

●ISO Class 4*1 (ISO14644-1)

- Built-in vacuum piping
- Possible to mount the main body without removing the external cover etc.
- Body-integrated linear guide specification

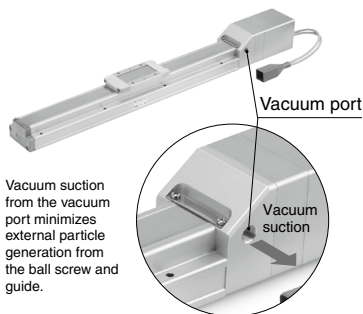
*1 Changes depending on the suction flow rate.

Slider Type Ball Screw Drive/11-LEFS Series

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

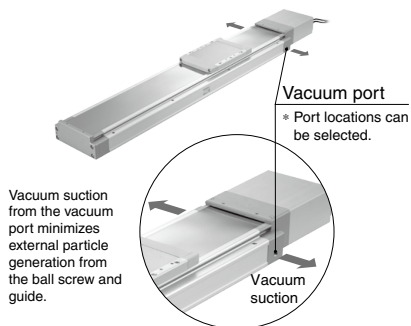
Page 514

AC Servo Motor Type Page 522



High Rigidity Slider Type Ball Screw Drive/11-LEJS Series

AC Servo Motor Type Page 533



Support Guide/11-LEFG Series Page 527

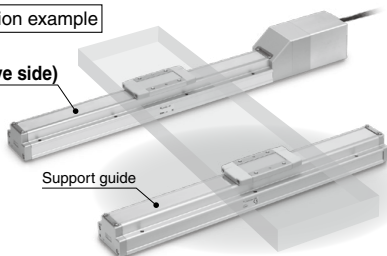
A support guide is designed to support workpieces with significant overhang.

- As the dimensions are the same as the LEF series body, installation is simple and contributes to a reduction in installation and assembly labor.
- The standard equipped seal bands prevent grease from splashing and external foreign matter from entering.

Application example

LEF (Drive side)

Support guide



⚠ Caution

After installing the actuator on the drive side, perform the alignment of the support guide. However, when the mounting flatness exceeds 0.1, install a floating mechanism separately on the workpiece installation surface (table).

LEF
LEJ
LEL
LEM
LEY
LES
LEPY
LEPS
LER
LEH
LEY-X5
11-LEFS
11-LEJS
25A-
LEC
LEC S
LEC SS-T
LEC Y
Motor-less
LAT
LZ
LC3F2

Particle Generation Characteristics

11-LEFS Series ▶ Pages 514, 522

Particle Generation Measuring Method

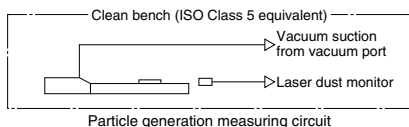
The particle generation data for SMC Clean Series are measured in the following test method.

■ Test Method (Example)

Operate the specimen that is placed in an ISO Class 5 equivalent clean bench, and measure the changes of the particle concentration over time until the number of cycles reaches the specified point.

■ Measuring Conditions

Measuring instrument	Description	Laser dust monitor (Automatic particle counter by lightscattering method)
	Minimum measurable particle diameter	0.1 μm
	Suction flow rate	28.3 L/min (ANR)
Setting conditions	Sampling time	5 min
	Interval time	55 min
	Sampling air flow	141.5 L (ANR)



■ Evaluation Method

To obtain the measured values of particle concentration, the accumulated value ^{Note 1)} of particles captured every 5 minutes, by the laser dust monitor, is converted into the particle concentration in every 1 m³.

When determining particle generation grades, the 95% upper confidence limit of the average particle concentration (average value), when each specimen is operated at a specified number of cycles ^{Note 2)} is considered.

The plots in the graphs indicate the 95% upper confidence limit of the average particle concentration of particles with a diameter within the horizontal axis range.

Note 1) Sampling air flow rate: Number of particles contained in 141.5 L (ANR) of air

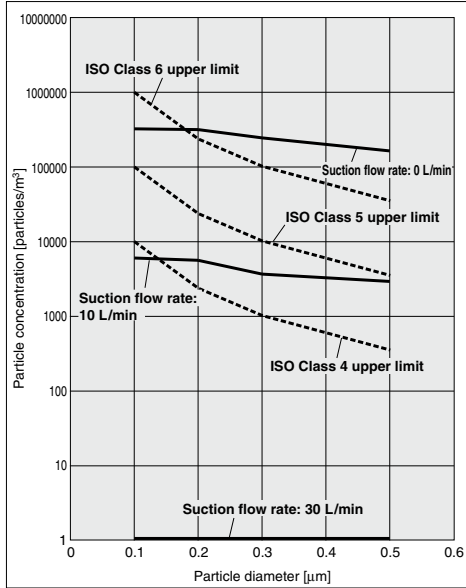
Note 2) Actuator: 1 million cycles

Note 3) The particle generation characteristics (Page 532) provide a guide for selection but is not guaranteed.

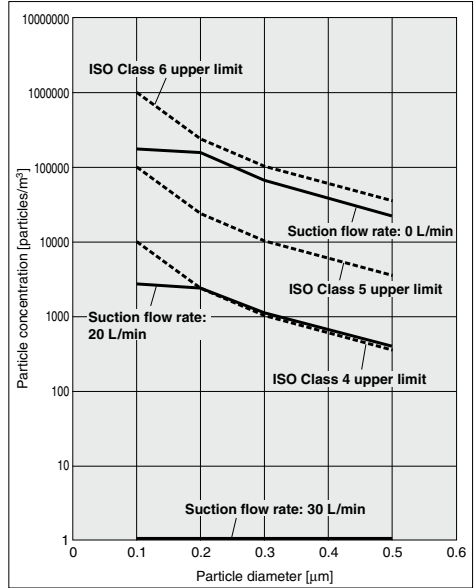
Note 4) When the suction flow rate is 0 L/min, the particle concentration is measured during operation without suction.

Particle Generation Characteristics
Step Motor (Servo/24 VDC), Servo Motor (24 VDC)

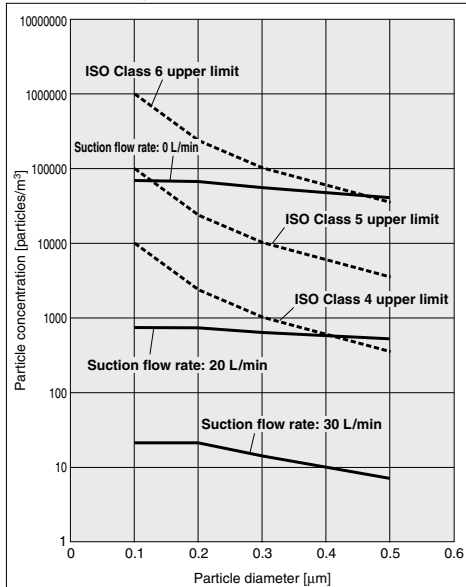
11-LEFS16 Speed 500 mm/s



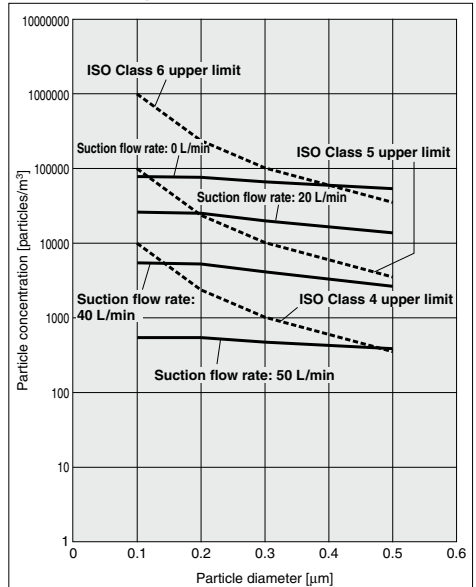
11-LEFS25 Speed 500 mm/s



11-LEFS32 Speed 500 mm/s



11-LEFS40 Speed 500 mm/s



LEF

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LES

LEPY

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LEY

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11-LEFS

11-LEJS

25A-

LEC

LEC

SS-T

LEC

Y

Motor-less

LAT

LZ

LC3F2

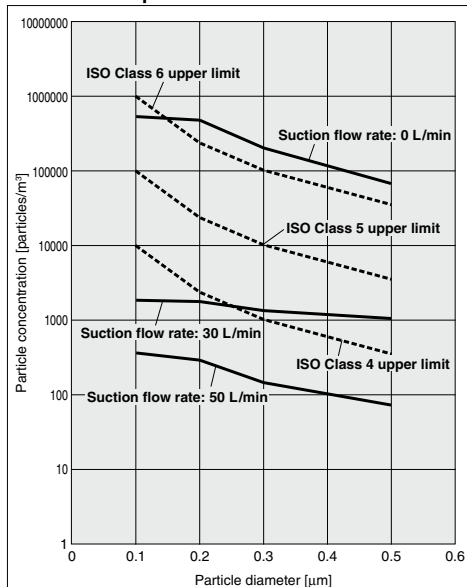
11-LEFS Series

AC Servo Motor

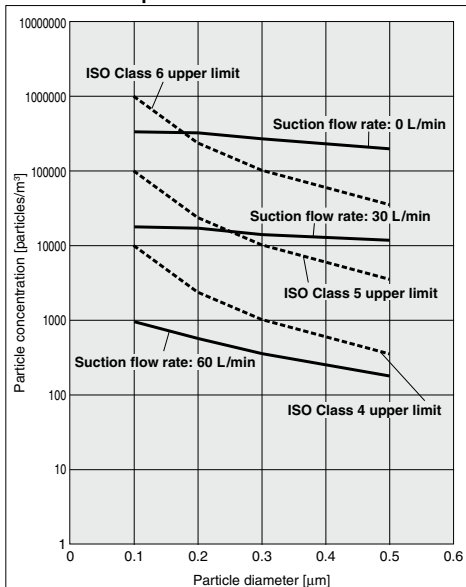
Clean Room Specification

Particle Generation Characteristics AC Servo Motor (100/200/400 W)

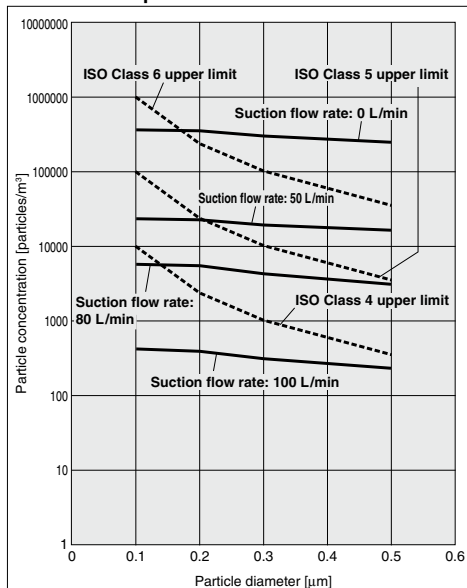
11-LEFS25 Speed 900 mm/s



11-LEFS32 Speed 1000 mm/s



11-LEFS40 Speed 1000 mm/s



LEF
LEJ
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LEH
LEY -X5
11- LEFS
11- LEJS
25A-
LEC□
LEC S□
LEC SS-T
LEC Y□
Motor- less
LAT
LZ□
LC3F2

Model Selection



LEFS Series ▶ Page 62

LEFB Series ▶ Page 90

11-LEFS Series ▶ Page 514

Selection Procedure

Step 1 Check the work load-speed.

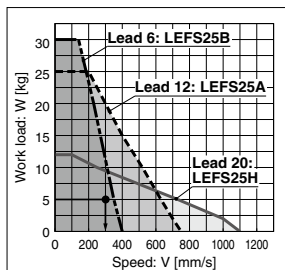
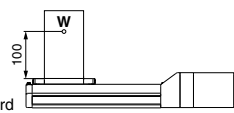
Step 2 Check the cycle time.

Step 3 Check the allowable moment.

Selection Example

Operating conditions

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



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

Step 1 Check the work load-speed. <Speed-Work load graph> (Pages 39 to 42)

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

Selection example) The **LEFS25A-200** is temporarily selected based on the graph shown on the right side.

Step 2 Check the cycle time.

Calculate the cycle time using the following calculation method.

Cycle time:

T can be found from the following equation.

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

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

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

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

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

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

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

Calculation example)

T1 to T4 can be calculated as follows.

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

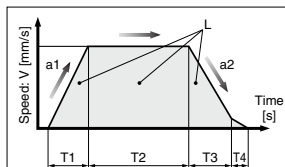
$$T3 = V/a2 = 300/3000 = 0.1 \text{ [s]}$$

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

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

Therefore, the cycle time can be obtained as follows.

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



L : Stroke [mm]

... (Operating condition)

V : Speed [mm/s]

... (Operating condition)

a1 : Acceleration [mm/s²]

... (Operating condition)

a2 : Deceleration [mm/s²]

... (Operating condition)

T1: Acceleration time [s]

Time until reaching the set speed

T2: Constant speed time [s]

Time while the actuator is operating at a constant speed

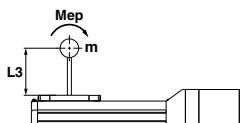
T3: Deceleration time [s]

Time from the beginning of the constant speed operation to stop

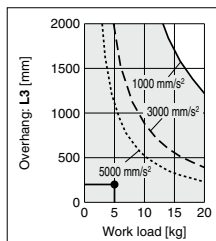
T4: Settling time [s]

Time until positioning is completed

Step 3 Check the guide moment.



Based on the above calculation result, the **LEFS25A-200** is selected.



* If the step motor and servo motors do not meet your specifications, also consider the AC servo specification (Page 46).

For the LECPA, refer to page 40.

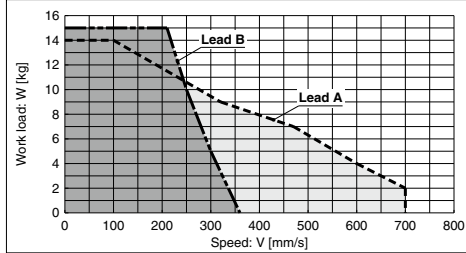
Speed-Work Load Graph (Guide)

For Step Motor (Servo/24 VDC) LECP6, LECP1, LECPMJ

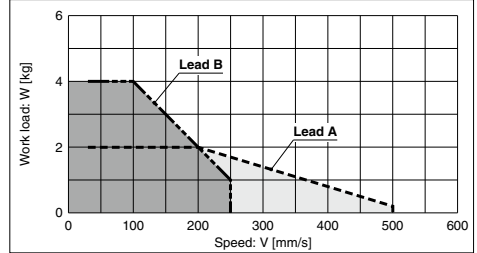
* The following graph shows the values when moving force is 100%.

LEFS16/Ball Screw Drive

Horizontal

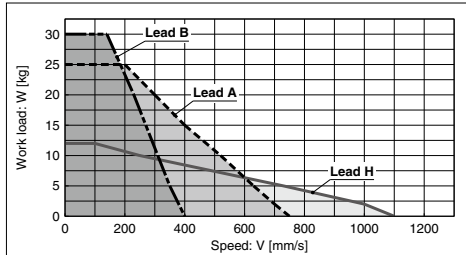


Vertical

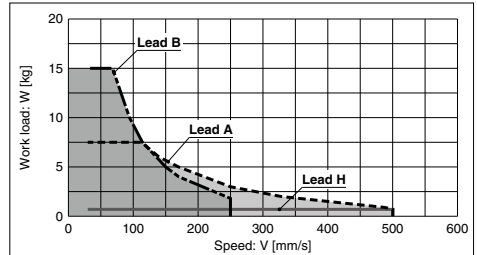


LEFS25/Ball Screw Drive

Horizontal

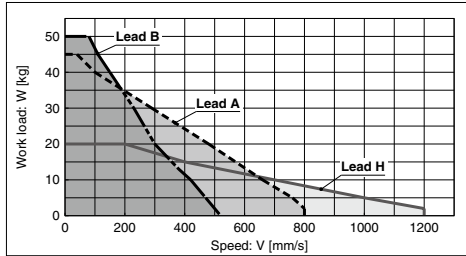


Vertical

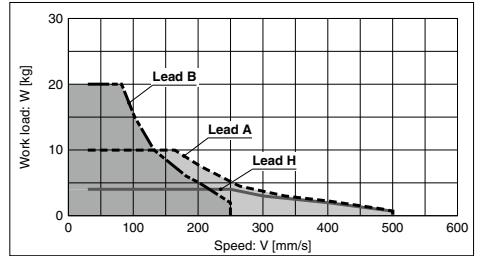


LEFS32/Ball Screw Drive

Horizontal

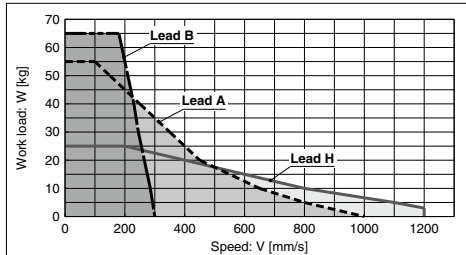


Vertical

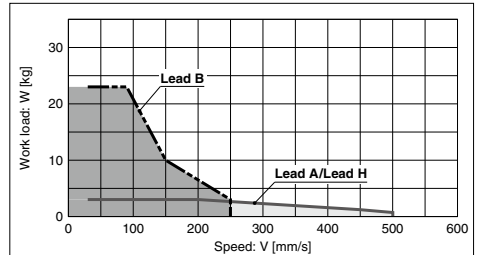


LEFS40/Ball Screw Drive

Horizontal



Vertical



LEF

LEJ

LEL

LEM

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LES

LEPY

LEPS

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LEH

LEY

-X5

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LEFS

11-

LEJS

25A-

LEC

LEC

S

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SS-T

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Y

Motor-

less

LAT

LZ

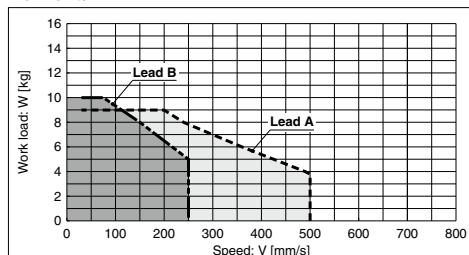
LC3F2

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

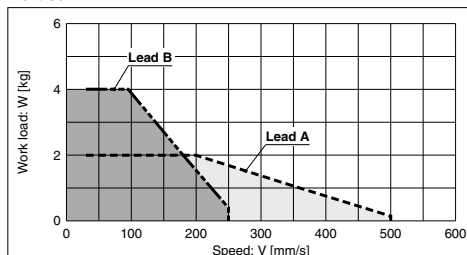
* The following graph shows the values when moving force is 100%.

LEFS16/Ball Screw Drive

Horizontal

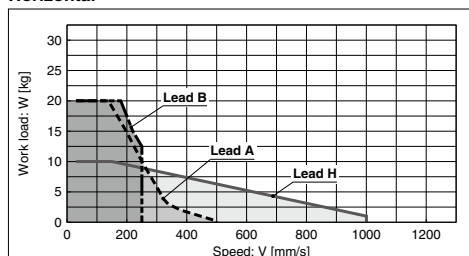


Vertical

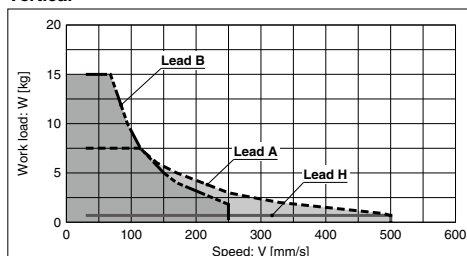


LEFS25/Ball Screw Drive

Horizontal

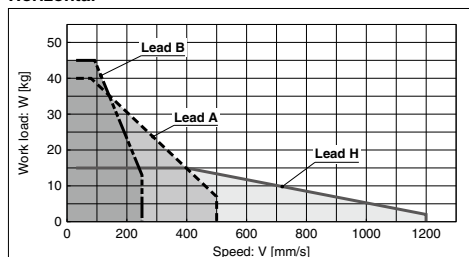


Vertical

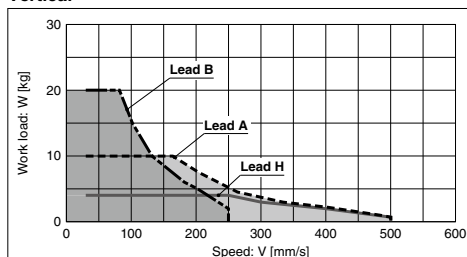


LEFS32/Ball Screw Drive

Horizontal

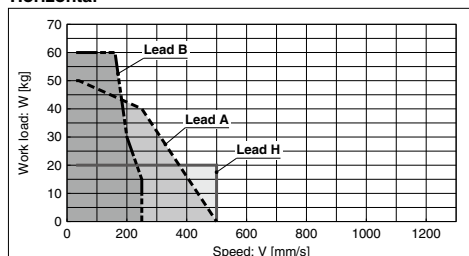


Vertical

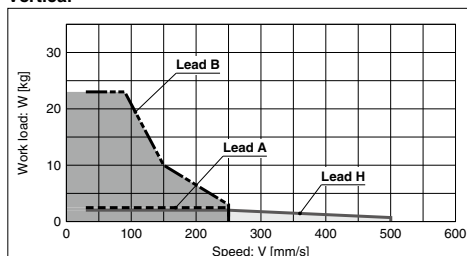


LEFS40/Ball Screw Drive

Horizontal



Vertical



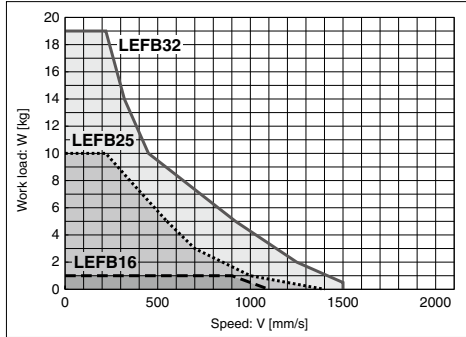
Speed-Work Load Graph (Guide)

For Step Motor (Servo/24 VDC) LECP6, LECP1, LECPMJ

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

LEFB/Belt Drive

Horizontal

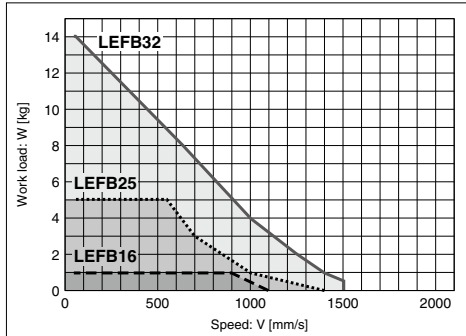


For Step Motor (Servo/24 VDC) LECPA

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

LEFB/Belt Drive

Horizontal



LEF

LEJ

LEL

LEM

LEY

LES

LEPY

LEPS

LER

LEH

LEY

-X5

11-

LEFS

11-

LEJS

25A-

LEC

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S

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SS-T

LEC

Y

Motor-

less

LAT

LZ

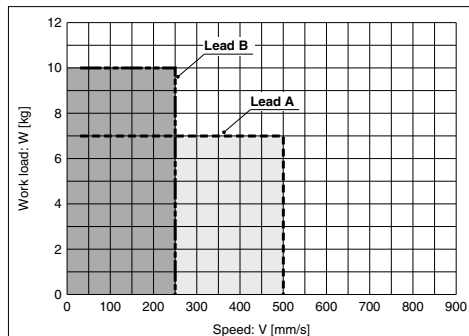
LC3F2

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

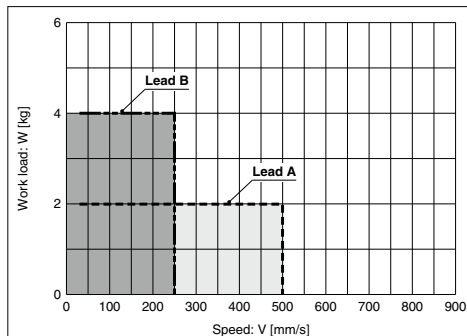
* The following graph shows the values when moving force is 250%.

LEFS16A/Ball Screw Drive

Horizontal

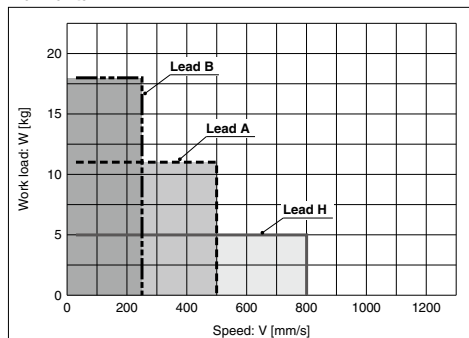


Vertical

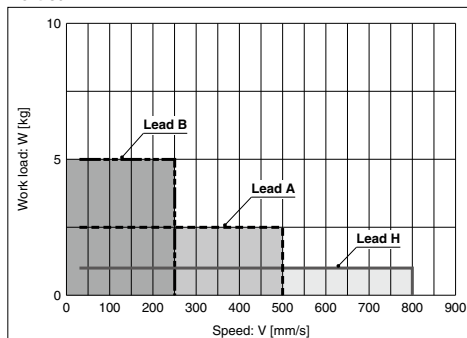


LEFS25A/Ball Screw Drive

Horizontal



Vertical

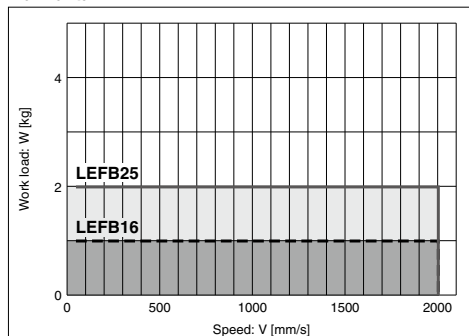


Servo Motor (24 VDC)

* The following graph shows the values when moving force is 250%.

LEFB/Belt Drive

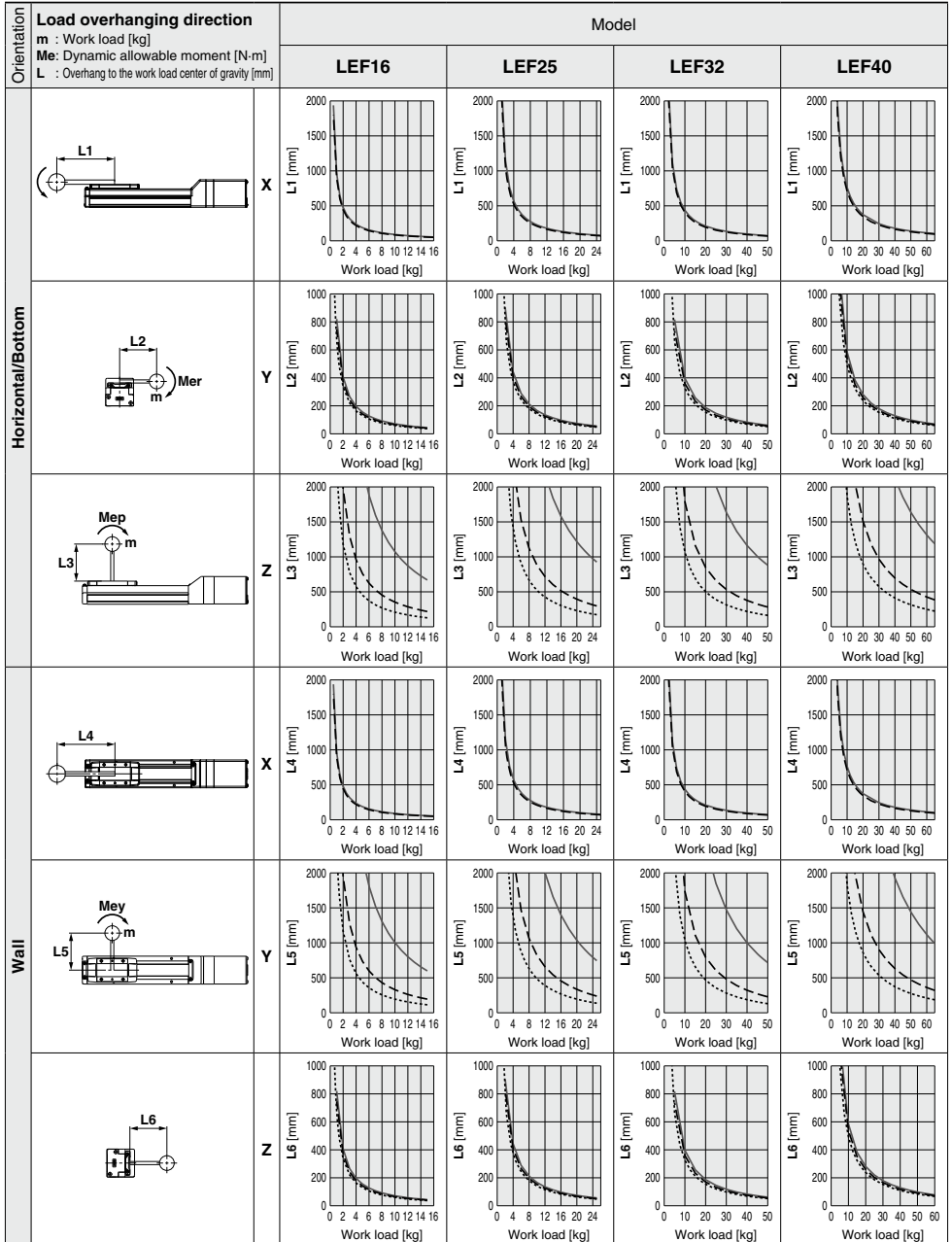
Horizontal



* 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/s² - - - 3000 mm/s² 5000 mm/s²



LEF

LEJ

LEL

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Motor-

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LAT

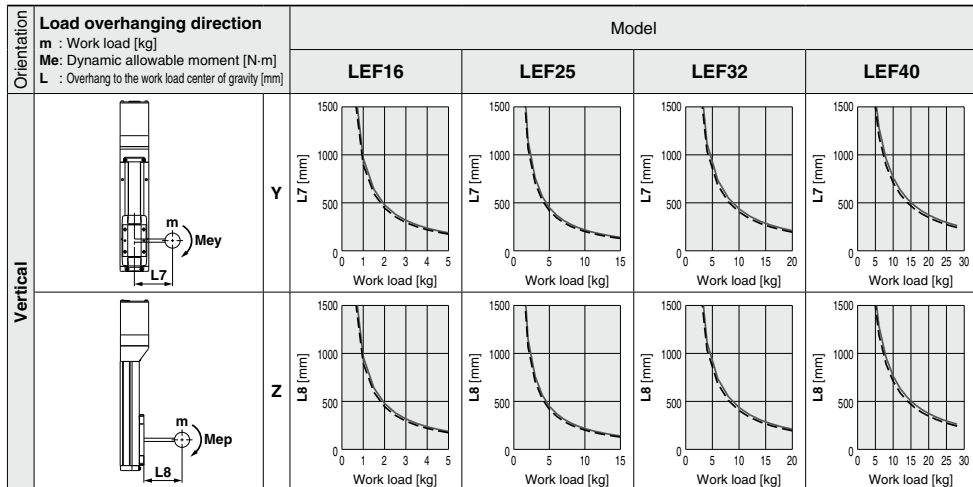
LZ

LC3F2

* 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/s² - - - 3000 mm/s² 5000 mm/s²



Calculation of Guide Load Factor

- Decide operating conditions.

Model: LEFS/LEFB

Size: 16/25/32/40

Mounting orientation: Horizontal/Bottom/Wall/Vertical

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

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

- Calculate the load factor for each direction.

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

- Confirm the total of αx , αy and αz is 1 or less.

$$\alpha x + \alpha y + \alpha z \leq 1$$

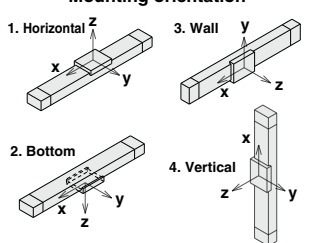
When 1 is exceeded, please consider a reduction of acceleration and work load, or a change of the work load center position and series.

Acceleration [mm/s²]: a

Work load [kg]: m

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

Mounting orientation



Example

- Operating conditions

Model: LEFS40

Size: 40

Mounting orientation: Horizontal

Acceleration [mm/s²]: 3000

Work load [kg]: 20

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

- Select the graphs for horizontal of the LEF40 on page 43.

- $Lx = 400$ mm, $Ly = 250$ mm, $Lz = 1500$ mm

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

$$\alpha x = 0/400 = 0$$

$$\alpha y = 50/250 = 0.2$$

$$\alpha z = 200/1500 = 0.13$$

- $\alpha x + \alpha y + \alpha z = 0.33 \leq 1$

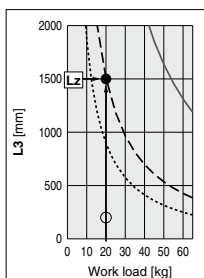
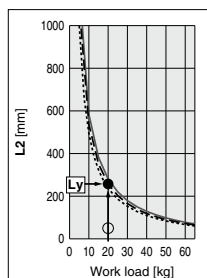
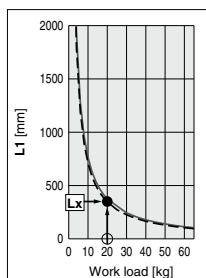
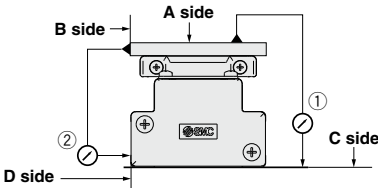


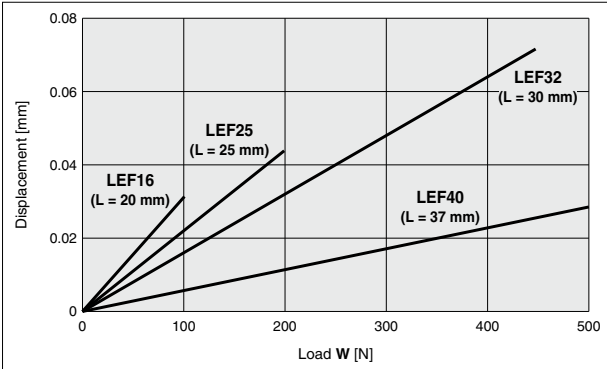
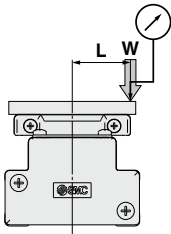
Table Accuracy



Model	Traveling parallelism [mm] (Every 300 mm)	
	① C side traveling parallelism to A side	② D side traveling parallelism to B side
LEF16	0.05	0.03
LEF25	0.05	0.03
LEF32	0.05	0.03
LEF40	0.05	0.03

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

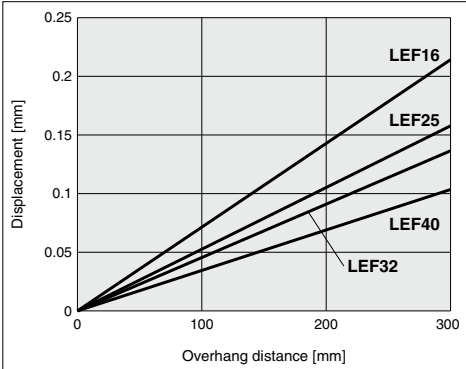
Table Displacement (Reference Value)



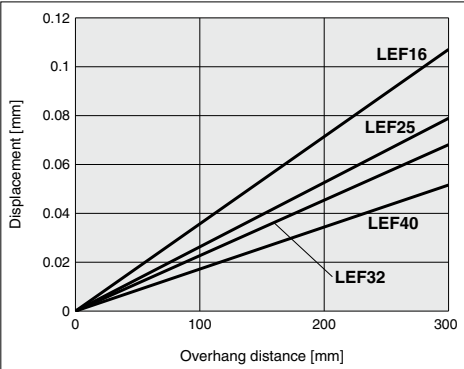
Note 1) This displacement is measured when a 15 mm aluminum plate is mounted and fixed on the table.
Note 2) Check the clearance and play of the guide separately.

Overhang Displacement Due to Table Clearance (Reference Value)

Basic type



High precision type



LEF

LEJ

LEL

LEM

LEY

LES

LEPY

LEPS

LER

LEH

LEY

-X5

11-

LEFS

11-

LEJS

25A-

LEC

LEC

S

LEC

SS-T

LEC

Y

Motor-

less

LAT

LZ

LC3F2

Model Selection



LEFS Series ▶ Page 76

11-LEFS Series ▶ Page 522

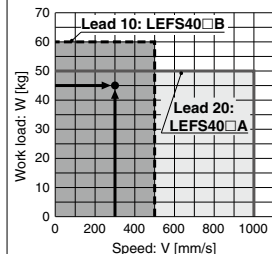
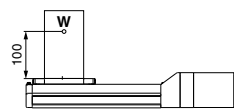
Selection Procedure

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

Selection Example

Operating conditions

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

**<Speed-Work load graph>
(LEFS40)****Step 1** Check the work load-speed. <Speed-Work load graph> (Page 47)

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

Selection example) The LEFS40S4B-200 is temporarily selected based on the graph shown on the right side.

Step 2 Check the cycle time.

Calculate the cycle time using the following calculation method.

Cycle time:

T can be found from the following equation.

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

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

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

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

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

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

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

Calculation example)

T1 to T4 can be calculated as follows.

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

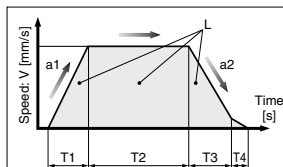
$$T3 = V/a2 = 300/3000 = 0.1 \text{ [s]}$$

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

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

Therefore, the cycle time can be obtained as follows.

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



L : Stroke [mm]

... (Operating condition)

V : Speed [mm/s]

... (Operating condition)

a1 : Acceleration [mm/s²]

... (Operating condition)

a2 : Deceleration [mm/s²]

... (Operating condition)

T1: Acceleration time [s]

Time until reaching the set speed

T2: Constant speed time [s]

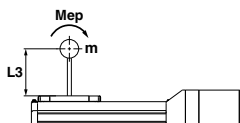
Time while the actuator is operating at a constant speed

T3: Deceleration time [s]

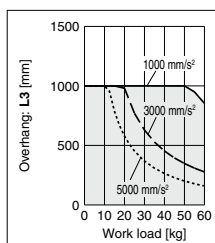
Time from the beginning of the constant speed operation to stop

T4: Settling time [s]

Time until positioning is completed

Step 3 Check the guide moment.

Based on the above calculation result, the LEFS40S4B-200 is selected.

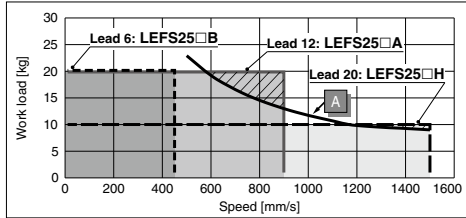


Speed-Work Load Graph/Required Conditions for "Regeneration Option"(Guide)

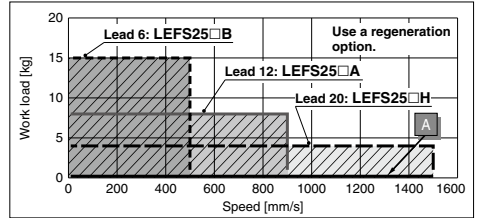
* The allowable speed is restricted depending on the stroke.
Select it by referring to "Allowable Stroke Speed" below.

LEFS25/Ball Screw Drive

Horizontal

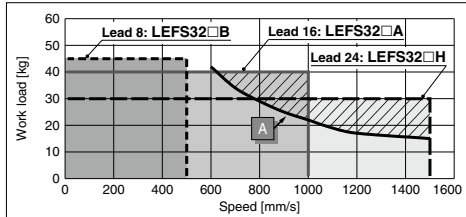


Vertical

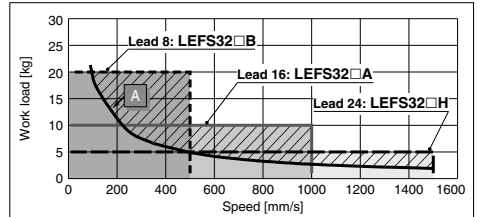


LEFS32/Ball Screw Drive

Horizontal

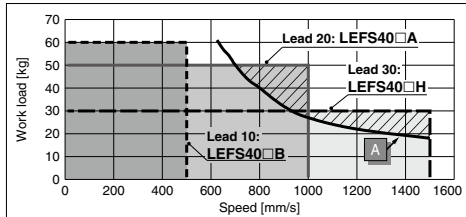


Vertical

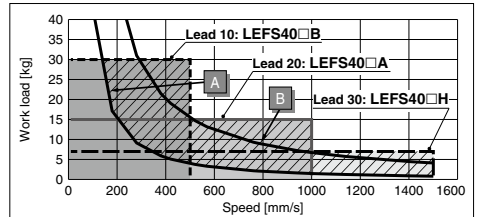


LEFS40/Ball Screw Drive

Horizontal



Vertical



Required conditions for "Regeneration option"

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

"Regeneration Option" Models

Operating condition	Model
A	LEC-MR-RB-032
B	LEC-MR-RB-12

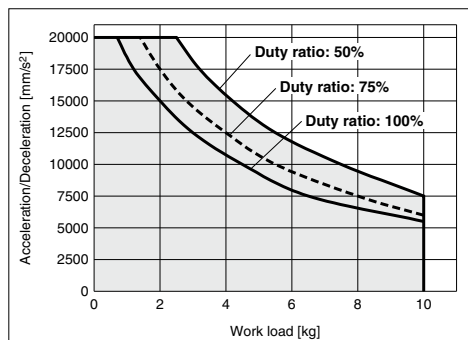
Allowable Stroke Speed

														[mm/s]	
Model	AC servo motor	Lead		Stroke [mm]											
		Symbol	[mm]	Up to 100	Up to 200	Up to 300	Up to 400	Up to 500	Up to 600	Up to 700	Up to 800	Up to 900	Up to 1000	Up to 1100	Up to 1200
LEFS25	100 W □40	H	20	1500				1200	900	700	550	—	—	—	—
		A	12	900				720	540	420	330	—	—	—	—
		B	6	450				360	270	210	160	—	—	—	—
		(Motor rotation speed)		(4500 rpm)				(3650 rpm)	(2700 rpm)	(2100 rpm)	(1650 rpm)	—	—	—	—
LEFS32	200 W □60	H	24	1500				1200	930	750	610	510	—	—	—
		A	16	1000				800	620	500	410	340	—	—	—
		B	8	500				400	310	250	200	170	—	—	—
		(Motor rotation speed)		(3750 rpm)				(3000 rpm)	(2325 rpm)	(1875 rpm)	(1537 rpm)	(1275 rpm)	—	—	—
LEFS40	400 W □60	H	30	—	1500				1410		1140	930	780	500	500
		A	20	—	1000				940		760	620	520	440	380
		B	10	—	500				470		380	310	260	220	190
		(Motor rotation speed)		—	(3000 rpm)				(2820 rpm)		(2280 rpm)	(1860 rpm)	(1560 rpm)	(1320 rpm)	(1140 rpm)

Work Load–Acceleration/Deceleration Graph (Guide)

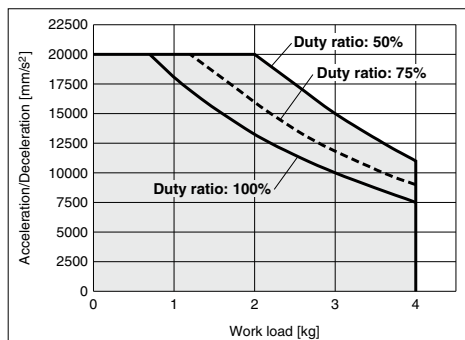
LEFS25S□H/Ball Screw Drive

Horizontal



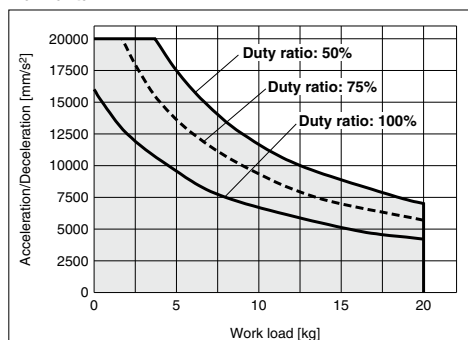
LEFS25S□H/Ball Screw Drive

Vertical



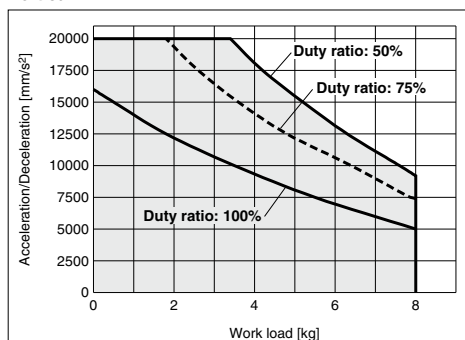
LEFS25S□A/Ball Screw Drive

Horizontal



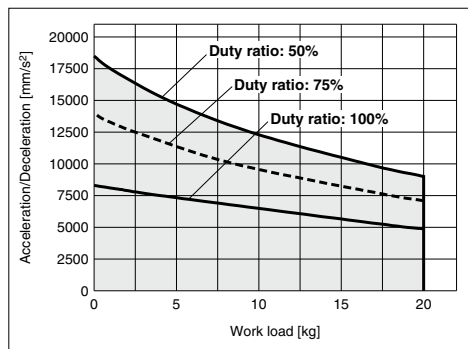
LEFS25S□A/Ball Screw Drive

Vertical



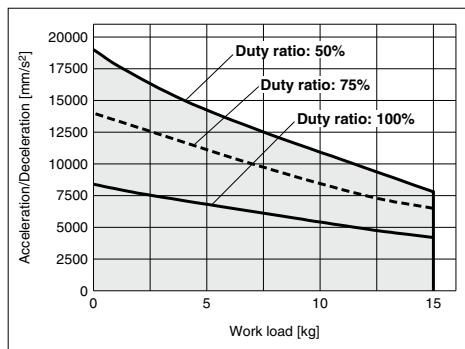
LEFS25S□B/Ball Screw Drive

Horizontal



LEFS25S□B/Ball Screw Drive

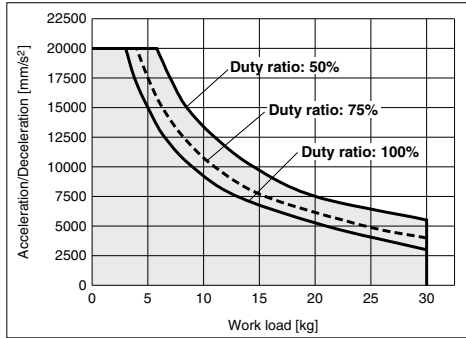
Vertical



Work Load–Acceleration/Deceleration Graph (Guide)

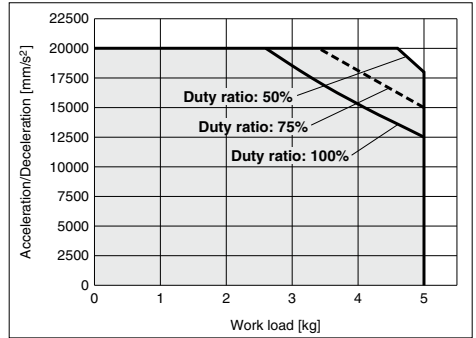
LEFS32S□H/Ball Screw Drive

Horizontal



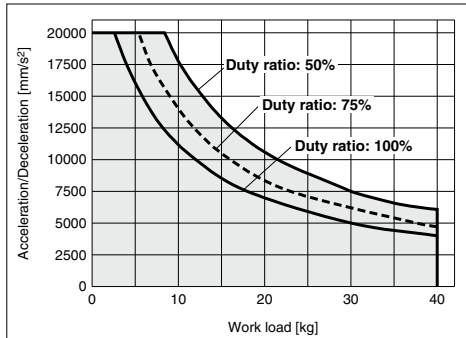
LEFS32S□H/Ball Screw Drive

Vertical



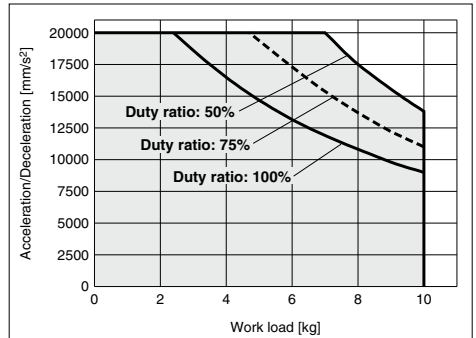
LEFS32S□A/Ball Screw Drive

Horizontal



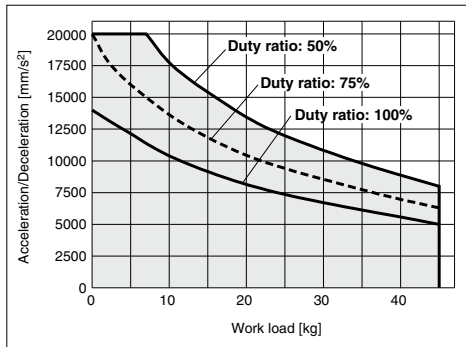
LEFS32S□A/Ball Screw Drive

Vertical



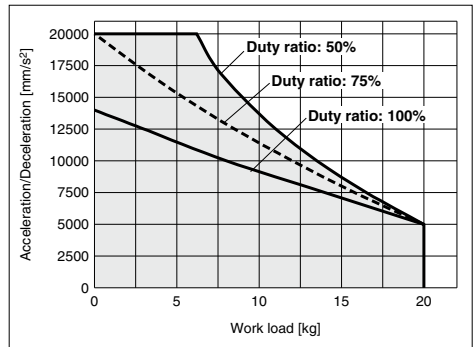
LEFS32S□B/Ball Screw Drive

Horizontal



LEFS32S□B/Ball Screw Drive

Vertical



LEF

LEJ

LEL

LEM

LEY

LES

LEPY

LEPS

LER

LEH

LEY

-X5

11-

LEFS

11-

LEJS

25A-

LEC□

LEC

S□

LEC

SS-T

LEC

Y□

Motor-

less

LAT

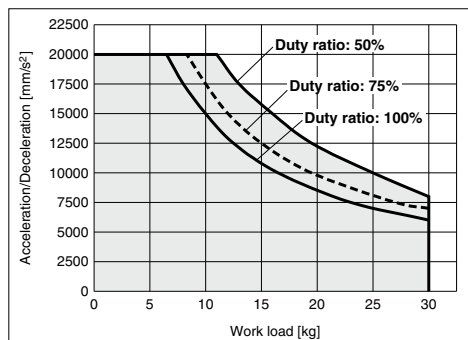
LZ□

LC3F2

Work Load–Acceleration/Deceleration Graph (Guide)

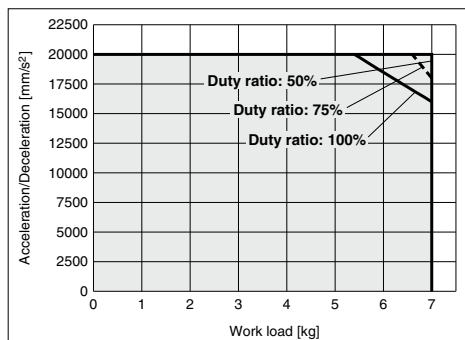
LEFS40S□H/Ball Screw Drive

Horizontal



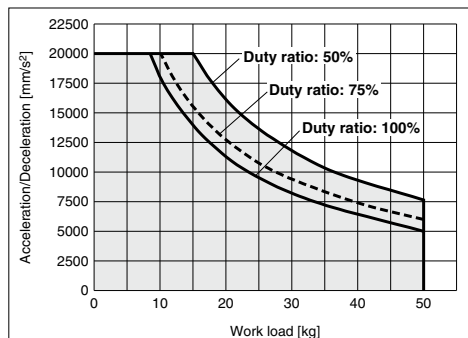
LEFS40S□H/Ball Screw Drive

Vertical



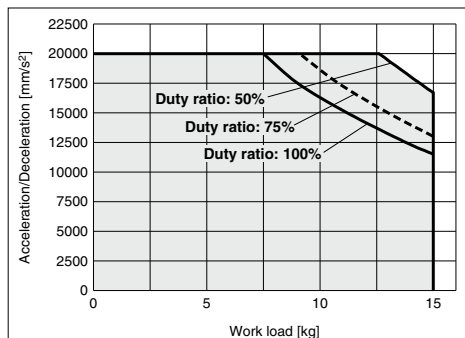
LEFS40S□A/Ball Screw Drive

Horizontal



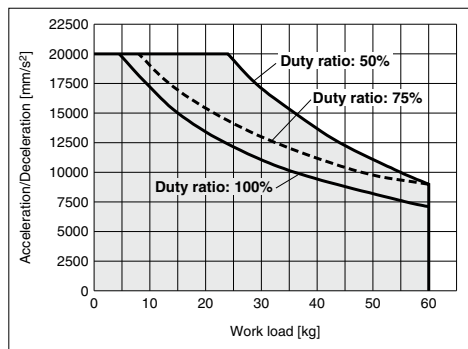
LEFS40S□A/Ball Screw Drive

Vertical



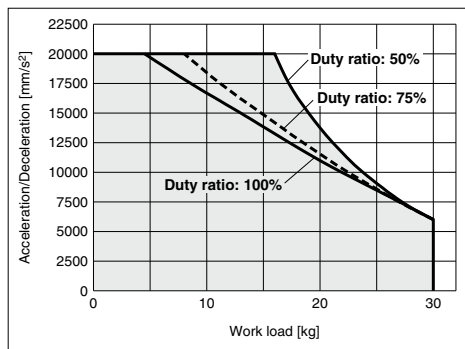
LEFS40S□B/Ball Screw Drive

Horizontal



LEFS40S□B/Ball Screw Drive

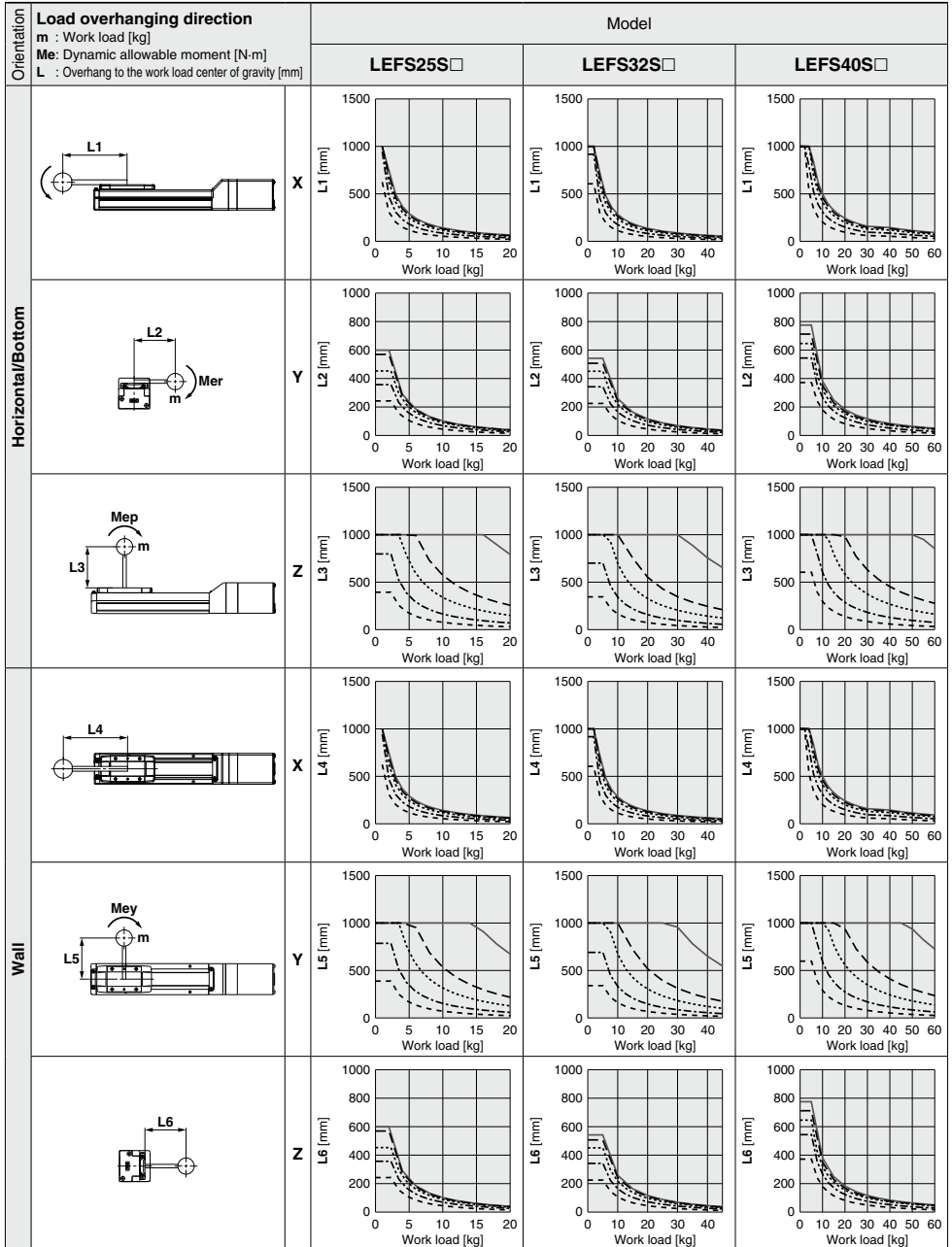
Vertical



* 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/s² - - - 3000 mm/s² 5000 mm/s² - - - - 10000 mm/s² - - - - 20000 mm/s²



LEF

LEJ

LEL

LEM

LEY

LES

LEPY

LEPS

LER

LEH

LEY

-X5

11-

LEFS

11-

LEJS

25A-

LEC□

LEC

S□

LEC

SS-T

LEC

Y□

Motor-

less

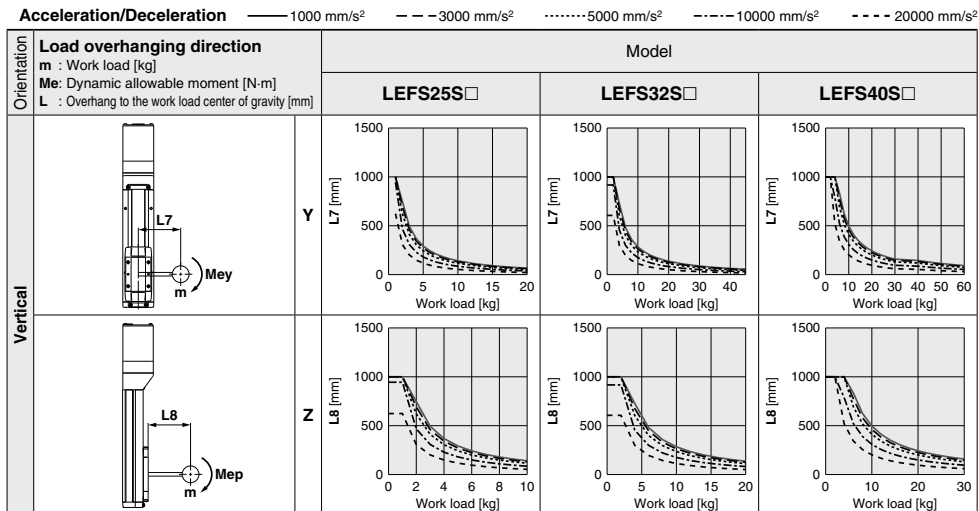
LAT

LZ□

LC3F2

* 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



Calculation of Guide Load Factor

- Decide operating conditions.

Model: LEFS

Size: 25/32/40

Mounting orientation: Horizontal/Bottom/Wall/Vertical

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

- Based on the acceleration and work load, obtain the overhang [mm]: $L_x/L_y/L_z$ from the graph.

- Calculate the load factor for each direction.

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

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

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

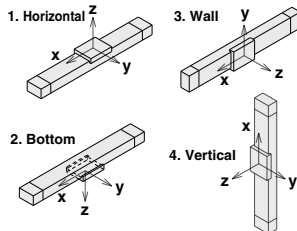
When 1 is exceeded, please consider a reduction of acceleration and work load, or a change of the work load center position and series.

Acceleration [mm/s²]: **a**

Work load [kg]: **m**

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

Mounting orientation



Example

- Operating conditions

Model: LEFS40

Size: 40

Mounting orientation: Horizontal

Acceleration [mm/s²]: 3000

Work load [kg]: 20

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

- Select the graphs for horizontal of the LEFS40 on page 51.

- Lx = 250 mm, Ly = 180 mm, Lz = 1000 mm**

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

$$\alpha_x = 0/250 = 0$$

$$\alpha_y = 50/180 = 0.27$$

$$\alpha_z = 200/1000 = 0.2$$

- $\alpha_x + \alpha_y + \alpha_z = 0.47 \leq 1$**

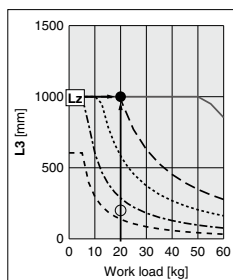
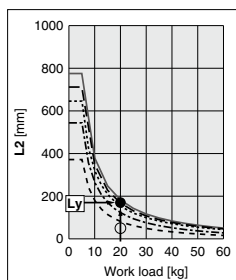
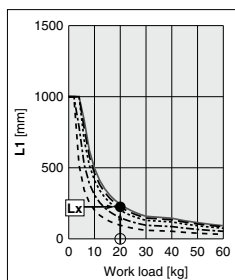
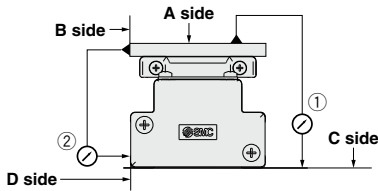


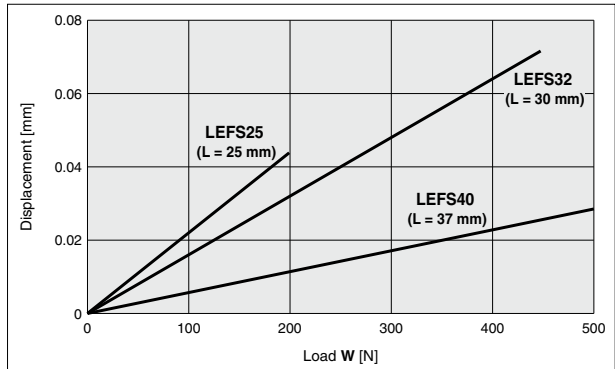
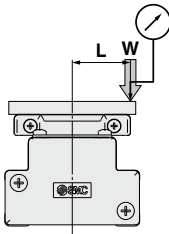
Table Accuracy



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

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

Table Displacement (Reference Value)

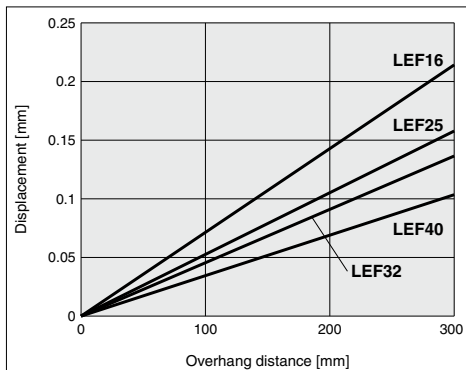


Note 1) This displacement is measured when a 15 mm aluminum plate is mounted and fixed on the table.

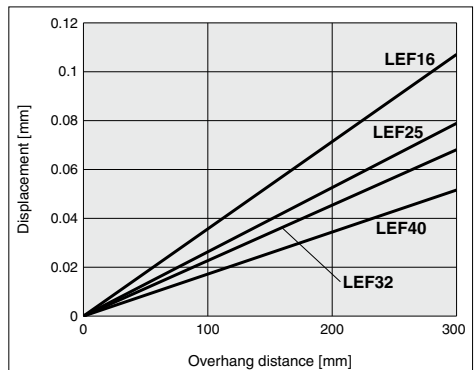
Note 2) Check the clearance and play of the guide separately.

Overhang Displacement Due to Table Clearance (Reference Value)

Basic type



High precision type



Electric Actuator/Slider Type Ball Screw Drive

Clean Room Specification



11-LEFS Series LEFS16, 25, 32, 40

RoHS

Refer to page 38 for model selection and page 510 for particle generation characteristics.

How to Order

11 - LEFS **H** **16** **B** - **100** - **S** **1** **6N** **1**

1 2 3 4 5 6 7 8 9 10 11 12

Clean Series

11	Vacuum type
----	-------------

① Accuracy

NII	Basic type
H	High precision type

② Size

16
25
32
40

③ Motor type

Symbol	Type	Applicable size				Compatible controller/ driver
		11-LEFS16	11-LEFS25	11-LEFS32	11-LEFS40	
NII	Step motor (Servo/24 VDC)	●	●	●	●	LECP6 LECP1 LECPA LECPMJ
A	Servo motor (24 VDC)	●	●	—	—	LECA6

④ Lead [mm]

Symbol	11-LEFS16	11-LEFS25	11-LEFS32	11-LEFS40
A	10	12	16	20
B	5	6	8	10

⑤ Stroke [mm]

50	50
to	to
1000	1000

* Refer to the applicable stroke table.

⚠ Caution

[CE-compliant products]

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

The EMC depends on the configuration of the customer's control panel and the relationship with other electrical equipment and wiring. Therefore, conformity to the EMC directive cannot be certified for SMC components incorporated into the customer's equipment under actual operating conditions. As a result, it is necessary for the customer to verify conformity to the EMC directive for the machinery and equipment as a whole.

② For the servo motor (24 VDC) specification, EMC compliance was tested by installing a noise filter set (LEC-NFA). Refer to page 568 for the noise filter set. Refer to the LECA series Operation Manual for installation.

③ CC-Link direct input type (LECPMJ) is not CE-compliant.

[UL-compliant products]

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

Applicable Stroke Table

Model	Stroke [mm]																Manufacturable stroke range [mm]
	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	
11-LEFS16	●	●	●	●	●	●	●	●	●	●	—	—	—	—	—	—	50 to 500
11-LEFS25	●	●	●	●	●	●	●	●	●	●	●	●	—	—	—	—	50 to 600
11-LEFS32	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	—	50 to 800
11-LEFS40	—	—	●	●	●	●	●	●	●	●	●	●	●	●	●	●	150 to 1000

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

Support Guide/LEFS Series

A support guide is designed to support workpieces with significant overhang.

Page S27

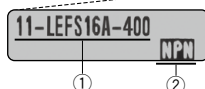


The actuator and controller/driver are sold as a package.

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

<Check the following before use.>

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

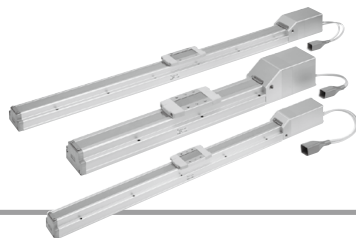
* Refer to the Operation Manual for using the products. Please download it via our website, <http://www.smcworld.com>

Electric Actuator/Slider Type Ball Screw Drive **11-LEFS Series**

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

Clean Room Specification



6 Motor option

NII	Without option
B	With lock

9 Actuator cable length

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

* Produced upon receipt of order (Robotic cable only)
Refer to the specifications Note 2) on pages 516 and 517.

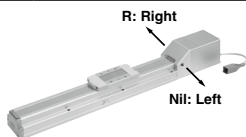
12 Controller/Driver mounting

NII	Screw mounting
D	DIN rail mounting*

* DIN rail is not included. Order it separately.

7 Vacuum port

NII	Left
R	Right



10 Controller/Driver type^{*1}

NII	Without controller/driver	
6N	LECP6/LECA6	NPN
6P	(Step data input type)	PNP
1N	LECP1 ^{*2}	NPN
1P	(Programless type)	PNP
MJ	LECPMJ ^{*2, *3}	—
	(CC-Link direct input type)	
AN	LECPA ^{*2, *4}	NPN
AP	(Pulse input type)	PNP

*1 For details about controller/driver and compatible motor, refer to the compatible controller/driver below.

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

*3 Not applicable to CE.

*4 When pulse signals are open collector, order the current limiting resistor (LEC-PA-R-□) on page 596 separately.

8 Actuator cable type^{*1}

NII	Without cable
S	Standard cable ^{*2}
R	Robotic cable (Flexible cable) ^{*3}

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

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

*3 Fix the motor cable protruding from the actuator to keep it unmovable. For details about fixing method, refer to Wiring/Cables in the Electric Actuators Precautions.

11 I/O cable length^{*1}, Communication plug

NII	Without cable (Without communication plug connector) ^{*3}
1	1.5 m
3	3 m ^{*2}
5	5 m ^{*2}
S	Straight type communication plug connector ^{*3}
T	T-branch type communication plug connector ^{*3}

*1 When "Without controller/driver" is selected for controller/driver types, I/O cable cannot be selected. Refer to page 568 (For LECP6/LECA6), page 582 (For LECP1) or page 596 (For LECPA) if I/O cable is required.

*2 When "Pulse input type" is selected for controller/driver types, pulse input usable only with differential. Only 1.5 m cables usable with open collector.

*3 For the LECPMJ, only "NII", "S" and "T" are selectable since I/O cable is not included.

Compatible Controller/Driver

Type	Step data input type	Step data input type	CC-Link direct input type	Programless type	Pulse input type
					
Series	LECP6	LECA6	LECPMJ	LECP1	LECPA
Features	Value (Step data) input Standard controller		CC-Link direct input	Capable of setting up operation (step data) without using a PC or teaching box	Operation by pulse signals
Compatible motor	Step motor (Servo/24 VDC)	Servo motor (24 VDC)	Step motor (Servo/24 VDC)		
Max. number of step data	64 points			14 points	—
Power supply voltage	24 VDC				
Reference page	Page 560	Page 560	Page 600	Page 576	Page 590

11-LEFS Series

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

Clean Room Specification

Specifications

Step Motor (Servo/24 VDC)

Model		11-LEFS16		11-LEFS25		11-LEFS32		11-LEFS40		
Actuator specifications	Stroke [mm]	50 to 500		50 to 600		50 to 800		150 to 1000		
	Work load [kg]	LECP6/LECP1/LECPMJ	14	15	25	30	45	50	55	65
		LECPA	9	10	20	20	40	45	50	60
		Vertical	2	4	7.5	15	10	20	2	23
	Speed [mm/s]	10 to 500	5 to 250	12 to 500	6 to 250	16 to 500	8 to 250	20 to 500	10 to 250	
	Max. acceleration/deceleration [mm/s ²]	3000								
	Positioning repeatability [mm]	Basic type	±0.02							
		High precision type	±0.015							
	Lost motion [mm]	Basic type	0.1 or less							
		High precision type	0.05 or less							
Lead [mm]		10	5	12	6	16	8	20	10	
Impact/Vibration resistance [m/s ²]		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)								
Cleanliness class		ISO Class 4 (ISO 14644-1)								
Grease	Ball screw /Linear guide portion	Low particle generation grease								
Electric specifications	Motor size	□28		□42				□56.4		
	Motor type	Step motor (Servo/24 VDC)								
	Encoder	Incremental A/B phase (800 pulse/rotation)								
	Rated voltage [V]	24 VDC ±10%								
	Power consumption [W]	22		38		50		100		
	Standby power consumption when operating [W]	18		16		44		43		
Lock unit specifications	Max. instantaneous power consumption [W]	51		57		123		141		
	Type	Non-magnetizing lock								
	Holding force [N]	20	39	78	157	108	216	113	225	
	Power consumption [W]	2.9		5		5		5		
	Rated voltage [V]	24 VDC ±10%								

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

Note 2) Speed changes according to the controller/driver type and work load. Check "Speed-Work Load Graph (Guide)" on pages 39 and 40.

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

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 amount of particle generation changes according to the operating conditions and suction flow rate. Refer to the particle generation characteristics for details.

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

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

Note 8) The maximum instantaneous power consumption (including the controller) is for when the actuator is operating. This value can be used for the selection of the power supply.

Note 9) With lock only

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

Specifications

Servo Motor (24 VDC)

Model		11-LEFS16A		11-LEFS25A		
Actuator specifications	Stroke [mm] ^{Note 1)}	50 to 500		50 to 600		
	Work load [kg] ^{Note 2)}	Horizontal		7	10	
		Vertical		2	4	
	Speed [mm/s] ^{Note 2)}		1 to 500	1 to 250	2 to 500	1 to 250
	Max. acceleration/deceleration [mm/s ²]		3000			
	Positioning repeatability [mm]	Basic type		±0.02		
		High precision type		±0.015		
	Lost motion [mm] ^{Note 3)}	Basic type		0.1 or less		
		High precision type		0.05 or less		
	Lead [mm]	10	5	12	6	
Electric specifications	Impact/Vibration resistance [m/s ²] ^{Note 4)}		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)			
	Cleanliness class ^{Note 5)}		ISO Class 4 (ISO 14644-1)			
	Grease/ Ball screw/Linear guide portion		Low particle generation grease			
	Motor size	□28		□42		
	Motor output [W]	30		36		
	Motor type	Servo motor (24 VDC)				
Load unit specifications	Encoder	Incremental A/B (800 pulse/rotation)/Z phase				
	Rated voltage [V]	24 VDC ±10%				
	Power consumption [W] ^{Note 6)}	63		102		
	Standby power consumption when operating [W] ^{Note 7)}	Horizontal 4/Vertical 9		Horizontal 4/Vertical 9		
	Max. instantaneous power consumption [W] ^{Note 8)}	70		113		
	Type ^{Note 9)}	Non-magnetizing lock				
	Holding force [N]	20	39	78	157	
Look unit specifications	Power consumption [W] ^{Note 10)}	2.9		5		
	Rated voltage [V]	24 VDC ±10%				

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

Note 2) Check "Speed-Work Load Graph (Guide)" on page 42 for details. Furthermore, if the cable length exceeds 5 m, then it will decrease by up to 10% for each 5 m.

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 amount of particle generation changes according to the operating conditions and suction flow rate. Refer to the particle generation characteristics for details.

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

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

Note 8) The maximum instantaneous power consumption (including the controller) is for when the actuator is operating. This value can be used for the selection of the power supply.

Note 9) With lock only

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

Weight

Series	11-LEFS16									
Stroke [mm]	50	100	150	200	250	300	350	400	450	500
Product weight [kg]	0.83	0.90	0.98	1.05	1.13	1.20	1.28	1.35	1.43	1.50
Additional weight with lock [kg]	0.12									

Series	11-LEFS25											
Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600
Product weight [kg]	1.70	1.84	1.98	2.12	2.26	2.40	2.54	2.68	2.82	2.96	3.10	3.24
Additional weight with lock [kg]	0.26											

Series	11-LEFS32															
Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Product weight [kg]	3.15	3.35	3.55	3.75	3.95	4.15	4.35	4.55	4.75	4.95	5.15	5.35	5.55	5.75	5.95	6.15
Additional weight with lock [kg]	0.53															

Series	11-LEFS40																	
Stroke [mm]	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Product weight [kg]	5.37	5.65	5.93	6.21	6.49	6.77	7.15	7.33	7.61	7.89	8.17	8.45	8.75	9.01	9.29	9.57	9.85	10.13
Additional weight with lock [kg]	0.53																	

LEF

LEJ

LEL

LEM

LEY

LES

LEPY

LEPS

LER

LEH

LEY

-X5

11-LEFS

11-LEJS

25A-

LEC□

LEC

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LEC

SS-T

LEC

Y□

Motor-

less

LAT

LZ□

LC3F2

11-LEFS Series

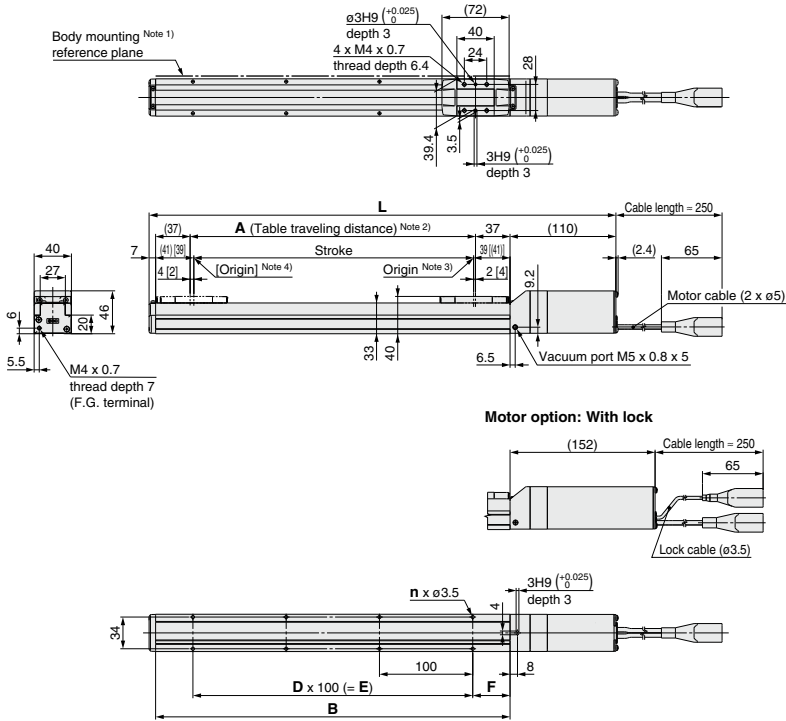
Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

Clean Room Specification

Dimensions: Ball Screw Drive

11-LEFS16



Note 1) When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 2 mm or more because of round chamfering. (Recommended height 5 mm)

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

Note 3) Position after return to origin

Note 4) [] for when the direction of return to origin has changed.

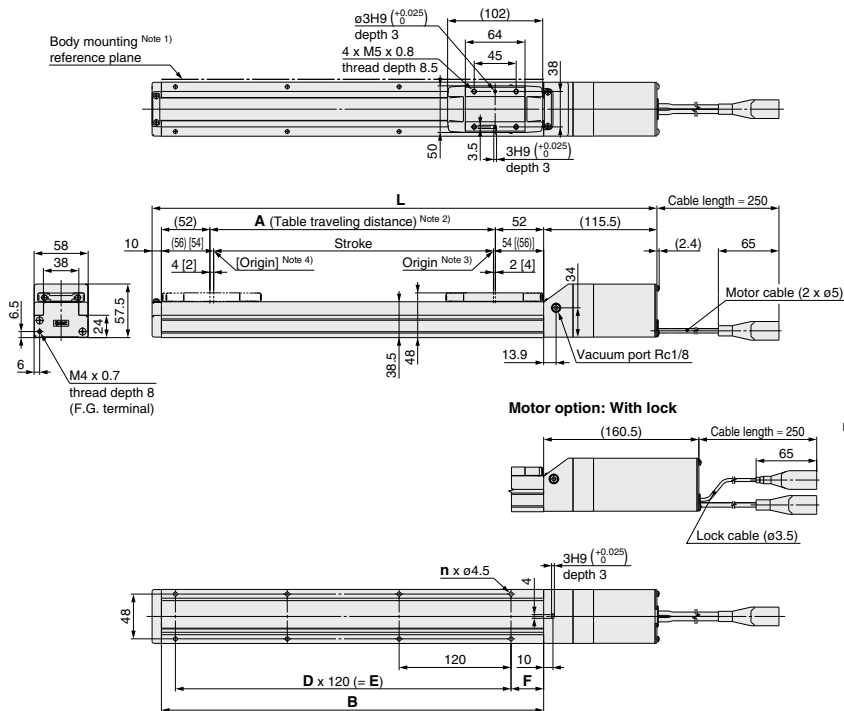
Dimensions

[mm]

Model	L		A	B	n	D	E	F
	Without lock	With lock						
11-LEFS16□-50□	247	289	56	130	4	—	—	15
11-LEFS16□-100□	297	339	106	180	4	—	—	
11-LEFS16□-150□	347	389	156	230	4	—	—	
11-LEFS16□-200□	397	439	206	280	6	2	200	
11-LEFS16□-250□	447	489	256	330	6	2	200	
11-LEFS16□-300□	497	539	306	380	8	3	300	40
11-LEFS16□-350□	547	589	356	430	8	3	300	
11-LEFS16□-400□	597	639	406	480	10	4	400	
11-LEFS16□-450□	647	689	456	530	10	4	400	
11-LEFS16□-500□	697	739	506	580	12	5	500	

Dimensions: Ball Screw Drive

11-LEFS25



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

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

Note 3) Position after return to origin

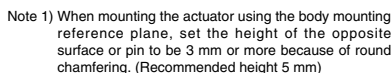
Note 4) [] for when the direction of return to origin has changed.

Dimensions

Model	L		A	B	n	D	E	F	[mm]
	Without lock	With lock							
11-LEFS25□-50□	285.5	330.5	56	160	4	—	—	20	35
11-LEFS25□-100□	335.5	380.5	106	210	4	—	—	—	
11-LEFS25□-150□	385.5	430.5	156	260	4	—	—	—	
11-LEFS25□-200□	435.5	480.5	206	310	6	2	240	—	
11-LEFS25□-250□	485.5	530.5	256	360	6	2	240	—	
11-LEFS25□-300□	535.5	580.5	306	410	8	3	360	—	
11-LEFS25□-350□	585.5	630.5	356	460	8	3	360	—	
11-LEFS25□-400□	635.5	680.5	406	510	8	3	360	—	
11-LEFS25□-450□	685.5	730.5	456	560	10	4	480	—	
11-LEFS25□-500□	735.5	780.5	506	610	10	4	480	—	
11-LEFS25□-550□	785.5	830.5	556	660	12	5	600	—	
11-LEFS25□-600□	835.5	880.5	606	710	12	5	600	—	

Step Motor (Servo/24 VDC) Servo Motor (24 VDC) Clean Room Specification

11-LEFS32



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

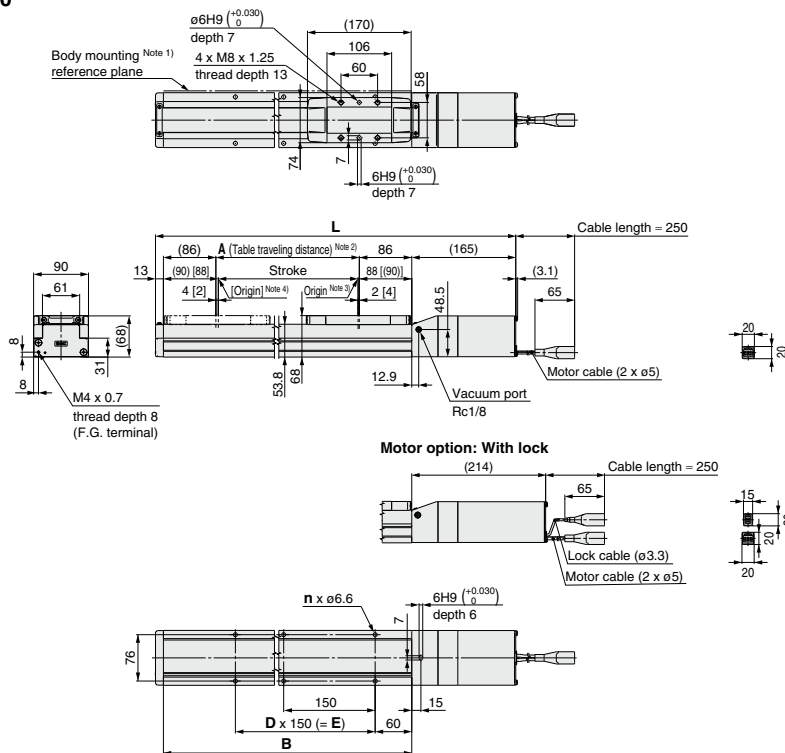
Note 3) Position after return to origin

Note 4) [] for when the direction of return to origin has changed.

Dimensions

Dimensions							[mm]
Model	L		A	B	n	D	E
	Without lock	With lock					
11-LEFS32□-50□	332	384	56	180	4	—	—
11-LEFS32□-100□	382	434	106	230	4	—	—
11-LEFS32□-150□	432	484	156	280	4	—	—
11-LEFS32□-200□	482	534	206	330	6	2	300
11-LEFS32□-250□	532	584	256	380	6	2	300
11-LEFS32□-300□	582	634	306	430	6	2	300
11-LEFS32□-350□	632	684	356	480	8	3	450
11-LEFS32□-400□	682	734	406	530	8	3	450
11-LEFS32□-450□	732	784	456	580	8	3	450
11-LEFS32□-500□	782	834	506	630	10	4	600
11-LEFS32□-550□	832	884	556	680	10	4	600
11-LEFS32□-600□	882	934	606	730	10	4	600
11-LEFS32□-650□	932	984	656	780	12	5	750
11-LEFS32□-700□	982	1034	706	830	12	5	750
11-LEFS32□-750□	1032	1084	756	880	12	5	750
11-LEFS32□-800□	1082	1134	806	930	14	6	900

11-LEFS40



Note 4) [] for when the direction of return to origin has changed.

[mm]

Model	L		A	B	n	D	E
	Without lock	With lock					
11-LEFS40-150	506	555	156	328	4	—	150
11-LEFS40-200	556	605	206	378	6	2	300
11-LEFS40-250	606	655	256	428	6	2	300
11-LEFS40-300	656	705	306	478	6	2	300
11-LEFS40-350	706	755	356	528	8	3	450
11-LEFS40-400	756	805	406	578	8	3	450
11-LEFS40-450	806	855	456	628	8	3	450
11-LEFS40-500	856	905	506	678	10	4	600
11-LEFS40-550	906	955	556	728	10	4	600
11-LEFS40-600	956	1005	606	778	10	4	600
11-LEFS40-650	1006	1055	656	828	12	5	750
11-LEFS40-700	1056	1105	706	878	12	5	750
11-LEFS40-750	1106	1155	756	928	12	5	750
11-LEFS40-800	1156	1205	806	978	14	6	900
11-LEFS40-850	1206	1255	856	1028	14	6	900
11-LEFS40-900	1256	1305	906	1078	14	6	900
11-LEFS40-950	1306	1355	956	1128	16	7	1050
11-LEFS40-1000	1356	1405	1006	1178	16	7	1050

Electric Actuator/Slider Type Ball Screw Drive

Clean Room Specification

11-LEFS Series LEFS25, 32, 40

Refer to page 46 for model selection and page 510 for particle generation characteristics.



How to Order

11 - LEFS **H** **25** **S2** **B** - **100** **□** **□** - **S** **2** **A1** **□**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

Clean Series

11 Vacuum type

① Accuracy

Nil	Basic type
H	High precision type

② Size

25
32
40

③ Motor type

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

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

④ Lead [mm]

Symbol	11-LEFS25	11-LEFS32	11-LEFS40
A	12	16	20
B	6	8	10

⑥ Motor option

Nil	Without option
B	With lock

⑦ Vacuum port*

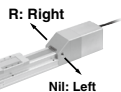
Nil	Left
R	Right
D	Both left and right

* Select "D" for the vacuum port for suction of 50 L/min (ANR) or more.

⑤ Stroke [mm]

50	50
to	to
1000	1000

* Refer to the applicable stroke table.



⑧ Cable type

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

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

Note 2) Standard cable entry direction is "(B) Counter axis side". (Refer to page 623 for details.)

⑨ Cable length

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

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

⑪ I/O cable length [m]

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

Note 4) When "Without driver" is selected for driver type, only "Nil: Without cable" can be selected. Refer to page 624 if I/O cable is required. (Options are shown on page 624.)

⑩ Driver type

	Compatible driver	Power supply voltage [V]	Size
			25 32 40
Nil	Without driver	—	● ● ●
A1	LECSA1-S□	100 to 120	● ● —
B1	LECSA2-S□	200 to 230	● ● ●
A2	LECSB1-S□	100 to 120	● ● —
B2	LECSB2-S□	200 to 230	● ● ●
C1	LECS1-S□	100 to 120	● ● —
C2	LECS2-S□	200 to 230	● ● ●
S1	LECS1-S□	100 to 120	● ● —
S2	LECS2-S□	200 to 230	● ● ●

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

Example)

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

S2: Standard cable (2 m)

Nil: Without cable and driver

Applicable Stroke Table

●: Standard

Model	Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
11-LEFS25	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
11-LEFS32	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
11-LEFS40	—	—	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

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

Compatible Driver

Driver type	Pulse input type/ Positioning type	Pulse input type	CC-Link direct input type	SSCNET Ⅲ type
Series	LECSA	LECSB	LECS1	LECS2
Number of point tables	Up to 7	—	Up to 255 (2 stations occupied)	—
Pulse input	○	○	—	—
Applicable network	—	—	CC-Link	SSCNET Ⅲ
Control encoder	Incremental 17-bit encoder	Absolute 18-bit encoder	Absolute 18-bit encoder	Absolute 18-bit encoder
Communication function	USB communication	USB communication, RS422 communication	USB communication, RS422 communication	USB communication
Power supply voltage [V]	—	100 to 120 VAC (50/60 Hz), 200 to 230 VAC (50/60 Hz)	—	—
Reference page	—	—	—	—

Specifications

11-LEFS25, 32, 40 AC Servo Motor

Model		11-LEFS25S ² ₆		11-LEFS32S ³ ₆		11-LEFS40S ⁴ ₆		
Stroke [mm] ^{Note 1)}		50 to 600		50 to 800		150 to 1000		
Work load [kg] ^{Note 2)}		Horizontal	20	20	40	45	50	60
		Vertical	8	15	10	20	15	30
Max. speed [mm/s] ^{Note 3)}	Stroke range	Up to 400	900	450	1000	500	1000	500
		401 to 500	720	360	1000	500	1000	500
		501 to 600	540	270	800	400	1000	500
		601 to 700	—	—	620	310	940	470
		701 to 800	—	—	500	250	760	380
		801 to 900	—	—	—	—	620	310
		901 to 1000	—	—	—	—	520	260
Max. acceleration/deceleration [mm/s ²]		5000 (Refer to pages 48 to 50 for limit according to work load and duty ratio.)						
Positioning repeatability [mm]		Basic type	±0.02					
		High precision type	±0.01					
Lost motion [mm] ^{Note 4)}		Basic type	0.1 or less					
		High precision type	0.05 or less					
Lead [mm]		12	6	16	8	20	10	
Impact/Vibration resistance [m/s ²] ^{Note 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)						
Cleanliness class ^{Note 6)}		ISO Class 4 (ISO 14644-1) Class 10 (Fed.Std.209E)						
Grease		Ball screw /Linear guide portion		Low particle generation grease				
Motor output/Size		100 W/□40		200 W/□60		400 W/□60		
Motor type		AC servo motor (100/200 VAC)						
Encoder		Motor type S2, S3, S4: Incremental 17-bit encoder (Resolution: 131072 p/rev) Motor type S6, S7, S8: Absolute 18-bit encoder (Resolution: 262144 p/rev)						
Power consumption [W] ^{Note 7)}		Horizontal	45	65	210			
		Vertical	145	175	230			
Standby power consumption when operating [W] ^{Note 8)}		Horizontal	2	2	2			
		Vertical	8	8	18			
Max. instantaneous power consumption [W] ^{Note 9)}		445	725	1275				
Type ^{Note 10)}		Non-magnetizing lock						
Holding force [N]		131	255	197	385	330	660	
Power consumption at 20°C [W] ^{Note 11)}		6.3	7.9	7.9				
Rated voltage [V]		24 VDC ^{100%}						

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 47.

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 amount of particle generation changes according to the operating conditions and suction flow rate. Refer to the particle generation characteristics for details.

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

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

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

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

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

Weight

Series		11-LEFS25S□											
Stroke [mm]		50	100	150	200	250	300	350	400	450	500	550	600
Motor type	S2	2.00	2.14	2.28	2.44	2.56	2.69	2.84	2.99	3.12	3.24	3.40	3.54
	S6	2.06	2.20	2.34	2.50	2.62	2.75	2.90	3.05	3.18	3.30	3.46	3.60
Additional weight with lock [kg]		S2: 0.2/S6: 0.3											

Series		11-LEFS32S□															
Stroke [mm]		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Motor type	S3	3.40	3.60	3.80	4.00	4.20	4.40	4.60	4.80	5.00	5.20	5.40	5.60	5.80	6.00	6.20	6.40
	S7	3.34	3.54	3.74	3.94	4.14	4.34	4.54	4.74	4.94	5.14	5.34	5.54	5.74	5.94	6.14	6.34
Additional weight with lock [kg]		S3: 0.4/S7: 0.7															

Series		11-LEFS40S□																	
Stroke [mm]		150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Motor type	S4	5.82	6.10	6.38	6.65	6.95	7.25	7.51	7.80	8.07	8.25	8.63	8.90	9.20	9.45	9.76	10.05	10.32	10.60
	S8	5.92	6.20	6.48	6.75	7.05	7.35	7.61	7.90	8.17	8.35	8.73	9.00	9.30	9.55	9.86	10.15	10.42	10.70
Additional weight with lock [kg]		S4: 0.7/S8: 0.7																	

LEF

LEJ

LEL

LEM

LEY

LES

LEPY
LEPS

LER

LEH

LEY
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11-
LEFS

11-
LEJS

25A-

LEC□

LEC
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LEC
SS-T

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Motor-
less

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LC3F2

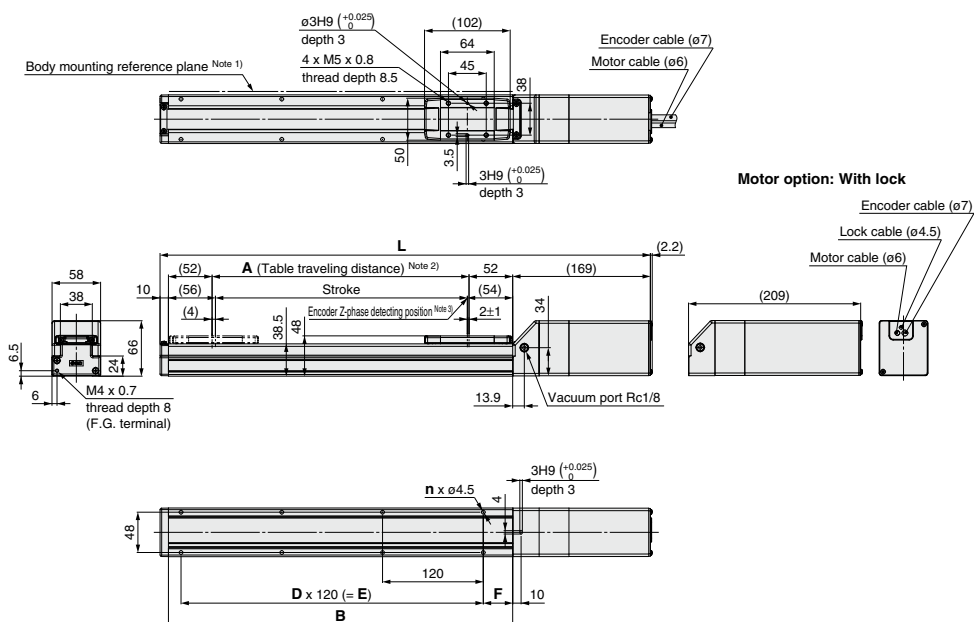
11-LEFS Series

AC Servo Motor

Clean Room Specification

Dimensions: Ball Screw Drive

11-LEFS25



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

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

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

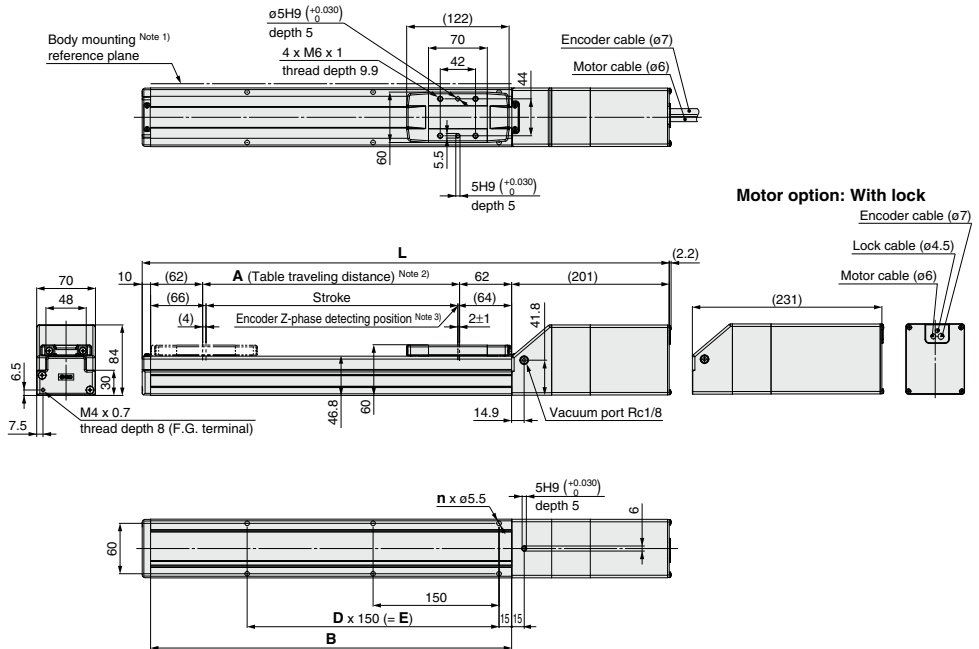
Dimensions

[mm]

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

Dimensions: Ball Screw Drive

11-LEFS32



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

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

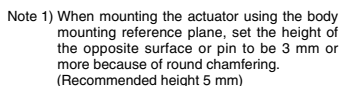
Note 3) The Z-phase first detecting position from the stroke end of the motor side.

Dimensions

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

AC Servo Motor Clean Room Specification

11-LEFS40



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

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

Dimensions

Model	L		A	B	n	D	E
	Without lock	With lock					
11-LEFS40□□-150□	564.5	594.5	156	328	4	—	150
11-LEFS40□□-200□	614.5	644.5	206	378	6	2	300
11-LEFS40□□-250□	664.5	694.5	256	428	6	2	300
11-LEFS40□□-300□	714.5	744.5	306	478	6	2	300
11-LEFS40□□-350□	764.5	794.5	356	528	8	3	450
11-LEFS40□□-400□	814.5	844.5	406	578	8	3	450
11-LEFS40□□-450□	864.5	894.5	456	628	8	3	450
11-LEFS40□□-500□	914.5	944.5	506	678	10	4	600
11-LEFS40□□-550□	964.5	994.5	556	728	10	4	600
11-LEFS40□□-600□	1014.5	1044.5	606	778	10	4	600
11-LEFS40□□-650□	1064.5	1094.5	656	828	12	5	750
11-LEFS40□□-700□	1114.5	1144.5	706	878	12	5	750
11-LEFS40□□-750□	1164.5	1194.5	756	928	12	5	750
11-LEFS40□□-800□	1214.5	1244.5	806	978	14	6	900
11-LEFS40□□-850□	1264.5	1294.5	856	1028	14	6	900
11-LEFS40□□-900□	1314.5	1344.5	906	1078	14	6	900
11-LEFS40□□-950□	1364.5	1394.5	956	1128	16	7	1050
11-LEFS40□□-1000□	1414.5	1444.5	1006	1178	16	7	1050