

# Model Selection



LEJS Series ▶ p. 885    LEJS-M Series ▶ p. 889

## Selection Procedure

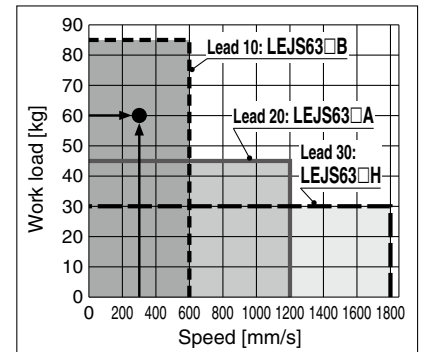
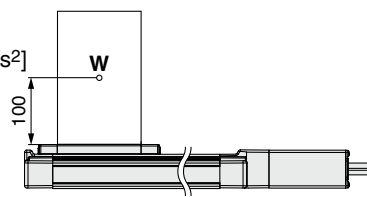


### Selection Example

The model selection method shown below corresponds to SMC's standard motor. For use in combination with a motor from a different manufacturer, check the available product information of the motor to be used.

#### Operating conditions

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



<Speed-Work Load Graph>  
(LEJS63)

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

Select a model based on the workpiece mass and speed which are within the range of the actuator body specifications while referencing the speed-work load graph (guide) on page 876.

Selection example) The LEJS63□B-300 can be temporarily selected as a possible candidate based on the graph shown on the right side.

\* Refer to the selection method of motor manufacturers for regeneration resistance.

#### 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 877)

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 found 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. Confirm that they do not exceed the upper limit, by referring to the "Work load-Acceleration/Deceleration Graph (Guide)" on pages 878 and 879.

For the ball screw type, there is an upper limit of the speed depending on the stroke. Confirm that it does not exceed the upper limit, by referring to the specifications on page 886.

- 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.

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

\* The conditions for the settling time vary depending on the motor or driver to be used.

###### Calculation example)

T1 to T4 can be calculated as follows.

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

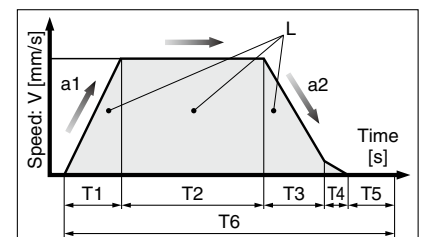
$$T3 = V/a2 = 300/3000 = 0.1 \text{ [s]}$$

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

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

The cycle time can be found as follows.

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



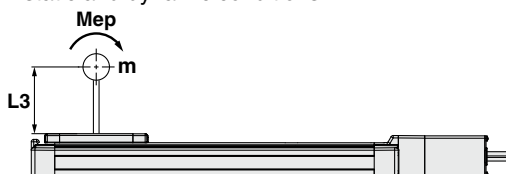
L : Stroke [mm]  
V : Speed [mm/s]  
a1 : Acceleration [mm/s<sup>2</sup>]  
a2 : Deceleration [mm/s<sup>2</sup>]

- 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  
 $T \div T6 \times 100$

#### Step 3 Check the allowable moment. <Static allowable moment> (page 879-1) <Dynamic allowable moment> (page 880)

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

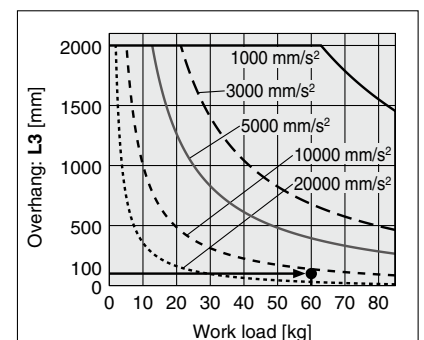


###### Selection example)

Select the LEJS63□B-300 from the graph on the right side.

Confirm that the external force is within the allowable external force (20 [N]).

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



<Dynamic Allowable Moment>  
(LEJS63)

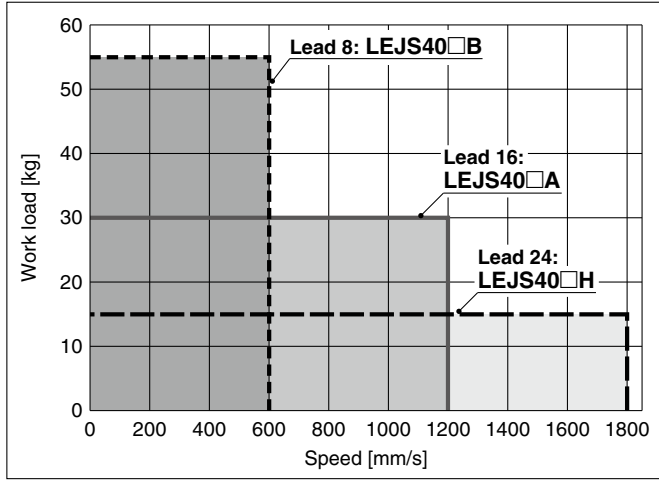
\* The values shown below are allowable values of the actuator body. Do not use the actuator so that it exceeds these specification ranges.

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

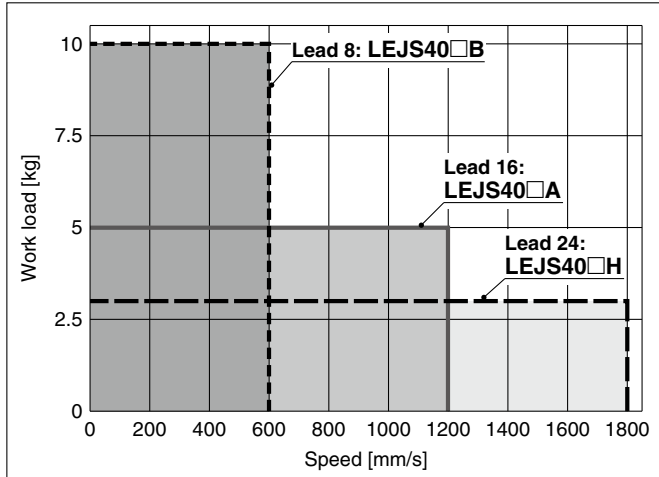
## Speed-Work Load Graph (Guide)

### LEJS40/Ball Screw Drive

#### Horizontal

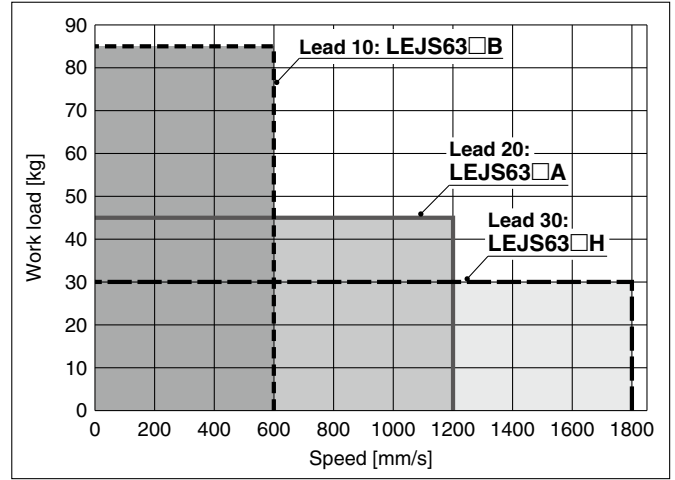


#### Vertical

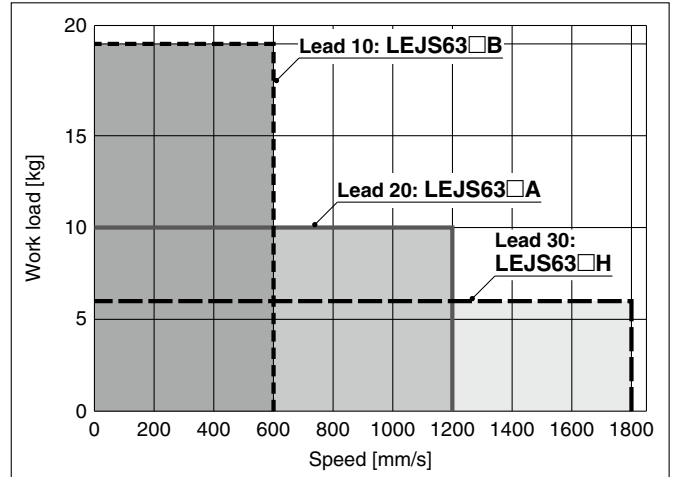


### LEJS63/Ball Screw Drive

#### Horizontal



#### Vertical



## Allowable Stroke Speed

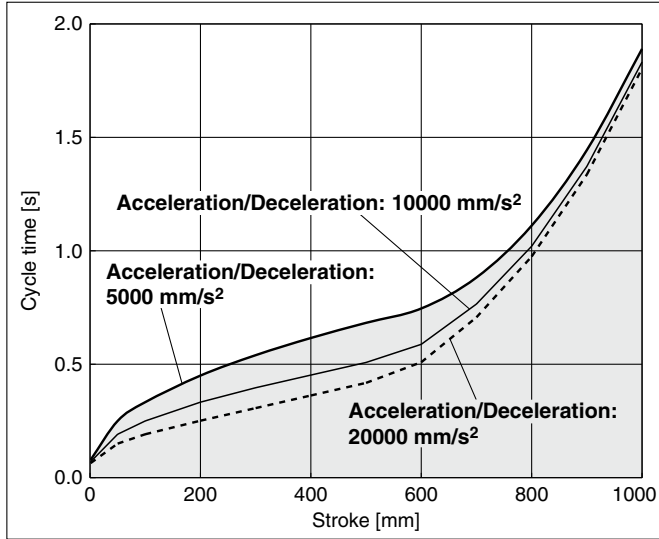
Model	Motor	Lead		Stroke [mm]														
		Symbol	[mm]	Up to 200	Up to 300	Up to 400	Up to 500	Up to 600	Up to 700	Up to 800	Up to 900	Up to 1000	Up to 1100	Up to 1200	Up to 1300	Up to 1400	Up to 1500	
LEJS40	100 W equivalent	H	24					1800	1580	1170	910	720	580	480	410	—	—	—
		A	16					1200	1050	780	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 equivalent	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)

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

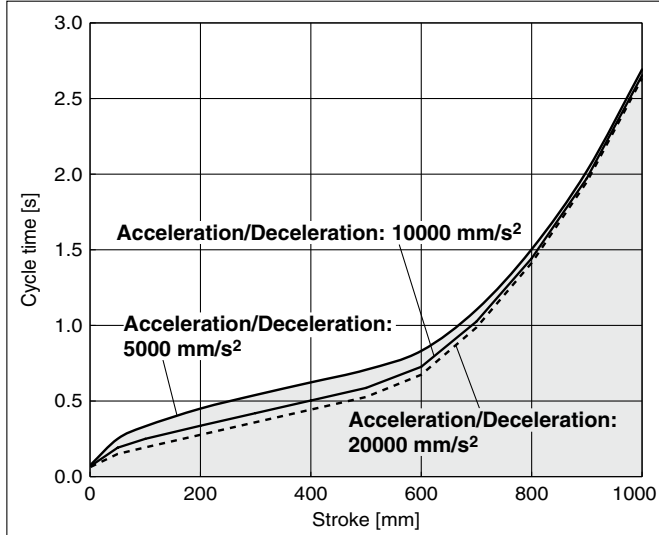
## Cycle Time Graph (Guide)

### LEJS40/Ball Screw Drive

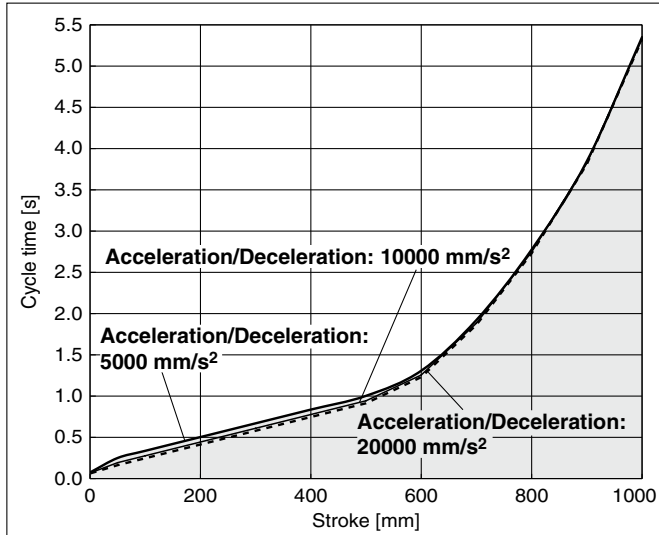
#### LEJS40□H



#### LEJS40□A

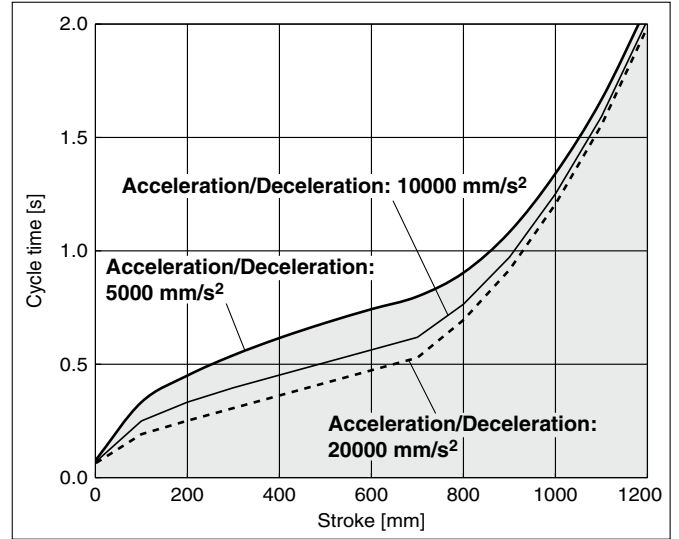


#### LEJS40□B

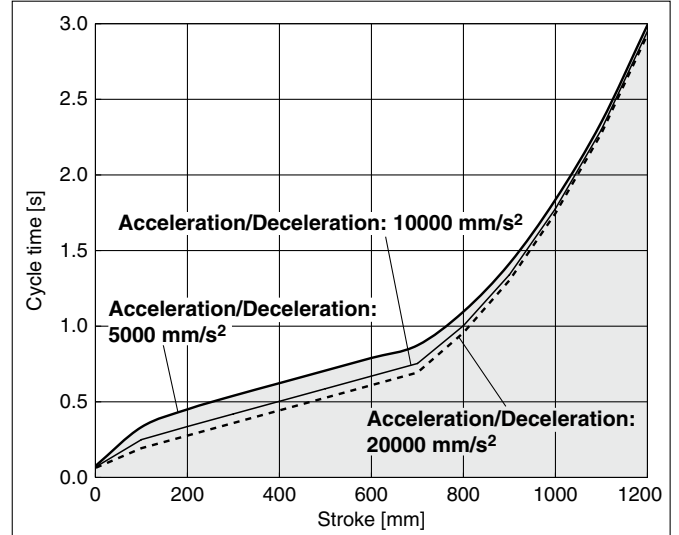


### LEJS63/Ball Screw Drive

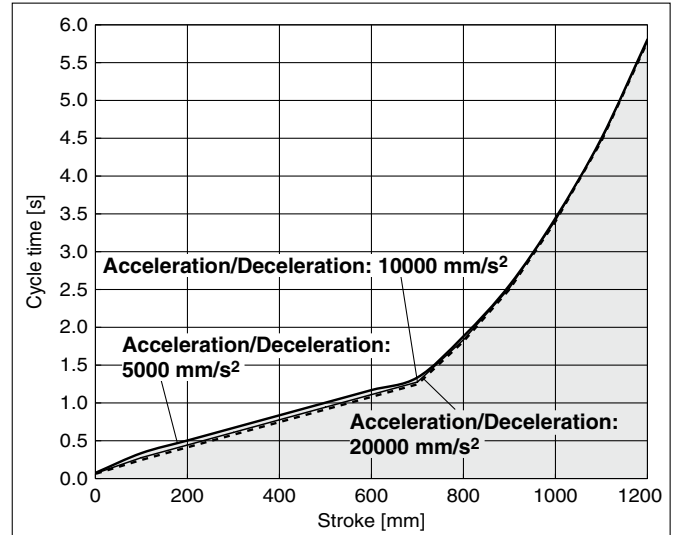
#### LEJS63□H



#### LEJS63□A



#### LEJS63□B

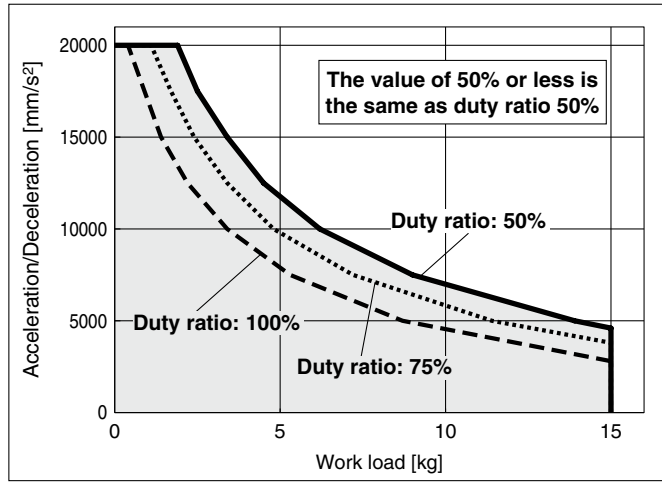


\* These graphs show the cycle time for each acceleration/deceleration.  
 \* These graphs show the cycle time for each stroke at the maximum speed.

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

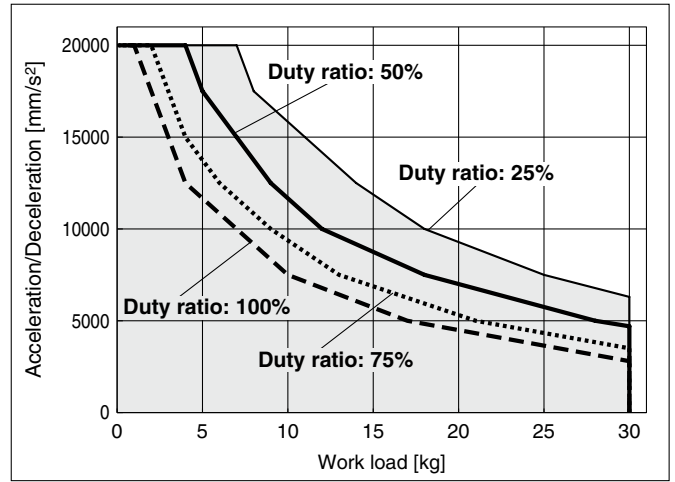
#### LEJS40/Ball Screw Drive: Horizontal

##### LEJS40□H

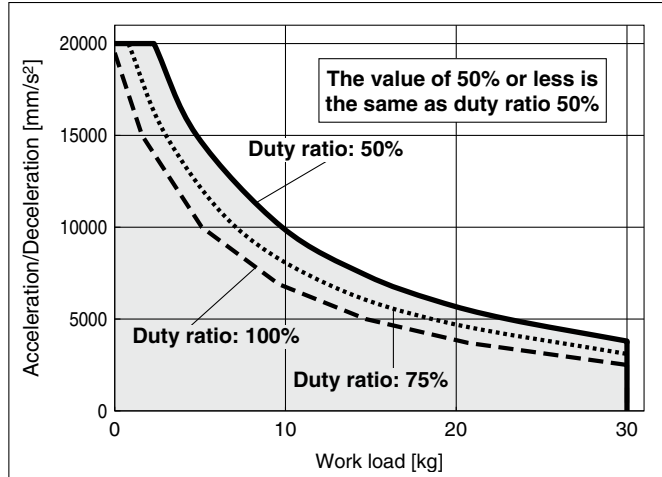


#### LEJS63/Ball Screw Drive: Horizontal

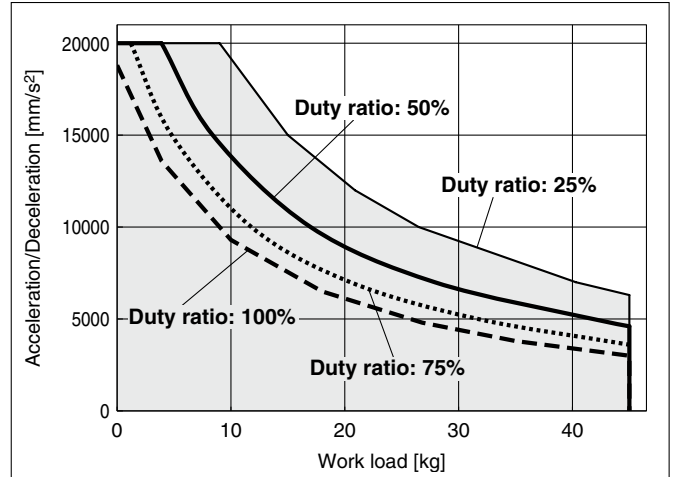
##### LEJS63□H



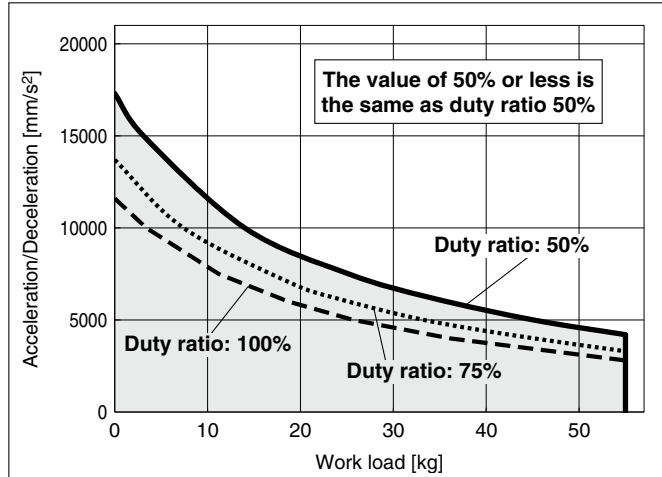
##### LEJS40□A



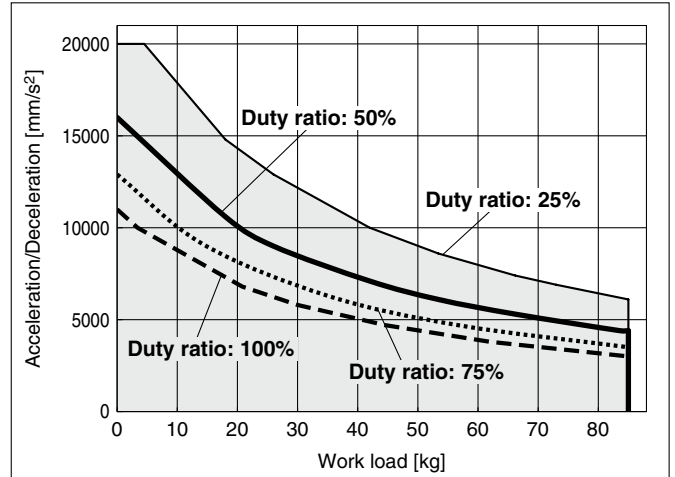
##### LEJS63□A



##### LEJS40□B



##### LEJS63□B



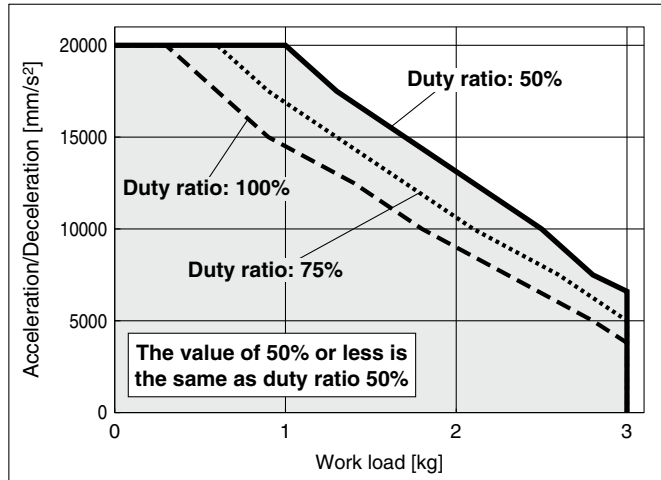
These graphs are examples of when the standard motor is mounted.  
Determine the duty ratio after taking into account the load factor of the motor or driver to be used.

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

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

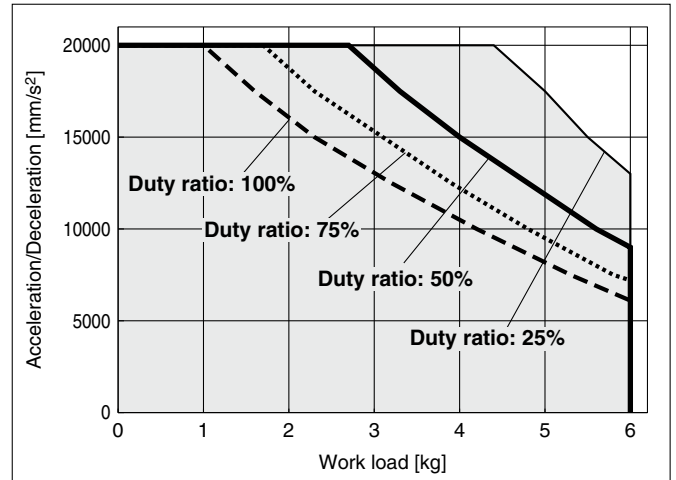
### LEJS40/Ball Screw Drive: Vertical

#### LEJS40□H

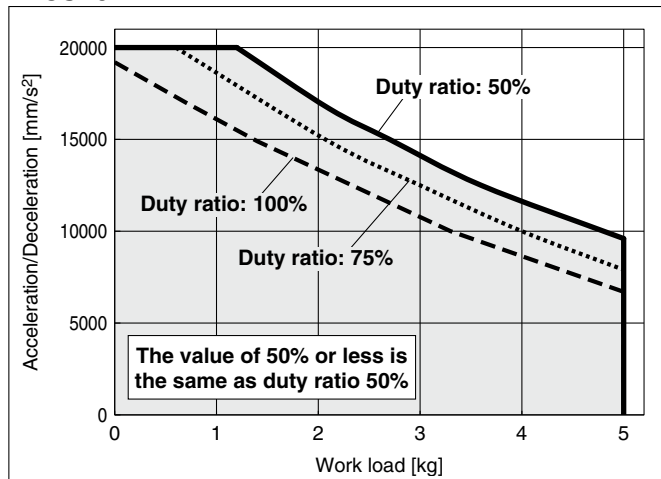


### LEJS63/Ball Screw Drive: Vertical

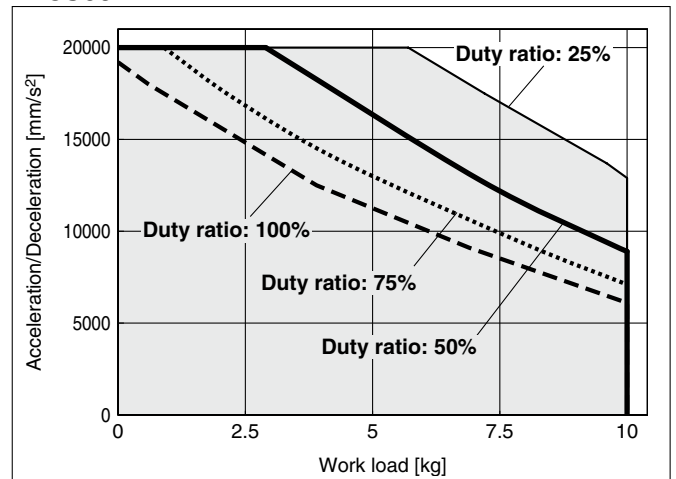
#### LEJS63□H



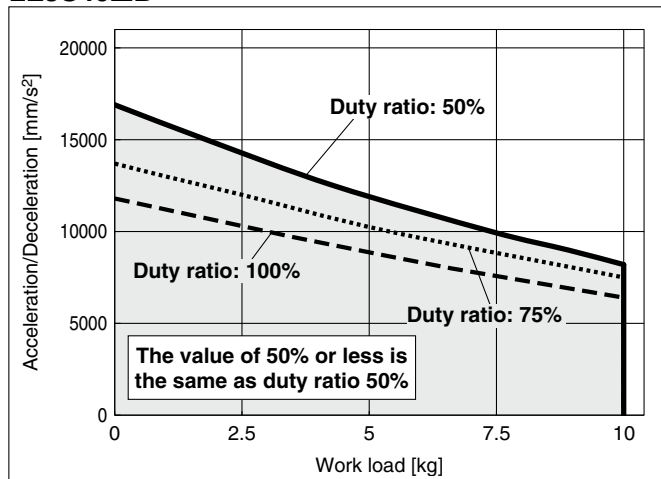
#### LEJS40□A



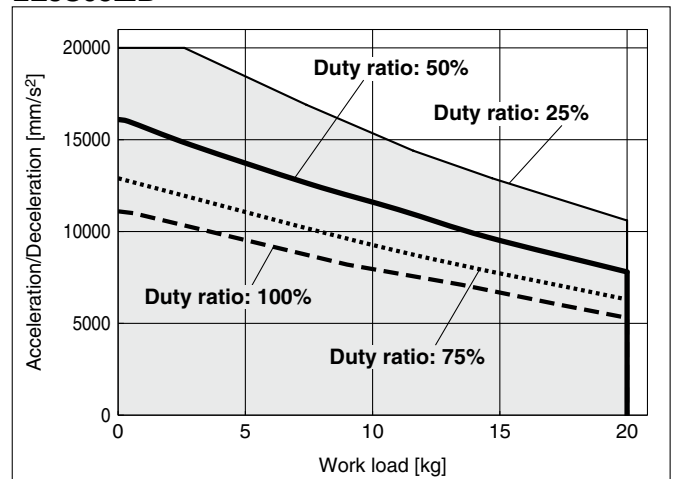
#### LEJS63□A



#### LEJS40□B



#### LEJS63□B



These graphs are examples of when the standard motor is mounted.  
Determine the duty ratio after taking into account the load factor of the motor or driver to be used.

## Static Allowable Moment\*1

[N·m]

Model	Size	Pitching	Yawing	Rolling
LEJS	40	83.9	88.2	88.2
	63	121.5	135.1	135.1

\*1 The static allowable moment is the amount of static moment which can be applied to the actuator when it is stopped.  
 If the product is exposed to impact or repeated load, be sure to take adequate safety measures when using the product.

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



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

## Dynamic Allowable Moment

Acceleration/Deceleration ——— 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>

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

- LEFS
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEY
- LEYG
- LES
- LESH
- LEPY
- LEPS
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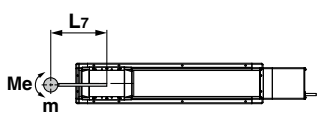
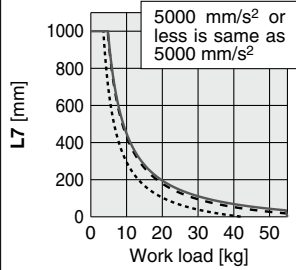
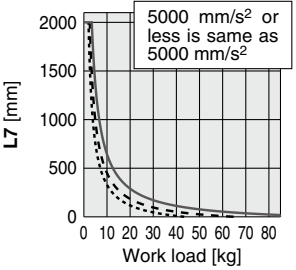
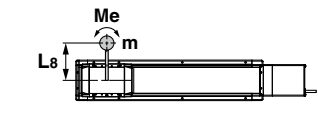
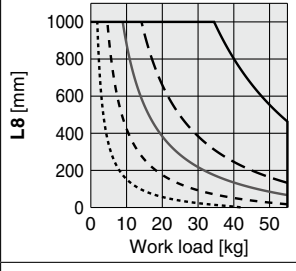
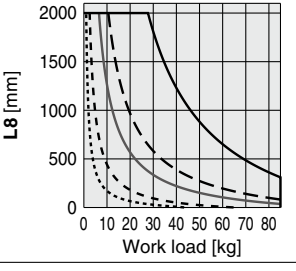
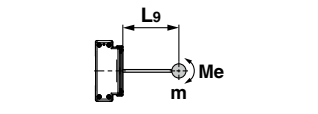
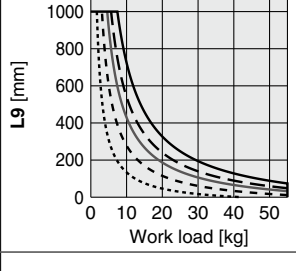
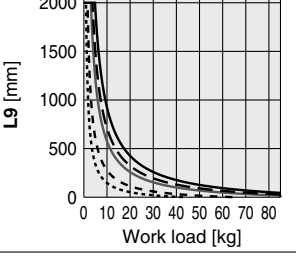
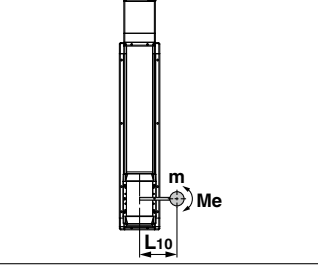
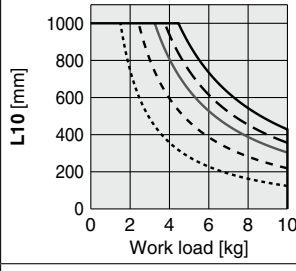
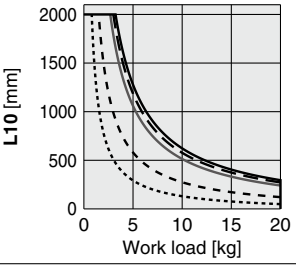
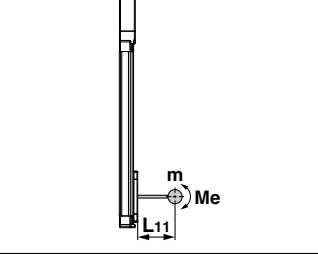
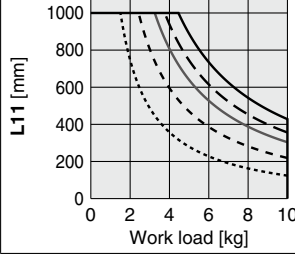
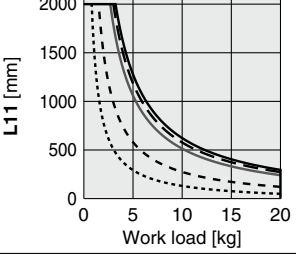
# LEJS Series

Motorless Type

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

## Dynamic Allowable Moment

Acceleration/Deceleration ——— 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>

Orientation	Load overhanging direction m : Work load [kg] Me: Allowable moment [N·m] L : Overhang to the work load center of gravity [mm]	Model	
		LEJS40	LEJS63
Wall			
			
			
Vertical			
			

### Calculation of Guide Load Factor

- Decide operating conditions.

Model: LEJS

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**

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

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

- Calculate the load factor for each direction.

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

- 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, consider a reduction of acceleration and work load, or a change of the work load center position and series.

#### Example

- Operating conditions

Model: LEJS

Size: 40

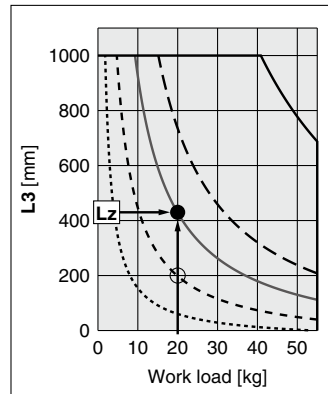
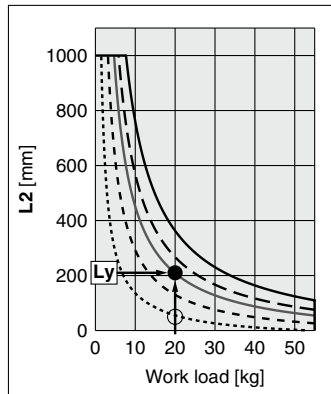
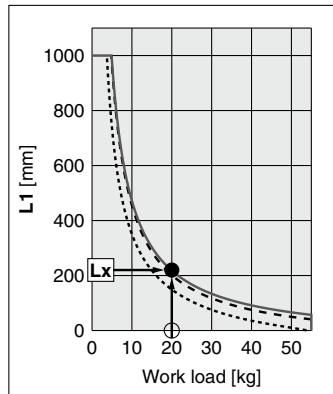
Mounting orientation: Horizontal

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

Work load [kg]: 20

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

- Select the graph on page 880, top and left side first row.



- Lx = 220 mm, Ly = 210 mm, Lz = 430 mm**

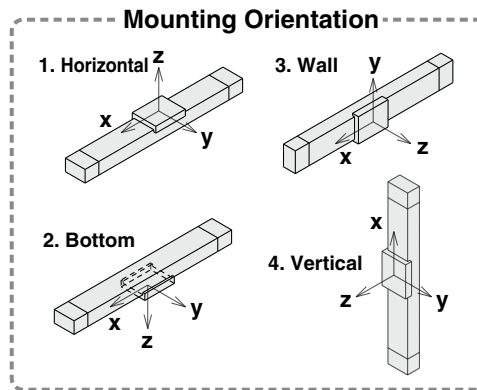
- The load factor for each direction can be found as follows.

$$\alpha_x = 0/220 = 0$$

$$\alpha_y = 50/210 = 0.24$$

$$\alpha_z = 200/430 = 0.47$$

- $\alpha_x + \alpha_y + \alpha_z = 0.71 \leq 1$



LEFS  
LEFB

LEJS  
LEJB

LEL

LEM

LEY  
LEYG

LES  
LESH

LEPY  
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC

JXC

LECS  
LECS-T

LECY

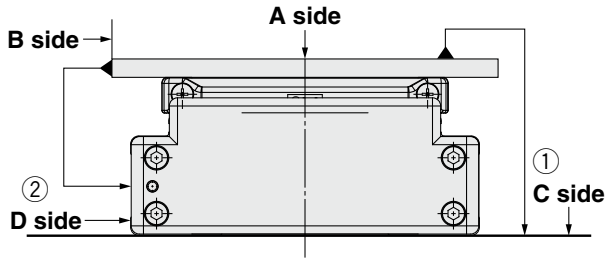
Motorless

LAT3

# LEJS Series

Motorless Type

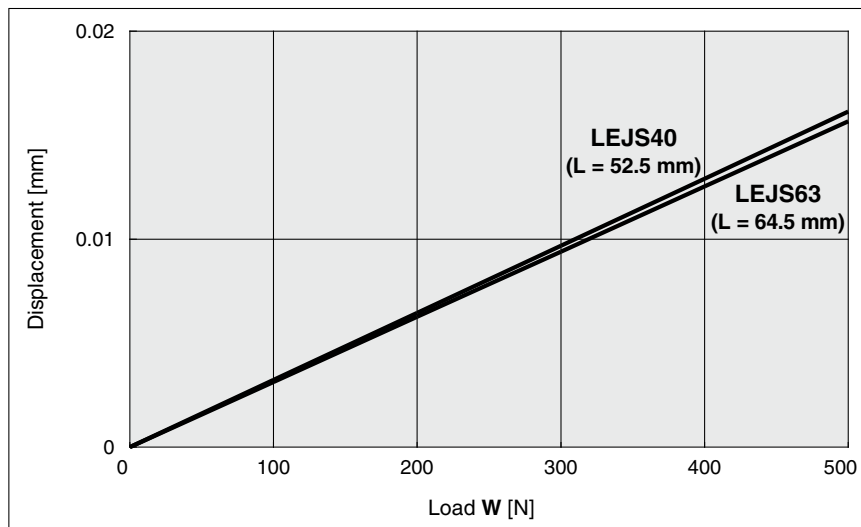
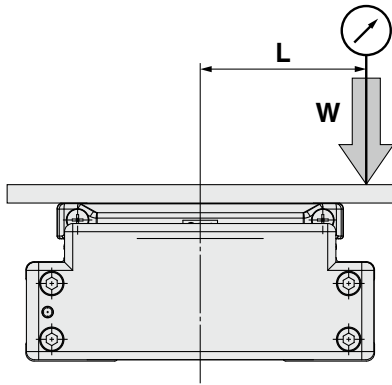
## Table Accuracy (Reference Value)



Model	Traveling parallelism [mm] (Every 300 mm)	
	① C side traveling parallelism to A side	② D side traveling parallelism to B side
LEJS40	0.05	0.03
LEJS63	0.05	0.03

\* Traveling parallelism does not include the mounting surface accuracy.

## Table Displacement (Reference Value)

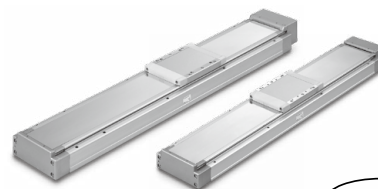


\* This displacement is measured when a 15 mm aluminum plate is mounted and fixed on the table. (Table clearance is included.)

LAT3
Motorless
LECY <input type="checkbox"/>
LECS <input type="checkbox"/> LECS-T <input type="checkbox"/>
JXC <input type="checkbox"/>
LEC <input type="checkbox"/>
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

## LEJS Series LEJS40, 63



### How to Order

**LEJS H 40 NZ A - 500**

①      ②      ③      ④      ⑤

**① Accuracy**

Nil	Basic type
H	High-precision type

**② Size**

40
63

**③ Mounting type**

NZ
NY
NX
NW*1
NV*1
NU*1
NT*1

\*1 Size 63 only

**④ Lead [mm]**

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

**⑤ Stroke [mm]**

200
to
1500

\* For details, refer to the table below.

**Applicable Stroke Table**

●: Standard

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

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

For auto switches, refer to pages 894 to 897.

**Compatible Motors and Mounting Types**

Applicable motor model		Size/Mounting type										
Manufacturer	Series	40			63							
		NZ	NY	NX	NZ	NY	NX	NW	NV	NU	NT	
Mitsubishi Electric Corporation	MELSERVO JN/J4/J5	●	—	—	●	—	—	—	—	—	—	—
YASKAWA Electric Corporation	Σ-V/7	●*1	—	—	●	—	—	—	—	—	—	—
SANYO DENKI CO., LTD.	SANMOTION R	●	—	—	●	—	—	—	—	—	—	—
OMRON Corporation	OMNUC G5/1S	●	—	—	—	●	—	—	—	—	—	—
Panasonic Corporation	MINAS A5/A6	● (MHMF only)	●	—	—	●	—	—	—	—	—	—
FANUC CORPORATION	βis (-B)	●	—	—	● (β1 only)	—	—	●	—	—	—	—
NIDEC SANKYO CORPORATION	S-FLAG	●	—	—	●	—	—	—	—	—	—	—
KEYENCE CORPORATION	SV/SV2	●*1	—	—	●	—	—	—	—	—	—	—
FUJI ELECTRIC CO., LTD.	ALPHA7	●	—	—	●	—	—	—	—	—	—	—
Rockwell Automation, Inc. (Allen-Bradley)	Kinetix MP/VP/TL	● (TL only)	—	—	—	—	—	● (MP/VP only)	—	—	—	● (TL only)
Beckhoff Automation GmbH	AM 30/31/80/81	●	—	—	—	—	—	● (80/81 only)	—	● (30 only)	● (31 only)	—
Siemens AG	SIMOTICS S-1FK7	—	—	●	—	—	—	●	—	—	—	—
Delta Electronics, Inc.	ASDA-A2	●	—	—	●	—	—	—	—	—	—	—
ANCA Motion	AMD2000	●	—	—	●	—	—	—	—	—	—	—

\*1 For some motors, the connector may protrude from the motor body. Be sure to check for interference with the mounting surface before selecting a motor.

## Specifications

- 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.

Model		LEJS40			LEJS63					
Stroke [mm]*1		200, 300, 400, 500, 600, 700, 800 900, 1000, 1200			300, 400, 500, 600, 700, 800, 900 1000, 1200, 1500					
Work load [kg]*2		Horizontal	15	30	55	30	45	85		
		Vertical	3	5	10	6	10	20		
Speed*3 [mm/s]	Stroke range	Up to 500	1800	1200	600	1800	1200	600		
		501 to 600	1580	1050	520					
		601 to 700	1170	780	390					
				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								
Positioning repeatability [mm]		Basic type		±0.02						
		High-precision type		±0.01						
Lost motion [mm]*4		Basic type		0.1 or less						
		High-precision type		0.05 or less						
Ball screw specifications		Thread size [mm]		ø12			ø15			
		Lead [mm]		24	16	8	30	20	10	
		Shaft length [mm]		Stroke + 118.5			Stroke + 126.5			
Impact/Vibration resistance [m/s <sup>2</sup> ]*5		50/20								
Actuation type		Ball screw								
Guide type		Linear guide								
Static allowable moment*6 [N·m]		Mep (Pitching)		83.9			121.5			
		Mey (Yawing)		88.2			135.1			
		Mer (Rolling)		88.2			135.1			
Operating temperature range [°C]		5 to 40								
Operating humidity range [%RH]		90 or less (No condensation)								
Other specifications *7		Actuation unit weight [kg]		0.86			1.37			
		Other inertia [kg·cm <sup>2</sup> ]		0.031			0.129			
		Friction coefficient		0.05						
		Mechanical efficiency		0.8						
Reference motor specifications *8		AC servo motor (100 V/200 V)								
		Rated output capacity [W]		100			200			
		Rated torque [N·m]		0.32			0.64			

- \*1 Please consult with SMC for non-standard strokes as they are produced as special orders.
- \*2 Check the "Speed-Work Load Graph (Guide)" on page 876.
- \*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 static allowable moment is the amount of static moment which can be applied to the actuator when it is stopped.  
If the product is exposed to impact or repeated load, be sure to take adequate safety measures when using the product.
- \*7 Each value is only to be used as a guide to select a motor of the appropriate capacity.
- \*8 For other specifications, refer to the specifications of the motor that is to be installed.  
\* Sensor magnet position is located in the table center.  
For detailed dimensions, refer to the "Auto Switch Mounting Position."  
\* 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.  
\* Please consult with SMC for the manufacture of intermediate strokes.  
(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]	5.0	5.8	6.5	7.3	8.1	8.8	9.6	10.4	11.1	12.7
Model	LEJS63									
Stroke [mm]	300	400	500	600	700	800	900	1000	1200	1500
Product weight [kg]	10.4	11.7	12.9	14.2	15.4	16.7	17.9	19.1	21.6	25.4

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

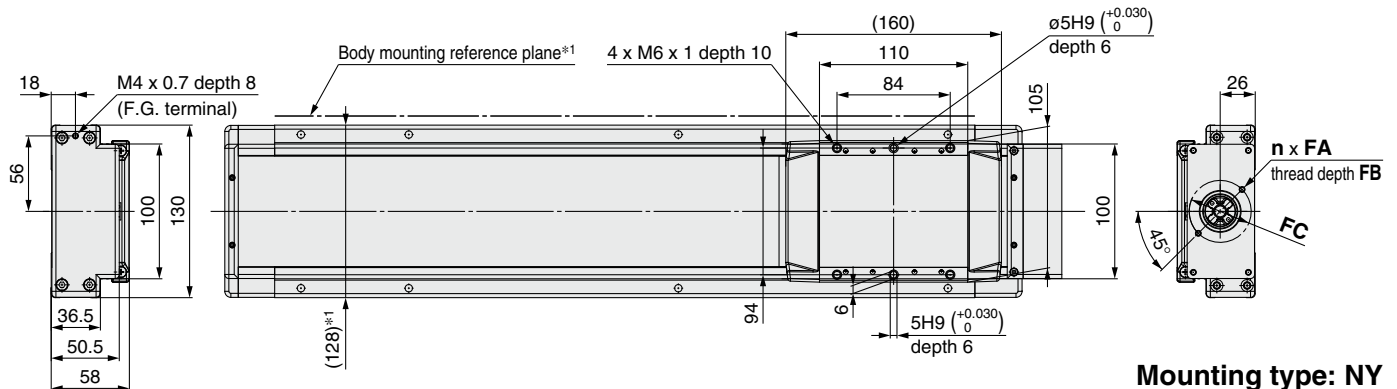
# LEJS Series

Motorless Type

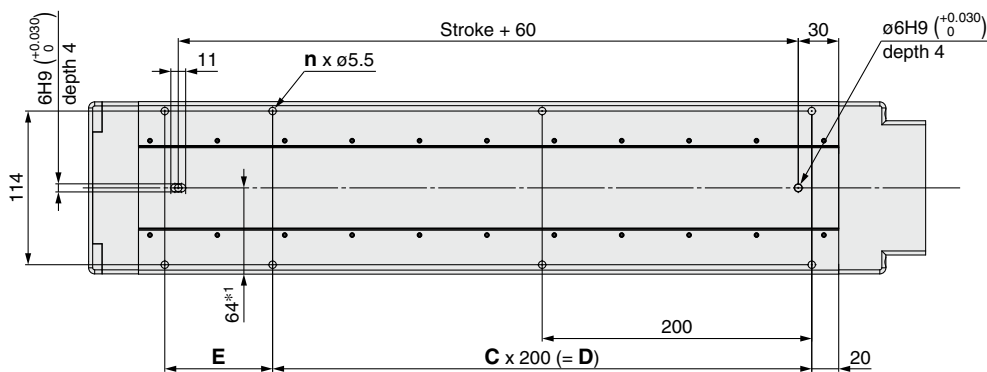
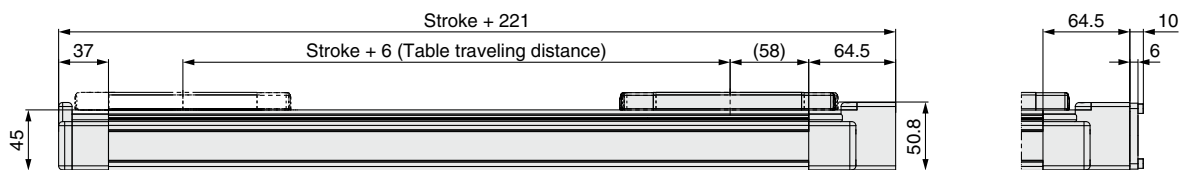
Refer to the "Motor Mounting" on page 891 for details about motor mounting and included parts.

## Dimensions: Ball Screw Drive

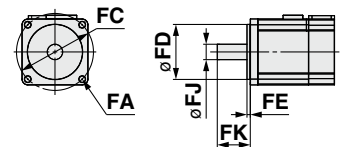
### LEJS40



Mounting type: NY  
LEJS40NY□-□



Applicable motor dimensions



\*1 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)

### Dimensions

Model	n	C	D	E	[mm]
LEJS□40N□□-200	6	1	200	80	
LEJS□40N□□-300	6	1	200	180	
LEJS□40N□□-400	8	2	400	80	
LEJS□40N□□-500	8	2	400	180	
LEJS□40N□□-600	10	3	600	80	
LEJS□40N□□-700	10	3	600	180	
LEJS□40N□□-800	12	4	800	80	
LEJS□40N□□-900	12	4	800	180	
LEJS□40N□□-1000	14	5	1000	80	
LEJS□40N□□-1200	16	6	1200	80	

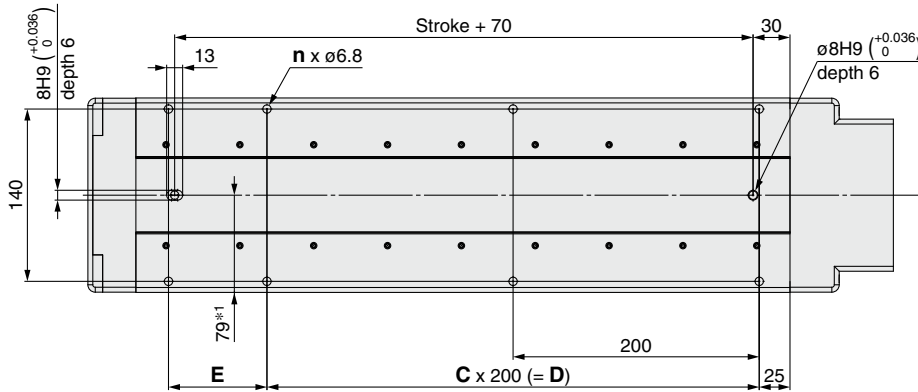
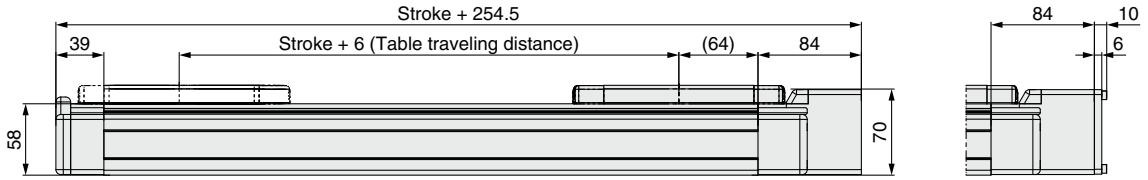
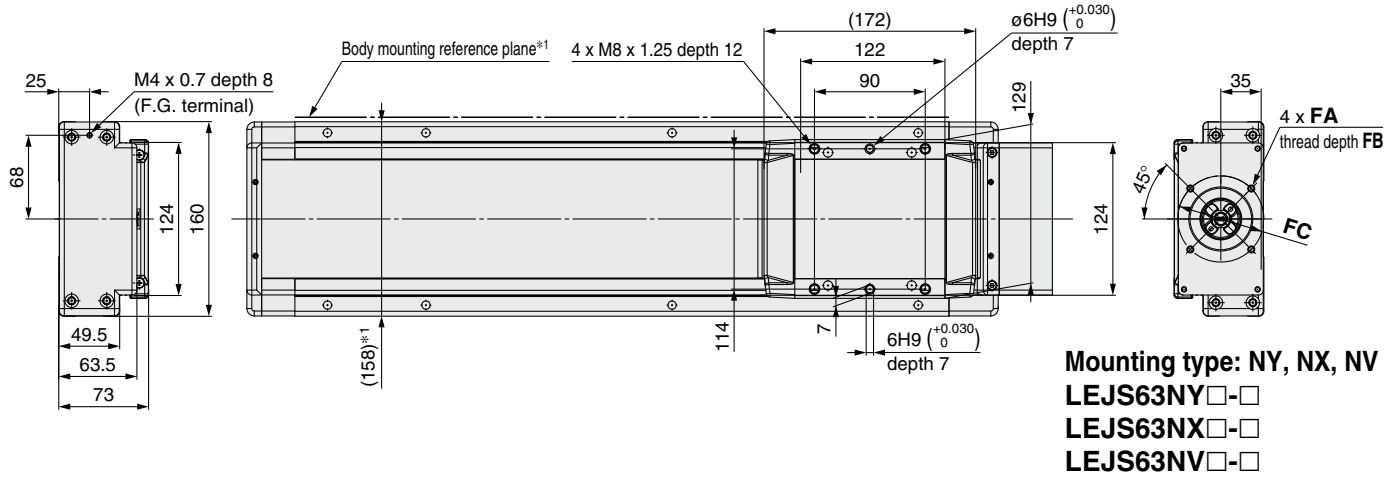
### Motor Mounting, Applicable Motor Dimensions

Mounting type	n	FA		FB	FC	FD	FE (Max.)	FJ	FK	[mm]
		Mounting type	Applicable motor							
NZ	2	M4 x 0.7	ø4.5	7	ø46	30	3.5	8	25 ±1	
NY	4	M3 x 0.5	ø3.4	6	ø45	30	3.5	8	25 ±1	
NX	2	M4 x 0.7	ø4.5	7	ø46	30	3.5	8	18 ±1	

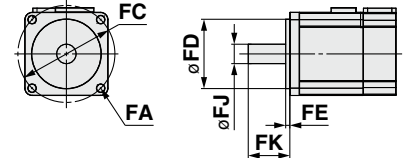
Refer to the "Motor Mounting" on page 891 for details about motor mounting and included parts.

**Dimensions: Ball Screw Drive**

**LEJS63**



**Applicable motor dimensions**



\*1 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)

Dimensions		[mm]			
Model	n	C	D	E	
LEJS□63N□□-300	6	1	200	180	
LEJS□63N□□-400	8	2	400	80	
LEJS□63N□□-500	8	2	400	180	
LEJS□63N□□-600	10	3	600	80	
LEJS□63N□□-700	10	3	600	180	
LEJS□63N□□-800	12	4	800	80	
LEJS□63N□□-900	12	4	800	180	
LEJS□63N□□-1000	14	5	1000	80	
LEJS□63N□□-1200	16	6	1200	80	
LEJS□63N□□-1500	18	7	1400	180	

Motor Mounting, Applicable Motor Dimensions		[mm]						
Mounting type	FA		FB	FC	FD	FE (Max.)	FJ	FK
	Mounting type	Applicable motor						
NZ	M5 x 0.8	ø5.8	7	ø70	50	3.3	14	30 ±1
NY	M4 x 0.7	ø4.5	6	ø70	50	3.3	11	30 ±1
NX	M5 x 0.8	ø5.8	6	ø63	40	3.5	9	20 ±1
NW	M5 x 0.8	ø5.8	7	ø70	50	3.3	9	25 ±1
NV	M4 x 0.7	ø4.5	6	ø63	40	3.5	9	20 ±1
NU	M5 x 0.8	ø5.8	7	ø70	50	3.3	11	23 ±1
NT	M5 x 0.8	ø5.8	7	ø70	50	3.3	12	30 ±1

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

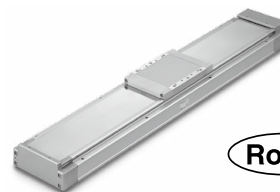


**Built-in Intermediate Supports Type**

These specifications enable the maximum speed to be realized throughout the entire stroke.

# Electric Actuator/High Rigidity Slider Type Ball Screw Drive

## LEJS63□-□M Series



Standard LEJS Series ▶ p. 885

### How to Order

LEJS **H** 63 **NZ** **A** - **790** **M**

①
②
③
④
⑤
⑥

**① Accuracy**

Nil	Basic type
H	High-precision type

**② Size**

63
----

**③ Mounting type**

NZ
NY
NX
NW
NV
NU
NT

**④ Lead [mm]**

H	30
A	20
B	10

**⑤ Stroke [mm]\*1**

●Standard ○Produced upon receipt of order

790	890	990	1190	1490	1790
●	●	○	○	○	○

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

**⑥ Built-in intermediate supports**

M	Built-in intermediate supports
---	--------------------------------

### Specifications

		Lead [mm]			
		30	20	10	
Speed [mm/s]	Stroke range	790	1800	1200	600
		890			
		990			
		1190			
		1490			
		1790			

For the model selection method, refer to page 875. Specifications other than those listed are the same as the standard product. Refer to page 886 for details. For details on the construction, refer to page 194.

For auto switches, refer to pages 894 to 897.

### Compatible Motors and Mounting Types

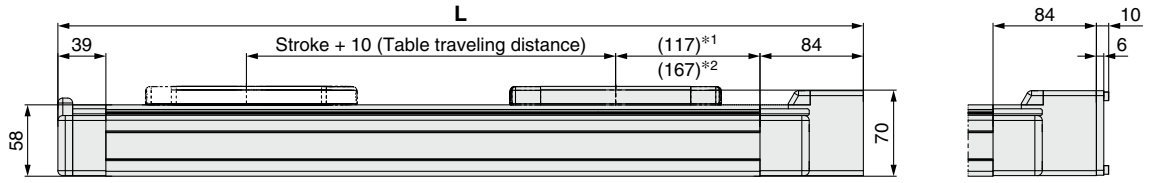
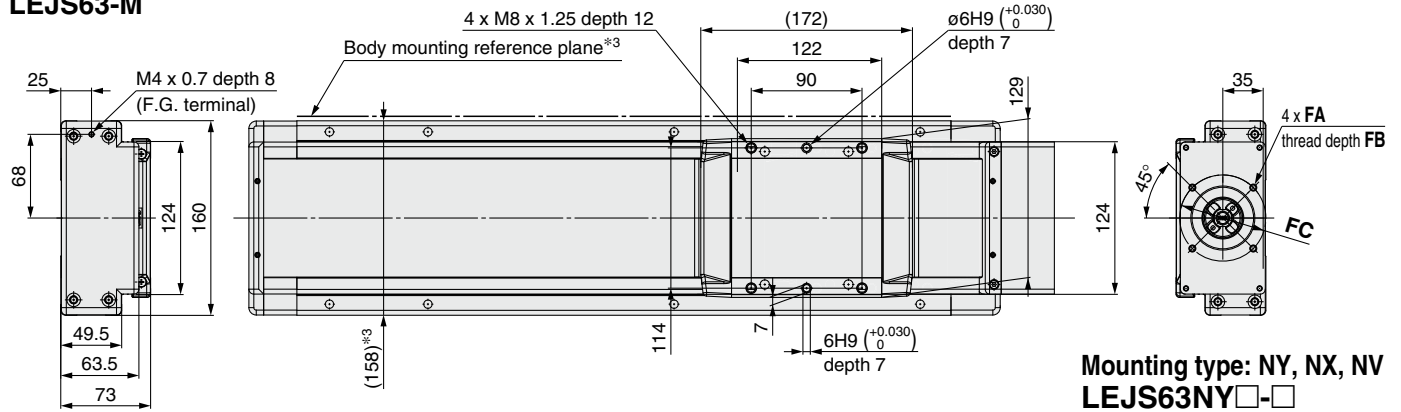
Applicable motor model		Size/Mounting type						
Manufacturer	Series	63						
		NZ	NY	NX	NW	NV	NU	NT
Mitsubishi Electric Corporation	MELSERVO JN/J4/J5	●	—	—	—	—	—	—
YASKAWA Electric Corporation	Σ-V/7	●*1	—	—	—	—	—	—
SANYO DENKI CO., LTD.	SANMOTION R	●	—	—	—	—	—	—
OMRON Corporation	OMNUC G5/1S	—	●	—	—	—	—	—
Panasonic Corporation	MINAS A5/A6	—	●	—	—	—	—	—
FANUC CORPORATION	βis (-B)	● (β1 only)	—	—	●	—	—	—
NIDEC SANKYO CORPORATION	S-FLAG	●	—	—	—	—	—	—
KEYENCE CORPORATION	SV/SV2	●*1	—	—	—	—	—	—
FUJI ELECTRIC CO., LTD.	ALPHA7	●	—	—	—	—	—	—
Rockwell Automation, Inc. (Allen-Bradley)	Kinetix MP/VP/TL	—	—	● (MP/VP only)	—	—	—	● (TL only)
Beckhoff Automation GmbH	AM 30/31/80/81	—	—	● (80/81 only)	—	● (30 only)	● (31 only)	—
Siemens AG	SIMOTICS S-1FK7	—	—	●	—	—	—	—
Delta Electronics, Inc.	ASDA-A2	●	—	—	—	—	—	—
ANCA Motion	AMD2000	●	—	—	—	—	—	—

\*1 For some motors, the connector may protrude from the motor body. Be sure to check for interference with the mounting surface before selecting a motor.

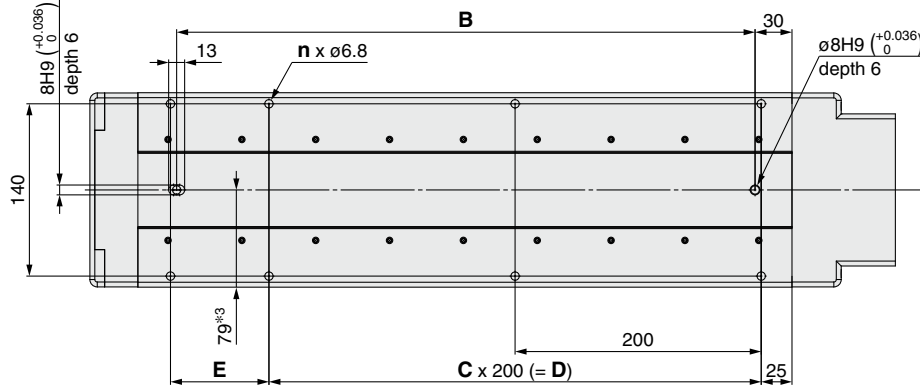
The motor mounting method and the included parts are the same as the standard product. Refer to page 891 for details.

### Dimensions: Ball Screw Drive

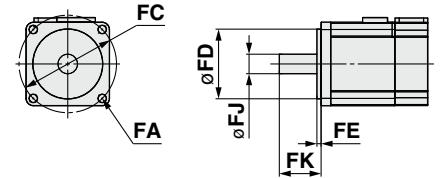
#### LEJS63-M



\*1 Upper dimension: 790 to 1190 mm stroke  
\*2 Lower dimension: 1490 to 1790 mm stroke



#### Applicable motor dimensions



\*3 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)

### ⚠ Caution

- During operation, the intermediate support mechanism emits a collision noise due to the structure.
- Compared to the standard product, the entire length of the product will be longer for each stroke. For details, refer to the dimensions.
- The stopper type origin position return method cannot be used as the return to origin method (due to the bumper as shown in Construction ④ on page 194).

#### Dimensions and Weight

Model	L	B	n	C	D	E	Product weight [kg]
LEJS□63N□□-790M	1154.5	970	12	4	800	180	18.4
LEJS□63N□□-890M	1254.5	1070	14	5	1000	80	19.7
LEJS□63N□□-990M	1354.5	1170	14	5	1000	180	20.9
LEJS□63N□□-1190M	1554.5	1370	16	6	1200	180	23.4
LEJS□63N□□-1490M	1954.5	1770	20	8	1600	180	28.9
LEJS□63N□□-1790M	2254.5	2070	24	10	2000	80	32.7

#### Motor Mounting, Applicable Motor Dimensions [mm]

Mounting type	FA		FB	FC	FD	FE (Max.)	FJ	FK
	Mounting type	Applicable motor						
NZ	M5 x 0.8	ø5.8	7	ø70	50	3.3	14	30 ±1
NY	M4 x 0.7	ø4.5	6	ø70	50	3.3	11	30 ±1
NX	M5 x 0.8	ø5.8	6	ø63	40	3.5	9	20 ±1
NW	M5 x 0.8	ø5.8	7	ø70	50	3.3	9	25 ±1
NV	M4 x 0.7	ø4.5	6	ø63	40	3.5	9	20 ±1
NU	M5 x 0.8	ø5.8	7	ø70	50	3.3	11	23 ±1
NT	M5 x 0.8	ø5.8	7	ø70	50	3.3	12	30 ±1

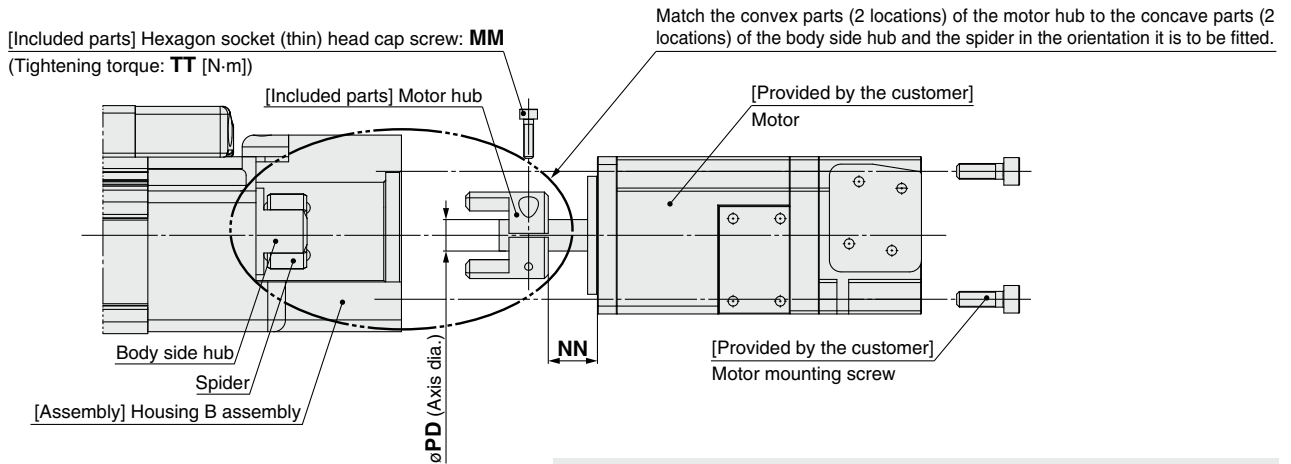
- LEFS
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEY
- LEYG
- LES
- LESH
- LEPY
- LEPS
- LER
- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC□
- JXC□
- LECS□
- LECS□-T
- LECY□
- Motor/less
- LAT3

# LEJS Series

Motorless Type

- When mounting a hub, remove all oil content, dust, and dirt adhered to the shaft and the inside of the hub.
- This product does not include the motor and motor mounting screws. (Provided by the customer)  
Prepare a motor with a round shaft end.
- Take measures to prevent the loosening of the motor mounting screws.

## Motor Mounting



### Mounting procedure

- 1) Secure the motor hub to the motor (provided by the customer) with the **MM** hexagon socket head cap screw.
- 2) Check the motor hub position, and then insert it.
- 3) Secure the motor to the housing B assembly with the motor mounting screws (provided by the customer).

### Dimensions

Size	Mounting type	MM	TT	NN	PD
40	<b>NZ</b>	M2.5 x 10	0.65	12.5	8
	<b>NY</b>	M2.5 x 10	0.65	12.5	8
	<b>NX</b>	M2.5 x 10	0.65	7	8
63	<b>NZ</b>	M3 x 12	1.5	18	14
	<b>NY</b>	M4 x 12	2.7	18	11
	<b>NX</b>	M4 x 12	2.7	8	9
	<b>NW</b>	M4 x 12	2.7	12	9
	<b>NV</b>	M4 x 12	2.7	8	9
	<b>NU</b>	M4 x 12	2.7	12	11
	<b>NT</b>	M3 x 12	1.5	18	12

### Included Parts List

#### Size: 40

Description	Quantity	Note
Motor hub	1	—
Hexagon socket head cap screw (to secure the hub)	1	M2.5 x 10: Mounting type "NZ," "NY," "NX"

#### Size: 63

Description	Quantity	Note
Motor hub	1	—
Hexagon socket head cap screw (to secure the hub)	1	M3 x 12: Mounting type "NZ," "NT"
Hexagon socket thin head cap screw (to secure the hub)		M4 x 12: Mounting type "NY," "NX," "NW," "NV," "NU"

# LEJS Series Motor Mounting Parts

## Motor Flange Option

As the mounting type "NZ" is selected for the model and this option is mounted, the mounting types that can be used are shown below.

## How to Order

LEJ-MF **63** D-**NY**

①

②

### ① Size

40	For LEJ40
63	For LEJ63

### ② Mounting type

NY
NX
NW
NV
NU
NT

\* Component parts vary depending on the mounting type. Refer to the "Component Parts" on page 893.

## Compatible Motors and Mounting Types

Applicable motor model		Size/Mounting type									
Manufacturer	Series	40			63						
		NZ	NY	NX	NZ	NY	NX	NW	NV	NU	NT
Mitsubishi Electric Corporation	MELSERVO JN/J4/J5	●	—	—	●	—	—	—	—	—	—
YASKAWA Electric Corporation	Σ-V/7	●*1	—	—	●	—	—	—	—	—	—
SANYO DENKI CO., LTD.	SANMOTION R	●	—	—	●	—	—	—	—	—	—
OMRON Corporation	OMNUC G5/1S	●	—	—	—	●	—	—	—	—	—
Panasonic Corporation	MINAS A5/A6	● (MHMF only)	●	—	—	●	—	—	—	—	—
FANUC CORPORATION	βis (-B)	●	—	—	● (β1 only)	—	—	●	—	—	—
NIDEC SANKYO CORPORATION	S-FLAG	●	—	—	●	—	—	—	—	—	—
KEYENCE CORPORATION	SV/SV2	●*1	—	—	●	—	—	—	—	—	—
FUJI ELECTRIC CO., LTD.	ALPHA7	●	—	—	●	—	—	—	—	—	—
Rockwell Automation, Inc. (Allen-Bradley)	Kinetix MP/VP/TL	● (TL only)	—	—	—	—	● (MP/VP only)	—	—	—	● (TL only)
Beckhoff Automation GmbH	AM 30/31/80/81	●	—	—	—	—	● (80/81 only)	—	● (30 only)	● (31 only)	—
Siemens AG	SIMOTICS S-1FK7	—	—	●	—	—	●	—	—	—	—
Delta Electronics, Inc.	ASDA-A2	●	—	—	●	—	—	—	—	—	—
ANCA Motion	AMD2000	●	—	—	●	—	—	—	—	—	—

\*1 For some motors, the connector may protrude from the motor body. Be sure to check for interference with the mounting surface before selecting a motor.

LEFS  
LEFB

LEJS  
LEJB

LEL

LEM

LEY  
LEYG

LES  
LESH

LEPY  
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC□

JXC□

LECS□  
LECS□-T

LECY□

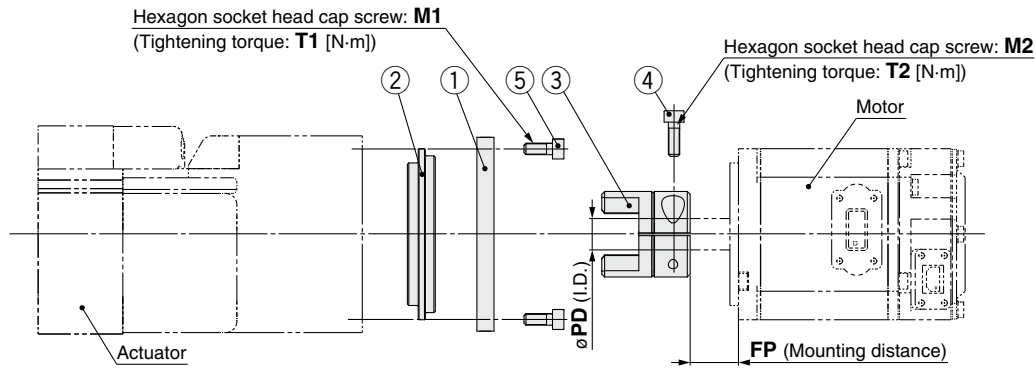
Motorless

LAT3

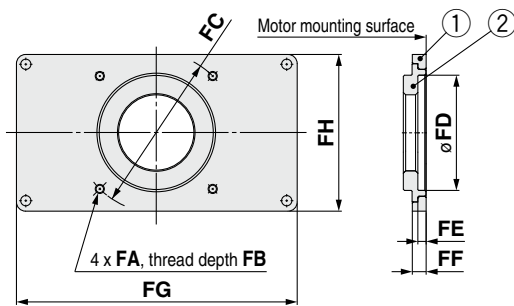
# LEJS Series

Motorless Type

## Dimensions: Motor Flange Option



### Motor plate details



### Dimensions

Size	Mounting type	FA	FB	FC	FD	FE	FF	FG	FH	M1	T1	M2	T2	PD	FP
40	NY	M3 x 0.5	6	$\phi 45$	30	3.5	6	99	49	M4 x 12	2.7	M2.5 x 10	0.65	8	12.5
	NX	—	—	—	—	—	—	—	—	—	—	M2.5 x 10	0.65	8	7
63	NY	M4 x 0.7	6	$\phi 70$	50	3.5	6	123	68	M4 x 12	2.7	M4 x 12	2.7	11	18
	NX	M5 x 0.8	6	$\phi 63$	40	3.5	6	123	68	M4 x 12	2.7	M4 x 12	2.7	9	8
	NW	—	—	—	—	—	—	—	—	—	—	M4 x 12	2.7	9	12
	NV	M4 x 0.7	6	$\phi 63$	40	3.5	6	123	68	M4 x 12	2.7	M4 x 12	2.7	9	8
	NU	—	—	—	—	—	—	—	—	—	—	M4 x 12	2.7	11	12
	NT	—	—	—	—	—	—	—	—	—	—	M3 x 12	1.5	12	18

### Component Parts

#### Size: 40

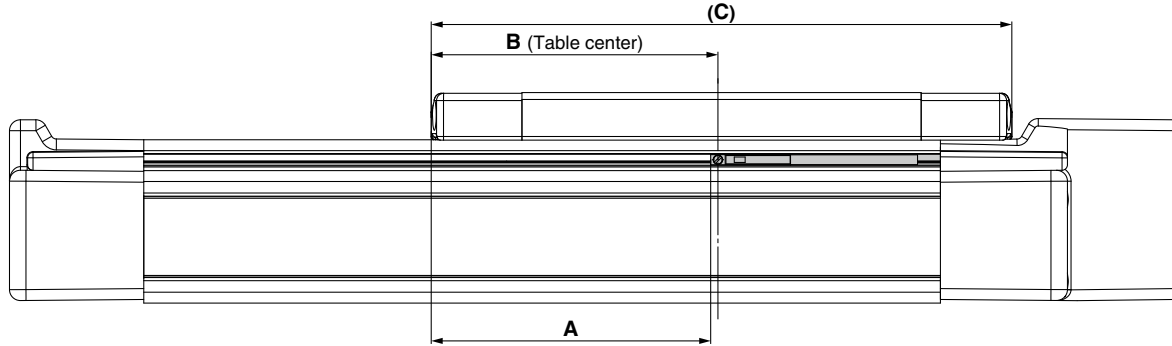
No.	Description	Quantity	
		Mounting type	
		NY	NX
1	Motor plate	1	—
2	Ring	1	—
3	Hub (Motor side)	1	1
4	Hexagon socket thin head cap screw	1	1
5	Hexagon socket head cap screw	4	—

#### Size: 63

No.	Description	Quantity					
		Mounting type					
		NY	NX	NW	NV	NU	NT
1	Motor plate	1	1	—	1	—	—
2	Ring	1	1	—	1	—	—
3	Hub (Motor side)	1	1	1	1	1	1
4	Hexagon socket thin head cap screw	1	1	1	1	1	1
5	Hexagon socket head cap screw	4	4	—	4	—	—

# LEJS Series Auto Switch Mounting

## Auto Switch Mounting Position



[mm]					
Model	Size	A	B	C	Operating range
LEJS	40	77	80	160	5.5
	63	83	86	172	7.0

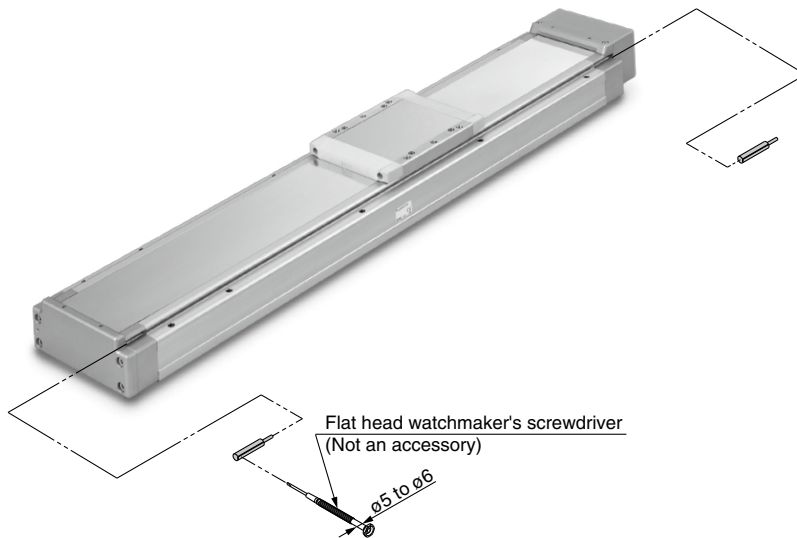
\* Since the operating range is provided as a guideline including hysteresis, it cannot be guaranteed (assuming approximately  $\pm 30\%$  dispersion). It may change substantially depending on the ambient environment.

## Auto Switch Mounting

When mounting the auto switches, they should be inserted into the actuator's auto switch mounting groove as shown in the drawing below. After setting in the mounting position, use a flat head watchmaker's screwdriver to tighten the auto switch mounting screw that is included.

### 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



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

LEFS  
LEFBLEJS  
LEJB

LEL

LEM

LEY  
LEYGLES  
LESHLEPY  
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC□

JXC□

LECS□  
LECS□-T

LECY□

Motorless

LAT3

# Solid State Auto Switch Direct Mounting Type D-M9N(V)/D-M9P(V)/D-M9B(V)



Refer to the SMC website for details on products that are compliant with international standards.

## Grommet

- 2-wire load current is reduced (2.5 to 40 mA).
- Using flexible cable as standard spec.



## 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□, D-M9□V (With indicator light)						
Auto switch model	D-M9N	D-M9NV	D-M9P	D-M9PV	D-M9B	D-M9BV
Electrical entry direction	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 illuminates when turned ON.					
Standard	CE marking, RoHS					

## Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-M9N(V)	D-M9P(V)	D-M9B(V)
Sheath	Outside diameter [mm]	2.6		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	0.88		
Conductor	Effective area [mm <sup>2</sup> ]	0.15		
	Strand diameter [mm]	0.05		
Minimum bending radius [mm] (Reference values)		17		

- \* Refer to page 996 for solid state auto switch common specifications.
- \* Refer to page 996 for lead wire lengths.

## Weight

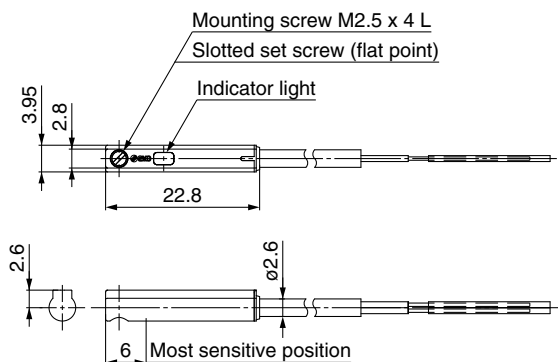
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Auto switch model		D-M9N(V)	D-M9P(V)	D-M9B(V)
Lead wire length	0.5 m (Nil)	8	7	7
	1 m (M)	14	13	13
	3 m (L)	41	38	38
	5 m (Z)	68	63	63

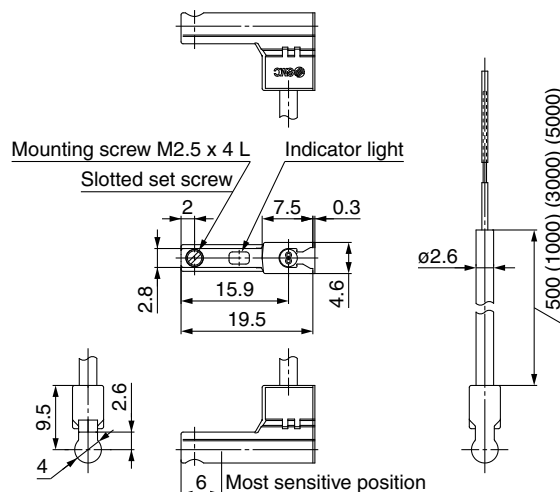
## Dimensions

[mm]

### D-M9□



### D-M9□V



# Normally Closed Solid State Auto Switch Direct Mounting Type

## D-M9NE(V)/D-M9PE(V)/D-M9BE(V)



Refer to the SMC website for details on products that are compliant with international standards.

### Grommet

- Output signal turns on when no magnetic force is detected.
- Can be used for the actuator adopted by the solid state auto switch D-M9 series (excluding special order products)



### 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□E, D-M9□EV (With indicator light)						
Auto switch model	D-M9NE	D-M9NEV	D-M9PE	D-M9PEV	D-M9BE	D-M9BEV
Electrical entry direction	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 illuminates when turned ON.					
Standard	CE marking, RoHS					

### Oilproof Heavy-duty Lead Wire Specifications

Auto switch model	D-M9NE(V)	D-M9PE(V)	D-M9BE(V)
Sheath	Outside diameter [mm]		
	2.6		
Insulator	Number of cores		2 cores (Brown/Blue)
	Outside diameter [mm]		0.88
Conductor	Effective area [mm <sup>2</sup> ]		0.15
	Strand diameter [mm]		0.05
Minimum bending radius [mm] (Reference values)			17

\* Refer to page 996 for solid state auto switch common specifications.  
\* Refer to page 996 for lead wire lengths.

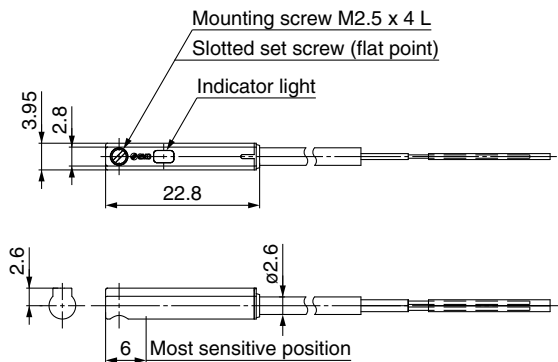
### Weight

Auto switch model	D-M9NE(V)	D-M9PE(V)	D-M9BE(V)
Lead wire length	0.5 m (Nil)	8	7
	1 m (M)*1	14	13
	3 m (L)	41	38
	5 m (Z)*1	68	63

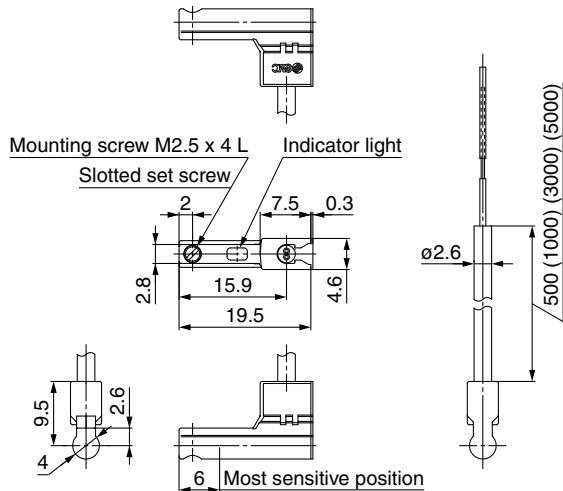
\*1 The 1 m and 5 m options are produced upon receipt of order.

### Dimensions

#### D-M9□E



#### D-M9□EV



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



# 2-Color Indicator Solid State Auto Switch Direct Mounting Type

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



Refer to the SMC website for details on products that are compliant with international standards.

### Grommet

- 2-wire load current is reduced (2.5 to 40 mA).
- Using flexible cable as standard spec.
- The proper 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 direction	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 illuminates. Proper operating range ..... Green LED illuminates.					
Standard	CE marking, RoHS					

### Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		D-M9NW(V)	D-M9PW(V)	D-M9BW(V)
Sheath	Outside diameter [mm]	2.6		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	0.88		
Conductor	Effective area [mm <sup>2</sup> ]	0.15		
	Strand diameter [mm]	0.05		
Minimum bending radius [mm] (Reference values)		17		

- \* Refer to page 996 for solid state auto switch common specifications.
- \* Refer to page 996 for lead wire lengths.

### Weight

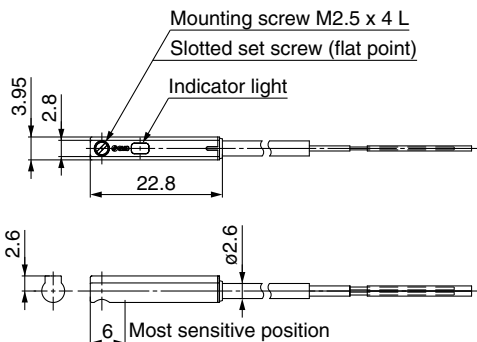
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Auto switch model		D-M9NW(V)	D-M9PW(V)	D-M9BW(V)
Lead wire length	0.5 m (Nil)	8	7	7
	1 m (M)	14	13	13
	3 m (L)	41	38	38
	5 m (Z)	68	63	63

### Dimensions

[mm]

#### D-M9□W



#### D-M9□WV

