

Electric Actuators

RoHS

LEY Series

Rod Type/Guide Rod Type

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



Rod Type LEY Series

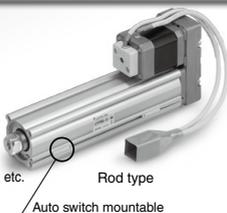
Size: 16, 25, 32, 40 ▶Page 222

Long stroke:

Max. 500 mm (LEY32, 40)

Mounting variations

- Direct mounting: 3 directions, Bracket mounting: 3 types
- Either positioning or pushing control can be selected. Possible to hold the actuator with the rod pushing to a workpiece, etc.



Dust-tight/Water-jet-proof (IP65 Equivalent): X5 ▶Page 270-14

- Size: 25, 32
- X5 is not CE-/UL-compliant.



Guide Rod Type LEYG Series

Size: 16, 25, 32, 40 ▶Page 272

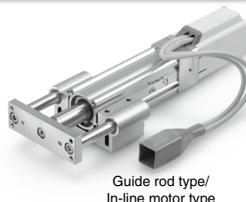
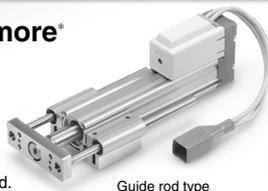
Lateral end load: 5 times more*

* Compared with rod type, size 25 and 100 mm stroke

Compatible with sliding bearing and ball bushing bearing.

Compatible with moment load and stopper (sliding bearing).

- Either positioning or pushing control can be selected. Possible to hold the actuator with the rod pushing to a workpiece, etc.



AC Servo Motor Type



* Refer to "How to Order"

Rod Type LEY Series Size: 25, 32, 63

Dust-tight/Water-jet-proof (IP65 Equivalent): X5

▶Pages 232, 237-1

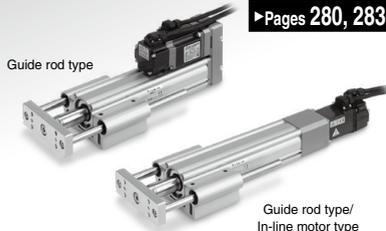
- High output motor (100/200/400 W)
- Improved high speed transfer ability
- High acceleration/deceleration compatible (5000 mm/s²)
- Pulse input/CC-Link/SSCNET III types
- With internal absolute encoder (For LECSB/C/S)



* X5 is not CE-compliant.

Guide Rod Type LEYG Series Size: 25, 32

▶Pages 280, 283-1



Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

Controller/
Driver

▶Page 547



- ▶ Step data input type
LECP6/LECA6 Series (64 points positioning)
- ▶ CC-Link direct input type
LECPMJ Series*
- ▶ EtherCAT®/EtherNet/IP™/PROFINET/
DeviceNet™/IO-Link direct input type
JXCE1/91/P1/D1/L1 Series
- ▶ Programless type
LECP1 Series (14 points positioning)
- ▶ Pulse input type
LECPA Series * Not applicable to CE.



AC Servo Motor Driver

▶Page 607



- ▶ For incremental encoder
- Pulse input type/
Positioning type
LECSA Series



- ▶ For absolute encoder
- Pulse input type
LECSB Series
- CC-Link direct input type
LECSA Series
- SSCNET III type
LECSA Series
- SSCNET III/H type
LECSS-T Series
- MECHATROLINK type
LECY□ Series



LEY Series

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

Rod Type **LEY Series** /Size: 16, 25, 32, 40

Control of intermediate positioning and pushing is possible.
High precision with ball screws (Positioning repeatability: ± 0.02 mm)

Motor mounting position selectable

Top mounting type is the standard product.



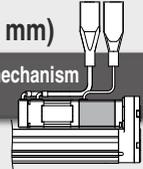
Right side parallel type

Left side parallel type

In-line motor type

Non-magnetizing lock mechanism (Option)

Prevents a workpiece from dropping. (Holding)



Motor cover available (Option)



Offering 2 types of actuator cables

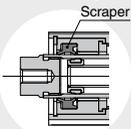
- Standard cable
- Robotic cable (Flexible cable)

Manual override screw

For manual piston rod operation
Adjustment operation possible when power OFF

Scraper

Prevents foreign matter from entering.

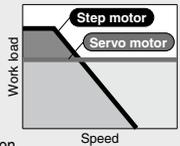


Scraper

Motor top/parallel type

2 types of motors selectable

- Step motor (Servo/24 VDC)
Ideal for transfer of high load at a low speed and pushing operation
- Servo motor (24 VDC)
Stable at high speed and silent operation



Pages 250, 251

Rod end brackets

Single knuckle joint

Double knuckle joint

Simple joint



Groove for auto switch

For checking the limit and intermediate signal
Applicable to the D-M9□ and D-M9□W (2-color indicator)

* The auto switches should be ordered separately. Refer to pages 270-11 and 270-12 for details.

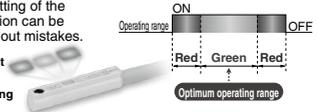


Auto switch

2-color indicator solid state auto switch

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

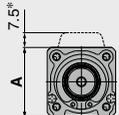
A green light lights up at the optimum operating range.



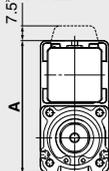
In-line motor type Height dimension shortened by up to 49%

For LEY16D

* When "Motor option/With motor cover" is selected.



For LEY16



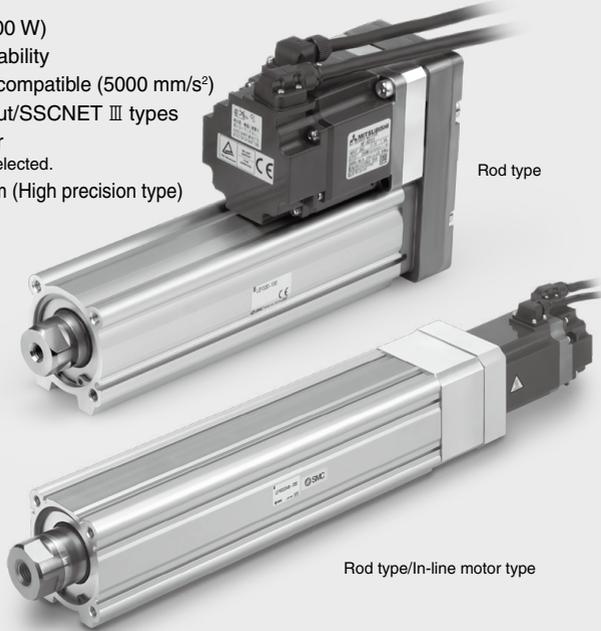
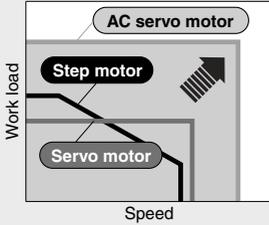
A Dimension		[mm]
Size	In-line motor	Motor top mounting
16	35.5	67.5
25	46.5	92
32, 40	61	118



AC Servo Motor Type

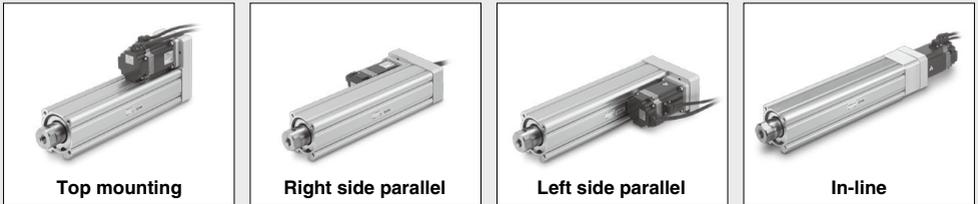
Rod Type **LEY Series/Size: 25, 32, 63**

- High output motor (100/200/400 W)
- Improved high speed transfer ability
- High acceleration/deceleration compatible (5000 mm/s²)
- Pulse input/CC-Link direct input/SSCNET III types
- With internal absolute encoder
 - * Incremental encoder can also be selected.
- Positioning repeatability ± 0.01 mm (High precision type)



Large bore size **63**

Motor mounting position can be selected from 4 directions!



● Max. work load (kg)

	Top/Parallel	In-line
Horizontal	200	80
Vertical	115	72

● Max. force (N)

Top/Parallel	3343
In-line	1910

● High output motor: **400 w**

● Max. speed: **1000 mm/s**

* 500 mm stroke

● Dust-tight/Water-jet-proof (IP65 equivalent)

LEY Series

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

Guide Rod Type LEYG Series/Size: 16, 25, 32, 40

Compact integrated guide rods Lateral load resistance and high non-rotating accuracy

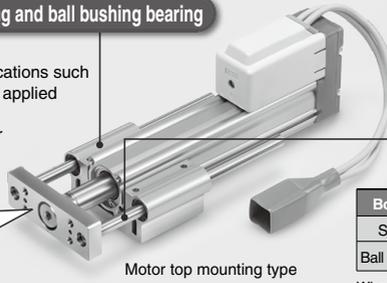
Compatible with sliding bearing and ball bushing bearing

- **Sliding bearing**
Suitable for lateral load applications such as a stopper where impact is applied
- **Ball bushing bearing**
Smooth operation suitable for pusher and lifter

Improved rigidity

Lateral end load: 5 times more*

* Compared with rod type, size 25 and 100 mm stroke



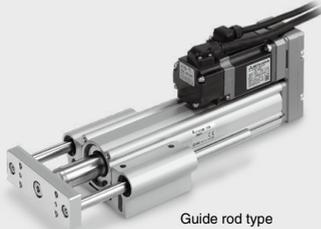
Non-rotating accuracy improved by using two guide rods

Bore size [mm]	16	25	32	40
Sliding bearing	±0.06°		±0.05°	
Ball bushing bearing	±0.05°		±0.04°	

When the cylinder is retracted (initial value), the non-rotating accuracy without a load or deflection of the guide rods will be below the values shown in the table.

AC Servo Motor Type

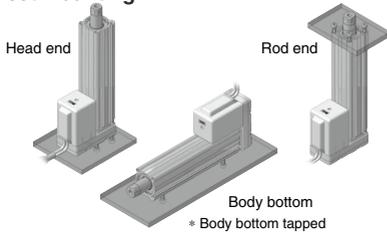
Guide Rod Type LEYG Series/Size: 25, 32



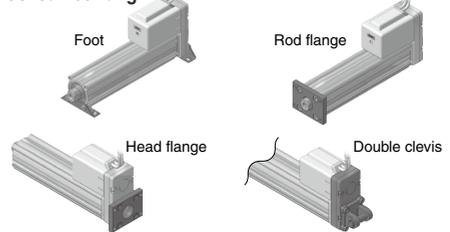
For use of auto switches for the guide rod type LEYG series, refer to page 305.

Mounting Variations

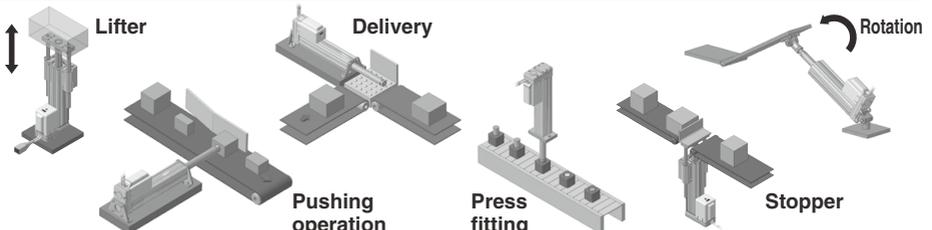
Direct Mounting



Bracket Mounting



Application Examples



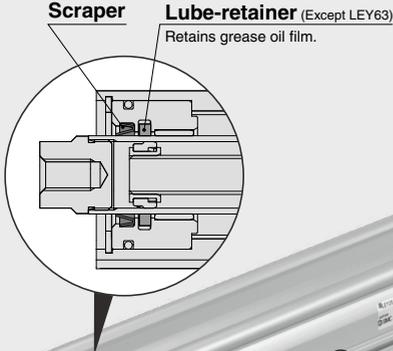
Dust-tight/Water-jet-proof (IP65 Equivalent)

● Enclosure: IP65 equivalent

(Refer to page 270-13.)

● Max. stroke: 500 mm*

* For size 32



Seal connector

Prevents dust and water droplets from entering between the cable and motor cover.

Aluminum cover

Protects the motor.

Tubing

* Order separately.

Vent hole

Reduces internal pressure fluctuation to prevent dust and water droplets from entering.

* Be sure to attach tubing and place the end of the tubing so it is not exposed to dust or water.

* For size 63, order a fitting separately.

Groove for auto switch

Water resistant type
For checking the limit and intermediate signal

* Order the water resistant 2-color indicator solid state auto switch separately. (Refer to page 270-33.)



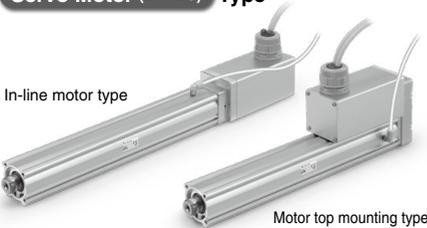
LEY-X5 (Refer to page 270-14.)

Step Motor (Servo/24 VDC) Type

Servo Motor (24 VDC) Type

Size

25, 32



LEY-X5 (Refer to page 232.)

AC Servo Motor (100/200 W) Type



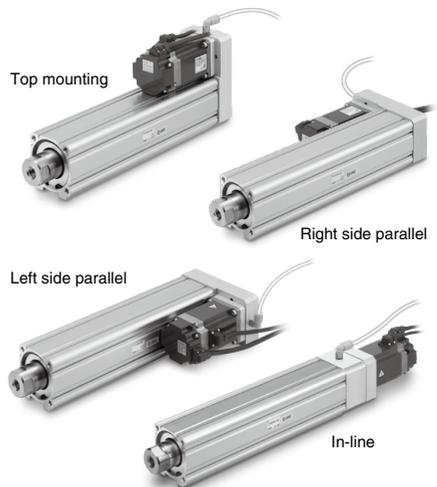
LEY63□□□-□P

(Refer to page 232./Option)

Size

63

AC Servo Motor (400 W) Type



Electric Actuator/Rod Type *LEY* Series

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)



○Rod Type *LEY* Series

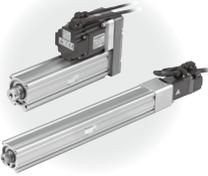
Model Selection	Page 222
How to Order	Page 238
Specifications	Page 240
Construction	Page 242
Dimensions	Page 244
Accessory Mounting Brackets	Page 250

AC Servo Motor

LECS□ Series

○Rod Type *LEY* Series

Size 25, 32



Model Selection	Page 232
How to Order	Page 254
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Construction	Page 257
Dimensions	Page 258

○Rod Type *LEY* Series

Size 63

Dust-tight/Water-jet-proof (IP65 Equivalent) * Select options



Model Selection	Page 232
How to Order	Page 264
Specifications	Page 265
Construction	Page 266
Dimensions	Page 267

LECY□ Series

○Rod Type *LEY* Series

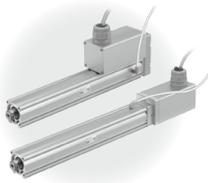


Model Selection	Page 237-1
How to Order	Page 270-1
Specifications	Page 270-3
Construction	Page 270-5
Dimensions	Page 270-6

Auto switch

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)



○Rod Type *LEY-X5* (Made to Order)

Dust-tight/Water-jet-proof (IP65 Equivalent)

Model Selection	Page 270-14
How to Order	Page 270-18
Specifications	Page 270-22
Construction	Page 270-24
Dimensions	Page 270-25

AC Servo Motor

LECS□ Series

○Rod Type *LEY-X5* (Made to Order)

Dust-tight/Water-jet-proof (IP65 Equivalent)



Model Selection	Page 232
How to Order	Page 270-28
Specifications	Page 270-29
Construction	Page 270-30
Dimensions	Page 270-31

Auto switch

Electric Actuator/Guide Rod Type *LEYG Series*

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)



◎Guide Rod Type *LEYG Series*

Model Selection	Page 272
How to Order	Page 284
Specifications	Page 286
Construction	Page 288
Dimensions	Page 290
Support Block	Page 294

AC Servo Motor

LECS□ Series

◎Guide Rod Type *LEYG Series*

Model Selection	Page 280
How to Order	Page 296
Specifications	Page 298
Construction	Page 299
Dimensions	Page 300
Support Block	Page 302



LECY□ Series

◎Guide Rod Type *LEYG Series*

Model Selection	Page 283-1
How to Order	Page 302-1
Specifications	Page 302-3
Construction	Page 302-4
Dimensions	Page 302-5
Support Block	Page 302-7



Specific Product Precautions Page 303

◎Step Motor (Servo/24 VDC)

Servo Motor (24 VDC) Controller

Step Data Input Type/ <i>LECP6/LECA6 Series</i> ...	Page 560
Controller Setting Kit/ <i>LEC-W2</i>	Page 569
Teaching Box/ <i>LEC-T1</i>	Page 570
CC-Link Direct Input Type/ <i>LECPMJ Series</i>	Page 600
Controller Setting Kit/ <i>LEC-W2</i>	Page 603-2
Teaching Box/ <i>LEC-T1</i>	Page 603-3
EtherCAT®/EtherNet/IP™/PROFINET/DeviceNet™/IO-Link	
Direct Input Type/ <i>JXCE1/91/P1/D1/L1 Series</i>	Page 603-5
Controller Setting Kit/ <i>LEC-W2</i>	Page 603-10
Teaching Box/ <i>LEC-T1</i>	Page 605
Gateway Unit/ <i>LEC-G Series</i>	Page 572
Programless Controller/ <i>LECP1 Series</i>	Page 576
Step Motor Driver/ <i>LECPA Series</i>	Page 590
Controller Setting Kit/ <i>LEC-W2</i>	Page 597
Teaching Box/ <i>LEC-T1</i>	Page 598

◎4-Axis Step Motor (Servo/24 VDC) Controller

Parallel I/O Type/ <i>JXC73/83 Series</i>	Page 606-1
EtherNet/IP™ Type/ <i>JXC93 Series</i>	Page 606-1



◎AC Servo Motor Driver

<i>LECSA/LECSB/</i>	
<i>LECS/LECSS Series</i>	Page 613
<i>LECSS-T Series</i>	Page 613
<i>LECYM/LECYU Series</i>	Page 628-1



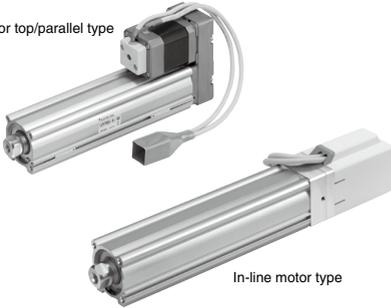
Rod Type

LEY Series

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

Motor top/parallel type

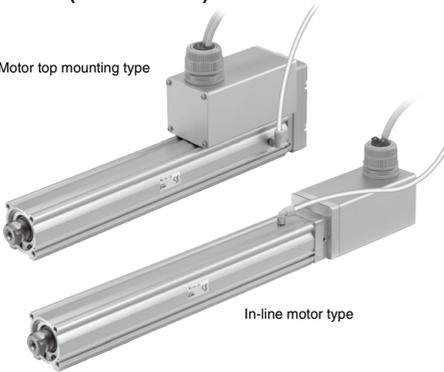


In-line motor type

Dust-tight/Water-jet-proof (IP65 Equivalent)

LEY-X5 (Made to Order)

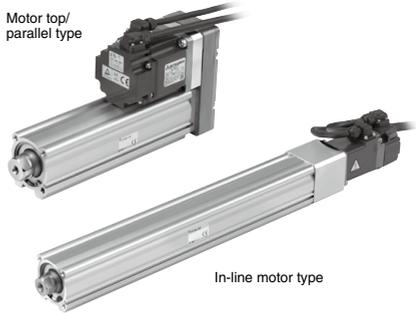
Motor top mounting type



In-line motor type

AC Servo Motor

Motor top/
parallel type

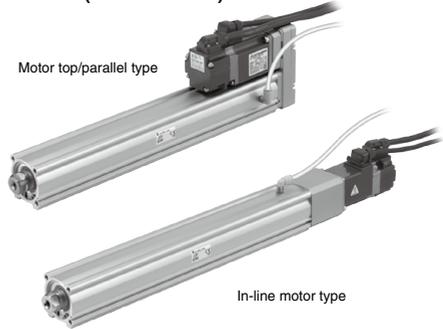


In-line motor type

Dust-tight/Water-jet-proof (IP65 Equivalent)

LEY-X5 (Made to Order)

Motor top/parallel type



In-line motor type

Electric Actuator/Rod Type

LEY Series

Model Selection



LEY Series ▶ Pages 238, 239-1

Selection Procedure

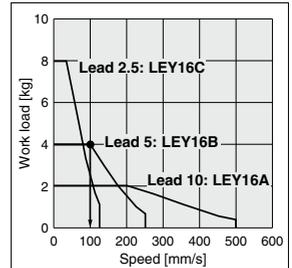
Positioning Control Selection Procedure



Selection Example

Operating conditions

- Workpiece mass: 4 [kg]
- Speed: 100 [mm/s]
- Acceleration/Deceleration: 3000 [mm/s²]
- Stroke: 200 [mm]
- Workpiece mounting condition: Vertical upward downward transfer



<Speed-Vertical work load graph>
(LEY16/Step motor)

Step 1 Check the work load-speed. <Speed-Vertical work load graph>

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

Selection example) The **LEY16B** is temporarily selected based on the graph shown on the right side.

* It is necessary to mount a guide outside the actuator when used for horizontal transfer. When selecting the target model, refer to page 231 for the horizontal work load in the specifications, and page 240 for the precautions.

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.

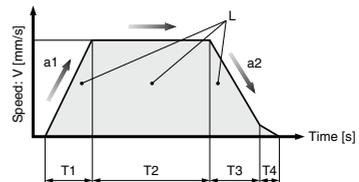
$$T1 = V/a1 = 100/3000 = 0.033 \text{ [s]}, T3 = V/a2 = 100/3000 = 0.033 \text{ [s]}$$

$$T2 = \frac{L - 0.5 \cdot V \cdot (T1 + T3)}{V} = \frac{200 - 0.5 \cdot 100 \cdot (0.033 + 0.033)}{100} = 1.97 \text{ [s]}$$

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

Therefore, the cycle time can be obtained as follows.

$$T = T1 + T2 + T3 + T4 = 0.033 + 1.967 + 0.033 + 0.2 = 2.233 \text{ [s]}$$



- 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

Based on the above calculation result, the **LEY16B-200** is selected.

Selection Procedure

Pushing Control Selection Procedure

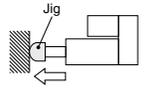


* The duty ratio is a ratio of the operation time in one cycle.

Selection Example

Operating conditions

- Mounting condition: Horizontal (pushing)
- Jig weight: 0.2 [kg]
- Pushing force: 60 [N]
- Duty ratio: 20 [%]
- Speed: 100 [mm/s]
- Stroke: 200 [mm]



Step 1 Check the duty ratio.

<Conversion table of pushing force–duty ratio>

Select the [Pushing force] from the duty ratio with reference to the <Conversion table of pushing force–duty ratio>.

Selection example)

Based on the table below,

- Duty ratio: 20 [%]

Therefore, the set value of pushing force will be 70 [%].

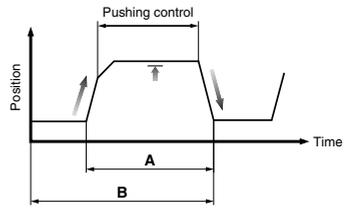
<Conversion table of pushing force–duty ratio>

(LEY16/Step motor)

Set value of pushing force [%]	Duty ratio [%]	Continuous pushing time [minute]
40 or less	100	—
50	70	12
70	20	1.3
85	15	0.8

* [Set value of pushing force] is one of the step data input to the controller.

* [Continuous pushing time] is the time that the actuator can continuously keep pushing.



$$\text{Duty ratio} = A/B \times 100 [\%]$$

Step 2 Check the pushing force. <Force conversion graph>

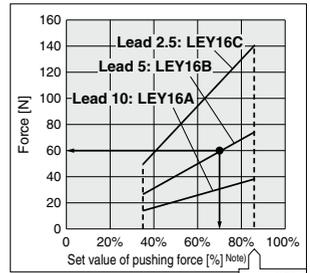
Select the target model based on the set value of pushing force and force with reference to the <Force conversion graph>.

Selection example)

Based on the graph shown on the right side,

- Set value of pushing force: 70 [%]
- Pushing force: 60 [N]

Therefore, the LEY16B is temporarily selected.



<Force conversion graph>
(LEY16/Step motor)

Note) Set values for the controller.

Step 3 Check the lateral load on the rod end.

<Graph of allowable lateral load on the rod end>

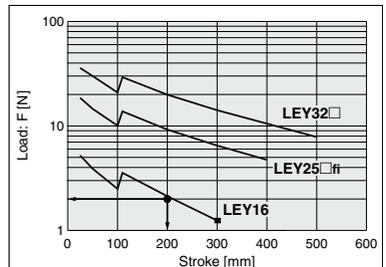
Confirm the allowable lateral load on the rod end of the actuator: LEY16□, which has been selected temporarily with reference to the <Graph of allowable lateral load on the rod end>.

Selection example)

Based on the graph shown on the right side,

- Jig weight: 0.2 [kg] ≈ 2 [N]
- Product stroke: 200 [mm]

Therefore, the lateral load on the rod end is in the allowable range.



<Graph of allowable lateral load on the rod end>

Based on the above calculation result, the LEY16B-200 is selected.

LEY Series

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

Refer to page 225 for the LECPA, JXC³ and page 226 for the LECA6.

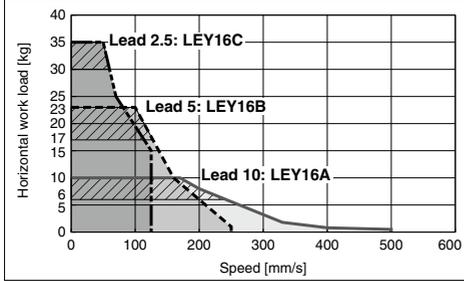
Speed-Work Load Graph (Guide)

For Step Motor (Servo/24 VDC) LECP6, LECP1, LECPMJ, JXC¹

Horizontal

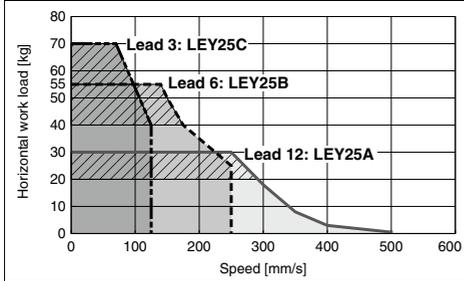
LEY16[□]

▨ for acceleration/deceleration: 2000 mm/s²



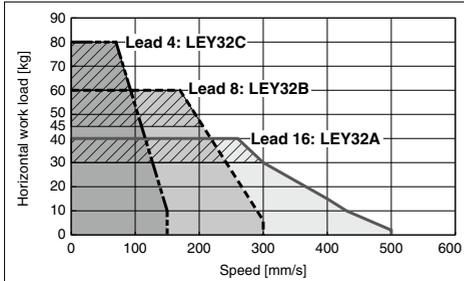
LEY25[□]

▨ for acceleration/deceleration: 2000 mm/s²



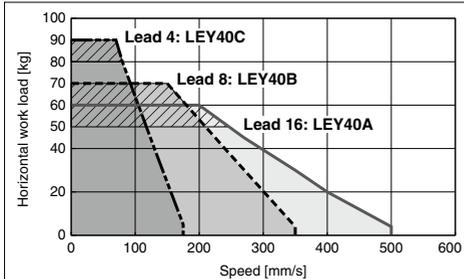
LEY32[□]

▨ for acceleration/deceleration: 2000 mm/s²



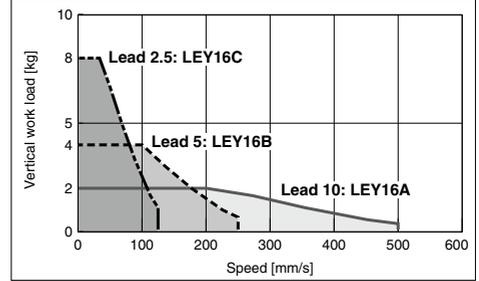
LEY40[□]

▨ for acceleration/deceleration: 2000 mm/s²

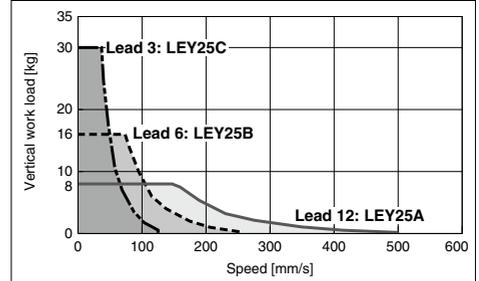


Vertical

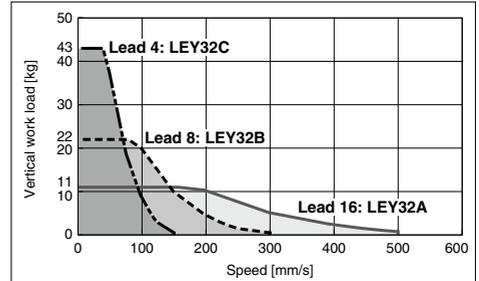
LEY16[□]



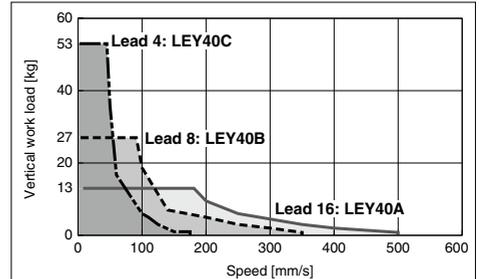
LEY25[□]



LEY32[□]



LEY40[□]

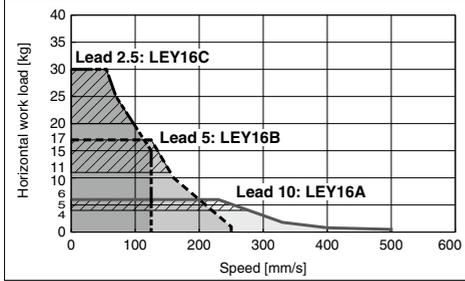


Refer to page 224 for the LECP6, LECP1, LECPMJ, JXC□1 and page 226 for the LECA6.

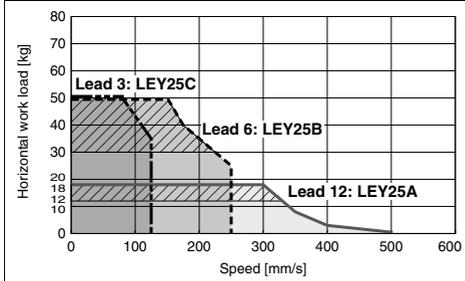
Speed-Work Load Graph (Guide)
For Step Motor (Servo/24 VDC) LECPA, JXC□3

Horizontal

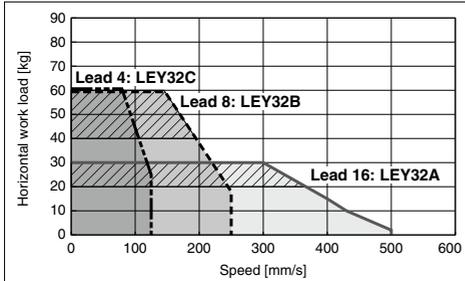
LEY16□  for acceleration/deceleration: 2000 mm/s²



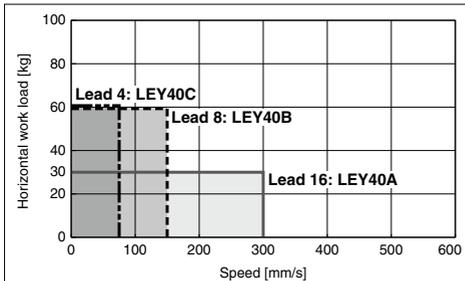
LEY25□  for acceleration/deceleration: 2000 mm/s²



LEY32□  for acceleration/deceleration: 2000 mm/s²

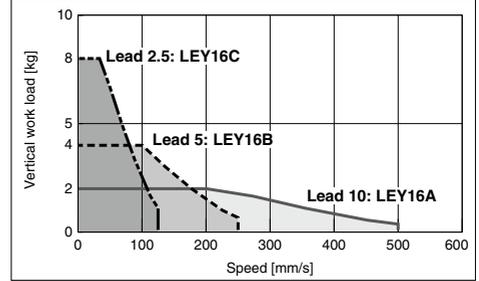


LEY40□

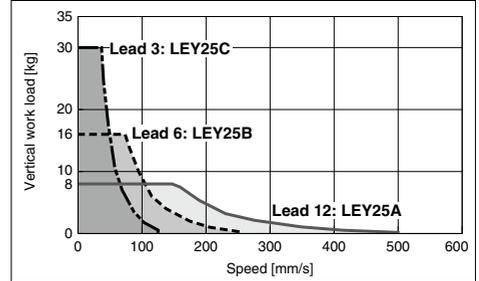


Vertical

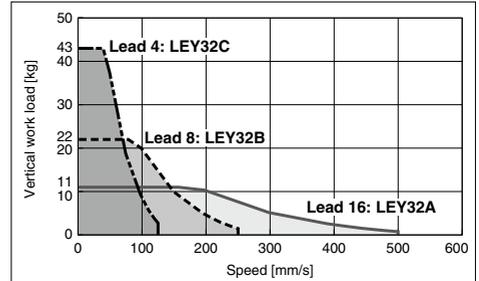
LEY16□



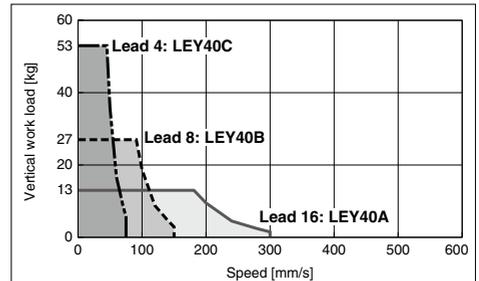
LEY25□



LEY32□



LEY40□



LEY Series

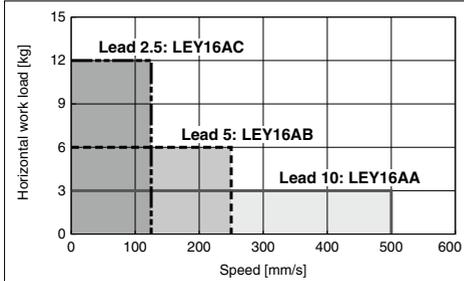
Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

Speed-Work Load Graph (Guide) For Servo Motor (24 VDC) LECA6

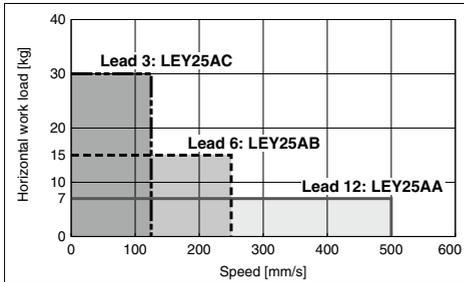
Refer to page 224 for the LECP6, LECP1, LECPMJ, JXC□1 and page 225 for the LECPA, JXC□3.

Horizontal

LEY16□A

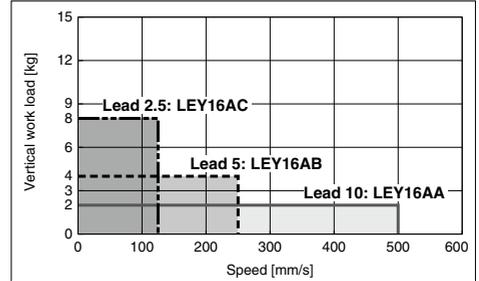


LEY25□A

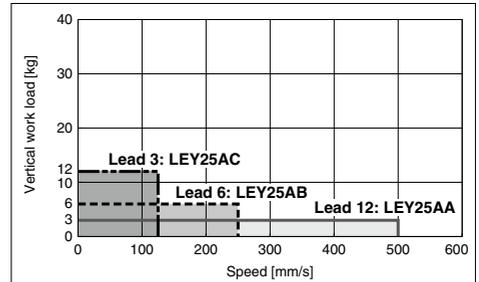


Vertical

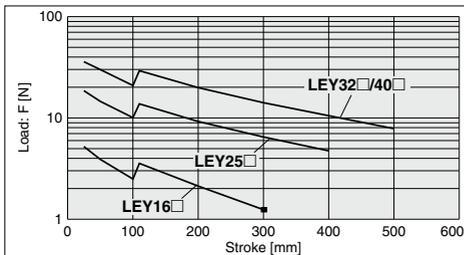
LEY16□A



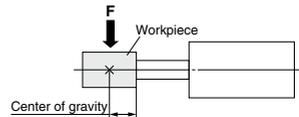
LEY25□A



Graph of Allowable Lateral Load on the Rod End (Guide)

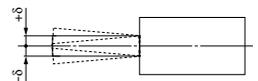


[Stroke] = [Product stroke] + [Distance from the rod end to the center of gravity of the workpiece]



Rod Displacement: δ [mm]

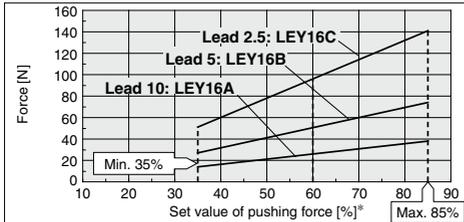
Stroke	30	50	100	150	200	250	300	350	400	450	500
Size											
16	±0.4	±0.5	±0.9	±0.8	±1.1	±1.3	±1.5	—	—	—	—
25	±0.3	±0.4	±0.7	±0.7	±0.9	±1.1	±1.3	±1.5	±1.7	—	—
32, 40	±0.3	±0.4	±0.7	±0.6	±0.8	±1.0	±1.1	±1.3	±1.5	±1.7	±1.8



Force Conversion Graph (Guide)

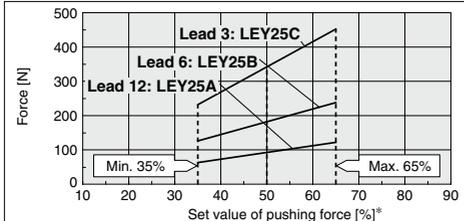
Step Motor (Servo/24 VDC)

LEY16



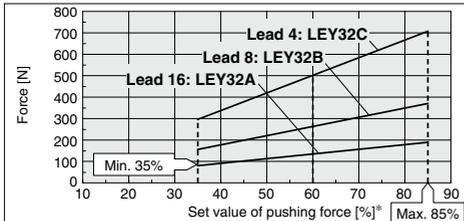
Ambient temperature	Set value of pushing force [%]	Duty ratio [%]	Continuous pushing time [minute]
25°C or less	85 or less	100	—
	40 or less	100	—
40°C	50	70	12
	70	20	1.3
	85	15	0.8

LEY25



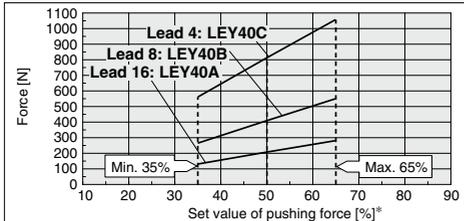
Ambient temperature	Set value of pushing force [%]	Duty ratio [%]	Continuous pushing time [minute]
40°C or less	65 or less	100	—

LEY32



Ambient temperature	Set value of pushing force [%]	Duty ratio [%]	Continuous pushing time [minute]
25°C or less	85 or less	100	—
	65 or less	100	—
40°C	85	50	15

LEY40

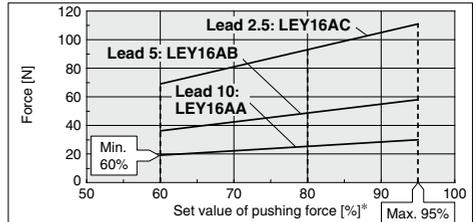


Ambient temperature	Set value of pushing force [%]	Duty ratio [%]	Continuous pushing time [minute]
40°C or less	65 or less	100	—

* Set values for the controller.

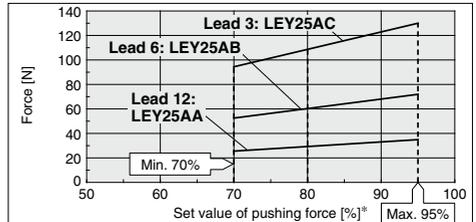
Servo Motor (24 VDC)

LEY16□A



Ambient temperature	Set value of pushing force [%]	Duty ratio [%]	Continuous pushing time [minute]
40°C or less	95 or less	100	—

LEY25□A



Ambient temperature	Set value of pushing force [%]	Duty ratio [%]	Continuous pushing time [minute]
40°C or less	95 or less	100	—

<Limit Value of Pushing Force and Trigger Level in Relation to Pushing Speed> Without Load

Model	Lead	Pushing speed [mm/s] (Setting input value)	Pushing force (Setting input value)	Model	Lead	Pushing speed [mm/s] (Setting input value)	Pushing force (Setting input value)
LEY16	A/B/C	21 to 50	60 to 85%	LEY16□A	A/B/C	21 to 50	80 to 95%
	LEY25	A/B/C	21 to 35		50 to 65%	LEY25□A	A/B/C
LEY32	A	24 to 30	60 to 85%	LEY40	A		24 to 20
	B/C	21 to 30			B/C	21 to 30	

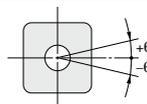
There is a limit to the pushing force in relation to the pushing speed. If the product is operated outside of the range (low pushing force), the completion signal [INP] may be output before the pushing operation has been completed (during the moving operation). If operating with the pushing speed below the minimum speed, please check for operating problems before using the product.

<Set Values for Vertical Upward Transfer Pushing Operation>

For vertical loads (upward), set the pushing force to the maximum value shown below, and operate at the work load or less.

Model	LEY16□	LEY25□	LEY32□	LEY40□	LEY16□A	LEY25□A												
Lead	A	B	C	A	B	C												
Work load [kg]	1	1.5	3	2.5	5	10	4.5	9	18	7	14	28	1	1.5	3	1.2	2.5	5
Pushing force	85%	65%	85%	65%	95%	95%												

Non-rotating Accuracy of Rod



Size	Non-rotating accuracy θ
16	±1.1°
25	±0.8°
32	±0.7°
40	±0.7°

* Avoid using the electric actuator in such a way that rotational torque would be applied to the piston rod. This may cause deformation of the non-rotating guide, abnormal responses of the auto switch, play in the internal guide or an increase in the sliding resistance.

Model Selection

Size **25, 32, 63**



LEY Series ▶ Pages **254, 264** **LEY□ Series** ▶ Page **270-1**

LEY-X5 Series ▶ Page **270-28**

Selection Procedure

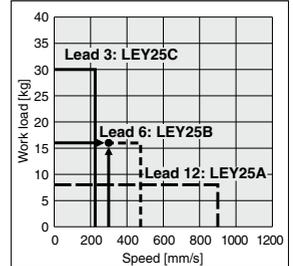
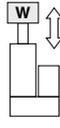
Positioning Control Selection Procedure



Selection Example

Operating conditions

- Workpiece mass: 16 [kg]
- Speed: 300 [mm/s]
- Acceleration/Deceleration: 5000 [mm/s²]
- Stroke: 300 [mm]
- Workpiece mounting condition: Vertical upward downward transfer



<Speed-Vertical work load graph> (LEY25)

Step 1 Check the work load-speed. <Speed-Vertical work load graph>

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

Selection example) The **LEY25B** is temporarily selected based on the graph shown on the right side.

* It is necessary to mount a guide outside the actuator when used for horizontal transfer. When selecting the target model, refer to the horizontal work load in the specifications on pages 256, 256-1, 265, 270-3, 270-4 and 270-29, and the precautions.

The regeneration option may be necessary. Refer to pages 234 and 235 for "Required Conditions for Regeneration Option".

Step 2 Check the cycle time.

Calculate the cycle time using the following calculation method.

- Cycle time T can be found from the following equation.

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

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

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

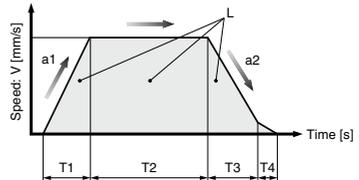
$$T3 = V/a2 \text{ [s]}$$

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

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

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

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



- 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

Calculation example)

T1 to T4 can be calculated as follows.

$$T1 = V/a1 = 300/5000 = 0.06 \text{ [s]}, T3 = V/a2 = 300/5000 = 0.06 \text{ [s]}$$

$$T2 = \frac{L - 0.5 \cdot V \cdot (T1 + T3)}{V} = \frac{300 - 0.5 \cdot 300 \cdot (0.06 + 0.06)}{300} = 0.94 \text{ [s]}$$

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

Therefore, the cycle time can be obtained as follows.

$$T = T1 + T2 + T3 + T4 = 0.06 + 0.94 + 0.06 + 0.05 = 1.11 \text{ [s]}$$

Based on the above calculation result, the **LEY25S2B-300** is selected.

Selection Procedure

Force Control Selection Procedure

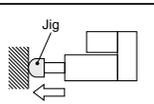


* The duty ratio is a ratio of the operation time in one cycle.

Selection Example

Operating conditions

- Mounting condition: Horizontal (pushing)
- Duty ratio: 60 [%]
- Jig weight: 0.5 [kg]
- Speed: 100 [mm/s]
- Force: 255 [N]
- Stroke: 300 [mm]



Step 1 Check the duty ratio.

<Conversion table of force–duty ratio>

Select the [Force] from the duty ratio with reference to the <Conversion table of force–duty ratio>.

Selection example)

Based on the table below,

- Duty ratio: 60 [%]

Therefore, Torque limit/Command value will be 30 [%].

<Conversion table of force–duty ratio>

(LEY25/AC Servo motor)

Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time [minute]
25 or less	100	—
30	60	1.5

* [Torque limit/Command value [%]] is the set value for the driver.

* [Continuous pushing time] is the time that the actuator can continuously keep pushing.

Step 2 Check the force. <Force conversion graph>

Select the target model based on the torque limit/command value and pushing force with reference to the <Force conversion graph>.

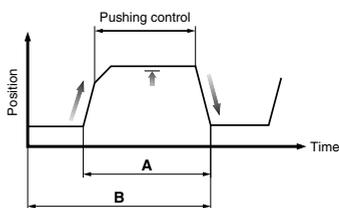
Selection example)

Based on the graph shown on the right side,

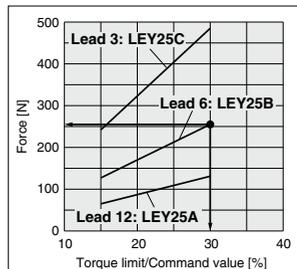
- Torque limit/Command value: 30 [%]

- Force: 255 [N]

Therefore, the **LEY25B** is temporarily selected.



$$\text{Duty ratio} = A/B \times 100 [\%]$$



<Force conversion graph>
(LEY25)

Step 3 Check the lateral load on the rod end.

<Graph of allowable lateral load on the rod end>

Confirm the allowable lateral load on the rod end of the actuator: LEY25B, which has been selected temporarily with reference to the <Graph of allowable lateral load on the rod end>.

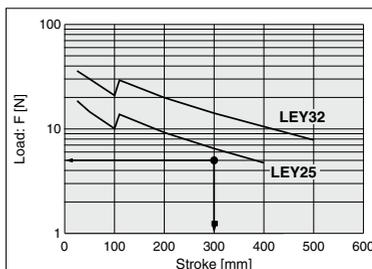
Selection example)

Based on the graph shown on the right side,

- Jig weight: 0.5 [kg] = 5 [N]

- Product stroke: 300 [mm]

Therefore, the lateral load on the rod end is in the allowable range.



<Graph of allowable lateral load on the rod end>

Based on the above calculation result, the **LEY25S2B-300** is selected.

LEY/LEY-X5 Series

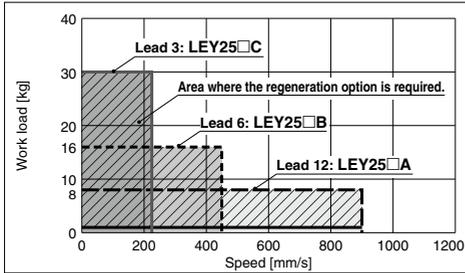
AC Servo Motor

Size 25, 32, 63

Dust-tight/Water-jet-proof (IP65 equivalent)

Speed-Vertical Work Load Graph/Required Conditions for "Regeneration Option"

LEY25 □ S₆²/T6 (Motor mounting position: Top/Parallel, In-line)



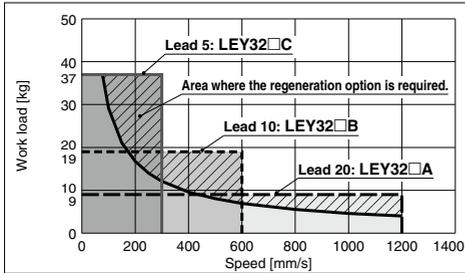
Required conditions for "Regeneration option"

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

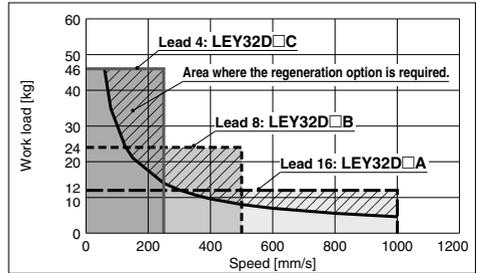
"Regeneration Option" Models

Size	Model
LEY25 □	LEC-MR-RB-032
LEY32 □	LEC-MR-RB-032
LEY63 □	LEC-MR-RB-12

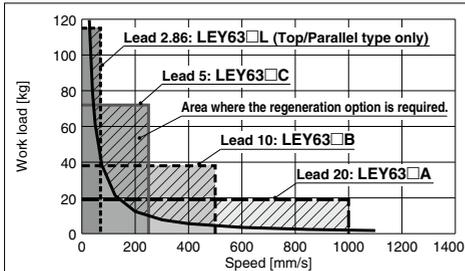
LEY32 □ S₇³/T7 (Motor mounting position: Top/Parallel)



LEY32DS₇³/T7 (Motor mounting position: In-line)

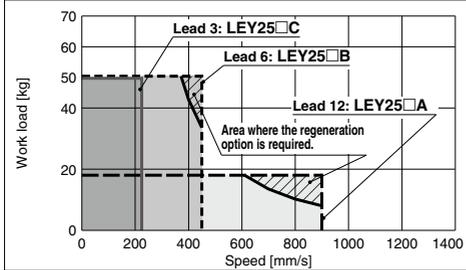


LEY63 □ S₈⁴/T8 (Motor mounting position: Top/Parallel, In-line)



Speed–Horizontal Work Load Graph/Required Conditions for “Regeneration Option”

LEY25□S₂³/T6 (Motor mounting position: Top/Parallel, In-line)



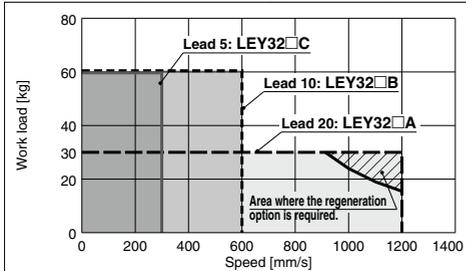
Required conditions for “Regeneration option”

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

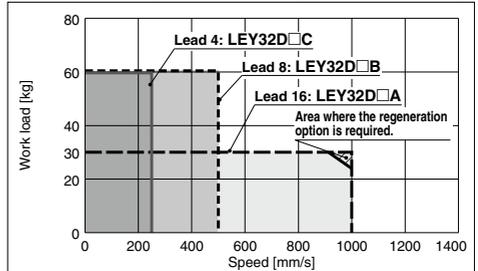
“Regeneration Option” Models

Size	Model
LEY25□	LEC-MR-RB-032
LEY32□	LEC-MR-RB-032
LEY63□	—

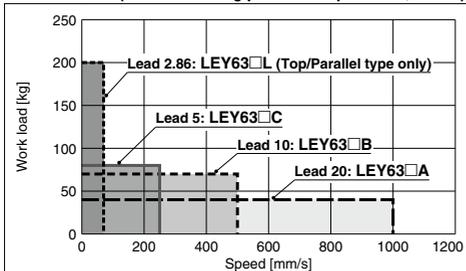
LEY32□S₃³/T7 (Motor mounting position: Top/Parallel)



LEY32DS₃³/T7 (Motor mounting position: In-line)



LEY63□S₄³/T8 (Motor mounting position: Top/Parallel, In-line)



Allowable Stroke Speed

Model	AC servo motor	Lead Symbol [mm]	Stroke [mm]															
			30	50	100	150	200	250	300	350	400	450	500	600	700	800		
LEY25□S ₂ ³ /T6 (Motor mounting position: Top/Parallel, In-line)	100 W /□40	A	12			900				600								
		B	6			450				300								
		C	3			225				150								
		(Motor rotation speed)				(4500 rpm)				(3000 rpm)								
LEY32□S ₃ ³ /T7 (Motor mounting position: Top/Parallel)	200 W /□60	A	20						1200					800				
		B	10						600				400					
		C	5						300				200					
		(Motor rotation speed)							(3600 rpm)				(2400 rpm)					
LEY32DS ₃ ³ /T7 (Motor mounting position: In-line)	200 W /□60	A	16						1000					640				
		B	8						500				320					
		C	4						250				160					
		(Motor rotation speed)							(3750 rpm)				(2400 rpm)					
LEY63□S ₄ ³ /T8 (Motor mounting position: Top/Parallel, In-line)	400 W /□60	A	20						1000					800	600	500		
		B	10						500				400	300	250			
		C	5						250				200	150	125			
		(Motor rotation speed)							(3000 rpm)				(2400 rpm)	(1800 rpm)	(1500 rpm)			
		L*	2.86							70								
(Motor rotation speed)								(1470 rpm)										

* Top/Parallel type only

LEY/LEY-X5 Series

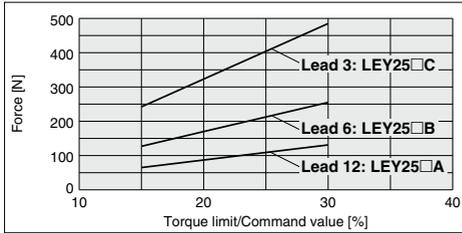
AC Servo Motor

Size 25, 32, 63

Dust-tight/Water-jet-proof (IP65 equivalent)

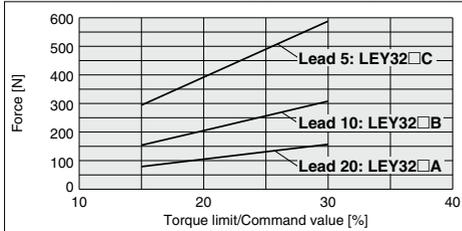
Force Conversion Graph (Guide) For LECSA, LECSB, LECS, LECS

LEY25□S₆² (Motor mounting position: Top/Parallel, In-line)



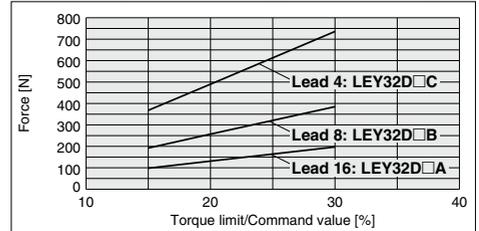
Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time (minute)
25 or less	100	—
30	60	1.5

LEY32□S₃³ (Motor mounting position: Top/Parallel)



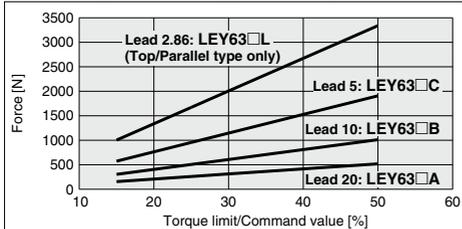
Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time (minute)
25 or less	100	—
30	60	1.5

LEY32DS₇³ (Motor mounting position: In-line)



Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time (minute)
25 or less	100	—
30	60	1.5

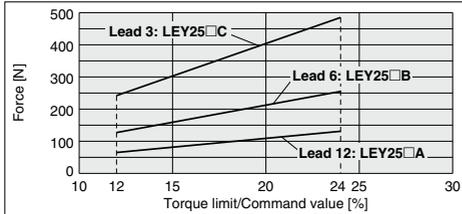
LEY63□S₄⁴ (Motor mounting position: Top/Parallel, In-line)



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

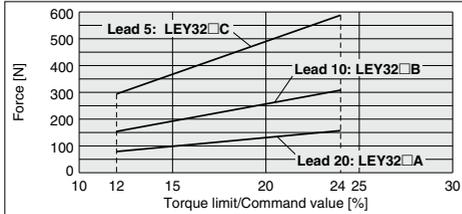
Force Conversion Graph (Guide) For LECSS-T

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



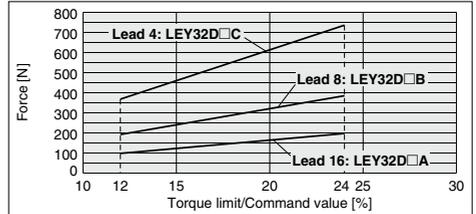
Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time [minute]
20 or less	100	—
24	60	1.5

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



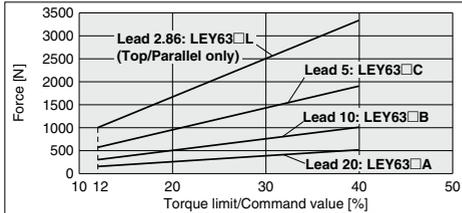
Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time [minute]
20 or less	100	—
24	60	1.5

LEY32DT7 (Motor mounting position: In-line)



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

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



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

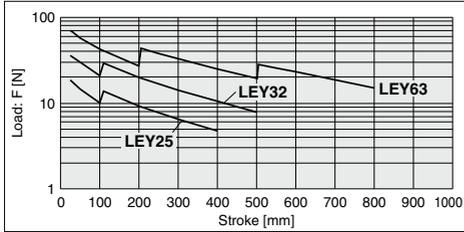
LEY/LEY-X5 Series

AC Servo Motor

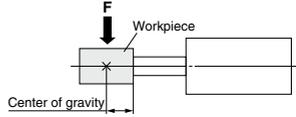
Size 25, 32, 63

Dust-tight/Water-jet-proof (IP65 equivalent)

Graph of Allowable Lateral Load on the Rod End (Guide)

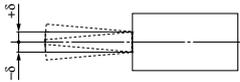


[Stroke] = [Product stroke] + [Distance from the rod end to the center of gravity of the workpiece]

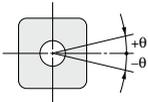


Rod Displacement: δ [mm]

Stroke \ Size	30	50	100	150	200	250	300	350	400	450	500	600	700	800
25	±0.3	±0.4	±0.7	±0.7	±0.9	±1.1	±1.3	±1.5	±0.5	—	—	—	—	—
32	±0.3	±0.4	±0.7	±0.6	±0.8	±1.0	±1.1	±1.3	±1.5	±1.7	±1.8	—	—	—
63	—	±0.5	±0.7	±0.9	±1.2	±1.1	±1.3	±1.5	±1.7	±1.9	±2.1	±1.7	±2.0	±2.2



Non-rotating Accuracy of Rod



Size	Non-rotating accuracy θ
25	±0.8°
32	±0.7°
63	±0.6°

* Avoid using the electric actuator in such a way that rotational torque would be applied to the piston rod. This may cause deformation of the non-rotating guide, abnormal responses of the auto switch, play in the internal guide or an increase in the sliding resistance.

Model Selection

Size 25, 32, 63



LEY Series ▶ Page 270-1

LECS □ Series ▶ Page 254

Selection Procedure

Positioning Control Selection Procedure

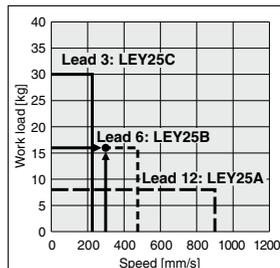
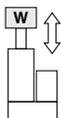
Step 1 Check the work load–speed.
(Vertical transfer)

Step 2 Check the cycle time.

Selection Example

Operating conditions

- Workpiece mass: 16 [kg]
- Speed: 300 [mm/s]
- Acceleration/Deceleration: 5000 [mm/s²]
- Stroke: 300 [mm]
- Workpiece mounting condition: Vertical upward downward transfer



<Speed-Vertical work load graph>
(LEY25)

Step 1 Check the work load–speed. <Speed-Vertical work load graph>

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

Selection example) The **LEY25B** is temporarily selected based on the graph shown on the right side.

* It is necessary to mount a guide outside the actuator when used for horizontal transfer. When selecting the target model, refer to the horizontal work load in the specifications on pages 270-3 and 270-4 and the precautions.

The regenerative resistor may be necessary. Refer to pages 237-3 and 237-4 for "Conditions for Regenerative Resistor (Guide)".

Step 2 Check the cycle time.

Calculate the cycle time using the following calculation method.

- Cycle time T can be found from the following equation.

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

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

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

- 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.

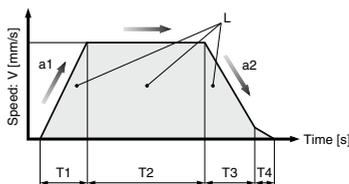
$$T1 = V/a1 = 300/5000 = 0.06 \text{ [s]}, \quad T3 = V/a2 = 300/5000 = 0.06 \text{ [s]}$$

$$T2 = \frac{L - 0.5 \cdot V \cdot (T1 + T3)}{V} = \frac{300 - 0.5 \cdot 300 \cdot (0.06 + 0.06)}{300} = 0.94 \text{ [s]}$$

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

Therefore, the cycle time can be obtained as follows.

$$T = T1 + T2 + T3 + T4 = 0.06 + 0.94 + 0.06 + 0.05 = 1.11 \text{ [s]}$$



- 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

Based on the above calculation result, the **LEY25V6B-300** is selected.



Selection Procedure

Pushing Control Selection Procedure

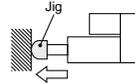


* The duty ratio is a ratio of the operation time in one cycle.

Selection Example

Operating conditions

- Mounting condition: Horizontal (pushing)
- Duty ratio: 60 [%]
- Jig weight: 0.5 [kg]
- Pushing speed: 35 [mm/s]
- Force: 255 [N]
- Stroke: 300 [mm]



Step 1 Check the duty ratio.

<Conversion table of pushing force–duty ratio>

Select the [Pushing force] from the duty ratio with reference to the <Conversion table of pushing force–duty ratio>.

Selection example)

Based on the table below,

- Duty ratio: 60 [%]

Therefore, Torque limit/command value will be 90 [%].

<Conversion table of pushing force–duty ratio>

(LEY25/AC Servo motor)

Set value of pushing force [%]	Duty ratio [%]	Continuous pushing time [minute]
75 or less	100	—
90	60	1.5

* [Set value of pushing force] is one of the data input to the driver.

* [Continuous pushing time] is the time that the actuator can continuously keep pushing.

Step 2 Check the pushing force. <Force conversion graph>

Select the target model based on the torque limit/command value and pushing force with reference to the <Force conversion graph>.

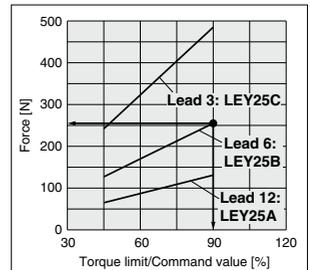
Selection example)

Based on the graph shown on the right side,

- Torque limit/Command value: 90 [%]

- Pushing force: 255 [N]

Therefore, the LEY25B is temporarily selected.



<Force conversion graph> (LEY25)

Step 3 Check the lateral load on the rod end.

<Graph of allowable lateral load on the rod end>

Confirm the allowable lateral load on the rod end of the actuator: LEY25B, which has been selected temporarily with reference to the <Graph of allowable lateral load on the rod end>.

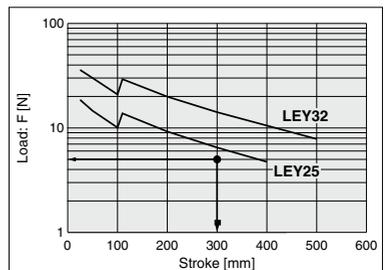
Selection example)

Based on the graph shown on the right side,

- Jig weight: 0.5 [kg] = 5 [N]

- Product stroke: 300 [mm]

Therefore, the lateral load on the rod end is in the allowable range.



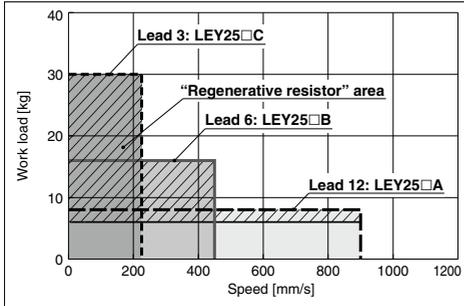
<Graph of allowable lateral load on the rod end>

Based on the above calculation result, the LEY25V6B-300 is selected.

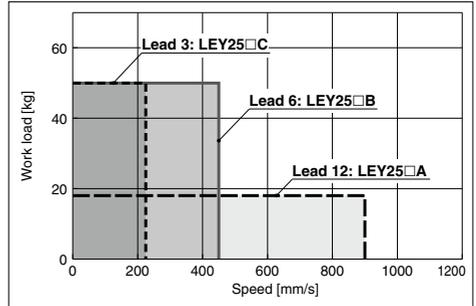
Speed-Work Load Graph/Conditions for “Regenerative Resistor” (Guide)

LEY25□V6 (Motor mounting position: Top/Parallel, In-line)

Vertical

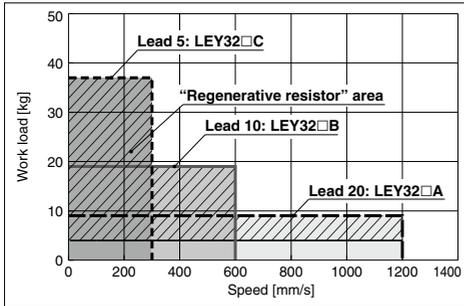


Horizontal

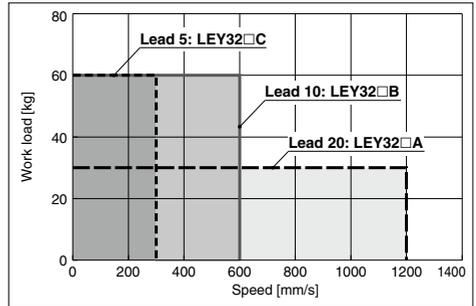


LEY32□V7 (Motor mounting position: Top/Parallel)

Vertical

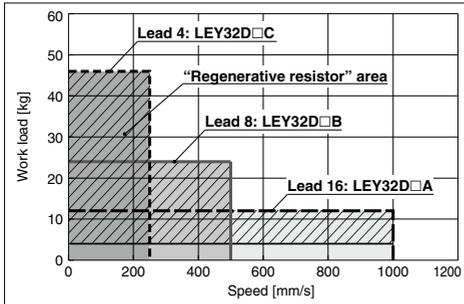


Horizontal

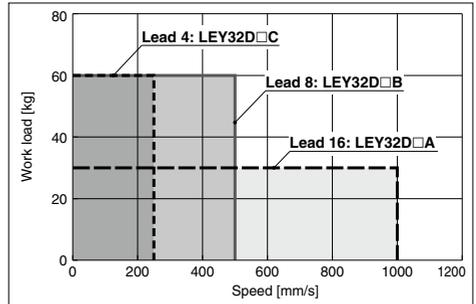


LEY32DV7 (Motor mounting position: In-line)

Vertical



Horizontal



“Regenerative resistor” area

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

* Regenerative resistor should be provided by the customer.

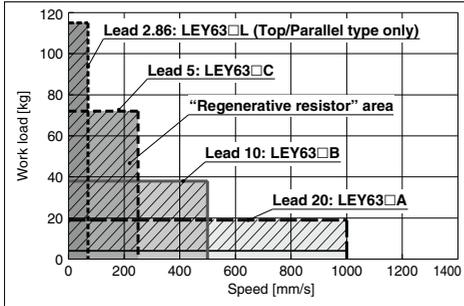
Applicable Motor/Driver

Model	Applicable model	
	Motor	Servopack (SMC driver)
LEY25□	SGMJV-01A3A	SGDV-R90A11□ (LECYM2-V5)
		SGDV-R90A21□ (LECYU2-V5)
LEY32□	SGMJV-02A3A	SGDV-1R6A11□ (LECYM2-V7)
		SGDV-1R6A21□ (LECYU2-V7)

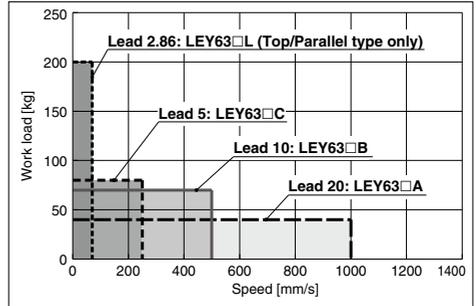
Speed-Work Load Graph/Conditions for “Regenerative Resistor” (Guide)

LEY63□V8 (Motor mounting position: Top/Parallel, In-line)

Vertical



Horizontal



“Regenerative resistor” area

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

* Regenerative resistor should be provided by the customer.

Applicable Motor/Driver

Product no.	Applicable model	
	Motor	Servopack (SMC driver)
LEY63□	SGMJV-04A3A	SGDV-2R8A11□ (LECYM2-V8) SGDV-2R8A21□ (LECYU2-V8)

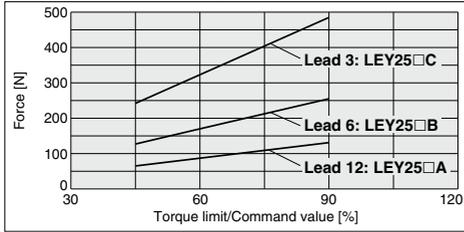
Allowable Stroke Speed

(mm/s)

Model	AC servo motor	Lead		Stroke [mm]																	
		Symbol	[mm]	Up to 30	Up to 50	Up to 100	Up to 150	Up to 200	Up to 250	Up to 300	Up to 350	Up to 400	Up to 450	Up to 500	Up to 600	Up to 700	Up to 800				
LEY25□V6 (Motor mounting position: Top/Parallel, In-line)	100 W /□40	A	12	900						600			—			—					
		B	6	450						300			—			—					
		C	3	225						150			—			—					
		(Motor rotation speed)		(4500 rpm)						(3000 rpm)			—			—					
LEY32□V7 (Motor mounting position: Top/Parallel)	200 W /□60	A	20	1200						800			—			—					
		B	10	600						400			—			—					
		C	5	300						200			—			—					
		(Motor rotation speed)		(3600 rpm)						(2400 rpm)			—			—					
LEY32DV7 (Motor mounting position: In-line)	200 W /□60	A	16	1000						640			—			—					
		B	8	500						320			—			—					
		C	4	250						160			—			—					
		(Motor rotation speed)		(3750 rpm)						(2400 rpm)			—			—					
LEY63□V8 (Motor mounting position: Top/Parallel, In-line)	400 W /□60	A	20	—						1000			800			600			500		
		B	10	—						500			400			300			250		
		C	5	—						250			200			150			125		
		(Motor rotation speed)		—						(3000 rpm)			(2400 rpm)			(1800 rpm)			(1500 rpm)		
		L	2.86	—						70			—			—			—		
		(Motor rotation speed)		—						(1470 rpm)			—			—			—		

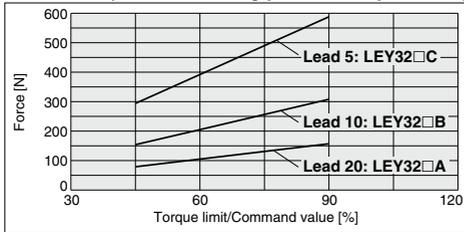
Force Conversion Graph (Guide)

LEY25□V6 (Motor mounting position: Top/Parallel, In-line)



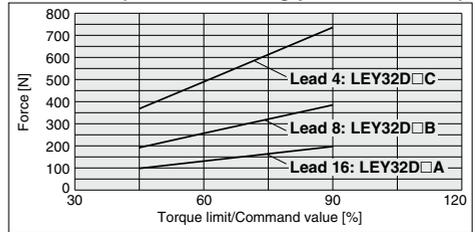
Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time [minute]
75 or less	100	—
90	60	1.5

LEY32□V7 (Motor mounting position: Top/Parallel)



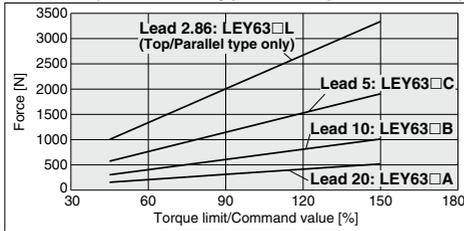
Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time [minute]
75 or less	100	—
90	60	1.5

LEY32DV7 (Motor mounting position: In-line)



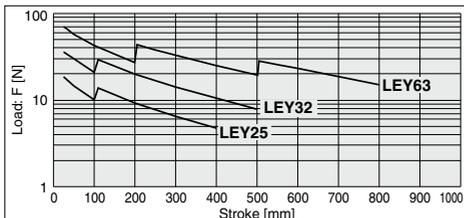
Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time [minute]
75 or less	100	—
90	60	1.5

LEY63□V8 (Motor mounting position: Top/Parallel, In-line)

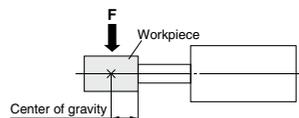


Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time [minute]
75 or less	100	—
90	60	1.5
120	30	0.5
150	20	0.16

Graph of Allowable Lateral Load on the Rod End (Guide)



[Stroke] = [Product stroke] + [Distance from the rod end to the center of gravity of the workpiece]

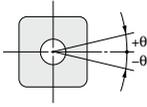


LEY Series

AC Servo Motor

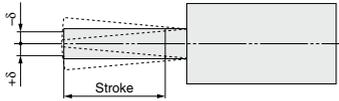
Size **25, 32, 63**

Non-rotating Accuracy: θ



Size	Non-rotating accuracy θ
25	$\pm 0.8^\circ$
32	$\pm 0.7^\circ$
63	$\pm 0.6^\circ$

Rod Displacement: δ



Size	Stroke [mm]													
	30	50	100	150	200	250	300	350	400	450	500	600	700	800
25	± 0.3	± 0.4	± 0.7	± 0.7	± 0.9	± 1.1	± 1.3	± 1.5	± 1.7	—	—	—	—	—
32	± 0.3	± 0.4	± 0.7	± 0.6	± 0.8	± 1.0	± 1.1	± 1.3	± 1.5	± 1.7	± 1.8	—	—	—
63	—	± 0.5	± 0.7	± 0.9	± 1.2	± 1.1	± 1.3	± 1.5	± 1.7	± 1.9	± 2.1	± 1.7	± 2.0	± 2.2

Electric Actuator/ Rod Type

Applicable to the
LEC□ series

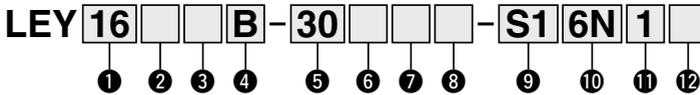


LEY Series LEY16, 25, 32, 40

Dust-tight/Water-jet-proof ▶ Page 270-18 Secondary Battery Compatible ▶ Page 542

Refer to page 239-1 for the communication protocols EtherCAT®, EtherNet/IP™, PROFINET, DeviceNet™, and IO-Link.

How to Order



① Size

16
25
32
40

② Motor mounting position

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

③ Motor type

Symbol	Type	Size			Compatible controller/driver
		LEY16	LEY25	LEY32/40	
Nil	Step motor (Servo/24 VDC)	●	●	●	LECP6 LECP1 LECPA LECPMJ
A	Servo motor (24 VDC)	●	●	—	LECA6

⚠ Caution

[CE-compliant products]

① EMC compliance was tested by combining the electric actuator LEY 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 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.

④ Lead [mm]

Symbol	LEY16	LEY25	LEY32/40
A	10	12	16
B	5	6	8
C	2.5	3	4

⑤ Stroke [mm]

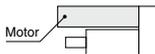
30	30
to	to
500	500

* Refer to the applicable stroke table.

⑥ Motor option*

Nil	Without option
C	With motor cover
B	With lock
W	With lock/motor cover

* When "With lock" or "With lock/motor cover" are selected for the top mounting and right/left side parallel types, the motor body will stick out of the end of the body for size 16/40 with strokes 30 mm or less. Check for interference with workpieces before selecting a model.



⑦ Rod end thread

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

* Applicable stroke table

Model	Stroke [mm]										Manufacturable stroke range [mm]	
	30	50	100	150	200	250	300	350	400	450		500
LEY16	●	●	●	●	●	●	●	—	—	—	—	10 to 300
LEY25	●	●	●	●	●	●	●	●	●	—	—	15 to 400
LEY32/40	●	●	●	●	●	●	●	●	●	●	●	20 to 500

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

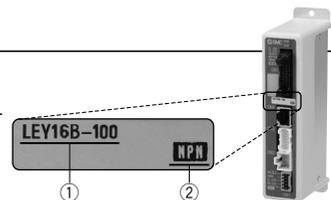
For auto switches, refer to pages 270-11 and 270-12.

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.>

- Check the actuator label for model number. This matches the controller/driver.
- 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>



Motor mounting position: Top/Parallel



Motor mounting position: In-line

8 Mounting*1

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

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

*2 For horizontal cantilever mounting with the rod flange, head flange and ends tapped, use the actuator within the following stroke range.
 •LEY25: 200 mm or less
 •LEY32/40: 100 mm or less

*3 For mounting with the double clevis, use the actuator within the following stroke range.
 •LEY16: 100 mm or less
 •LEY25: 200 mm or less
 •LEY32/40: 200 mm or less

*4 Rod flange is not available for the LEY16/40 with stroke 30 mm and motor option "With lock", "With lock/motor cover".

*5 Head flange is not available for the LEY32/40.

12 Controller/Driver mounting

Nil	Screw mounting
D	DIN rail mounting*1

*1 DIN rail is not included. Order it separately.

9 Actuator cable type/length*2

Nil	Without cable
S1	Standard cable 1.5 m*3
S3	Standard cable 3 m*3
S5	Standard cable 5 m*3
R1	Robotic cable 1.5 m
R3	Robotic cable 3 m
R5	Robotic cable 5 m
R8	Robotic cable 8 m*1
RA	Robotic cable 10 m*1
RB	Robotic cable 15 m*1
RC	Robotic cable 20 m*1

*1 Produced upon receipt of order (Robotic cable only)

*2 The standard cable should only be used on fixed parts.

For use on moving parts, select the robotic cable.

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

10 Controller/Driver type*1

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

11 I/O cable length*1, Communication plug

Symbol	Type
Nil	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 "Nil", "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)	
Maximum 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

Electric Actuator/ Rod Type

LEY Series LEY16, 25, 32, 40

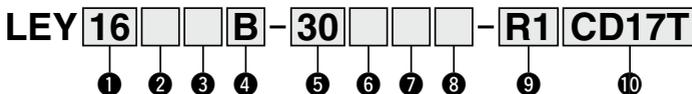
Applicable to the
JXC□ series



Dust-tight/Water-jet-proof ▶ Page 270-20 Secondary Battery Compatible ▶ Page 543-1

How to Order

Refer to page 238 for the communication protocol CC-Link.



1 Size

16
25
32
40

2 Motor mounting position

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

3 Motor type

Symbol	Type	Size			Compatible controller
		LEY16	LEY25	LEY32/40	
Nil	Step motor (Servo/24 VDC)	●	●	●	JXCE1 JXC91 JXCP1 JXCD1 JXCL1

Caution

[CE-compliant products]

EMC compliance was tested by combining the electric actuator LE series and the JXCE1/91/P1/D1/L1 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.

4 Lead [mm]

Symbol	LEY16	LEY25	LEY32/40
A	10	12	16
B	5	6	8
C	2.5	3	4

5 Stroke [mm]

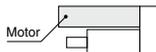
30	30
to	to
500	500

* Refer to the applicable stroke table.

6 Motor option*

Nil	Without option
C	With motor cover
B	With lock
W	With lock/motor cover

* When "With lock" or "With lock/motor cover" are selected for the top mounting and right/left side parallel types, the motor body will stick out of the end of the body for size 16/40 with strokes 30 mm or less. Check for interference with workpieces before selecting a model.



7 Rod end thread

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

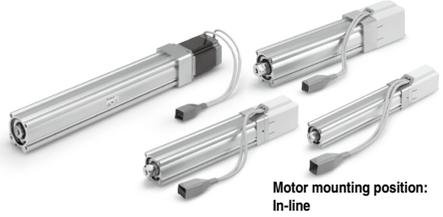
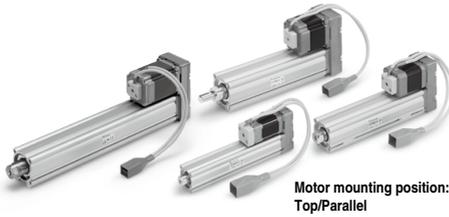
* Applicable stroke table

●: Standard

Model	Stroke [mm]										Manufacturable stroke range [mm]	
	30	50	100	150	200	250	300	350	400	450		500
LEY16	●	●	●	●	●	●	●	—	—	—	—	10 to 300
LEY25	●	●	●	●	●	●	●	●	●	—	—	15 to 400
LEY32/40	●	●	●	●	●	●	●	●	●	●	●	20 to 500

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

For auto switches, refer to pages 270-11 and 270-12.



8 Mounting*

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

- *1 Mounting bracket is shipped together, (but not assembled).
- *2 For horizontal cantilever mounting with the rod flange, head flange and ends tapped, use the actuator within the following stroke range.
 - LEY25: 200 mm or less
 - LEY32/40: 100 mm or less
- *3 For mounting with the double clevis, use the actuator within the following stroke range.
 - LEY16: 100 mm or less
 - LEY25: 200 mm or less
 - LEY32/40: 200 mm or less
- *4 Rod flange is not available for the LEY16/40 with stroke 30 mm and motor option "With lock", "With lock/motor cover".
- *5 Head flange is not available for the LEY32/40.

9 Actuator cable type/length

Nil	Without cable
S1	Standard cable 1.5 m
S3	Standard cable 3 m
S5	Standard cable 5 m
R1	Robotic cable 1.5 m
R3	Robotic cable 3 m
R5	Robotic cable 5 m
R8	Robotic cable 8 m ^{*1}
RA	Robotic cable 10 m ^{*1}
RB	Robotic cable 15 m ^{*1}
RC	Robotic cable 20 m ^{*1}

- *1 Produced upon receipt of order (Robotic cable only)
- *2 The standard cable should only be used on fixed parts. For use on moving parts, select the robotic cable.

10 Controller

Nil	Without controller
C□1□□	With controller



Communication protocol ●

E	EtherCAT®
9	EtherNet/IP™
P	PROFINET
D	DeviceNet™
L	IO-Link

For single axis ●

Mounting ●

7	Screw mounting
8*	DIN rail

* DIN rail is not included. It must be ordered separately. (Page 603-8)

Communication plug connector ●
for DeviceNet™

Nil	Without plug connector
S	Straight type
T	T-branch type

* Select "Nil" for anything other than DeviceNet™.

Compatible Controller

Type	EtherCAT® direct input type	EtherNet/IP™ direct input type	PROFINET direct input type	DeviceNet™ direct input type	IO-Link direct input type
Series	JXCE1	JXC91	JXCP1	JXCD1	JXCL1
Features	EtherCAT® direct input	EtherNet/IP™ direct input	PROFINET direct input	DeviceNet™ direct input	IO-Link direct input
Compatible motor	Step motor (Servo/24 VDC)				
Maximum number of step data	64 points				
Power supply voltage	24 VDC				
Reference page	Page 603-5				

Specifications

Step Motor (Servo/24 VDC)

Model			LEY16			LEY25			LEY32			LEY40		
Stroke [mm] ^{Note 1)}			30, 50, 100, 150 200, 250, 300			30, 50, 100, 150, 200 250, 300, 350, 400			30, 50, 100, 150, 200, 250 300, 350, 400, 450, 500			30, 50, 100, 150, 200, 250 300, 350, 400, 450, 500		
Work load [kg] ^{Note 2)}	Horizontal (LECP6, LECP1, LECPMJ, JXC□1)	(3000 [mm/s ²])	6	17	30	20	40	60	30	45	60	50	60	80
		(2000 [mm/s ²])	10	23	35	30	55	70	40	60	80	60	70	90
	Horizontal (LECPA, JXC□3)	(3000 [mm/s ²])	4	11	20	12	30	30	20	40	40	30	60	60
		(2000 [mm/s ²])	6	17	30	18	50	50	30	60	60	—	—	—
	Vertical	(3000 [mm/s ²])	2	4	8	8	16	30	11	22	43	13	27	53
	Pushing force [N] ^{Note 3) 4) 5)}			14 to 38	27 to 74	51 to 141	63 to 122	126 to 238	232 to 452	80 to 189	156 to 370	296 to 707	132 to 283	266 to 553
Speed [mm/s] ^{Note 5)}			LECP6/LECP1/LECPMJ LECPA			15 to 500	8 to 250	4 to 125	18 to 500	9 to 250	5 to 125	24 to 500	12 to 300	6 to 150
Max. acceleration/deceleration [mm/s²]			3000											
Pushing speed [mm/s] ^{Note 6)}			50 or less			35 or less			30 or less			30 or less		
Positioning repeatability [mm]			±0.02											
Lost motion [mm] ^{Note 7)}			0.1 or less											
Screw lead [mm]			10	5	2.5	12	6	3	16	8	4	16	8	4
Impact/Vibration resistance [m/s²] ^{Note 8)}			50/20											
Actuation type			Ball screw + Belt (LEY□□)/Ball screw (LEY□□)											
Guide type			Sliding bushing (Piston rod)											
Operating temperature range [°C]			5 to 40											
Operating humidity range [%RH]			90 or less (No condensation)											
Motor size			□28			□42			□56.4			□56.4		
Motor type			Step motor (Servo/24 VDC)											
Encoder			Incremental A/B phase (800 pulse/rotation)											
Rated voltage [V]			24 VDC ±10%											
Power consumption [W] ^{Note 9)}			23			40			50			50		
Standby power consumption when operating [W] ^{Note 10)}			16			15			48			48		
Max. instantaneous power consumption [W] ^{Note 11)}			43			48			104			106		
Type ^{Note 12)}			Non-magnetizing lock											
Holding force [N]			20	39	78	78	157	294	108	216	421	127	265	519
Power consumption [W] ^{Note 13)}			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) Horizontal: The maximum value of the work load. An external guide is necessary to support the load (Friction coefficient of guide: 0.1 or less). The actual work load and transfer speed change according to the condition of the external guide. Also, speed changes according to the work load. Check "Model Selection" on pages 224 and 225.

Vertical: Speed changes according to the work load. Check "Model Selection" on pages 224 and 225.

The values shown in () are the acceleration/deceleration.

Set these values to be 3000 [mm/s²] or less.

Note 3) Pushing force accuracy is ±20% (F.S.).

Note 4) The pushing force values for LEY16□ is 35% to 85%, for LEY25□ is 35% to 65%, for LEY32□ is 35% to 85% and for LEY40□ is 35% to 65%.

The pushing force values change according to the duty ratio and pushing speed. Check "Model Selection" on page 227.

Note 5) The speed and force may change depending on the cable length, load and mounting conditions. Furthermore, if the cable length exceeds 5 m, then it will decrease by up to 10% for each 5 m. (At 15 m: Reduced by up to 20%)

Note 6) The allowable speed for pushing operation. When push conveying a workpiece, operate at the vertical work load or less.

Note 7) A reference value for correcting an error in reciprocal operation.

Note 8) Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)

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

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

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

Note 11) 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 12) With lock only

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

Specifications

Servo Motor (24 VDC)

Model		LEY16□A				LEY25□A			
Actuator specifications	Stroke [mm] ^{Note 1)}	30, 50, 100, 150 200, 250, 300				30, 50, 100, 150, 200 250, 300, 350, 400			
	Work load [kg] ^{Note 2)}	Horizontal (3000 [mm/s ²])	3	6	12	7	15	30	
		Vertical (3000 [mm/s ²])	2	4	8	3	6	12	
	Pushing force [N] ^{Note 3) 4)}	16 to 30	30 to 58	57 to 111	18 to 35	37 to 72	66 to 130		
	Speed [mm/s]	1 to 500	1 to 250	1 to 125	2 to 500	1 to 250	1 to 125		
	Max. acceleration/deceleration [mm/s ²]	3000							
	Pushing speed [mm/s] ^{Note 5)}	50 or less				35 or less			
	Positioning repeatability [mm]	±0.02							
	Lost motion [mm] ^{Note 6)}	0.1 or less							
	Screw lead [mm]	10	5	2.5	12	6	3		
Electric specifications	Impact/Vibration resistance [m/s ²] ^{Note 7)}	50/20							
	Actuation type	Ball screw + Belt (LEY□□)/Ball screw (LEY□□D)							
	Guide type	Sliding bushing (Piston rod)							
	Operating temperature range [°C]	5 to 40							
	Operating humidity range [%RH]	90 or less (No condensation)							
	Motor size	□28				□42			
	Motor output [W]	30				36			
	Motor type	Servo motor (24 VDC)							
	Encoder	Incremental A/B phase (800 pulse/rotation)/Z phase							
	Rated voltage [V]	24 VDC ±10%							
Lock with specifications	Power consumption [W] ^{Note 8)}	40				86			
	Standby power consumption when operating [W] ^{Note 9)}	4 (Horizontal)/6 (Vertical)				4 (Horizontal)/12 (Vertical)			
	Max. instantaneous power consumption [W] ^{Note 10)}	59				96			
	Type ^{Note 11)}	Non-magnetizing lock							
	Holding force [N]	20	39	78	78	157	294		
	Power consumption [W] ^{Note 12)}	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) Horizontal: The maximum value of the work load. An external guide is necessary to support the load (Friction coefficient of guide: 0.1 or less). The actual work load and transfer speed change according to the condition of the external guide. Vertical: Check "Model Selection" on page 226 for details. The values shown in () are the acceleration/deceleration. Set these values to be 3000 [mm/s²] or less.
- Note 3) Pushing force accuracy is ±20% (F.S.).
- Note 4) The thrust setting values for LEY16□A is 60% to 95% and for LEY25□A is 70% to 95%. The pushing force values change according to the duty ratio and pushing speed. Check "Model Selection" on page 227.
- Note 5) The allowable speed for pushing operation. When pushing conveying a workpiece, operate at the vertical work load or less.
- Note 6) A reference value for correcting an error in reciprocal operation.
- Note 7) Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)
- Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. Test was performed in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)
- Note 8) The power consumption (including the controller) is for when the actuator is operating.
- Note 9) The standby power consumption when operating (including the controller) is for when the actuator is stopped in the set position during the operation. Except during the pushing operation.
- Note 10) 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 11) With lock only
- Note 12) For an actuator with lock, add the power consumption for the lock.

Weight

Weight: Motor Top/Parallel Type

Series		LEY16								LEY25								LEY32										
Stroke [mm]		30	50	100	150	200	250	300	30	50	100	150	200	250	300	350	400	30	50	100	150	200	250	300	350	400	450	500
Product weight [kg]	Step motor	0.58	0.62	0.73	0.87	0.98	1.09	1.20	1.18	1.25	1.42	1.68	1.86	2.03	2.21	2.38	2.56	2.09	2.20	2.49	2.77	3.17	3.46	3.74	4.03	4.32	4.60	4.89
	Servo motor	0.58	0.62	0.73	0.87	0.98	1.09	1.20	1.14	1.21	1.38	1.64	1.82	1.99	2.17	2.34	2.52	—	—	—	—	—	—	—	—	—	—	—

Series		LEY40										
Stroke [mm]		30	50	100	150	200	250	300	350	400	450	500
Product weight [kg]	Step motor	2.39	2.50	2.79	3.07	3.47	3.76	4.04	4.33	4.62	4.90	5.19
	Servo motor	—	—	—	—	—	—	—	—	—	—	—

Weight: In-line Motor Type

Series		LEY16D								LEY25D								LEY32D										
Stroke [mm]		30	50	100	150	200	250	300	30	50	100	150	200	250	300	350	400	30	50	100	150	200	250	300	350	400	450	500
Product weight [kg]	Step motor	0.58	0.62	0.73	0.87	0.98	1.09	1.20	1.17	1.24	1.41	1.67	1.85	2.02	2.20	2.37	2.55	2.08	2.19	2.48	2.76	3.16	3.45	3.73	4.02	4.31	4.59	4.88
	Servo motor	0.58	0.62	0.73	0.87	0.98	1.09	1.20	1.13	1.20	1.37	1.63	1.81	1.98	2.16	2.33	2.51	—	—	—	—	—	—	—	—	—	—	—

Series		LEY40D										
Stroke [mm]		30	50	100	150	200	250	300	350	400	450	500
Product weight [kg]	Step motor	2.38	2.49	2.78	3.06	3.46	3.75	4.03	4.32	4.61	4.89	5.18
	Servo motor	—	—	—	—	—	—	—	—	—	—	—

Additional Weight

Size		16	25	32	40
Lock		0.12	0.26	0.53	0.53
Motor cover		0.02	0.03	0.04	0.05
Lock/Motor cover		0.16	0.32	0.61	0.62
Rod end male thread	Male thread	0.01	0.03	0.03	0.03
	Nut	0.01	0.02	0.02	0.02
Foot (2 sets including mounting bolt)		0.06	0.08	0.14	0.14
Rod flange (including mounting bolt)		0.13	0.17	0.20	0.20
Head flange (including mounting bolt)					
Double clevis (including pin, retaining ring and mounting bolt)		0.08	0.16	0.22	0.22

LEY Series

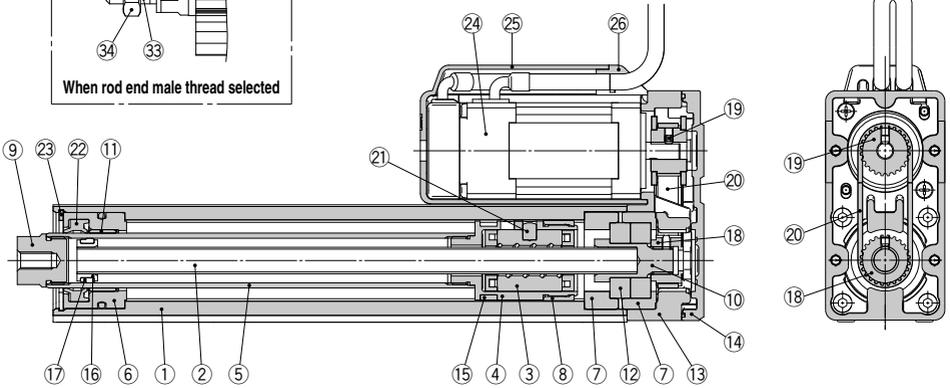
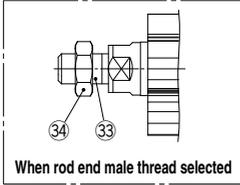
Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

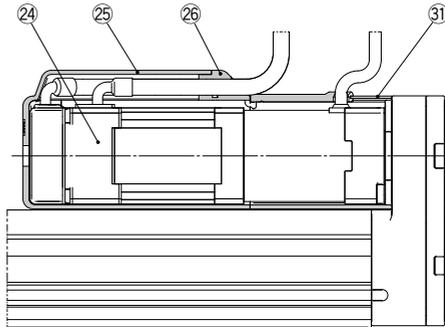
Construction

Motor top mounting type: LEY

16
25
32
40

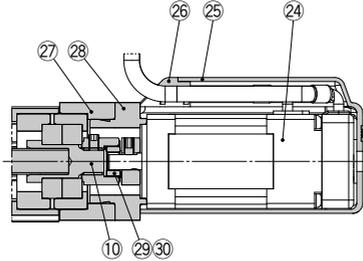


Motor top/parallel type
With lock/motor cover

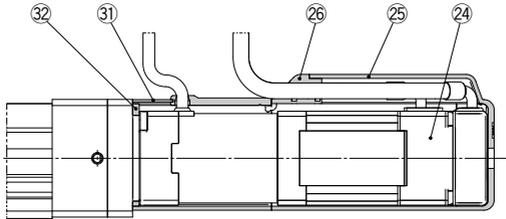


Construction

In-line motor type: LEY 16
 25 D
 32
 40



In-line motor type: With lock/motor cover



Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	Anodized
2	Ball screw shaft	Alloy steel	
3	Ball screw nut	Synthetic resin/Alloy steel	
4	Piston	Aluminum alloy	
5	Piston rod	Stainless steel	Hard chrome plating
6	Rod cover	Aluminum alloy	
7	Bearing holder	Aluminum alloy	
8	Rotation stopper	POM	
9	Socket	Free cutting carbon steel	Nickel plating
10	Connected shaft	Free cutting carbon steel	Nickel plating
11	Bushing	Bearing alloy	
12	Bearing	—	
13	Return box	Aluminum die-cast	Coating
14	Return plate	Aluminum die-cast	Coating
15	Magnet	—	
16	Wear ring holder	Stainless steel	Stroke 101 mm or more
17	Wear ring	POM	Stroke 101 mm or more
18	Screw shaft pulley	Aluminum alloy	
19	Motor pulley	Aluminum alloy	
20	Belt	—	
21	Parallel pin	Stainless steel	
22	Seal	NBR	
23	Retaining ring	Steel for spring	Phosphate coated
24	Motor	—	

No.	Description	Material	Note
25	Motor cover	Synthetic resin	Only "With motor cover"
26	Grommet	Synthetic resin	Only "With motor cover"
27	Motor block	Aluminum alloy	Anodized
28	Motor adapter	Aluminum alloy	Anodized/LEY16, 25 only
29	Hub	Aluminum alloy	
30	Spider	NBR	
31	Motor cover with lock	Aluminum alloy	Only "With lock/motor cover"
32	Cover support	Aluminum alloy	Only "With lock/motor cover"
33	Socket (Male thread)	Free cutting carbon steel	Nickel plating
34	Nut	Alloy steel	Zinc chromated

Replacement Parts (Top/Parallel only)/Belt

No.	Size	Order no.
21	16	LE-D-2-1
	25	LE-D-2-2
	32, 40	LE-D-2-3

Replacement Parts/Grease Pack

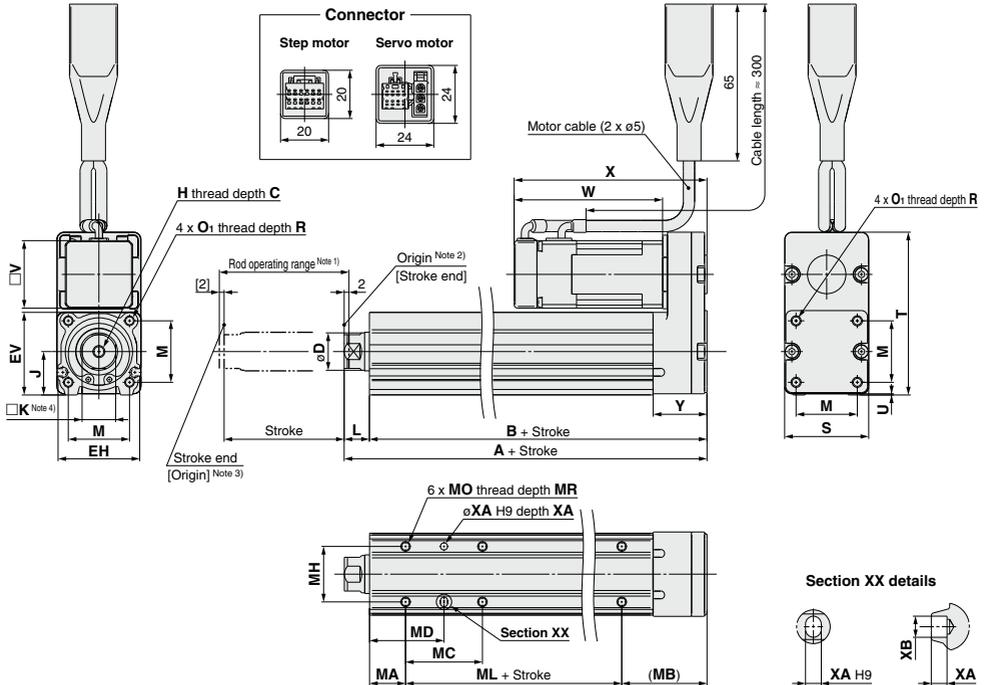
Applied portion	Order no.
Piston rod	GR-S-010 (10 g) GR-S-020 (20 g)

* Apply grease on the piston rod periodically. Grease should be applied at 1 million cycles or 200 km, whichever comes first.

LEY Series

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

Dimensions: Motor Top/Parallel



Note 1) Range within which the rod can move when it returns to origin. Make sure a workpiece mounted on the rod does not interfere with the workpieces and facilities around the rod.
 Note 2) Position after return to origin.
 Note 3) [] for when the direction of return to origin has changed.
 Note 4) The direction of rod end width across flats (□K) differs depending on the products.

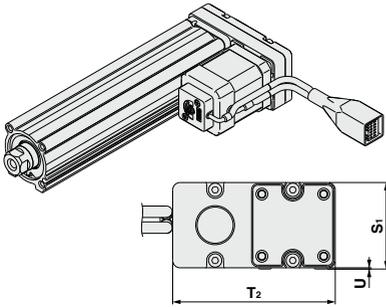
Size	Stroke range [mm]	A	B	C	D	EH	EV	H	J	K	L	M	O ₁	R	S	T	U	V	Step motor		Servo motor		Y
																			W	X	W	X	
16	10 to 100	101	90.5	10	16	34	34.3	M5 x 0.8	18	14	10.5	25.5	M4 x 0.7	7	35	67.5	0.5	28	61.8	80.3	62.5	81	22.5
	101 to 300	121	110.5																				
	15 to 100	130.5	116																				
25	101 to 400	155.5	141	13	20	44	45.5	M8 x 1.25	24	17	14.5	34	M5 x 0.8	8	46	92	1	42	63.4	85.4	59.6	81.6	26.5
	20 to 100	148.5	130																				
	101 to 500	178.5	160																				
32	20 to 100	148.5	130	13	25	51	56.5	M8 x 1.25	31	22	18.5	40	M6 x 1.0	10	60	118	1	56.4	68.4	95.4	—	—	34
	101 to 500	178.5	160																				
	20 to 100	148.5	130																				
40	20 to 100	148.5	130	13	25	51	56.5	M8 x 1.25	31	22	18.5	40	M6 x 1.0	10	60	118	1	56.4	90.4	117.4	—	—	34
	101 to 500	178.5	160																				
	20 to 100	148.5	130																				

Body Bottom Tapped

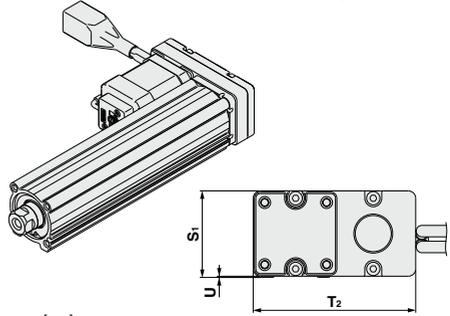
Size	Stroke range [mm]	MA	MB	MC	MD	MH	ML	MO	MR	XA	XB
	40 to 100	32	31								
	101 to 300	62	46	60							
25	15 to 39	20	46	24	32	29	50	M5 x 0.8	6.5	4	5
	40 to 100			42	41						
	101 to 124			59	49.5						
	125 to 200			76	58						
	201 to 400			76	58						
32	20 to 39	25	55	22	36	30	50	M6 x 1	8.5	5	6
	40 to 100			36	43						
	101 to 124			53	51.5						
	125 to 200			53	51.5						
	201 to 500			70	60						

Dimensions: Motor Top/Parallel

Motor left side parallel type: LEY¹⁶₂₅^L₃₂^L₄₀



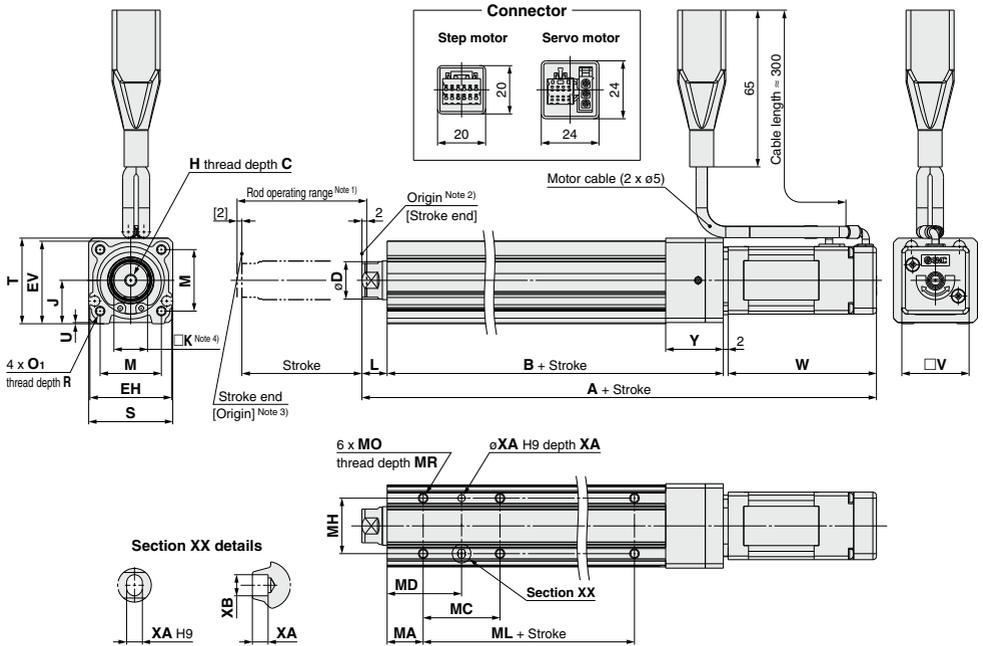
Motor right side parallel type: LEY¹⁶₂₅^R₃₂^R₄₀



[mm]			
Size	S ₁	T ₂	U
16	35.5	67	0.5
25	47	91	1
32, 40	61	117	1

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

Dimensions: In-line Motor



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

Note 2) Position after return to origin.

Note 3) [] for when the direction of return to origin has changed.

Note 4) The direction of rod end width across flats (□K) differs depending on the products.

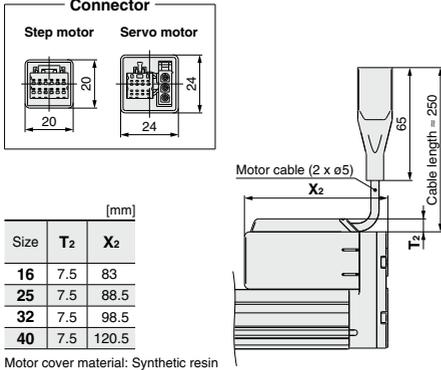
Size	Stroke range [mm]	Step motor	Servo motor	B	C	D	EH	EV	H	J	K	L	M	O ₁	R	S	T	U	V	Step motor	Servo motor	Y
		A																		W		
16	10 to 100	166.3	167	92	10	16	34	34.3	M5 x 0.8	18	14	10.5	25.5	M4 x 0.7	7	35	35.5	0.5	28	61.8	62.5	24
	101 to 300	186.3	187	112	13	20	44	45.5	M8 x 1.25	24	17	14.5	34	M5 x 0.8	8	45	46.5	1.5	42	63.4	59.6	26
	101 to 400	220.4	216.6	140.5	13	25	51	56.5	M8 x 1.25	31	22	18.5	40	M6 x 1	10	60	61	1	56.4	68.4	—	32
32	20 to 100	216.9	—	128	13	25	51	56.5	M8 x 1.25	31	22	18.5	40	M6 x 1	10	60	61	1	56.4	68.4	—	32
	101 to 500	246.9	—	158	13	25	51	56.5	M8 x 1.25	31	22	18.5	40	M6 x 1	10	60	61	1	56.4	90.4	—	32
40	20 to 100	238.9	—	128	13	25	51	56.5	M8 x 1.25	31	22	18.5	40	M6 x 1	10	60	61	1	56.4	90.4	—	32
	101 to 500	268.9	—	158	13	25	51	56.5	M8 x 1.25	31	22	18.5	40	M6 x 1	10	60	61	1	56.4	90.4	—	32

Body Bottom Tapped

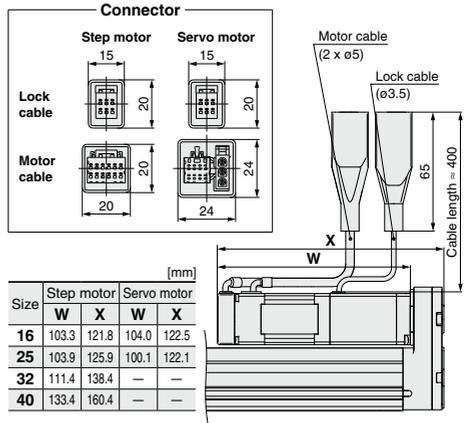
Size	Stroke range [mm]	MA	MC	MD	MH	ML	MO	MR	XA	XB
16	10 to 39	15	17	23.5	23	40	M4 x 0.7	5.5	3	4
	40 to 100	32	31	60						
	101 to 300	62	46	60						
25	15 to 39	20	24	32	29	50	M5 x 0.8	6.5	4	5
	40 to 100	42	41	75						
	101 to 124	59	49.5	75						
	125 to 200	76	58	75						
	201 to 400	76	58	75						
32	20 to 39	25	22	36	30	50	M6 x 1	8.5	5	6
	40 to 100	36	43	80						
	101 to 124	53	51.5	80						
40	125 to 200	70	70	60	30	80	M6 x 1	8.5	5	6
	201 to 500	70	60	80						

Dimensions

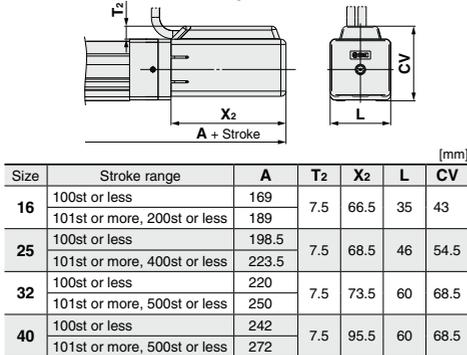
Motor top/parallel type 16
 With motor cover: LEY ²⁵□□□₃₂ B-□□₄₀ C



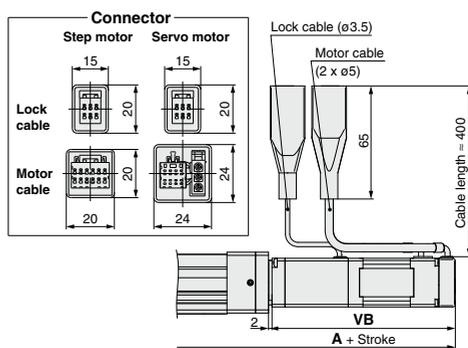
With lock: LEY ¹⁶□□□₂₅ B-□□₃₂ C₄₀



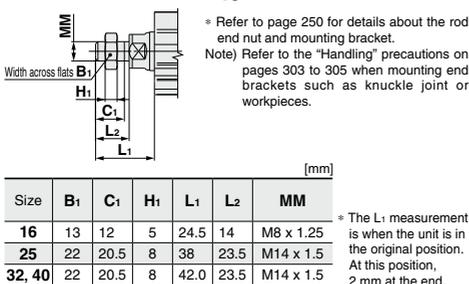
In-line motor type 16
 With motor cover: LEY ²⁵□□□₃₂ D□□□₄₀ B-C



With lock: LEY ¹⁶□□□₂₅ D□□□₃₂ B-C₄₀



End male thread: LEY ¹⁶□□□₂₅ B-□□□₃₂ M₄₀ C



[mm]					
Size	Stroke range	A		VB	
		Step motor	Servo motor	Step motor	Servo motor
16	100st or less	207.8	208.5	103.3	104
	101st or more, 200st or less	227.8	228.5		
25	100st or less	235.9	232.1	103.9	100.1
	101st or more, 400st or less	260.9	257.1		
32	100st or less	259.9	—	111.4	—
	101st or more, 500st or less	289.9	—		
40	100st or less	281.9	—	133.4	—
	101st or more, 500st or less	311.9	—		

* The L₁ measurement is when the unit is in the original position. At this position, 2 mm at the end.

LEY Series

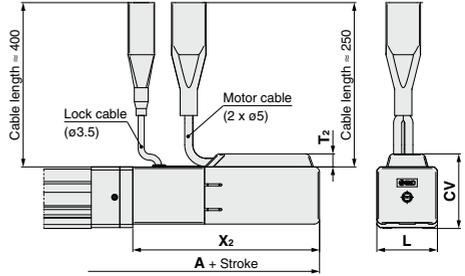
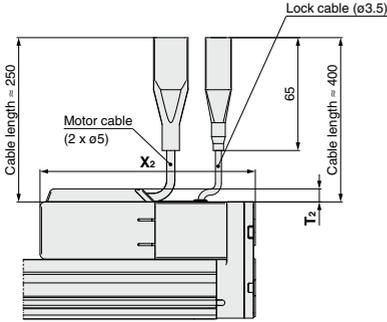
Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

Dimensions

Motor top/parallel type **16** **A**
 With lock/motor cover: LEY **25** □ □ **B** - □ □
32 □ □ **C**
40

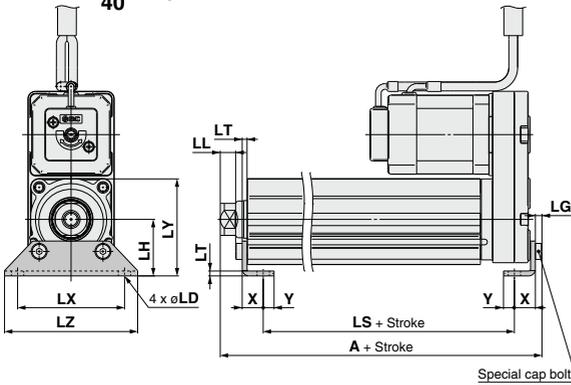
In-line motor type **16** **A**
 With lock/motor cover: LEY **25** □ □ **B** - □ □
32 □ □ **C**
40



Size	T ₂	X ₂
16	7.5	124.5
25	7.5	129
32	7.5	141.5
40	7.5	163.5

Size	Stroke range	A	T ₂	X ₂	L	CV
16	100st or less	210.5	7.5	108	35	43
	101st or more, 300st or less	230.5				
25	100st or less	239	7.5	109	46	54.4
	101st or more, 400st or less	264				
32	100st or less	263	7.5	116.5	60	68.5
	101st or more, 500st or less	293				
40	100st or less	285	7.5	138.5	60	68.5
	101st or more, 500st or less	315				

Foot: LEY **16** **A**
25 □ □ **B** - □ □ **L**
32 □ □ **C**
40



Included parts
 • Foot
 • Body mounting bolt

Foot

Size	Stroke range [mm]	A	LS	LS ₁	LL	LD	LG
16	10 to 100	106.1	76.7	16.1	5.4	6.6	2.8
	101 to 300	126.1	96.7				
25	15 to 100	136.6	98.8	19.8	8.4	6.6	3.5
	101 to 400	161.6	123.8				
32	20 to 100	155.7	114	19.2	11.3	6.6	4
	101 to 500	185.7	144				

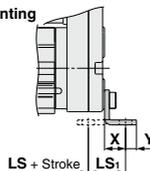
Size	Stroke range [mm]	LH	LT	LX	LY	LZ	X	Y
16	10 to 100	24	2.3	48	40.3	62	9.2	5.8
	101 to 300							
25	15 to 100	30	2.6	57	51.5	71	11.2	5.8
	101 to 400							
32	20 to 100	36	3.2	76	61.5	90	11.2	7
	101 to 500							

Material: Carbon steel (Chromate treated)

* The A measurement is when the unit is in the original position.
 At this position, 2 mm at the end.

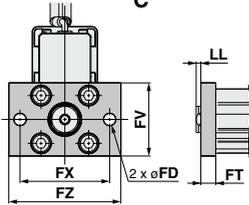
Note) When the motor mounting is the right or left side parallel type, the head side foot should be mounted outwards.

Outward mounting

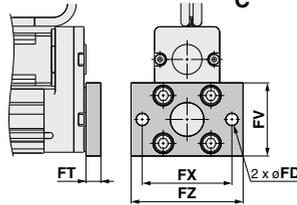


Dimensions

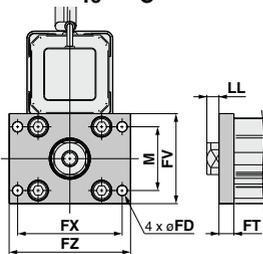
Rod flange: LEY16 □□ B-□□□ F
 A
 C



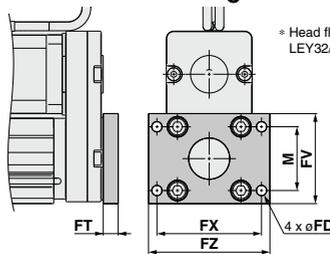
Head flange: LEY16 □□ B-□□□ G
 A
 C



Rod flange: LEY32 □□ B-□□□ F
 25
 40
 A
 C



Head flange: LEY25 □□ B-□□□ G
 A
 C



* Head flange is not available for the LEY32/40.

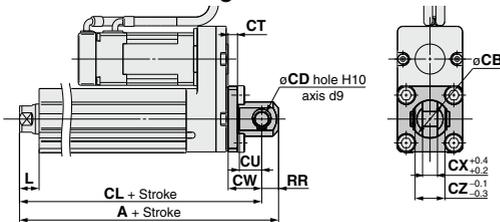
- Included parts
 · Flange
 · Body mounting bolt

Rod/Head Flange [mm]

Size	FD	FT	FV	FX	FZ	LL	M
16	6.6	8	39	48	60	2.5	—
25	5.5	8	48	56	65	6.5	34
32, 40	5.5	8	54	62	72	10.5	40

Material: Carbon steel (Nickel plating)

Double clevis: LEY16 □□ B-□□□ D
 A
 C



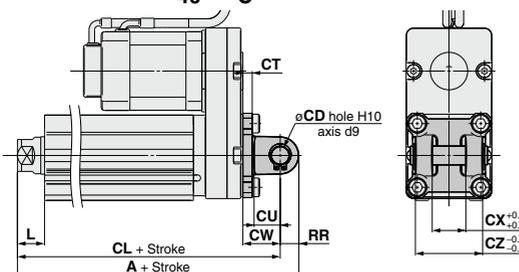
- Included parts
 · Double clevis
 · Body mounting bolt
 · Clevis pin
 · Retaining ring

* Refer to page 250 for details about the rod end nut and mounting bracket.

Double Clevis [mm]

Size	Stroke range [mm]	A	CL	CB	CD	CT
16	10 to 100	128	119	20	8	5
	15 to 100	160.5	150.5	—	10	5
25	101 to 200	185.5	175.5	—	—	—
	20 to 100	180.5	170.5	—	—	—
32	101 to 200	210.5	200.5	—	10	6
	20 to 100	—	—	—	—	—

Double clevis: LEY32 □□ B-□□□ D
 25
 40
 A
 C



Size	Stroke range [mm]	CU	CW	CX	CZ	L	RR
16	10 to 100	12	18	8	16	10.5	9
	15 to 100	—	—	—	—	—	—
25	101 to 200	14	20	18	36	14.5	10
	20 to 100	—	—	—	—	—	—
32	101 to 200	14	22	18	36	18.5	10
	20 to 100	—	—	—	—	—	—

Material: Cast iron (Coating)

* The A and CL measurements are when the unit is in the original position. At this position, 2 mm at the end.



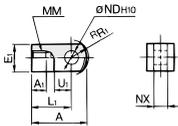
Accessory Mounting Brackets

Accessory Brackets/Support Brackets

Single Knuckle Joint

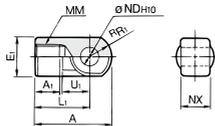
* If a knuckle joint is used, select the body option [end male thread].

I-G02



Material: Carbon steel
Surface treatment: Nickel plating

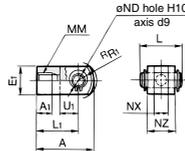
I-G04



Material: Cast iron
Surface treatment: Nickel plating

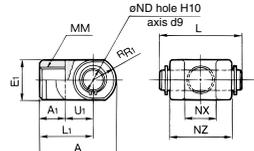
Double Knuckle Joint

Y-G02



Material: Carbon steel
Surface treatment: Nickel plating

Y-G04



Material: Cast iron
Surface treatment: Nickel plating

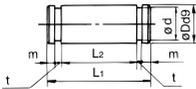
Part no.	Applicable size	A	A ₁	E ₁	L ₁	MM	R ₁	U ₁	ND _{H10}	NX
I-G02	16	34	8.5	□16	25	M8 x 1.25	10.3	11.5	8 ^{+0.058} ₀	8 ^{+0.2} _{-0.3}
I-G04	25, 32, 40	42	14	∅22	30	M14 x 1.5	12	14	10 ^{+0.058} ₀	18 ^{+0.3} _{-0.3}
I-G05	63	56	18	∅28	40	M18 x 1.5	16	20	14 ^{+0.070} ₀	22 ^{+0.3} _{-0.3}

Part no.	Applicable size	A	A ₁	E ₁	L ₁	MM	R ₁
Y-G02	16	34	8.5	□16	25	M8 x 1.25	10.3
Y-G04	25, 32, 40	42	16	∅22	30	M14 x 1.5	12
Y-G05	63	56	20	∅28	40	M18 x 1.5	16

* Knuckle pin and retaining ring are included.

Part no.	Applicable size	U ₁	ND _{H10}	NX	NZ	L	Applicable pin part no.
Y-G02	16	11.5	8 ^{+0.058} ₀	8 ^{+0.2} _{-0.3}	16	21	IY-G02
Y-G04	25, 32, 40	14	10 ^{+0.058} ₀	18 ^{+0.3} _{-0.3}	36	41.6	IY-G04
Y-G05	63	20	14 ^{+0.070} ₀	22 ^{+0.3} _{-0.3}	44	50.6	IY-G05

Knuckle Pin (Common with double clevis pin)



Material: Carbon steel
[mm]

Part no.	Applicable size	Dd9	L ₁	L ₂	d	m	t	Retaining ring
IY-G02	16	8 ^{+0.040} _{-0.076}	21	16.2	7.6	1.5	0.9	Type C retaining ring 8
IY-G04	25, 32, 40	10 ^{+0.040} _{-0.076}	41.6	36.2	9.6	1.55	1.15	Type C retaining ring 10
IY-G05	63	14 ^{+0.050} _{-0.093}	50.6	44.2	13.4	2.05	1.15	Type C retaining ring 14

Mounting Brackets/Part No.

Applicable size	Foot	Flange	Double clevis
16	LEY-L016	LEY-F016	LEY-D016
25	LEY-L025	LEY-F025	LEY-D025
32, 40	LEY-L032	LEY-F032	LEY-D032
63	LEY-L063	LEY-F063	LEY-D063

* When ordering foot brackets, order 2 pieces per actuator.

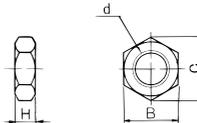
* Parts belonging to each bracket are as follows.

Foot: Body mounting bolt

Flange: Body mounting bolt

Double clevis: Clevis pin, Type C retaining ring for axis, Body mounting bolt

Rod End Nut



Material: Carbon steel (Nickel plating)
[mm]

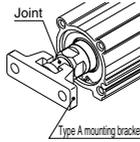
Part no.	Applicable size	d	H	B	C
NT-02	16	M8 x 1.25	5	13	15.0
NT-04	25, 32, 40	M14 x 1.5	8	22	25.4
NT-05	63	M18 x 1.5	11	27	31.2

Simple Joint Brackets * The joint is not included in type A and type B mounting brackets. Therefore, it must be ordered separately.

Joint and Mounting Bracket (Type A/B)/Part No.

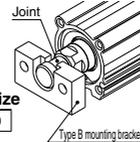
Joint **LEY-U025**

Applicable size
025 25, 32, 40



Mounting bracket **YA-03**

Applicable size
03 25, 32, 40



Mounting bracket
YA Type A mounting bracket
YB Type B mounting bracket

Allowable Eccentricity [mm]

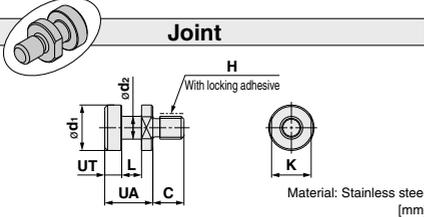
Applicable size	25	32	40
Eccentricity tolerance	±1		
Backlash	0.5		

<How to Order>
 • The joint is not included in type A and type B mounting brackets. Therefore, it must be ordered separately.
 Example) Order no. LEY-U025
 • Type A mounting bracket YA-03

Joint and Mounting Bracket (Type A/B)/Part No.

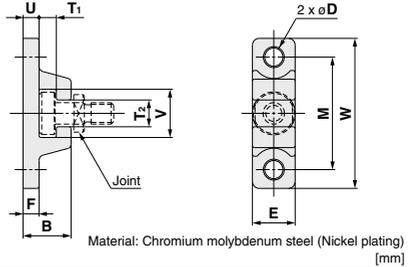
Applicable size	Joint part no.	Applicable mounting bracket part no.	
		Type A mounting bracket	Type B mounting bracket
25, 32, 40	LEY-U025	YA-03	YB-03

Joint



Part no.	Applicable size	UA	C	d ₁	d ₂	H	K	L	UT	Weight [g]
LEY-U025	25, 32, 40	17	11	16	8	M8 x 1.25	14	7	6	22

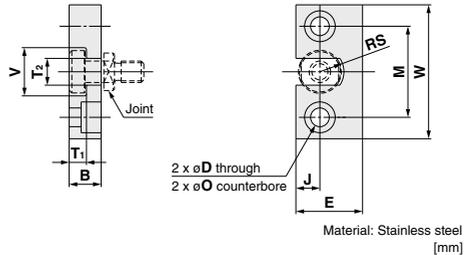
Type A Mounting Bracket



Part no.	Applicable size	B	D	E	F	M	T ₁	T ₂	U
YA-03	25, 32, 40	18	6.8	16	6	42	6.5	10	6

Part no.	Applicable size	V	W	Weight [g]
YA-03	25, 32, 40	18	56	55

Type B Mounting Bracket



Part no.	Applicable size	B	D	E	J	M	øO
YB-03	25, 32, 40	12	7	25	9	34	11.5 depth 7.5

Part no.	Applicable size	T ₁	T ₂	V	W	RS	Weight [g]
YB-03	25, 32, 40	6.5	10	18	50	9	80

Floating Joints (Refer to Best Pneumatics No. 2-1 for details.)

- For Male Thread/JC (Light weight type)
- With the aluminum case



- For Male Thread/JA



- For Male Thread/JS (Stainless steel)

- Stainless steel 304 (Appearance)
- Dust cover
Fluororubber/Silicone rubber



Applicable size	Thread size
16	M8 x 1.25
25, 32, 40	M14 x 1.5
63	M18 x 1.5

- For Female Thread/JB



Applicable size	Thread size
16	M5 x 0.8
25, 32, 40	M8 x 1.25
63	M16 x 2

Electric Actuator/ Rod Type

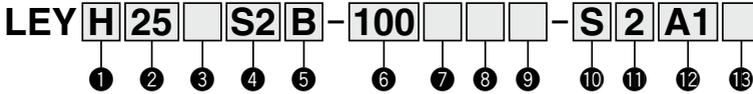
LEY Series LEY25, 32 Size 25, 32



Dust-tight/Water-jet-proof ▶ Page 270-28 Secondary Battery Compatible ▶ Page 544 Motorless Type ▶ Page 854

LEY Series ▶ Page 270-1

How to Order



1 Accuracy

Nil	Basic type
H	High precision type

2 Size

25
32

3 Motor mounting position

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

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

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

*3 For details about the driver, refer to page 607.

4 Motor type

Symbol	Type	Output [W]	Actuator size	Compatible drivers*3
S2*1	AC servo motor (Incremental encoder)	100	25	LECSA□-S1
S3	AC servo motor (Incremental encoder)	200	32	LECSA□-S3
S6*1	AC servo motor (Absolute encoder)	100	25	LECSB□-S5 LECS□-S5 LECSS□-S5
S7	AC servo motor (Absolute encoder)	200	32	LECSB□-S7 LECS□-S7 LECSS□-S7
T6*2	AC servo motor (Absolute encoder)	100	25	LECSS2-T5
T7		200	32	LECSS2-T7

5 Lead [mm]

Symbol	LEY25	LEY32*
A	12	16 (20)
B	6	8 (10)
C	3	4 (5)

* The values shown in () are the lead for size 32 top mounting, right/left side parallel types. (Equivalent lead which includes the pulley ratio [1.25:1])

6 Stroke [mm]

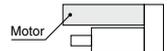
30	30
to	to
500	500

* Refer to the applicable stroke table for details.

7 Motor option

Nil	Without option
B	With lock*

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



8 Rod end thread

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

9 Mounting*1

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

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

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

•LEY25: 200 mm or less •LEY32: 100 mm or less

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

•LEY25: 200 mm or less •LEY32: 200 mm or less

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

*5 Head flange is not available for the LEY32.

* Applicable stroke table

Model	Stroke [mm]										Manufacturable stroke range	
	30	50	100	150	200	250	300	350	400	450		500
LEY25	●	●	●	●	●	●	●	●	●	—	—	15 to 400
LEY32	●	●	●	●	●	●	●	●	●	●	●	20 to 500

For auto switches, refer to pages 270-11 and 270-12.

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



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

10 Cable type*

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

- * The motor and encoder cables are included.
(The lock cable is also included when the motor with lock option is selected.)
- * Standard cable entry direction is
 - Top/Parallel: (A) Axis side
 - In-line: (B) Counter axis side
 (Refer to page 623 for details.)

11 Cable length* [m]

Nii	Without cable
2	2
5	5
A	10

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

12 Driver type*

	Compatible driver	Power supply voltage [V]
Nii	Without driver	—
A1	LECSA1-S□	100 to 120
A2	LECSA2-S□	200 to 230
B1	LECSB1-S□	100 to 120
B2	LECSB2-S□	200 to 230
C1	LECSC1-S□	100 to 120
C2	LECSC2-S□	200 to 230
S1	LECSS1-S□	100 to 120
	LECSS2-S□	200 to 230
S2	LECSS2-S□	200 to 230
	LECSS2-T□	200 to 240

- * When the driver type is selected, the cable is included. Select cable type and cable length.
- Example
 S2S2: Standard cable (2 m) + Driver (LECSS2)
 S2 : Standard cable (2 m)
 Nil : Without cable and driver

13 I/O cable length [m]*

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

- * 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.)

Compatible Driver

Driver type	Pulse input type /Positioning type	Pulse input type	CC-Link direct input type	SSCNET III type	SSCNET III/H type
					
Series	LECSA	LECSB	LECSC	LECSS	LECSS-T
Number of point tables	Up to 7	—	Up to 255 (2 stations occupied)	—	—
Pulse input	○	○	—	—	—
Applicable network	—	—	CC-Link	SSCNET III	SSCNET III/H
Control encoder	Incremental 17-bit encoder	Absolute 18-bit encoder	Absolute 18-bit encoder	Absolute 18-bit encoder	Absolute 22-bit encoder
Communication function	USB 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)				200 to 240 VAC (50/60 Hz)
Reference page	Page 607				

LEY Series

AC Servo Motor

Size 25, 32

Specifications: LECSA/LECSB/LECS/LECSS

* Refer to the next page for the LECS-2.

Model		LEY25S ₂ [‡] (Top/Parallel)/LEY25DS ₂ [‡] (In-line)				LEY32S ₂ [‡] (Top/Parallel)				LEY32DS ₂ [‡] (In-line)			
Stroke [mm] ^{Note 1)}		30, 50, 100, 150, 200, 250, 300, 350, 400				30, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500				30, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500			
Work load [kg]	Horizontal ^{Note 2)}	18	50	50	30	30	60	60	30	60	60	60	
	Vertical	8	16	30	9	19	37	12	24	46	46		
Force [N] ^{Note 3)} (Set value: 15 to 30%)		65 to 131	127 to 255	242 to 485	79 to 157	154 to 308	294 to 588	98 to 197	192 to 385	368 to 736	368 to 736		
Max. speed [mm/s] ^{Note 4)}	Up to 300	900	450	225	1200	600	300	1000	500	250	160		
	305 to 400	600	300	150									
Stroke range		405 to 500				800				400			
Pushing speed [mm/s] ^{Note 5)}		35 or less				30 or less				30 or less			
Max. acceleration/deceleration [mm/s²]		5000				5000				5000			
Positioning repeatability [mm]		Basic type				±0.02				±0.01			
		High precision type				0.1 or less				0.05 or less			
Lost motion [mm] ^{Note 6)}		Basic type				0.1 or less				0.05 or less			
		High precision type				0.05 or less				0.05 or less			
Lead [mm] (including pulley ratio)		12	6	3	20	10	5	16	8	4	4		
Impact/Vibration resistance [m/s²] ^{Note 7)}		50/20				50/20				50/20			
Actuation type		Ball screw + Belt (LEY□)/Ball screw (LEY□□)				Ball screw + Belt [1.25:1]				Ball screw			
Guide type		Sliding bushing (Piston rod)				Sliding bushing (Piston rod)				Sliding bushing (Piston rod)			
Operating temperature range [°C]		5 to 40				5 to 40				5 to 40			
Operating humidity range [%RH]		90 or less (No condensation)				90 or less (No condensation)				90 or less (No condensation)			
Regeneration option		May be required depending on speed and work load. (Refer to pages 234 and 235.)											
Motor output/Size		100 W/□40				200 W/□60				200 W/□60			
Motor type		AC servo motor (100/200 VAC)				AC servo motor (100/200 VAC)				AC servo motor (100/200 VAC)			
Encoder		Motor type S2, S3: Incremental 17-bit encoder (Resolution: 131072 p/rev) Motor type S6, S7: Absolute 18-bit encoder (Resolution: 262144 p/rev)											
Power consumption [W] ^{Note 8)}	Horizontal	45				65				65			
	Vertical	145				175				175			
Standby power consumption when operating [W] ^{Note 9)}	Horizontal	2				2				2			
	Vertical	8				8				8			
Max. instantaneous power consumption [W] ^{Note 10)}		445				724				724			
Type ^{Note 11)}		Non-magnetizing lock											
Holding force [N]		131	255	485	157	308	588	197	385	736	736		
Power consumption [W] at 20°C ^{Note 12)}		6.3				7.9				7.9			
Rated voltage [V]		24 VDC ⁰ _{-10%}											

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

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

Note 3) The force setting range (set values for the driver) for the force control with the torque control mode. Set it with reference to "Force Conversion Graph" on page 236. When the control equivalent to the pushing operation of the controller LECP series is performed, select the LECS driver and combine it with the Simple Motion (manufactured by Mitsubishi Electric Corporation) which has a pushing operation function.

Note 4) The allowable speed changes according to the stroke. Set the number of rotations according to speed.

Note 5) The allowable collision speed for collision with the workpiece with the torque control mode.

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

Note 7) Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)

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

Note 8) The power consumption (including the driver) is for when the actuator is operating. Note 9) The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.

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

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

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

Weight

Product Weight

[kg]

Series		LEY25S ₂ [‡] (Motor mounting position: Top/Parallel)								LEY32S ₂ [‡] (Motor mounting position: Top/Parallel)											
Stroke [mm]		30	50	100	150	200	250	300	350	400	30	50	100	150	200	250	300	350	400	450	500
Motor type	Incremental encoder	1.31	1.38	1.55	1.81	1.99	2.16	2.34	2.51	2.69	2.42	2.53	2.82	3.29	3.57	3.85	4.14	4.42	4.70	4.98	5.26
	Absolute encoder	1.37	1.44	1.61	1.87	2.05	2.22	2.40	2.57	2.75	2.36	2.47	2.76	3.23	3.51	3.79	4.08	4.36	4.64	4.92	5.20
Series		LEY25DS ₂ [‡] (Motor mounting position: In-line)								LEY32DS ₂ [‡] (Motor mounting position: In-line)											
Stroke [mm]		30	50	100	150	200	250	300	350	400	30	50	100	150	200	250	300	350	400	450	500
Motor type	Incremental encoder	1.34	1.41	1.58	1.84	2.02	2.19	2.37	2.54	2.72	2.44	2.55	2.84	3.31	3.59	3.87	4.16	4.44	4.72	5.00	5.28
	Absolute encoder	1.40	1.47	1.64	1.90	2.08	2.25	2.43	2.60	2.78	2.38	2.49	2.78	3.25	3.53	3.81	4.10	4.38	4.66	4.94	5.22

Additional Weight

[kg]

Size		25	32
Lock	Incremental encoder	0.20	0.40
	Absolute encoder [S6/S7]	0.30	0.66
Rod end male thread	Male thread	0.03	0.03
	Nut	0.02	0.02
Foot (2 sets including mounting bolt)		0.08	0.14
Rod flange (including mounting bolt)		0.17	0.20
Head flange (including mounting bolt)			
Double clevis (including pin, retaining ring and mounting bolt)		0.16	0.22

Specifications: LECSS-T

Model		LEY25T6 (Top/Parallel)/LEY25DT6 (In-line)				LEY32T7 (Top/Parallel)				LEY32DT7 (In-line)			
Stroke [mm] ^{Note 1)}		30, 50, 100, 150, 200, 250, 300, 350, 400				30, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500				30, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500			
Work load [kg]	Horizontal ^{Note 2)}	18	50	50	30	60	60	30	60	60	30	60	60
	Vertical	8	16	30	9	19	37	12	24	46	12	24	46
Force [N] ^{Note 3)} (Set value: 12 to 24%)		65 to 131	127 to 255	242 to 485	79 to 157	154 to 308	294 to 588	98 to 197	192 to 385	368 to 736			
Max. speed [mm/s]	Stroke range ^{Note 4)}	Up to 300	900	450	225	1200	600	300	1000	500	250		
		305 to 400	600	300	150				640	320	160		
		405 to 500	—	—	—	800	400	200					
Pushing speed [mm/s] ^{Note 5)}		35 or less				30 or less				30 or less			
Max. acceleration/deceleration [mm/s ²]		5000								5000			
Positioning repeatability [mm]		Basic type ±0.02								±0.02			
		High precision type ±0.01								±0.01			
Lost motion [mm] ^{Note 6)}		Basic type				0.1 or less							
		High precision type				0.05 or less							
Lead [mm] (including pulley ratio)		12	6	3	20	10	5	16	8	4			
Impact/Vibration resistance [m/s ²] ^{Note 7)}		50/20				50/20							
Actuation type		Ball screw + Belt (LEY□□)/Ball screw (LEY□□)				Ball screw + Belt [1.25:1]				Ball screw			
Guide type		Sliding bushing (Piston rod)				Sliding bushing (Piston rod)							
Operating temperature range [°C]		5 to 40				5 to 40							
Operating humidity range [%RH]		90 or less (No condensation)				90 or less (No condensation)							
Regeneration option		May be required depending on speed and work load. (Refer to pages 234 and 235.)											
Motor output/Size		100 W/□40				200 W/□60							
Motor type		AC servo motor (200 VAC)				AC servo motor (200 VAC)							
Encoder		Motor type T6, T7: Absolute 22-bit encoder (Resolution: 4194304 p/rev)											
Power consumption [W] ^{Note 8)}		Horizontal		Vertical		Horizontal		Vertical		Horizontal		Vertical	
Standby power consumption when operating [W] ^{Note 9)}		2		8		2		8		2		8	
Max. instantaneous power consumption [W] ^{Note 10)}		445		724		445		724		445		724	
Type ^{Note 11)}		Non-magnetizing lock											
Holding force [N]		131	255	485	157	308	588	197	385	736			
Power consumption [W] at 20°C ^{Note 12)}		6.3				7.9				7.9			
Rated voltage [V]		24 VDC ⁰ ~10%											

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

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

Note 3) The force setting range (set values for the driver) for the force control with the torque control mode. Set it with reference to "Force Conversion Graph (Guide)" on page 236-1. When the control equivalent to the pushing operation of the controller LECSP series is performed, combine the Simple Motion (manufactured by Mitsubishi Electric Corporation) which has a pushing operation function.

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

Note 5) The allowable collision speed for collision with the workpiece with the torque control mode.

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

Note 7) Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.) Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. Test was performed in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)

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

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

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

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

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

Weight

Product Weight

Series		LEY25T6 (Motor mounting position: Top/Parallel)								LEY32T7 (Motor mounting position: Top/Parallel)											
Stroke [mm]		30	50	100	150	200	250	300	350	400	30	50	100	150	200	250	300	350	400	450	500
Motor type	Absolute encoder	1.4	1.5	1.6	1.9	2.0	2.2	2.4	2.6	2.7	2.3	2.4	2.7	3.2	3.5	3.8	4.1	4.3	4.6	4.9	5.2

Series		LEY25DT6 (Motor mounting position: In-line)								LEY32DT7 (Motor mounting position: In-line)											
Stroke [mm]		30	50	100	150	200	250	300	350	400	30	50	100	150	200	250	300	350	400	450	500
Motor type	Absolute encoder	1.4	1.5	1.6	1.9	2.1	2.2	2.4	2.6	2.8	2.4	2.5	2.8	3.2	3.5	3.8	4.1	4.4	4.6	4.9	5.2

Additional Weight

Size		25	32
Lock	Absolute encoder [T6/T7]	0.3	0.4
Rod end male thread	Male thread	0.03	0.03
	Nut	0.02	0.02
Foot (2 sets including mounting bolt)		0.08	0.14
Rod flange (including mounting bolt)			
Head flange (including mounting bolt)		0.17	0.20
Double clevis (including pin, retaining ring and mounting bolt)		0.16	0.22

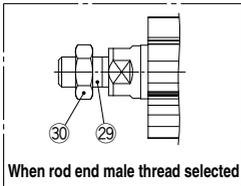
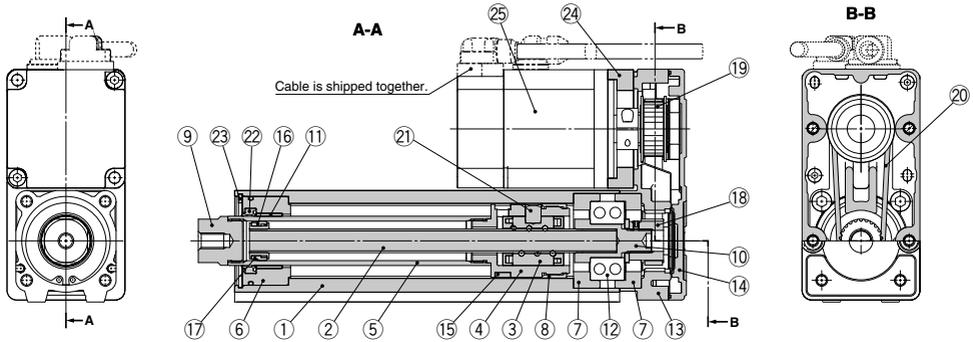
LEY Series

AC Servo Motor

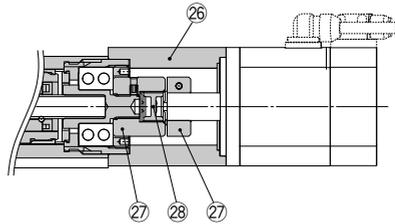
Size 25, 32

Construction

Motor top mounting type: LEY²⁵₃₂



In-line motor type: LEY²⁵_{32D}



Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	Anodized
2	Ball screw shaft	Alloy steel	
3	Ball screw nut	Synthetic resin/Alloy steel	
4	Piston	Aluminum alloy	
5	Piston rod	Stainless steel	Hard chrome plating
6	Rod cover	Aluminum alloy	
7	Bearing holder	Aluminum alloy	
8	Rotation stopper	POM	
9	Socket	Free cutting carbon steel	Nickel plating
10	Connected shaft	Free cutting carbon steel	Nickel plating
11	Bushing	Bearing alloy	
12	Bearing	—	
13	Return box	Aluminum die-cast	Coating
14	Return plate	Aluminum die-cast	Coating
15	Magnet	—	
16	Wear ring holder	Stainless steel	Stroke 101 mm or more
17	Wear ring	POM	Stroke 101 mm or more
18	Screw shaft pulley	Aluminum alloy	
19	Motor pulley	Aluminum alloy	
20	Belt	—	
21	Parallel pin	Stainless steel	
22	Seal	NBR	

No.	Description	Material	Note
23	Retaining ring	Steel for spring	
24	Motor adapter	Aluminum alloy	Coating
25	Motor	—	
26	Motor block	Aluminum alloy	Coating
27	Hub	Aluminum alloy	
28	Spider	Urethane	
29	Socket (Male thread)	Free cutting carbon steel	Nickel plating
30	Nut	Alloy steel	Zinc chromated

Replacement Parts (Top/Parallel only)/Belt

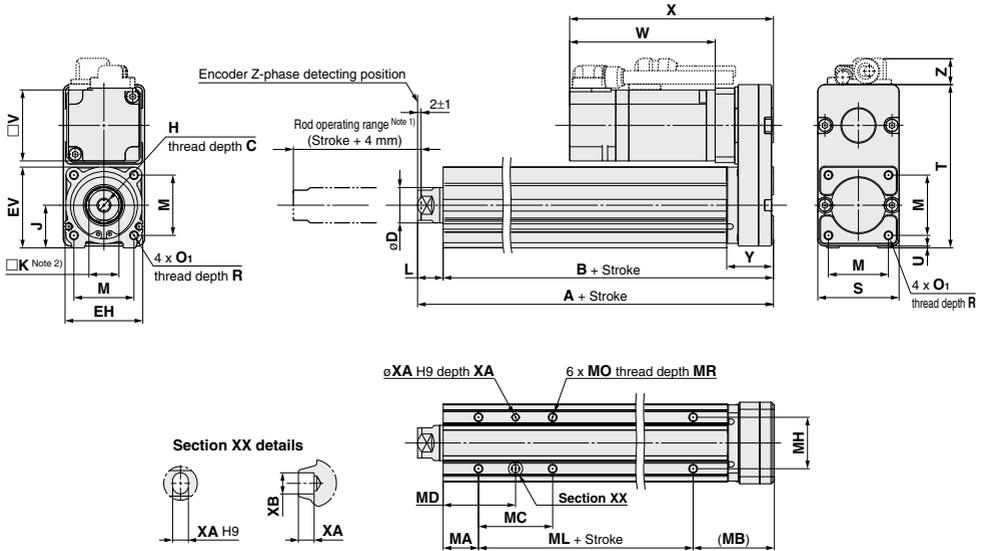
No.	Size	Order no.
21	25	LE-D-2-2
	32	LE-D-2-4

Replacement Parts/Grease Pack

Applied portion	Order no.
Piston rod	GR-S-010 (10 g) GR-S-020 (20 g)

* Apply grease on the piston rod periodically. Grease should be applied at 1 million cycles or 200 km, whichever comes first.

Dimensions: Motor Top/Parallel



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

Size	Stroke range [mm]	A	B	C	D	EH	EV	H	J	K	L	M	O ₁	R	S	T	U	Y	V
25	15 to 100	130.5	116	13	20	44	45.5	M8 x 1.25	24	17	14.5	34	M5 x 0.8	8	46	92	1	26.5	40
	105 to 400	155.5	141																
32	20 to 100	148.5	130	13	25	51	56.5	M8 x 1.25	31	22	18.5	40	M6 x 1.0	10	60	118	1	34	60
	105 to 500	178.5	160																

Size	Stroke range [mm]	Incremental encoder						Absolute encoder [S6/S7]						Absolute encoder [T6/T7]					
		Without lock			With lock			Without lock			With lock			Without lock			With lock		
		W	X	Z	W	X	Z	W	X	Z	W	X	Z	W	X	Z	W	X	Z
25	15 to 100	87	120	14.1	123.9	156.9	15.8	82.4	115.4	14.1	123.5	156.5	15.8	82.4	115.4	14.1	123	156	15.8
	105 to 400																		
32	20 to 100	88.2	128.2	17.1	116.8	156.8	17.1	76.6	116.6	17.1	116.1	156.1	17.1	76.6	116.6	17.1	113.4	153.4	17.1
	105 to 500																		

Body Bottom Tapped

Size	Stroke range [mm]	MA	MB	MC	MD	MH	ML	MO	MR	XA	XB
25	15 to 39	20	46	24	32	29	50	M5 x 0.8	6.5	4	5
	40 to 100			42	41						
	101 to 124			59	49.5						
	125 to 200			76	58						
	201 to 400			76	58						
32	20 to 39	25	55	22	36	30	50	M6 x 1	8.5	5	6
	40 to 100			36	43						
	101 to 124			53	51.5						
	125 to 200			70	60						
	201 to 500			70	60						



LEY Series

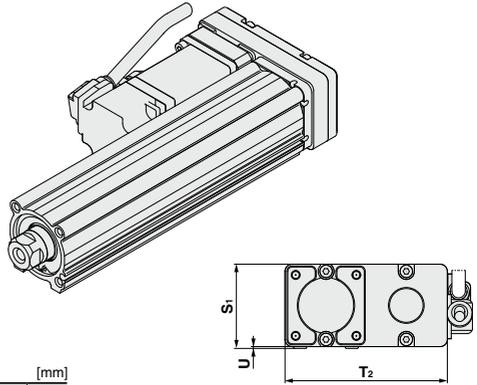
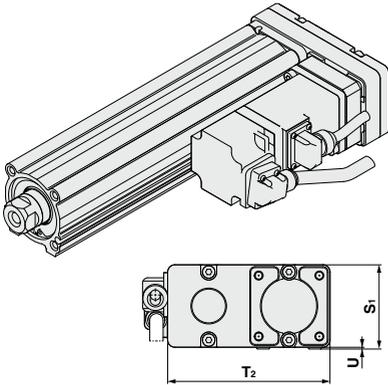
AC Servo Motor

Size 25, 32

Dimensions: Motor Top/Parallel

Motor left side parallel type: LEY²⁵₃₂L

Motor right side parallel type: LEY²⁵₃₂R

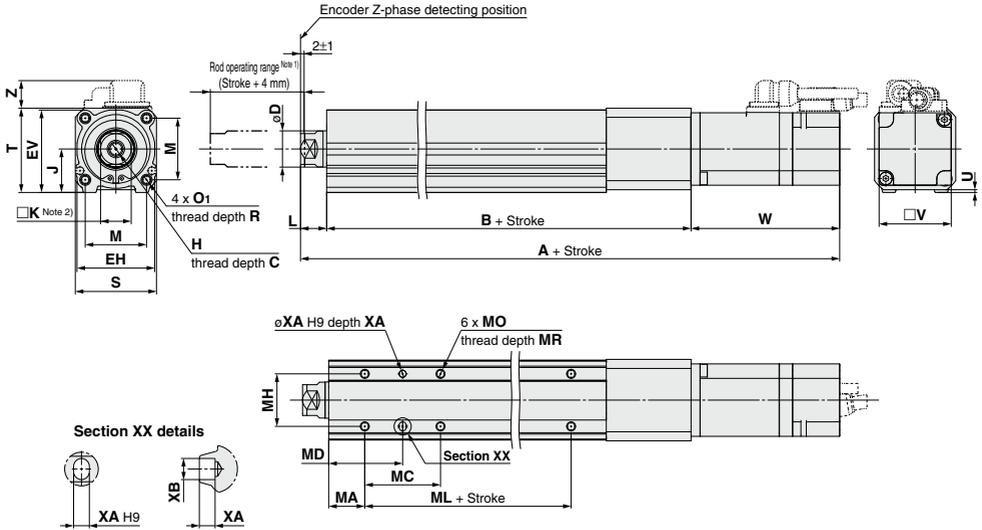


[mm]

Size	S ₁	T ₂	U
25	47	91	1
32	61	117	1

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

Dimensions: In-line Motor



Note 1) Range within which the rod can move.

Make sure a workpiece mounted on the rod does not interfere with the workpieces and facilities around the rod.

Note 2) The direction of rod end width across flats (□K) differs depending on the products.

Size	Stroke range [mm]	C	D	EH	EV	H	J	K	L	M	O1	R	S	T	U	B	V
25	15 to 100	13	20	44	45.5	M8 x 1.25	24	17	14.5	34	M5 x 0.8	8	45	46.5	1.5	136.5	40
	105 to 400															161.5	
32	20 to 100	13	25	51	56.5	M8 x 1.25	31	22	18.5	40	M6 x 1.0	10	60	61	1	156	60
	105 to 500															186	

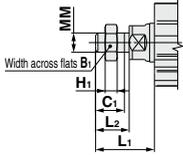
Size	Stroke range [mm]	Incremental encoder						Absolute encoder [S6/S7]						Absolute encoder [T6/T7]					
		Without lock			With lock			Without lock			With lock			Without lock			With lock		
		A	W	Z	A	W	Z	A	W	Z	A	W	Z	A	VB	VC	A	VB	VC
25	15 to 100	238	87	14.6	274.9	123.9	16.3	233.4	82.4	14.6	274.5	123.5	16.3	233.4	82.4	14.6	274	123	16.3
	105 to 400	263			299.9			258.4			299.5			258.4					
32	20 to 100	262.7	88.2	17.1	291.3	116.8	17.1	251.1	76.6	17.1	290.6	116.1	17.1	251.1	76.6	17.1	287.9	113.4	17.1
	105 to 500	292.7			321.3			281.1			320.6			281.1					

Body Bottom Tapped

Size	Stroke range [mm]	MA	MC	MD	MH	ML	MO	MR	XA	XB		
25	15 to 39	20	24	32	29	50	M5 x 0.8	6.5	4	5		
	40 to 100		42	41		75						
	101 to 124		59	49.5		80						
	125 to 200										76	58
	201 to 400										22	36
32	20 to 39	25	36	43	30	50	M6 x 1	8.5	5	6		
	40 to 100		53	51.5		80						
	101 to 124		70	60		80						
	125 to 200										22	36
	201 to 500										53	51.5

Dimensions

End male thread: LEY²⁵□□□□A
32□□□□B□□□M
C



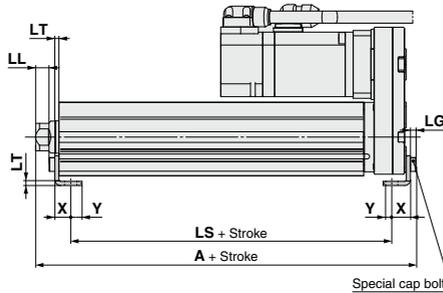
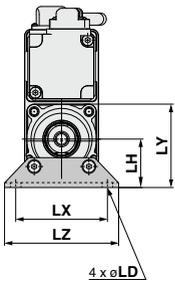
* Refer to page 250 for details about the rod end nut and mounting bracket.

Note) Refer to the precautions on page 305 when mounting end brackets such as knuckle joint or workpieces.

	[mm]					
Size	B ₁	C ₁	H ₁	L ₁	L ₂	MM
25	22	20.5	8	38	23.5	M14 x 1.5
32	22	20.5	8	42.0	23.5	M14 x 1.5

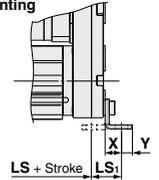
* The L₁ measurement is when the unit is in the original position. At this position, 2 mm at the end.

Foot: LEY²⁵□□□□A
32□□□□B□□□□L
C



Included parts
• Foot
• Body mounting bolt

Outward mounting



Foot

	[mm]													
Size	Stroke range [mm]	A	LS	LS ₁	LL	LD	LG	LH	LT	LX	LY	LZ	X	Y
25	15 to 100	136.6	98.8	19.8	8.4	6.6	3.5	30	2.6	57	51.5	71	11.2	5.8
	101 to 400	161.6	123.8											
32	20 to 100	155.7	114	19.2	11.3	6.6	4	36	3.2	76	61.5	90	11.2	7
	101 to 500	185.7	144											

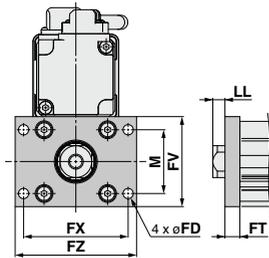
Material: Carbon steel (Chromate treated)

* The A measurement is when the unit is in the Z-phase first detecting position. At this position, 2 mm at the end.

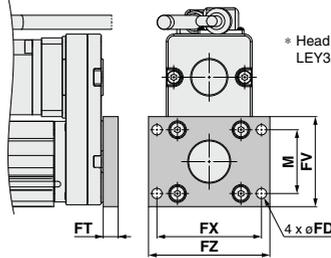
Note) When the motor mounting is the right or left side parallel type, the head side foot should be mounted outwards.

Dimensions

Rod flange: LEY²⁵₃₂ □□^A□□^B-□□□□^F
 □□□□^C



Head flange: LEY25 □□^A□□^B-□□□□^G
 □□□□^C



* Head flange is not available for the LEY32.

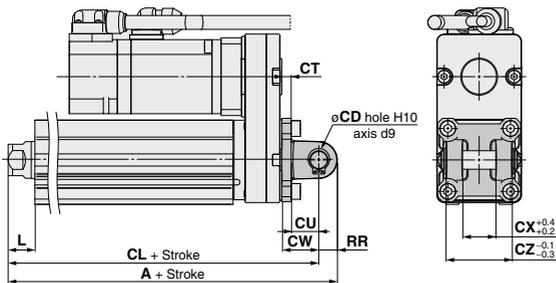
- Included parts
 - Flange
 - Body mounting bolt

Rod/Head Flange [mm]

Size	FD	FT	FV	FX	FZ	LL	M
25	5.5	8	48	56	65	6.5	34
32	5.5	8	54	62	72	10.5	40

Material: Carbon steel (Nickel plating)

Double clevis: LEY²⁵₃₂ □□^A□□□□□□^D
 □□□□^C



- Included parts
 - Double clevis
 - Body mounting bolt
 - Clevis pin
 - Retaining ring

* Refer to page 250 for details about the rod end nut and mounting bracket.

Double Clevis [mm]

Size	Stroke range [mm]	A	CL	CD	CT
25	15 to 100	160.5	150.5	10	5
	101 to 200	185.5	175.5		
32	20 to 100	180.5	170.5	10	6
	101 to 200	210.5	200.5		

Size	Stroke range [mm]	CU	CW	CX	CZ	L	RR
25	15 to 100	14	20	18	36	14.5	10
	101 to 200						
32	20 to 100	14	22	18	36	18.5	10
	101 to 200						

Material: Cast iron (Coating)

* The A and CL measurements are when the unit is in the Z-phase first detecting position. At this position, 2 mm at the end.

Electric Actuator/ Rod Type

Dust-tight/Water-jet-proof (IP65 Equivalent)

* Select options

LEY Series LEY63 Size **63**

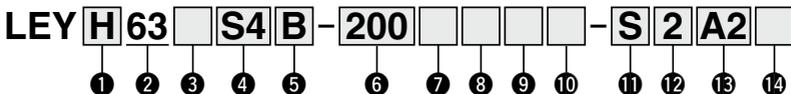


* See tables 4 and 6 below.

Motorless Type ▶ Page 854 **LEY** Series ▶ Page 270-1

Refer to page 232 for model selection.

How to Order



1 Accuracy

Nil	Basic type
H	High precision type

2 Size

63

3 Motor mounting position

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

4 Motor type

Symbol	Type	Output [W]	Actuator size	Compatible driver	UL-compliant
S4	AC servo motor (Incremental encoder)	400	63	LECSA2-S4	—
S8	AC servo motor (Absolute encoder)	400	63	LECSB2-S8 LECS2-S8 LECSS2-S8	—
T8				LECS2-T8	●

5 Lead [mm]

Symbol	LEY63
A	20
B	10
C	5
L	2.86*

* Screw lead 5 mm, Pulley ratio [4:7] equivalent lead
* Only available for top mounting and right/left side parallel types.

6 Stroke [mm]

100	100
to	to
800	800

7 Dust-tight/Water-jet-proof

Nil	IP5x equivalent (Dust-protected)
P	IP65 equivalent (Dust-tight/Water-jet-proof/ With vent hole tap)

* When using the dust-tight/water-jet-proof (IP65 equivalent), correctly mount the fitting and tubing to the vent hole tap, and then place the end of the tubing in an area not exposed to dust or water.
* The fitting and tubing should be provided separately by the customer. Select [Applicable tubing O.D.: ø4 or more, Connection thread: Rc1/8].
* Cannot be used in an environment where oil such as cutting oil splashes or it is constantly exposed to water. Take suitable protective measures. For details about enclosure, refer to "Enclosure" on page 306.

8 Motor option

Nil	Without option
B	With lock

9 Rod end thread

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

10 Mounting^{*1}

Symbol	Type	Motor mounting position	
		Top/Parallel	In-line
Nil	Ends tapped/ Body bottom tapped ^{*2}	●	●
L	Foot	●	—
F	Rod flange ^{*2}	●	●
D	Double clevis ^{*3}	●	—

*1 Mounting bracket is shipped together, (but not assembled).
*2 For horizontal cantilever mounting with the rod flange and ends tapped, use the actuator within the following stroke range.
• LEY63: 400 mm or less
*3 For mounting with the double clevis, use the actuator within the following stroke range.
• LEY63: 300 mm or less

11 Cable type ^{Note 1)}

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.)

* Standard cable entry direction is
• Top/Parallel: (A) Axis side
• In-line: (B) Counter axis side
(Refer to page 623 for details.)

14 I/O cable length [m]

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

* 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.)

12 Cable length ^{Note 2)} [m]

Nil	Without cable
2	2
5	5
A	10

Note 2) The length of the encoder, motor and lock cables are the same.

13 Driver type

	Compatible driver	Power supply voltage	UL-compliant
Nil	Without driver		—
A2	LECSA2/Pulse input (Incremental encoder)	200 V to 230 V	—
B2	LECSB2/Pulse input (Absolute encoder)	200 V to 230 V	—
C2	LECS2/CC-Link (Absolute encoder)	200 V to 230 V	—
S2	LECSS2-S/SSCNET III (Absolute encoder)	200 V to 230 V	—
	LECSS2-T/SSCNET III/H (Absolute encoder)	200 V to 240 V	●

* When the driver type is selected, the cable is included. Select cable type and cable length.
Example) S2S2: Standard cable (2 m) + Driver (LECS2S)
S2 : Standard cable (2 m)
Nil : Without cable and driver

* Applicable stroke table

Model	Stroke [mm]												Manufacturable stroke range	
	50	100	150	200	250	300	350	400	450	500	600	700		800
LEY63	●	●	●	●	●	●	●	●	●	●	●	●	●	50 to 800

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



Specifications

Model		LEY63S ₈ /T8 (Top/Parallel)								LEY63DS ₈ /T8 (In-line)		
Stroke [mm] <small>Note 1</small>		50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800										
Work load [kg]	Horizontal <small>Note 2</small>	40	70	80	200	40	70	80				
	Vertical <small>Note 15</small>	19	38	72	115	19	38	72				
Force [N]/Set value <small>Note 3</small> : 15 to 50% <small>Note 4, 5</small>		156 to 521	304 to 1012	573 to 1910	1003 to 3343	156 to 521	304 to 1012	573 to 1910				
Max. speed <small>Note 6</small> [mm/s]	Stroke range	Up to 500	1000	500	250	70	1000	500	250			
		505 to 600	800	400	200		800	400	200			
		605 to 700	600	300	150		600	300	150			
		705 to 800	500	250	125		500	250	125			
Pushing speed [mm/s] <small>Note 7</small>		30 or less										
Max. acceleration/deceleration [mm/s ²]		5000								3000	5000	
Positioning repeatability [mm]	Basic type									±0.02		
	High precision type									±0.01		
Lost motion [mm] <small>Note 8</small>	Basic type									0.1 or less		
	High precision type									0.05 or less		
Screw lead [mm] (including pulley ratio)		20	10	5	5 (2.86)	20	10	5				
Impact/vibration resistance [m/s ²] <small>Note 9</small>		50/20										
Actuation type		Ball screw + Belt								Ball screw		
Guide type		Sliding bushing (Piston rod)										
Operating temperature range [°C]		5 to 40										
Operating humidity range [%RH]		90 or less (No condensation)										
Regeneration option		May be required depending on speed and work load. (Refer to pages 234 and 235.)										
Motor output/Size		400 W/160										
Motor type		AC servo motor (200 VAC)										
Encoder		Motor type S4: Incremental 17-bit encoder (Resolution: 131072 p/rev) Motor type S8: Absolute 18-bit encoder (Resolution: 262144 p/rev) Motor type T8: Absolute 22-bit encoder (Resolution: 4194304 p/rev)										
Power consumption [W] <small>Note 10</small>	Horizontal									210		
	Vertical									230		
Standby power consumption when operating [W] <small>Note 11</small>	Horizontal									2		
	Vertical									18		
Max. instantaneous power consumption [W] <small>Note 12</small>										1275		
Type <small>Note 13</small>		Non-magnetizing lock										
Holding force [N]		313	607	1146	2006	313	607	1146				
Power consumption [W] at 20°C <small>Note 14</small>										7.9		
Rated voltage [V]										24 VDC ⁰ _{-10%}		

- Note 1) Please consult with SMC for non-standard strokes as they are produced as special orders.
- Note 2) The maximum value of the horizontal work load. An external guide is necessary to support the load. The actual work load changes according to the condition of the external guide. Please confirm using actual device.
- Note 3) Set values for the driver.
- Note 4) The force setting range (set values for the driver) for the force control with the torque control mode. The force and duty ratio change according to the set value. Set it with reference to "Force Conversion Graph" on page 236. When the control equivalent to the pushing operation of the controller LECP series is performed, select the LECS8 driver and combine it with the Simple Motion (manufactured by Mitsubishi Electric Corporation) which has a pushing operation function.
- Note 5) For the motor type T8, the set value is from 12 to 40%.
- Note 6) The allowable speed changes according to the stroke. Set the number of rotations according to speed.
- Note 7) The allowable collision speed for collision with the workpiece with the torque control mode.
- Note 8) A reference value for correcting an error in reciprocal operation.
- Note 9) 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 10) The power consumption (including the driver) is for when the actuator is operating.
- Note 11) The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.
- Note 12) The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.
- Note 13) Only when motor option "With lock" is selected.
- Note 14) For an actuator with lock, add the power consumption for the lock.
- Note 15) When mounting vertically and using the product facing upwards in an environment where water is present, take necessary measures to prevent water from splashing on the rod cover, because water will accumulate on the rod seal due to the structure of the product.

Weight

Product Weight		[kg]												
Series		LEY63S ₈ (Motor mounting position: Top/Parallel)												
Stroke [mm]		50	100	150	200	250	300	350	400	450	500	600	700	800
Motor type	Incremental encoder	4.9	5.4	6.0	6.6	7.8	8.3	8.9	9.4	10.0	10.5	12.2	13.4	14.5
	Absolute encoder (Motor type S8)	5.0	5.5	6.1	6.7	7.9	8.4	9.0	9.5	10.1	10.6	12.3	13.5	14.6
	Absolute encoder (Motor type T8)	4.9	5.4	6.0	6.6	7.8	8.3	8.9	9.4	10.0	10.5	12.2	13.4	14.5
Series		LEY63DS ₈ (Motor mounting position: In-line)												
Stroke [mm]		50	100	150	200	250	300	350	400	450	500	600	700	800
Motor type	Incremental encoder	5.1	5.6	6.2	6.7	7.9	8.4	9.0	9.6	10.2	10.7	12.4	13.5	14.7
	Absolute encoder (Motor type S8)	5.2	5.7	6.3	6.8	8.0	8.5	9.1	9.7	10.3	10.8	12.5	13.6	14.8
	Absolute encoder (Motor type T8)	5.1	5.6	6.2	6.7	7.9	8.4	9.0	9.6	10.2	10.7	12.4	13.5	14.7

Additional Weight		Size	63
Lock	Incremental encoder		0.4
	Absolute encoder (Motor type S8)		0.6
	Absolute encoder (Motor type T8)		0.4
Rod end male thread	Male thread		0.12
	Nut		0.04
Foot (2 sets including mounting bolt)			0.26
Rod flange (including mounting bolt)			0.51
Double clevis (including pin, retaining ring and mounting bolt)			0.58



LEY Series

AC Servo Motor

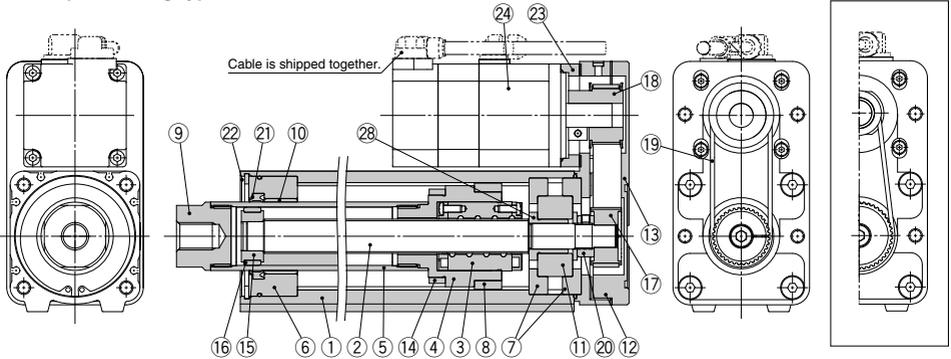
Size **63**

Dust-tight/Water-jet-proof (IP65 Equivalent)

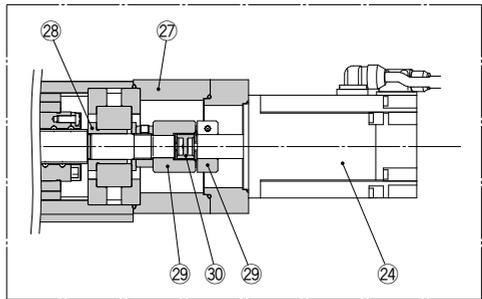
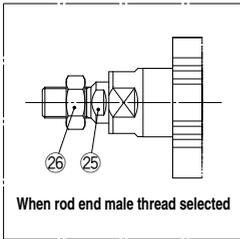
* Select options

Construction

Motor top mounting type: LEY63



In-line motor type: LEY63D



Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	Anodized
2	Ball screw shaft	Alloy steel	
3	Ball screw nut	Resin/Alloy steel	
4	Piston	Aluminum alloy	
5	Piston rod	Stainless steel	Hard chrome plating
6	Rod cover	Aluminum alloy	
7	Bearing holder	Aluminum alloy	
8	Rotation stopper	Resin	
9	Socket	Free cutting carbon steel	Nickel plating
10	Bushing	Lead bronze cast	
11	Bearing	—	
12	Return box	Aluminum alloy	Coating
13	Return plate	Aluminum alloy	Coating
14	Magnet	—	
15	Wear ring holder	Stainless steel	

No.	Description	Material	Note
16	Wear ring	Resin	
17	Screw shaft pulley	Aluminum alloy	
18	Motor pulley	Aluminum alloy	
19	Belt	—	
20	Lock nut	Alloy steel	Black dyed
21	Seal	NBR	
22	Retaining ring	Steel for spring	
23	Motor adapter	Aluminum alloy	Coating
24	Motor	—	
25	Socket (Male thread)	Free cutting carbon steel	Nickel plating
26	Nut	Alloy steel	Trivalent chromated
27	Motor block	Aluminum alloy	Coating
28	Spacer A	Stainless steel	
29	Hub	Aluminum alloy	
30	Spider	Urethane	

Replacement Parts (Top/Parallel only)/Belt

No.	Size	Lead	Order no.
19	63	A/B/C	LE-D-2-5
		L	LE-D-2-6

Replacement Parts/Grease Pack

Applied portion	Order no.
Piston rod	GR-S-010 (10 g)
	GR-S-020 (20 g)

* Apply grease on the piston rod periodically. Grease should be applied at 1 million cycles or 200 km, whichever comes first.

LEY Series

AC Servo Motor

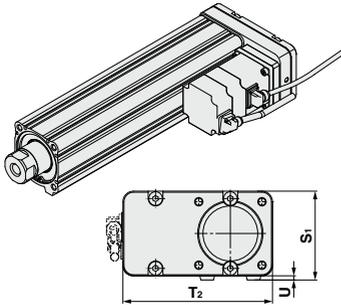
Size **63**

Dust-tight/Water-jet-proof (IP65 Equivalent)

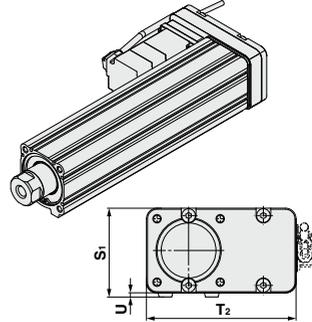
* Select options

Dimensions: Motor Top/Parallel

Motor left side parallel type: LEY63L



Motor right side parallel type: LEY63R

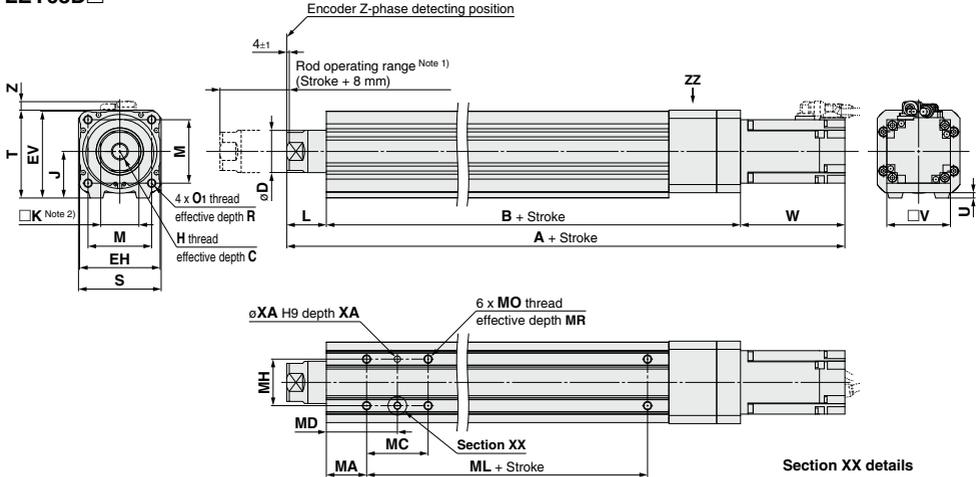


[mm]			
Size	S ₁	T ₂	U
63	84	142	4

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

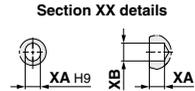
Dimensions: In-line Motor

LEY63D



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

Note 2) The direction of rod end width across flats (□K) differs depending on the products.



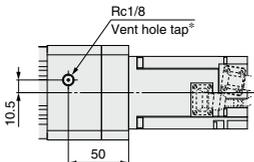
Size	Stroke range [mm]	C	D	EH	EV	H	J	K	L	M	O1	R	S	T	U	B	V
63	Up to 200	21	40	76	82	M16 x 2	44	36	37.4	60	M8 x 1.25	16	78	83	5	190.7	60
	205 to 500															225.7	
	505 to 800															260.7	

Size	Stroke range [mm]	Incremental encoder						Absolute encoder [S8]						Absolute encoder [T8]					
		Without lock			With lock			Without lock			With lock			Without lock			With lock		
		A	W	Z	A	W	Z	A	W	Z	A	W	Z	A	W	Z	A	W	Z
63	Up to 200	338.3			366.9			326.6			366.1			326.4			363.2		
	205 to 500	373.3	110.2	8.1	401.9	138.8	8.1	361.6	98.5	8.1	401.1	138	8.1	361.4	98.3	8.1	398.2	135.1	8.1
	505 to 800	408.3			436.9			396.6			436.1			396.4			433.2		

Body Bottom Tapped

Size	Stroke range [mm]	MA	MC	MD	MH	ML	MO	MR	XA	XB
63	50 to 74	38	24	50	44	65	M8 x 1.25	10	6	7
	75 to 124		45	60.5						
	125 to 200		58	67						
	201 to 500		86	81						
	501 to 800									

IP65 equivalent (Dust-tight/Water-jet-proof): LEY63D□□-□P (View ZZ)



* When using the dust-tight/water-jet-proof (IP65 equivalent), correctly mount the fitting and tubing to the vent hole tap, and then place the end of the tubing in an area not exposed to dust or water. The fitting and tubing should be provided separately by the customer. Select [Applicable tubing O.D.: $\phi 4$ or more, Connection thread: Rc1/8].

LEY Series

AC Servo Motor

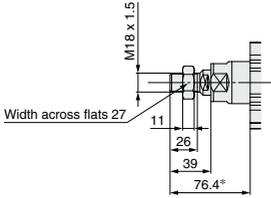
Size **63**

Dust-tight/Water-jet-proof (IP65 Equivalent)

* Select options

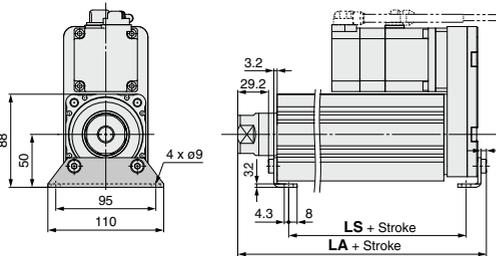
Dimensions

End male thread: LEY63□□□-□□M

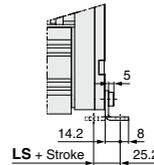


* The measurement 76.4 is when the unit is in the Z-phase detecting position. At this position, 4 mm from the end of the operating range.

Foot: LEY63□□□-□□L



Outward mounting



Included parts
• Foot
• Body mounting bolt

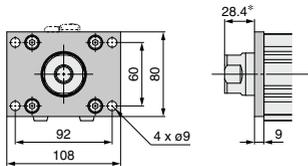
Material: Carbon steel (Chromate treated)

* The overall length is when the unit is in the Z-phase detecting position. At this position, 4 mm from the end of the operating range.

Note) When the motor mounting is the right or left side parallel type, the head side foot should be mounted outwards.

Stroke range [mm]	[mm]	
	LA	LS
50 to 200	200.8	133.2
201 to 500	235.8	168.2
501 to 800	270.8	203.2

Rod flange: LEY63□□□-□□F

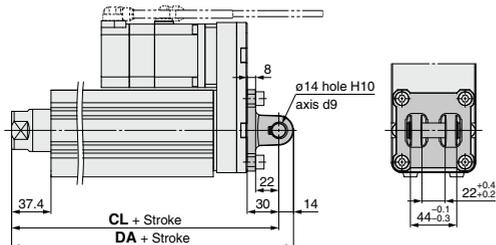


Included parts
• Flange
• Body mounting bolt

Material: Carbon steel (Nickel plating)

* When the unit is in the Z-phase detecting position. At this position, 4 mm from the end of the operating range.

Double clevis: LEY63□□□-□□D



Included parts
• Double clevis
• Body mounting bolt
• Clevis pin
• Retaining ring

Material: Cast iron (Coating)

* The overall length is when the unit is in the Z-phase detecting position. At this position, 4 mm from the end of the operating range.

Stroke range [mm]	[mm]	
	DA	CL
50 to 200	236.6	222.6
201 to 500	271.6	257.6
501 to 800	306.6	292.6

Electric Actuator/ Rod Type

LEY Series LEY25, 32, 63



Please contact SMC for dust-tight/water-jet-proof (IP65 equivalent) and the models compatible with secondary batteries.

LECS Series ▶ Pages 254, 264

How to Order

LEY **H** **25** **V6** **B** - **200** - **S** **3** **M2**

1 2 3 4 5 6 7 8 9 10 11 12 13 14

1 Accuracy

Nil	Basic type
H	High precision type

2 Size

25
32
63

3 Motor mounting position

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

4 Motor type

Symbol	Type	Output [W]	Size	Compatible driver
V6*	AC servo motor (Absolute encoder)	100	25	LECYM2-V5 LECYU2-V5
V7		200	32	LECYM2-V7 LECYU2-V7
V8		400	63	LECYM2-V8 LECYU2-V8

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

5 Lead [mm]

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

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

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

6 Stroke [mm]

30	30
to	to
800	800

* Refer to the applicable stroke table.

7 Dust-tight/Water-jet-proof (Only available for LEY63)

Symbol	LEY25/32	LEY63
Nil	IP4x equivalent	IP5x equivalent (Dust-protected)
P	—	IP65 equivalent (Dust-tight/Water-jet-proof)/With vent hole tap

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

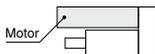
* The fitting and tubing should be provided separately by the customer. Select [Applicable tubing O.D.: ø4 or more, Connection thread: Rc1/8].

* Cannot be used in environments exposed to cutting oil etc. Take suitable protective measures. For details about enclosure, refer to "Enclosure" on page 306.

8 Motor option

Nil	Without option
B	With lock

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



9 Rod end thread

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

Applicable Stroke Table

●: Standard

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

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

For auto switches, refer to pages 270-11 and 270-12.



Motor mounting position: Top/Parallel



Motor mounting position: In-line

10 Mounting *1

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

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

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

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

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

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

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

*5 Head flange is not available for the LEY32/LEY63.

11 Cable type*

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

* The motor and encoder cables are included. The motor cable for lock option is included when the motor with lock option is selected.

12 Cable length [m]*

Nil	Without cable
3	3
5	5
A	10
C	20

* The length of the motor and encoder cables are the same. (For with lock)

13 Driver type

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

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

14 I/O cable length [m] *

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

* When "Without driver" is selected for driver type, only "Nil: Without cable" can be selected. Refer to page 628-8 if I/O cable is required. (Options are shown on page 628-8.)

Compatible Driver

Driver type		
Series	LECYM	LECYU
Applicable network	MECHATROLINK-II	MECHATROLINK-III
Control encoder	Absolute 20-bit encoder	
Communication device	USB communication, RS-422 communication	
Power supply voltage [V]	200 to 230 VAC (50/60 Hz)	
Reference page	Page 628-1	

LEY Series

AC Servo Motor Size **25, 32, 63**

Specifications

Model		LEY25V6 (Top/Parallel)/LEY25DV6 (In-line)				LEY32V7 (Top/Parallel)			LEY32DV7 (In-line)		
Stroke [mm] ^{Note 1)}		30, 50, 100, 150, 200, 250, 300, 350, 400				30, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500			30, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500		
Work load [kg]		Horizontal ^{Note 2)}		50		60		60		60	
		Vertical		16		19		37		24	
Force [N] ^{Note 3)} (Set value: 45 to 90%)		65 to 131		127 to 255		242 to 485		79 to 157		154 to 308	
Max. speed [mm/s] ^{Note 4)}	Stroke range	Up to 300		450		225		1200		600	
		305 to 400		300		150		800		400	
Pushing speed [mm/s]		35 or less				30 or less			30 or less		
Max. acceleration/deceleration [mm/s ²]		5000							5000		
Positioning repeatability [mm]		Basic type		±0.02						±0.02	
		High precision type		±0.01						±0.01	
Lost motion [mm] ^{Note 6)}		Basic type		0.1 or less						0.1 or less	
		High precision type		0.05 or less						0.05 or less	
Lead [mm] (including pulley ratio)		12		6		3		20		10	
Impact/Vibration resistance [m/s ²] ^{Note 7)}		50/20				50/20			16		
Actuation type		Ball screw + Belt (LEY□) / Ball screw (LEY□D)				Ball screw + Belt [1.25:1]			Ball screw		
Guide type		Sliding bushing (Piston rod)				Sliding bushing (Piston rod)			5 to 40		
Operating temperature range [°C]		5 to 40				5 to 40			90 or less (No condensation)		
Operating humidity range [%RH]		90 or less (No condensation)				90 or less (No condensation)			90 or less (No condensation)		
Conditions for ^{Note 8)}		Horizontal				Not required			Not required		
"Regenerative resistor" [kg]		Vertical				6 or more			4 or more		
Motor output/Size		100 W □ 40				200 W □ 60			200 W □ 60		
Motor type		AC servo motor (200 VAC)				AC servo motor (200 VAC)			AC servo motor (200 VAC)		
Encoder		Absolute 20-bit encoder (Resolution: 1048576 p/rev)				Absolute 20-bit encoder (Resolution: 1048576 p/rev)			Absolute 20-bit encoder (Resolution: 1048576 p/rev)		
Power consumption [W] ^{Note 9)}	Horizontal		45		65		65		65		
	Vertical		145		175		175		175		
Standby power consumption when operating [W] ^{Note 10)}	Horizontal		2		2		2		2		
	Vertical		8		8		8		8		
Max. instantaneous power consumption [W] ^{Note 11)}		445				724			724		
Type ^{Note 12)}		Non-magnetizing lock				Non-magnetizing lock			Non-magnetizing lock		
Holding force [N]		131		255		485		157		308	
Power consumption [W] at 20°C ^{Note 13)}		5.5				6			6		
Rated voltage [V]		24 VDC ^{+10%} ₀				24 VDC ^{+10%} ₀			24 VDC ^{+10%} ₀		

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

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

Note 3) The force setting range (set values for the driver) for the force control with the torque control mode. Set it with reference to "Force Conversion Graph (Guide)" on page 237-5.

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

Note 5) The allowable collision speed for collision with the workpiece with the torque control mode.

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

Note 7) Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)

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

Note 8) The work load conditions which require "Regenerative resistor" when operating at the maximum speed (Duty ratio: 100%). Order the regenerative resistor separately. For details, refer to "Conditions for Regenerative Resistor (Guide)" on pages 237-3 and 237-4.

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

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

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

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

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

Weight

Product Weight

Series	LEY25V6 (Motor mounting position: Top/Parallel)								LEY32V7 (Motor mounting position: Top/Parallel)											
Stroke [mm]	30	50	100	150	200	250	300	350	400	30	50	100	150	200	250	300	350	400	450	500
Weight [kg]	1.2	1.3	1.6	1.7	1.9	2.1	2.2	2.4	2.6	2.3	2.4	2.7	3.2	3.5	3.8	4.0	4.3	4.6	4.9	5.2

Series	LEY25DV6 (Motor mounting position: In-line)								LEY32DV7 (Motor mounting position: In-line)											
Stroke [mm]	30	50	100	150	200	250	300	350	400	30	50	100	150	200	250	300	350	400	450	500
Weight [kg]	1.2	1.3	1.5	1.7	1.9	2.1	2.3	2.4	2.6	2.3	2.4	2.7	3.2	3.5	3.8	4.1	4.3	4.6	4.9	5.2

Additional Weight

Size	25	32	
Lock	0.30	0.60	
Rod end male thread	Male thread	0.03	0.03
	Nut	0.02	0.02
Foot (2 sets including mounting bolt)	0.08	0.14	
Rod flange (including mounting bolt)			
Head flange (including mounting bolt)	0.17	0.20	
Double clevis (including pin, retaining ring and mounting bolt)	0.16	0.22	

Specifications

Model		LEY63V8 (Top/Parallel)						LEY63DV8 (In-line)		
Stroke [mm] ^{Note 1)}		50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800								
Work load [kg]	Horizontal ^{Note 2)}	40	70	80	200	40	70	80		
	Vertical	19	38	72	115	19	38	72		
Force [N]/Set value ^{Note 3)} : 45 to 150% ^{Note 4)}		156 to 521	304 to 1012	573 to 1910	1003 to 3343	156 to 521	304 to 1012	573 to 1910		
Max. speed ^{Note 5)} [mm/s]	Stroke range	Up to 500	1000	500	250	70	1000	500	250	
		505 to 600	800	400	200		800	400	200	
		605 to 700	600	300	150		600	300	150	
		705 to 800	500	250	125		500	250	125	
Pushing speed [mm/s] ^{Note 6)}								30 or less		
Max. acceleration/deceleration [mm/s ²]		5000						3000 5000		
Positioning repeatability [mm]	Basic type	±0.02								
	High precision type	±0.01								
Lost motion [mm] ^{Note 7)}	Basic type	0.1 or less								
	High precision type	0.05 or less								
Screw lead [mm] (including pulley ratio)		20	10	5	5 (2.86)	20	10	5		
Impact/Vibration resistance [m/s ²] ^{Note 8)}		50/20								
Actuation type		Ball screw			Ball screw + Ball Pulley ratio 4:7)		Ball screw			
Guide type		Sliding bushing (Piston rod)								
Operating temperature range [°C]		5 to 40								
Operating humidity range [%RH]		90 or less (No condensation)								
Conditions for ^{Note 9)} "Regenerative resistor" [kg]	Horizontal	Not required								
	Vertical	2.5 or more								
Motor output/Size		400 W/□60								
Motor type		AC servo motor (200 VAC)								
Encoder		Absolute 20-bit encoder (Resolution: 1048576 p/rev)								
Power consumption [W] ^{Note 10)}	Horizontal	210								
	Vertical	230								
Standby power consumption when operating [W] ^{Note 11)}	Horizontal	2								
	Vertical	18								
Max. instantaneous power consumption [W] ^{Note 12)}		1275								
Type ^{Note 13)}		Non-magnetizing lock								
Holding force [N]		313	607	1146	2006	313	607	1146		
Power consumption [W] at 20°C ^{Note 14)}		6								
Rated voltage [V]		24 VDC ^{+10%} ₀								

- Note 1) Please consult with SMC for non-standard strokes as they are produced as special orders.
 Note 2) The maximum value of the horizontal work load. An external guide is necessary to support the load. The actual work load changes according to the condition of the external guide. Please confirm using actual device.
 Note 3) Set values for the driver.
 Note 4) The force setting range (set values for the driver) for the force control with the torque control mode. The force and duty ratio change according to the set value. Set it with reference to "Force Conversion Graph (Guide)" on page 237-5.
 Note 5) The allowable speed changes according to the stroke.
 Note 6) The allowable collision speed for collision with the workpiece with the torque control mode.
 Note 7) A reference value for correcting an error in reciprocal operation.
 Note 8) Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)
 Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. Test was performed in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)
 Note 9) The work load conditions which require "Regenerative resistor" when operating at the maximum speed (Duty ratio: 100%).
 Note 10) The power consumption (including the driver) is for when the actuator is operating.
 Note 11) The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.
 Note 12) The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.
 Note 13) Only when motor option "With lock" is selected.
 Note 14) For an actuator with lock, add the power consumption for the lock.

Weight

Product Weight

Series	LEY63V8 (Motor mounting position: Top/Parallel)											[kg]		
Stroke [mm]	50	100	150	200	250	300	350	400	450	500	600	700	800	
Weight [kg]	4.8	5.3	6.0	6.5	7.7	8.2	8.8	9.3	9.9	10.4	12.1	13.3	14.4	

Series	LEY63DV8 (Motor mounting position: In-line)											[kg]		
Stroke [mm]	50	100	150	200	250	300	350	400	450	500	600	700	800	
Weight [kg]	5.0	5.5	6.1	6.6	7.8	8.3	9.0	9.5	10.1	10.6	12.3	13.4	14.6	

Additional Weight

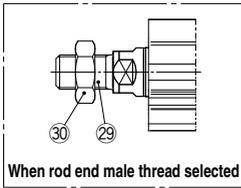
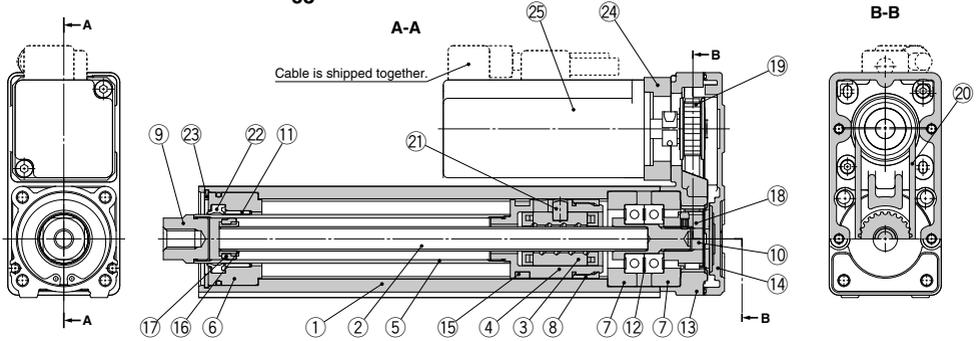
Size		[kg]
Lock		63
Lock	Nut	0.6
Rod end male thread	Male thread	0.12
	Nut	0.04
Foot (2 sets including mounting bolt)		0.26
Rod flange (including mounting bolt)		0.51
Double clevis (including pin, retaining ring and mounting bolt)		0.58

LEY Series

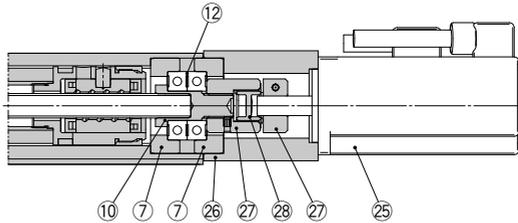
AC Servo Motor Size **25, 32, 63**

Construction

Motor top mounting type: **LEY32**
63



In-line motor type: **LEY25**
63



Component Parts

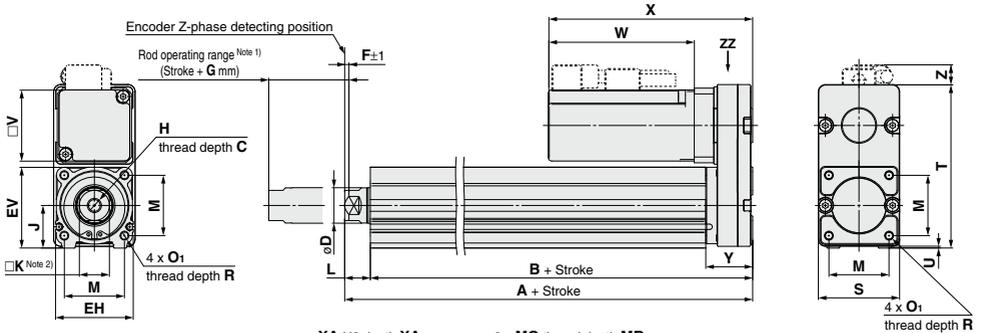
No.	Description	Material	Note
1	Body	Aluminum alloy	Anodized
2	Ball screw shaft	Alloy steel	
3	Ball screw nut	Resin/Alloy steel	
4	Piston	Aluminum alloy	
5	Piston rod	Stainless steel	Hard chrome plating
6	Rod cover	Aluminum alloy	
7	Bearing holder	Aluminum alloy	
8	Rotation stopper	POM	
9	Socket	Free cutting carbon steel	Nickel plating
10	Connected shaft	Free cutting carbon steel	Nickel plating
11	Bushing	Bearing alloy	
12	Bearing	—	
13	Return box	Aluminum die-cast	Coating
14	Return plate	Aluminum die-cast	Coating
15	Magnet	—	
16	Wear ring holder	Stainless steel	Stroke 101 mm or more
17	Wear ring	POM	Stroke 101 mm or more
18	Screw shaft pulley	Aluminum alloy	

No.	Description	Material	Note
19	Motor pulley	Aluminum alloy	
20	Belt	—	
21	Parallel pin	Stainless steel	
22	Seal	NBR	
23	Retaining ring	Steel for spring	Phosphate coated
24	Motor adapter	Aluminum alloy	Coating
25	Motor	—	
26	Motor block	Aluminum alloy	Coating
27	Hub	Aluminum alloy	
28	Spider	Urethane	
29	Socket (Male thread)	Free cutting carbon steel	Nickel plating
30	Nut	Alloy steel	Zinc chromated

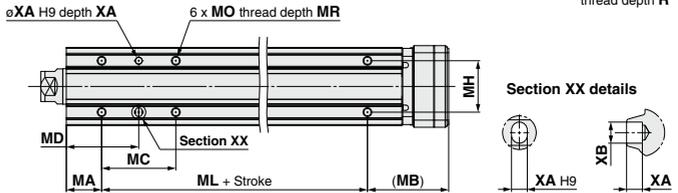
Replacement Parts (Top/Parallel only)/Belt

No.	Size	Order no.	No.	Size	Lead	Order no.
20	25	LE-D-2-2	20	63	A/B/C	LE-D-2-5
	32	LE-D-2-4			L	LE-D-2-6

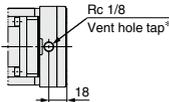
Dimensions: Motor Top/Parallel



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



IP65 equivalent (Dust-tight/Water-jet-proof): LEY63□□□-□P
 (View ZZ)



* When using the dust-tight/water-jet-proof (IP65 equivalent), correctly mount the fitting and tubing to the vent hole tap, and then place the end of the tubing in an area not exposed to dust or water. The fitting and tubing should be provided separately by the customer.
 Select [Applicable tubing O.D.: ø4 or more, Connection thread: Rc1/8].

Size	Stroke range [mm]	A	B	C	D	EH	EV	H	J	K	L	M	O ₁	R	S	T	U	Y	V
25	15 to 100	130.5	116	13	20	44	45.5	M8 x 1.25	24	17	14.5	34	M5 x 0.8	8	46	92	1	26.5	40
	105 to 400	155.5	141																
32	20 to 100	148.5	130	13	25	51	56.5	M8 x 1.25	31	22	18.5	40	M6 x 1.0	10	60	118	1	34	60
	105 to 500	178.5	160																
63	Up to 200	192.6	155.2	21	40	76	82	M16 x 2	44	36	37.4	60	M8 x 1.25	16	80	146	4	32.2	60
	205 to 500	227.6	190.2																
	505 to 800	262.6	225.2																

Size	Stroke range [mm]	Without lock			With lock			F	G
		W	X	Z	W	X	Z		
25	15 to 100	82.5	115.5	11	127.5	160.5	11	2	4
	105 to 400								
32	20 to 100	80	120	14	120	160	14	2	4
	105 to 500								
63	50 to 200	98.5	138.5	12.5 (13.5)*	138.5	178.5	12.5 (13.5)*	4	8
	205 to 500								
	505 to 800								

* L lead

Body Bottom Tapped

Size	Stroke range [mm]	MA	MB	MC	MD	MH	ML	MO	MR	XA	XB
25	15 to 35	20	46	24	32	29	50	M5 x 0.8	6.5	4	5
	40 to 100			42	41						
	105 to 120			59	49.5						
	125 to 200			76	58						
	205 to 400			76	58						
32	20 to 35	25	55	22	36	30	50	M6 x 1	8.5	5	6
	40 to 100			36	43						
	105 to 120			53	51.5						
	125 to 200			53	51.5						
	205 to 500			70	60						
63	50 to 70	38	52.2	24	50	44	65	M8 x 1.25	10	6	7
	75 to 120			45	60.5						
	125 to 200			58	67						
	205 to 500			86	81						
	505 to 800			86	81						

LEY Series

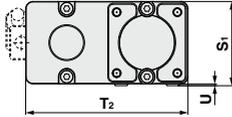
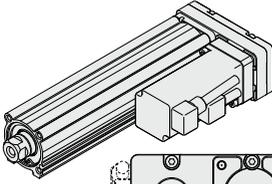
AC Servo Motor

Size 25, 32, 63

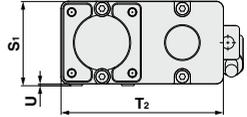
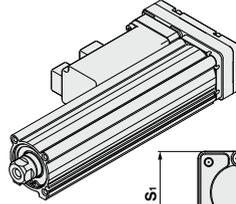
Dimensions: Motor Top/Parallel

Motor left side parallel type: LEY 32 L
25
63

Motor right side parallel type: LEY 32 R
25
63

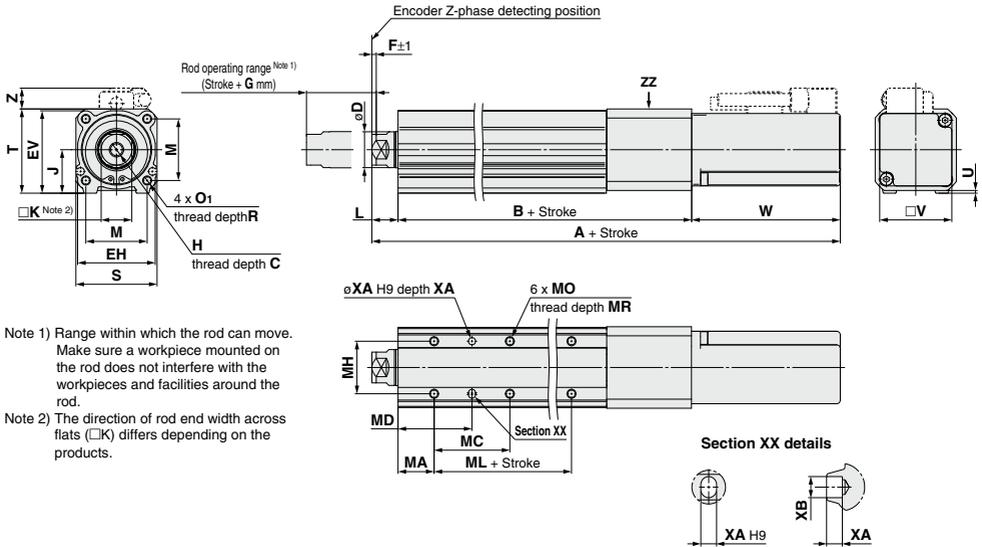


Size	S ₁	T ₂	U
25	47	91	1
32	61	117	1
63	84	142	4



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

Dimensions: In-line Motor



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

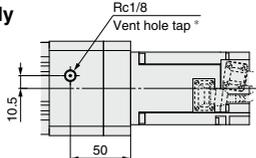
Size	Stroke range [mm]	C	D	EH	EV	H	J	K	L	M	O ₁	R	S	T	U	B	V
25	15 to 100	13	20	44	45.5	M8 x 1.25	24	17	14.5	34	M5 x 0.8	8	45	46.5	1.5	136.5	40
	105 to 400															161.5	
32	20 to 100	13	25	51	56.5	M8 x 1.25	31	22	18.5	40	M6 x 1.0	10	60	61	1	156	60
	105 to 500															186	
63	50 to 200	21	40	76	82	M16 x 2	44	36	37.4	60	M8 x 1.25	16	78	83	5	190.7	60
	205 to 500															225.7	
	505 to 800															260.7	

Size	Stroke range [mm]	Without lock			With lock			F	G
		A	W	Z	A	W	Z		
25	15 to 100	233.5	82.5	11.5	278.5	127.5	11.5	2	4
	105 to 400	258.5			303.5				
32	20 to 100	254.5	80	14	294.5	120	14	2	4
	105 to 500	284.5			324.5				
63	50 to 200	326.6	98.5	5	366.6	138.5	5	4	8
	205 to 500	361.6			401.6				
	505 to 800	396.6			436.6				

Size	Stroke range [mm]	Body Bottom Tapped								
		MA	MC	MD	MH	ML	MO	MR	XA	XB
25	15 to 35	24	32			50				
	40 to 100	42	41		29		M5 x 0.8	6.5	4	5
	105 to 120					75				
	125 to 200	59	49.5							
	205 to 400	76	58							
32	20 to 35	22	36			50				
	40 to 100	36	43		30		M6 x 1	8.5	5	6
	105 to 120					80				
	125 to 200	53	51.5							
	205 to 500	70	60							
63	50 to 70	24	50			65				
	75 to 120	45	60.5				M8 x 1.25	10	6	7
	125 to 200	58	67		44					
	205 to 500	86	81			100				
	505 to 800					135				

IP65 equivalent (Dust-tight/Water-jet-proof): LEY63D□□-□P (View ZZ)

*LEY63 only



* When using the dust-tight/water-jet-proof (IP65 equivalent), correctly mount the fitting and tubing to the vent hole tap, and then place the end of the tubing in an area not exposed to dust or water. The fitting and tubing should be provided separately by the customer. Select [Applicable tubing O.D.: ø4 or more, Connection thread: Rc1/8].

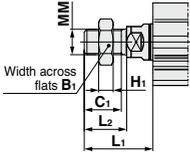
LEY Series

AC Servo Motor

Size **25, 32, 63**

Dimensions

End male thread: LEY $\begin{matrix} 25 \\ 32 \\ 63 \end{matrix}$ $\begin{matrix} A \\ B \\ C \\ L \end{matrix}$ $\begin{matrix} \square \\ \square \\ \square \end{matrix}$ $\begin{matrix} \square \\ \square \\ \square \end{matrix}$ M



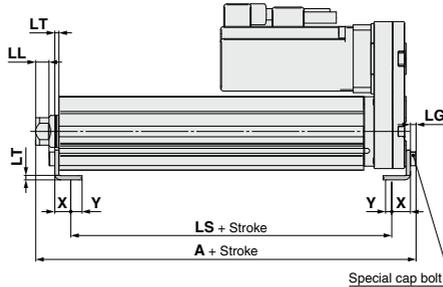
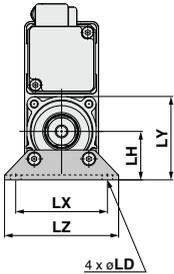
* Refer to page 250 for details about the rod end nut and mounting bracket.

Note) Refer to the precautions on page 305 when mounting end brackets such as knuckle joint or workpieces.

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

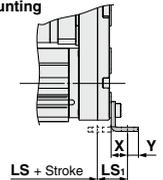
* The L₁ measurement is when the unit is in the Z-phase first detecting position. At this position, 2 mm at the end (size 25, 32) and 4 mm at the end (size 63).

Foot: LEY $\begin{matrix} 25 \\ 32 \\ 63 \end{matrix}$ $\begin{matrix} A \\ B \\ C \\ L \end{matrix}$ $\begin{matrix} \square \\ \square \\ \square \end{matrix}$ $\begin{matrix} \square \\ \square \\ \square \end{matrix}$ L



Included parts
-Foot
-Body mounting bolt

Outward mounting



Foot

Size	Stroke range [mm]	A	LS	LS ₁	LL	LD	LG	LH	LT	LX	LY	LZ	X	Y
25	15 to 100	136.6	98.8	19.8	8.4	6.6	3.5	30	2.6	57	51.5	71	11.2	5.8
	105 to 400	161.6	123.8											
32	20 to 100	155.7	114	19.2	11.3	6.6	4	36	3.2	76	61.5	90	11.2	7
	105 to 500	185.7	144											
63	50 to 200	200.8	133.2	25.2	29.2	8.6	5	50	3.2	95	88	110	14.2	8
	205 to 500	235.8	168.2											
	505 to 800	270.8	203.2											

Material: Carbon steel (Chromate treated)

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

Note) When the motor mounting is the right or left side parallel type, the head side foot should be mounted outwards.

Solid State Auto Switch Direct Mounting Type

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



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

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

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 ²]	0.15		
	Strand diameter [mm]	0.05		
Minimum bending radius [mm] (Reference values)		17		

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

Weight

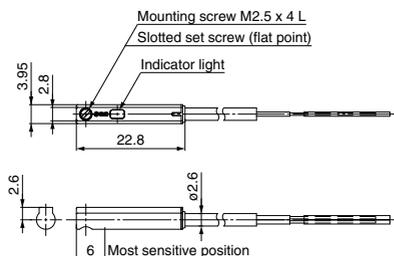
(g)

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

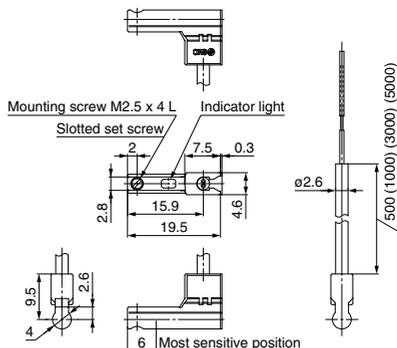
Dimensions

(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 SMC website for the details of the products conforming to the 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	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	0.88		
Conductor	Effective area [mm ²]	0.15		
	Strand diameter [mm]	0.05		
Minimum bending radius [mm] (Reference values)		17		

Note 1) Refer to page 1584 for solid state auto switch common specifications.

Note 2) Refer to page 1584 for lead wire lengths.

Weight

(g)

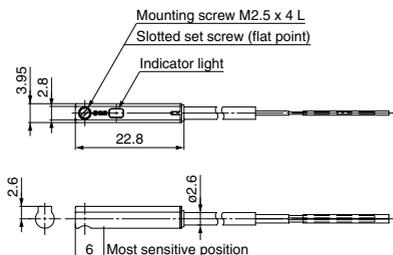
Auto switch model		D-M9NE(V)	D-M9PE(V)	D-M9BE(V)
Lead wire length	0.5 m (NII)	8	7	7
	1 m (M)*	14	13	13
	3 m (L)	41	38	38
	5 m (Z)*	68	63	63

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

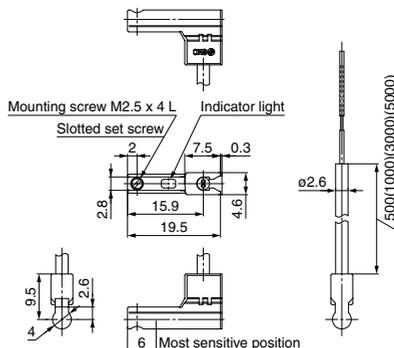
Dimensions

(mm)

D-M9□E



D-M9□EV



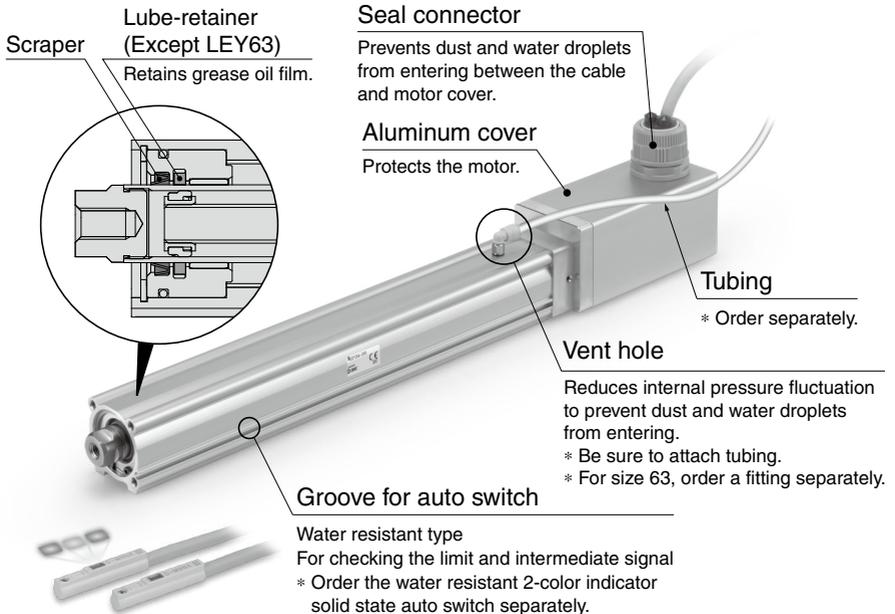
270-11-1 (A)

Environment Dust-tight/Water-jet-proof (IP65 Equivalent)

● **Enclosure: IP65 equivalent** Note)

● **Max. stroke: 500 mm***

* For size 32



LEY-X5 (Made to Order) Size 25, 32

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

Pages 270-18, 270-20



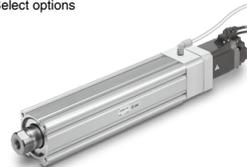
AC Servo Motor (100/200 W) **Type** Page 270-28



LEY63 Size 63

AC Servo Motor (400 W) **Type** Pages 264, 270-1

* Select options



Note) IP65 enclosure: The protection structure against solid foreign objects is dust-tight type and the protection structure against water is water-jet-proof type. Dust-tight means that no dust can enter the inside of the equipment. Water-jet-proof means that the product is not adversely affected by direct water jets from any direction. That is, even when direct water jets are applied to the product for 3 minutes by means of the pre-determined method, there is no water entry that hinders correct operation inside the equipment. Be sure to take appropriate protection measures when the product is used in an environment where it is constantly exposed to water or fluids other than water splash. In particular, the product cannot be used in an environment with oil, such as cutting oil or cutting fluid.

Model Selection



Refer to page 229 for the LECPA or LECA6.

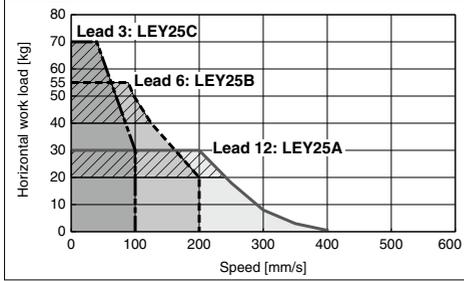
LEY-X5 Series Page 486

Speed-Work Load Graph (Guide) for Step Motor (Servo/24 VDC) LECP6, LECP1, LECPMJ

Horizontal

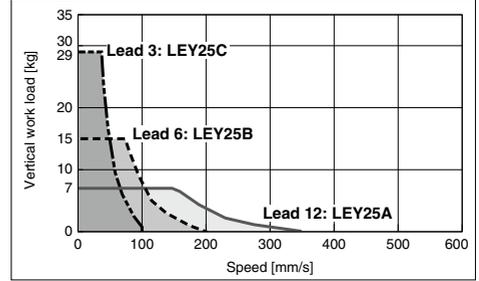
LEY25□-X5

▨ for acceleration/deceleration: 2000 mm/s²



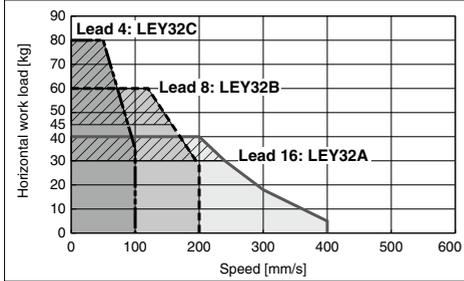
Vertical

LEY25□-X5

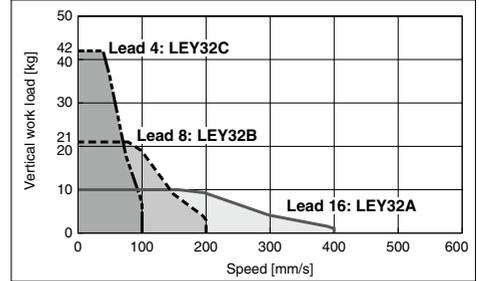


LEY32□-X5

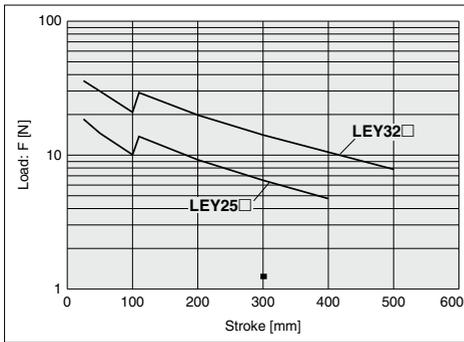
▨ for acceleration/deceleration: 2000 mm/s²



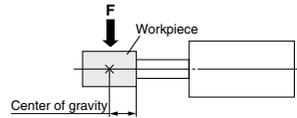
LEY32□-X5



Graph of Allowable Lateral Load on the Rod End (Guide)

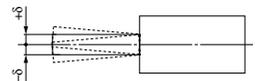


[Stroke] = [Product stroke] + [Distance from the rod end to the center of gravity of the workpiece]



Rod Displacement: δ [mm]

Stroke	30	50	100	150	200	250	300	350	400	450	500
Size 25	±0.3	±0.4	±0.7	±0.7	±0.9	±1.1	±1.3	±1.5	±1.7	—	—
Size 32	±0.3	±0.4	±0.7	±0.6	±0.8	±1.0	±1.1	±1.3	±1.5	±1.7	±1.8



LEY-X5 Series

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

Dust-tight/Water-jet-proof (IP65 Equivalent)

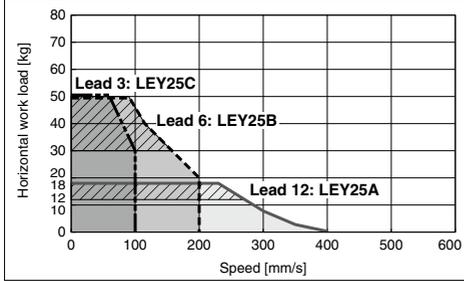
Refer to page 270-14 for the LECP6, LECP1, LECPMJ.

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

Horizontal

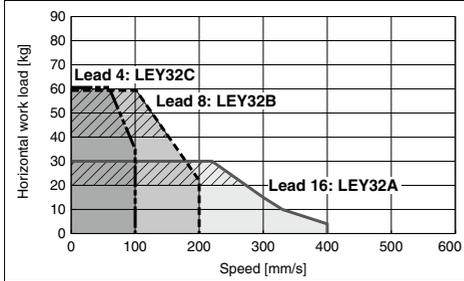
LEY25□-X5

▨ for acceleration/deceleration: 2000 mm/s²



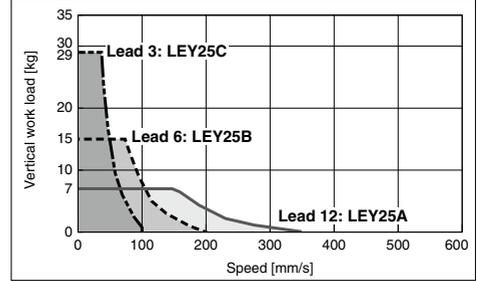
LEY32□-X5

▨ for acceleration/deceleration: 2000 mm/s²

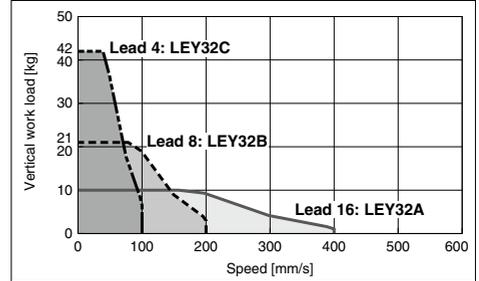


Vertical

LEY25□-X5



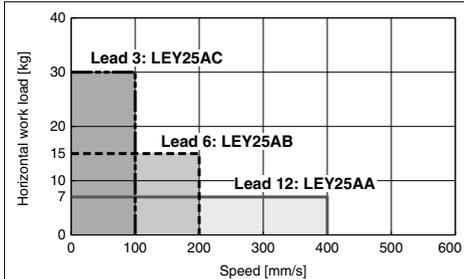
LEY32□-X5



For Servo Motor (24 VDC) LECA6

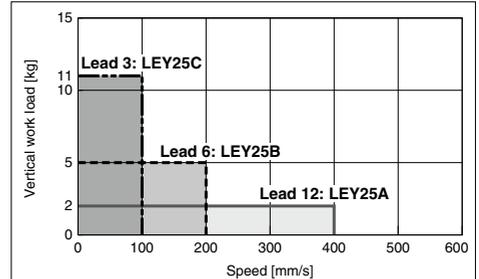
Horizontal

LEY25□A-X5



Vertical

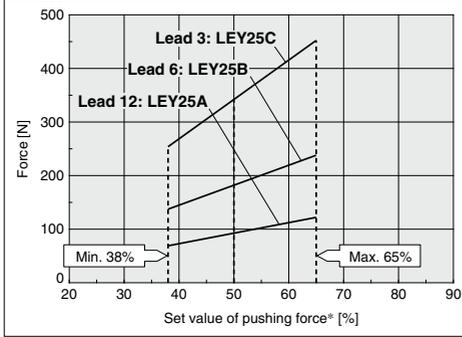
LEY25□A-X5



Force Conversion Graph

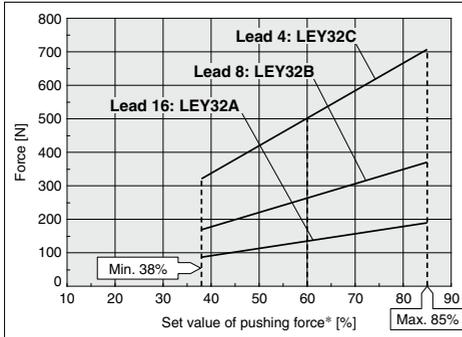
Step Motor (Servo/24 VDC)

LEY25□-X5



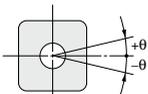
Ambient temperature	Set value of pushing force* [%]	Duty ratio [%]	Continuous pushing time [minute]
40°C or less	65 or less	100	—

LEY32□-X5



Ambient temperature	Set value of pushing force* [%]	Duty ratio [%]	Continuous pushing time [minute]
25°C or less	85 or less	100	—
40°C	65 or less	100	—
	85	50	15

Non-rotating Accuracy of Rod



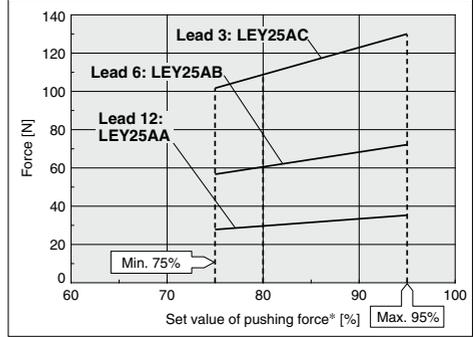
Size	Non-rotating accuracy θ
25	±0.8°
32	±0.7°

* Avoid using the electric actuator in such a way that rotational torque would be applied to the piston rod.

This may cause deformation of the non-rotating guide, abnormal responses of the auto switch, play in the internal guide or an increase in the sliding resistance.

Servo Motor (24 VDC)

LEY25□A-X5



Ambient temperature	Set value of pushing force* [%]	Duty ratio [%]	Continuous pushing time [minute]
40°C or less	95 or less	100	—

<Limit Value of Pushing Force and Trigger Level in Relation to Pushing Speed> Without Load

Model	Lead	Pushing speed [mm/s]	Pushing force (Setting input value)	Model	Lead	Pushing speed [mm/s]	Pushing force (Setting input value)
LEY25	A/B/C	21 to 35	50 to 65%	LEY25□A	A/B/C	21 to 35	80 to 95%
	A	24 to 30	60 to 85%		B/C	21 to 30	
LEY32							

There is a limit to the pushing force in relation to the pushing speed. If the product is operated outside of the range (low pushing force), the completion signal [INP] may be output before the pushing operation has been completed (during the moving operation).

If operating with the pushing speed below the minimum speed, please check for operating problems before using the product.

<Set Values for Vertical Upward Transfer Pushing Operation>

For vertical loads (upward), set the pushing force to the maximum value shown below, and operate at the work load or less.

Model	LEY25□			LEY32□			LEY25□A		
	A	B	C	A	B	C	A	B	C
Work load [kg]	2.5	5	10	4.5	9	18	1.2	2.5	5
Pushing force	65%			85%			95%		

* Set values for the controller.

Electric Actuator/ Rod Type

Dust-tight/Water-jet-proof (IP65 Equivalent)

Applicable to the
LEC□ series



LEY-X5 (Made to Order) Series LEY25, 32

RoHS

Refer to page 270-14 for model selection.

Refer to page 270-20 for the communication protocols
EtherCAT®, EtherNet/IP™, PROFINET, DeviceNet™, and IO-Link.

How to Order

LEY 25 D □ B - 50 □ □ □ - R1 6N 1 □ - X5

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫

● Made to Order:
Dust-tight/
Water-jet-proof

① Size

25
32

② Motor mounting position

Nil	Top mounting
D	In-line

④ Lead [mm]

Symbol	LEY25	LEY32
A	12	16
B	6	8
C	3	4

⑤ Stroke [mm]

30	30
to	to
500	500

* Refer to the applicable stroke table.

⑦ Rod end thread

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

⑧ Mounting*1

Symbol	Type	Motor mounting position	
		Top mounting	In-line
Nil	Ends tapped/ Body bottom tapped *2	●	●
L	Foot	●	—
F	Rod flange *2	●*3	●
G	Head flange *2	●*4	—

③ Motor type

Symbol	Type	Size		Compatible controller/driver
		25	32	
Nil	Step motor (Servo/24 VDC)	●	●	LECP6 LECP1 LECPA LECPMJ
A	Servo motor (24 VDC)	●	—	LECA6

⑥ Motor option*

Nil	Without option
B	With lock

* When "With lock" is selected for the top mounting type, the motor body will stick out of the end of the body for strokes 50 mm or less. Check for interference with workpieces before selecting a model.



⚠ Caution

[CE-compliant products]

① EMC compliance was tested by combining the electric actuator LEY 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 Operation Manual for installation.

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

Applicable Stroke Table

●: Standard

Model	Stroke	30	50	100	150	200	250	300	350	400	450	500	Manufacturable stroke range [mm]
		●	●	●	●	●	●	●	●	●	—	—	
LEY25		●	●	●	●	●	●	●	●	●	—	—	15 to 400
LEY32		●	●	●	●	●	●	●	●	●	●	●	20 to 500

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

* For auto switches, refer to page 270-33.

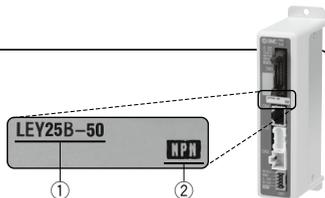
* "-X5" is not added to an actuator model with a controller/driver part number suffix. Example) "LEY25DB-100" for the LEY25DB-100B MU-R16N1D-X5

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.>

- Check the actuator label for model number. This matches the controller/driver.
- 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.smworld.com>





9 Actuator cable type/length

R1	Robotic cable 1.5 m
R3	Robotic cable 3 m
R5	Robotic cable 5 m
R8	Robotic cable 8 m*1
RA	Robotic cable 10 m*1
RB	Robotic cable 15 m*1
RC	Robotic cable 20 m*1

*1 Produced upon receipt of order (Robotic cable only)

*2 The standard cable should only be used on fixed parts.

For use on moving parts, select the robotic cable.

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.

11 I/O cable length [m]*1, Communication plug

NII	Without cable
1	1.5
3	3*2
5	5*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.

12 Controller/Driver mounting

NII	Screw mounting
D	DIN rail mounting*

* DIN rail is not included. Order it separately.

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)	
Maximum 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

Electric Actuator/ Rod Type

Dust-tight/Water-jet-proof (IP65 Equivalent)



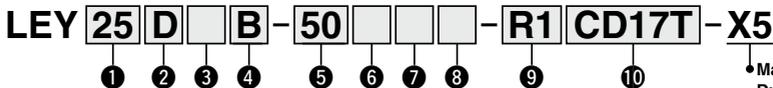
Applicable to the JXC□ series

LEY-X5 (Made to Order) Series LEY25, 32

Refer to page 270-14 for model selection.

How to Order

Refer to page 270-18 for the communication protocol CC-



• Made to Order:
Dust-tight/
Water-jet-proof

1 Size

25
32

2 Motor mounting position

Nil	Top mounting
D	In-line

4 Lead [mm]

Symbol	LEY25	LEY32
A	12	16
B	6	8
C	3	4

5 Stroke [mm]

30	30
to	to
500	500

* Refer to the applicable stroke table.

7 Rod end thread

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

8 Mounting^{*1}

Symbol	Type	Motor mounting position	
		Top mounting	In-line
Nil	Ends tapped/ Body bottom tapped ^{*2}	●	●
L	Foot	●	—
F	Rod flange ^{*2}	● ^{*3}	●
G	Head flange ^{*2}	● ^{*4}	—

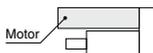
3 Motor type

Symbol	Type	Size		Compatible controller
		25	32	
Nil	Step motor (Servo/24 VDC)	●	●	JXCE1 JXC91 JXCP1 JXCD1 JXCL1

6 Motor option^{*}

Nil	Without option
B	With lock

* When "With lock" is selected for the top mounting type, the motor body will stick out of the end of the body for strokes 50 mm or less. Check for interference with workpieces before selecting a motor.



Caution

[CE-compliant products]

EMC compliance was tested by combining the electric actuator LE series and the JX-CE1/91/P1/D1/L1 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.

Applicable Stroke Table

●: Standard

Model	Stroke	30	50	100	150	200	250	300	350	400	450	500	Manufacturable stroke range [mm]
LEY25		●	●	●	●	●	●	●	●	●	—	—	15 to 400
LEY32		●	●	●	●	●	●	●	●	●	●	●	20 to 500

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

* For auto switches, refer to page 270-33.

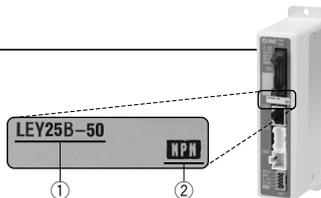
* "-X5" is not added to an actuator model with a controller/driver part number suffix. Example) "LEY25DB-100" for the LEY25DB-100BMU-R16N1D-X5

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.>

- Check the actuator label for model number. This matches the controller/driver.
- 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>



9 Actuator cable type/length

R1	Robotic cable 1.5 m
R3	Robotic cable 3 m
R5	Robotic cable 5 m
R8	Robotic cable 8 m*
RA	Robotic cable 10 m*
RB	Robotic cable 15 m*
RC	Robotic cable 20 m*

* Produced upon receipt of order

10 Controller

Nil	Without controller
C <input type="checkbox"/> 1 <input type="checkbox"/>	With controller

C D 1 7 T

Communication protocol

E	EtherCAT®
9	EtherNet/IP™
P	PROFINET
D	DeviceNet™
L	IO-Link

For single axis

Communication plug connector for DeviceNet™

Nil	Without plug connector
S	Straight type
T	T-branch type

* Select "Nil" for anything other than DeviceNet™.

Mounting

7	Screw mounting
8 [°]	DIN rail

* DIN rail is not included. It must be ordered separately. (Page 603-8)

Compatible Controller

Type	EtherCAT® direct input type	EtherNet/IP™ direct input type	PROFINET direct input type	DeviceNet™ direct input type	IO-Link direct input type
Series	JXCE1	JXC91	JXCP1	JXCD1	JXCL1
Features	EtherCAT® direct input	EtherNet/IP™ direct input	PROFINET direct input	DeviceNet™ direct input	IO-Link direct input
Compatible motor	Step motor (Servo/24 VDC)				
Maximum number of step data	64 points				
Power supply voltage	24 VDC				
Reference page	Page 603-5				

LEY-X5 Series

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

Dust-tight/Water-jet-proof (IP65 Equivalent)

Specifications

Step Motor (Servo/24 VDC)

Model		LEY25□-X5			LEY32□-X5				
Stroke [mm] ^{Note 1)}		30, 50, 100, 150, 200 250, 300, 350, 400			30, 50, 100, 150, 200 250, 300, 350, 400, 450, 500				
Work load [kg] ^{Note 2)}	Horizontal	For LECPC6 LECP1 LECPMJ JXC□1	(3000 [mm/s ²])	20	40	60	30	45	60
			(2000 [mm/s ²])	30	60	70	40	60	80
	Vertical ^{Note 15)}	For LECPC3 JXC□3	(3000 [mm/s ²])	12	30	30	20	40	40
			(2000 [mm/s ²])	18	50	50	30	60	60
			(3000 [mm/s ²])	7	15	29	10	21	42
Pushing force [N] ^{Note 3)} ^{Note 4)} ^{Note 5)}		63 to 122	126 to 238	232 to 452	80 to 189	156 to 370	296 to 707		
Speed [mm/s] ^{Note 5)}		18 to 400	9 to 200	5 to 100	24 to 400	12 to 200	6 to 100		
Max. acceleration/deceleration [mm/s ²]		3000							
Pushing speed [mm/s] ^{Note 6)}		35 or less			30 or less				
Positioning repeatability [mm]		±0.02							
Lost motion [mm] ^{Note 7)}		0.1 or less							
Screw lead [mm]		12	6	3	16	8	4		
Impact/Vibration resistance [m/s ²] ^{Note 8)}		50/20							
Actuation type		Ball screw + Belt (LEY□) Ball screw (LEY□D)							
Guide type		Sliding bushing (Piston rod)							
Enclosure ^{Note 9)}		IP65 equivalent							
Operating temperature range [°C]		5 to 40							
Operating humidity range [%RH]		90 or less (No condensation)							
Motor size		□42			□56.4				
Motor type		Step motor (Servo/24 VDC)							
Encoder		Incremental A/B phase (800 pulse/rotation)							
Rated voltage [V]		24 VDC ±10%							
Power consumption [W] ^{Note 10)}		40			50				
Standby power consumption when operating [W] ^{Note 11)}		15			48				
Max. instantaneous power consumption [W] ^{Note 12)}		48			104				
Type ^{Note 13)}		Non-magnetizing lock							
Holding force [N]		78	157	294	108	216	421		
Power consumption [W] ^{Note 14)}		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) Horizontal: The maximum value of the work load. An external guide is necessary to support the load. (Friction coefficient of guide: 0.1 or less) The actual work load and transfer speed change according to the condition of the external guide. Also, speed changes according to the work load. Check "Model Selection" on pages 270-14 and 270-15.

Vertical: Speed changes according to the work load. Check "Model Selection" on pages 270-14 and 270-15.

The values shown in () are the acceleration/deceleration. Set these values to be 3000 [mm/s²] or less.

Note 3) Pushing force accuracy is ±20% (F.S.).

Note 4) The thrust setting values for LEY25□ is 38% to 65% and for LEY32□ is 38% to 85%. The pushing force values change according to the duty ratio and pushing speed. Check "Model Selection" on page 270-16.

Note 5) The speed and force may change depending on the cable length, load and mounting conditions. Furthermore, if the cable length exceeds 5 m, then it will decrease by up to 10% for each 5 m. (At 15 m: Reduced by up to 20%)

Note 6) The allowable speed for pushing operation. When push conveying a workpiece, operate at the vertical work load or less.

Note 7) A reference value for correcting an error in reciprocal operation.

Note 8) Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)

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

Note 9) Cannot be used in an environment where oil such as cutting oil splashes or it is constantly exposed to water. Take suitable protective measures. For details about enclosure, refer to "Enclosure" on page 306.

Note 10) The power consumption (including the controller) is for when the actuator is operating.

Note 11) The standby power consumption when operating (including the controller) is for when the actuator is stopped in the set position during the operation. Except during the pushing operation.

Note 12) 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 13) With lock only

Note 14) For an actuator with lock, add the power consumption for the lock.

Note 15) When mounting vertically and using the product facing upwards in an environment where water is present, take necessary measures to prevent water from splashing on the rod cover, because water will accumulate on the rod seal due to the structure of the product.

Specifications

Servo Motor (24 VDC)

Model		LEY25□A-X5				
Actuator specifications	Stroke [mm] ^{Note 1)}	30, 50, 100, 150, 200 250, 300, 350, 400				
	Work load [kg] ^{Note 2)}	Horizontal	(3000 [mm/s ²])	7	15	30
		Vertical ^{Note 14)}	(3000 [mm/s ²])	2	5	11
	Pushing force [N] ^{Note 3)} ^{Note 4)}	18 to 35			37 to 72	66 to 130
	Speed [mm/s]	2 to 400			1 to 200	1 to 100
	Max. acceleration/deceleration [mm/s ²]	3000				
	Pushing speed [mm/s] ^{Note 5)}	35 or less				
	Positioning repeatability [mm]	±0.02				
	Lost motion [mm] ^{Note 6)}	0.1 or less				
	Screw lead [mm]	12	6	3		
Impact/Vibration resistance [m/s ²] ^{Note 7)}	50/20					
Actuation type	Ball screw + Belt (LEY□)			Ball screw (LEY□□)		
Guide type	Sliding bushing (Piston rod)					
Enclosure ^{Note 8)}	IP65 equivalent					
Operating temperature range [°C]	5 to 40					
Operating humidity range [%RH]	90 or less (No condensation)					
Lock unit specifications	Motor size	□42				
	Motor type	Servo motor (24 VDC)				
	Encoder	Incremental A/B phase (800 pulse/rotation)/Z-phase				
	Rated voltage [V]	24 VDC ±10%				
	Power consumption [W] ^{Note 9)}	86				
	Standby power consumption when operating [W] ^{Note 10)}	4 (Horizontal)/12 (Vertical)				
	Max. instantaneous power consumption [W] ^{Note 11)}	96				
Type ^{Note 12)}	Non-magnetizing lock					
Holding force [N]	78	157	294			
Power consumption [W] ^{Note 13)}	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) Horizontal: The maximum value of the work load. An external guide is necessary to support the load. (Friction coefficient of guide: 0.1 or less) The actual work load and transfer speed change according to the condition of the external guide.
Vertical: Speed changes according to the work load. Check "Model Selection" on page 228. The values shown in () are the acceleration/deceleration. Set these values to be 3000 [mm/s²] or less.
- Note 3) Pushing force accuracy is ±20% (F.S.).
- Note 4) The thrust setting values for LEY25□ is 75% to 95%. The pushing force values change according to the duty ratio and pushing speed. Check "Model Selection" on page 270-16.
- Note 5) The allowable speed for pushing operation. When push conveying a workpiece, operate at the vertical work load or less.
- Note 6) A reference value for correcting an error in reciprocal operation.
- Note 7) Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)
Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. Test was performed in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)
- Note 8) Cannot be used in an environment where oil such as cutting oil splashes or it is constantly exposed to water. Take suitable protective measures. For details about enclosure, refer to "Enclosure" on page 306.
- Note 9) The power consumption (including the controller) is for when the actuator is operating.
- Note 10) The standby power consumption when operating (including the controller) is for when the actuator is stopped in the set position during the operation with the maximum work load. Except during the pushing operation.
- Note 11) 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 12) With lock only
- Note 13) For an actuator with lock, add the power consumption for the lock.
- Note 14) When mounting vertically and using the product facing upwards in an environment where water is present, take necessary measures to prevent water from splashing on the rod cover, because water will accumulate on the rod seal due to the structure of the product.

Weight

Weight: Motor Top Mounting Type

Model		LEY25-X5									LEY32-X5										
Stroke [mm]		30	50	100	150	200	250	300	350	400	30	50	100	150	200	250	300	350	400	450	500
Product	Step motor	1.45	1.52	1.69	1.95	2.13	2.30	2.48	2.65	2.83	2.48	2.59	2.88	3.35	3.64	3.91	4.21	4.49	4.76	5.04	5.32
weight [kg]	Servo motor	1.41	1.48	1.65	1.91	2.09	2.26	2.44	2.61	2.79	—	—	—	—	—	—	—	—	—	—	—

Weight: In-line Motor Type

Model		LEY25D-X5									LEY32D-X5										
Stroke [mm]		30	50	100	150	200	250	300	350	400	30	50	100	150	200	250	300	350	400	450	500
Product	Step motor	1.46	1.53	1.70	1.96	2.14	2.31	2.49	2.66	2.84	2.49	2.60	2.89	3.36	3.65	3.92	4.22	4.50	4.77	5.05	5.33
weight [kg]	Servo motor	1.42	1.49	1.66	1.92	2.10	2.27	2.45	2.62	2.80	—	—	—	—	—	—	—	—	—	—	—

Additional Weight

Size		[kg]	
		25	32
Lock		0.33	0.63
Rod end male thread	Male thread	0.03	0.03
	Nut	0.02	0.02
Foot (2 sets including mounting bolt)		0.08	0.14
Rod flange (including mounting bolt)			
Head flange (including mounting bolt)		0.17	0.20

LEY-X5 Series

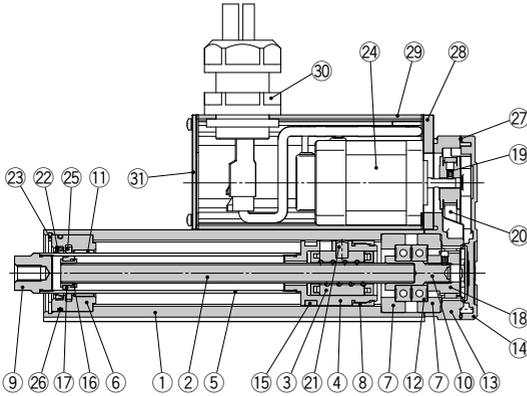
Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

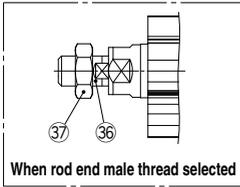
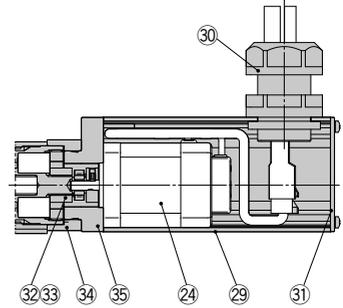
Dust-tight/Water-jet-proof (IP65 Equivalent)

Construction

Motor top mounting type: LEY²⁵₃₂



In-line motor type: LEY²⁵₃₂D



Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	Anodized
2	Ball screw shaft	Alloy steel	
3	Ball screw nut	Synthetic resin/Alloy steel	
4	Piston	Aluminum alloy	
5	Piston rod	Stainless steel	Hard chrome plating
6	Rod cover	Aluminum alloy	
7	Bearing holder	Aluminum alloy	
8	Rotation stopper	POM	
9	Socket	Free cutting carbon steel	Nickel plating
10	Connected shaft	Free cutting carbon steel	Nickel plating
11	Bushing	Bearing alloy	
12	Bearing	—	
13	Return box	Aluminum die-cast	Coating
14	Return plate	Aluminum die-cast	Coating
15	Magnet	—	
16	Wear ring holder	Stainless steel	Stroke 101 mm or more
17	Wear ring	POM	Stroke 101 mm or more
18	Screw shaft pulley	Aluminum alloy	
19	Motor pulley	Aluminum alloy	

No.	Description	Material	Note
20	Belt	—	
21	Parallel pin	Stainless steel	
22	Scraper	Nylon	
23	Retaining ring	Steel for spring	Nickel plating
24	Motor	—	
25	Lube-retainer	Felt	
26	O-ring	NBR	
27	Gasket	NBR	
28	Motor adapter	Aluminum alloy	Anodized
29	Motor cover	Aluminum alloy	Anodized
30	Seal connector	—	
31	End cover	Aluminum alloy	Anodized
32	Hub	Aluminum alloy	
33	Spider	NBR	
34	Motor block	Aluminum alloy	Anodized
35	Motor adapter	Aluminum alloy	LEY25 only
36	Socket (Male thread)	Free cutting carbon steel	Nickel plating
37	Nut	Alloy steel	Zinc chromated

Replacement Parts (Top mounting only)/Belt

No.	Size	Order no.
21	25	LE-D-2-2
	32	LE-D-2-3

Replacement Parts/Grease Pack

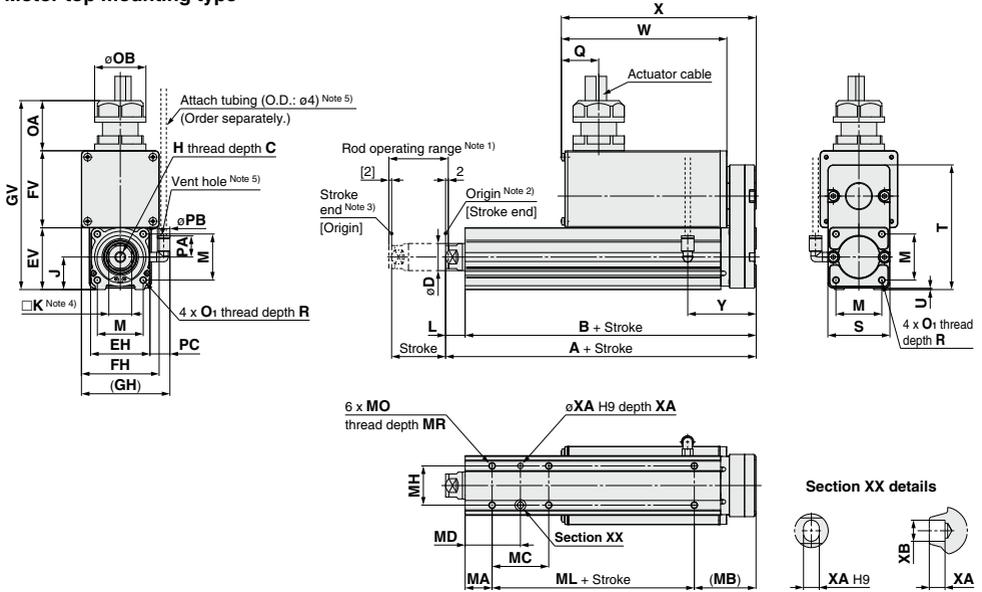
Applied portion	Order no.
Piston rod	GR-S-010 (10 g)
	GR-S-020 (20 g)

* Apply grease on the piston rod periodically.

Grease should be applied at 1 million cycles or 200 km, whichever comes first.

Dimensions

Motor top mounting type



Size	Stroke range [mm]	A	B	C	D	EH	EV	FH	FV	GH	GV	H	J	K	L	M	O ₁
25	15 to 100	130.5	116	13	20	44	45.5	57.6	56.8	66.2	139.5	M8 x 1.25	24	17	14.5	34	M5 x 0.8
	101 to 400	155.5	141														
32	20 to 100	148.5	130	13	25	51	56.5	69.6	78.6	76.2	173.5	M8 x 1.25	31	22	18.5	40	M6 x 1.0
	101 to 500	178.5	160														

Size	Stroke range [mm]	R	OA	OB	PA	PB	Q	S	T	U	PC	W		X		Y
												Without lock	With lock	Without lock	With lock	
25	15 to 100	8	37	38	15.4	8.2	28	46	92	1	15.4	123	173	145	195	51
	101 to 400											123	173	145	195	
32	20 to 100	10	37	38	15.4	8.2	28	60	118	1	15.9	123	173	150	200	61
	101 to 500											123	173	150	200	

Body Bottom Tapped

Size	Stroke range [mm]	MA	MB	MC	MD	MH	ML	MO	MR	XA	XB
25	15 to 39	20	46	24	32	29	50	M5 x 0.8	6.5	4	5
	40 to 100			42	41						
	101 to 124			59	49.5						
	125 to 200			76	58						
	201 to 400			76	58						
32	20 to 39	25	55	22	36	30	50	M6 x 1	8.5	5	6
	40 to 100			36	43						
	101 to 124			53	51.5						
	125 to 200			70	60						
	201 to 500			70	60						

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

Note 2) Position after return to origin.

Note 3) [] for when the direction of return to origin has changed.

Note 4) The direction of rod end width across flats (□K) differs depending on the products.

Note 5) The vent hole is the port for releasing to atmosphere. Do not apply pressure to this hole.

Attach tubing to the vent hole and place the end of the tubing so it is not exposed to dust or water.

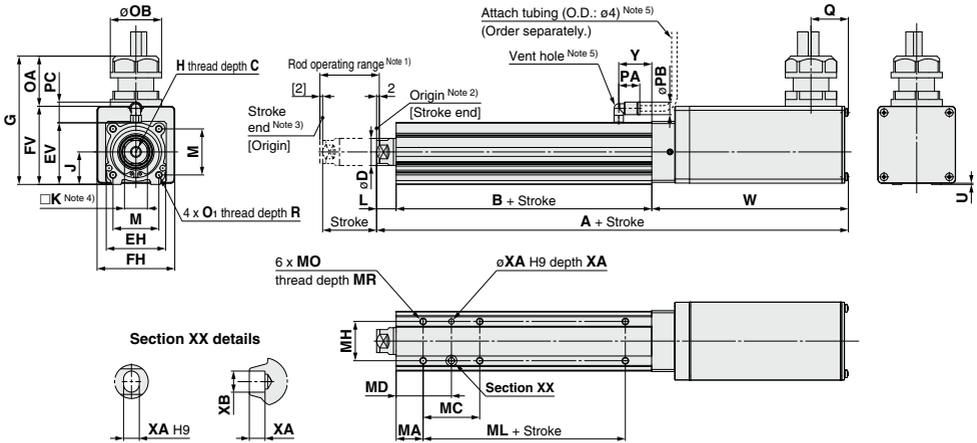
For the rod end male thread, refer to page 247. For the mounting bracket dimensions, refer to page 250.

LEY-X5 Series

Step Motor (Servo/24 VDC) Servo Motor (24 VDC) Dust-tight/Water-jet-proof (IP65 Equivalent)

Dimensions

In-line motor type



[mm]

Size	Stroke range [mm]	A		B	C	D	EH	EV	FH	FV	G	H	J	K	L
		Without lock	With lock												
25	15 to 100	250	300	89.5	13	20	44	45.5	57.6	57.7	94.7	M8 x 1.25	24	17	14.5
	101 to 400	275	325	114.5											
32	20 to 100	265.5	315.5	96	13	25	51	56.5	69.6	79.6	116.6	M8 x 1.25	31	22	18.5
	101 to 500	295.5	345.5	126											

Size	Stroke range [mm]	M	O ₁	R	OA	OB	PA	PB	Q	U	PC	W		Y
												Without lock	With lock	
25	15 to 100	34	M5 x 0.8	8	37	38	15.4	8.2	28	0.9	15.9	146	196	24.5
	101 to 400											151	201	
32	20 to 100	40	M6 x 1.0	10	37	38	15.4	8.2	28	1	15.9	151	201	27
	101 to 500											151	201	

Body Bottom Tapped

[mm]

Size	Stroke range [mm]	MA	MC	MD	MH	ML	MO	MR	XA	XB
25	15 to 39	20	24	32	29	50	M5 x 0.8	6.5	4	5
	40 to 100		42	41		75				
	101 to 124		59	49.5						
	125 to 200		76	58						
	201 to 400		76	58						
32	20 to 39	25	22	36	30	50	M6 x 1	8.5	5	6
	40 to 100		36	43		80				
	101 to 124		53	51.5						
	125 to 200		53	51.5						
	201 to 500		70	60						

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

Note 2) Position after return to origin.

Note 3) [] for when the direction of return to origin has changed.

Note 4) The direction of rod end width across flats (□K) differs depending on the products.

Note 5) The vent hole is the port for releasing to atmosphere. Do not apply pressure to this hole.

Attach tubing to the vent hole and place the end of the tubing so it is not exposed to dust or water.

For the rod end male thread, refer to page 247. For the mounting bracket dimensions, refer to page 250.

Electric Actuator/ Rod Type

Dust-tight/Water-jet-proof (IP65 Equivalent)

LEY-X5 (Made to Order) Series LEY25, 32



Refer to page 232 for model selection.



How to Order

LEY **H** **25** **S2** **B** - **100** - **S** **2** **A1** - **X5**

1 2 3 4 5 6 7 8 9 10 11 12 13

• Made to Order:
Dust-tight/
Water-jet-proof

1 Accuracy

Nil	Basic type
H	High precision type

2 Size

25
32

3 Motor mounting position

Nil	Top mounting
D	In-line

4 Motor type*

Symbol	Type	Output [W]	Actuator size	Compatible driver
S2	AC servo motor (Incremental encoder)	100	25	LECSA□-S1
S3	AC servo motor (Incremental encoder)	200	32	LECSA□-S3
S6	AC servo motor (Absolute encoder)	100	25	LECSB□-S5 LECSS□-S5 LECSB□-S5
S7	AC servo motor (Absolute encoder)	200	32	LECSB□-S7 LECSS□-S7 LECSB□-S7

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

5 Lead [mm]

Symbol	LEY25□	LEY32□*
A	12	16 (20)
B	6	8 (10)
C	3	4 (5)

* The values shown in () are the equivalent lead which includes the pulley ratio for size 32 top mounting type.

8 Rod end thread

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

6 Stroke [mm]

30	30
to	to
500	500

* Refer to the applicable stroke table.

11 Cable length [m]*

Nil	Without cable
2	2
5	5
A	10

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

13 I/O cable length [m]*

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

9 Mounting*1

Symbol	Type	Motor mounting position	
		Top mounting	In-line
Nil	Ends tapped/ Body bottom tapped *2	●	●
L	Foot	●	—
F	Rod flange*2	●*3	●
G	Head flange*2	●*4	—

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

*2 For horizontal cantilever mounting with the rod flange, head flange and ends tapped, use the actuator within the following stroke range.
- LEY25: 200 mm or less
- LEY32: 100 mm or less

*3 Rod flange is not available for the LEY25 with stroke 30 mm and motor option "With lock".
*4 Head flange is not available for the LEY32.

* Applicable Stroke Table

Model	Stroke											Manufacturable stroke range [mm]
	30	50	100	150	200	250	300	350	400	450	500	
LEY25	●	●	●	●	●	●	●	●	●	—	—	15 to 400
LEY32	●	●	●	●	●	●	●	●	●	●	—	20 to 500

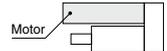
* Please consult with SMC for non-standard strokes as they are produced as special orders.

* 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.)

7 Motor option

Nil	Without option
B	With lock*

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



10 Cable type*

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

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

* Standard cable entry direction is
• Top mounting: (A) Axis side
• In-line: (B) Counter axis side
(Refer to page 623 for details.)

12 Driver type*

	Compatible driver	Power supply voltage [V]
Nil	Without driver	—
A1	LECSA1	100 to 120
A2	LECSA2	200 to 230
B1	LECSB1	100 to 120
B2	LECSB2	200 to 230
C1	LECS1	100 to 120
C2	LECS2	200 to 230
S1	LECS1	100 to 120
S2	LECS2	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 (LECS2)

S2 : Standard cable (2 m)

Nil : Without cable and driver

* For auto switches, refer to page 270-33.

Specifications: LECSA/LECSB/LECSS/LECS

Model		LEY25S ₂ -X5 / LEY25DS ₂ -X5				LEY32S ₃ -X5 (Top mounting)				LEY32DS ₃ -X5 (In-line)			
Stroke [mm] ^{Note 1)}		30, 50, 100, 150, 200 250, 300, 350, 400				30, 50, 100, 150, 200, 250 300, 350, 400, 450, 500				30, 50, 100, 150, 200, 250 300, 350, 400, 450, 500			
Work load [kg]	Horizontal ^{Note 2)}	18	50	50	30	60	60	30	60	60	30	60	60
	Vertical ^{Note 10)}	8	16	30	9	19	37	12	24	46	12	24	46
Force [N] ^{Note 3)} (Set value: 15 to 30%)		65 to 131	127 to 255	242 to 485	79 to 157	154 to 308	294 to 588	98 to 197	192 to 385	368 to 736			
Max. speed [mm/s] ^{Note 4)}	Stroke range	Up to 300	900	450	225	1200	600	300	1000	500	250		
		305 to 400	600	300	150	800	400	200	640	320	160		
Pushing speed [mm/s] ^{Note 5)}		35 or less				30 or less				30 or less			
Max. acceleration/deceleration [mm/s ²]		5000								5000			
Positioning repeatability [mm]	Basic type									±0.02			
	High precision type									±0.01			
Lost motion [mm] ^{Note 6)}	Basic type									0.1 or less			
	High precision type									0.05 or less			
Lead [mm]		12	6	3	20 ^{Note 7)}	10 ^{Note 7)}	5 ^{Note 7)}	16	8	4			
Impact/Vibration resistance [m/s ²] ^{Note 8)}		50/20				50/20							
Actuation type		Ball screw + Belt/Ball screw				Ball screw + Belt				Ball screw			
Guide type		Sliding bushing (Piston rod)				Sliding bushing (Piston rod)							
Enclosure ^{Note 9)}						IP65 equivalent							
Operating temperature range [°C]		5 to 40				5 to 40							
Operating humidity range [%RH]		90 or less (No condensation)				90 or less (No condensation)							
Regeneration option		May be required depending on speed and work load. (Refer to pages 234 and 235.)											
Motor output/Size		100 W/□40				200 W/□60							
Motor type		AC servo motor (100/200 VAC)				AC servo motor (100/200 VAC)							
Encoder		Motor type S2, S3: Incremental 17-bit encoder (Resolution: 131072 p/rev) Motor type S6, S7: Absolute/incremental dual 18-bit encoder (Resolution: 262144 p/rev)											
Power consumption [W] ^{Note 11)}	Horizontal	45				65				65			
	Vertical	145				175				175			
Standby power consumption when operating [W] ^{Note 12)}	Horizontal	2				2				2			
	Vertical	8				8				8			
Max. instantaneous power consumption [W] ^{Note 13)}		445				724				724			
Type ^{Note 14)}		Non-magnetizing lock											
Holding force [N]		131	255	485	157	308	588	197	385	736			
Power consumption [W] at 20°C ^{Note 15)}		6.3				7.9				7.9			
Rated voltage [V]		24 VDC ⁰ / _{10%}											

- Note 1) Please consult with SMC for non-standard strokes as they are produced as special orders.
 Note 2) The maximum value of the horizontal work load. An external guide is necessary to support the load. The actual work load changes according to the condition of the external guide. Please confirm using actual device.
 Note 3) The force setting range (set values for the driver) for the force control with the torque control mode. Set it with reference to "Force Conversion Graph" on page 236. When the control equivalent to the pushing operation of the controller LECP series is performed, select the LECSA driver and combine it with the Simple Motion (manufactured by Mitsubishi Electric Corporation) which has a pushing operation function.
 Note 4) The allowable speed changes according to the stroke. Set the number of rotations according to speed.
 Note 5) The allowable collision speed for collision with the workpiece with the torque control mode.
 Note 6) A reference value for correcting an error in reciprocal operation.
 Note 7) Equivalent lead which includes the pulley ratio [1:25.1]
 Note 8) Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)

- Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. Test was performed in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)
 Note 9) Cannot be used in an environment where oil such as cutting oil splashes or it is constantly exposed to water. Take suitable protective measures. For details about enclosure, refer to "Enclosure" on page 306.
 Note 10) When mounting vertically and using the product facing upwards in an environment where water is present, take necessary measures to prevent water from splashing on the rod cover, because water will accumulate on the rod seal due to the structure of the product.
 Note 11) The power consumption (including the driver) is for when the actuator is operating.
 Note 12) The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.
 Note 13) The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.
 Note 14) Only when motor option "With lock" is selected.
 Note 15) For an actuator with lock, add the power consumption for the lock.

Weight

Product Weight

Series		LEY25S ₂ -X5 (Motor mounting position: Top mounting)								LEY32S ₃ -X5 (Motor mounting position: Top mounting)											
Stroke [mm]		30	50	100	150	200	250	300	350	400	30	50	100	150	200	250	300	350	400	450	500
Motor type	Incremental encoder	1.31	1.38	1.55	1.81	1.99	2.16	2.34	2.51	2.69	2.42	2.53	2.82	3.29	3.57	3.85	4.14	4.42	4.70	4.98	5.26
	Absolute encoder	1.37	1.44	1.61	1.87	2.05	2.22	2.40	2.57	2.75	2.36	2.47	2.76	3.23	3.51	3.79	4.08	4.36	4.64	4.92	5.20
Series		LEY25DS ₂ -X5 (Motor mounting position: In-line)								LEY32DS ₃ -X5 (Motor mounting position: In-line)											
Stroke [mm]		30	50	100	150	200	250	300	350	400	30	50	100	150	200	250	300	350	400	450	500
Motor type	Incremental encoder	1.34	1.41	1.58	1.84	2.02	2.19	2.37	2.54	2.72	2.44	2.55	2.84	3.31	3.59	3.87	4.16	4.44	4.72	5.00	5.28
	Absolute encoder	1.40	1.47	1.64	1.90	2.08	2.25	2.43	2.60	2.78	2.38	2.49	2.78	3.25	3.53	3.81	4.10	4.38	4.66	4.94	5.22

Additional Weight

Size		25	32
Lock	Incremental encoder	0.20	0.40
	Absolute encoder	0.30	0.66
	Male thread	0.03	0.03
Rod end male thread	Nut	0.02	0.02
	Foot (2 sets including mounting bolt)	0.08	0.14
Rod flange (including mounting bolt)	0.17		0.20
Head flange (including mounting bolt)			

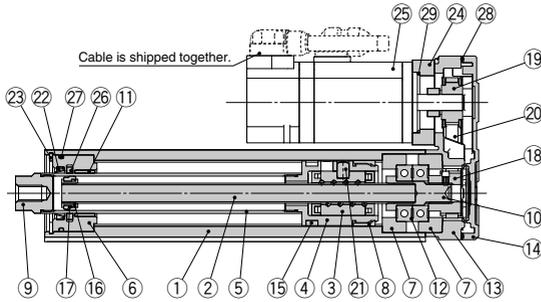
LEY-X5 Series

AC Servo Motor

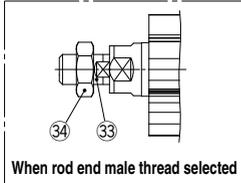
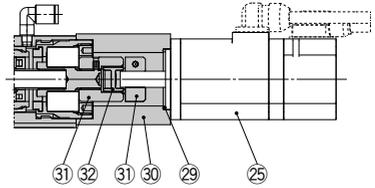
Dust-tight/Water-jet-proof (IP65 Equivalent)

Construction

Motor top mounting type: LEY²⁵₃₂



In-line motor type: LEY²⁵₃₂D



Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	Anodized
2	Ball screw shaft	Alloy steel	
3	Ball screw nut	Synthetic resin/Alloy steel	
4	Piston	Aluminum alloy	
5	Piston rod	Stainless steel	Hard chrome plating
6	Rod cover	Aluminum alloy	
7	Bearing holder	Aluminum alloy	
8	Rotation stopper	POM	
9	Socket	Free cutting carbon steel	Nickel plating
10	Connected shaft	Free cutting carbon steel	Nickel plating
11	Bushing	Bearing alloy	
12	Bearing	—	
13	Return box	Aluminum die-cast	Coating
14	Return plate	Aluminum die-cast	Coating
15	Magnet	—	
16	Wear ring holder	Stainless steel	Stroke 101 mm or more
17	Wear ring	POM	Stroke 101 mm or more

No.	Description	Material	Note
18	Screw shaft pulley	Aluminum alloy	
19	Motor pulley	Aluminum alloy	
20	Belt	—	
21	Parallel pin	Stainless steel	
22	Scraper	Nylon	
23	Retaining ring	Steel for spring	Nickel plating
24	Motor adapter	Aluminum alloy	Coating
25	Motor	—	
26	Lube-retainer	Felt	
27	O-ring	NBR	
28	Gasket	NBR	
29	O-ring	NBR	
30	Motor block	Aluminum alloy	Coating
31	Hub	Aluminum alloy	
32	Spider	Urethane	
33	Socket (Male thread)	Free cutting carbon steel	Nickel plating
34	Nut	Alloy steel	Zinc chromated

Replacement Parts (Top mounting only)/Belt

No.	Size	Order no.
21	25	LE-D-2-2
	32	LE-D-2-4

Replacement Parts/Grease Pack

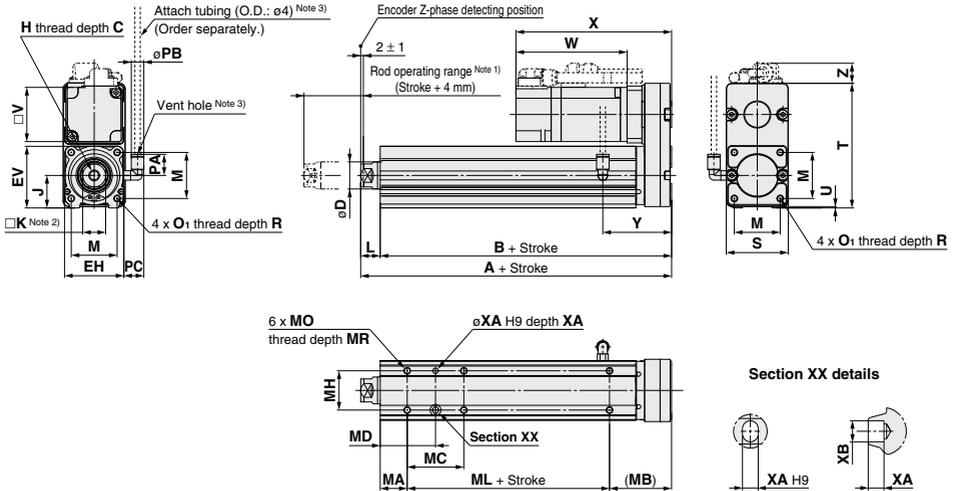
Applied portion	Order no.
Piston rod	GR-S-010 (10 g)
	GR-S-020 (20 g)

* Apply grease on the piston rod periodically.

Grease should be applied at 1 million cycles or 200 km, whichever comes first.

Dimensions

Motor top mounting type: LEY²⁵₃₂



																	[mm]	
Size	Stroke range [mm]	A	B	C	D	EH	EV	H	J	K	L	M	O ₁	R	PA	PB	V	
25	15 to 100	130.5	116	13	20	44	45.5	M8 x 1.25	24	17	14.5	34	M5 x 0.8	8	15.4	8.2	40	
	101 to 400	155.5	141															
32	20 to 100	148.5	130	13	25	51	56.5	M8 x 1.25	31	22	18.5	40	M6 x 1.0	10	15.4	8.2	60	
	101 to 500	178.5	160															
Size	Stroke range [mm]	S	T	U	PC	Incremental encoder						Absolute encoder						Y
						Without lock			With lock			Without lock			With lock			
		W	X	Z	W	X	Z	W	X	Z	W	X	Z	W	X	Z		
25	15 to 100	46	92	1	15.4	87	120	14.1	123.9	156.9	15.8	82.4	115.4	14.1	123.5	156.5	15.8	51
	101 to 400																	
32	20 to 100	60	118	1	15.9	88.2	128.2	17.1	116.8	156.8	17.1	76.6	116.6	17.1	116.1	156.1	17.1	61
	101 to 500																	

Body Bottom Tapped

												[mm]
Size	Stroke range [mm]	MA	MB	MC	MD	MH	ML	MO	MR	XA	XB	
25	15 to 39	20	46	24	32	29	50	M5 x 0.8	6.5	4	5	
	40 to 100			42	41		75					
	101 to 124			59	49.5							
	125 to 200			76	58							
	201 to 400			76	58							
32	20 to 39	25	55	22	36	30	50	M6 x 1	8.5	5	6	
	40 to 100			36	43		80					
	101 to 124			53	51.5							
	125 to 200			70	60							
	201 to 500			70	60							

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

Note 2) The direction of rod end width across flats (□K) differs depending on the products.

Note 3) The vent hole is the port for releasing to atmosphere. Do not apply pressure to this hole.

Attach tubing to the vent hole and place the end of the tubing so it is not exposed to dust or water.

For the rod end male thread, refer to page 261. For the mounting bracket dimensions, refer to page 250.

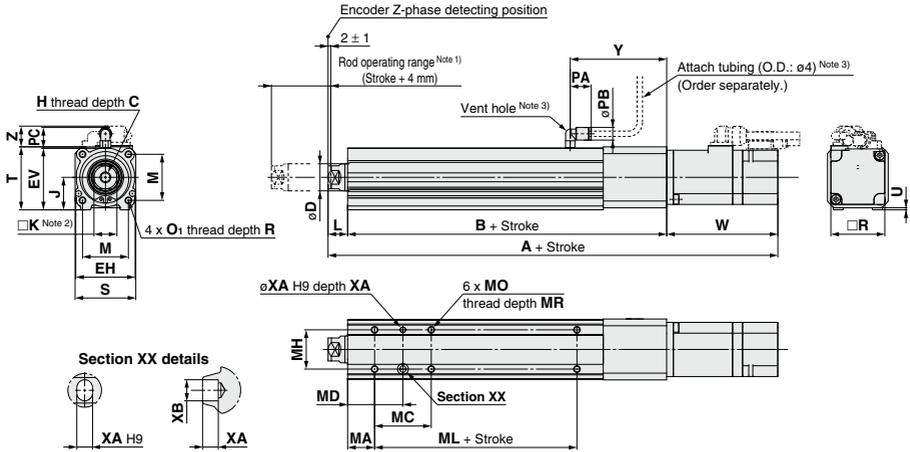
LEY-X5 Series

AC Servo Motor

Dust-tight/Water-jet-proof (IP65 Equivalent)

Dimensions

In-line motor type: LEY²⁵₃₂D



Size	Stroke range [mm]	Incremental encoder						Absolute encoder						B	C	D	EH	EV
		Without lock			With lock			Without lock			With lock							
		A	W	Z	A	W	Z	A	W	Z	A	W	Z					
25	15 to 100	238			274.9			233.4			274.5			136.5	13	20	44	45.5
	101 to 400	263	87	14.6	299.9	123.9	16.3	258.4	82.4	14.6	299.5	123.5	16.3	161.5				
	20 to 100	262.7			291.3			251.1			290.6			156	13	25	51	56.5
32	101 to 500	292.7	88.2	17.1	321.3	116.8	17.1	281.1	76.6	17.1	320.6	116.1	17.1	186				

Size	Stroke range [mm]	H	J	K	L	M	O ₁	R	PA	PB	V	S	T	U	PC	Y
25	15 to 100	M8 x 1.25	24	17	14.5	34	M5 x 0.8	8	15.4	8.2	40	45	46.5	1.5	15.9	71.5
	101 to 400															
32	20 to 100	M8 x 1.25	31	22	18.5	40	M6 x 1.0	10	15.4	8.2	60	60	61	1	15.9	87
	101 to 500															

Body Bottom Tapped

Size	Stroke range [mm]	MA	MC	MD	MH	ML	MO	MR	XA	XB
25	15 to 39	20	24	32	29	50	M5 x 0.8	6.5	4	5
	40 to 100		42	41		75				
	101 to 124		59	49.5						
	125 to 200		76	58						
	201 to 400		22	36						
32	20 to 39	25	36	43	30	50	M6 x 1	8.5	5	6
	40 to 100		53	51.5		80				
	101 to 124		70	60						
	125 to 200									
	201 to 500									

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

Note 2) The direction of rod end width across flats (□K) differs depending on the products.

Note 3) The vent hole is the port for releasing to atmosphere. Do not apply pressure to this hole.

Attach tubing to the vent hole and place the end of the tubing so it is not exposed to dust or water.

For the rod end male thread, refer to page 261. For the mounting bracket dimensions, refer to page 250.

Water Resistant 2-Color Indicator Solid State Auto Switch: Direct Mounting Type

D-M9NA(V)/D-M9PA(V)/D-M9BA(V)

Grommet

- Water (coolant) resistant type
- 2-wire load current is reduced (2.5 to 40 mA).
- The proper operating range can be determined by the color of the light. (Red → Green ← Red)
- 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. Please consult with SMC if using coolant liquid other than water based solution.

Weight

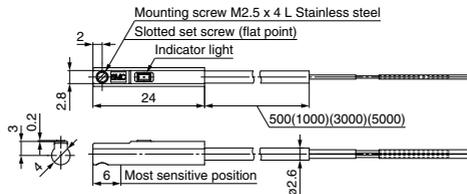
(g)

Auto switch model	D-M9NA(V)	D-M9PA(V)	D-M9BA(V)
Lead wire length			
0.5 m (Nil)	8	7	
1 m (M)	14	13	
3 m (L)	41	38	
5 m (Z)	68	63	

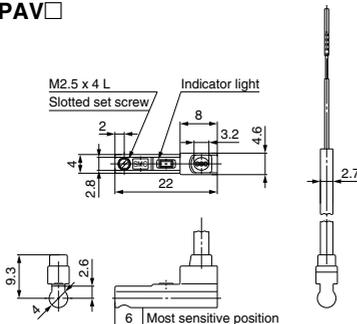
Dimensions

(mm)

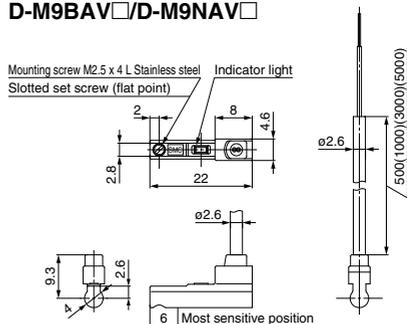
D-M9□A



D-M9PAV□



D-M9BAV□/D-M9NAV□



Auto Switch Specifications

PLC: Programmable Logic Controller

D-M9□A, D-M9□AV (With indicator light)						
Auto switch model	D-M9NA	D-M9NAV	D-M9PA	D-M9PAV	D-M9BA	D-M9BAV
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-M9NA□	D-M9NAV□	D-M9PA□	D-M9PAV□	D-M9BA□	D-M9BAV□
Sheath	Outside diameter [mm]	2.6		2.7 x 3.2 (ellipse)		2.6	
Insulator	Number of cores	3 cores (Brown/Blue/Black)				2 cores (Brown/Blue)	
	Outside diameter [mm]	0.88		0.9		0.88	
Conductor	Effective area [mm ²]	0.15					
	Strand diameter [mm]	0.05					
Minimum bending radius [mm] (Reference values)		17		20		17	

Note 1) Refer to Best Pneumatics No. 2-1 for solid state auto switch common specifications.

Note 2) Refer to Best Pneumatics No. 2-1 for lead wire lengths.

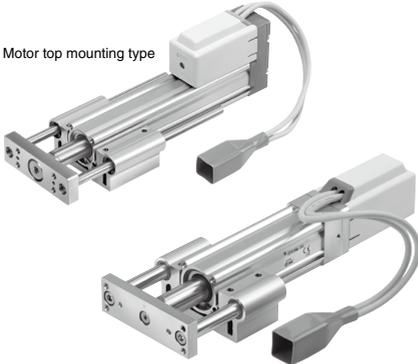
Guide Rod Type

LEYG Series

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

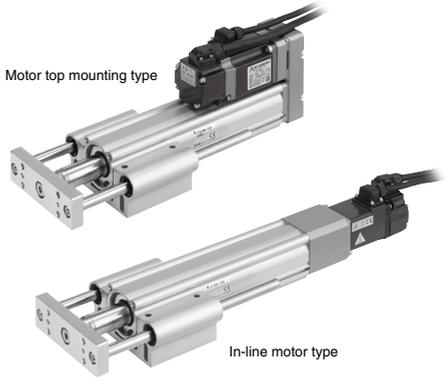
Motor top mounting type



In-line motor type

AC Servo Motor

Motor top mounting type



In-line motor type

Model Selection



LEYG Series ▶ Pages 284, 285-1

Moment Load Graph

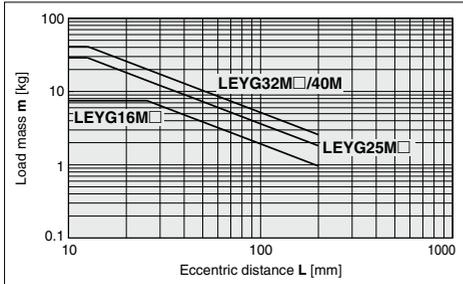
Selection conditions

Mounting position	Vertical	Horizontal	
Max. speed [mm/s]	"Speed-Vertical Work Load Graph"	200 or less	Over 200
Graph (Sliding bearing type)	①, ②	⑤, ⑥*	—
Graph (Ball bushing bearing type)	③, ④	⑦, ⑧	⑨, ⑩

* For the sliding bearing type, the speed is restricted with a horizontal/moment load.

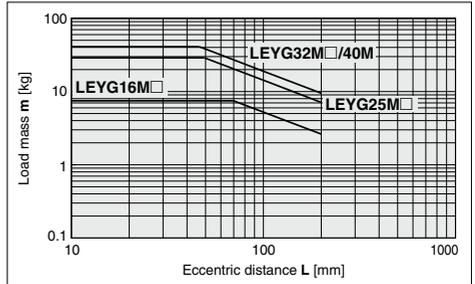
Vertical Mounting, Sliding Bearing

① 70 mm stroke or less



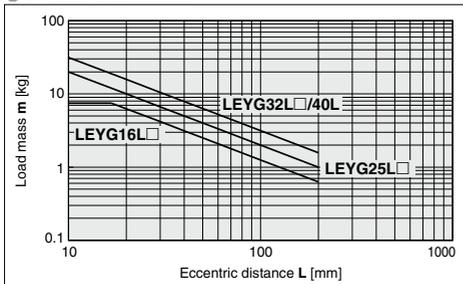
* The limit of vertical load mass varies depending on "lead" and "speed".
Check "Speed-Vertical Work Load Graph" on pages 274 to 276.

② Over 75 mm stroke



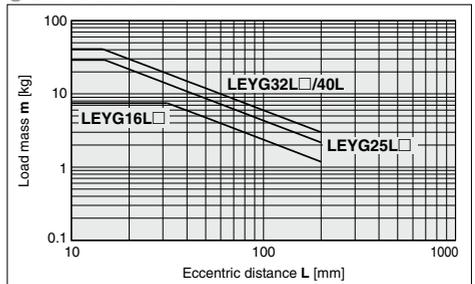
Vertical Mounting, Ball Bushing Bearing

③ 35 mm stroke or less



* The limit of vertical load mass varies depending on "lead" and "speed".
Check "Speed-Vertical Work Load Graph" on pages 274 to 276.

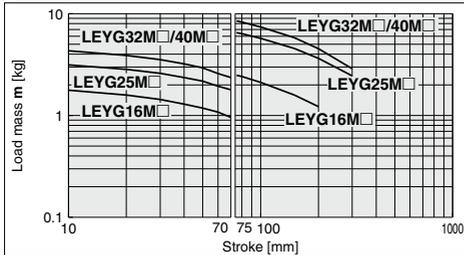
④ Over 40 mm stroke



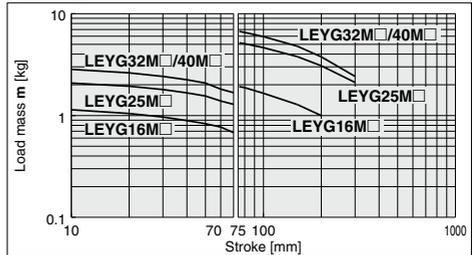
Moment Load Graph

Horizontal Mounting, Sliding Bearing

⑤ L = 50 mm



⑥ L = 100 mm



* Set the speed to less than or equal to the values shown below.

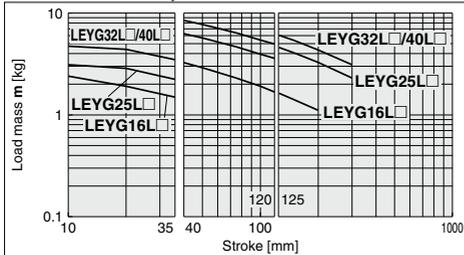
Motor type	LEYG□M□A	LEYG□M□B	LEYG□M□C
Step motor (Servo/24 VDC)	200 mm/s	125 mm/s	75 mm/s
Servo motor (24 VDC)	200 mm/s	200 mm/s	125 mm/s

* For the specifications below, operate the system at the "load mass" shown in the graph x 80%.

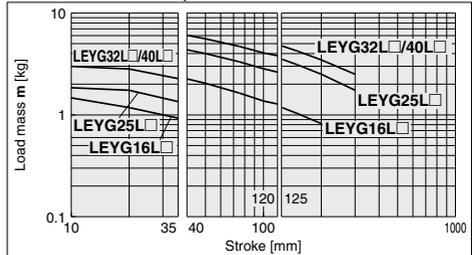
• LEYG25MAA/Servo motor (24 VDC), Lead 12

Horizontal Mounting, Ball Bushing Bearing

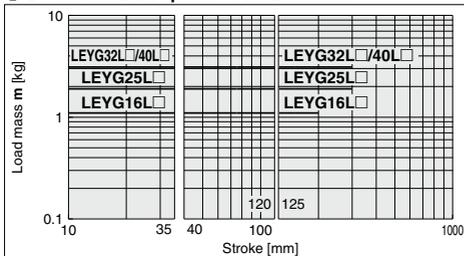
⑦ L = 50 mm Max. speed = 200 mm/s or less



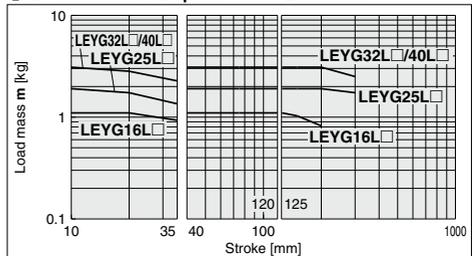
⑧ L = 100 mm Max. speed = 200 mm/s or less



⑨ L = 50 mm Max. speed = Over 200 mm/s

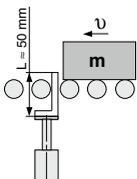


⑩ L = 100 mm Max. speed = Over 200 mm/s



Operating Range when Used as Stopper

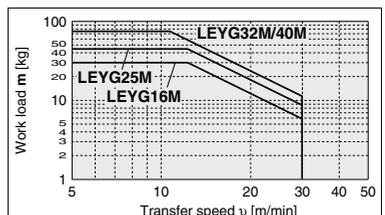
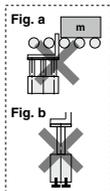
LEYG□M (Sliding bearing)



⚠ Caution

Handling Precautions

- Note 1) When used as a stopper, select a model with strokes 30 mm or less.
- Note 2) LEYG□L (ball bushing bearing) cannot be used as a stopper.
- Note 3) Workpiece collision in series with guide rod cannot be permitted (Fig. a).
- Note 4) The body should not be mounted on the end. It must be mounted on the top or bottom (Fig. b).



LEYG Series

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

* These graphs show the work load when the external guide is used together. When using the LEYG alone, refer to pages 272 and 273.

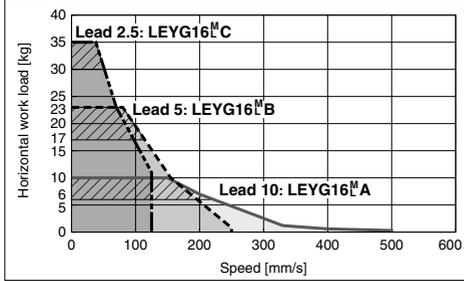
Refer to page 275 for the LECPA, JXC□3 and page 276 for the LECA6.

Speed-Work Load Graph (Guide)

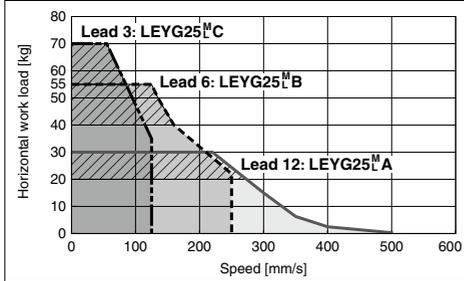
For Step Motor (Servo/24 VDC) LECP6, LECP1, LECPMJ, JXC□1

Horizontal

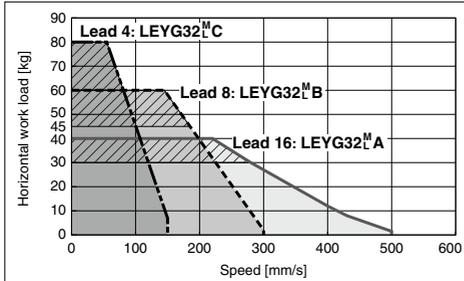
LEYG16^M□  for acceleration/deceleration: 2000 mm/s²



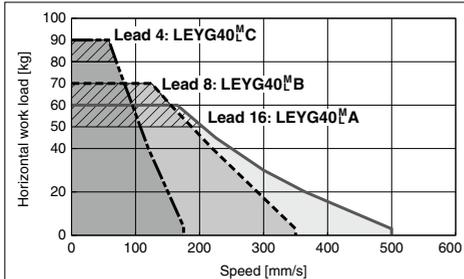
LEYG25^M□  for acceleration/deceleration: 2000 mm/s²



LEYG32^M□  for acceleration/deceleration: 2000 mm/s²

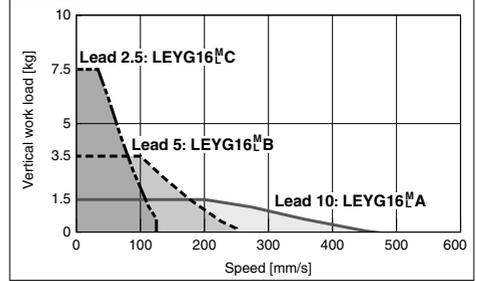


LEYG40^M□  for acceleration/deceleration: 2000 mm/s²

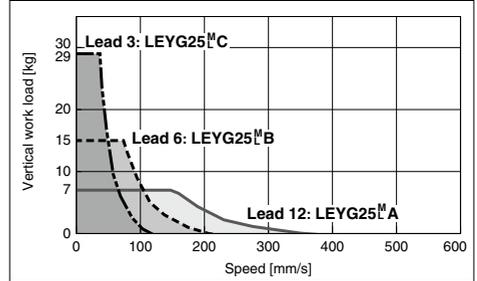


Vertical

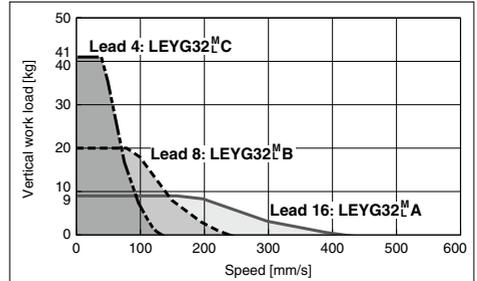
LEYG16^L□



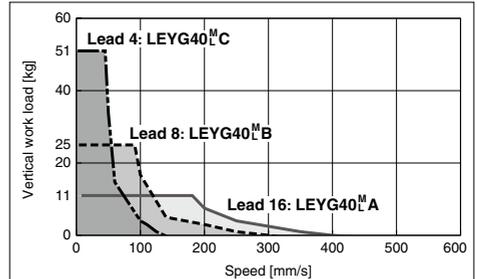
LEYG25^L□



LEYG32^L□



LEYG40^L□



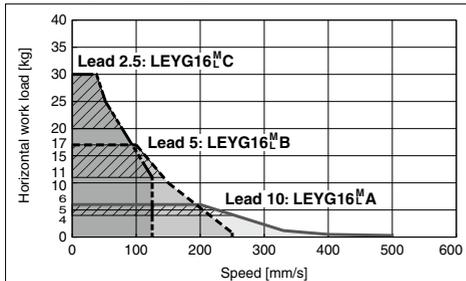
Refer to page 274 for the LECP6, LECP1, LECPMJ, JXC□1 and page 276 for the LECA6.

Speed-Work Load Graph (Guide) For Step Motor (Servo/24 VDC) LECPA, JXC□3

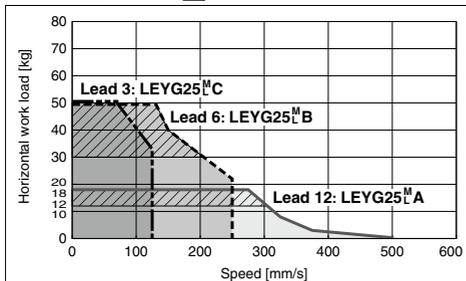
* These graphs show the work load when the external guide is used together. When using the LEYG alone, refer to pages 272 and 273.

Horizontal

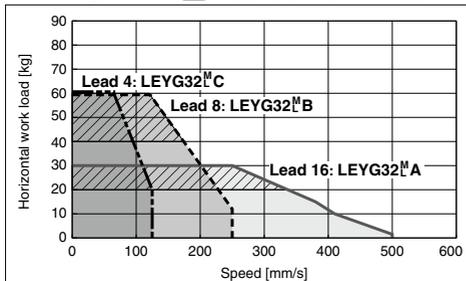
LEYG16^M□ ▨ for acceleration/deceleration: 2000 mm/s²



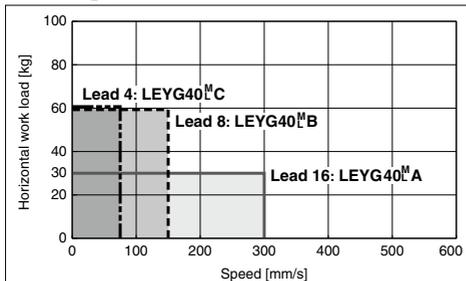
LEYG25^M□ ▨ for acceleration/deceleration: 2000 mm/s²



LEYG32^M□ ▨ for acceleration/deceleration: 2000 mm/s²

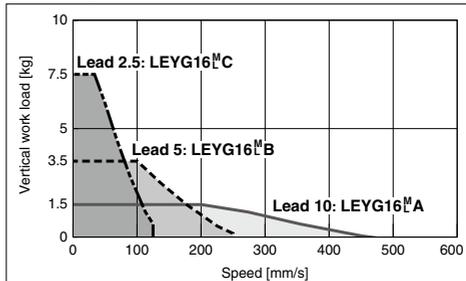


LEYG40^M□

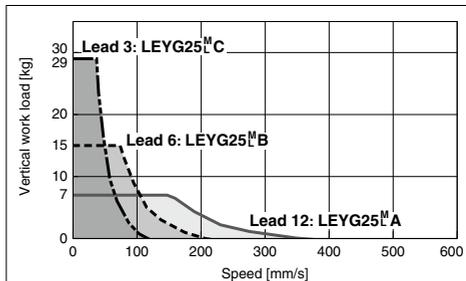


Vertical

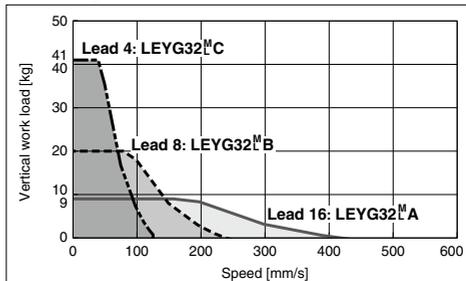
LEYG16^L□



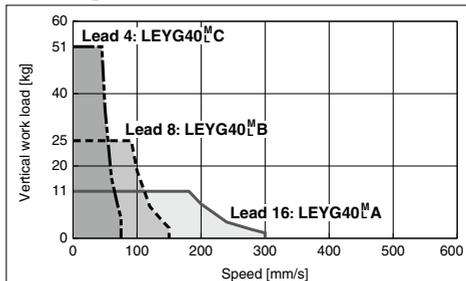
LEYG25^L□



LEYG32^L□



LEYG40^L□



LEYG Series

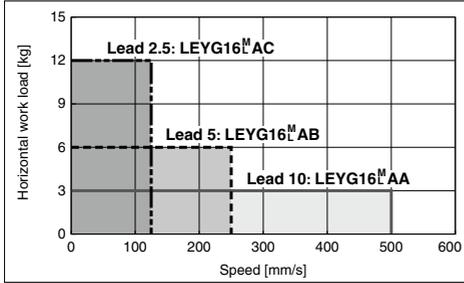
Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

Speed-Work Load Graph (Guide) For Servo Motor (24 VDC) LECA6

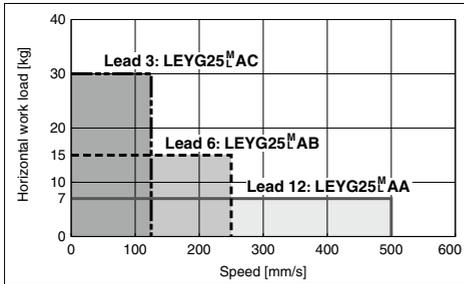
Refer to page 274 for the LECP6, LECP1, LECPMJ, JXC□1
and page 275 for the LECPA, JXC□3.

Horizontal

LEYG16^M□A

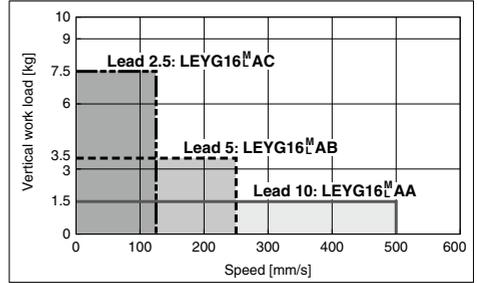


LEYG25^M□A

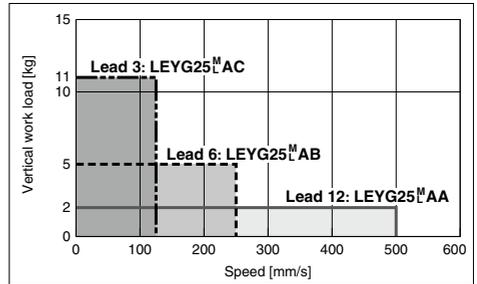


Vertical

LEYG16^L□A



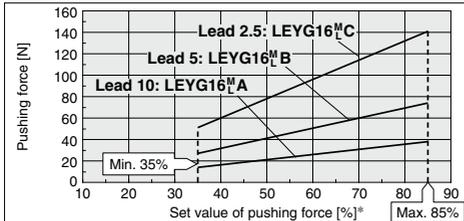
LEYG25^L□A



Force Conversion Graph (Guide)

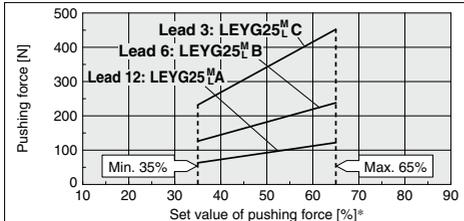
Step Motor (Servo/24 VDC)

LEYG16^M_L□



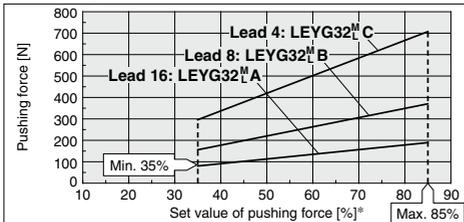
Ambient temperature	Set value of pushing force [%]	Duty ratio [%]	Continuous pushing time [minute]
25°C or less	85 or less	100	—
	40 or less	100	—
40°C	50	70	12
	70	20	1.3
	85	15	0.8

LEYG25^M_L□



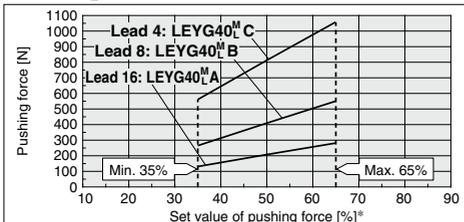
Ambient temperature	Set value of pushing force [%]	Duty ratio [%]	Continuous pushing time [minute]
40°C or less	65 or less	100	—

LEYG32^M_L□



Ambient temperature	Set value of pushing force [%]	Duty ratio [%]	Continuous pushing time [minute]
25°C or less	85 or less	100	—
	65 or less	100	—
40°C	85	50	15

LEYG40^M_L□

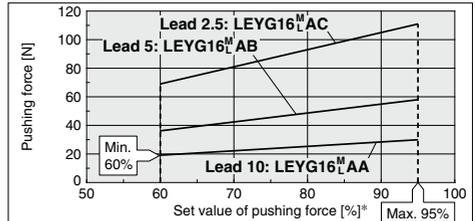


Ambient temperature	Set value of pushing force [%]	Duty ratio [%]	Continuous pushing time [minute]
40°C or less	65 or less	100	—

* Set values for the controller.

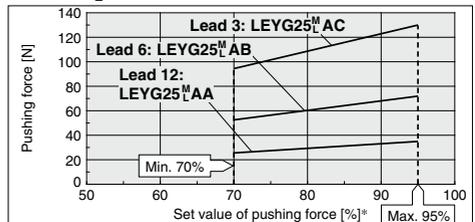
Servo Motor (24 VDC)

LEYG16^M_L□



Ambient temperature	Set value of pushing force [%]	Duty ratio [%]	Continuous pushing time [minute]
40°C or less	95 or less	100	—

LEYG25^M_L□



Ambient temperature	Set value of pushing force [%]	Duty ratio [%]	Continuous pushing time [minute]
40°C or less	95 or less	100	—

<Limit Value of Pushing Force and Trigger Level in Relation to Pushing Speed> Without Load

Model	Lead	Pushing speed [mm/s]	Pushing force (Setting input value)	Model	Lead	Pushing speed [mm/s]	Pushing force (Setting input value)
LEYG16 ^M	A/B/C	21 to 50	60 to 85%	LEYG16 ^M _L	A/B/C	21 to 50	80 to 95%
LEYG25 ^M	A/B/C	21 to 35	50 to 65%	LEYG25 ^M _L	A/B/C	21 to 35	80 to 95%
LEYG32 ^M	A	24 to 30	60 to 85%	LEYG40 ^M	A	24 to 20	50 to 65%
	B/C	21 to 30			B/C	21 to 30	

There is a limit to the pushing force in relation to the pushing speed. If the product is operated outside of the range (low pushing force), the completion signal [INP] may be output before the pushing operation has been completed (during the moving operation).
 If operating with the pushing speed below the minimum speed, please check for operating problems before using the product.

<Set Values for Vertical Upward Transfer Pushing Operation>

For vertical loads (upward), set the pushing force to the maximum value shown below, and operate at the work load or less.

Model	LEYG16 ^M	LEYG25 ^M	LEYG32 ^M	LEYG40 ^M	LEYG16 ^M _L	LEYG25 ^M _L
Lead	A B C	A B C	A B C	A B C	A B C	A B C
Work load [kg]	0.5 1 2.5 1.5 4 9	2.5 7 16 5 12 26	0.5 1 2.5 0.5 1.5 4			
Pushing force	85%	65%	85%	65%	95%	95%

Model Selection



Moment Load Graph

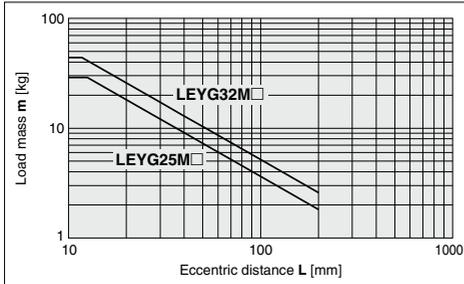
Selection conditions

Mounting position	Vertical		Horizontal	
Max. speed [mm/s]	"Speed-Vertical Work Load Graph"		200 or less	Over 200
Graph (Sliding bearing type)	①, ②		⑤, ⑥*	⑦, ⑧
Graph (Ball bushing bearing type)	③, ④		⑨, ⑩	⑪, ⑫

* For the sliding bearing type, the speed is restricted with a horizontal/moment load.

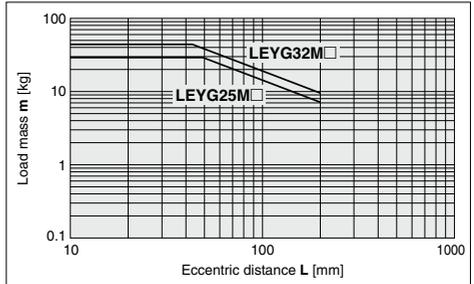
Vertical Mounting, Sliding Bearing

① 70 mm stroke or less



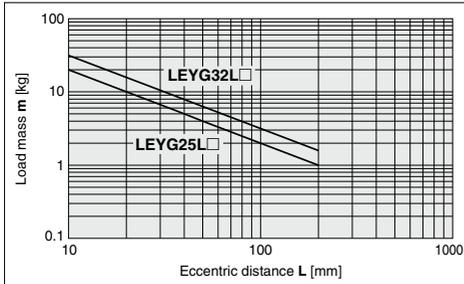
* The limit of vertical load mass varies depending on "lead" and "speed". Check "Speed-Vertical Work Load Graph" on page 282.

② Over 75 mm stroke



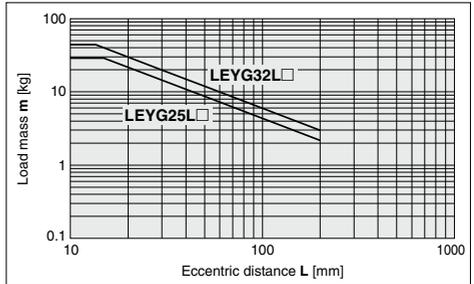
Vertical Mounting, Ball Bushing Bearing

③ 35 mm stroke or less



* The limit of vertical load mass varies depending on "lead" and "speed". Check "Speed-Vertical Work Load Graph" on page 282.

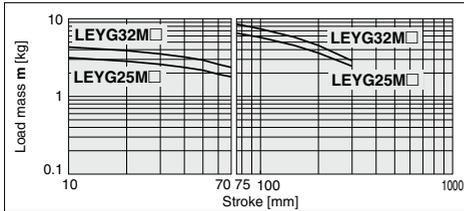
④ Over 40 mm stroke



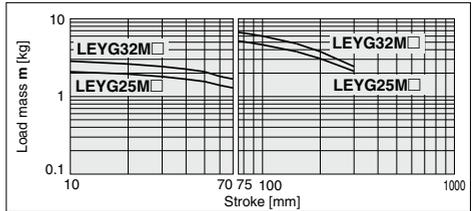
Moment Load Graph

Horizontal Mounting, Sliding Bearing

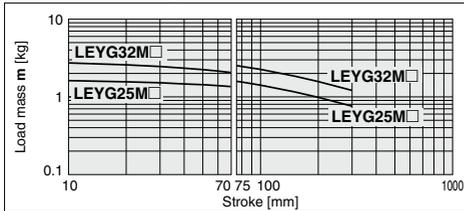
⑤ L = 50 mm Max. speed = 200 mm/s or less



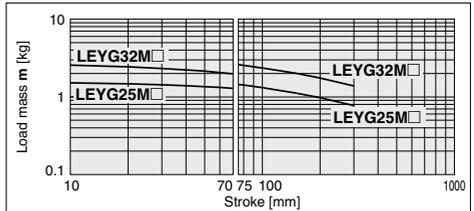
⑥ L = 100 mm Max. speed = 200 mm/s or less



⑦ L = 50 mm Max. speed = Over 200 mm/s

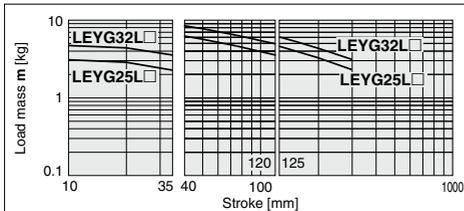


⑧ L = 100 mm Max. speed = Over 200 mm/s

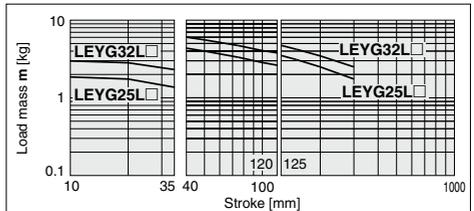


Horizontal Mounting, Ball Bushing Bearing

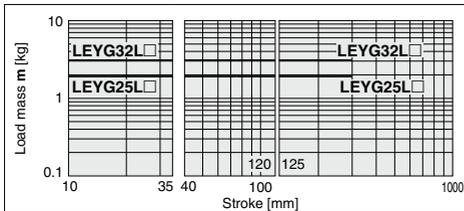
⑨ L = 50 mm Max. speed = 200 mm/s or less



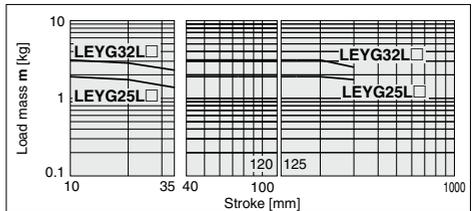
⑩ L = 100 mm Max. speed = 200 mm/s or less



⑪ L = 50 mm Max. speed = Over 200 mm/s

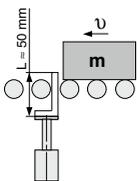


⑫ L = 100 mm Max. speed = Over 200 mm/s



Operating Range when Used as Stopper

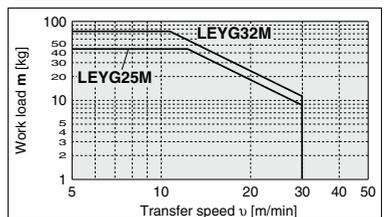
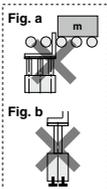
LEYG□M (Sliding bearing)



Caution

Handling Precautions

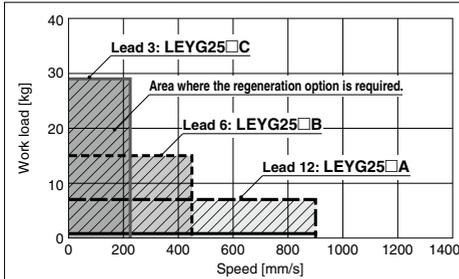
- Note 1) When used as a stopper, select a model with strokes 30 mm or less.
- Note 2) LEYG□L (ball bushing bearing) cannot be used as a stopper.
- Note 3) Workpiece collision in series with guide rod cannot be permitted (Fig. a).
- Note 4) The body should not be mounted on the end. It must be mounted on the top or bottom (Fig. b).



Speed-Vertical Work Load Graph/Required Conditions for "Regeneration Option"

* These graphs show the work load when the external guide is used together. When using the LEYG alone, refer to pages 280 and 281.

LEYG25□S₆/T6 (Motor mounting position: Top mounting/In-line)



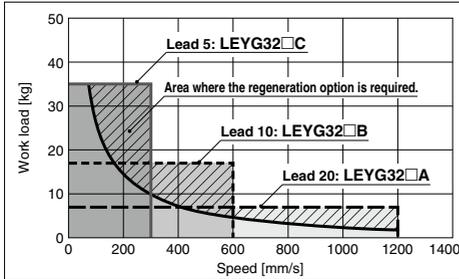
Required conditions for "Regeneration option"

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

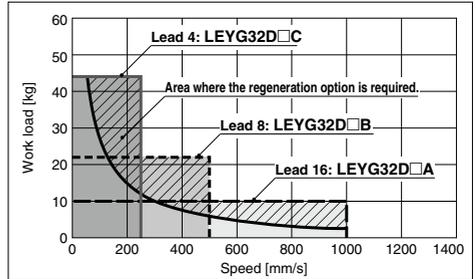
"Regeneration Option" Models

Size	Model
LEYG25□	LEC-MR-RB-032
LEYG32□	LEC-MR-RB-032

LEYG32S₃/T7 (Motor mounting position: Top mounting)



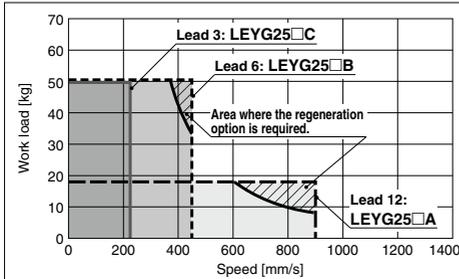
LEYG32DS₃/T7 (Motor mounting position: In-line)



Speed-Horizontal Work Load Graph/Required Conditions for "Regeneration Option"

* These graphs show the work load when the external guide is used together. When using the LEYG alone, refer to pages 280 and 281.

LEYG25□S₆/T6 (Motor mounting position: Top mounting/In-line)



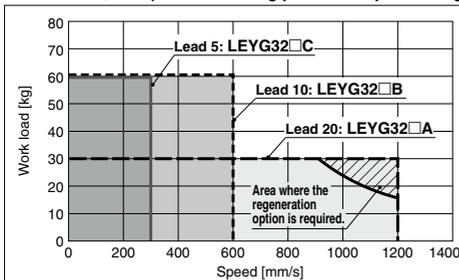
Required conditions for "Regeneration option"

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

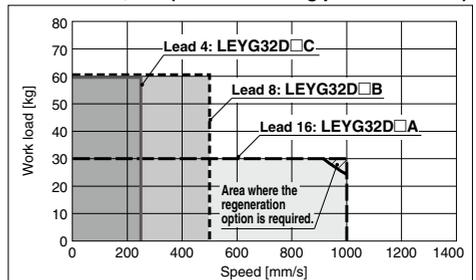
"Regeneration Option" Models

Size	Model
LEYG25□	LEC-MR-RB-032
LEYG32□	LEC-MR-RB-032

LEYG32S₃/T7 (Motor mounting position: Top mounting)

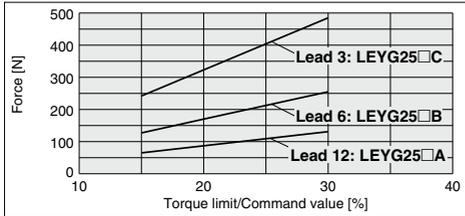


LEYG32DS₃/T7 (Motor mounting position: In-line)



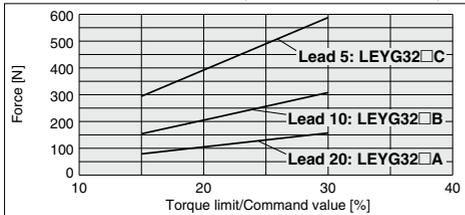
Force Conversion Graph: LECSA, LECSB, LECS, LECS

LEYG25□S₆² (Motor mounting position: Top mounting/In-line)



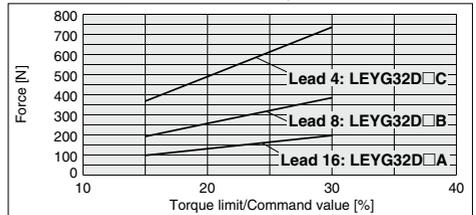
Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time [minute]
25 or less	100	—
30	60	1.5

LEYG32S₇³ (Motor mounting position: Top mounting)



Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time [minute]
25 or less	100	—
30	60	1.5

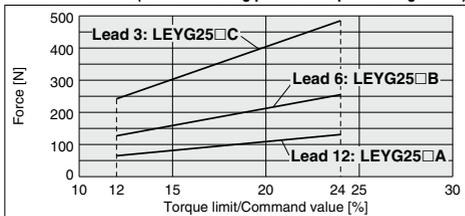
LEYG32DS₇³ (Motor mounting position: In-line)



Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time [minute]
25 or less	100	—
30	60	1.5

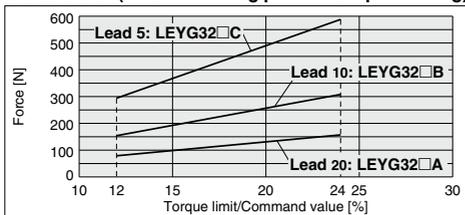
Force Conversion Graph: LECS-T

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



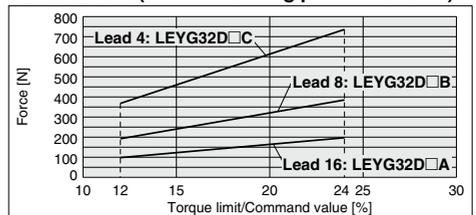
Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time [minute]
20 or less	100	—
24	60	1.5

LEYG32T7 (Motor mounting position: Top mounting)



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

LEYG32DT7 (Motor mounting position: In-line)

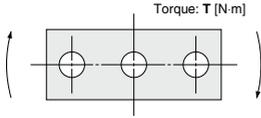


Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time [minute]
20 or less	100	—
24	60	1.5

LEYG Series

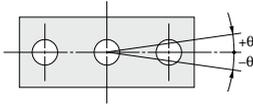
Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

Allowable Rotational Torque of Plate



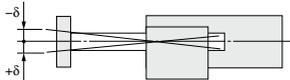
Model	Stroke [mm]					T [N·m]
	30	50	100	200	300	
LEYG16M	0.70	0.57	1.05	0.56	—	
LEYG16L	0.82	1.48	0.97	0.57	—	
LEYG25M	1.56	1.29	3.50	2.18	1.36	
LEYG25L	1.52	3.57	2.47	2.05	1.44	
LEYG32M	2.55	2.09	5.39	3.26	1.88	
LEYG32L	2.80	5.76	4.05	3.23	2.32	
LEYG40M	2.55	2.09	5.39	3.26	1.88	
LEYG40L	2.80	5.76	4.05	3.23	2.32	

Non-rotating Accuracy of Plate



Size	Non-rotating accuracy θ	
	LEYG□M	LEYG□L
16	0.06°	0.05°
25		0.04°
32		
40	0.05°	

Plate Displacement: δ



Model	Stroke [mm]					[mm]
	30	50	100	200	300	
LEYG16M	±0.20	±0.25	±0.24	±0.27	—	
LEYG16L	±0.13	±0.12	±0.17	±0.19	—	
LEYG25M	±0.26	±0.31	±0.25	±0.38	±0.36	
LEYG25L	±0.13	±0.13	±0.17	±0.20	±0.23	
LEYG32M	±0.23	±0.29	±0.23	±0.36	±0.34	
LEYG32L	±0.11	±0.11	±0.15	±0.19	±0.22	

Model Selection



Moment Load Graph

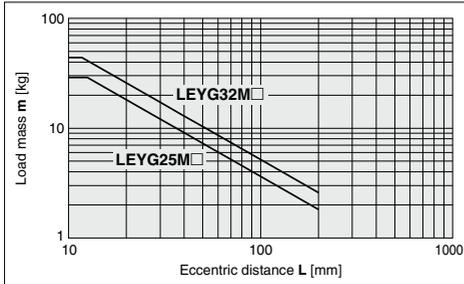
Selection conditions

Mounting position	Vertical		Horizontal	
Max. speed [mm/s]	"Speed-Work Load Graph"		200 or less	Over 200
Graph (Sliding bearing type)	①, ②		⑤, ⑥*	⑦, ⑧
Graph (Ball bushing bearing type)	③, ④		⑨, ⑩	⑪, ⑫

* For the sliding bearing type, the speed is restricted with a horizontal/moment load.

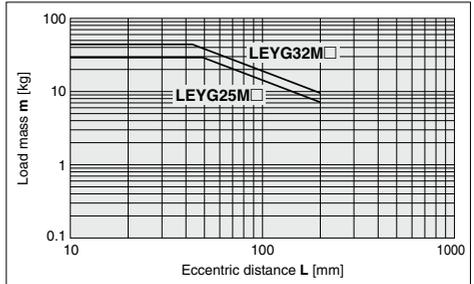
Vertical Mounting, Sliding Bearing

① 70 mm stroke or less



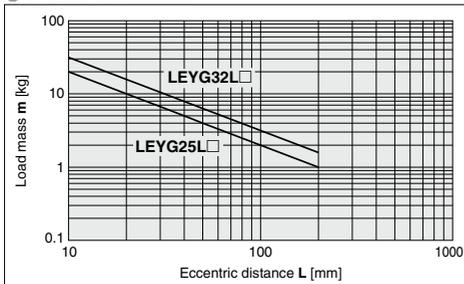
* The limit of vertical load mass varies depending on "lead" and "speed".
Check "Speed-Work Load Graph" on page 283-3.

② Over 75 mm stroke



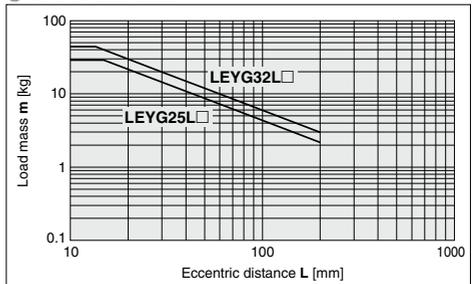
Vertical Mounting, Ball Bushing Bearing

③ 35 mm stroke or less



* The limit of vertical load mass varies depending on "lead" and "speed".
Check "Speed-Work Load Graph" on page 283-3.

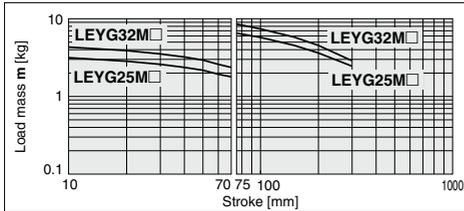
④ Over 40 mm stroke



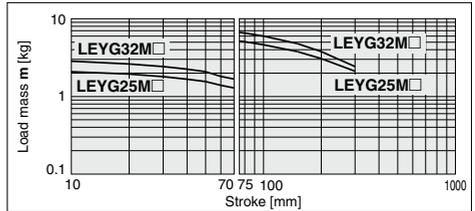
Moment Load Graph

Horizontal Mounting, Sliding Bearing

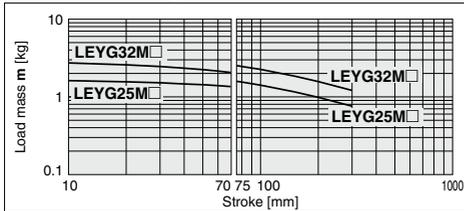
⑤ L = 50 mm Max. speed = 200 mm/s or less



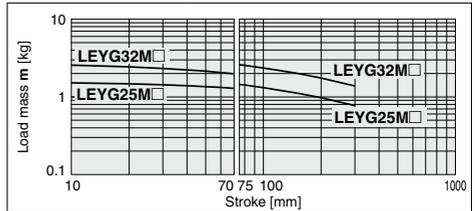
⑥ L = 100 mm Max. speed = 200 mm/s or less



⑦ L = 50 mm Max. speed = Over 200 mm/s

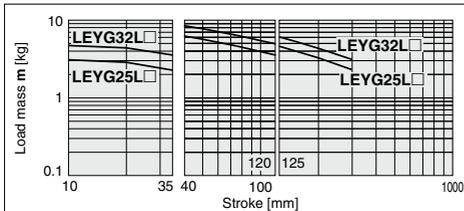


⑧ L = 100 mm Max. speed = Over 200 mm/s

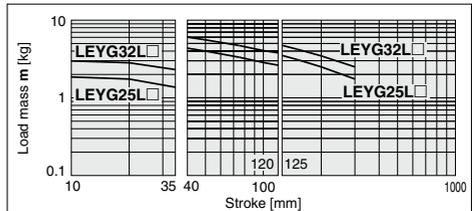


Horizontal Mounting, Ball Bushing Bearing

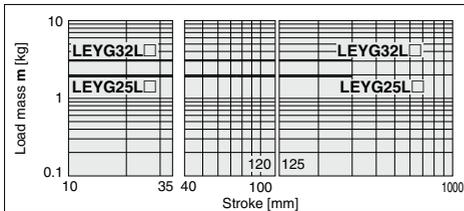
⑨ L = 50 mm Max. speed = 200 mm/s or less



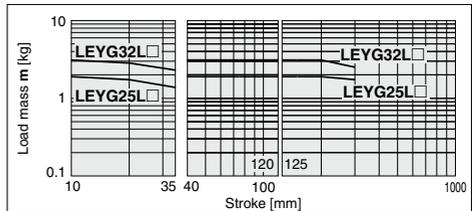
⑩ L = 100 mm Max. speed = 200 mm/s or less



⑪ L = 50 mm Max. speed = Over 200 mm/s

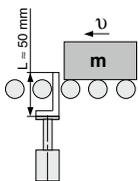


⑫ L = 100 mm Max. speed = Over 200 mm/s



Operating Range when Used as Stopper

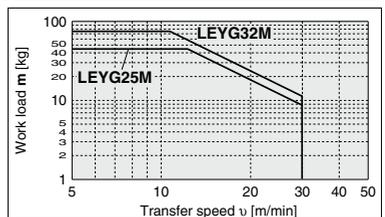
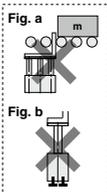
LEYG□M (Sliding bearing)



Caution

Handling Precautions

- Note 1) When used as a stopper, select a model with 30 mm stroke or less.
- Note 2) LEYG□L (ball bushing bearing) cannot be used as a stopper.
- Note 3) Workpiece collision in series with guide rod cannot be permitted (Fig. a).
- Note 4) The body should not be mounted on the end. It must be mounted on the top or bottom (Fig. b).

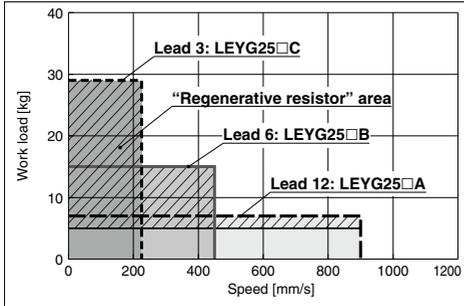


* These graphs show the work load when the external guide is used together. When using the LEYG alone, refer to pages 283-1 and 283-2.

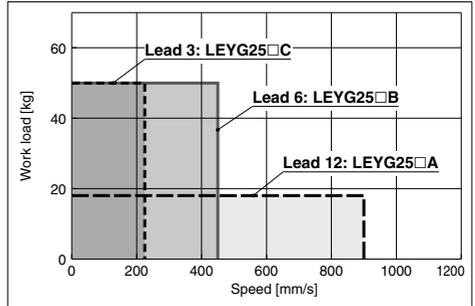
Speed-Work Load Graph/Conditions for "Regenerative Resistor" (Guide)

LEYG25□V6 (Motor mounting position: Top mounting/In-line)

Vertical

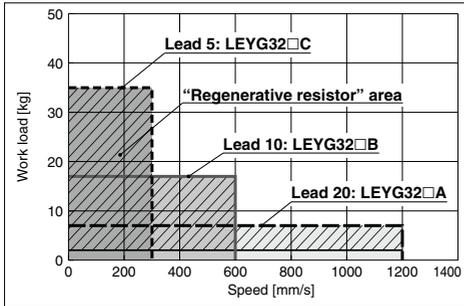


Horizontal

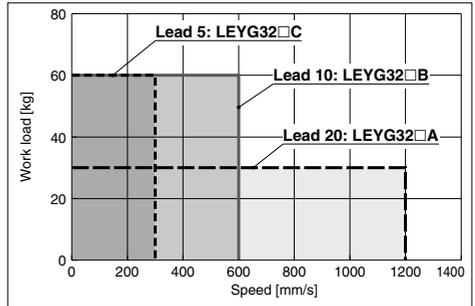


LEYG32V7 (Motor mounting position: Top mounting)

Vertical

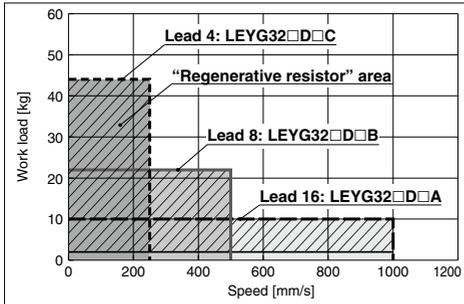


Horizontal

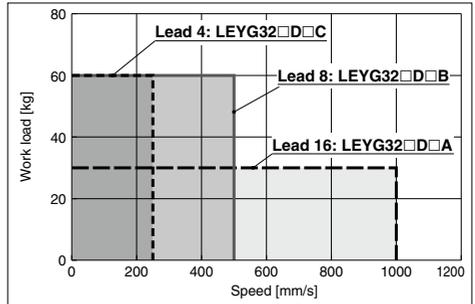


LEYG32DV7 (Motor mounting position: In-line)

Vertical



Horizontal



"Regenerative resistor" area

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

* Regenerative resistor should be provided by the customer.

Applicable Motor/Driver

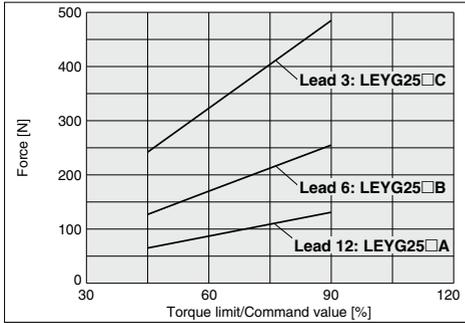
Model	Applicable model	
	Motor	Servopack (SMC driver)
LEYG25□	SGMJV-01A3A	SGDV-R90A11□ (LECYM2-V5) SGDV-R90A21□ (LECYU2-V5)
LEYG32□	SGMJV-02A3A	SGDV-1R6A11□ (LECYM2-V7) SGDV-1R6A21□ (LECYU2-V7)

LEYG Series

AC Servo Motor

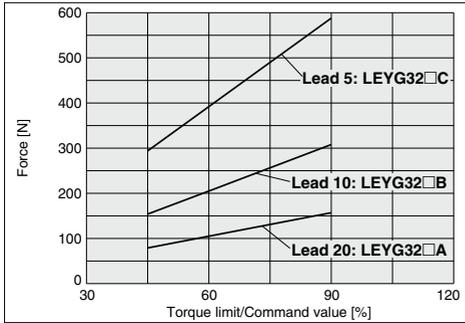
Force Conversion Graph

LEYG25□V6 (Motor mounting position: Top mounting/In-line)



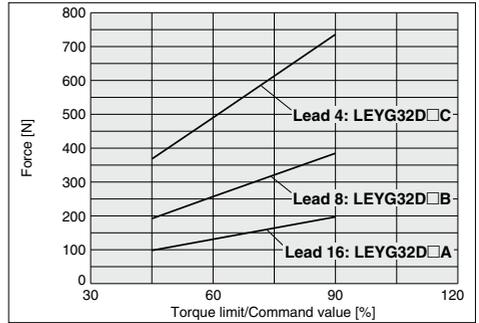
Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time (minute)
75 or less	100	—
90	60	1.5

LEYG32□V7 (Motor mounting position: Top mounting)



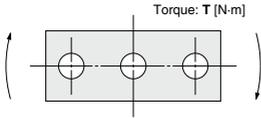
Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time (minute)
75 or less	100	—
90	60	1.5

LEYG32DV7 (Motor mounting position: In-line)



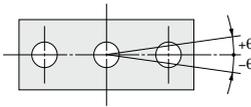
Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time (minute)
75 or less	100	—
90	60	1.5

Allowable Rotational Torque of Plate: T



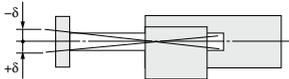
Model	Stroke [mm]					T [N-m]
	30	50	100	200	300	
LEYG25M	1.56	1.29	3.50	2.18	1.36	
LEYG25L	1.52	3.57	2.47	2.05	1.44	
LEYG32M	2.55	2.09	5.39	3.26	1.88	
LEYG32L	2.80	5.76	4.05	3.23	2.32	

Non-rotating Accuracy of Plate: θ



Size	LEYG□M	LEYG□L
25	±0.05°	±0.04°
32		

Plate Displacement: δ



Model	Stroke [mm]					[mm]
	30	50	100	200	300	
LEYG25M	±0.26	±0.31	±0.25	±0.38	±0.36	
LEYG25L	±0.13	±0.13	±0.17	±0.20	±0.23	
LEYG32M	±0.23	±0.29	±0.23	±0.36	±0.34	
LEYG32L	±0.11	±0.11	±0.15	±0.19	±0.22	

Electric Actuator/ Guide Rod Type

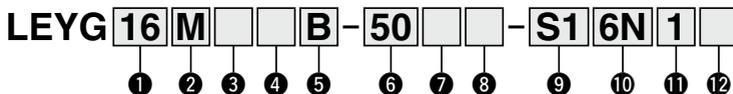
LEYG Series LEYG16, 25, 32, 40

Applicable to the
LEC series



Refer to page 285-1 for the communication protocols EtherCAT®, EtherNet/IP™, PROFINET, DeviceNet™, and IO-Link.

How to Order



1 Size

16
25
32
40

2 Bearing type

M	Sliding bearing
L	Ball bushing bearing

* When [M: Sliding bearing] is selected, the maximum speed of lead [A] is 400 mm/s (at no-load, horizontal mounting). The speed is also restricted with a horizontal/moment load. Refer to "Model Selection" on page 272.

4 Motor type

Symbol	Type	Size			Compatible controller/driver
		LEYG16	LEYG25	LEYG32/40	
Nil	Step motor (Servo/24 VDC)	●	●	●	LECP6 LECP1 LECPA LECPMJ
A	Servo motor (24 VDC)	●	●	—	LECA6

3 Motor mounting position

Nil	Top mounting
D	In-line

5 Lead [mm]

Symbol	LEYG16	LEYG25	LEYG32/40
A	10	12	16
B	5	6	8
C	2.5	3	4

6 Stroke [mm]

30	30
to	to
300	300

* Refer to the applicable stroke table.
* There is a limit for mounting size 32/40 top mounting types and 50 mm stroke or less. Refer to the dimensions.

7 Motor option*

Nil	Without option
C	With motor cover
B	With lock
W	With lock/motor cover

* When "With lock" or "With lock/motor cover" are selected for the top mounting type, the motor body will stick out of the end of the body for size 16/40 with stroke 30 mm or less. Check for interference with workpieces before selecting a model.

8 Guide option

Nil	Without option
F	With grease retaining function

* Only available for size 25, 32, and 40 sliding bearings. (Refer to "Construction" on page 289.)

⚠ Caution

[CE-compliant products]

① EMC compliance was tested by combining the electric actuator LEYG 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 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

●: Standard

Model	Stroke [mm]							Manufacturable stroke range [mm]
	30	50	100	150	200	250	300	
LEYG16	●	●	●	●	●	—	—	10 to 200
LEYG25	●	●	●	●	●	●	●	15 to 300
LEYG32/40	●	●	●	●	●	●	●	20 to 300

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

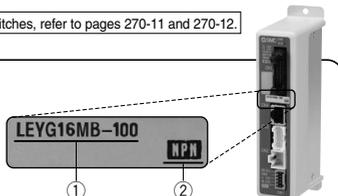
For auto switches, refer to pages 270-11 and 270-12.

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

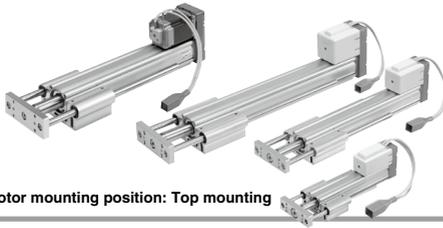
Confirm that the combination of the controller/driver and the actuator is correct.

<Check the following before use.>

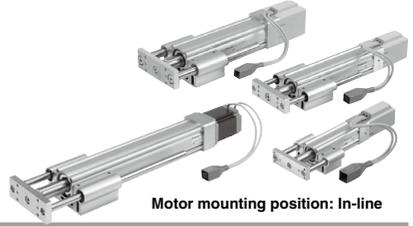
- Check the actuator label for model number. This matches the controller/driver.
- Check Parallel I/O configuration matches (NPN or PNP).



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



Motor mounting position: Top mounting



Motor mounting position: In-line

9 Actuator cable type/length*2

Nil	Without cable
S1	Standard cable 1.5 m*3
S3	Standard cable 3 m*3
S5	Standard cable 5 m*3
R1	Robotic cable 1.5 m
R3	Robotic cable 3 m
R5	Robotic cable 5 m
R8	Robotic cable 8 m*1
RA	Robotic cable 10 m*1
RB	Robotic cable 15 m*1
RC	Robotic cable 20 m*1

- *1 Produced upon receipt of order (Robotic cable only)
- *2 The standard cable should only be used on fixed parts.
For use on moving parts, select the robotic cable.
- *3 Only available for the motor type "Step motor."

10 Controller/Driver mounting

Nil	Screw mounting
D	DIN rail mounting*

- * DIN rail is not included. Order it separately.

10 Controller/Driver type*1

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

11 I/O cable length*1, Communication plug

Nil	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 If "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 "Nil", "S" and "T" are selectable since I/O cable is not included.

Use of auto switches for the guide rod type LEYG series

- Insert the auto switch from the front side with rod (plate) sticking out.
- For the parts hidden behind the guide attachment (Rod stick out side), the auto switch cannot be fixed.
- Please consult with SMC when using auto switch on the rod stick out side, as it is produced as a special order.

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)	
Maximum 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

Electric Actuator/ Guide Rod Type

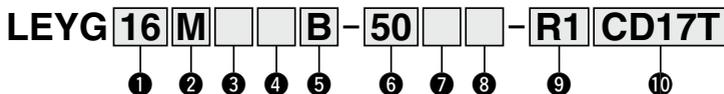
LEYG Series LEYG16, 25, 32, 40

Applicable to the
JXC□ series



How to Order

Refer to page 284 for the communication protocol CC-Link.



1 Size

16
25
32
40

2 Bearing type

M	Sliding bearing
L	Ball bushing bearing

* When [M: Sliding bearing] is selected, the maximum speed of lead [A] is 400 mm/s (at no-load, horizontal mounting). The speed is also restricted with a horizontal/moment load. Refer to "Model Selection" on page 272.

4 Motor type

Symbol	Type	Size			Compatible controller
		LEYG16	LEYG25	LEYG32/40	
Nil	Step motor (Servo/24 VDC)	●	●	●	JXCE1 JXC91 JXCP1 JXCD1 JXCL1

3 Motor mounting position

Nil	Top mounting
D	In-line

5 Lead [mm]

Symbol	LEYG16	LEYG25	LEYG32/40
A	10	12	16
B	5	6	8
C	2.5	3	4

6 Stroke [mm]

30	30
to	to
300	300

* Refer to the applicable stroke table.
* There is a limit for mounting size 32/40 top mounting types and 50 mm stroke or less. Refer to the dimensions.

7 Motor option*

Nil	Without option
C	With motor cover
B	With lock
W	With lock/motor cover

* When "With lock" or "With lock/motor cover" are selected for the top mounting type, the motor body will stick out of the end of the body for size 16/40 with stroke 30 mm or less. Check for interference with workpieces before selecting a model.

8 Guide option

Nil	Without option
F	With grease retaining function

* Only available for size 25, 32, and 40 sliding bearings. (Refer to "Construction" on page 289.)

Caution

[CE-compliant products]
EMC compliance was tested by combining the electric actuator LE series and the JXCE1/91/P1/D1/L1 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.

* Applicable stroke table

●: Standard

Model	Stroke [mm]							Manufacturable stroke range [mm]
	30	50	100	150	200	250	300	
LEYG16	●	●	●	●	●	—	—	10 to 200
LEYG25	●	●	●	●	●	●	●	15 to 300
LEYG32/40	●	●	●	●	●	●	●	20 to 300

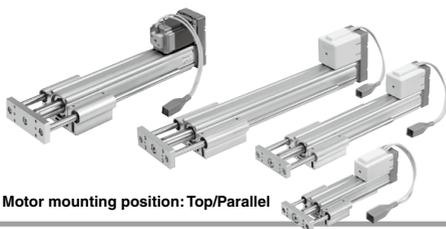
* Please consult with SMC for non-standard strokes as they are produced as special orders.

For auto switches, refer to pages 270-11 and 270-12.

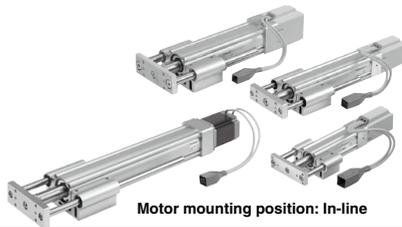
Electric Actuator/Guide Rod Type **LEYG Series**

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)



Motor mounting position: Top/Parallel



Motor mounting position: In-line

9 Actuator cable type/length

Nil	Without cable
S1	Standard cable 1.5 m
S3	Standard cable 3 m
S5	Standard cable 5 m
R1	Robotic cable 1.5 m
R3	Robotic cable 3 m
R5	Robotic cable 5 m
R8	Robotic cable 8 m*1
RA	Robotic cable 10 m*1
RB	Robotic cable 15 m*1
RC	Robotic cable 20 m*1

*1 Produced upon receipt of order (Robotic cable only)

*2 The standard cable should only be used on fixed parts.

For use on moving parts, select the robotic cable.

10 Controller

Nil	Without controller
C□1□□	With controller



Communication protocol

E	EtherCAT®
9	EtherNet/IP™
P	PROFINET
D	DeviceNet™
L	IO-Link

For single axis

Communication plug connector for DeviceNet™

Nil	Without plug connector
S	Straight type
T	T-branch type

* Select "Nil" for anything other than DeviceNet™.

Mounting

7	Screw mounting
8*	DIN rail

* DIN rail is not included. It must be ordered separately. (Page 603-8)

Use of auto switches for the guide rod type LEYG series

- Insert the auto switch from the front side with rod (plate) sticking out.
- For the parts hidden behind the guide attachment (Rod stick out side), the auto switch cannot be fixed.
- Please consult with SMC when using auto switch on the rod stick out side, as it is produced as a special order.

Compatible Controller

Type					
Series	JXCE1	JXC91	JXCP1	JXCD1	JXCL1
Features	EtherCAT® direct input	EtherNet/IP™ direct input	PROFINET direct input	DeviceNet™ direct input	IO-Link direct input
Compatible motor	Step motor (Servo/24 VDC)				
Maximum number of step data	64 points				
Power supply voltage	24 VDC				
Reference page	Page 603-5				



Specifications

Step Motor (Servo/24 VDC)

Model			LEYG16 ^M _L			LEYG25 ^M _L			LEYG32 ^M _L			LEYG40 ^M _L			
Stroke [mm] ^{Note 1)}			30, 50, 100, 150, 200			30, 50, 100, 150, 200, 250, 300			30, 50, 100, 150, 200, 250, 300			30, 50, 100, 150, 200, 250, 300			
Work load [kg] ^{Note 2)}	Horizontal (LECP6, LECP1, LECPM, JXC□□)	Acceleration/Deceleration at 3000 [mm/s ²]	6	17	30	20	40	60	30	45	60	50	60	80	
		Acceleration/Deceleration at 2000 [mm/s ²]	10	23	35	30	55	70	40	60	80	60	70	90	
	Horizontal (LECPA, JXC□□)	Acceleration/Deceleration at 3000 [mm/s ²]	4	11	20	12	30	30	20	40	40	30	60	60	
		Acceleration/Deceleration at 2000 [mm/s ²]	6	17	30	18	50	50	30	60	60	—	—	—	
	Vertical	Acceleration/Deceleration at 3000 [mm/s ²]	1.5	3.5	7.5	7	15	29	9	20	41	11	25	51	
Pushing force [N] ^{Note 3) 4) 5)}			14 to 38	27 to 74	51 to 141	63 to 122	126 to 238	232 to 452	80 to 189	156 to 370	296 to 707	132 to 283	266 to 553	562 to 1058	
Speed [mm/s] ^{Note 5)}	LECP6/LECP1/LECPMJ		15 to 500	8 to 250	4 to 125	18 to 500	9 to 250	5 to 125	24 to 500	12 to 300	6 to 150	24 to 500	12 to 350	6 to 175	
	LECPA									12 to 250	6 to 125	24 to 300	12 to 150	6 to 75	
Max. acceleration/deceleration [mm/s²]			3000												
Pushing speed [mm/s] ^{Note 6)}			50 or less			35 or less			30 or less			30 or less			
Positioning repeatability [mm]			±0.02												
Lost motion [mm] ^{Note 7)}			0.1 or less												
Screw lead [mm]			10	5	2.5	12	6	3	16	8	4	16	8	4	
Impact/Vibration resistance [m/s²] ^{Note 8)}			50/20												
Actuation type			Ball screw + Belt (LEYG□□□), Ball screw (LEYG□□□□)												
Guide type			Sliding bearing (LEYG□□M), Ball bushing bearing (LEYG□□L)												
Operating temp. range [°C]			5 to 40												
Operating humidity range [%RH]			90 or less (No condensation)												
Electric specifications	Motor size			□28			□42			□56.4			□56.4		
	Motor type			Step motor (Servo/24 VDC)											
	Encoder			Incremental A/B phase (800 pulse/rotation)											
	Rated voltage [V]			24 VDC ±10%											
	Power consumption [W] ^{Note 9)}			23			40			50			50		
Standby power consumption when operating [W] ^{Note 10)}			16			15			48			48			
Max. instantaneous power consumption [W] ^{Note 11)}			43			48			104			106			
Lock with specifications	Type ^{Note 12)}			Non-magnetizing lock											
	Holding force [N]			20	39	78	78	157	294	216	421	127	265	519	
	Power consumption [W] ^{Note 13)}			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) Horizontal: An external guide is necessary to support the load (Friction coefficient of guide: 0.1 or less). The actual work load and transfer speed change according to the condition of the external guide. Also, speed changes according to the work load. Check "Model Selection" on pages 274 and 275.

Vertical: Speed changes according to the work load. Check "Model Selection" on pages 274 and 275.

Set the acceleration/deceleration values to be 3000 [mm/s²] or less.

Note 3) Pushing force accuracy is ±20% (F.S.).

Note 4) The pushing force values for LEYG16□□□ is 35% to 85%, for LEYG25□□□ is 35% to 65%, for LEYG32□□□ is 35% to 85% and for LEYG40□□□ is 35% to 65%. The pushing force values change according to the duty ratio and pushing speed. Check "Model Selection" on page 277.

Note 5) The speed and force may change depending on the cable length, load and mounting conditions. Furthermore, if the cable length exceeds 5 m, then it will decrease by up to 10% for each 5 m. (At 15 m: Reduced by up to 20%)

When [M: Sliding bearing] is selected, the maximum speed of lead [A] is 400 mm/s (at no-load, horizontal mounting).

The speed is also restricted with a horizontal/moment load. Refer to "Model Selection" on page 272.

Note 6) The allowable speed for the pushing operation.

Note 7) A reference value for correcting an error in reciprocal operation.

Note 8) Impact resistance: No malfunction occurred when it was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)

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

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

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

Note 11) 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 12) With lock only

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

Specifications

Servo Motor (24 VDC)

Model		LEYG16 ^M □A			LEYG25 ^M □A			
Actuator specifications	Stroke [mm] ^{Note 1)}	30, 50, 100, 150, 200			30, 50, 100, 150, 200, 250, 300			
	Work load [kg] ^{Note 2)}	Horizontal	Acceleration/Deceleration at 3000 [mm/s ²]			3	6	12
		Vertical	Acceleration/Deceleration at 3000 [mm/s ²]			1.5	3.5	7.5
	Pushing force [N] ^{Note 3) 4)}		16 to 30	30 to 58	57 to 111	18 to 35	37 to 72	66 to 130
	Speed [mm/s]		1 to 500	1 to 250	1 to 125	2 to 500	1 to 250	1 to 125
	Max. acceleration/deceleration [mm/s ²]		3000					
	Pushing speed [mm/s] ^{Note 5)}		50 or less			35 or less		
	Positioning repeatability [mm]		±0.02					
	Lost motion [mm] ^{Note 6)}		0.1 or less					
	Screw lead [mm]		10	5	2.5	12	6	3
Impact/Vibration resistance [m/s ²] ^{Note 7)}		50/20						
Actuation type		Ball screw + Belt (LEYG□□□), Ball screw (LEYG□□□D)						
Guide type		Sliding bearing (LEYG□□M), Ball bushing bearing (LEYG□□L)						
Operating temp. range [°C]		5 to 40						
Operating humidity range [%RH]		90 or less (No condensation)						
Electric specifications	Motor size	□28			□42			
	Motor output [W]	30			36			
	Motor type	Servo motor (24 VDC)						
	Encoder	Incremental A/B (800 pulse/rotation)/Z phase						
	Rated voltage [V]	24 VDC ±10%						
	Power consumption [W] ^{Note 8)}	40			86			
Lock unit specifications	Standby power consumption when operating [W] ^{Note 9)}	4 (Horizontal)/6 (Vertical)			4 (Horizontal)/12 (Vertical)			
	Max. instantaneous power consumption [W] ^{Note 10)}	59			96			
	Type ^{Note 11)}	Non-magnetizing lock						
Lock unit specifications	Holding force [N]	20	39	78	78	157	294	
	Power consumption [W] ^{Note 12)}	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) Horizontal: An external guide is necessary to support the load (Friction coefficient of guide: 0.1 or less). The actual work load and transfer speed change according to the condition of the external guide.

Vertical: Check "Model Selection" on page 276 for details. Set the acceleration/deceleration values to be 3000 [mm/s²] or less.

Note 3) Pushing force accuracy is ±20% (F.S.).

Note 4) The thrust setting values for LEYG16□□□□ is 60% to 95% and for LEYG25□□□□ is 70% to 95%. The pushing force values change according to the duty ratio and pushing speed. Check "Model Selection" on page 277.

Note 5) The allowable speed for the pushing operation.

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

Note 7) Impact resistance: No malfunction occurred when it was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)

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

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

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

Note 10) 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 11) With lock only

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

Weight

Weight: Motor Top Mounting Type

Model		LEYG16M					LEYG25M					LEYG32M								
Stroke [mm]		30	50	100	150	200	30	50	100	150	200	250	300	30	50	100	150	200	250	300
Product weight [kg]	Step motor	0.83	0.97	1.20	1.49	1.66	1.67	1.86	2.18	2.60	2.94	3.28	3.54	2.91	3.17	3.72	4.28	4.95	5.44	5.88
	Servo motor	0.83	0.97	1.20	1.49	1.66	1.63	1.82	2.14	2.56	2.90	3.24	3.50	—	—	—	—	—	—	—

Model		LEYG16L					LEYG25L					LEYG32L								
Stroke [mm]		30	50	100	150	200	30	50	100	150	200	250	300	30	50	100	150	200	250	300
Product weight [kg]	Step motor	0.84	0.97	1.14	1.43	1.58	1.68	1.89	2.13	2.56	2.82	3.14	3.38	2.91	3.18	3.57	4.12	4.66	5.17	5.56
	Servo motor	0.84	0.97	1.14	1.43	1.58	1.64	1.85	2.09	2.52	2.78	3.10	3.34	—	—	—	—	—	—	—

Model		LEYG40M					LEYG40L								
Stroke [mm]		30	50	100	150	200	250	300	30	50	100	150	200	250	300
Product weight [kg]	Step motor	3.21	3.47	4.02	4.58	5.25	5.74	6.18	3.21	3.48	3.87	4.42	4.96	5.47	5.86
	Servo motor	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Weight: In-line Motor Type

Model		LEYG16M					LEYG25M					LEYG32M								
Stroke [mm]		30	50	100	150	200	30	50	100	150	200	250	300	30	50	100	150	200	250	300
Product weight [kg]	Step motor	0.83	0.97	1.20	1.49	1.66	1.66	1.85	2.17	2.59	2.93	3.27	3.53	2.90	3.16	3.71	4.27	4.94	5.43	5.87
	Servo motor	0.83	0.97	1.20	1.49	1.66	1.62	1.81	2.13	2.55	2.89	3.23	3.49	—	—	—	—	—	—	—

Model		LEYG16L					LEYG25L					LEYG32L								
Stroke [mm]		30	50	100	150	200	30	50	100	150	200	250	300	30	50	100	150	200	250	300
Product weight [kg]	Step motor	0.84	0.97	1.14	1.43	1.58	1.67	1.88	2.12	2.55	2.81	3.13	3.37	2.90	3.17	3.56	4.11	4.65	5.16	5.55
	Servo motor	0.84	0.97	1.14	1.43	1.58	1.63	1.84	2.08	2.51	2.77	3.09	3.33	—	—	—	—	—	—	—

Model		LEYG40M					LEYG40L								
Stroke [mm]		30	50	100	150	200	250	300	30	50	100	150	200	250	300
Product weight [kg]	Step motor	3.20	3.46	4.01	4.57	5.24	5.73	6.17	3.20	3.47	3.86	4.41	4.95	5.46	5.85
	Servo motor	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Additional Weight [kg]

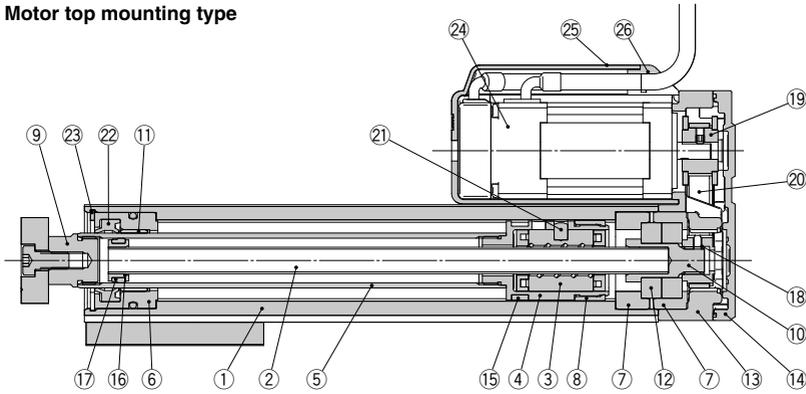
Size	16	25	32	40
Lock	0.12	0.26	0.53	0.53
Motor cover	0.02	0.03	0.04	0.05
Lock/Motor cover	0.16	0.32	0.61	0.62

LEYG Series

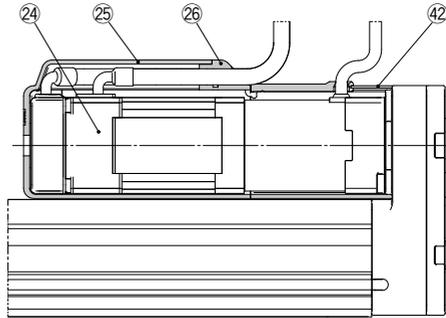
Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

Construction

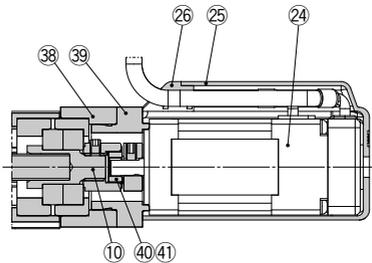
Motor top mounting type



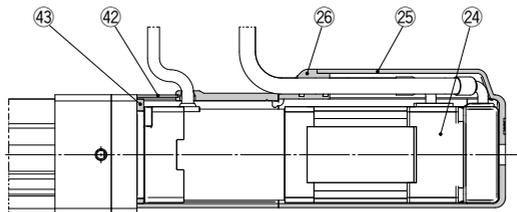
Motor top mounting type With lock/motor cover



In-line motor type



In-line motor type With lock/motor cover

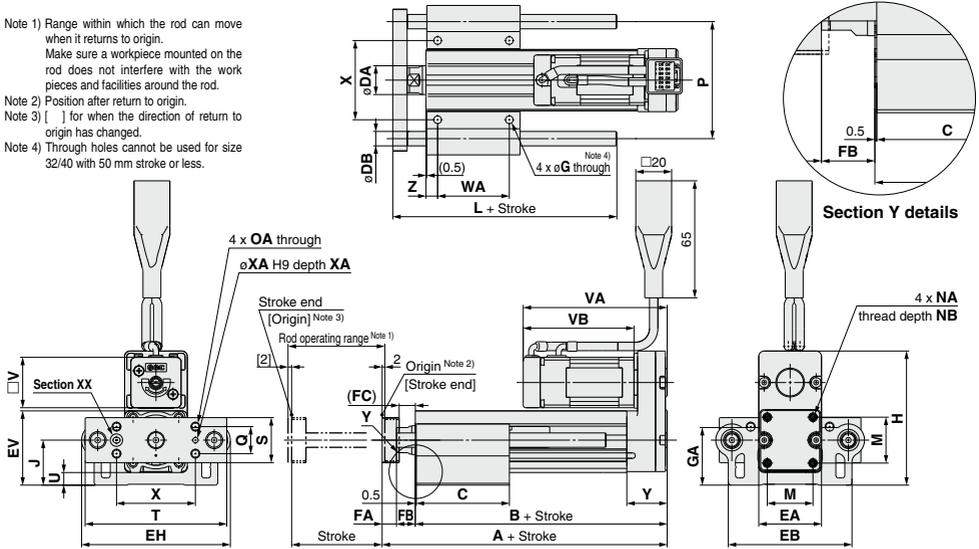


LEYG Series

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

Dimensions: Motor Top Mounting

- Note 1) Range within which the rod can move when it returns to origin.
Make sure a workpiece mounted on the rod does not interfere with the work pieces and facilities around the rod.
- Note 2) Position after return to origin.
- Note 3) [] for when the direction of return to origin has changed.
- Note 4) Through holes cannot be used for size 32/40 with 50 mm stroke or less.



LEYG□L (Ball bushing bearing) Standard stroke: 50, 100, 200

Size	Stroke range	L	DB
16	90st or less	75	8
	91st or more, 200st or less	105	
25	114st or less	91	10
	115st or more, 190st or less	115	
32	114st or less	97.5	13
	115st or more, 190st or less	116.5	
40	191st or more, 300st or less	134	

LEYG□M (Sliding bearing) Standard stroke: 30, 50, 100

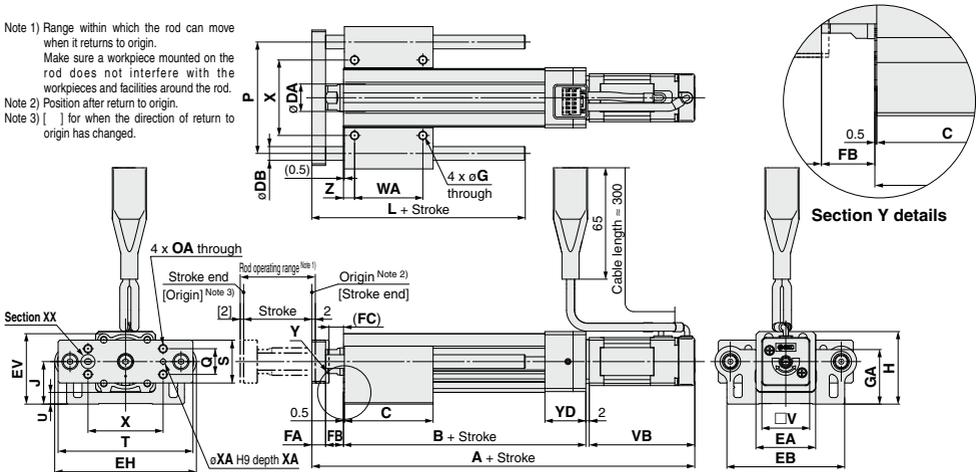
Size	Stroke range	L	DB
16	64st or less	51.5	10
	65st or more, 90st or less	74.5	
	91st or more, 200st or less	105	
25	59st or less	67.5	12
	60st or more, 185st or less	100.5	
	186st or more, 300st or less	138	
32	54st or less	74	16
	55st or more, 180st or less	107	
40	181st or more, 300st or less	144	

LEYG□M, LEYG□L Common

Size	Stroke range	A	B	C	DA	EA	EB	EH	EV	FA	FB	FC	G	GA	H	J	K	M	NA	NB	NC	
16	39st or less	109	90.5	37	16	35	69	83	41.1	8	10.5	8.5	4.3	31.8	74.3	24.8	23	25.5	M4 x 0.7	7	5.5	
	40st or more, 100st or less	129	110.5	52																		
	101st or more, 200st or less			82																		
25	39st or less	141.5	116	50	20	46	85	103	52.3	11	14.5	12.5	5.4	40.3	98.8	30.8	29	34	M5 x 0.8	8	6.5	
	40st or more, 100st or less			67.5																		
	101st or more, 124st or less			84.5																		
32	125st or more, 200st or less	166.5	141	102																		
	201st or more, 300st or less			55																		
	39st or less	160.5	130	68	25	60	101	123	63.8	12	18.5	16.5	5.4	50.3	125.3	38.3	30	40	M6 x 1.0	10	8.5	
40	40st or more, 100st or less			85																		
	101st or more, 124st or less			102																		
	125st or more, 200st or less	190.5	160	85																		
16	39st or less	10	65	15	25	79	6.8	28	80.3	61.8	81	62.5	25	19	55	44	3	4	22.5	6.5		
	40st or more, 100st or less	M5 x 0.8											40	26.5	70	41.5	75					
	101st or more, 200st or less												35	26	70							
25	39st or less	12	80	18	30	95	6.8	42	85.4	63.4	81.6	59.6	50	33.5	95	54	4	5	26.5	8.5		
	40st or more, 100st or less	M6 x 1.0											70	43.5	95							
	101st or more, 124st or less												85	51								
32	125st or more, 200st or less												40	28.5	75							
	201st or more, 300st or less												50	33.5	105	64	5	6	34	8.5		
	39st or less	M6 x 1.0	12	95	28	117	7.3	56.4	95.4	68.4	—	—	70	43.5	105							
40	40st or more, 100st or less												40	28.5	75							
	101st or more, 124st or less												50	33.5	105	64	5	6	34	8.5		
	125st or more, 200st or less	M6 x 1.0	12	95	28	117	7.3	56.4	117.4	90.4	—	—	70	43.5	105							
16	39st or less	10	65	15	25	79	6.8	28	80.3	61.8	81	62.5	25	19	55	44	3	4	22.5	6.5		
	40st or more, 100st or less	M5 x 0.8											40	26.5	70	41.5	75					
25	39st or less	12	80	18	30	95	6.8	42	85.4	63.4	81.6	59.6	50	33.5	95	54	4	5	26.5	8.5		
	40st or more, 100st or less	M6 x 1.0											70	43.5	95							
	101st or more, 124st or less												85	51								
32	125st or more, 200st or less												40	28.5	75							
	201st or more, 300st or less												50	33.5	105	64	5	6	34	8.5		
	39st or less	M6 x 1.0	12	95	28	117	7.3	56.4	95.4	68.4	—	—	70	43.5	105	64	5	6	34	8.5		
40	40st or more, 100st or less												40	28.5	75							
	101st or more, 124st or less												50	33.5	105	64	5	6	34	8.5		
	125st or more, 200st or less	M6 x 1.0	12	95	28	117	7.3	56.4	117.4	90.4	—	—	70	43.5	105							

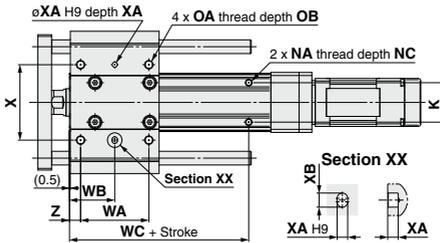
Dimensions: In-line Motor

Note 1) Range within which the rod can move when it returns to origin.
 Make sure a workpiece mounted on the rod does not interfere with the workpieces and facilities around the rod.
 Note 2) Position after return to origin.
 Note 3) [] for when the direction of return to origin has changed.



LEYG□L (Ball bushing bearing)
 Standard stroke: 50, 100, 200

Size	Stroke range	L	DB
16	90st or less	75	8
	91st or more, 200st or less	105	
	114st or less	91	
25	115st or more, 190st or less	115	10
	191st or more, 300st or less	133	
	114st or less	97.5	
32	115st or more, 190st or less	116.5	13
	191st or more, 300st or less	134	



LEYG□M (Sliding bearing)
 Standard stroke: 30, 50, 100

Size	Stroke range	L	DB
16	64st or less	51.5	10
	65st or more, 90st or less	74.5	
	91st or more, 200st or less	105	
25	99st or less	67.5	12
	60st or more, 165st or less	100.5	
	166st or more, 300st or less	138	
32	54st or less	74	16
	55st or more, 190st or less	107	
40	181st or more, 300st or less	144	

LEYG□M, LEYG□L Common

Size	Stroke range	Step motor		Servo motor		B	C	DA	EA	EB	EH	EV	FA	FB	FC	G	GA	H	J	K	NA	NC
		A	A	A	A																	
16	39st or less	174.3	175	92	37	16	35	69	83	41.1	8	10.5	8.5	4.3	31.8	42.3	24.8	23	M4 x 0.7	5.5		
	40st or more, 100st or less	194.3	195	112	82																	
	101st or more, 200st or less	206.4	202.6	115.5	50																	
25	39st or less	231.4	227.6	140.5	67.5	20	45	85	103	52.3	11	14.5	12.5	5.4	40.3	53.3	30.8	29	M5 x 0.8	6.5		
	40st or more, 100st or less				84.5																	
	101st or more, 124st or less				102																	
32	39st or less	228.9	—	128	55	25	60	101	123	63.8	12	18.5	16.5	5.4	50.3	68.3	38.3	30	M6 x 1.0	8.5		
	40st or more, 100st or less				68																	
	101st or more, 124st or less				85																	
40	39st or less	250.9	—	128	55	25	60	101	123	63.8	12	18.5	16.5	5.4	50.3	68.3	38.3	30	M6 x 1.0	8.5		
	40st or more, 100st or less				68																	
	101st or more, 124st or less				85																	
40	39st or less	280.9	—	158	102	25	60	101	123	63.8	12	18.5	16.5	5.4	50.3	68.3	38.3	30	M6 x 1.0	8.5		
	40st or more, 100st or less				68																	
	101st or more, 124st or less				85																	
16	39st or less	M5 x 0.8	10	65	15	25	79	6.8	28	61.8	62.5	25	19	55	44	3	4	24	6.5			
	40st or more, 100st or less																			40	26.5	
	101st or more, 200st or less																			70	41.5	75
25	39st or less	M6 x 1.0	12	80	18	30	95	6.8	42	63.4	59.6	50	33.5	95	54	4	5	26	8.5			
	40st or more, 100st or less																			85	51	
	101st or more, 124st or less																			70	43.5	75
32	39st or less	M6 x 1.0	12	95	28	40	117	7.3	56.4	68.4	—	50	33.5	75	64	5	6	32	8.5			
	40st or more, 100st or less																			40	28.5	
	101st or more, 124st or less																			70	43.5	105
40	39st or less	M6 x 1.0	12	95	28	40	117	7.3	56.4	90.4	—	50	33.5	105	64	5	6	32	8.5			
	40st or more, 100st or less																			40	28.5	
	101st or more, 124st or less																			70	43.5	105
40	39st or less	M6 x 1.0	12	95	28	40	117	7.3	56.4	90.4	—	50	33.5	105	64	5	6	32	8.5			
	40st or more, 100st or less																			40	28.5	
	101st or more, 124st or less																			70	43.5	105

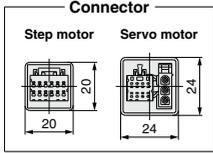
LEYG Series

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

Dimensions

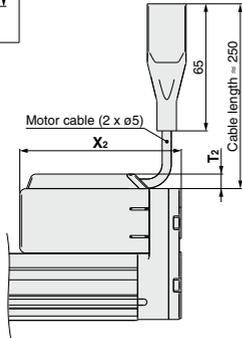
Motor top mounting type

With motor cover: LEYG $\begin{matrix} 16 \\ 25 \\ 32 \\ 40 \end{matrix} \square \square \square \begin{matrix} A \\ B \\ C \end{matrix}$

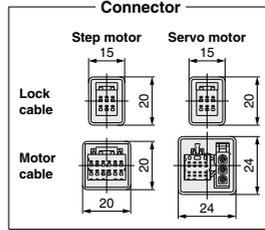


Size	T ₂	X ₂
16	7.5	83
25	7.5	88.5
32	7.5	98.5
40	7.5	120.5

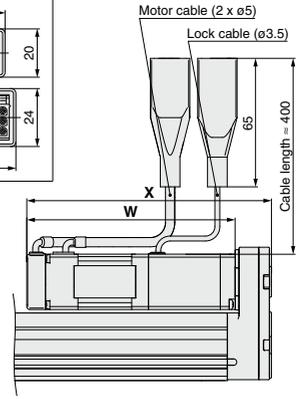
Motor cover material:
Synthetic resin



With lock: LEYG $\begin{matrix} 16 \\ 25 \\ 32 \\ 40 \end{matrix} \square \square \square \begin{matrix} A \\ B \\ C \end{matrix}$

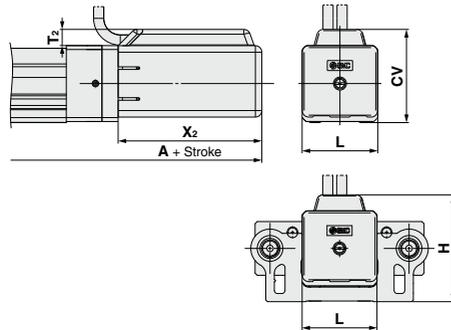


Size	Step motor		Servo motor	
	W	X	W	X
16	103.3	121.8	104.0	122.5
25	103.9	125.9	100.1	122.1
32	111.4	138.4	—	—
40	133.4	160.4	—	—



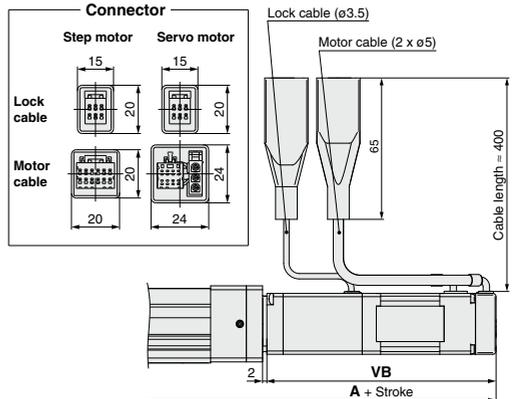
In-line motor type

With motor cover: LEYG $\begin{matrix} 16 \\ 25 \\ 32 \\ 40 \end{matrix} \square \square \square \begin{matrix} A \\ D \\ B \\ C \end{matrix}$



Size	Stroke range	A	T ₂	X ₂	L	H	CV
25	101st or more, 200st or less	197	7.5	68.5	46	61.3	54.5
	100st or less	209.5					
	101st or more, 300st or less	234.5					
32	100st or less	232	7.5	73.5	60	75.8	68.5
	101st or more, 300st or less	262					
	100st or less	254					
40	100st or less	254	7.5	95.5	60	75.8	68.5
	101st or more, 300st or less	284					

With lock: LEYG $\begin{matrix} 16 \\ 25 \\ 32 \\ 40 \end{matrix} \square \square \square \begin{matrix} A \\ D \\ B \\ C \end{matrix}$

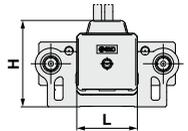
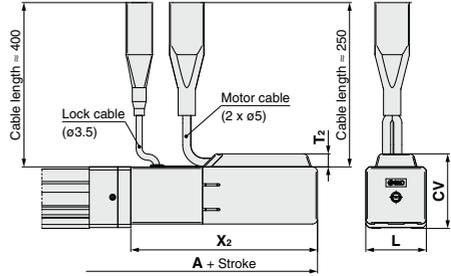
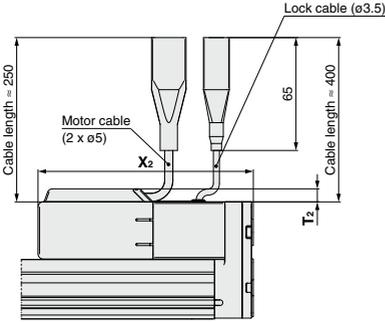


Size	Stroke range	Step motor		Servo motor	
		A		VB	
		Step motor	Servo motor	Step motor	Servo motor
16	100st or less	215.8	216.5	103.3	104
	101st or more, 200st or less	235.8	236.5		
	100st or less	246.9	243.1		
25	101st or more, 300st or less	271.9	268.1	103.9	100.1
	100st or less	271.9	—		
	101st or more, 300st or less	301.9	—		
32	100st or less	293.9	—	111.4	—
	101st or more, 300st or less	323.9	—		
40	100st or less	293.9	—	133.4	—
	101st or more, 300st or less	323.9	—		

Dimensions

Motor top mounting type 16 A
 With lock/motor cover: LEYG 25 □ □ B □ W
 32 C
 40

In-line motor type 16 A
 With lock/motor cover: LEYG 25 D □ B □ W
 32 C
 40



[mm]

Size	T ₂	X ₂
16	7.5	124.5
25	7.5	129
32	7.5	141.5
40	7.5	163.5

[mm]

Size	Stroke range	A	T ₂	X ₂	L	H	CV
16	100st or less	218.5	7.5	108	35	49.8	43
	101st or more, 300st or less	238.5					
25	100st or less	250	7.5	109	46	61.3	54.4
	101st or more, 300st or less	275					
32	100st or less	275	7.5	116.5	60	75.8	68.5
	101st or more, 300st or less	305					
40	100st or less	297	7.5	138.5	60	75.8	68.5
	101st or more, 300st or less	327					

LEYG Series

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

Support Block

●Guide for support block application

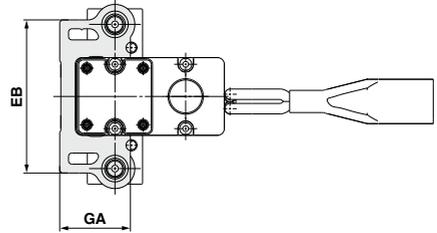
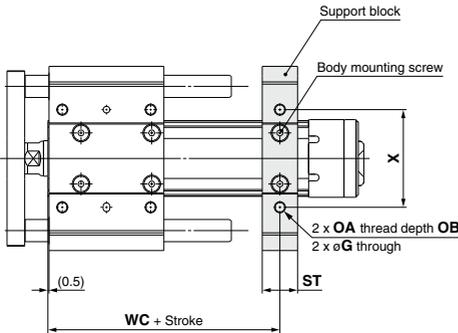
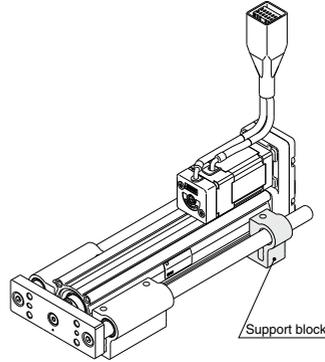
When the stroke exceeds 100 mm and the mounting orientation is horizontal, the body will be bent. Mounting the support block is recommended. (Please order it separately from the models shown below.)

Support Block Model

LEYG-S016

Size

016	For size 16
025	For size 25
032	For size 32, 40



⚠ Caution

Do not install the body using only a support block. The support block should be used only for support.

Size	Model	Stroke range	EB	G	GA	OA	OB	ST	WC	X
16	LEYG-S016	100st or less	69	4.3	31.8	M5 x 0.8	10	16	55	44
		101st or more, 200st or less							75	
25	LEYG-S025	100st or less	85	5.4	40.3	M6 x 1.0	12	20	70	54
		101st or more, 300st or less							95	
32 40	LEYG-S032	100st or less	101	(5.4)	(50.3)	M6 x 1.0	12	22	75	64
		101st or more, 300st or less							105	

* Two body mounting screws are included with the support block.

* The through holes of the LEYG-S032 cannot be used for the top mounting type. Use taps on the bottom.

Electric Actuator/ Guide Rod Type

LEYG Series LEYG25, 32

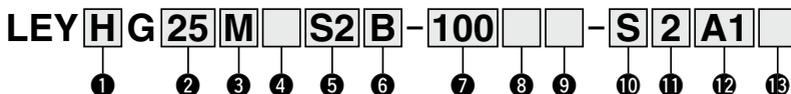


RoHS

Motorless Type ▶ Page 868

LECY Series ▶ Page 302-1

How to Order



1 Accuracy

Nil	Basic type
H	High precision type

2 Size

25
32

3 Bearing type

M	Sliding bearing
L	Ball bushing bearing

4 Motor mounting position

Nil	Top mounting
D	In-line

5 Motor type*1

Symbol	Type	Output [W]	Actuator size	Compatible driver*3	UL-compliant
S2	AC servo motor (Incremental encoder)	100	25	LECSA□-S1	—
S3	AC servo motor (Incremental encoder)	200	32	LECSA□-S3	—
S6	AC servo motor (Absolute encoder)	100	25	LECSB□-S5 LECS□-S5 LECSS□-S5	—
S7	AC servo motor (Absolute encoder)	200	32	LECSB□-S7 LECS□-S7 LECSS□-S7	—
T6 *2	AC servo motor (Absolute encoder)	100	25	LECSS2-T5	●
T7		200	32	LECSS2-T7	●

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

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

*3 For details about the driver, refer to page 607.

6 Lead [mm]

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

* The values shown in () are the lead for size 32 top mounting types. (Equivalent lead which includes the pulley ratio [1.25:1])

7 Stroke [mm]

30	30
to	to
300	300

* Refer to the applicable stroke table.

* There is a limit for mounting size 32 top mounting type and 50 mm stroke or less. Refer to the dimensions.

8 Motor option

Nil	Without option
B	With lock

9 Guide option

Nil	Without option
F	With grease retaining function

* Only available for size 25 and 32 sliding bearings. (Refer to "Construction" on page 299.)

11 Cable length* [m]

Nil	Without cable
2	2
5	5
A	10

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

10 Cable type*

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

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

* Standard cable entry direction is

- Top mounting: (A) Axis side
- In-line: (B) Counter axis side

(Refer to page 623 for details.)

* Applicable stroke table

Model	Stroke [mm]	●: Standard						Manufacturable stroke range
		30	50	100	150	200	250	
LEYG25		●	●	●	●	●	●	15 to 300
LEYG32		●	●	●	●	●	●	20 to 300

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

For auto switches, refer to pages 270-11 and 270-12.



Motor mounting position: Top mounting



Motor mounting position: In-line

12 Driver type*

	Compatible driver	Power supply voltage [V]	UL-compliant
Nil	Without driver	—	—
A1	LECSA1-S□	100 to 120	—
A2	LECSA2-S□	200 to 230	—
B1	LECSB1-S□	100 to 120	—
B2	LECSB2-S□	200 to 230	—
C1	LE CSC1-S□	100 to 120	—
C2	LE CSC2-S□	200 to 230	—
S1	LECSS1-S□	100 to 120	—
S2	LECSS2-S□	200 to 230	—
	LECSS2-T□	200 to 240	●

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

Example)

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

S2 : Standard cable (2 m)

Nil : Without cable and driver

13 I/O cable length [m]*

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

* 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.)

Use of auto switches for the guide rod type LEYG series

- Insert the auto switch from the front side with rod (plate) sticking out.
- For the parts hidden behind the guide attachment (Rod stick out side), the auto switch cannot be fixed.
- Please consult with SMC when using auto switch on the rod stick out side, as it is produced as a special order.

Compatible Driver

Driver type	Pulse input type /Positioning type	Pulse input type	CC-Link direct input type	SSCNET III type	SSCNET III/H type
					
Series	LECSA	LECSB	LE CSC	LECSS	LECSS-T
Number of point tables	Up to 7	—	Up to 255 (2 stations occupied)	—	—
Pulse input	○	○	—	—	—
Applicable network	—	—	CC-Link	SSCNET III type	SSCNET III/H
Control encoder	Incremental 17-bit encoder	Absolute 18-bit encoder	Absolute 18-bit encoder	Absolute 18-bit encoder	Absolute 22-bit encoder
Communication function	USB communication	USB communication, RS422 communication		USB communication	
Power supply voltage [V]	100 to 120 VAC (50/60 Hz) 200 to 230 VAC				200 to 240 VAC (50/60 Hz)
Reference page	Page 607				

LEYG Series

AC Servo Motor

Specifications

Model		LEYG25□S ² /T6 (Top mounting) LEYG25□DS ² /T6 (In-line)				LEYG32□S ² /T7 (Top mounting)				LEYG32□DS ² /T7 (In-line)			
Actuator specifications	Stroke [mm] ^{Note 1)}	30, 50, 100, 150, 200, 250, 300				30, 50, 100, 200, 250, 300				30, 50, 100, 200, 250, 300			
	Work load [kg]	Horizontal ^{Note 2)}		50		30		60		30		60	
		Vertical		15		29		35		10		44	
	Force [N] ^{Note 3)} (Set value: 15 to 30%)	65 to 131		127 to 255		242 to 485		79 to 157		154 to 308		294 to 588	
	Max. speed [mm/s]	900		450		225		1200		600		300	
	Pushing speed [mm/s] ² ^{Note 4)}	35 or less				30 or less				30 or less			
	Max. acceleration/deceleration [mm/s ²]	5000								5000			
	Positioning repeatability [mm]	Basic type		±0.02		±0.01		±0.01		±0.01		±0.01	
		High precision type											
	Lost motion [mm] ^{Note 5)}	Basic type		0.1 or less		0.1 or less		0.1 or less		0.1 or less		0.1 or less	
High precision type		0.05 or less		0.05 or less		0.05 or less		0.05 or less		0.05 or less			
Lead [mm] (including pulley ratio)	12		6		3		20		10		5		
Impact/Vibration resistance [m/s ²] ^{Note 6)}	50/20				50/20				50/20				
Actuation type	Ball screw + Belt [1:1]/Ball screw				Ball screw + Belt [1:1.25]				Ball screw				
Guide type	Sliding bearing (LEYG□M), Ball bushing bearing (LEYG□L)												
Operating temperature range [°C]	5 to 40				5 to 40				5 to 40				
Operating humidity range [%RH]	90 or less (No condensation)				90 or less (No condensation)				90 or less (No condensation)				
Regeneration option	May be required depending on speed and work load. (Refer to page 282.)												
Motor output/Size	100 W/□40				200 W/□60								
Motor type	AC servo motor (100/200 VAC)				AC servo motor (100/200 VAC)				AC servo motor (100/200 VAC)				
Encoder	Motor type S2, S3: Incremental 17-bit encoder (Resolution: 131072 p/rev) Motor type S6, S7: Absolute 18-bit encoder (Resolution: 262144 p/rev) Motor type T6, T7: Absolute 22-bit encoder (Resolution: 4194304 p/rev)												
Power consumption [W] ^{Note 7)}	Horizontal		45		65		65		65		65		
	Vertical		145		175		175		175		175		
Standby power consumption when operating [W] ^{Note 8)}	Horizontal		2		2		2		2		2		
	Vertical		8		8		8		8		8		
Max. instantaneous power consumption [W] ^{Note 9)}	445		724		724		724		724		724		
Type ^{Note 10)}	Non-magnetizing lock				Non-magnetizing lock				Non-magnetizing lock				
Holding force [N]	131		255		485		157		308		588		
Power consumption at 20°C [W] ^{Note 11)}	6.3		6.3		6.3		7.9		5.88		1.97		
Rated voltage [V]	24 VDC ^{0/10%}												

Note 1) Please consult with SMC for non-standard strokes as they are produced as special orders.
 Note 2) The maximum value of the horizontal work load. An external guide is necessary to support the load. The actual work load changes according to the condition of the external guide. Please confirm using actual device.
 Note 3) The force setting range (set values for the driver) for the force control with the torque control mode. Set it with reference to "Force Conversion Graph" on page 283. When the control equivalent to the pushing operation of the controller LECOP series is performed, select the LECSS driver and combine it with the Simple Motion (manufactured by Mitsubishi Electric Corporation) which has a pushing operation function.
 Note 4) The allowable collision speed for collision with the workpiece with the torque control mode.
 Note 5) A reference value for correcting an error in reciprocal operation.
 Note 6) Impact resistance: No malfunction occurred when the actuator was tested with a drop

tester in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)
 Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. Test was performed in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)
 Note 7) The power consumption (including the driver) is for when the actuator is operating.
 Note 8) The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during 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

Weight: Top Mounting Type

Series		LEYG25MS ² /T6						LEYG32MS ² /T7							
Motor type	Stroke [mm]	30	50	100	150	200	250	300	30	50	100	150	200	250	300
	Incremental encoder	1.80	1.99	2.31	2.73	3.07	3.41	3.67	3.24	3.50	4.05	4.80	5.35	5.83	6.28
	Absolute encoder [S ²]	1.86	2.05	2.37	2.79	3.13	3.47	3.73	3.18	3.44	3.99	4.74	5.29	5.77	6.22
	Absolute encoder [T ²]	1.8	2.0	2.4	2.8	3.1	3.5	3.7	3.2	3.4	4.0	4.7	5.3	5.7	6.2

Series		LEYG25LS ² /T6						LEYG32LS ² /T7							
Motor type	Stroke [mm]	30	50	100	150	200	250	300	30	50	100	150	200	250	300
	Incremental encoder	1.81	2.02	2.26	2.69	2.95	3.27	3.51	3.24	3.51	3.9	4.64	5.06	5.56	5.96
	Absolute encoder [S ²]	1.87	2.08	2.32	2.75	3.01	3.33	3.57	3.18	3.45	3.84	4.58	5.00	5.50	5.90
	Absolute encoder [T ²]	1.9	2.1	2.3	2.7	3.0	3.3	3.6	3.2	3.4	3.8	4.6	5.0	5.5	5.9

Weight: In-line Motor Type

Series		LEYG25MDS ² /T6						LEYG32MDS ² /T7							
Motor type	Stroke [mm]	30	50	100	150	200	250	300	30	50	100	150	200	250	300
	Incremental encoder	1.83	2.02	2.34	2.76	3.10	3.44	3.70	3.26	3.52	4.07	4.82	5.37	5.85	6.30
	Absolute encoder [S ²]	1.89	2.08	2.40	2.82	3.16	3.50	3.76	3.20	3.46	4.01	4.76	5.31	5.79	6.24
	Absolute encoder [T ²]	1.9	2.1	2.4	2.8	3.1	3.5	3.7	3.2	3.4	4.0	4.7	5.3	5.8	6.2

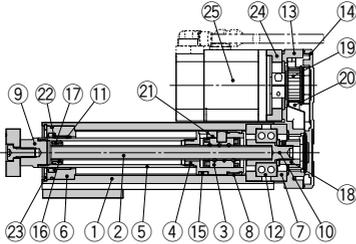
Series		LEYG25LDS ² /T6						LEYG32LDS ² /T7							
Motor type	Stroke [mm]	30	50	100	150	200	250	300	30	50	100	150	200	250	300
	Incremental encoder	1.84	2.05	2.29	2.72	2.98	3.30	3.54	3.26	3.53	3.92	4.66	5.08	5.58	5.98
	Absolute encoder [S ²]	1.90	2.11	2.35	2.78	3.04	3.36	3.60	3.20	3.47	3.86	4.60	5.02	5.52	5.92
	Absolute encoder [T ²]	1.9	2.1	2.3	2.8	3.0	3.3	3.6	3.2	3.4	3.8	4.6	5.0	5.5	5.9

Additional Weight

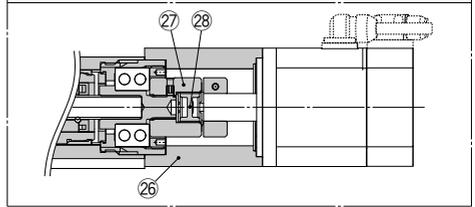
Size		25	32
Lock	Incremental encoder	0.20	0.40
	Absolute encoder [S ²]	0.30	0.66
	Absolute encoder [T ²]	0.3	0.7

Construction

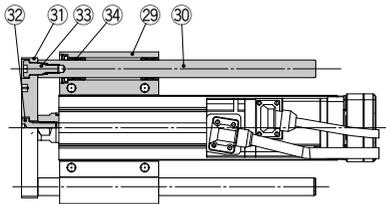
Motor mounting position: Top mounting type



Motor mounting position: In-line type



LEYG□M

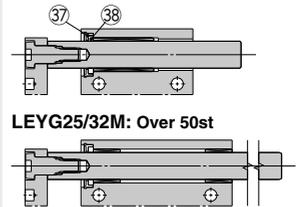


LEYG25/32M: 50st or less



When grease retaining function selected

LEYG25/32M: 50st or less



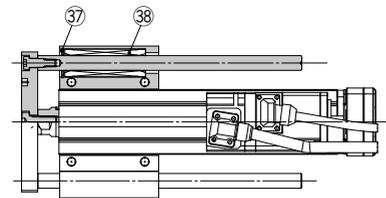
LEYG25/32M: Over 50st



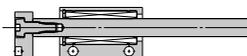
LEYG25/32M: Over 50st



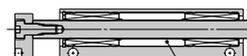
LEYG□L



LEYG25/32L: 100st or less



LEYG25/32L: Over 100st



Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	Anodized
2	Ball screw shaft	Alloy steel	
3	Ball screw nut	Synthetic resin/Alloy steel	
4	Piston	Aluminum alloy	
5	Piston rod	Stainless steel	Hard chrome plating
6	Rod cover	Aluminum alloy	
7	Bearing holder	Aluminum alloy	
8	Rotation stopper	POM	
9	Socket	Free cutting carbon steel	Nickel plating
10	Connected shaft	Free cutting carbon steel	Nickel plating
11	Bushing	Bearing alloy	
12	Bearing	—	
13	Return box	Aluminum die-cast	Coating
14	Return plate	Aluminum die-cast	Coating
15	Magnet	—	
16	Wear ring holder	Stainless steel	Stroke 101 mm or more
17	Wear ring	POM	Stroke 101 mm or more
18	Screw shaft pulley	Aluminum alloy	
19	Motor pulley	Aluminum alloy	
20	Belt	—	
21	Parallel pin	Stainless steel	
22	Seal	NBR	
23	Retaining ring	Steel for spring	Phosphate coated
24	Motor adapter	Aluminum alloy	Coating
25	Motor	—	
26	Motor block	Aluminum alloy	Coating

No.	Description	Material	Note
27	Hub	Aluminum alloy	
28	Spider	Urethane	
29	Guide attachment	Aluminum alloy	Anodized
30	Guide rod	Carbon steel	
31	Plate	Aluminum alloy	Anodized
32	Plate mounting cap screw	Carbon steel	Nickel plating
33	Guide cap screw	Carbon steel	Nickel plating
34	Sliding bearing	Bearing alloy	
35	Felt	Felt	
36	Holder	Resin	
37	Retaining ring	Steel for spring	Phosphate coated
38	Ball bushing	—	
39	Spacer	Aluminum alloy	Chromated

Support Block

Size	Order no.
25	LEYG-S025
32	LEYG-S032

* Two body mounting screws are included with the support block.

Replacement Parts /Belt

Size	Order no.
25	LE-D-2-2
32	LE-D-2-4

Replacement Parts/Grease Pack

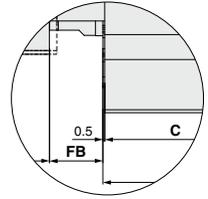
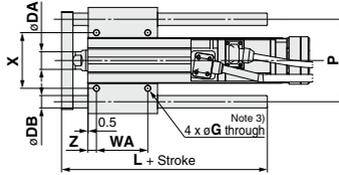
Applied portion	Order no.
Piston rod	GR-S-010 (10 g)
Guide rod	GR-S-020 (20 g)

* Apply grease on the piston rod periodically. Grease should be applied at 1 million cycles or 200 km, whichever comes first.

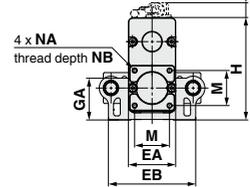
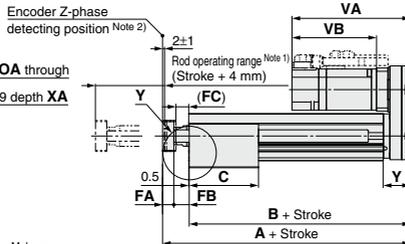
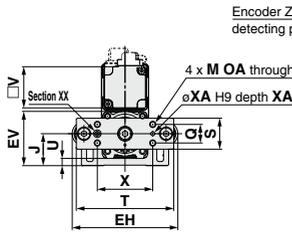
LEYG Series

AC Servo Motor

Dimensions: Top Mounting

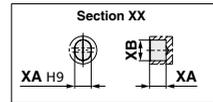
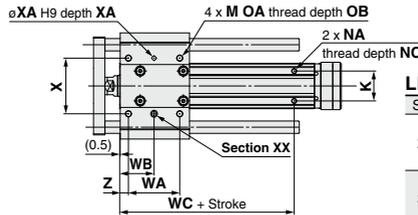


Section Y details



Section XX

- Note 1) Range within which the rod can move. Make sure a workpiece mounted on the rod does not interfere with the workpieces and facilities around the rod.
- Note 2) The Z-phase first detecting position from the stroke end of the motor side.
- Note 3) Through holes cannot be used for size 32 with 50 mm stroke or less.



Section XX

LEYG□L (Ball bushing bearing) [mm]

Size	Stroke range [mm]	L	DB
25	Up to 114	91	10
	115 to 190	115	
	191 to 300	133	
32	Up to 114	97.5	13
	115 to 190	116.5	
	191 to 300	134	

LEYG□M (Sliding bearing) [mm]

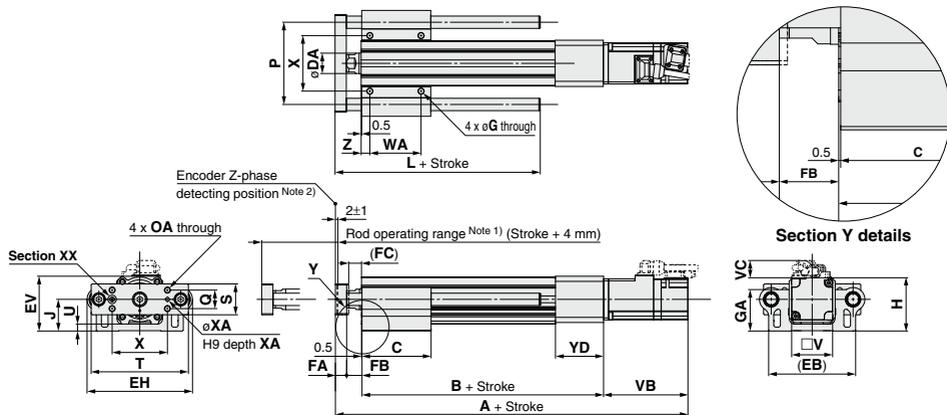
Size	Stroke range [mm]	L	DB
25	Up to 59	67.5	12
	60 to 185	100.5	
	186 to 300	138	
32	Up to 59	74	16
	60 to 185	107	
	186 to 300	144	

LEYG□M, LEYG□L Common

Size	Stroke range [mm]	A	B	C	DA	EA	EB	EH	EV	FA	FB	FC	G	GA	H	J	K	M	NA	NB	NC
25	Up to 39	141.5	116	50	20	46	85	103	52.3	11	14.5	12.5	5.4	40.3	98.8	30.8	29	34	M5x0.8	8	6.5
	40 to 100			67.5																	
	101 to 124			84.5																	
	125 to 200			102																	
32	Up to 39	160.5	130	55	25	60	101	123	63.8	12	18.5	16.5	5.4	50.3	125.3	38.3	30	40	M6x1.0	10	8.5
	40 to 100			68																	
	101 to 124			85																	
	125 to 200			102																	
Size	Stroke range [mm]	OA	OB	P	Q	S	T	U	V	WA	WB	WC	X	XA	XB	Y	Z				
25	Up to 39	M6 x 1.0	12	80	18	30	95	6.8	40	35	26	70	54	4	5	26.5	8.5				
	40 to 100									50	33.5										
	101 to 124									70	43.5										
	125 to 200									85	51										
32	Up to 39	M6 x 1.0	12	95	28	40	117	7.3	60	40	28.5	75	64	5	6	34	8.5				
	40 to 100									50	33.5										
	101 to 124									70	43.5										
	125 to 200									85	51										

Size	Incremental encoder						Absolute encoder [S6/S7]						Absolute encoder [T6/T7]								
	Without lock			With lock			Without lock			With lock			Without lock			With lock					
	VA	VB	VC	VA	VB	VC	VA	VB	VC	VA	VB	VC	VA	VB	VC	VA	VB	VC	VA	VB	VC
25	120	87	14.1	156.9	123.9	15.8	115.4	82.4	14.1	156.5	123.5	15.8	115.4	82.4	14.1	156	123	15.8	156	123	15.8
32	128.2	88.2	17.1	156.8	116.8	17.1	116.6	76.6	17.1	156.1	116.1	17.1	116.6	76.6	17.1	153.4	113.4	17.1	153.4	113.4	17.1

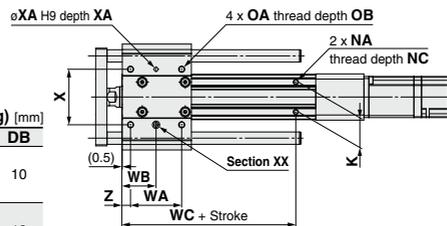
Dimensions: In-line Motor



Note 1) Range within which the rod can move.

Make sure a workpiece mounted on the rod does not interfere with the workpieces and facilities around the rod.

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



LEYG□L (Ball bushing bearing) [mm]

Size	Stroke range [mm]	L	DB
25	Up to 114	91	10
	115 to 190	115	
	191 to 300	133	
32	Up to 114	97.5	13
	115 to 190	116.5	
	191 to 300	134	

LEYG□M (Sliding bearing) [mm]

Size	Stroke range [mm]	L	DB
25	Up to 59	67.5	12
	60 to 185	100.5	
	186 to 300	138	
32	Up to 59	74	16
	60 to 185	107	
	186 to 300	144	

LEYG□M, LEYG□L Common

Size	Stroke range [mm]	B	C	DA	EB	EH	EV	FA	FB	FC	G	GA	H	J	K	NA	NC
25	Up to 39	136.5	50	20	85	103	52.3	11	14.5	12.5	5.4	40.3	53.3	30.8	29	M6 x 0.8	6.5
	40 to 100		67.5														
	101 to 124		84.5														
	125 to 200		102														
	201 to 300		102														
32	Up to 39	156	55	25	101	123	63.8	12	18.5	16.5	5.4	50.3	68.3	38.3	30	M6 x 1.0	8.5
	40 to 100		68														
	101 to 124		85														
	125 to 200		102														
	201 to 300		102														

Size	Stroke range [mm]	OA	OB	P	Q	S	T	U	V	WA	WB	WC	X	XA	XB	YD	Z
25	Up to 39	M6 x 1.0	12	80	18	30	95	6.8	40	35	26	70	54	4	5	47	8.5
	40 to 100									50	33.5						
	101 to 124									70	43.5						
	125 to 200									85	51	95					
	201 to 300									40	28.5						
32	Up to 39	M6 x 1.0	12	95	28	40	117	7.3	60	40	28.5	75	64	5	6	60	8.5
	40 to 100									50	33.5						
	101 to 124									70	43.5						
	125 to 200									85	51	105					
	201 to 300									40	28.5						

Size	Stroke range [mm]	Incremental encoder						Absolute encoder [S6/S7]						Absolute encoder [T6/T7]					
		Without lock			With lock			Without lock			With lock			Without lock			With lock		
		A	VB	VC	A	VB	VC	A	VB	VC	A	VB	VC	A	VB	VC	A	VB	VC
25	15 to 100	249	87	14.6	285.9	123.9	16.3	244.4	82.4	14.6	285.5	123.5	16.3	244.4	82.4	14.6	285	123	16.3
	105 to 300	274			310.9			269.4			315.5			269.4			310		
32	15 to 100	274.7	88.2	17.1	303.3	116.8	17.1	263.1	76.6	17.1	302.6	116.1	17.1	263.1	76.6	17.1	299.9	113.4	17.1
	105 to 300	304.7			333.3			293.1			332.6			293.1			329.9		

LEYG Series

AC Servo Motor

Support Block

●Guide for support block application

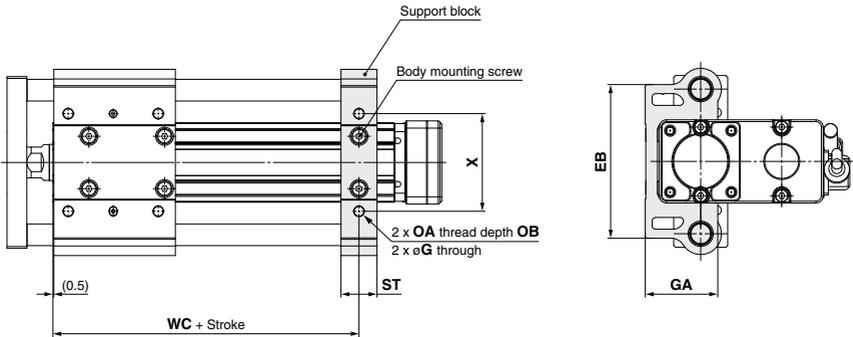
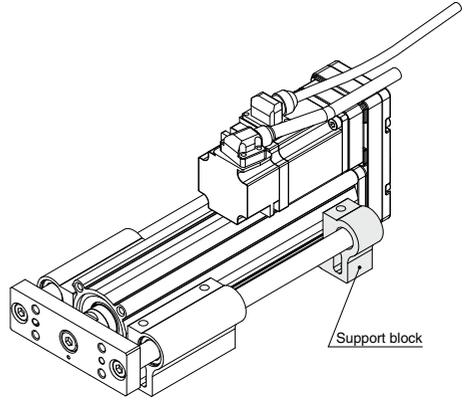
When the stroke exceeds 100 mm and the mounting orientation is horizontal, the body will be bent. Mounting the support block is recommended. (Please order it separately from the models shown below.)

Support Block Model

LEYG-S025

●Size

025	For size 25
032	For size 32



⚠Caution

Do not install the body using only a support block.
The support block should be used only for support.

Size	Model	Stroke range	EB	G	GA	OA	OB	ST	WC	X	[mm]
25	LEYG-S025	100st or less	85	5.4	40.3	M6 x 1.0	12	20	70	54	
		101st or more, 300st or less							95		
32	LEYG-S032	100st or less	101	(5.4)	(50.3)	M6 x 1.0	12	22	75	64	
		101st or more, 300st or less							105		

* Two body mounting screws are included with the support block.

* The through holes of the LEYG-S032 cannot be used for the top mounting type. Use taps on the bottom.

Electric Actuator/ Guide Rod Type

LEYG Series LEYG25, 32



LECY Series Page 296

How to Order

LEYG **H** **G** **25** **M** **V6** **B** - **200** - **S** **3** **M2**

1 2 3 4 5 6 7 8 9 10 11 12 13

1 Accuracy

NII	Basic type
H	High precision type

2 Size

25
32

3 Bearing type

M	Sliding bearing
L	Ball bushing bearing

4 Motor mounting position

NII	Top mounting
D	In-line

5 Motor type

Symbol	Type	Output [W]	Actuator size	Compatible driver
V6*	AC servo motor (Absolute encoder)	100	25	LECYM2-V5 LECYU2-V5
V7		200	32	LECYM2-V7 LECYU2-V7

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

6 Lead [mm]

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

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

7 Stroke [mm]

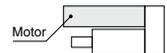
30	30
to	to
300	300

* Refer to the applicable stroke table.
* There is a limit for mounting size 32 top mounting type and 50 mm stroke or less. Refer to the dimensions.

8 Motor option

NII	Without option
B	With lock

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



9 Guide option

NII	Without option
F	With grease retaining function

* Only available for the sliding bearing.

10 Cable type*

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

* The motor and encoder cables are included. The motor cable for lock option is included when the motor with lock option is selected.

11 Cable length [m]*

NII	Without cable
3	3
5	5
A	10
C	20

* The length of the motor and encoder cables are the same. (For with lock)

Applicable Stroke Table

Model	Stroke [mm]							Manufacturable stroke range
	30	50	100	150	200	250	300	
LEYG25	●	●	●	●	●	●	●	15 to 300
LEYG32	●	●	●	●	●	●	●	20 to 300

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

For auto switches, refer to pages 270-11 and 270-12.



Motor mounting position: Top mounting



Motor mounting position: In-line

12 Driver type

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

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

13 I/O cable length [m] *

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

* When "Without driver" is selected for driver type, only "Nil: Without cable" can be selected.
 Refer to page 628-8 if I/O cable is required.
 (Options are shown on page 628-8.)

Use of auto switches for the guide rod type LEYG series

- Insert the auto switch from the front side with rod (plate) sticking out.
- For the parts hidden behind the guide attachment (Rod stick out side), the auto switch cannot be fixed.
- Please consult with SMC when using auto switch on the rod stick out side, as it is produced as a special order.

Compatible Driver

Driver type	 <p>MECHATROLINK-II type</p>	 <p>MECHATROLINK-III type</p>
Series	LECYM	LECYU
Applicable network	MECHATROLINK-II	MECHATROLINK-III
Control encoder	Absolute 20-bit encoder	
Communication device	USB communication, RS-422 communication	
Power supply voltage [V]	200 to 230 VAC (50/60 Hz)	
Reference page	Page 628-1	

LEYG Series

AC Servo Motor

Specifications

Model		LEYG25 ^M V6 (Top mounting) LEYG25 ^L DV6 (In-line)			LEYG32 ^M V7 (Top mounting)			LEYG32 ^M DV7 (In-line)			
Actuator specifications	Stroke [mm] ^{Note 1)}	30, 50, 100, 150, 200, 250, 300			30, 50, 100, 150, 200, 250, 300			30, 50, 100, 150, 200, 250, 300			
	Work load [kg]	Horizontal ^{Note 2)}	18	50	50	30	60	60	30	60	60
		Vertical	7	15	29	7	17	35	10	22	44
	Force [N] ^{Note 3)} (Set value: 45 to 90%)	65 to 131	127 to 255	242 to 485	79 to 157	154 to 308	294 to 588	98 to 197	192 to 385	368 to 736	
	Max. speed [mm/s]	900	450	225	1200	600	300	1000	500	250	
	Pushing speed [mm/s] ^{Note 4)}	35 or less			30 or less			30 or less			
	Max. acceleration/deceleration [mm/s ²]	5000			5000			5000			
	Positioning repeatability [mm]	Basic type	±0.02			±0.02			±0.02		
		High precision type	±0.01			±0.01			±0.01		
	Lost motion [mm]	Basic type	0.1 or less			0.1 or less			0.1 or less		
		High precision type	0.05 or less			0.05 or less			0.05 or less		
	Lead [mm] (including pulley ratio)	12	6	3	20	10	5	16	8	4	
	Impact/Vibration resistance [m/s ²] ^{Note 5)}	50/20			50/20			50/20			
	Actuation type	Ball screw + Belt [1:1]/Ball screw			Ball screw + Belt [1:1.25]			Ball screw			
	Guide type	Sliding bearing (LEYG□□M), Ball bushing bearing (LEYG□□L)									
Operating temperature range [°C]	5 to 40			5 to 40			5 to 40				
Operating humidity range [%RH]	90 or less (No condensation)			90 or less (No condensation)			90 or less (No condensation)				
Conditions for ^{Note 6)} "Regenerative resistor"	Horizontal	Not required			Not required			Not required			
	Vertical	5 or more			2 or more			2 or more			
Motor output/Size	100 W□□40			200 W□□60			200 W□□60				
Motor type	AC servo motor (200 VAC)			AC servo motor (200 VAC)			AC servo motor (200 VAC)				
Encoder	Absolute 20-bit encoder (Resolution: 1048576 p/rev)										
Electric specifications	Power consumption [W] ^{Note 7)}	Horizontal	45	65	65	65	65	65	65	65	
		Vertical	145	175	175	175	175	175	175	175	
	Standby power consumption when operating [W] ^{Note 8)}	Horizontal	2	2	2	2	2	2	2	2	
		Vertical	8	8	8	8	8	8	8	8	
Max. instantaneous power consumption [W] ^{Note 9)}	445			724			724				
Lock with specifications	Type ^{Note 10)}	Non-magnetizing lock			Non-magnetizing lock			Non-magnetizing lock			
	Holding force [N]	131	255	485	157	308	588	197	385	736	
	Power consumption at 20°C [W] ^{Note 11)}	5.5			6			6			
	Rated voltage [V]	24 VDC ^{+10%} ₀									

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

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

Note 3) The force setting range (set values for the driver) for the force control with the torque control mode. Set it with reference to "Force Conversion Graph" on page 283-4.

Note 4) The allowable collision speed for collision with the workpiece with the torque control mode.

Note 5) Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)

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

Note 6) The work load conditions which require "Regenerative resistor" when operating at the maximum speed (Duty ratio: 100%). Order the regenerative resistor separately. For details, refer to "Conditions for Regenerative Resistor (Guide)" on page 283-3.

Note 7) The power consumption (including the driver) is for when the actuator is operating. Note 8) The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during operation.

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

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

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

Weight

Product Weight: Top Mounting Type

Series	LEYG25MV6							LEYG32MV7						
	Stroke [mm]	30	50	100	150	200	250	300	30	50	100	150	200	250
Weight [kg]	1.7	1.9	2.2	2.6	3.0	3.3	3.6	3.1	3.4	4.0	4.7	5.3	5.7	6.2

Series	LEYG25LV6					LEYG32LV7								
	Stroke [mm]	30	50	100	150	200	250	300	30	50	100	150	200	250
Weight [kg]	1.7	1.9	2.2	2.6	2.9	3.2	3.4	3.1	3.4	3.8	4.5	5.0	5.5	5.9

Product Weight: In-line Motor Type

Series	LEYG25MDV6							LEYG32MDV7						
	Stroke [mm]	30	50	100	150	200	250	300	30	50	100	150	200	250
Weight [kg]	1.7	1.9	2.2	2.6	3.0	3.3	3.6	3.2	3.4	4.0	4.7	5.3	5.8	6.2

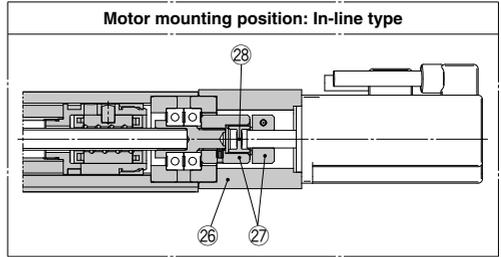
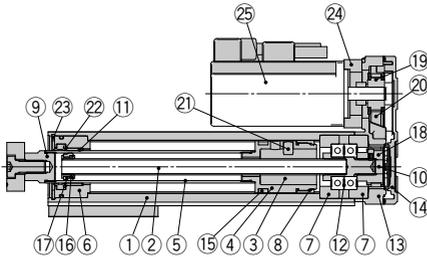
Series	LEYG25LDV6					LEYG32LDV7								
	Stroke [mm]	30	50	100	150	200	250	300	30	50	100	150	200	250
Weight [kg]	1.7	2.0	2.2	2.6	2.9	3.2	3.4	3.2	3.4	3.8	4.6	5.0	5.5	5.9

Additional Weight [kg]

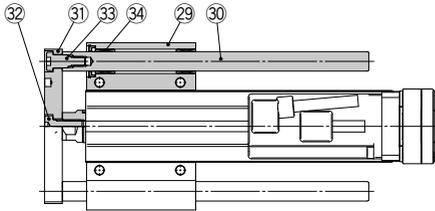
Size	25	32
Lock	0.3	0.6

Construction

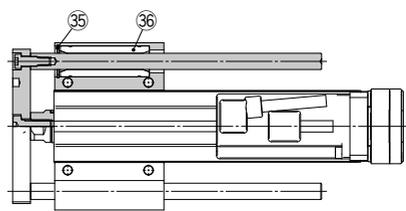
Motor mounting position: Top mounting type



LEYG□M



LEYG□L



Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	Anodized
2	Ball screw shaft	Alloy steel	
3	Ball screw nut	—	
4	Piston	Aluminum alloy	
5	Piston rod	Stainless steel	Hard chrome plating
6	Rod cover	Aluminum alloy	
7	Bearing holder	Aluminum alloy	
8	Rotation stopper	POM	
9	Socket	Free cutting carbon steel	Nickel plating
10	Connected shaft	Free cutting carbon steel	Nickel plating
11	Bushing	Bearing alloy	
12	Bearing	—	
13	Return box	Aluminum die-cast	Coating
14	Return plate	Aluminum die-cast	Coating
15	Magnet	—	
16	Wear ring holder	Stainless steel	Stroke 101 mm or more
17	Wear ring	POM	Stroke 101 mm or more
18	Screw shaft pulley	Aluminum alloy	

No.	Description	Material	Note
19	Motor pulley	Aluminum alloy	
20	Belt	—	
21	Parallel pin	Stainless steel	
22	Seal	NBR	
23	Retaining ring	Steel for spring	Phosphate coated
24	Motor adapter	Aluminum alloy	Coating
25	Motor	—	
26	Motor block	Aluminum alloy	Coating
27	Hub	Aluminum alloy	
28	Spider	Urethane	
29	Guide attachment	Aluminum alloy	Anodized
30	Guide rod	Carbon steel	
31	Plate	Aluminum alloy	Anodized
32	Plate mounting cap screw	Carbon steel	Nickel plating
33	Guide cap screw	Carbon steel	Nickel plating
34	Sliding bearing	Bearing alloy	
35	Retaining ring	Steel for spring	Phosphate coated
36	Ball bushing	—	

Support Block

Size	Order no.
25	LEYG-S025
32	LEYG-S032

* Two body mounting screws are included with the support block.

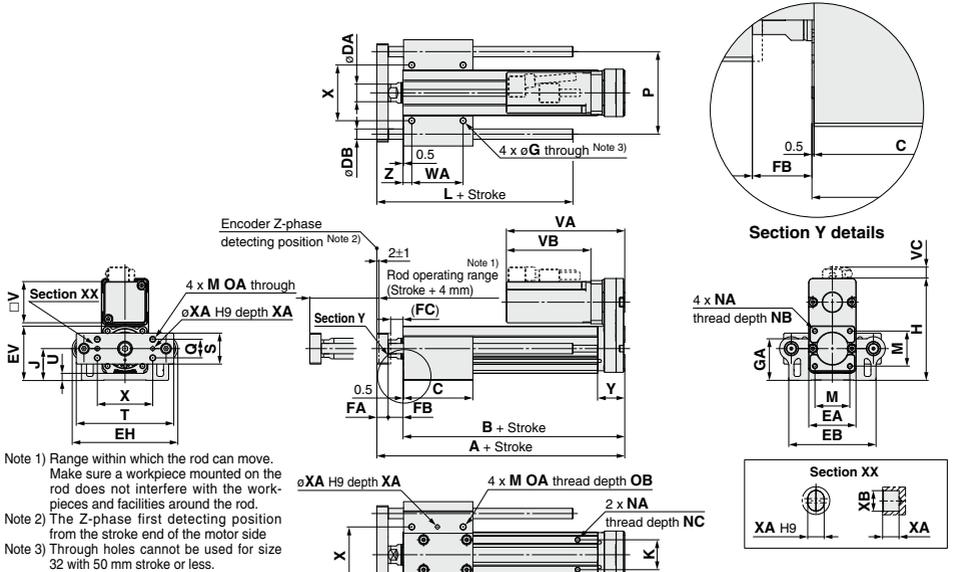
Replacement Parts/Belt

Size	Order no.
25	LE-D-2-2
32	LE-D-2-4

LEYG Series

AC Servo Motor

Dimensions: Top Mounting



Note 1) Range within which the rod can move. Make sure a workpiece mounted on the rod does not interfere with the workpieces and facilities around the rod.
 Note 2) The Z-phase first detecting position from the stroke end of the motor side
 Note 3) Through holes cannot be used for size 32 with 50 mm stroke or less.

LEYG□L (Ball bushing bearing) [mm]				
Size	Stroke range [mm]	L	DB	
25	15 to 110	91	10	
	115 to 190	115		
	195 to 300	133		
32	20 to 110	97.5	13	
	115 to 190	116.5		
	195 to 300	134		

LEYG□M (Sliding bearing) [mm]				
Size	Stroke range (mm)	L	DB	
25	15 to 55	67.5	12	
	60 to 185	100.5		
	190 to 300	138		
32	20 to 55	74	16	
	60 to 185	107		
	190 to 300	144		

LEYG□M, LEYG□L Common [mm]

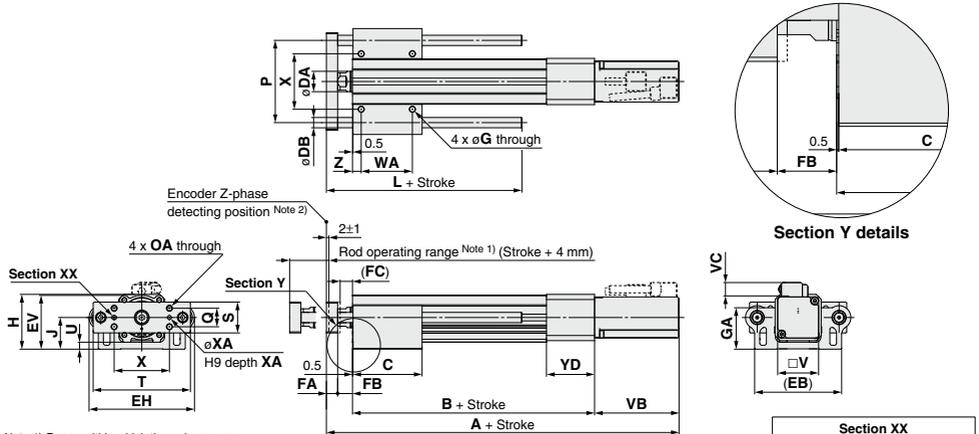
Size	Stroke range [mm]	A	B	C	DA	EA	EB	EH	EV	FA	FB	FC	G	GA	H	J	K	M	NA	NB	NC
25	15 to 35	141.5	116	50	20	46	85	103	52.3	11	14.5	12.5	5.4	40.3	98.8	30.8	29	34	M5 x 0.8	8	6.5
	40 to 100			67.5																	
	105 to 120	166.5	141	84.5																	
	125 to 200			102																	
	205 to 300																				
32	20 to 35	160.5	130	55	25	60	101	123	63.8	12	18.5	16.5	5.4	50.3	125.3	38.3	30	40	M6 x 1.0	10	8.5
	40 to 100			68																	
	105 to 120	190.5	160	85																	
	125 to 200			102																	
	205 to 300																				

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

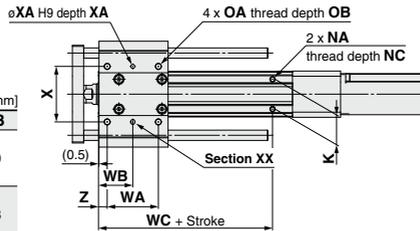
Size	Without lock			With lock		
	VA	VB	VC	VA	VB	VC
25	115.5	82.5	11	160.5	127.5	11
32	120	80	14	160	120	14



Dimensions: In-line Motor



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



LEYG□L (Ball bushing bearing) [mm]

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

LEYG□M (Sliding bearing) [mm]

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

LEYG□M, LEYG□L Common

Size	Stroke range [mm]	B	C	DA	EB	EH	EV	FA	FB	FC	G	GA	H	J	K	NA	NC
25	15 to 35	136.5	50	20	85	103	52.3	11	14.5	12.5	5.4	40.3	53.3	30.8	29	M5 x 0.8	6.5
	40 to 100		67.5														
	105 to 120	161.5	84.5														
	125 to 200		102														
32	20 to 35	156	55	25	101	123	63.8	12	18.5	16.5	5.4	50.3	68.3	38.3	30	M6 x 1.0	8.5
	40 to 100		68														
	105 to 120	186	85														
	125 to 200		102														

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

Size	Stroke range [mm]	Without lock			With lock		
		A	VB	VC	A	VB	VC
25	15 to 100	255.5	82.5	11.5	300.5	127.5	11.5
	105 to 300	280.5			325.5		
32	15 to 100	266.5	80	14	306.5	120	14
	105 to 300	296.5			336.5		



LEYG Series

AC Servo Motor

Support Block

●Guide for support block application

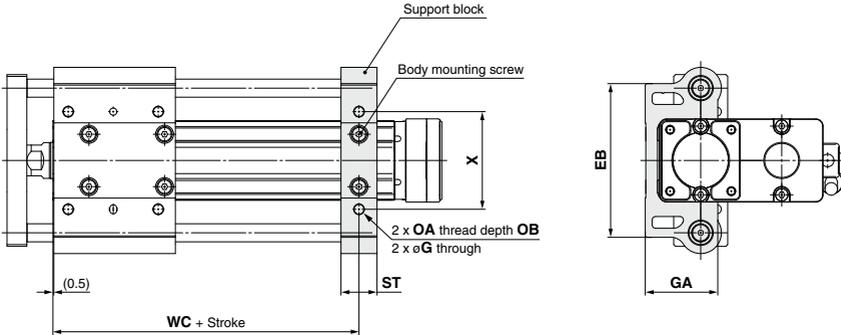
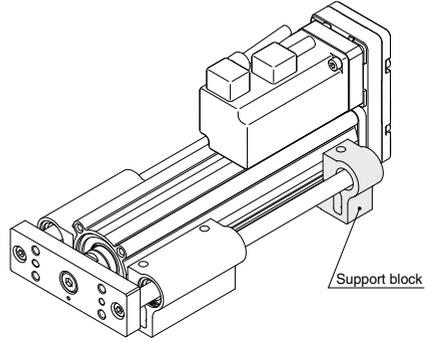
When the stroke exceeds 100 mm and the mounting orientation is horizontal, the body will be bent. Mounting the support block is recommended. (Please order it separately from the models shown below.)

Support Block Model

LEYG-S025

●Size

025	For size 25
032	For size 32



⚠Caution

Do not install the body using only a support block.
The support block should be used only for support.

Size	Model	Stroke range	EB	G	GA	OA	OB	ST	WC	X
25	LEYG-S025	15 to 100	85	5.4	40.3	M6 x 1.0	12	20	70	54
		105 to 300							95	
32	LEYG-S032	20 to 100	101	5.4	50.3	M6 x 1.0	12	22	75	64
		105 to 300							105	

* Two body mounting screws are included with the support block.

* The through holes of the LEYG-S032 cannot be used for the top mounting type. Use taps on the bottom.



LEY/LEYG Series Electric Actuators/ Specific Product Precautions 1

Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 8 for Electric Actuator Precautions.

Design/Selection

Warning

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

Select a suitable actuator by work load and allowable lateral load on the rod end. If the product is used outside of the specification limits, the eccentric load applied to the piston rod will be excessive and have adverse effects such as creating play on the sliding parts of the piston rod, degrading accuracy and shortening the life of the product.

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

This can cause failure.

3. When used as a stopper, select the LEYG series "Sliding bearing" for a stroke of 30 mm or less.

4. When used as a stopper, fix the main body with a guide attachment ("Top mounting" or "Bottom mounting").

If the end of the actuator is used to fix the main body (end mounting), the excessive load acts on the actuator, which adversely affects the operation and life of the product.

Handling

Caution

1. INP output signal

1) Positioning operation

When the product comes within the set range by step data [In position], the INP output signal will turn on.
Initial value: Set to [0.50] or higher.

2) Pushing operation

When the effective force exceeds step data [Trigger LV], the INP output signal will turn on.
Use the product within the specified range of [Pushing force] and [Trigger LV].

- To ensure that the actuator pushes the workpiece with the set [Pushing force], it is recommended that the [Trigger LV] be set to the same value as the [Pushing force].
- When the [Pushing force] and [Trigger LV] are set less than the specified range, the INP output signal will turn on from the pushing start position.

<Limit Value of Pushing Force and Trigger Level in Relation to Pushing Speed> Without Load

Model	Lead	Pushing speed (mm/s)	Pushing force (Setting input value)	Model	Lead	Pushing speed (mm/s)	Pushing force (Setting input value)
LEY16□	A/B/C	21 to 50	60 to 85%	LEY16□A	A/B/C	21 to 50	80 to 95%
LEY25□	A/B/C	21 to 35	50 to 65%	LEY25□A	A/B/C	21 to 35	80 to 95%
LEY32□	A	24 to 30	60 to 85%				
	B/C	21 to 30					
LEY40□	A	24 to 20	50 to 65%				
	B/C	21 to 30					

There is a limit to the pushing force in relation to the pushing speed. If the product is operated outside of the range (low pushing force), the completion signal [INP] may be output before the pushing operation has been completed (during the moving operation). If operating with the pushing speed below the minimum speed, please check for operation problems before using the product.

Handling

Caution

<Set Values for Vertical Upward Transfer Pushing Operation>

For vertical loads (upward), set the pushing force to the maximum value shown below, and operate at the work load or less.

Model	LEY16□			LEY25□			LEY32□			LEY40□		
Lead	A	B	C	A	B	C	A	B	C	A	B	C
Work load [kg]	1	1.5	3	2.5	5	10	4.5	9	18	7	14	28
Pushing force	85%			65%			85%			65%		

Model	LEY16□A			LEY25□A		
Lead	A	B	C	A	B	C
Work load [kg]	1	1.5	3	1.2	2.5	5
Pushing force	95%			95%		

Model	LEYG16□			LEYG25□			LEYG32□			LEYG40□		
Lead	A	B	C	A	B	C	A	B	C	A	B	C
Work load [kg]	0.5	1	2.5	1.5	4	9	2.5	7	16	5	12	26
Pushing force	85%			65%			85%			65%		

Model	LEYG16□A			LEYG25□A		
Lead	A	B	C	A	B	C
Work load [kg]	0.5	1	2.5	0.5	1.5	4
Pushing force	95%			95%		

2. When the pushing operation is used, be sure to set to [Pushing operation].

Also, do not hit the workpiece in positioning operation or in the range of positioning operation. It may malfunction.

3. Use the product within the specified pushing speed range for the pushing operation.

It may lead to damage and malfunction.

4. The moving force should be the initial value (LEY16□/25□/32□/40□: 100%, LEY16A□: 150%, LEY25A□: 200%).

If the moving force is set below the initial value, it may cause an alarm.

5. The actual speed of this actuator is affected by the load.

Check the model selection section of the catalog.

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

Additional force will cause the displacement of the origin position since it is based on detected motor torque.

7. In pushing operation, set the product to a position of at least 2 mm away from a workpiece. (This position is referred to as a pushing start position.)

The following alarms may be generated and operation may become unstable.

a. "Posn failed" alarm is generated.

The product cannot reach a pushing start position due to variation in the target position.

b. "Pushing ALM" alarm is generated.

The product is pushed back from a pushing start position after starting to push.

LEY/LEYG Series Electric Actuators/ Specific Product Precautions 2

Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 8 for Electric Actuator Precautions.



Handling

⚠ Caution

8. Do not scratch or dent the sliding parts of the piston rod, by striking or attaching objects.

The piston rod and guide rod are manufactured to precise tolerances, even a slight deformation may cause malfunction.

9. When an external guide is used, connect it in such a way that no impact or load is applied to it.

Use a freely moving connector (such as a floating joint).

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

Excessive load will be applied to the piston rod, leading to damage to the actuator and reduced the life of the product.

11. When an actuator is operated with one end fixed and the other free (ends tapped or flange type), a bending moment may act on the actuator due to vibration generated at the stroke end, which can damage the actuator. In such a case, install a mounting bracket to suppress the vibration of the actuator body or reduce the speed so that the actuator does not vibrate at the stroke end.

Also, use a mounting bracket when moving the actuator body or when a long stroke actuator is mounted horizontally and fixed at one end.

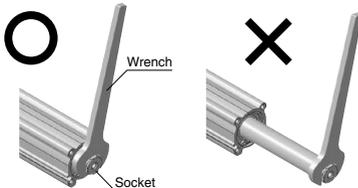
12. Avoid using the electric actuator in such a way that rotational torque would be applied to the piston rod.

This may cause deformation of the non-rotating guide, abnormal responses of the auto switch, play in the internal guide or an increase in the sliding resistance.

Refer to the table below for the approximate values of the allowable range of rotational torque.

Allowable rotational torque [N·m] or less	LEY16□□	LEY25□□	LEY32/40□□	LEY63
	0.8	1.1	1.4	2.8

When screwing in a bracket or nut to the end of the piston rod, hold the flats of the rod end with a wrench (the piston rod should be fully retracted). Do not apply tightening torque to the non-rotating mechanism.



13. When rotational torque is applied to the end of the plate, use it within the allowable range. [LEYG series]

This may cause deformation of the guide rod and bushing, play in the guide or an increase in the sliding resistance.

14. For the pushing operation, use the product within the duty ratio range below.

The duty ratio is a ratio at the time that can keep being pushed.

• Step motor (Servo/24 VDC)

LEY16□

Pushing force [%]	Ambient temperature: 25°C or less		Ambient temperature: 40°C	
	Duty ratio [%]	Continuous pushing time [minute]	Duty ratio [%]	Continuous pushing time [minute]
40 or less	100	—	100	—
50			70	12
70			20	1.3
85			15	0.8

LEY25□

Pushing force [%]	Ambient temperature: 25°C or less		Ambient temperature: 40°C	
	Duty ratio [%]	Continuous pushing time [minute]	Duty ratio [%]	Continuous pushing time [minute]
65 or less	100	—	100	—

LEY32□/40□

Pushing force [%]	Ambient temperature: 25°C or less		Ambient temperature: 40°C	
	Duty ratio [%]	Continuous pushing time [minute]	Duty ratio [%]	Continuous pushing time [minute]
65 or less	100	—	100	—
85			50	15

• Servo motor (24 VDC)

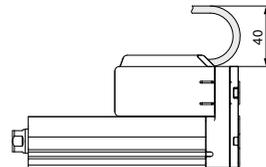
LEY16A□

Pushing force [%]	Ambient temperature: 25°C or less		Ambient temperature: 40°C	
	Duty ratio [%]	Continuous pushing time [minute]	Duty ratio [%]	Continuous pushing time [minute]
95 or less	100	—	100	—

LEY25A□

Pushing force [%]	Ambient temperature: 25°C or less		Ambient temperature: 40°C	
	Duty ratio [%]	Continuous pushing time [minute]	Duty ratio [%]	Continuous pushing time [minute]
95 or less	100	—	100	—

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



16. When mounting a bolt, workpiece or jig, hold the flats of the piston rod end with a wrench so that the piston rod does not rotate. The bolt should be tightened within the specified torque range.

This may cause abnormal responses of the auto switch, play in the internal guide or an increase in the sliding resistance.

LEY/LEYG Series Electric Actuators/ Specific Product Precautions 3

Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 8 for Electric Actuator Precautions.



Handling

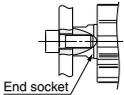
⚠ Caution

17. When mounting the product and/or a workpiece, tighten the mounting screws within the specified torque range.

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

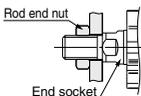
<LEY series>

Workpiece fixed/Rod end female thread

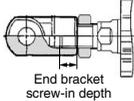


Model	Screw size	Max. tightening torque [N·m]	Max. screw-in depth [mm]	End socket width across flats [mm]
LEY16	M5 x 0.8	3.0	10	14
LEY25	M8 x 1.25	12.5	13	17
LEY32/40	M8 x 1.25	12.5	13	22
LEY63	M16 x 2	106	21	36

Workpiece fixed/Rod end male thread (When "Rod end male thread" is selected.)



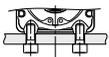
Model	Thread size	Max. tightening torque [N·m]	Effective thread length [mm]	End socket width across flats [mm]
LEY16	M8 x 1.25	12.5	12	14
LEY25	M14 x 1.5	65.0	20.5	17
LEY32/40	M14 x 1.5	65.0	20.5	22
LEY63	M18 x 1.5	97.0	26	36



Model	Rod end nut		End bracket screw-in depth [mm]
	Width across flats [mm]	Length [mm]	
LEY16	13	5	5 or more
LEY25	22	8	8 or more
LEY32/40	22	8	8 or more
LEY63	27	11	18

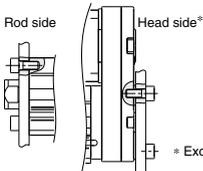
* Rod end nut is an accessory.

Body fixed/Body bottom tapped type (When "Body bottom tapped" is selected.)



Model	Screw size	Max. tightening torque [N·m]	Max. screw-in depth [mm]
LEY16	M4 x 0.7	1.5	5.5
LEY25	M5 x 0.8	3.0	6.5
LEY32/40	M6 x 1.0	5.2	8.8
LEY63	M8 x 1.25	12.5	10

Body fixed/Rod side/Head side tapped type

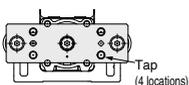


Model	Screw size	Max. tightening torque [N·m]	Max. screw-in depth [mm]
LEY16	M4 x 0.7	1.5	7
LEY25	M5 x 0.8	3.0	8
LEY32/40	M6 x 1.0	5.2	10
LEY63	M8 x 1.25	12.5	16

* Except the LEYG□.

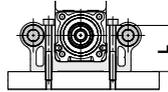
<LEYG series>

Workpiece fixed/Plate tapped type



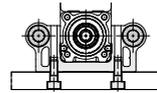
Model	Screw size	Max. tightening torque [N·m]	Max. screw-in depth [mm]
LEYG16 ^M	M5 x 0.8	3.0	8
LEYG25 ^M	M6 x 1.0	5.2	11
LEYG32/40 ^M	M6 x 1.0	5.2	12

Body fixed/Top mounting



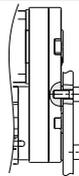
Model	Screw size	Max. tightening torque [N·m]	Length: L [mm]
LEYG16 ^M	M4 x 0.7	1.5	32
LEYG25 ^M	M5 x 0.8	3.0	40.3
LEYG32/40 ^M	M5 x 0.8	3.0	50.3

Body fixed/Bottom mounting



Model	Screw size	Max. tightening torque [N·m]	Max. screw-in depth [mm]
LEYG16 ^M	M5 x 0.8	3.0	10
LEYG25 ^M	M6 x 1.0	5.2	12
LEYG32/40 ^M	M6 x 1.0	5.2	12

Body fixed/Head side tapped type



Model	Screw size	Max. tightening torque [N·m]	Max. screw-in depth [mm]
LEYG16 ^M	M4 x 0.7	1.5	7
LEYG25 ^M	M5 x 0.8	3.0	8
LEYG32/40 ^M	M6 x 1.0	5.2	10

18. Keep the flatness of the mounting surface within the following ranges when mounting the actuator body and workpiece.

Unevenness of a workpiece or mass mounted on the body of the product may cause an increase in the sliding resistance.

Model	Mounting position	Flatness
LEY□	Body/Body bottom 	0.1 mm or less
LEYG□	Top mounting/Bottom mounting 	0.02 mm or less
	Workpiece/Plate mounting 	0.02 mm or less

19. When using auto switch with the guide rod type LEYG series, the following limits will be in effect. Please select the product while paying attention to this.

- Insert the auto switch from the front side with rod (plate) sticking out.
- The auto switches with perpendicular electrical entry cannot be used.
- For the parts hidden behind the guide attachment (Rod stick out side), the auto switch cannot be fixed.
- Please consult with SMC when using auto switch on the rod stick out side.

LEY/LEYG Series Electric Actuators/ Specific Product Precautions 4



Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 8 for Electric Actuator Precautions.

Handling

⚠ Caution

20. When using the product with the IP65 or equivalent specifications, be sure to mount the tubing to the vent hole, and then place the end of the tubing in an area where it is not exposed to dust or water. When the actuator is used without mounting the fitting and tubing to the vent hole, water or dust may enter the inside of the actuator, causing a malfunction.

21. When the fluctuation of load is caused during operation, malfunction/noise/alarm may occur. (In case of AC servo motor)

The tuning of gain may not suit for fluctuation load. Adjust the gain properly by following the manual of driver.

Enclosure

IP -

First characteristic numeral • Second characteristic numeral

• First Characteristics:

Degrees of protection against solid foreign objects

0	Non-protected
1	Protected against solid foreign objects of 50 mmφ and greater
2	Protected against solid foreign objects of 12 mmφ and greater
3	Protected against solid foreign objects of 2.5 mmφ and greater
4	Protected against solid foreign objects of 1.0 mmφ and greater
5	Dust-protected
6	Dust-tight

• Second Characteristics:

Degrees of protection against water

0	Non-protected	—
1	Protected against vertically falling water drops	Drip-proof type 1
2	Protected against vertically falling water drops when enclosure tilted up to 15°	Drip-proof type 2
3	Protected against rainfall when enclosure tilted up to 60°	Rain-proof type
4	Protected against splashing water	Splash-proof type
5	Protected against water jets	Water-jet-proof type
6	Protected against powerful water jets	Powerful water-jet-proof type
7	Protected against the effects of temporary immersion in water	Immersible type
8	Protected against the effects of continuous immersion in water	Submersible type

Example) IP65: Dust-tight, Water-jet-proof type

"Water-jet-proof type" means that no water intrudes inside an equipment that could hinder from operating normally by means of applying water for 3 minutes in the prescribed manner. Take appropriate protection measures, since a device is not usable in an environment where a droplet of water is splashed constantly.

Maintenance

⚠ Warning

1. Ensure that the power supply is stopped and the workpiece is removed before starting maintenance work or replacement of the product.

• Maintenance frequency

Perform maintenance according to the table below.

Frequency	Appearance check	Belt check
Inspection before daily operation	○	—
Inspection every 6 months/ 250 km/5 million cycles*	○	○

* Select whichever comes first.

• Items for visual appearance check

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

• Items for belt check

Stop operation immediately and replace the belt when belt appear to be below. Further, ensure your operating environment and conditions satisfy the requirements specified for the product.

a. Tooth shape canvas is worn out

Canvas fiber becomes fuzzy. Rubber is removed and the fiber becomes whitish. Lines of fibers become unclear.

b. Peeling off or wearing of the side of the belt

Belt corner becomes round and frayed thread sticks out.

c. Belt partially cut

Belt is partially cut. Foreign matter caught in teeth other than cut part causes flaw.

d. Vertical line of belt teeth

Flaw which is made when the belt runs on the flange.

e. Rubber back of the belt is softened and sticky

f. Crack on the back of the belt