder (Resolution: 131072 p/rev) Motor type S6, S7: Absolute 18-bit encoder (Resolution: 262144 p/rev)	
	Power consumption [W] <sup>Note 5)</sup>	Horizontal	65	190
		Vertical	—	—
	Standby power consumption when operating [W] <sup>Note 6)</sup>	Horizontal	2	2
		Vertical	—	—
	Max. instantaneous power consumption [W] <sup>Note 7)</sup>		445	725
Lock unit specifications	Type <sup>Note 8)</sup>		Non-magnetizing lock	
	Holding force [N]		60	157
	Power consumption at 20°C [W] <sup>Note 9)</sup>		6.3	7.9
	Rated voltage [V]		24 VDC <sup>0</sup> <sub>-10%</sub>	

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 112.

Note 3) A reference value for correcting an error in reciprocal operation.

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.

Note 10) Sensor magnet position is located in the table center.

For detailed dimensions, refer to "Auto Switch Mounting Position" on page 133.

Note 11) 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 12) 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)

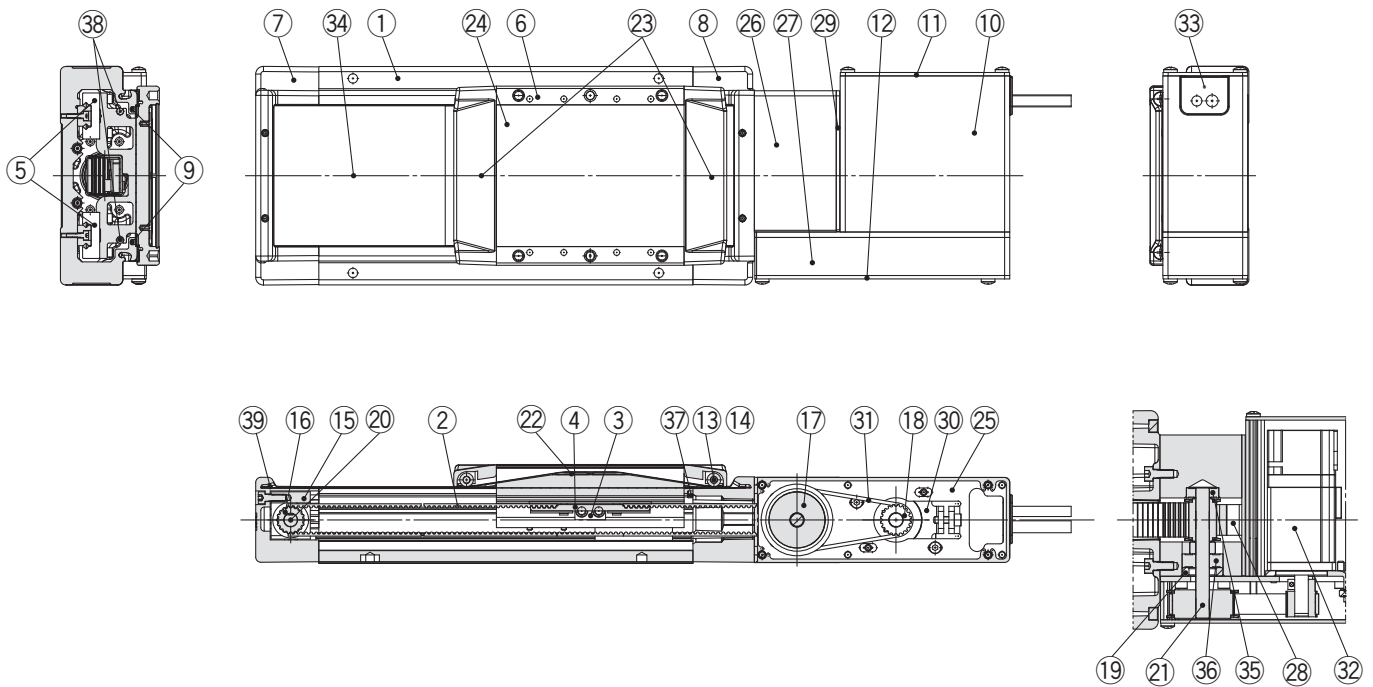
## Weight

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]	0.2 (Incremental encoder)/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]	0.4 (Incremental encoder)/0.7 (Absolute encoder)											

## Construction



Motor details

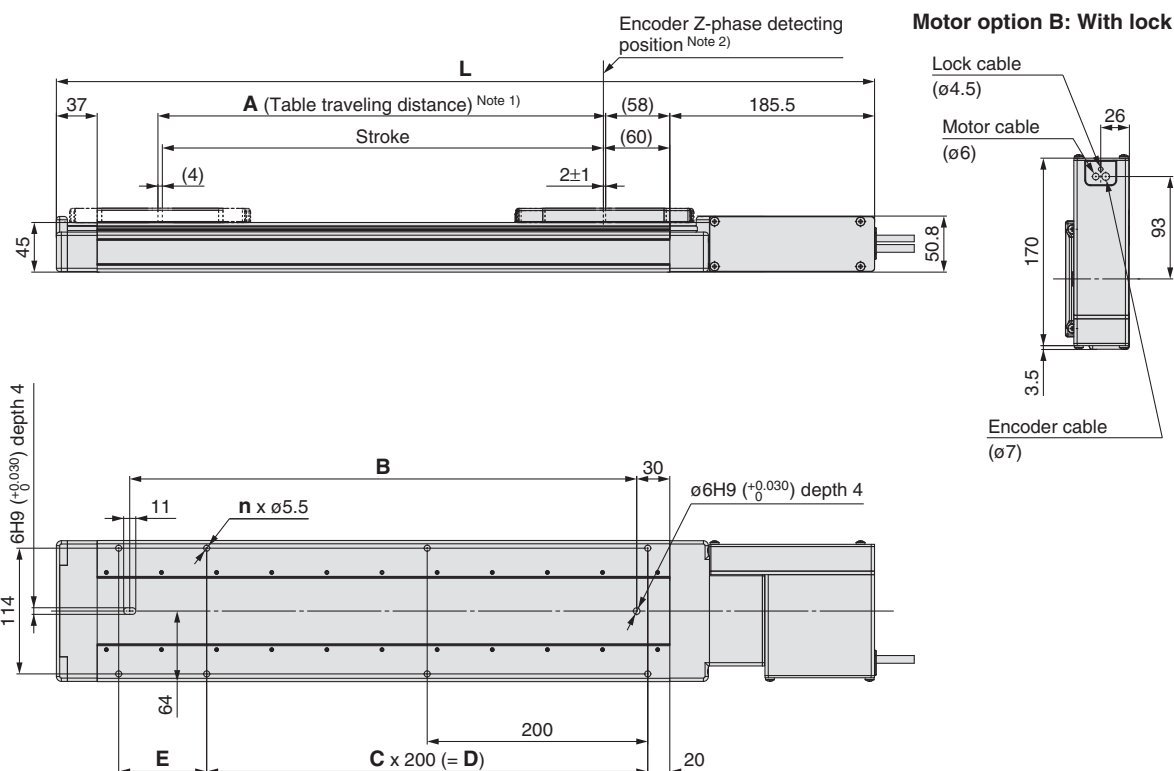
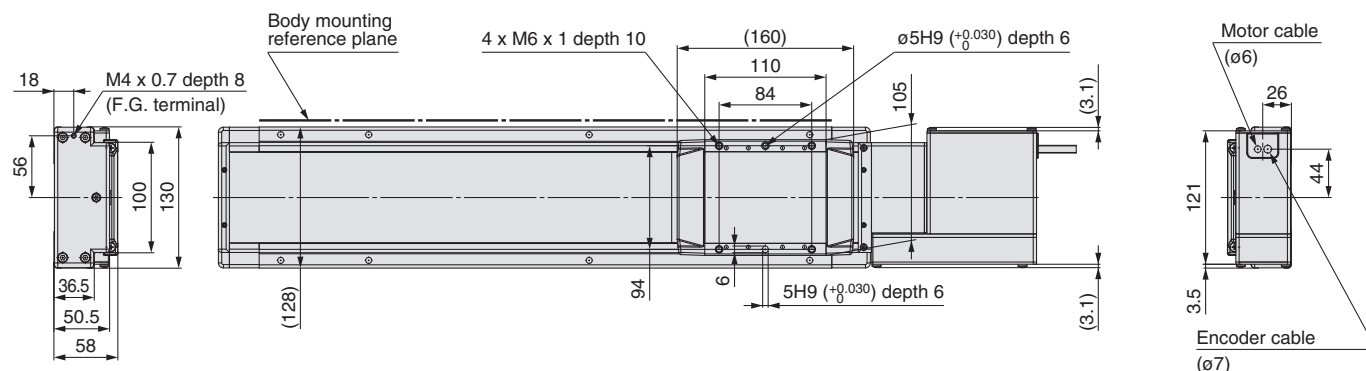
## Component Parts

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	
20	Pulley shaft A	Stainless steel	

No.	Description	Material	Note
21	Pulley shaft B	Stainless steel	
22	Table cap	Synthetic resin	
23	Seal band holder	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	—	
39	Seal band stopper	Stainless steel	

### 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.

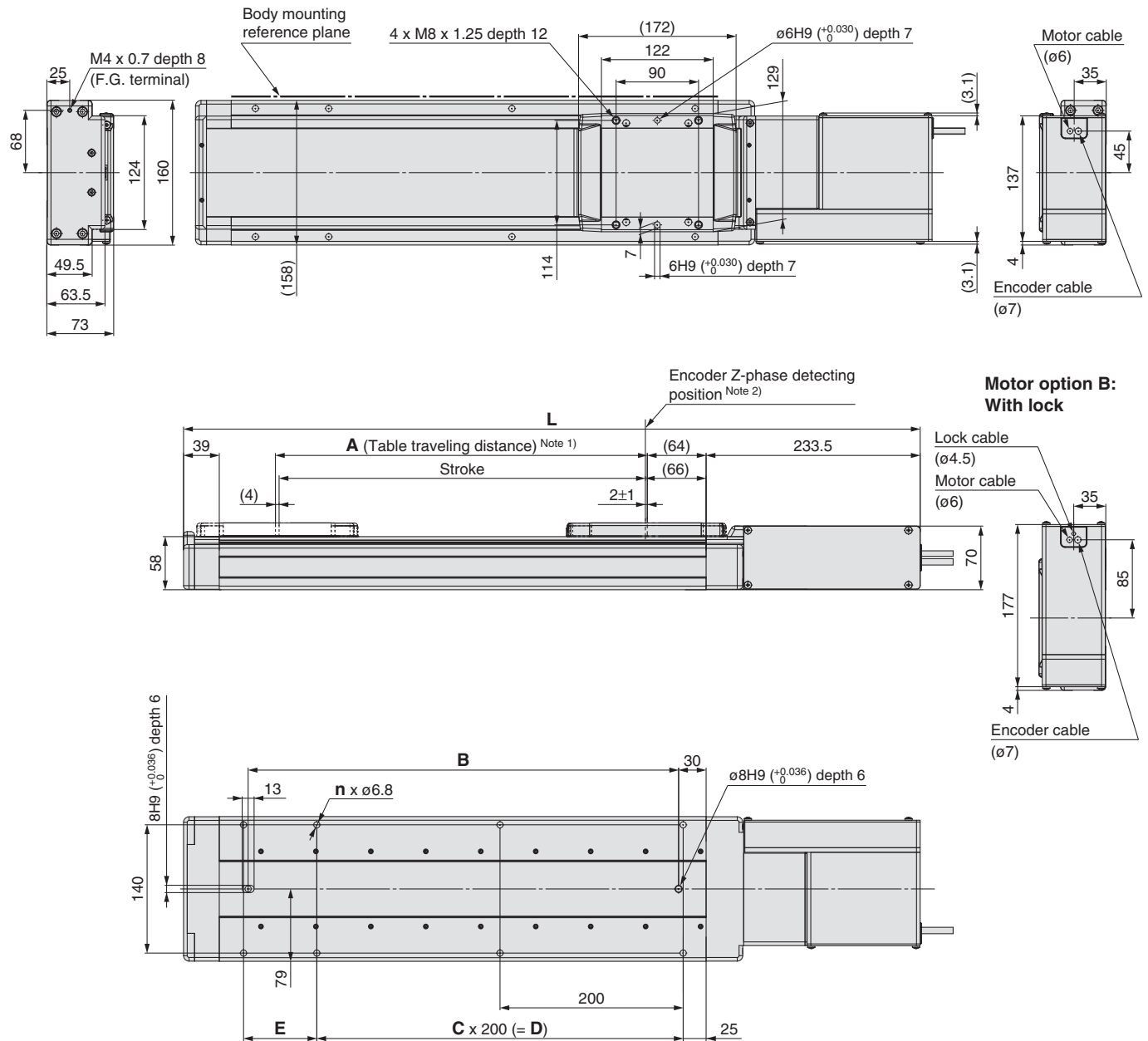
Note 2) The Z-phase first detecting position from the stroke end of the motor side.

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

Model	L	A	B	n	C	D	E
LEJB40S□□-200□-□□□□	542	206	260	6	1	200	80
LEJB40S□□-300□-□□□□	642	306	360	6	1	200	180
LEJB40S□□-400□-□□□□	742	406	460	8	2	400	80
LEJB40S□□-500□-□□□□	842	506	560	8	2	400	180
LEJB40S□□-600□-□□□□	942	606	660	10	3	600	80
LEJB40S□□-700□-□□□□	1042	706	760	10	3	600	180
LEJB40S□□-800□-□□□□	1142	806	860	12	4	800	80
LEJB40S□□-900□-□□□□	1242	906	960	12	4	800	180
LEJB40S□□-1000□-□□□□	1342	1006	1060	14	5	1000	80
LEJB40S□□-1200□-□□□□	1542	1206	1260	16	6	1200	80
LEJB40S□□-1500□-□□□□	1842	1506	1560	18	7	1400	180
LEJB40S□□-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.

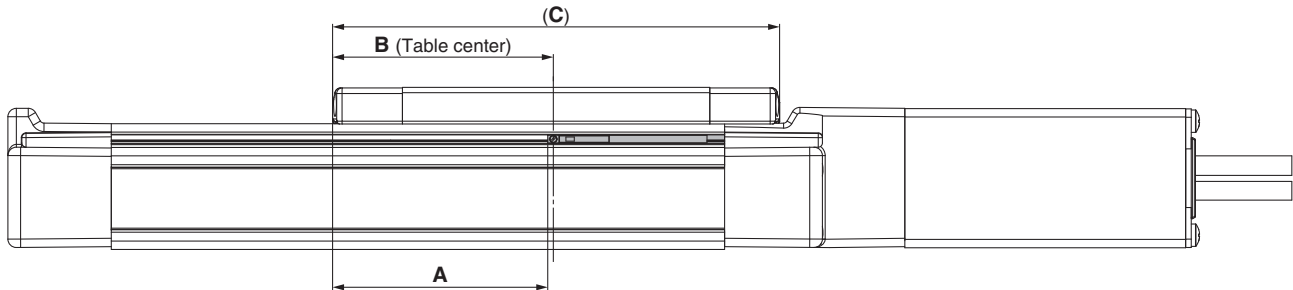
Note 3) Auto switch magnet is located in the table center.

Model	L	A	B	n	C	D	E
LEJB63S□□-300□-□□□□	704	306	370	6	1	200	180
LEJB63S□□-400□-□□□□	804	406	470	8	2	400	80
LEJB63S□□-500□-□□□□	904	506	570	8	2	400	180
LEJB63S□□-600□-□□□□	1004	606	670	10	3	600	80
LEJB63S□□-700□-□□□□	1104	706	770	10	3	600	180
LEJB63S□□-800□-□□□□	1204	806	870	12	4	800	80
LEJB63S□□-900□-□□□□	1304	906	970	12	4	800	180
LEJB63S□□-1000□-□□□□	1404	1006	1070	14	5	1000	80
LEJB63S□□-1200□-□□□□	1604	1206	1270	16	6	1200	80
LEJB63S□□-1500□-□□□□	1904	1506	1570	18	7	1400	180
LEJB63S□□-2000□-□□□□	2404	2006	2070	24	10	2000	80
LEJB63S□□-3000□-□□□□	3404	3006	3070	34	15	3000	80

# Series LEJ

## Auto Switch Mounting

### Auto Switch Mounting Position



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

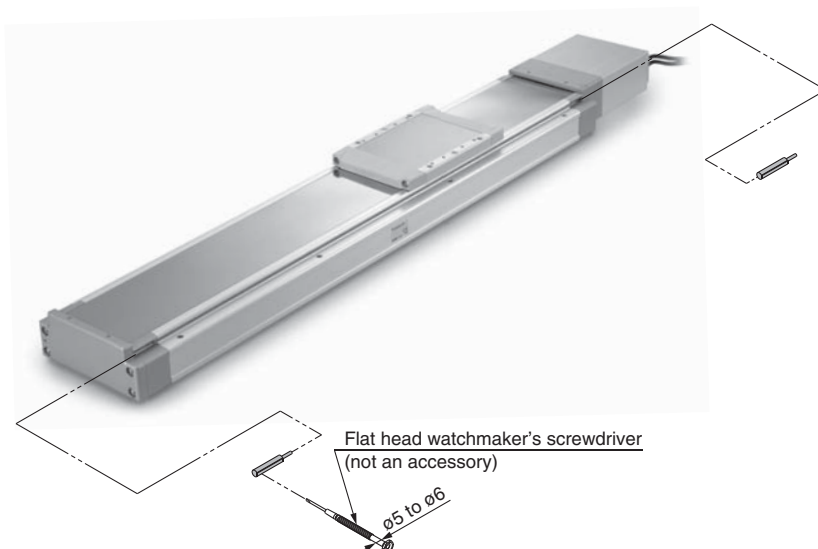
Note) The operating range is a guideline including hysteresis, not meant to be guaranteed. There may be large variations (as much as  $\pm 30\%$ ) depending on the ambient environment.

### 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 [N·m]

Auto switch model	Tightening torque
D-M9□(V) D-M9□W(V)	0.10 to 0.15



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)



RoHS

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					

## 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		2 cores (Brown/Blue)
	Outside diameter [mm]		ø0.9
Conductor	Effective area [mm <sup>2</sup> ]		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-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

## Grommet

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



## Caution

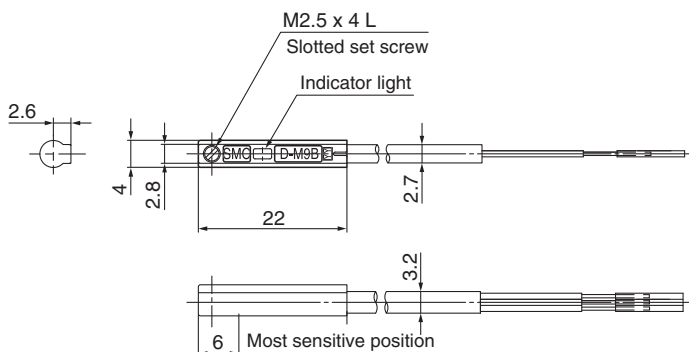
### Precautions

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.

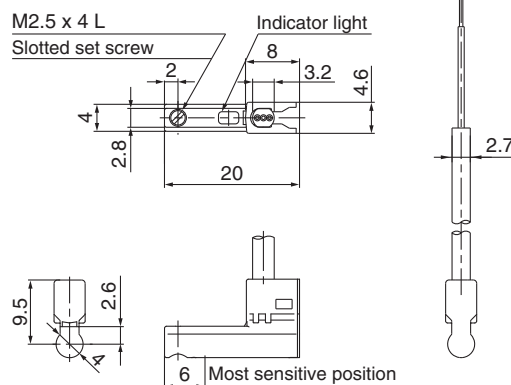
## Dimensions

[mm]

### D-M9□



### D-M9□V



LEFS  
LEJB

LEJS  
LEJB

LEL

LEM

LEY  
LEYG

LES  
LESH

LEPY  
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC□

LECS□

LECS-T

LECYM  
LECYU

Motorless

LAT3

# 2-Color Indication Solid State Auto Switch Direct Mounting Style

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



RoHS

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 former 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 [mm²]	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

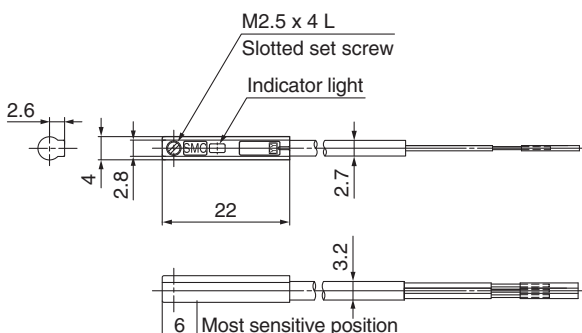
[g]

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

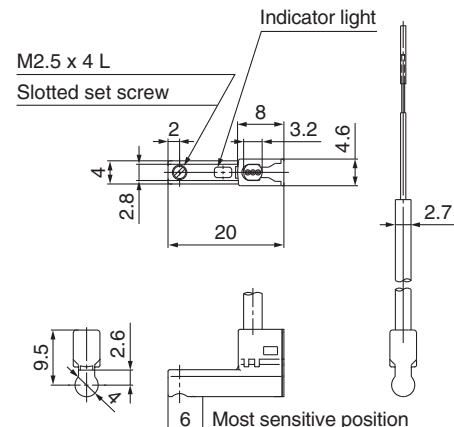
### Dimensions

[mm]

#### D-M9□W



#### D-M9□WV





# Series LEJ

## Electric Actuator/ Specific Product Precautions 1

Be sure to read this before handling. Refer to page 906 for Safety Instructions. For Electric Actuator Precautions, refer to pages 907 to 912, or “Handling Precautions for SMC Products” and the Operation Manual on SMC website, <http://www.smworld.com>

### Design

#### ⚠ Caution

##### 1. Do not apply a load in excess of the specification limits.

Select a suitable actuator by work load and allowable moment. If the product is used outside of the specification limits, the eccentric load applied to the guide will be excessive and have adverse effects such as 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 specification limits.

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 specification limits, 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 a thousand cycles.

##### 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 specification limits 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 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

LEFS  
LEFB

LEJS  
LEJB

LEL

LEM

LEY  
LEYG

LES  
LESH

LEPY  
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC

LECS

LECS-T

LECYM  
LECYU

Motorless

LAT3



# Series LEJ

## Electric Actuator/ Specific Product Precautions 2

Be sure to read this before handling. Refer to page 906 for Safety Instructions. For Electric Actuator Precautions, refer to pages 907 to 912, or “Handling Precautions for SMC Products” and the Operation Manual on SMC website, <http://www.smcworld.com>

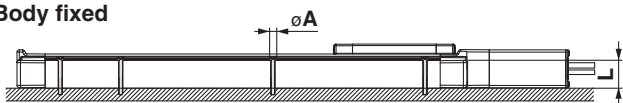
### Handling

#### ⚠ Caution

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

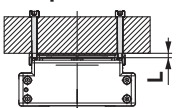
Tightening the screws with a higher torque than recommended may cause a malfunction, whilst the tightening with a lower torque can cause the displacement of the mounting position or in extreme conditions the actuator could become detached from its mounting position.

#### Body fixed



Model	Screw size	Max. tightening torque [N·m]	$\phi A$ [mm]	L [mm]
LEJ□40	M5	3.0	5.5	36.5
LEJ□63	M6	5.2	6.8	49.5

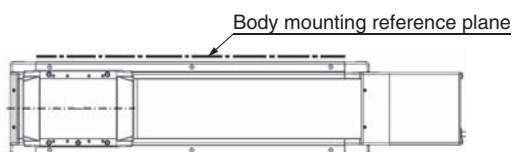
#### Workpiece fixed



Model	Screw size	Max. tightening torque [N·m]	L (Max. screw-in depth) [mm]
LEJ□40	M6 x 1	5.2	10
LEJ□63	M8 x 1.25	12.5	12

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

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, adjust response value of auto tuning of driver to be lower.  
During the first auto tuning noise may occur, the noise will stop when the tuning is complete.
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 round 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 first.

##### • 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