

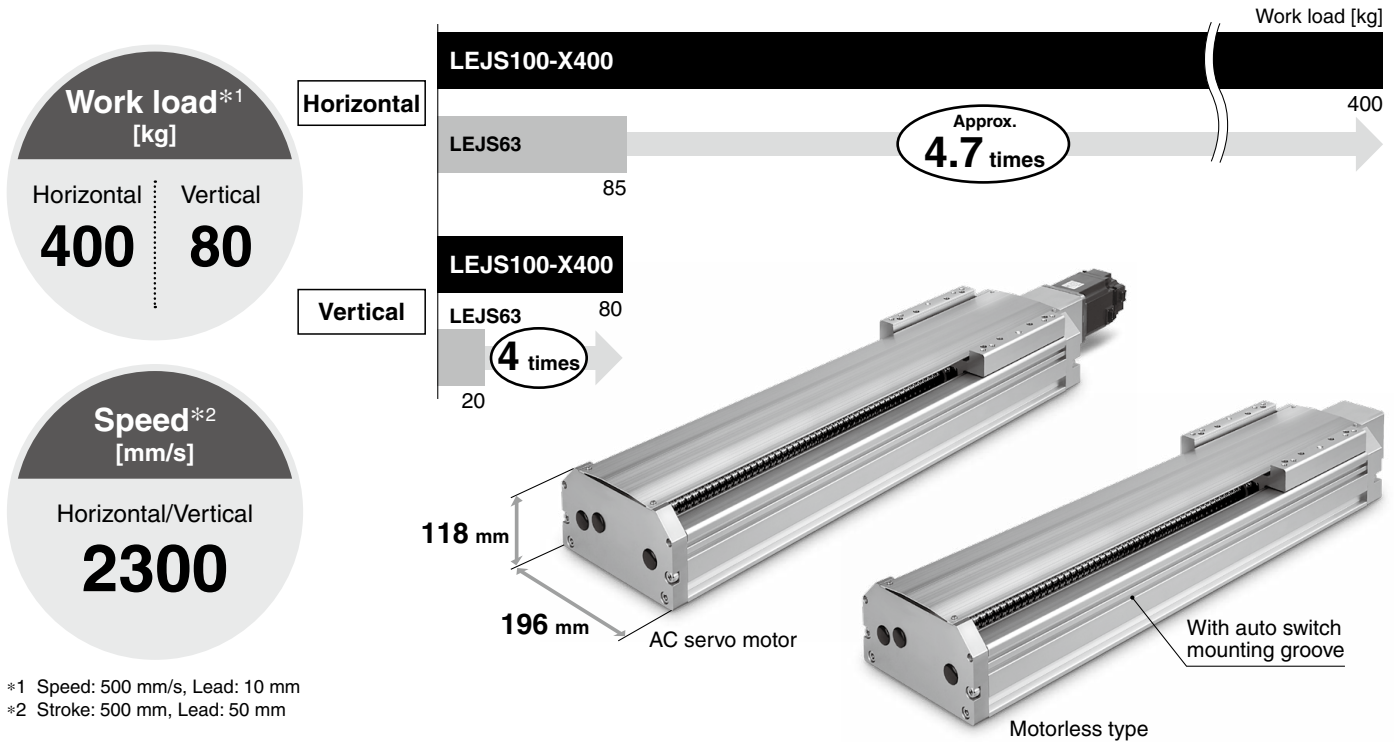
**New Release**

# High Rigidity Slider Type Electric Actuator



[Excludes the motorless type]

● Supports **750 W** (Motor output)



\*1 Speed: 500 mm/s, Lead: 10 mm  
\*2 Stroke: 500 mm, Lead: 50 mm

● Max. acceleration/deceleration: **9800 mm/s<sup>2</sup>**

**AC Servo Motor Absolute Type**  
Pulse input type/Positioning type LECSB-T Series

- Positioning by up to 255 point tables
- Input type: Pulse input (Sink (NPN) type interface/Source (PNP) type interface)
- Control encoder: Absolute 22-bit encoder (Resolution: 4194304 p/rev)
- STO (Safe Torque Off) safety function available
- Parallel input: 10 inputs  
output: 6 outputs



**Motorless Type Compatible Motors by Manufacturer**

Manufacturer	Series	Type	Compatible interfaces						
			Battery-less absolute encoder	Pulse input	CC-Link IE Field	CC-Link IE TSN	SSCNET III/H	MECHATROLINK II	MECHATROLINK III
Mitsubishi Electric Corporation	MELSERVO-J4	HG-KR73	●	●	●	●	●	●	●
	MELSERVO-J5	HK-KT7M3W	●	●	●	●	●	●	●
YASKAWA Electric Corporation	Σ-V	SGMJV-08	●	●	●	●	●	●	●
	Σ-7	SGM7J-08	●	●	●	●	●	●	●

Trademark: DeviceNet™ is a trademark of ODVA.

**LEJS100-X400**

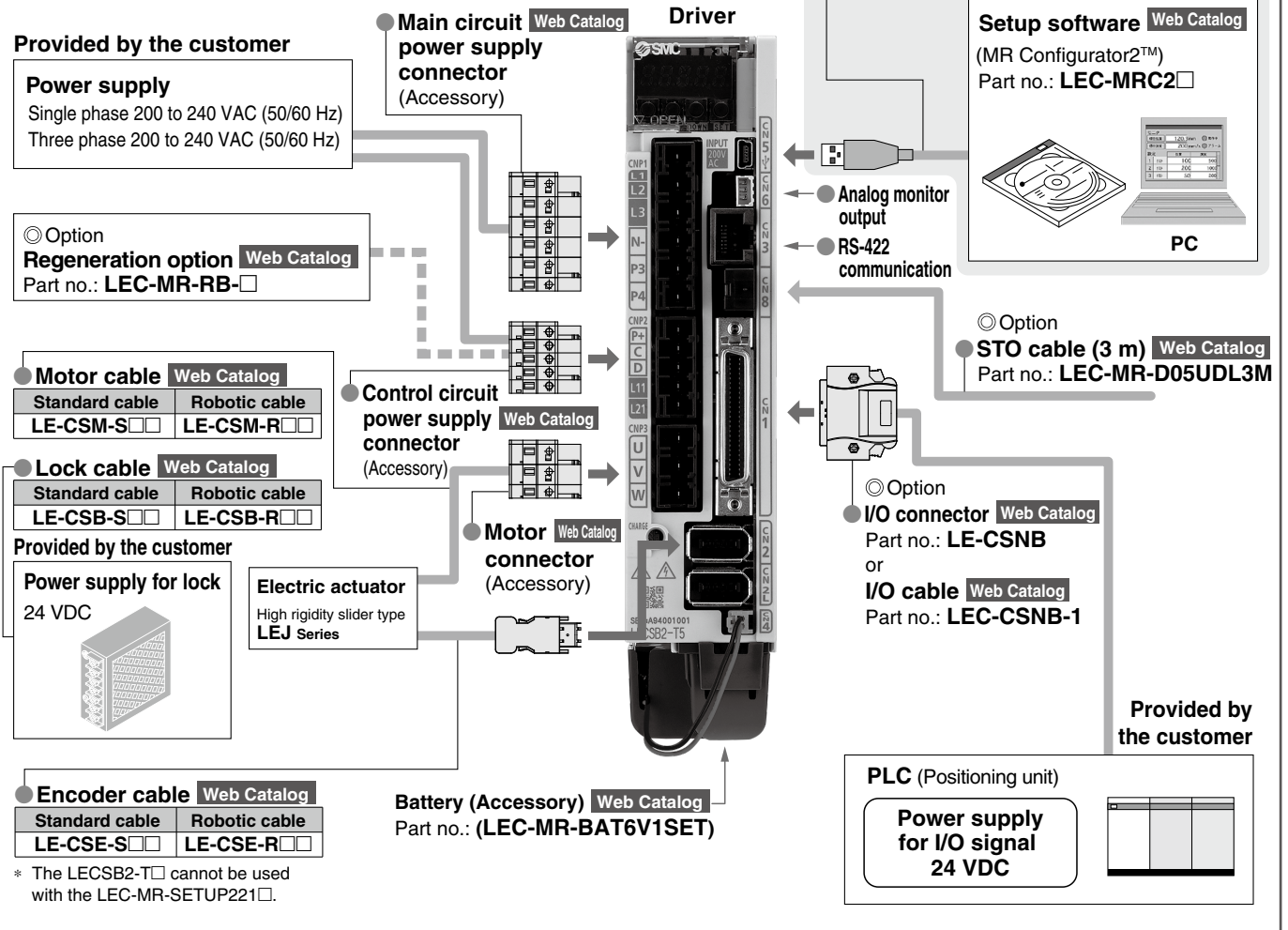


# LEJS100-X400

AC Servo Motor Motorless Type

## System Construction

### Absolute encoder compatible **LECSB-T Series** (Pulse input type/Positioning type)



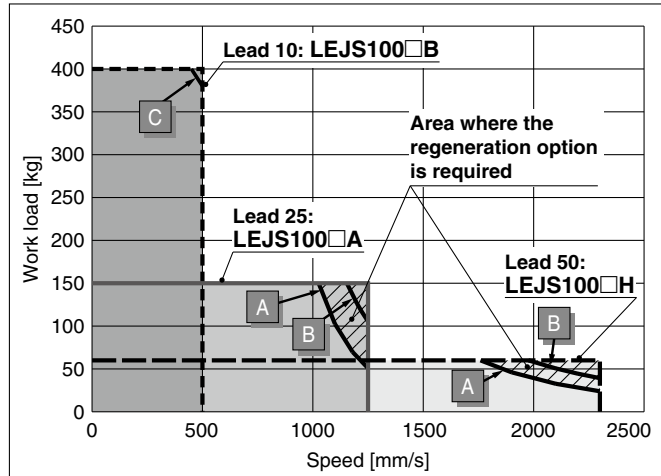
# Electric Actuator/High Rigidity Slider Type Ball Screw Drive/LEJS100-X400 Model Selection



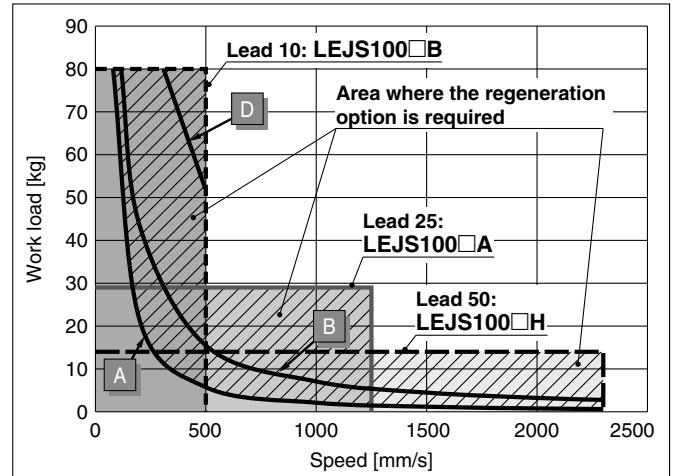
## Speed-Work Load Graph/Required Conditions for "Regeneration Option" (Guide)

AC Servo Motor

### Horizontal



### Vertical



### Required conditions for "Regeneration option"

\* The regeneration option is required if the product is to be used in the "area beyond the regeneration line (A, B, C, or D)" in the graph. (Order separately.)

### "Regeneration Option" Models

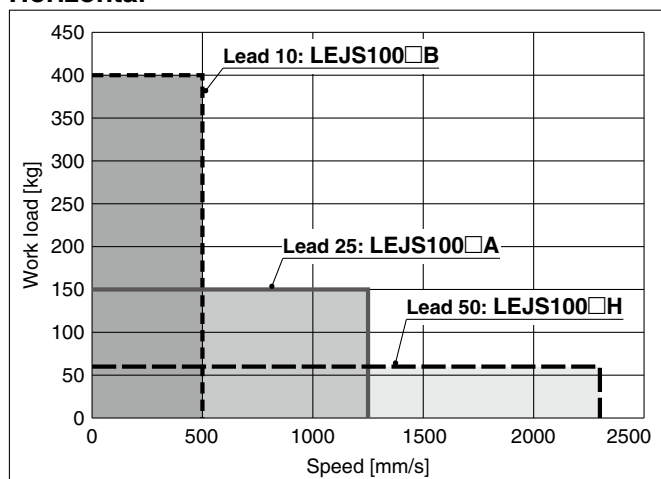
Operating condition	Regenerative condition Duty ratio	Regeneration option
A	100%	LEC-MR-RB-032
B		
C	80%	LEC-MR-RB-12
D	65%	

\* Confirm the operating area, and order the regeneration option if needed.

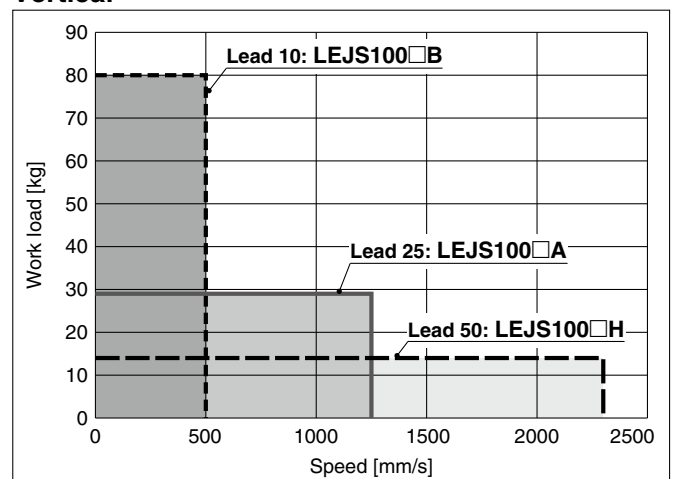
## Speed-Work Load Graph (Guide)

Motorless Type

### Horizontal



### Vertical




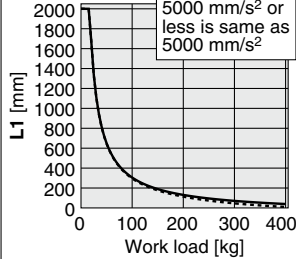

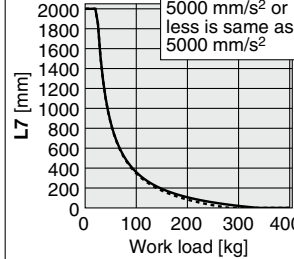
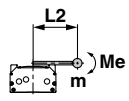
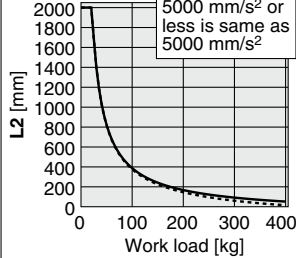
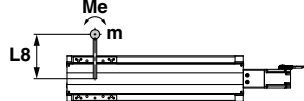
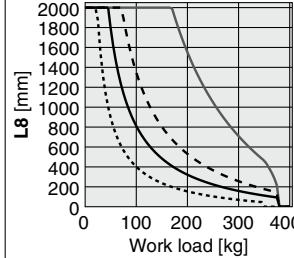

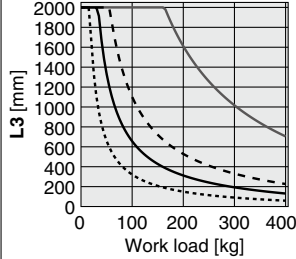
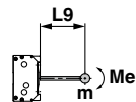
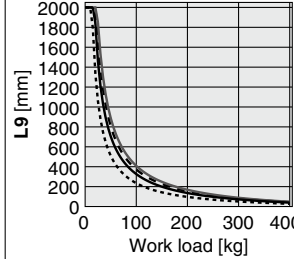

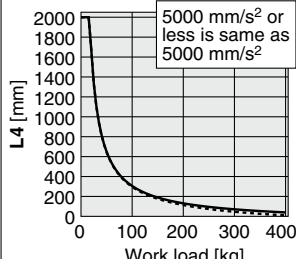
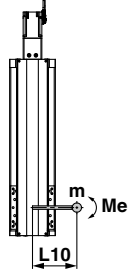
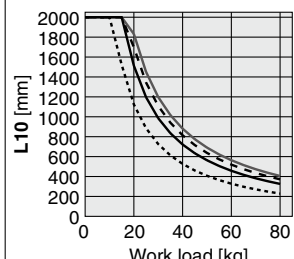
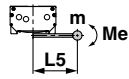
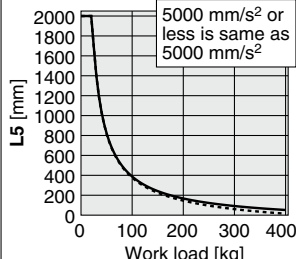
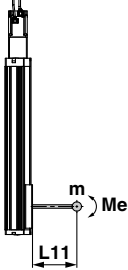
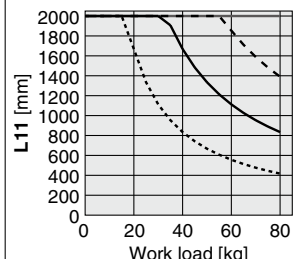
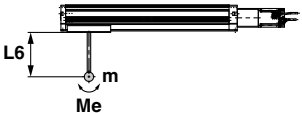
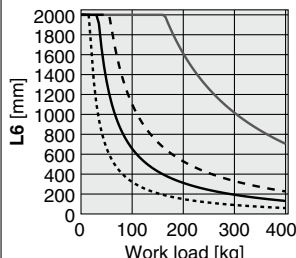
# LEJS100-X400

AC Servo Motor Motorless Type

\* 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" for confirmation.

## Dynamic Allowable Moment

Acceleration/Deceleration ——— 1000 mm/s<sup>2</sup> - - - - 3000 mm/s<sup>2</sup> ——— 5000 mm/s<sup>2</sup> ······ 9800 mm/s<sup>2</sup>

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

## Calculation of Guide Load Factor

1. Decide operating conditions.

Model: LEJS-X400

Size: 100

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.

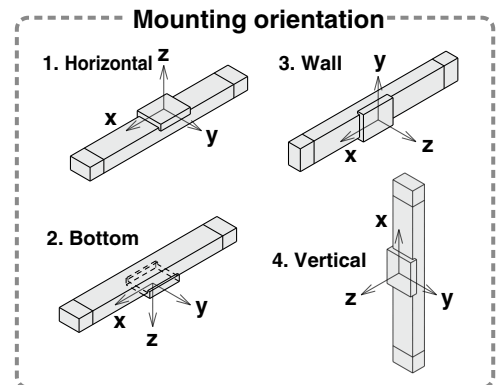
4. Calculate the load factor for each direction.

$$\alpha_x = Xc/Lx \quad \alpha_y = Yc/Ly \quad \alpha_z = Zc/Lz$$

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-X400

Size: 100

Mounting orientation: Horizontal

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

Work load [kg]: 100

Work load center position [mm]: **Xc = 50, Yc = 100, Zc = 200**

2. Select the graph on page 3, top and left side first row.

3. **Lx = 300 mm, Ly = 380 mm, Lz = 650 mm**

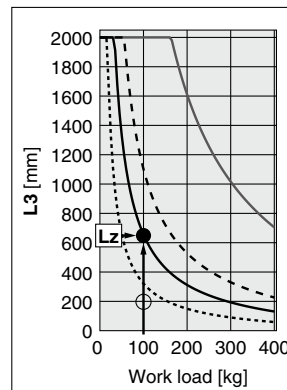
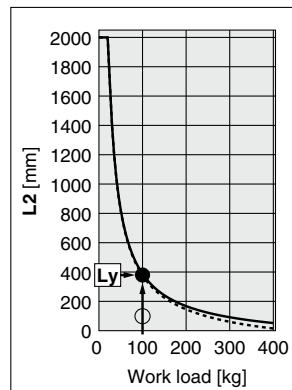
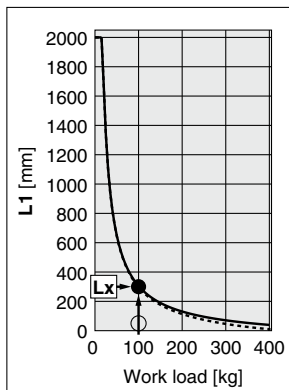
4. The load factor for each direction can be obtained as follows.

$$\alpha_x = 50/300 = 0.17$$

$$\alpha_y = 100/380 = 0.26$$

$$\alpha_z = 200/650 = 0.31$$

5.  $\alpha_x + \alpha_y + \alpha_z = 0.74 \leq 1$



# Electric Actuator/High Rigidity Slider Type Ball Screw Drive

## LEJS100-X400



### How to Order

LEJS100 T9 **B** - 500 **T** - **4** **5** **6** **7** - X400

Motor type: AC servo motor  
(Absolute encoder) 750 W

With top cover type

#### 1 Lead [mm]

H	50
A	25
B	10

#### 2 Stroke [mm]

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

#### 3 Motor option

Nil	Without option
B	With lock

#### 4 Cable type\*1\*2

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

\*1 When a driver type is selected, a cable is included.  
Select the cable type and cable length.  
Example)

S2B2: Standard cable (2 m) + Driver (LECSB2)  
S2 : Standard cable (2 m)  
Nil : Without cable and driver

\*2 The motor and encoder cables are included.  
(The lock cable is included when the motor with lock option is selected.)

#### 5 Cable length [m]\*3

Nil	Without cable
2	2
5	5
A	10

\*3 When "Without driver" is selected for driver type, only "Nil: Without cable" can be selected.

#### 6 Driver type\*1


	Compatible driver Model	Power supply voltage [V]	Control method
Nil	Without driver	—	—
B2	LECSB2-T9	200 to 240	Pulse input/Point table

#### 7 I/O cable length [m]\*4

Nil	Without cable
H	Connector only
1	1.5

\*4 When "Without driver" is selected for driver type, only "Nil: Without cable" can be selected.

#### Compatible Driver

Driver type	Pulse input type
	
Series	LECSB-T
Number of point tables	Up to 255
Pulse input	○
Applicable network	—
Control encoder	Absolute 22-bit encoder
Communication function	USB communication, RS422 communication
Power supply voltage [V]	200 to 240 VAC (50/60 Hz)



## Specifications

		200, 300, 400, 500, 600, 800, 1000, 1200, 1500				
Actuator specifications	Stroke [mm]*1					
	Lead [mm]	50	25	10		
	Work load*2 [kg]	Horizontal	3000 (mm/s <sup>2</sup> )	60	150	400
			5000 (mm/s <sup>2</sup> )	43	93	150
			9800 (mm/s <sup>2</sup> )	22	36	—
		Vertical	3000 (mm/s <sup>2</sup> )	14	29	80
			5000 (mm/s <sup>2</sup> )	12	29	30
			9800 (mm/s <sup>2</sup> )	8	9	—
	Max. speed*3 [mm/s]	Stroke range	200 to 800	2300	1250	500
			1000	1600	800	320
			1200	1200	600	240
			1500	900	450	180
	Max. acceleration/deceleration [mm/s <sup>2</sup> ]	9800				
	Positioning repeatability [mm]	±0.01				
	Lost motion [mm]*4	0.05 or less				
Impact/Vibration resistance [m/s <sup>2</sup> ]*5	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 2.)					
Electric specifications	Motor output [W]/Size [mm]	750/□80				
	Motor type	AC servo motor (200 VAC)				
	Encoder	Absolute 22-bit encoder (Resolution: 4194304 p/rev)				
Power consumption [W]*6	Max. power consumption 1100					
Lock unit specifications	Type*7	Non-magnetizing lock				
	Holding force [N]	240	480	1200		
	Power consumption [W] at 20°C*8	10				
	Rated voltage [V]	24 VDC <sup>0</sup> <sub>-10%</sub>				

\*1 Strokes other than those listed in the table above are available as special orders. Please contact SMC for further details.

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

\*3 The allowable speed changes according to the stroke.

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

\*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. (The test was performed with the actuator in the initial state.)

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

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

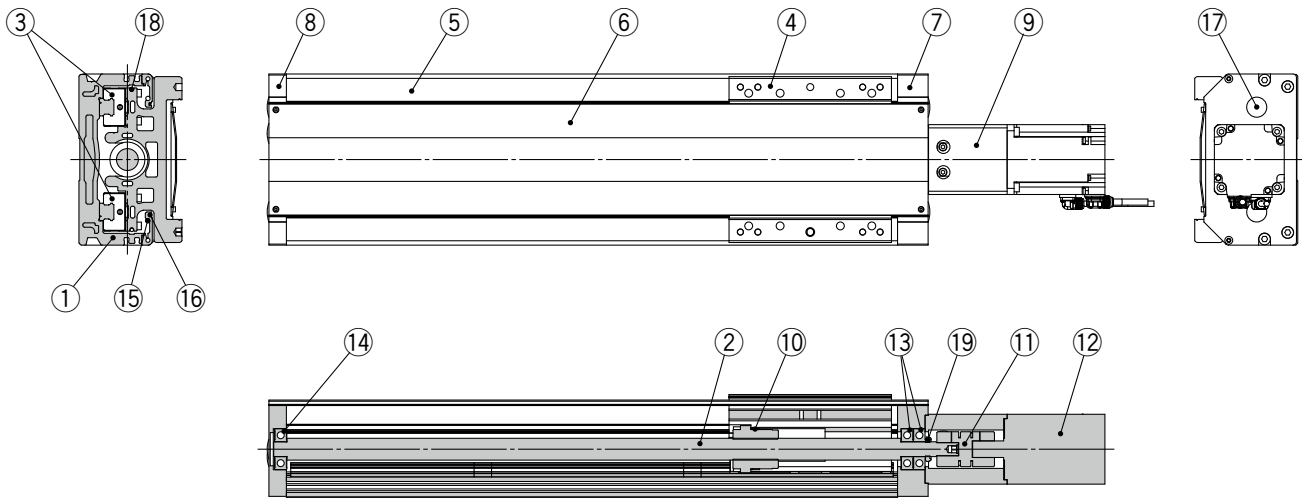
\*7 Only when motor option "With lock" is selected

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

\* Do not allow collisions at either end of the table traveling distance. Additionally, when running the positioning operation, do not set within 7 mm of both ends.



## 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>Side cover</b>	Aluminum alloy	Anodized
6	<b>Dust cover</b>	Aluminum alloy	Anodized
7	<b>Plate M</b>	Aluminum alloy	Anodized
8	<b>Plate E</b>	Aluminum alloy	Anodized
9	<b>Motor block</b>	Aluminum alloy	Anodized
10	<b>Spacer</b>	Aluminum alloy	"Lead: H" only
11	<b>Coupling</b>	—	
12	<b>Motor</b>	—	
13	<b>Bearing</b>	—	
14	<b>Bearing</b>	—	
15	<b>Pin</b>	Carbon steel	
16	<b>Pin</b>	Carbon steel	
17	<b>Cap</b>	Polyethylene	
18	<b>Magnet</b>	—	
19	<b>Lock nut</b>	—	

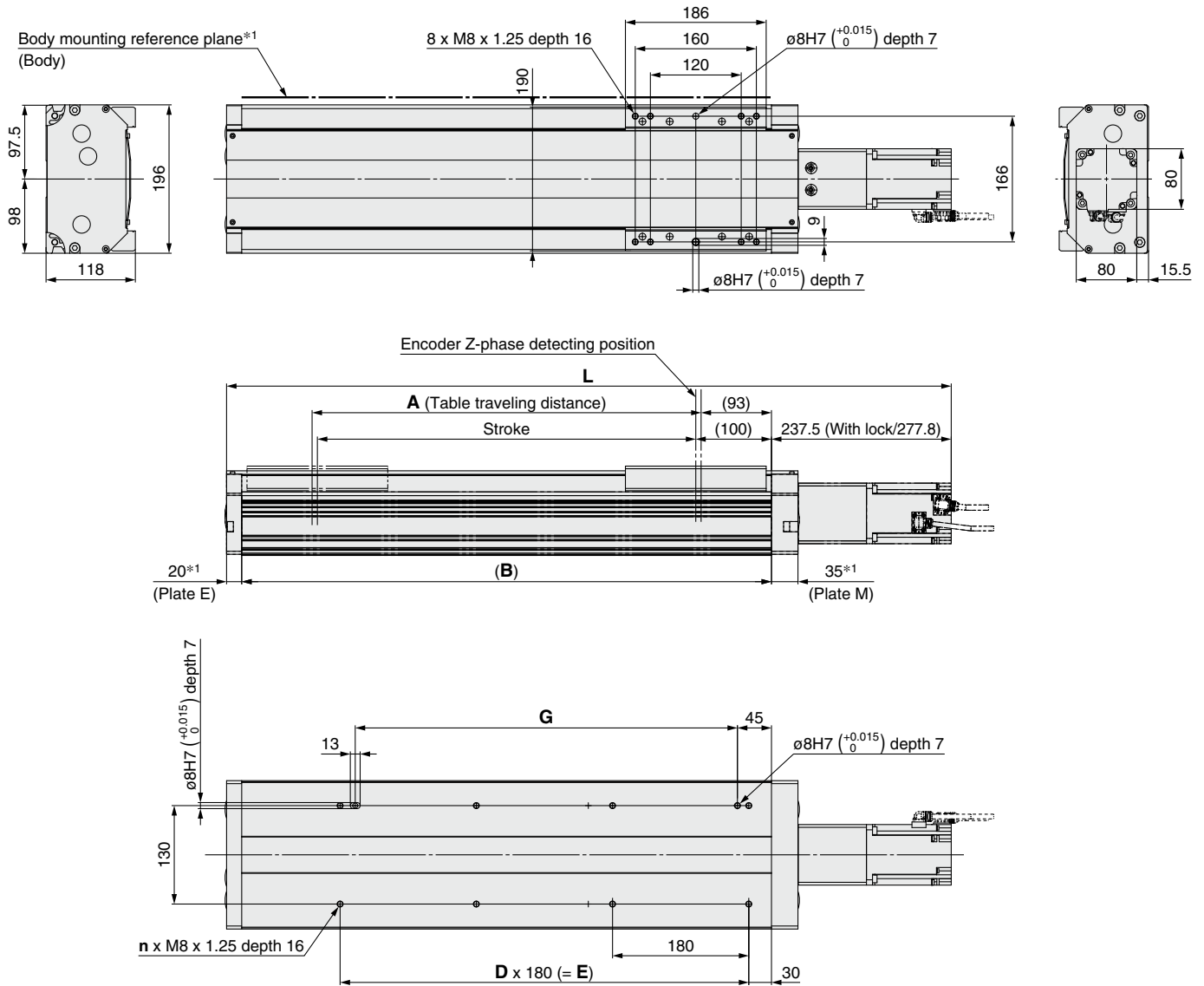
### Replacement Parts/Grease Pack

Applied portion	Order no.
Ball screw	GR-S-010 (10 g)
Linear guide portion	GR-S-020 (20 g)

# LEJS100-X400

AC Servo Motor

## Dimensions: Ball Screw Drive



\*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 5 mm or more. (Recommended height 6 mm)

The surfaces of plates M and E on the ends of the product may slightly protrude from the body mounting reference plane (Body/B dimension range). Be sure to provide a clearance of 1 mm or more to avoid interference.

\* Please consult with SMC for adjusting the Z-phase detecting position at the stroke end of the end side.

## Dimensions and Weight

Stroke	L		A	B	n	D	E	G	Weight [kg]	
	Without lock	With lock							Without lock	With lock
200	657.5	697.8	214	400	6	2	360	325	20.4	21.4
300	757.5	797.8	314	500	6	2	360	325	22.5	23.5
400	857.5	897.8	414	600	8	3	540	505	24.6	25.6
500	957.5	997.8	514	700	8	3	540	505	26.7	27.7
600	1057.5	1097.8	614	800	10	4	720	685	28.8	29.8
800	1257.5	1297.8	814	1000	12	5	900	865	33.0	34.0
1000	1457.5	1497.8	1014	1200	14	6	1080	1045	37.1	38.1
1200	1657.5	1697.8	1214	1400	16	7	1260	1225	41.3	42.3
1500	1957.5	1997.8	1514	1700	20	9	1620	1585	47.6	48.6

# AC Servo Motor Driver Absolute Type

## LECSB-T (Pulse input type/Positioning type)



### How to Order

## LECSB 2-T9

**Driver type**  
**B** Pulse input type/Positioning type  
 (For absolute encoder)

**Power supply voltage**  
**2** 200 to 240 VAC 50/60 Hz

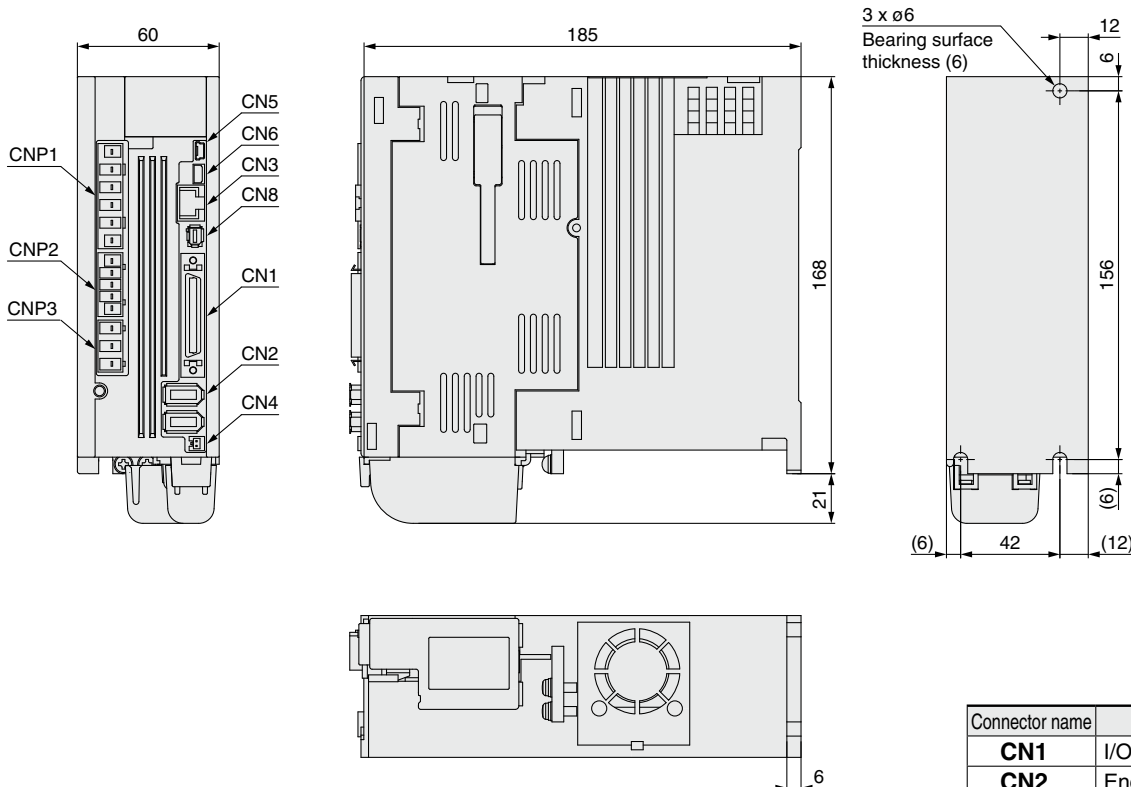
**Compatible motor type**

Symbol	Type	Capacity	Encoder
<b>T9</b>	AC servo motor (T9*1)	750 W	Absolute

\*1 The symbol shows the motor type (actuator).

\* If an I/O connector is required, order the part number "LE-CSNB" separately.  
 \* If an I/O cable is required, order the part number "LEC-CSNB-1" separately.  
 (Since the electric actuator will not operate without forced stop (EM2) wiring when using the LECSB-T in any mode other than positioning mode, an I/O connector or an I/O cable is required.)

### Dimensions



Connector name	Description
<b>CN1</b>	I/O signal connector
<b>CN2</b>	Encoder connector
<b>CN3</b>	RS-422 communication connector
<b>CN4</b>	Battery connector
<b>CN5</b>	USB communication connector
<b>CN6</b>	Analog monitor connector
<b>CN8</b>	STO input signal connector
<b>CNP1</b>	Main circuit power supply connector
<b>CNP2</b>	Control circuit power supply connector
<b>CNP3</b>	Servo motor power connector

# LECSB-T

## Specifications

Model		LECSB2-T9
Compatible motor capacity [W]		750
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]	3.8
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
Parallel input		10 inputs
Parallel output		6 outputs
Max. input pulse frequency [pps]		4 M (for differential receiver), 200 k (for open collector)
Function	In-position range setting [pulse]	0 to $\pm 65535$ (Command pulse unit)
	Error excessive	$\pm 3$ rotations
	Torque limit	Parameter setting or external analog input setting (0 to 10 VDC)
	Communication	USB communication, RS422 communication*1
	Point table	Up to 255 points
	Pushing operation	Point table no. input method, Up to 127 points
Operating temperature range [°C]		0 to 55 (No freezing)
Operating humidity range [%RH]		90 or less (No condensation)
Storage temperature range [°C]		-20 to 65 (No freezing)
Storage humidity range [%RH]		90 or less (No condensation)
Insulation resistance [M $\Omega$ ]		Between the housing and SG: 10 (500 VDC)
Weight [g]		1400

\*1 USB communication and RS422 communication cannot be performed at the same time.

Motorless Type

# Electric Actuator/High Rigidity Slider Type Ball Screw Drive LEJS100-X400



RoHS

## How to Order

LEJS100 N **B** - **500** T - X400

Motorless type • ①      ②      • With top cover type

### ① Lead [mm]

H	50
A	25
B	10

### ② Stroke [mm]

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

## Specifications

Stroke*1 [mm]		200, 300, 400, 500, 600, 800, 1000, 1200, 1500			
Lead [mm]		50		25	10
Work load*2 [kg]	Horizontal	3000 [mm/s <sup>2</sup> ]	60	150	400
		5000 [mm/s <sup>2</sup> ]	43	93	150
		9800 [mm/s <sup>2</sup> ]	22	36	—
	Vertical	3000 [mm/s <sup>2</sup> ]	14	29	80
		5000 [mm/s <sup>2</sup> ]	12	29	30
		9800 [mm/s <sup>2</sup> ]	8	9	—
Max. speed*3 [mm/s]	Stroke range	200 to 800	2300	1250	500
		1000	1600	800	320
		1200	1200	600	240
		1500	900	450	180
Max. acceleration/deceleration [mm/s <sup>2</sup> ]		9800			
Positioning repeatability [mm]		±0.01			
Lost motion*4 [mm]		0.05 or less			
Ball screw specifications	Thread size [mm]	ø25			
	Shaft length [mm]	Stroke + 284.5			
Impact/Vibration resistance*5 [m/s <sup>2</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)			
Other*6 specifications	Actuation unit weight [kg]	4.58			
	Other inertia [kg·cm <sup>2</sup> ]	0.43			
	Friction coefficient	0.05			
	Mechanical efficiency	0.8			
Reference motor specifications	Motor shape	□80			
	Motor type	AC servo motor (200 VAC)			
	Rated output capacity [W]	750			
	Rated torque [N·m]	2.4			
	Rated rotation [rpm]	3000			

\*1 Strokes other than those listed in the table above are available as special orders. Please contact SMC for further details.

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

\*3 The allowable speed changes according to the stroke.

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

\*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. (The test was performed with the actuator in the initial state.)

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

\*6 Each value is only to be used as a guide to select a motor of the appropriate capacity.

\* Values in this specifications table are the allowable values of the actuator body with the standard motor mounted. Do not use the actuator so that it exceeds these values.

\* Before mounting the coupling, remove any dust, oil, etc., adhered to the shaft and the inner surface of the coupling.

\* This product does not come with a motor, motor mounting screws, or couplings. They should be prepared separately by the customer.

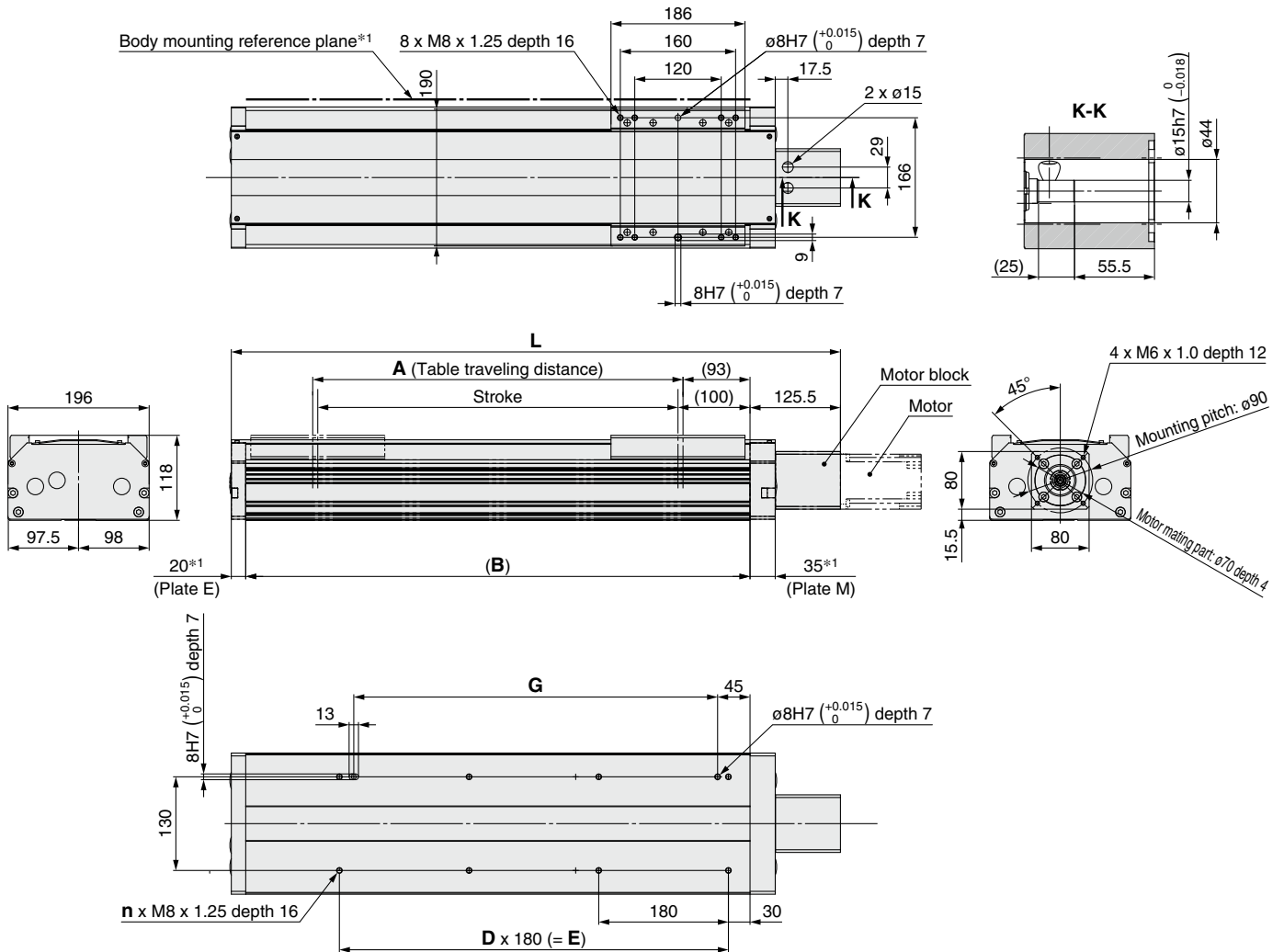
\* Take measures to prevent the loosening of the motor mounting screws.

\* Do not allow collisions at either end of the table traveling distance. Additionally, when running the positioning operation, do not set within 7 mm of both ends.

# LEJS100-X400

Motorless Type

## Dimensions



### Recommended coupling

Manufacturer	Part no.
Nabeya Bi-tech Kaisha	MJT-40C-RD-15-19
Miki Pulley Co., Ltd	ALS-040-B-15B-19B
KTR Japan Co., Ltd.	ROTEX-GS19-98Sha-GS-2.5- $\phi 15$ -2.5- $\phi 19$
SUNGIL Machinery Co., Ltd.	SJCB-40C-GR-15X19

\*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 5 mm or more. (Recommended height 6 mm)

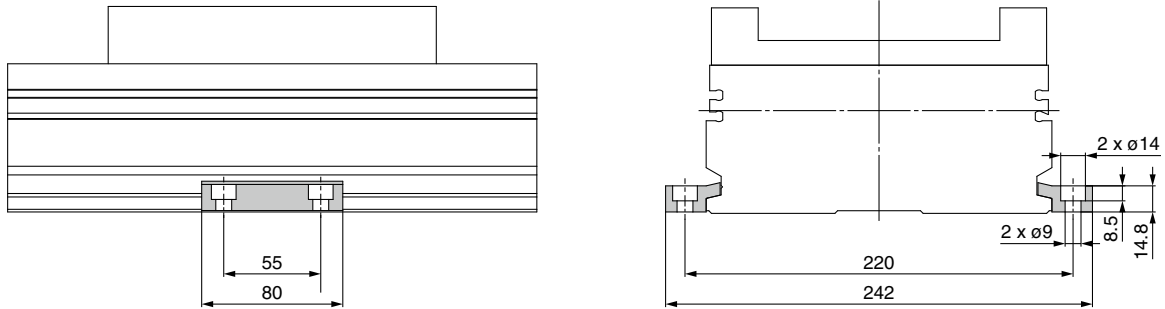
The surfaces of plates M and E on the ends of the product may slightly protrude from the body mounting reference plane (Body/B dimension range). Be sure to provide a clearance of 1 mm or more to avoid interference.

### Dimensions and Weight

Stroke	L	A	B	n	D	E	G	Weight [kg]
200	545.5	214	400	6	2	360	325	17.6
300	645.5	314	500	6	2	360	325	19.7
400	745.5	414	600	8	3	540	505	21.8
500	845.5	514	700	8	3	540	505	23.9
600	945.5	614	800	10	4	720	685	26
800	1145.5	814	1000	12	5	900	865	30.2
1000	1345.5	1014	1200	14	6	1080	1045	34.3
1200	1545.5	1214	1400	16	7	1260	1225	38.5
1500	1845.5	1514	1700	20	9	1620	1585	44.8

## Side Supports

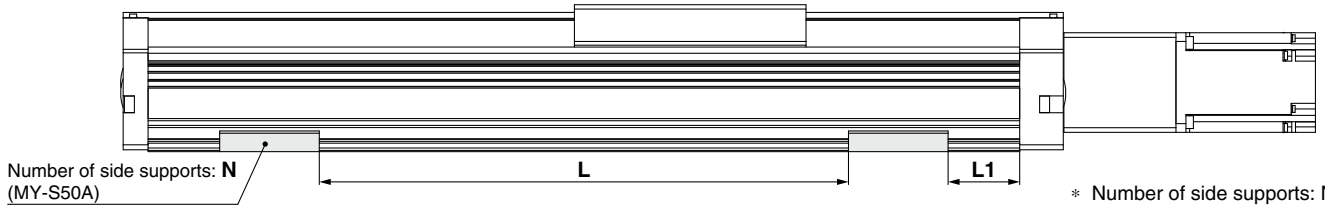
### Side supports: MY-S50A



\* The side supports consist of a set of right and left brackets.

## Usage Guide for Side Supports

When mounting with the side supports, be sure to use the number of side supports (N) and the support spacing (L1) shown in the figure and table below as a guide.



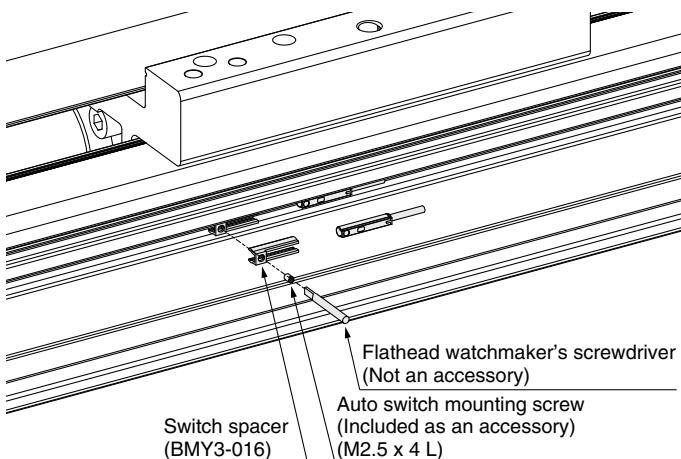
\* Number of side supports: N is the combined number of left and right supports.

Stroke	N (Qty.)	L1 [mm]	Screw size	Max. tightening torque [N·m]
200 st	6	15	M8 x 1.25	12.5
300 st	6			
400 st	6			
500 st	6			
600 st	8			
800 st	8			
1000 st	10			
1200 st	10			
1500 st	14			

- Secure the side supports using the support spacing (L) in the table above.
- When mounting with the side supports, use in combination with the pin on the bottom of the body.
- For vertical or bottom mounting, please refrain from using only the side supports.


## Auto Switch Mounting

When mounting an auto switch, first, hold a switch spacer between your fingers and press it into the auto switch mounting groove. When doing this, confirm that it is set in the correct mounting orientation, or reattach it if necessary. Next, insert an auto switch into the auto switch mounting groove and slide it until it is positioned under the switch spacer. After establishing the mounting position, use a flathead 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)	0.10 to 0.15
D-M9□W(V)	

 **Safety Instructions** Be sure to read the "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" before use.