

Electric Actuators

Series LEY



Rod Type/Guide Rod Type

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

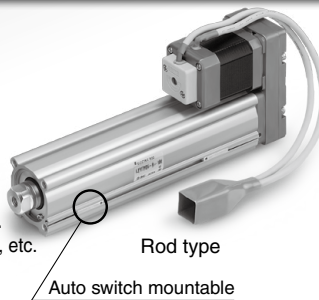
Rod Type Series LEY

Size: 16, 25, 32, 40 ▶ Page 213

Long stroke:
Max. 500 mm (LEY32, 40)

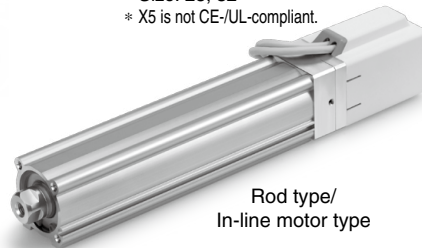
Mounting variations

- 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 219

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



Guide Rod Type Series LEYG

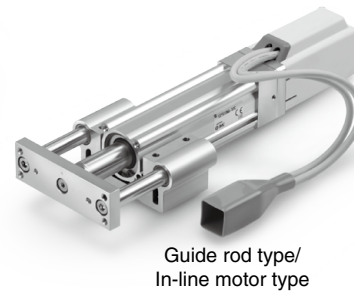
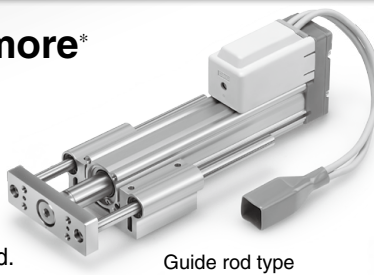
Size: 16, 25, 32, 40 ▶ Page 263

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

* Not applicable to UL.

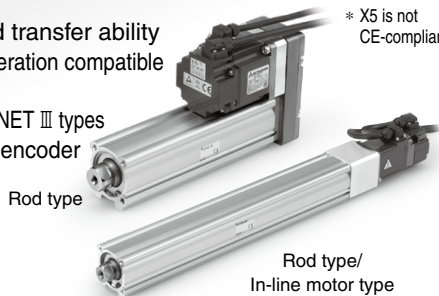
▶ Page 223

Rod Type Series LEY 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/SSCNET III types
- With internal absolute encoder (For LECSB/C/S)

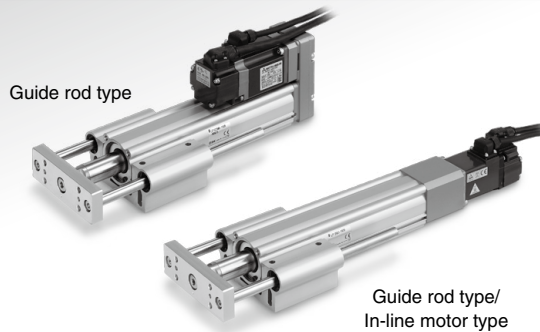
Dust-tight/Water-jet-proof (IP65 Equivalent): -X5

* X5 is not CE-compliant.



▶ Page 271

Guide Rod Type Series LEYG Size: 25, 32



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

▶ Page 538

- ▶ Step data input type
Series LECP6/LECA6 (64 points positioning)
- ▶ CC-Link direct input type
Series LECPMJ*
- ▶ Programless type
Series LECP1 (14 points positioning)
- ▶ Pulse input type
Series LECPA

* Not applicable to CE.



AC Servo Motor Driver

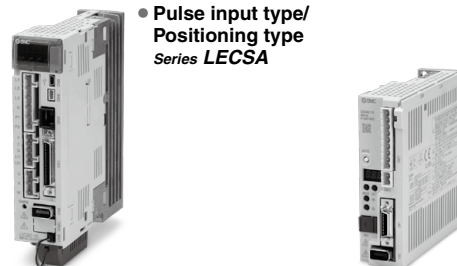
* Not applicable to UL.

▶ Pages 598, 620, 648

▶ For absolute encoder

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

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



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

Series LEY

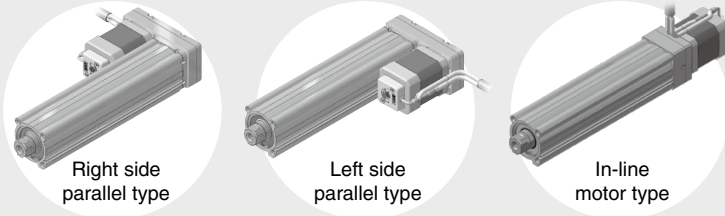
Step Motor (Servo/24 VDC) Servo Motor (24 VDC) Type

Rod Type Series LEY / 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.



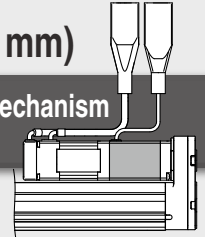
Right side parallel type

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

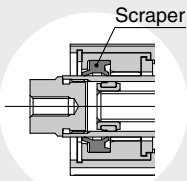
- Standard cable
- Robotic cable (Flexible cable)

Manual override screw

For manual piston rod operation
Adjustment operation possible when power OFF

Scraper

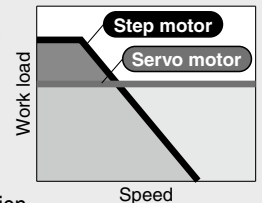
Prevents foreign matter from entering.



Scraper

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



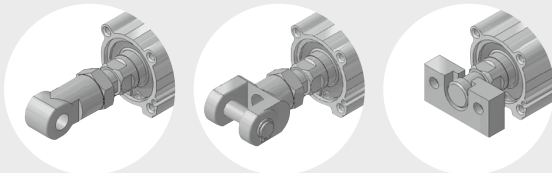
Pages 241, 242

Rod end brackets

Single knuckle joint

Double knuckle joint

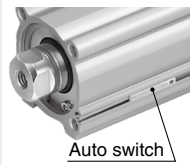
Simple joint



Groove for auto switch

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

* The auto switches should be ordered separately. Refer to pages 243 and 244 for details.

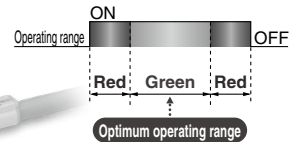


Auto switch

2-color indication solid state auto switch

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

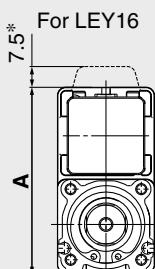
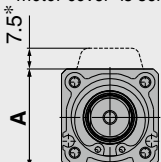
A green light lights up at the optimum operating range.



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

For LEY16D

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



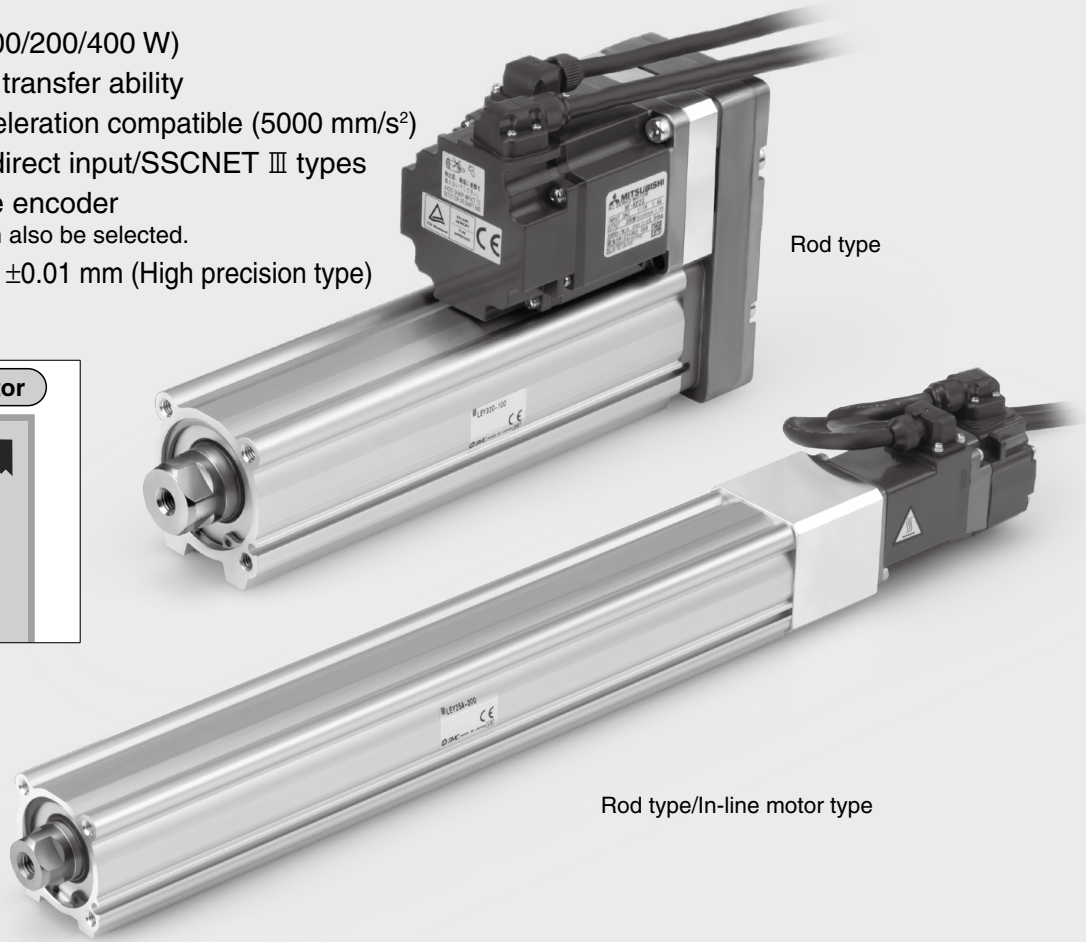
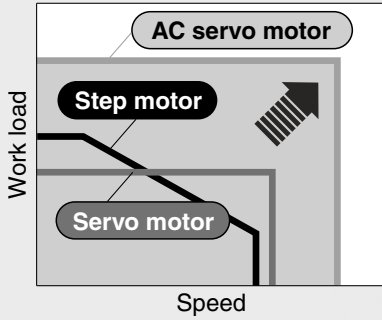
| Size | A Dimension [mm] | |
|--------|------------------|--------------------|
| | In-line motor | Motor top mounting |
| 16 | 35.5 | 67.5 |
| 25 | 46.5 | 92 |
| 32, 40 | 61 | 118 |



AC Servo Motor Type

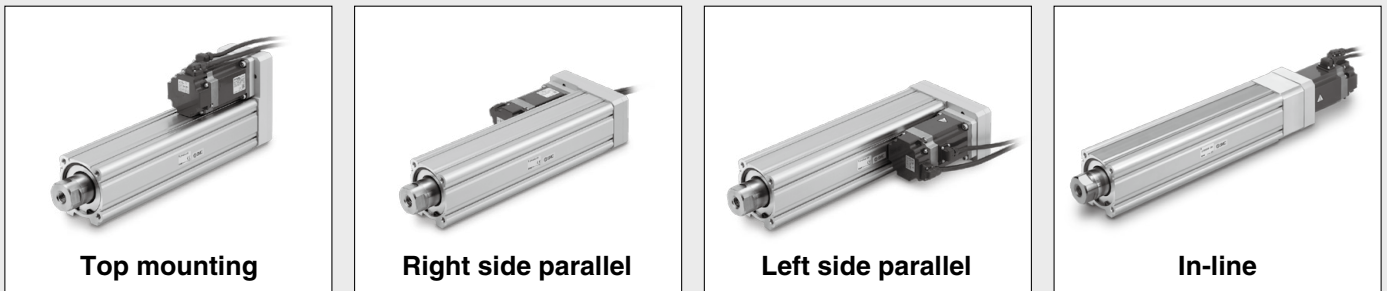
Rod Type Series **LEY** /Size: 25, 32, 63

- 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)

LEFS
LEFBLEJS
LEJB

LEL

LEM
LEMBLEY
LEYGLES
LESHLEPY
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC□

LECS□

LECSS-T

LECYM
LECYU

Motorless

LAT3

Series LEY

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

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

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

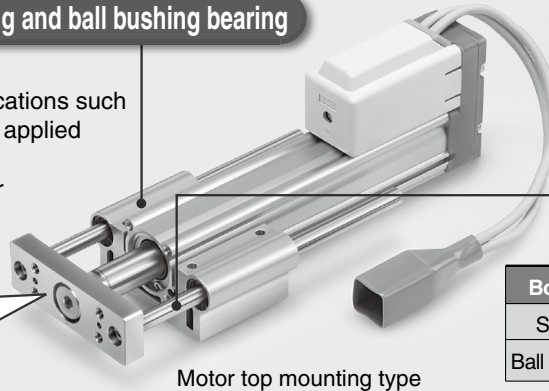
Compatible with sliding bearing and ball bushing bearing

- **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

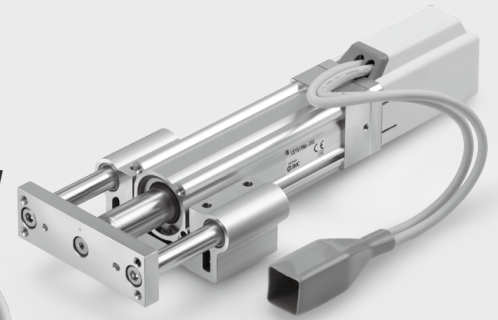
Improved rigidity

Lateral end load: 5 times more*

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



Motor top mounting type



In-line motor type

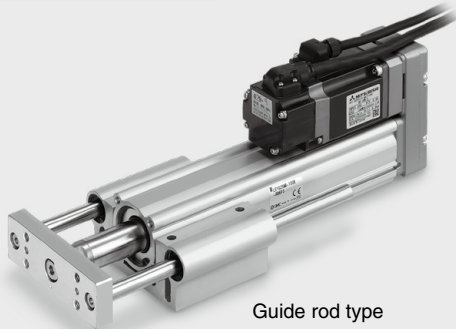
Non-rotating accuracy improved by using two guide rods

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

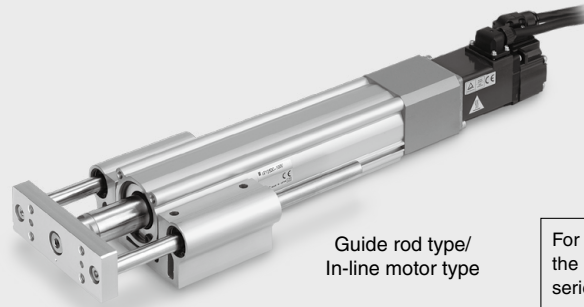
When the cylinder is retracted (initial value), the non-rotating accuracy without a load or deflection of the guide rods will be below the values shown in the table.

AC Servo Motor Type

Guide Rod Type Series LEYG /Size: 25, 32



Guide rod type

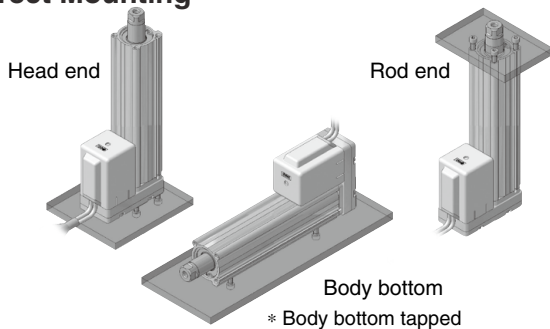


Guide rod type/
In-line motor type

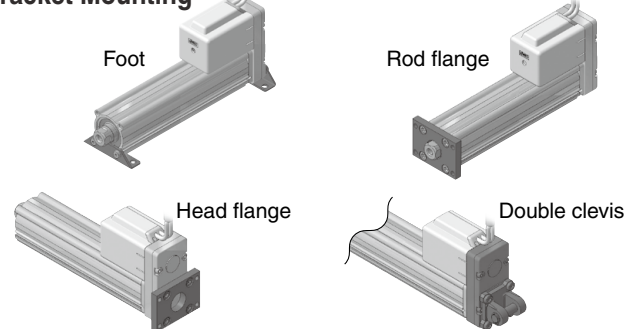
For use of auto switches for the guide rod type LEYG series, refer to page 296.

Mounting Variations

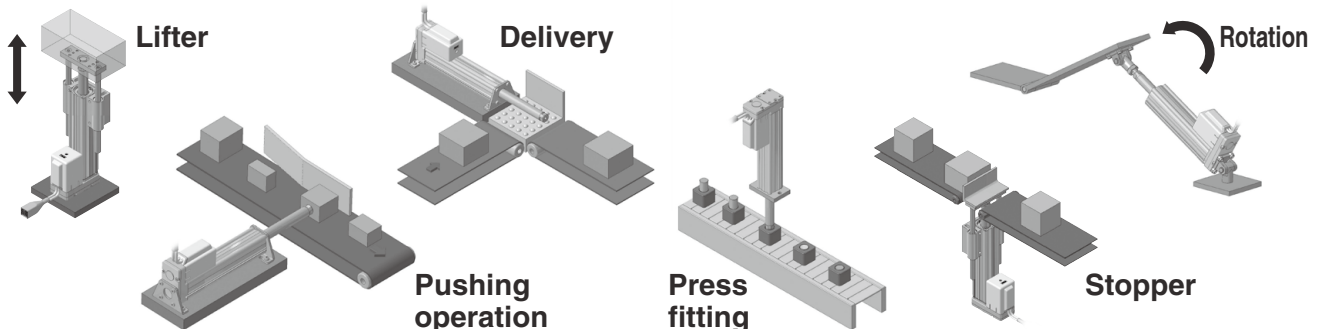
Direct Mounting



Bracket Mounting



Application Examples

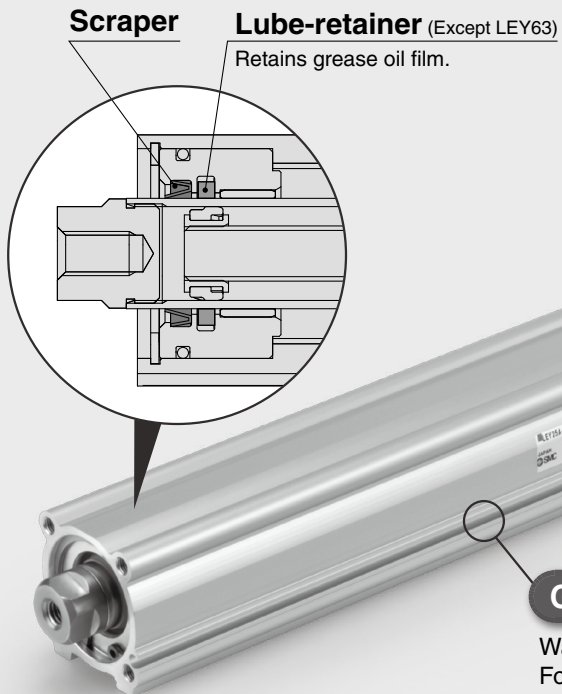


Dust-tight/Water-jet-proof (IP65 Equivalent)

● **Enclosure: IP65 equivalent**

● **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.

Vent hole

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

Groove for auto switch

Water resistant type (Coolant)
For checking the limit and intermediate signal

* Order the water resistant 2-color indication solid state auto switch separately. (Refer to page 498.)



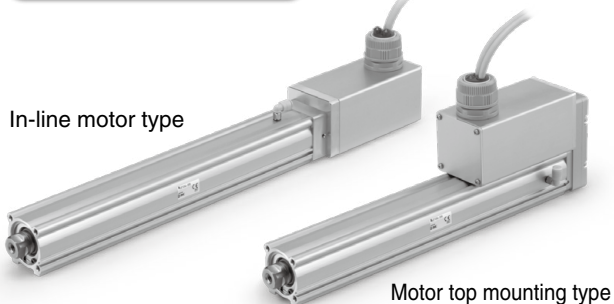
LEY-X5 (Refer to page 219.)

Step Motor (Servo/24 VDC) Type

Servo Motor (24 VDC) Type

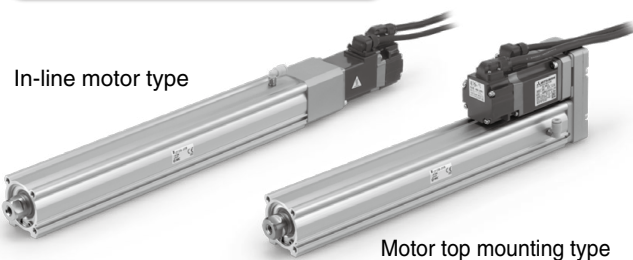
Size

25, 32



LEY-X5 (Refer to page 223.)

AC Servo Motor (100/200 W) Type



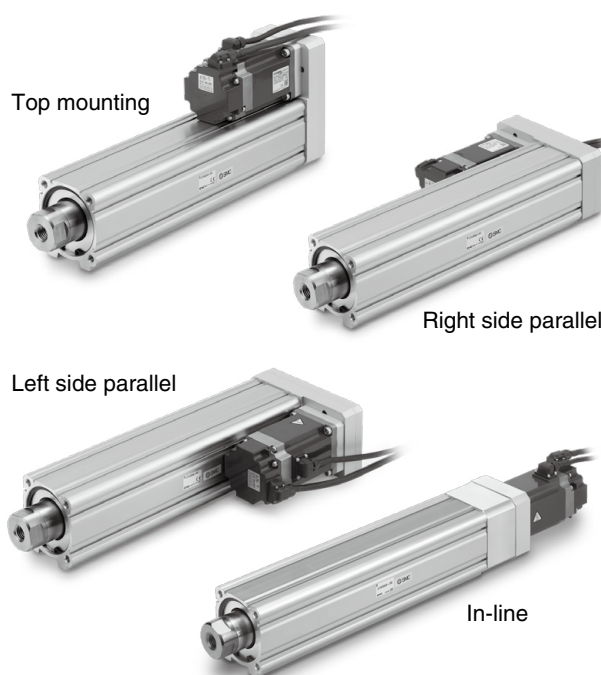
LEY63□□□-□P

(Refer to page 223./Option)

Size

63

AC Servo Motor (400 W) Type



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

Electric Actuator/Rod Type *Series LEY*

Step Motor (Servo/24 VDC)

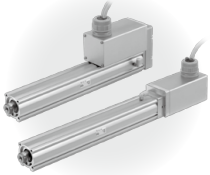
Servo Motor (24 VDC)

○ Rod Type *Series LEY*



| | |
|-----------------------------------|----------|
| Model Selection | Page 213 |
| How to Order | Page 229 |
| Specifications | Page 231 |
| Construction | Page 233 |
| Dimensions | Page 235 |
| Accessory Mounting Brackets | Page 241 |
| Auto Switch | Page 243 |

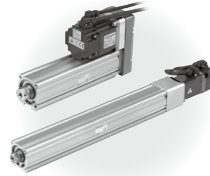
○ Rod Type *LEY-X5* Dust-tight/Water-jet-proof (IP65 Equivalent)



| | |
|-----------------------|----------|
| Model Selection | Page 219 |
| How to Order | Page 477 |
| Specifications | Page 479 |
| Construction | Page 481 |
| Dimensions | Page 482 |
| Auto Switch | Page 498 |

AC Servo Motor

○ Rod Type *Series LEY* Size 25, 32



| | |
|-----------------------|----------|
| Model Selection | Page 223 |
| How to Order | Page 245 |
| Specifications | Page 247 |
| Construction | Page 248 |
| Dimensions | Page 249 |

○ Rod Type *Series LEY* Size 63

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

* Select options



| | |
|-----------------------|----------------|
| Model Selection | Page 223 |
| How to Order | Pages 255, 491 |
| Specifications | Pages 256, 492 |
| Construction | Pages 257, 493 |
| Dimensions | Pages 258, 494 |

○ Rod Type *LEY-X5* Dust-tight/Water-jet-proof (IP65 Equivalent)



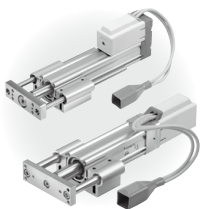
| | |
|-----------------------|----------|
| Model Selection | Page 223 |
| How to Order | Page 485 |
| Specifications | Page 486 |
| Construction | Page 487 |
| Dimensions | Page 488 |

Electric Actuator/Guide Rod Type *Series LEYG*

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

○ Guide Rod Type *Series LEYG*

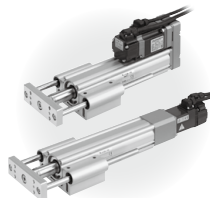


| | |
|-----------------------|----------|
| Model Selection | Page 263 |
| How to Order | Page 275 |
| Specifications | Page 277 |
| Construction | Page 279 |
| Dimensions | Page 281 |
| Support Block | Page 285 |

| | |
|------------------------------------|----------|
| Specific Product Precautions | Page 294 |
|------------------------------------|----------|

AC Servo Motor

○ Guide Rod Type *Series LEYG*



| | |
|-----------------------|----------|
| Model Selection | Page 271 |
| How to Order | Page 287 |
| Specifications | Page 289 |
| Construction | Page 290 |
| Dimensions | Page 291 |
| Support Block | Page 293 |

○ Step Motor (Servo/24 VDC)/

Servo Motor (24 VDC) Controller

| | |
|---|----------|
| Step Data Input Type/ <i>Series LECP6/LECA6</i> | Page 551 |
| Controller Setting Kit/ <i>LEC-W2</i> | Page 560 |
| Teaching Box/ <i>LEC-T1</i> | Page 561 |
| CC-Link Direct Input Type/ <i>Series LECPMJ</i> | Page 591 |
| Controller Setting Kit/ <i>LEC-W2</i> | Page 595 |
| Teaching Box/ <i>LEC-T1</i> | Page 596 |
| Gateway Unit/ <i>Series LEC-G</i> | Page 563 |
| Programless Controller/ <i>Series LECP1</i> | Page 567 |
| Step Motor Driver/ <i>Series LECPA</i> | Page 581 |
| Controller Setting Kit/ <i>LEC-W2</i> | Page 588 |
| Teaching Box/ <i>LEC-T1</i> | Page 589 |

○ AC Servo Motor Driver

Series LECSA/LECSB/ LECSC/LECSS

Page 598

Series LECSS-T

Page 620

Series LECYM/LECYU

Page 648



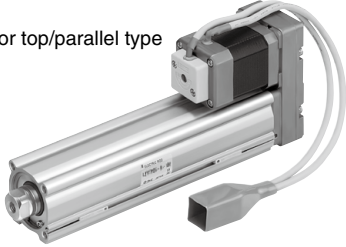
Rod Type

Series LEY

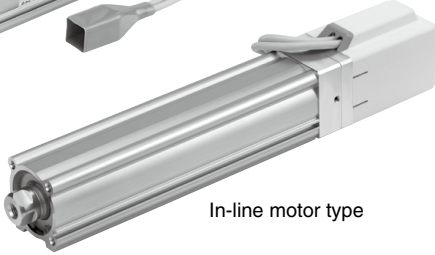
Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

Motor top/parallel type



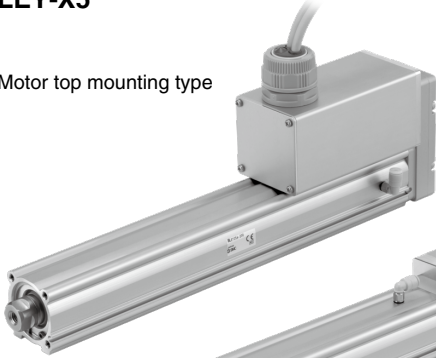
In-line motor type



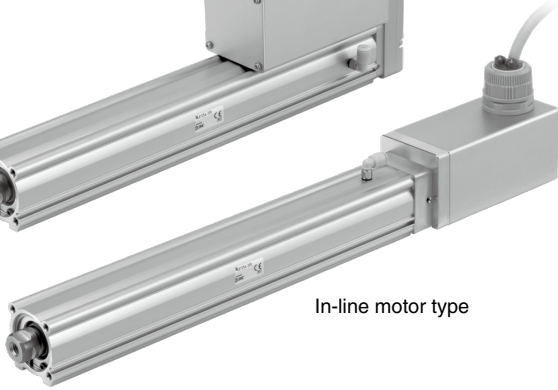
Dust-tight/Water-jet-proof (IP65 Equivalent)

LEY-X5

Motor top mounting type

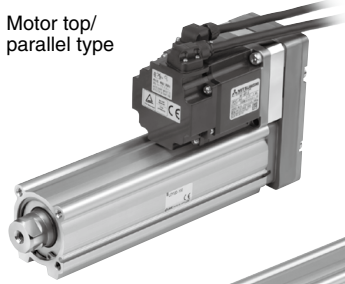


In-line motor type

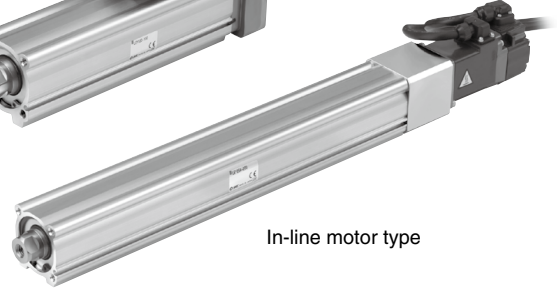


AC Servo Motor

Motor top/parallel type



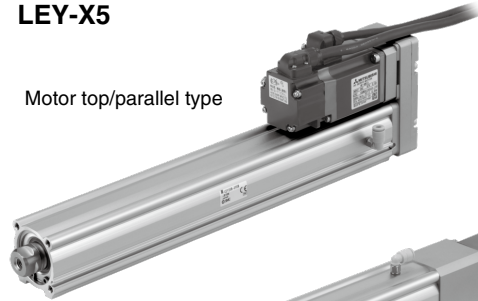
In-line motor type



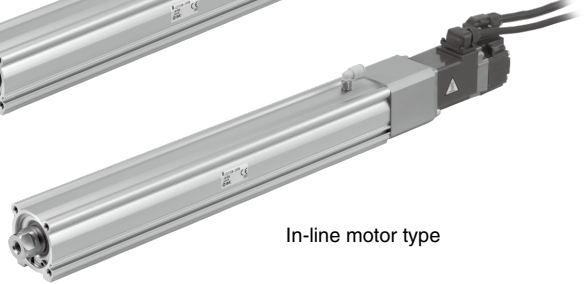
Dust-tight/Water-jet-proof (IP65 Equivalent)

LEY-X5

Motor top/parallel type



In-line motor type



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

Model Selection



Selection Procedure

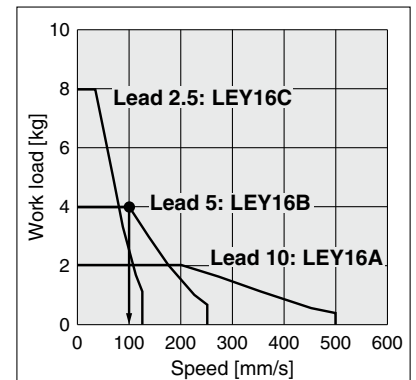
Positioning Control Selection Procedure



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 294 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.

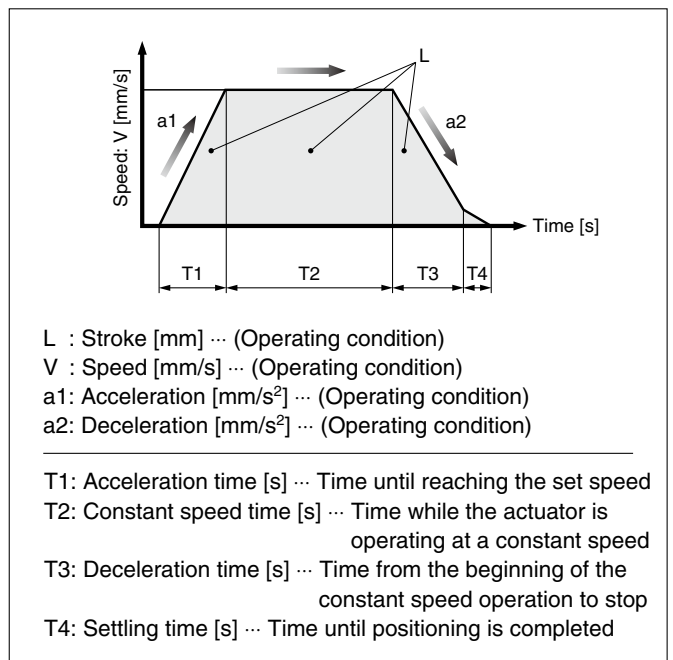
$$T1 = V/a1 = 100/3000 = 0.033 \text{ [s]}, \quad T3 = V/a2 = 100/3000 = 0.033 \text{ [s]}$$

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

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

Therefore, the cycle time can be obtained as follows.

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



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

Selection Procedure

Pushing Control Selection Procedure

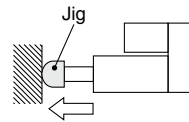


* The duty ratio is a ratio at the time that can keep being pushed.

Selection Example

Operating conditions

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

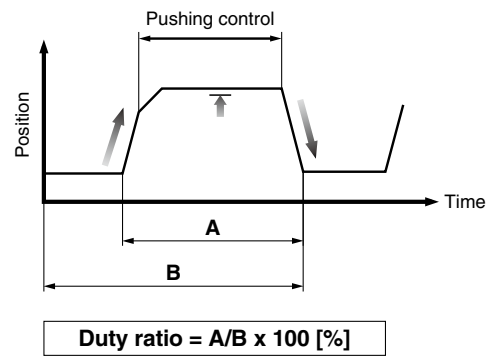
<Conversion table of pushing force–duty ratio>

(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.



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

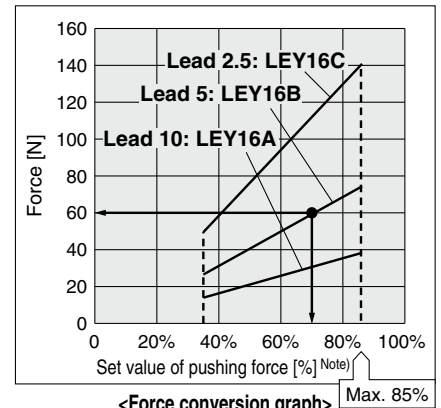
Select the target model based on the set value of pushing force and force with reference to the <Force conversion graph>.

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>

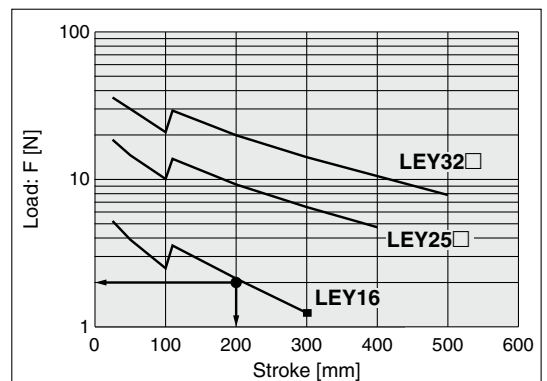
Confirm the allowable lateral load on the rod end of the actuator: LEY16□, which has been selected temporarily with reference to the <Graph of allowable lateral load on the rod end>.

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.

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

Series LEY


Step Motor (Servo/24 VDC)

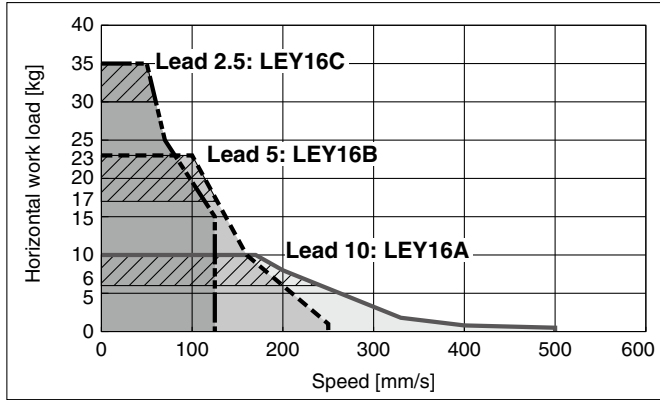
Servo Motor (24 VDC)

Refer to page 216 for the LECPA and page 217 for the LECA6.

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

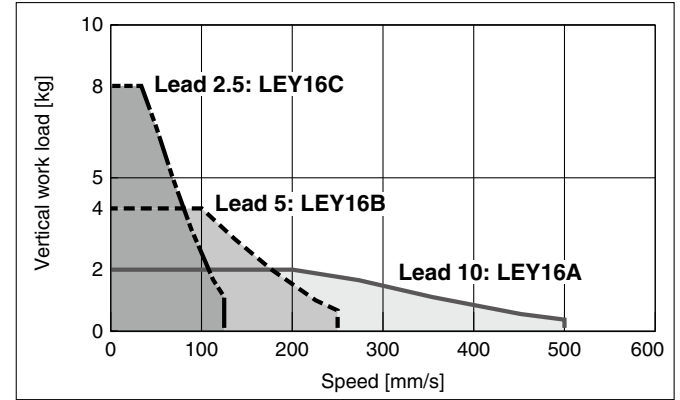
Horizontal


LEY16  for acceleration/deceleration: 2000 mm/s²

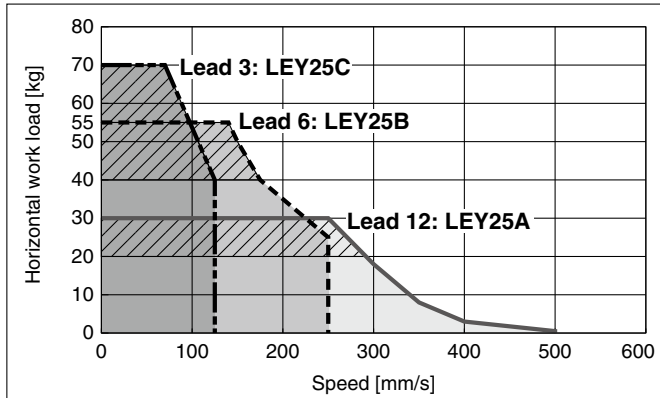


Vertical

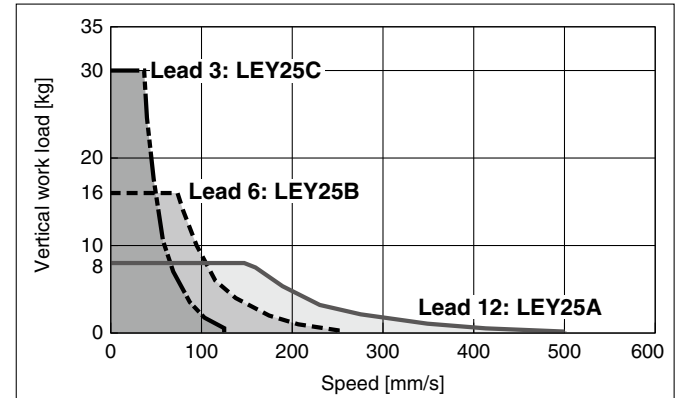
LEY16 




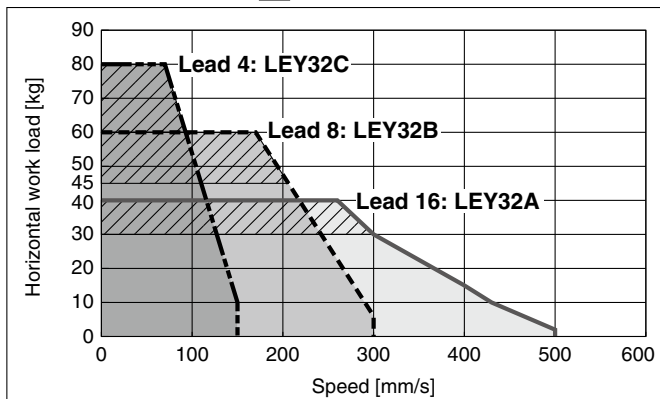
LEY25  for acceleration/deceleration: 2000 mm/s²



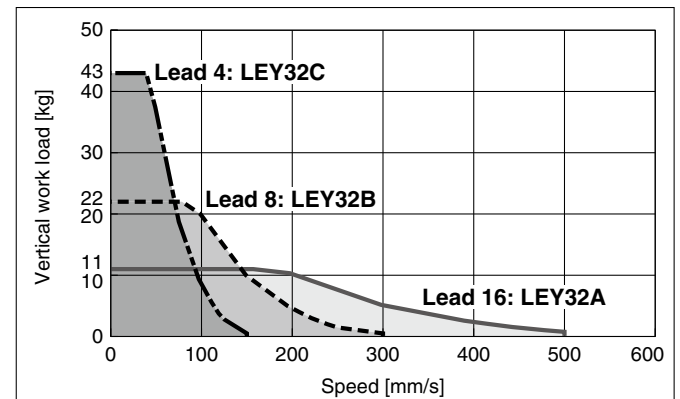
LEY25 




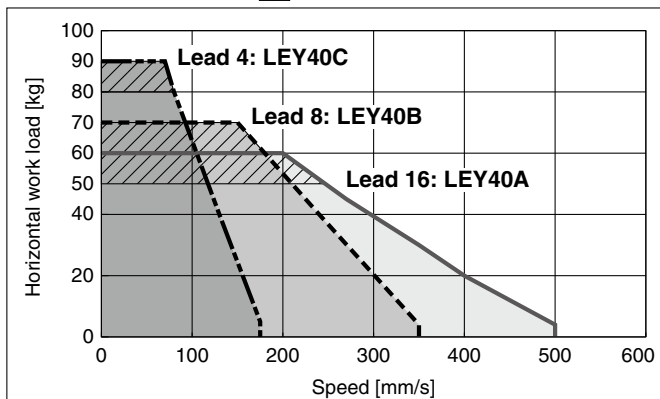
LEY32  for acceleration/deceleration: 2000 mm/s²



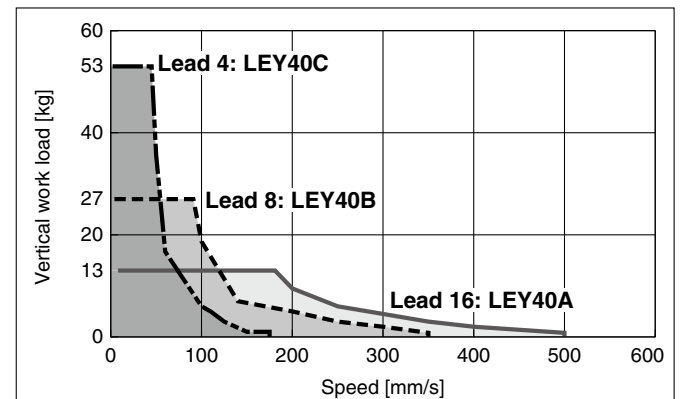
LEY32 



LEY40  for acceleration/deceleration: 2000 mm/s²



LEY40 

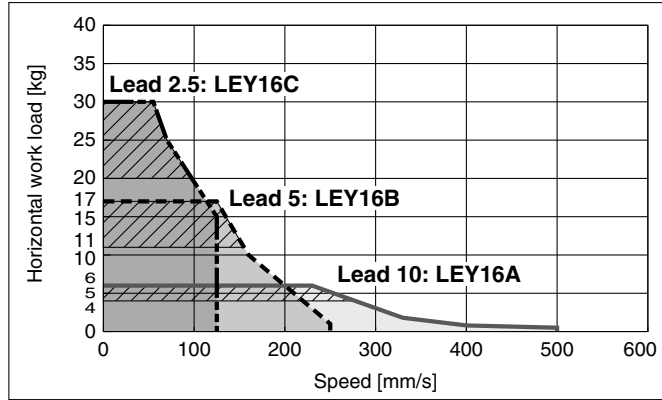


Refer to page 215 for the LECP6, LECP1, LECPM1, and page 217 for the LECA6.

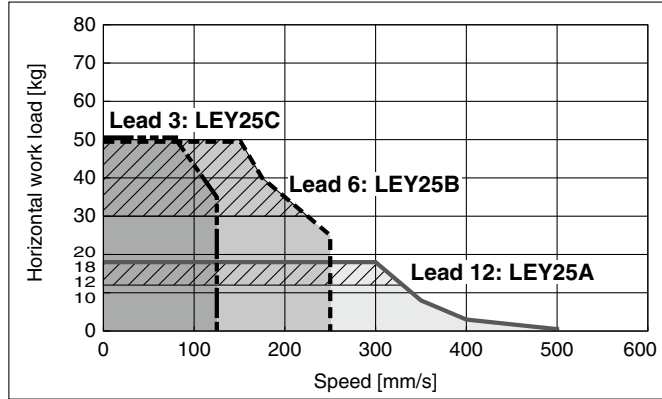
Speed-Work Load Graph (Guide) For Step Motor (Servo/24 VDC) LECPA

Horizontal

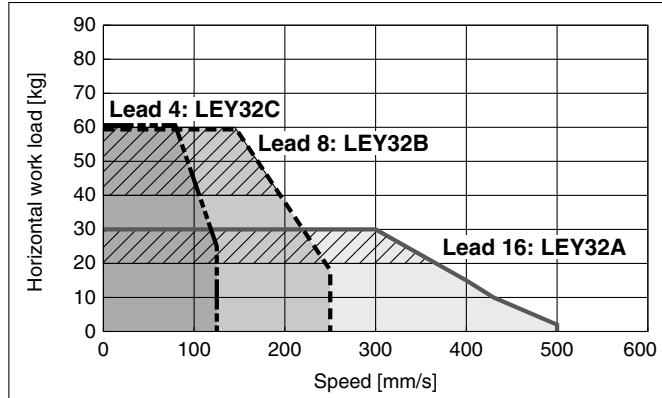
LEY16 for acceleration/deceleration: 2000 mm/s²



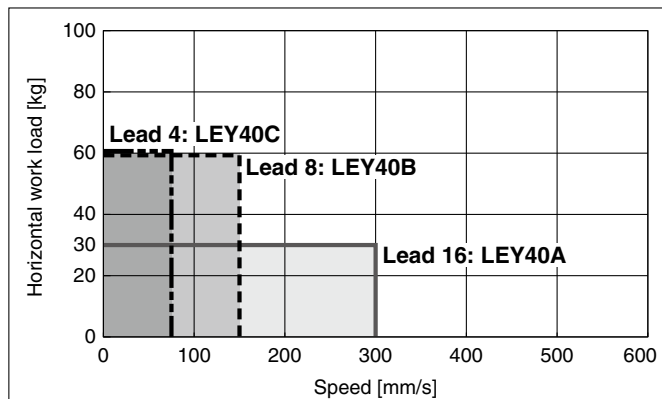
LEY25 for acceleration/deceleration: 2000 mm/s²



LEY32 for acceleration/deceleration: 2000 mm/s²

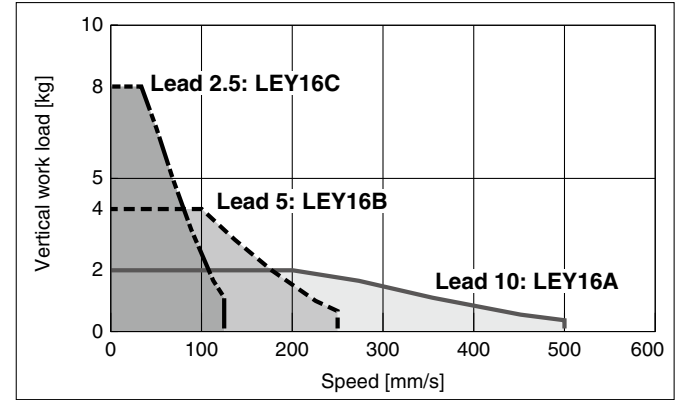


LEY40

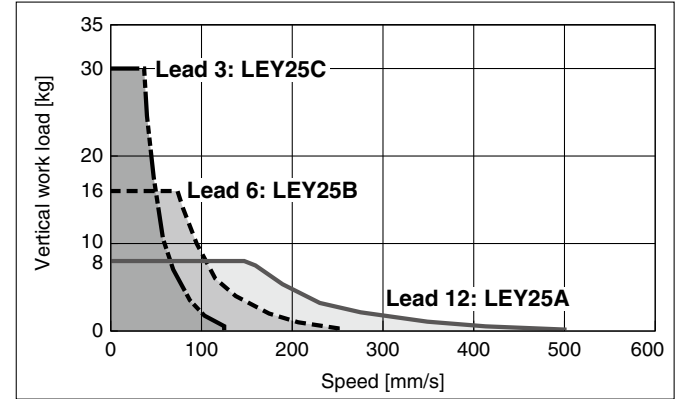


Vertical

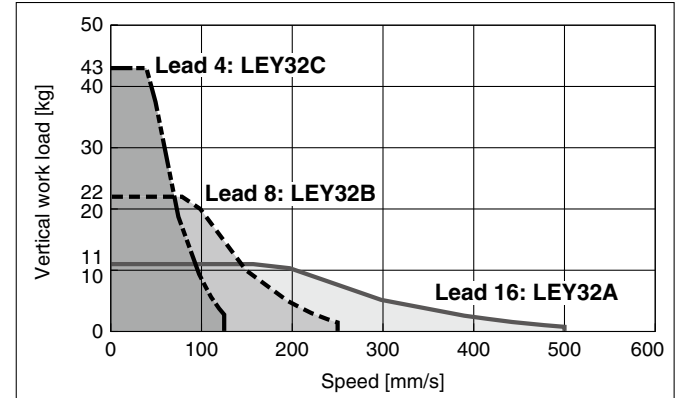
LEY16



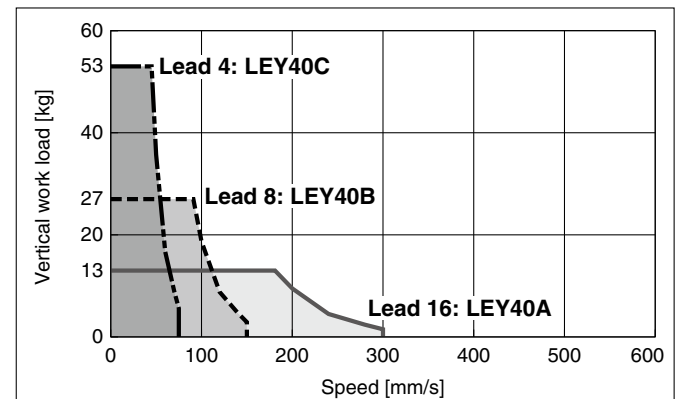
LEY25



LEY32



LEY40



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

Series LEY

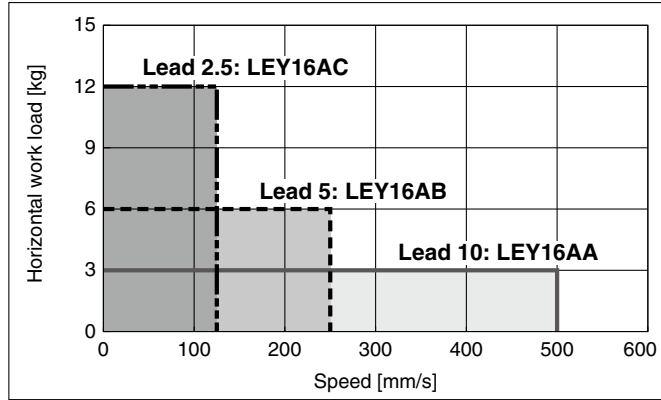
Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

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

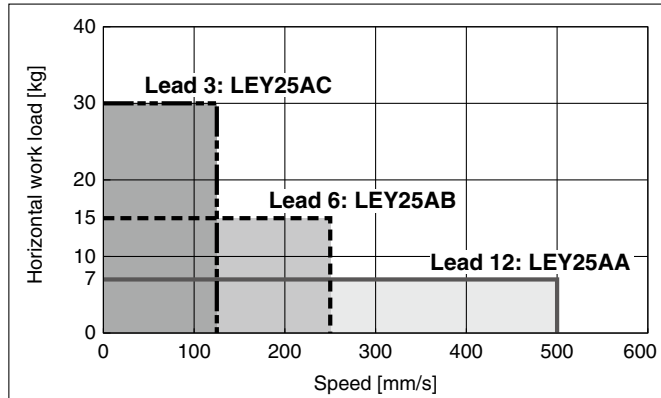
Refer to page 215 for the LECP6, LECP1, LECPMJ, and page 216 for the LECPA.

Horizontal

LEY16A□

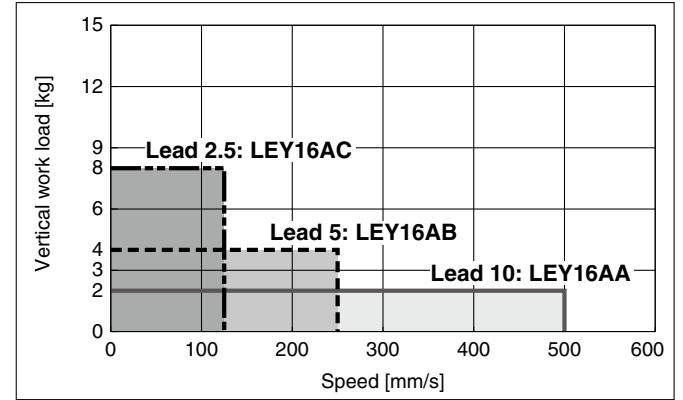


LEY25A□

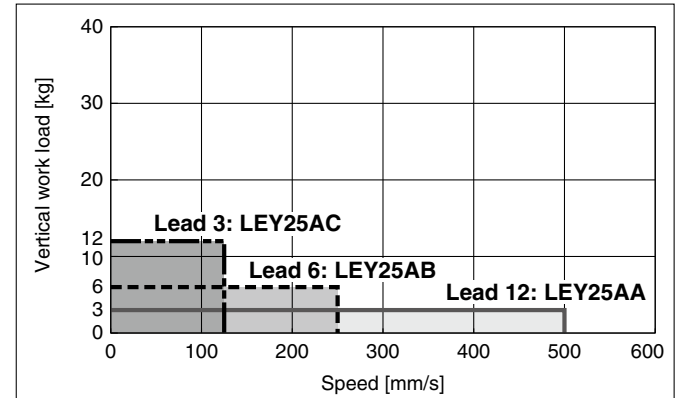


Vertical

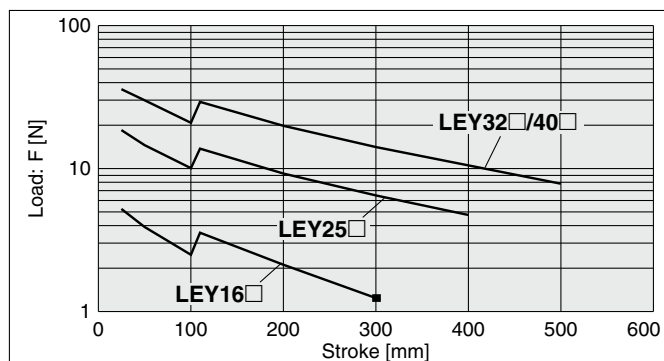
LEY16A□



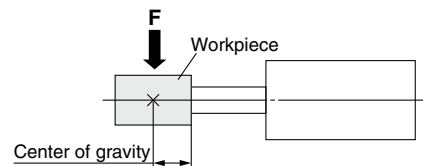
LEY25A□



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



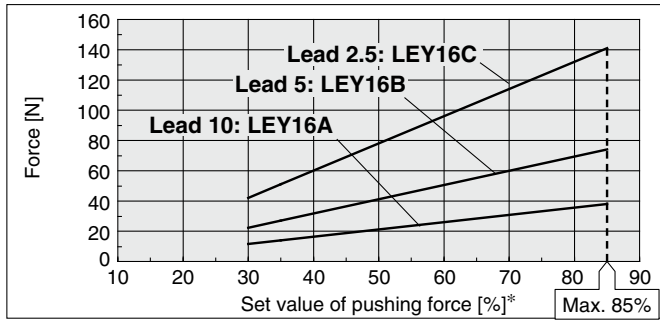
$$[\text{Stroke}] = [\text{Product stroke}] + [\text{Distance from the rod end to the center of gravity of the workpiece}]$$



Force Conversion Graph (Guide)

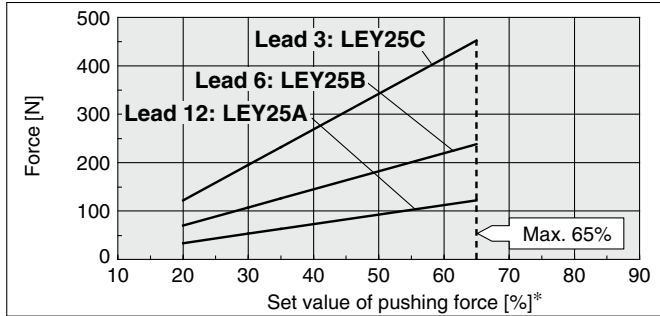
Step Motor (Servo/24 VDC)

LEY16



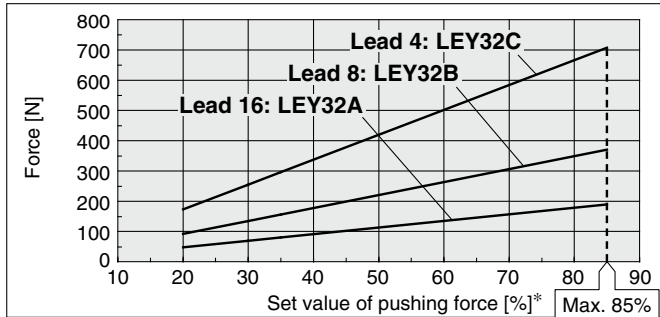
| Ambient temperature | Set value of pushing force [%] | Duty ratio [%] | Continuous pushing time [minute] |
|---------------------|--------------------------------|----------------|----------------------------------|
| 25°C or less | 85 or less | 100 | — |
| | 40 or less | 100 | — |
| 40°C | 50 | 70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

LEY25



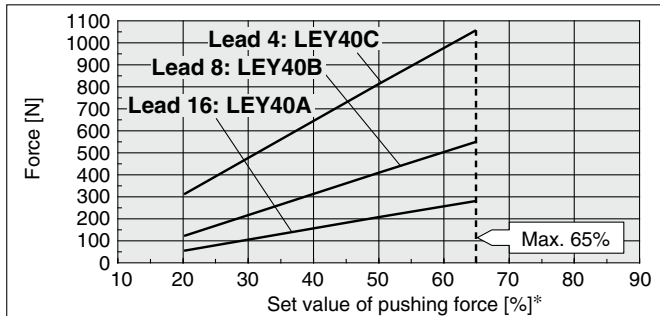
| Ambient temperature | Set value of pushing force [%] | Duty ratio [%] | Continuous pushing time [minute] |
|---------------------|--------------------------------|----------------|----------------------------------|
| 40°C or less | 65 or less | 100 | — |

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

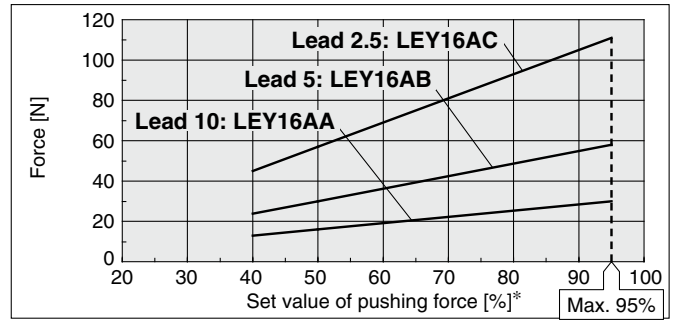


| Ambient temperature | Set value of pushing force [%] | Duty ratio [%] | Continuous pushing time [minute] |
|---------------------|--------------------------------|----------------|----------------------------------|
| 40°C or less | 65 or less | 100 | — |

* Set values for the controller.

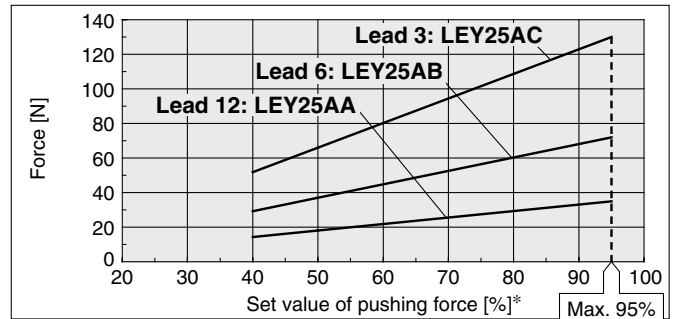
Servo Motor (24 VDC)

LEY16



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

LEY25



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

<Pushing Force and Trigger Level Range> Without Load

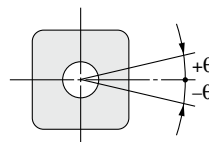
| Model | Pushing speed [mm/s] | Pushing force (Setting input value) | Model | Pushing speed [mm/s] | Pushing force (Setting input value) |
|--------|----------------------|-------------------------------------|---|----------------------|-------------------------------------|
| LEY16□ | 1 to 4 | 30% to 85% | LEY16□A | 1 to 4 | 40% to 95% |
| | 5 to 20 | 35% to 85% | | 5 to 20 | 60% to 95% |
| | 21 to 50 | 60% to 85% | | 21 to 50 | 80% to 95% |
| LEY25□ | 1 to 4 | 20% to 65% | LEY25□A | 1 to 4 | 40% to 95% |
| | 5 to 20 | 35% to 65% | | 5 to 20 | 60% to 95% |
| | 21 to 35 | 50% to 65% | | 21 to 35 | 80% to 95% |
| LEY32□ | 1 to 4 | 20% to 85% | * The pushing force in the table shows the range within which the completion signal [INP] is normally output. If the product is operated outside this range (low pushing force), the [INP] signal may be output when the actuator is moving (before pushing). | | |
| | 5 to 20 | 35% to 85% | | | |
| | 21 to 30 | 60% to 85% | | | |
| LEY40□ | 1 to 4 | 20% to 65% | | | |
| | 5 to 20 | 35% to 65% | | | |
| | 21 to 30 | 50% to 65% | | | |

<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 | 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 | 1 1.5 3 | 1.2 2.5 5 |
| Pushing force | 85% | 65% | 85% | 65% | 95% | 95% |

Non-rotating Accuracy of Rod



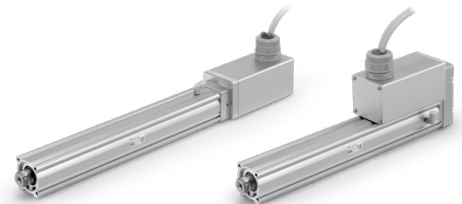
| Size | Non-rotating accuracy θ |
|------|-------------------------|
| 16 | ±1.1° |
| 25 | ±0.8° |
| 32 | ±0.7° |
| 40 | |

* 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.

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

Model Selection

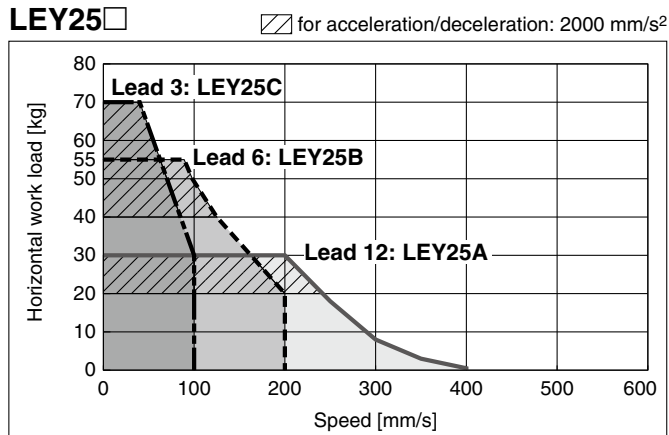


Refer to page 220 for the LECPA or LECA6.

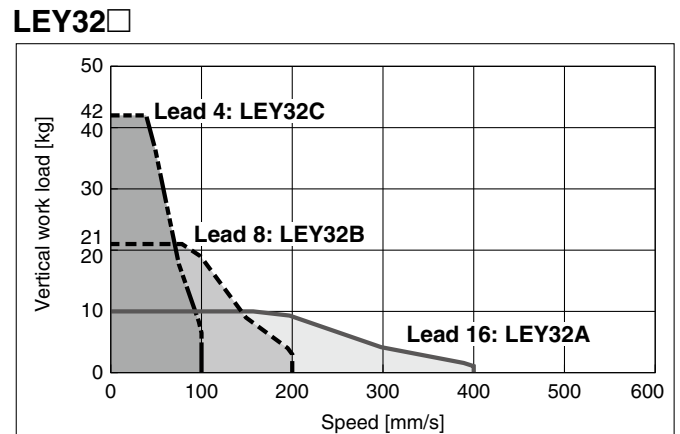
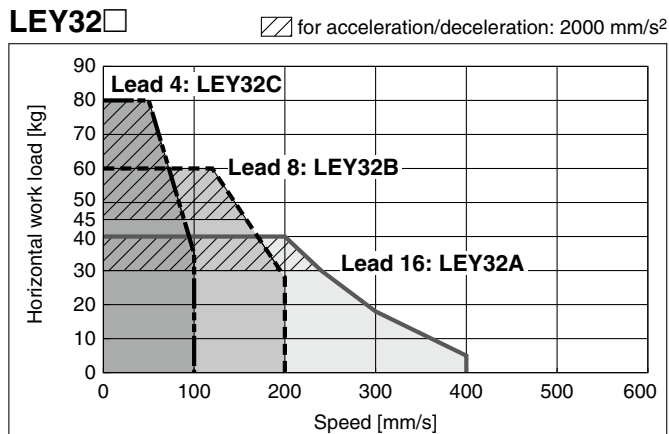
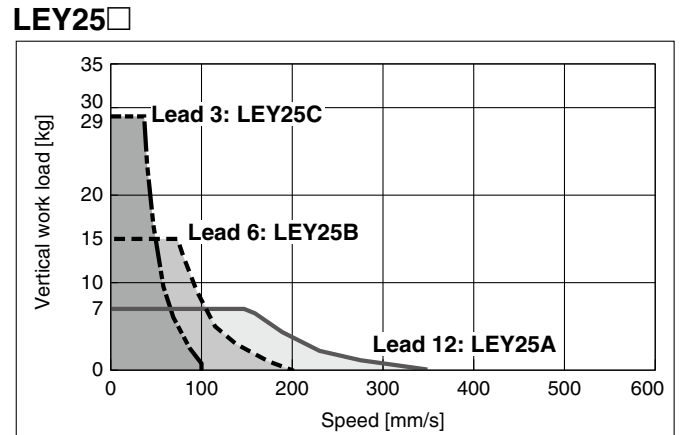
Series LEY-X5 ▶ Page 477

Speed-Work Load Graph (Guide) for Step Motor (Servo/24 VDC) LECP6, LECP1, LECPM1

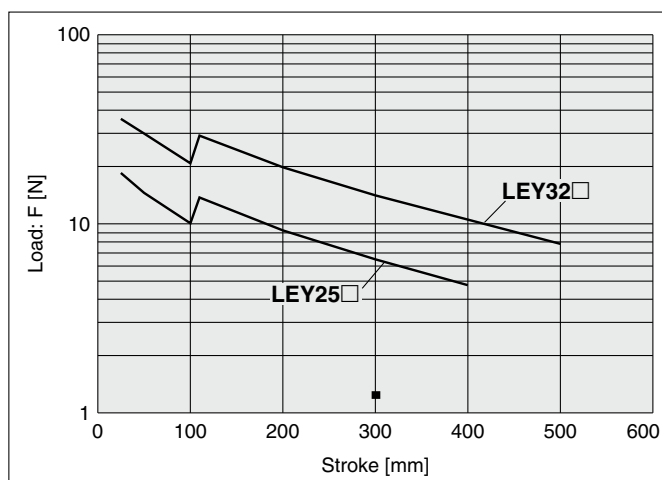
Horizontal



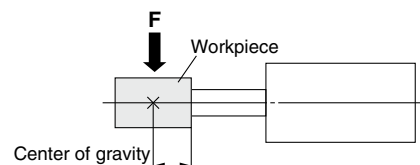
Vertical



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]

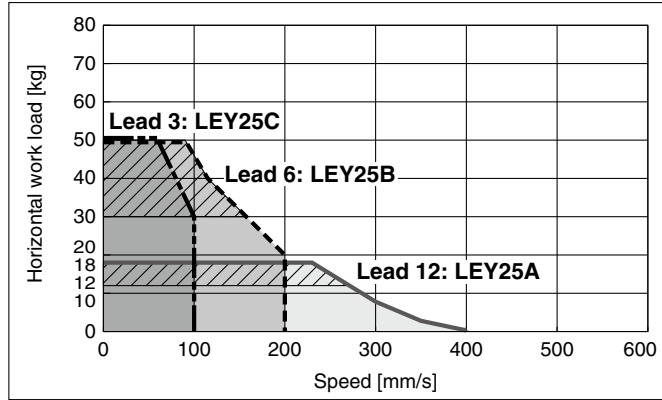



Refer to page 219 for the LECP6, LECP1, LECPMJ.

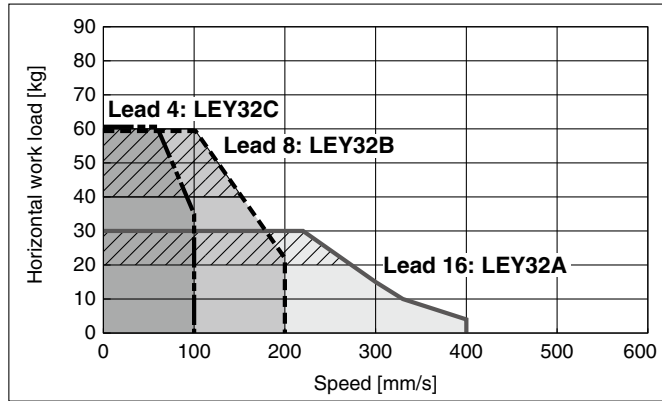
Speed-Work Load Graph (Guide) For Step Motor (Servo/24 VDC) LECPA

Horizontal

LEY25  for acceleration/deceleration: 2000 mm/s²

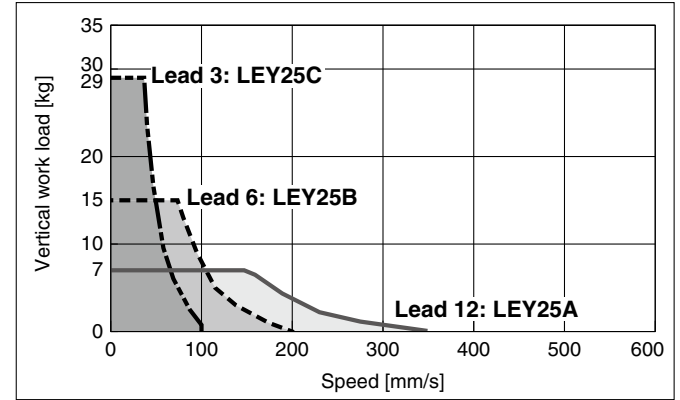


LEY32  for acceleration/deceleration: 2000 mm/s²

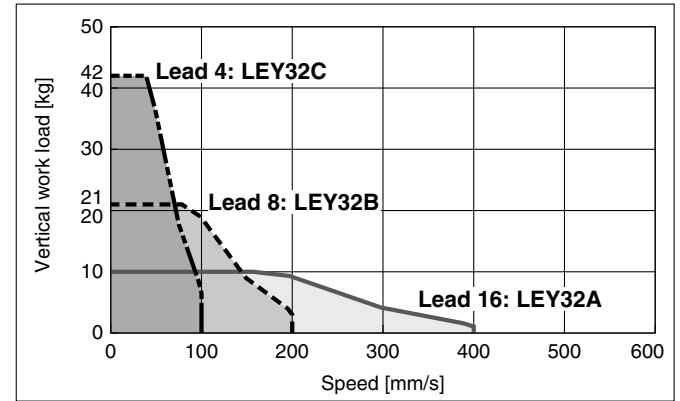


Vertical

LEY25



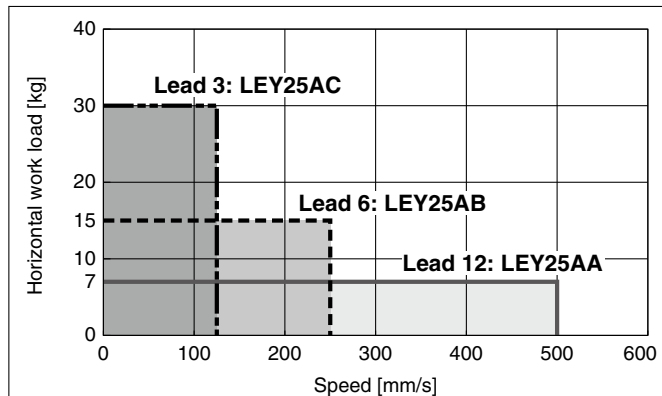
LEY32



For Servo Motor (24 VDC) LECA6

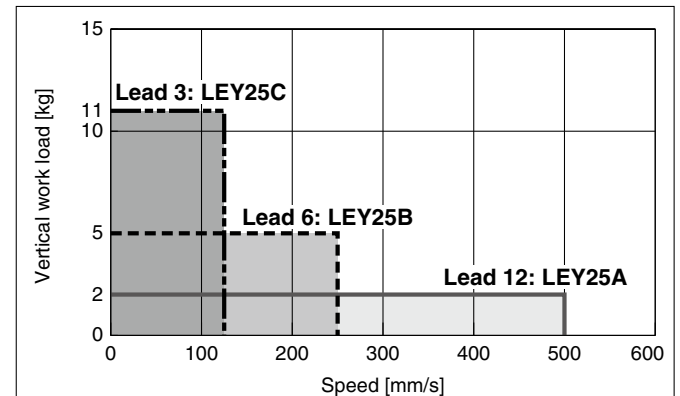
Horizontal

LEY25A



Vertical

LEY25



- LEFS
- LEJB
- LEJ
- LEM
- LEY
- LESH
- LEPS
- LER
- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC
- LECS
- LECS-T
- LECYM
- LECYU
- Motorless
- LAT3

Series LEY-X5

Step Motor (Servo/24 VDC)

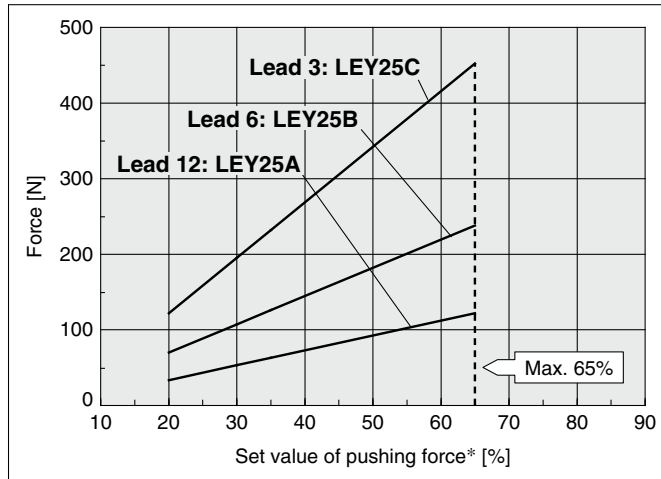
Servo Motor (24 VDC)

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

Force Conversion Graph

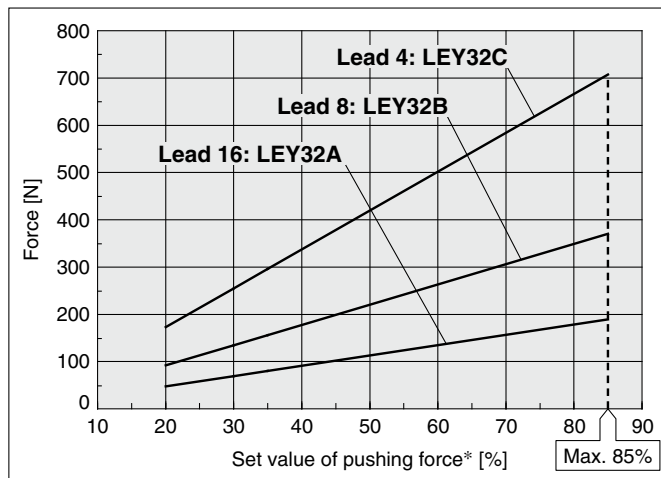
Step Motor (Servo/24 VDC)

LEY25



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

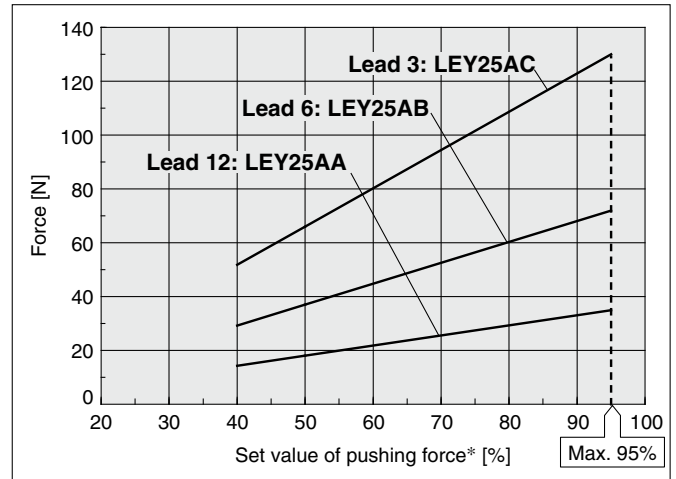
LEY32



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

Servo Motor (24 VDC)

LEY25



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

<Pushing Force and Trigger Level Range> Without Load

| Model | Pushing speed [mm/s] | Pushing force (Setting input value) | Model | Pushing speed [mm/s] | Pushing force (Setting input value) |
|--------|----------------------|-------------------------------------|---------|----------------------|-------------------------------------|
| LEY25□ | 1 to 4 | 20% to 65% | LEY25□A | 1 to 4 | 40% to 95% |
| | 5 to 20 | 35% to 65% | | 5 to 20 | 60% to 95% |
| | 21 to 35 | 50% to 65% | | 21 to 35 | 80% to 95% |
| LEY32□ | 1 to 4 | 20% to 85% | | | |
| | 5 to 20 | 35% to 85% | | | |
| | 21 to 30 | 60% to 85% | | | |

<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.

LEFS
LEFB

LEJS
LEJB

LEL

LEM

LEY
LEYG

LES
LESH

LEPY
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC

LECS

LECS-T

LECYM
LECYU

Motorless

LAT3

Model Selection

Size 25, 32, 63



Series LEY ▶ Pages 245, 255

Series LEY-X5 ▶ Pages 485, 491

Selection Procedure

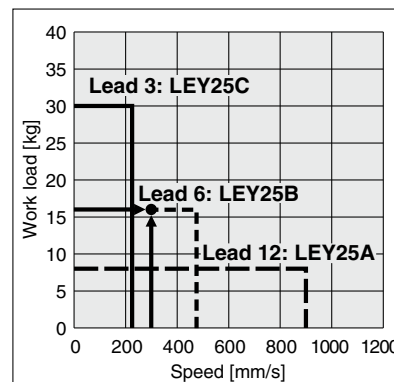
Positioning Control Selection Procedure



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 pages 247, 256, 486 and 492 for the horizontal work load in the specifications, and page 294 for the precautions.

The regeneration option may be necessary. Refer to pages 225 and 226 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.

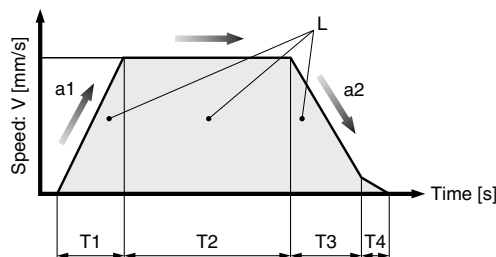
$$T1 = V/a1 \text{ [s]} \quad T3 = V/a2 \text{ [s]}$$

- 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.

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



- 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.

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

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

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

Therefore, the cycle time can be obtained as follows.

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

Based on the above calculation result, the **LEY25B-300** is selected.

Selection Procedure

Force Control Selection Procedure

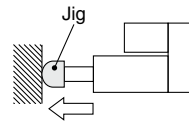


* The duty ratio is a ratio of the operation time in one cycle.

Selection Example

Operating conditions

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

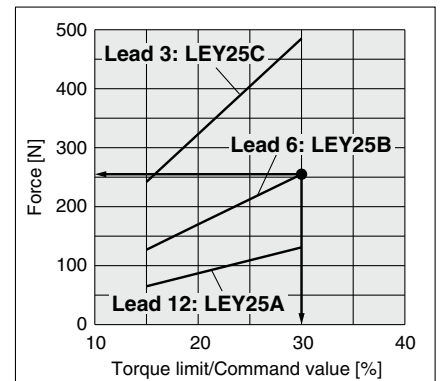
Select the target model based on the torque limit/command value and pushing force with reference to the <Force conversion graph>.

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.



**<Force conversion graph>
(LEY25)**

Step 3 Check the lateral load on the rod end.

<Graph of allowable lateral load on the rod end>

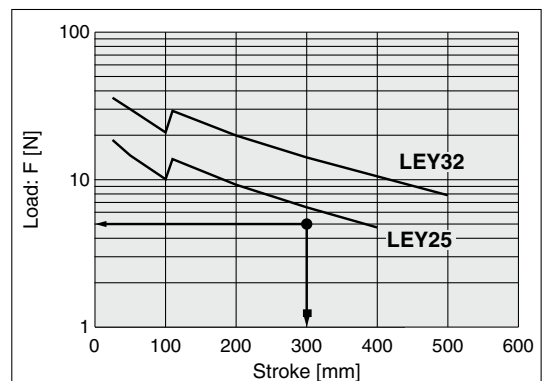
Confirm the allowable lateral load on the rod end of the actuator: LEY25B, which has been selected temporarily with reference to the <Graph of allowable lateral load on the rod end>.

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 LEY25B-300 is selected.

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

Series LEY/LEY-X5

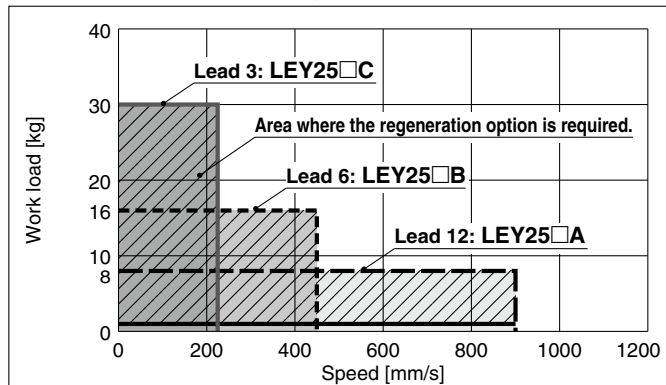
AC Servo Motor

Size 25, 32, 63

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

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

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



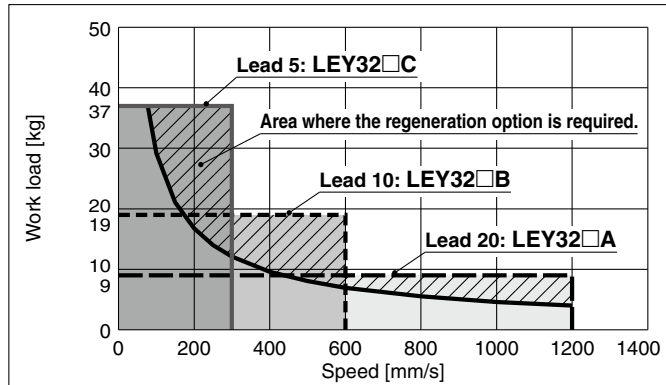
Required conditions for "Regeneration option"

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

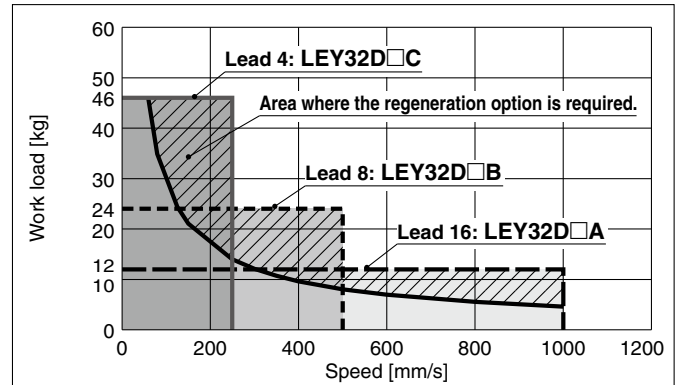
"Regeneration Option" Models

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

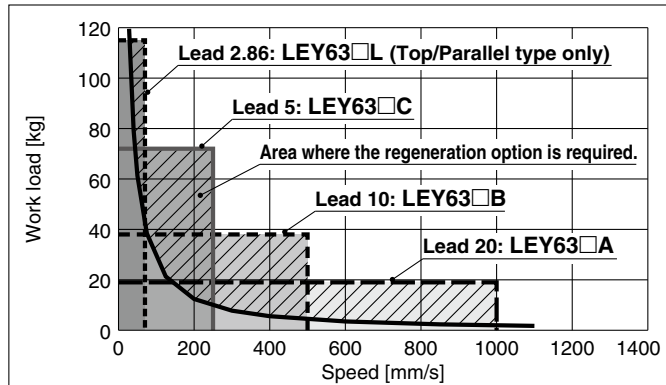
LEY32□ (Motor mounting position: Top/Parallel)



LEY32D (Motor mounting position: In-line)

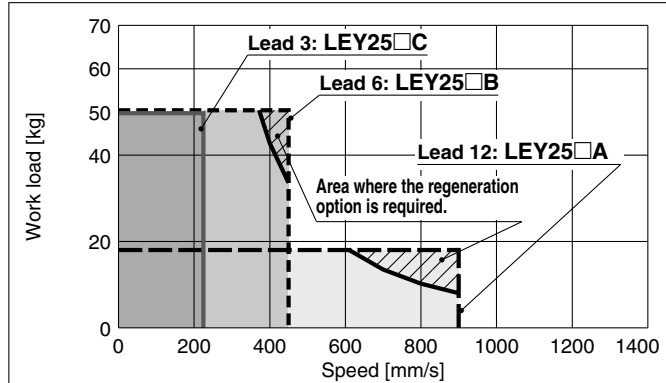


LEY63□ (Motor mounting position: Top/Parallel, In-line)



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

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



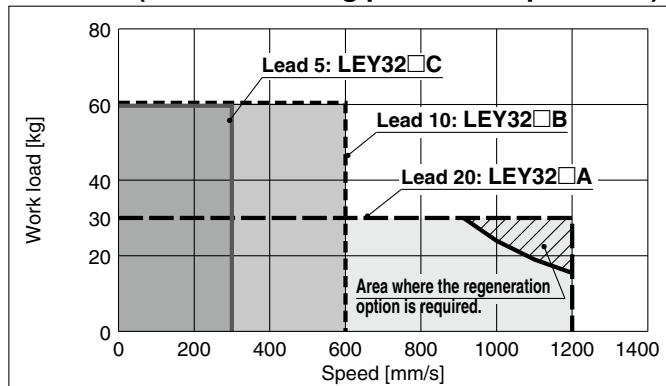
Required conditions for “Regeneration option”

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

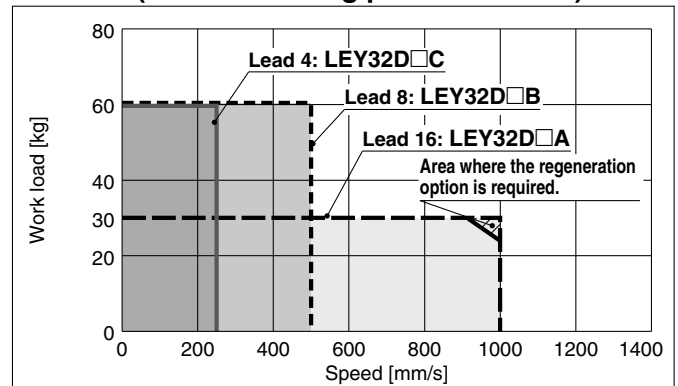
“Regeneration Option” Models

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

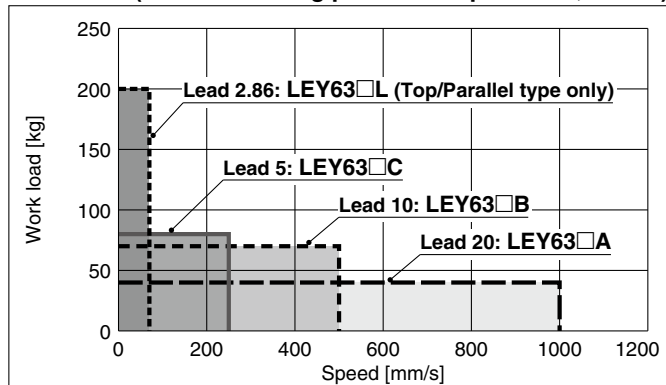
LEY32□ (Motor mounting position: Top/Parallel)



LEY32D (Motor mounting position: In-line)



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



Allowable Stroke Speed

| Model | AC servo motor | Lead | Stroke [mm] | | | | | | | | | | | | | | | |
|--|----------------|------------------------|-------------|------|----|----|------------|------------|------------|-----|-----|------------|-----|-----|------------|------------|------------|-----|
| | | | Symbol | [mm] | 30 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 | 700 | 800 |
| LEY25□ (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□ (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) | | | |
| LEY32D (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□ (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

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

Series LEY/LEY-X5

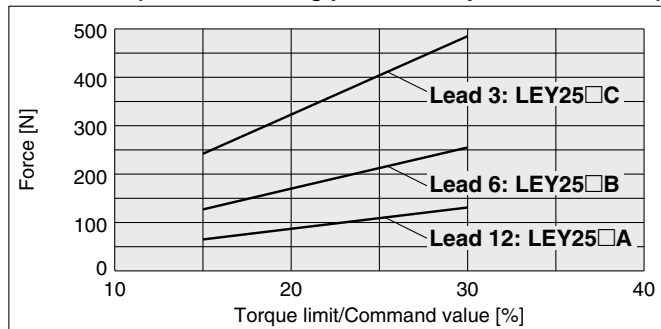
AC Servo Motor

Size 25, 32, 63

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

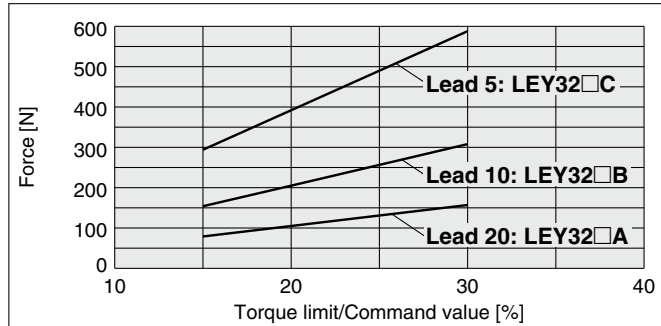
Force Conversion Graph (Guide)

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



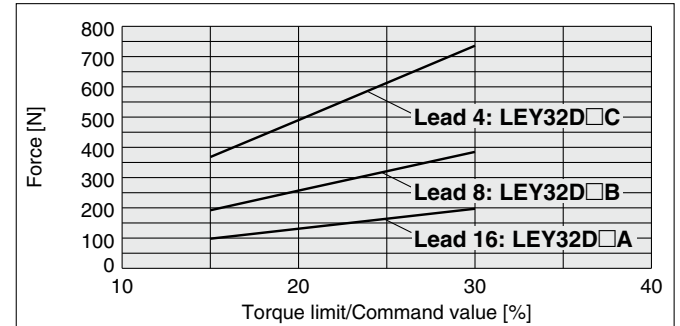
| Torque limit/Command value [%] | Duty ratio [%] | Continuous pushing time [minute] |
|--------------------------------|----------------|----------------------------------|
| 25 or less | 100 | — |
| 30 | 60 | 1.5 |

LEY32 (Motor mounting position: Top/Parallel)



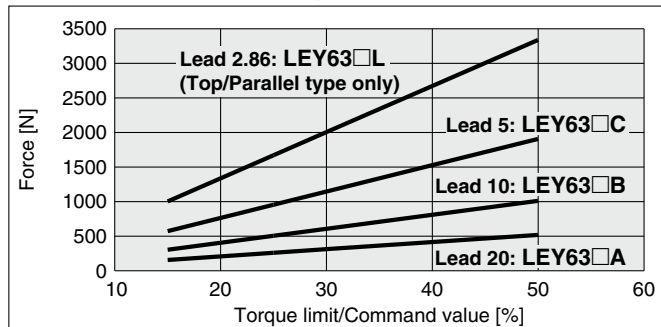
| Torque limit/Command value [%] | Duty ratio [%] | Continuous pushing time [minute] |
|--------------------------------|----------------|----------------------------------|
| 25 or less | 100 | — |
| 30 | 60 | 1.5 |

LEY32D (Motor mounting position: In-line)



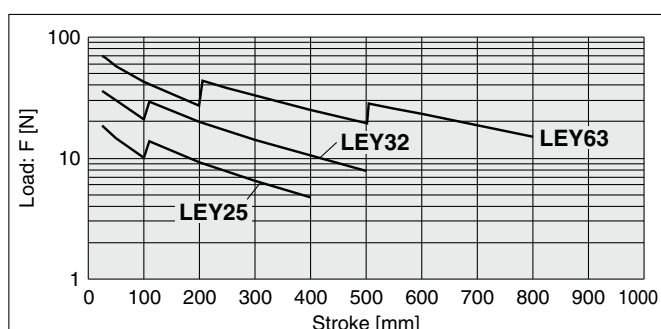
| Torque limit/Command value [%] | Duty ratio [%] | Continuous pushing time [minute] |
|--------------------------------|----------------|----------------------------------|
| 25 or less | 100 | — |
| 30 | 60 | 1.5 |

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

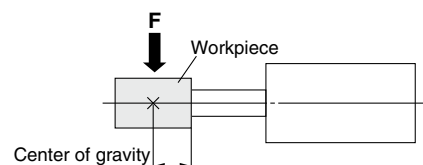


| Torque limit/Command value [%] | Duty ratio [%] | Continuous pushing time [minute] |
|--------------------------------|----------------|----------------------------------|
| 25 or less | 100 | — |
| 30 | 60 | 1.5 |
| 40 | 30 | 0.5 |
| 50 | 20 | 0.16 |

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]



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

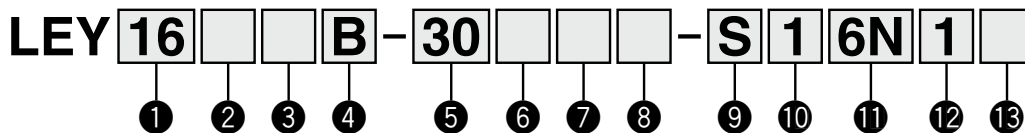
Electric Actuator/ Rod Type

Series **LEY** LEY16, 25, 32, 40



Dust-tight/Water-jet-proof ▶ Page 477 Secondary Battery Compatible ▶ Page 533

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 559 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]

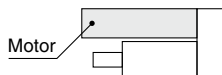
| | |
|-----|-----|
| 30 | 30 |
| to | to |
| 500 | 500 |

* 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 |

●: Standard

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

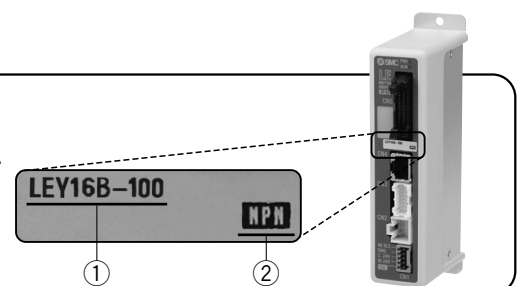
For auto switches, refer to pages 243 and 244.

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.>

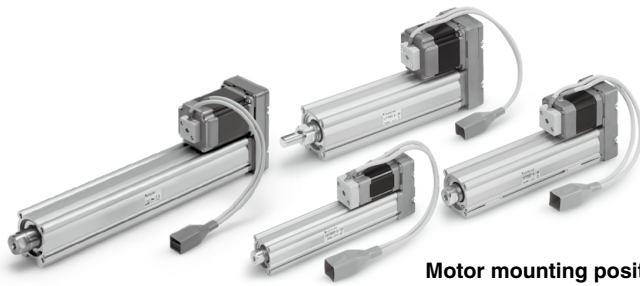
- Check the actuator label for model number. This matches the controller/driver.
- Check Parallel I/O configuration matches (NPN or PNP)



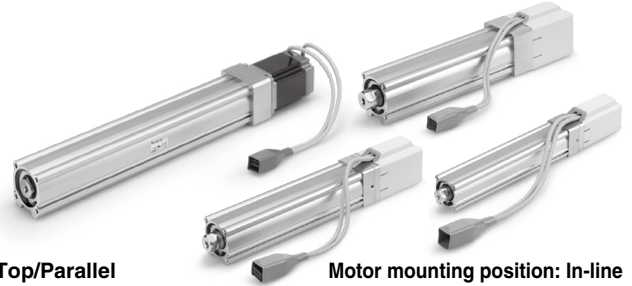
* Refer to the operation manual for using the products. Please download it via our website, <http://www.smcworld.com>

Electric Actuator/Rod Type **Series LEY**

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



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.

13 Controller/Driver mounting

| | |
|-----|---------------------|
| Nil | Screw mounting |
| D | DIN rail mounting*1 |

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

9 Actuator cable type*1

| | |
|-----|----------------------------------|
| Nil | Without cable |
| S | Standard cable*2 |
| R | Robotic cable (Flexible cable)*3 |

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

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

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

11 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 587 separately.

10 Actuator cable length [m]

| Nil | Without cable |
|-----|---------------|
| 1 | 1.5 |
| 3 | 3 |
| 5 | 5 |
| 8 | 8* |
| A | 10* |
| B | 15* |
| C | 20* |

* Produced upon receipt of order (Robotic cable only). Refer to the specifications Note 5) on page 231.

12 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 When "Without controller/driver" is selected for controller/driver types, I/O cable cannot be selected. Refer to page 559 (For LECP6/LECA6), page 573 (For LECP1) or page 587 (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 551 | Page 551 | Page 591 | Page 567 | Page 581 |

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) | (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) | (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 | 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 (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 | | | □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 | 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 215 and 216.

Vertical: Speed changes according to the work load. Check "Model Selection" on pages 215 and 216.

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 218.

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 | | LEY16A | | | | LEY25A | | | | |
|---|--|--|----------|-----------|----------|---|-----------|----|--|--|
| 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 unit 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 217 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 pushing force values for LEY16A□ is 50% to 95% and for LEY25A□ is 50% to 95%. The pushing force values change according to the duty ratio and pushing speed. Check "Model Selection" on page 218.

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) 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 |

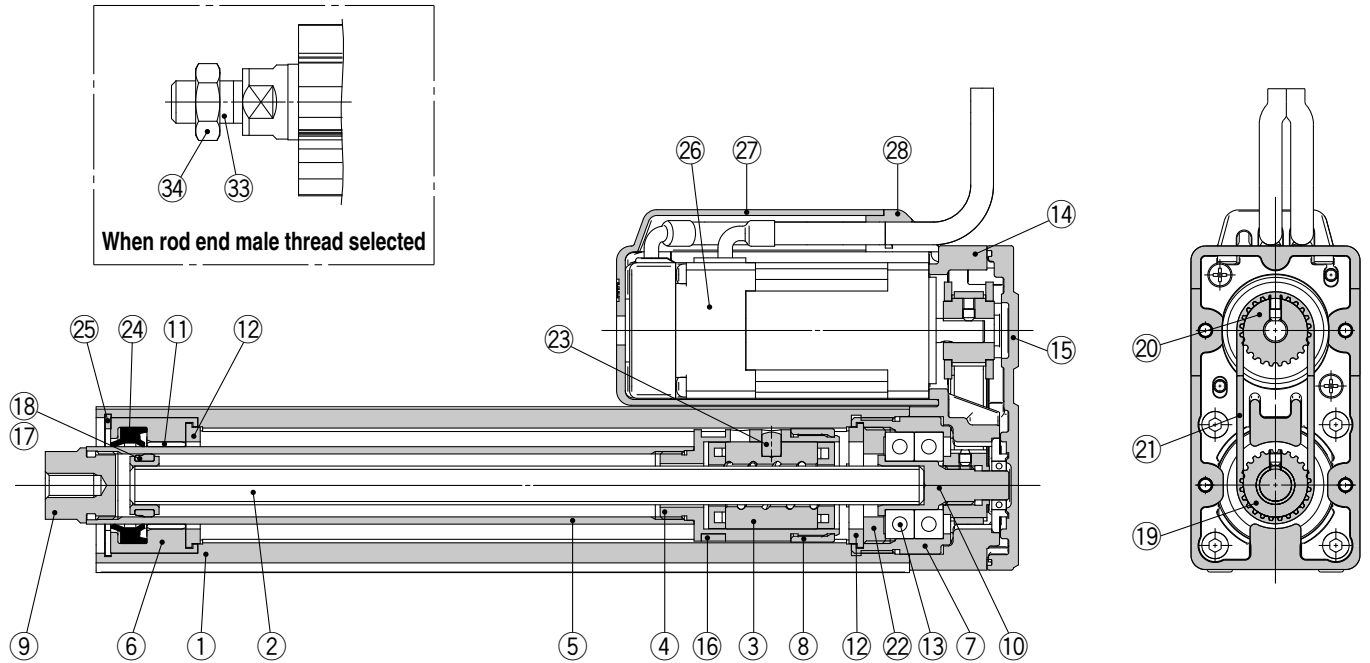
LEFS
LEFB
LEJS
LEJB
LEL
LEM
LEY
LEYG
LES
LESH
LEPY
LEPS
LER
LEH
LEH
LEY-X5
11-LEFS
11-LEJS
25A-
LEC□
LECS□
LECS-T
LECYM
LECYU
Motorless
LAT3

Series LEY

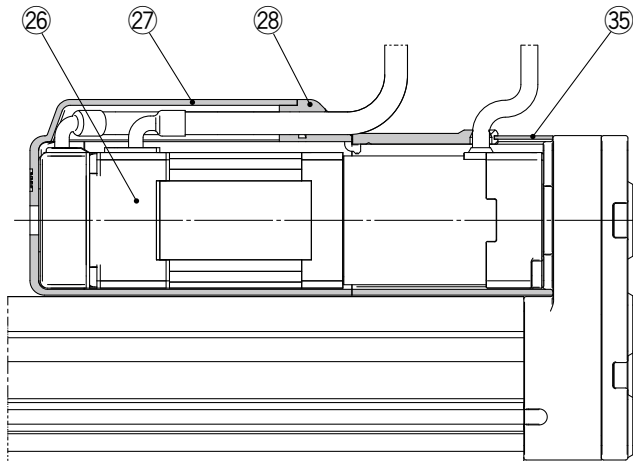
Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

Construction

Motor top mounting type: LEY
 16
 25
 32
 40

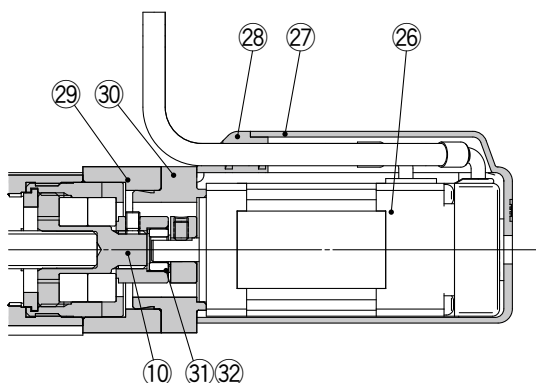


Motor top/parallel type
 With lock/motor cover

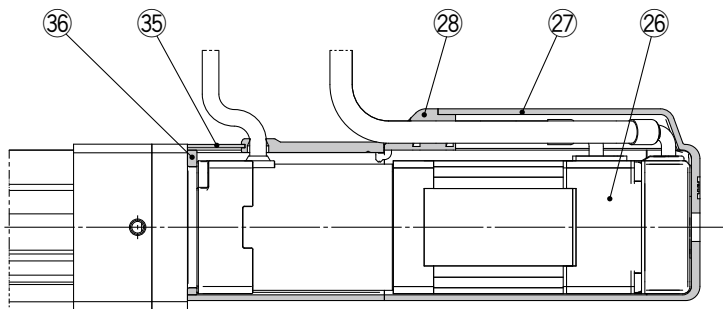


Construction

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 | Resin/Alloy steel | |
| 4 | Piston | Aluminum alloy | |
| 5 | Piston rod | Stainless steel | Hard chrome plating |
| 6 | Rod cover | Aluminum alloy | |
| 7 | Housing | 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 | Lead bronze cast | |
| 12 | Bumper | Urethane | |
| 13 | Bearing | — | |
| 14 | Return box | Aluminum die-cast | Coating |
| 15 | Return plate | Aluminum die-cast | Coating |
| 16 | Magnet | — | |
| 17 | Wear ring holder | Stainless steel | Stroke 101 mm or more |
| 18 | Wear ring | POM | Stroke 101 mm or more |
| 19 | Screw shaft pulley | Aluminum alloy | |
| 20 | Motor pulley | Aluminum alloy | |
| 21 | Belt | — | |
| 22 | Bearing stopper | Aluminum alloy | |
| 23 | Parallel pin | Stainless steel | |
| 24 | Seal | NBR | |
| 25 | Retaining ring | Steel for spring | Phosphate coated |

| No. | Description | Material | Note |
|-----|-----------------------|---------------------------|------------------------------|
| 26 | Motor | — | |
| 27 | Motor cover | Synthetic resin | Only "With motor cover" |
| 28 | Grommet | Synthetic resin | Only "With motor cover" |
| 29 | Motor block | Aluminum alloy | Anodized |
| 30 | Motor adapter | Aluminum alloy | Anodized/LEY16, 25 only |
| 31 | Hub | Aluminum alloy | |
| 32 | Spider | NBR | |
| 33 | Socket (Male thread) | Free cutting carbon steel | Nickel plating |
| 34 | Nut | Alloy steel | |
| 35 | Motor cover with lock | Aluminum alloy | Only "With lock/motor cover" |
| 36 | Cover support | Aluminum alloy | Only "With lock/motor cover" |

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.

LEFS
LEFB

LEJS
LEJB

LEL

LEM

LEY
LEYG

LES
LESH

LEPY
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC

LECS

LECS-T

LECYM
LECYU

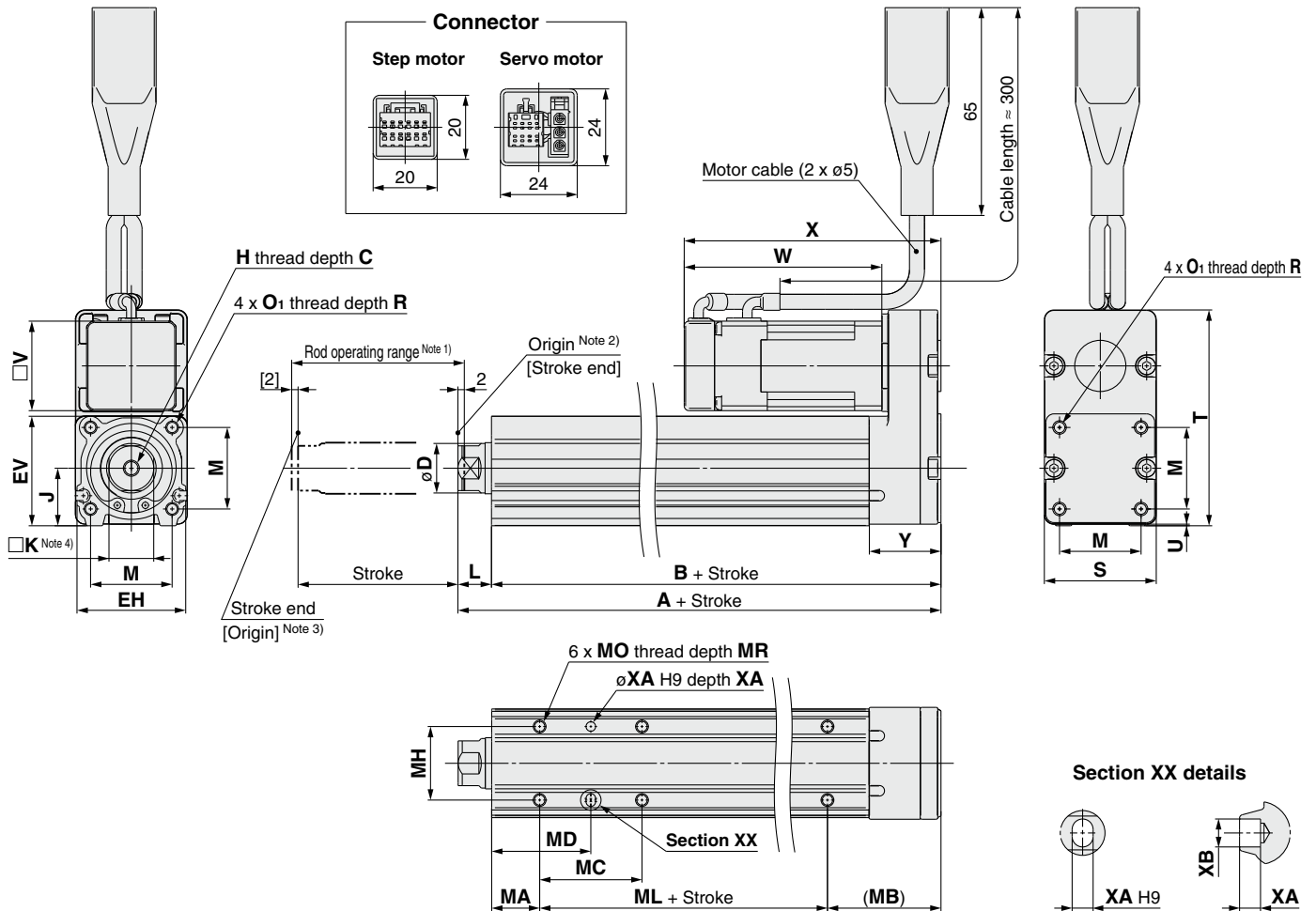
Motorless

LAT3

Series LEY

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.

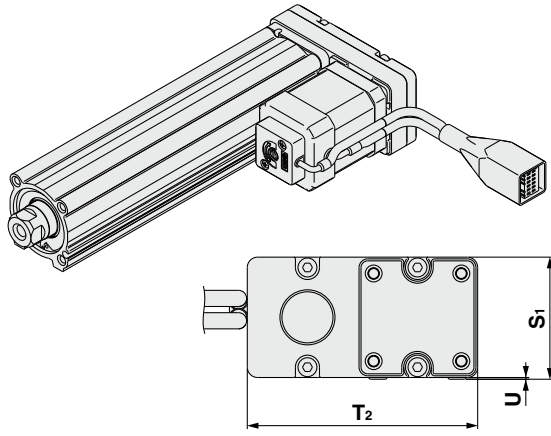
| Size | Stroke range [mm] | A | B | C | D | EH | EV | H | J | K | L | M | O ₁ | R | S | T | U | V | Step motor | | Servo motor | | Y |
|------|-------------------|-------|-------|----|----|----|------|-----------|----|----|------|------|----------------|----|----|------|-----|------|------------|-------|-------------|------|------|
| | | | | | | | | | | | | | | | | | | | 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 | | | | | | | | | | | | | | | | | | | | |
| 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 | 42 | 63.4 | 85.4 | 59.6 | 81.6 | 26.5 |
| | 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 | 60 | 118 | 1 | 56.4 | 68.4 | 95.4 | — | — | 34 |
| | 101 to 500 | 178.5 | 160 | | | | | | | | | | | | | | | | | | | | |
| 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 | | | | | | | | | | | | | | | | | | | | |

Body Bottom Tapped

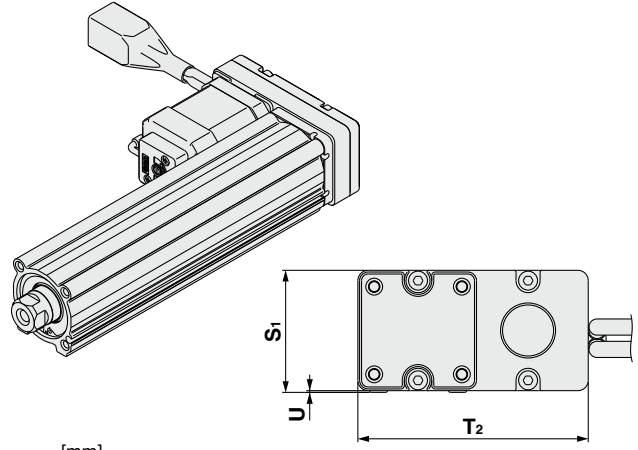
| Size | Stroke range [mm] | MA | MB | MC | MD | MH | ML | MO | MR | XA | XB |
|------|-------------------|----|------|----|------|----|----|----------|-----|----|----|
| 16 | 10 to 39 | 15 | 35.5 | 17 | 23.5 | 23 | 40 | M4 x 0.7 | 5.5 | 3 | 4 |
| | 40 to 100 | | | 32 | 31 | | | | | | |
| | 101 to 300 | | | 62 | 46 | | | | | | |
| 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 | | | | | | |

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.

LEFS
LEFB

LEJS
LEJB

LEL

LEM

LEY
LEYG

LES
LESH

LEPY
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC□

LECS□

LECS-T

LECYM
LECYU

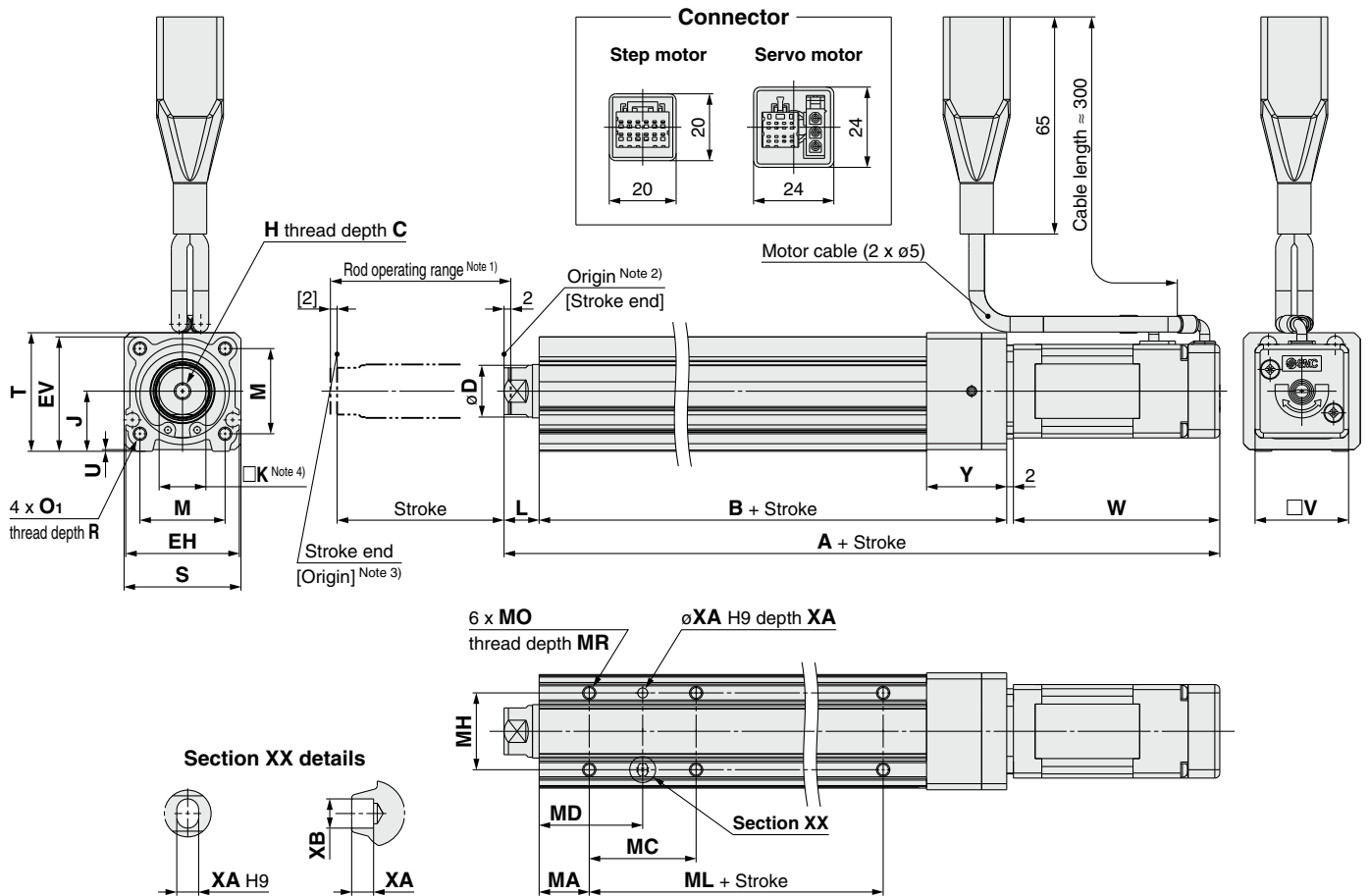
Motorless

LAT3

Series LEY

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

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.

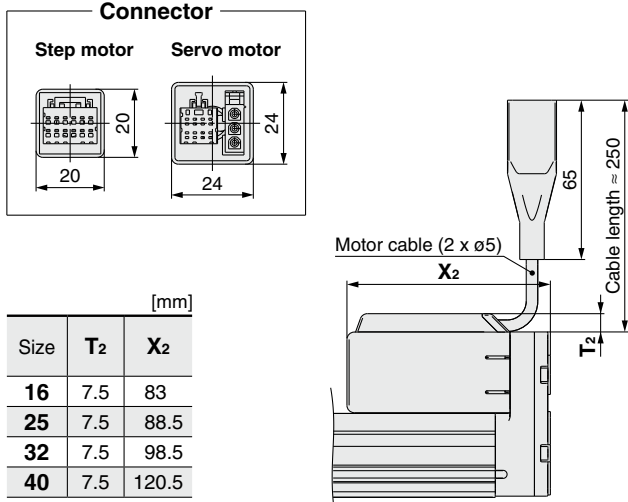
| Size | Stroke range [mm] | Step motor | Servo motor | A | B | C | D | EH | EV | H | J | K | L | M | O ₁ | R | S | T | U | V | Step motor | Servo motor | Y |
|------|-------------------|------------|-------------|-------|----|----|----|------|-----------|----|----|------|------|----------|----------------|----|------|-----|------|------|------------|-------------|------|
| | | | | | | | | | | | | | | | | | | | | | | | |
| 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 | | | | | | | | | | | | | | | | | | | 61.8 |
| 25 | 15 to 100 | 195.4 | 191.6 | 115.5 | 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 | | | | | | | | | | | | | | | | | | | 63.4 |
| 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 | | | | | | | | | | | | | | | | | | | 68.4 |
| 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 | | | | | | | | | | | | | | | | | | | 90.4 |

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 | | | | | | |
| | 101 to 300 | | 62 | 46 | | | | | | |
| 25 | 15 to 39 | 20 | 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 | 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

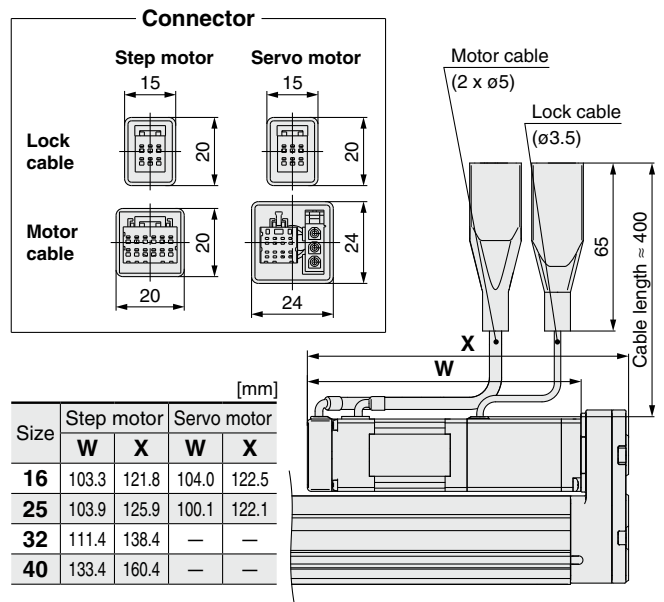
Motor top/parallel type 16 A
 With motor cover: LEY 25 B-C
 32 C
 40



| Size | T ₂ | X ₂ |
|------|----------------|----------------|
| 16 | 7.5 | 83 |
| 25 | 7.5 | 88.5 |
| 32 | 7.5 | 98.5 |
| 40 | 7.5 | 120.5 |

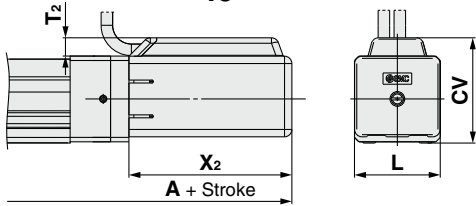
Motor cover material: Synthetic resin

With lock: LEY 16 A
 25 B-C
 32 C
 40



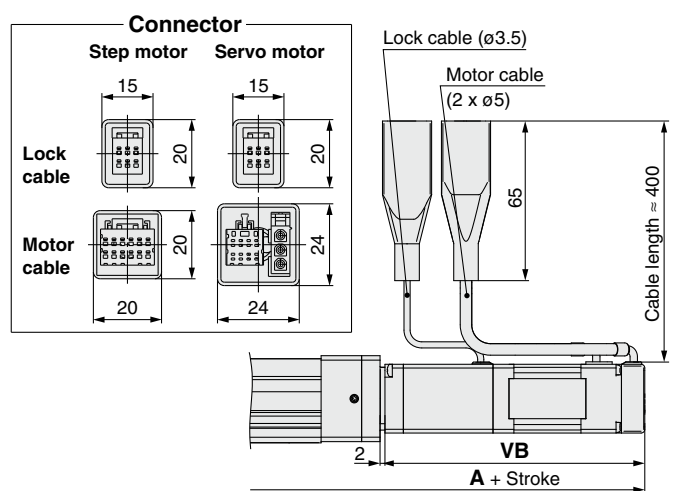
| Size | Step motor | | Servo motor | |
|------|------------|-------|-------------|-------|
| | W | X | W | X |
| 16 | 103.3 | 121.8 | 104.0 | 122.5 |
| 25 | 103.9 | 125.9 | 100.1 | 122.1 |
| 32 | 111.4 | 138.4 | — | — |
| 40 | 133.4 | 160.4 | — | — |

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

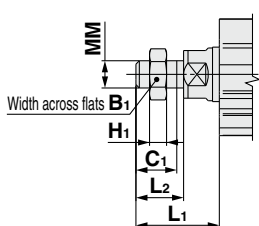


| Size | Stroke range | A | T ₂ | X ₂ | L | CV |
|------|------------------------------|------------------------------|----------------|----------------|----|------|
| | | | | | | |
| | 101st or more, 200st or less | 189 | | | | |
| 25 | 100st or less | 198.5 | 7.5 | 68.5 | 46 | 54.5 |
| | | 101st or more, 400st or less | | | | |
| 32 | 100st or less | 220 | 7.5 | 73.5 | 60 | 68.5 |
| | | 101st or more, 500st or less | | | | |
| 40 | 100st or less | 242 | 7.5 | 95.5 | 60 | 68.5 |
| | | 101st or more, 500st or less | | | | |

With lock: LEY 16 A
 25 D B-C
 32 C
 40



End male thread: LEY 16 A
 25 B-C
 32 C
 40 M



* Refer to page 241 for details about the rod end nut and mounting bracket.
 Note) Refer to the "Handling" precautions on pages 294 to 296 when mounting end brackets such as knuckle joint or workpieces.

| Size | B ₁ | C ₁ | H ₁ | L ₁ | L ₂ | MM |
|--------|----------------|----------------|----------------|----------------|----------------|-----------|
| 16 | 13 | 12 | 5 | 24.5 | 14 | M8 x 1.25 |
| 25 | 22 | 20.5 | 8 | 38 | 23.5 | M14 x 1.5 |
| 32, 40 | 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.

| Size | Stroke range | Step motor | | Servo motor | |
|------|---------------|------------|-------|-------------|-------|
| | | A | | VB | |
| 16 | 100st or less | 207.8 | 208.5 | 103.3 | 104 |
| | | 227.8 | 228.5 | | |
| 25 | 100st or less | 235.9 | 232.1 | 103.9 | 100.1 |
| | | 260.9 | 257.1 | | |
| 32 | 100st or less | 259.9 | — | 111.4 | — |
| | | 289.9 | — | | |
| 40 | 100st or less | 281.9 | — | 133.4 | — |
| | | 311.9 | — | | |

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

Series LEY

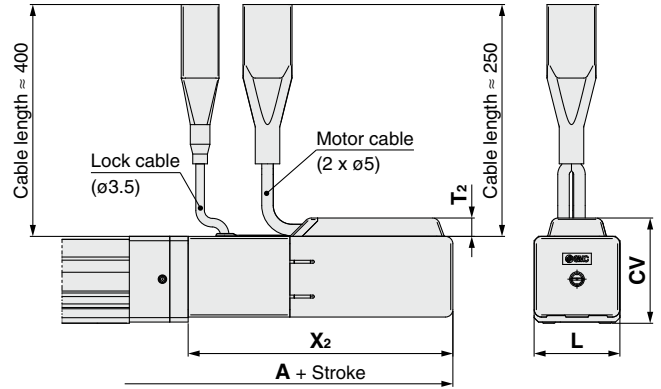
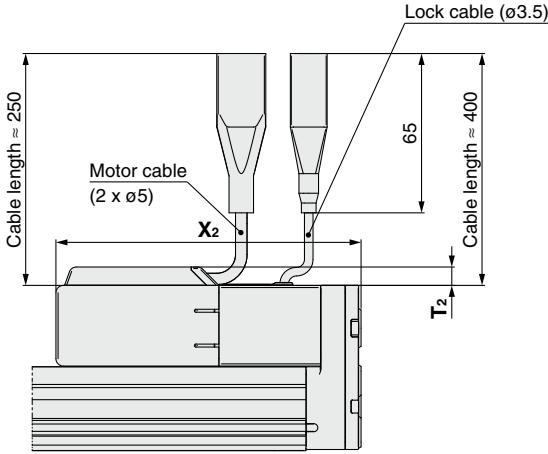
Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

Dimensions

Motor top/parallel type
With lock/motor cover: LEY $\begin{matrix} 16 \\ 25 \\ 32 \\ 40 \end{matrix}$ $\begin{matrix} A \\ B \\ C \end{matrix}$ $\begin{matrix} \square \\ \square \\ \square \end{matrix}$ $\begin{matrix} B \\ \square \\ \square \end{matrix}$ $\begin{matrix} \square \\ \square \\ \square \end{matrix}$ W

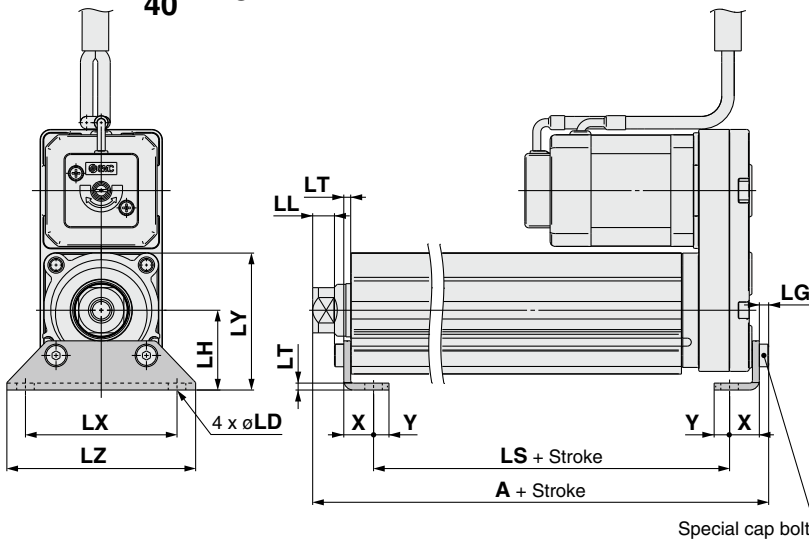
In-line motor type
With lock/motor cover: LEY $\begin{matrix} 16 \\ 25 \\ 32 \\ 40 \end{matrix}$ D $\begin{matrix} A \\ B \\ C \end{matrix}$ $\begin{matrix} \square \\ \square \\ \square \end{matrix}$ W



| 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 $\begin{matrix} 16 \\ 25 \\ 32 \\ 40 \end{matrix}$ $\begin{matrix} A \\ B \\ C \end{matrix}$ $\begin{matrix} \square \\ \square \\ \square \end{matrix}$ $\begin{matrix} \square \\ \square \\ \square \end{matrix}$ L



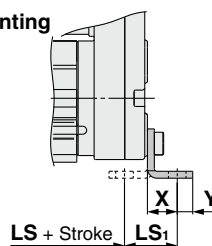
Included parts
• Foot
• Body mounting bolt

| 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 |
| 40 | 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 |
| 40 | 101 to 500 | | | | | | | |

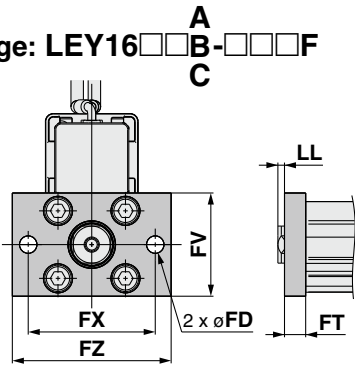
Material: Carbon steel (Chromate treated)
* The A measurement is when the unit is in the original position.
At this position, 2 mm at the end.
Note) When the motor mounting is the right or left side parallel type, the head side foot should be mounted outwards.

Outward mounting

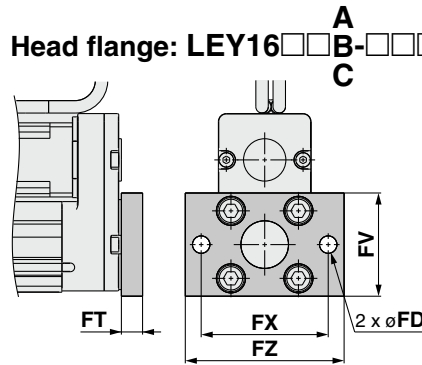


Dimensions

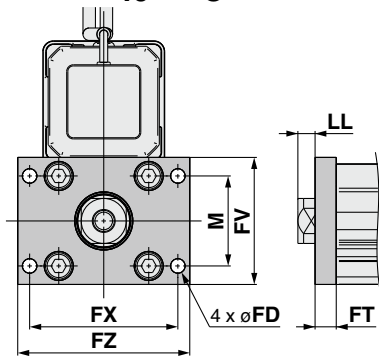
Rod flange: LEY16□□B-□□□F



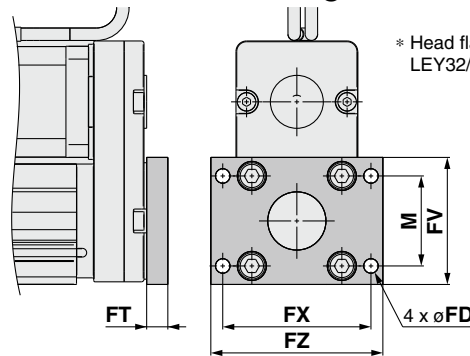
Head flange: LEY16□□B-□□□G



Rod flange: LEY32□□B-□□□F
40 C



Head flange: LEY25□□B-□□□G



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

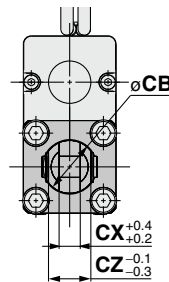
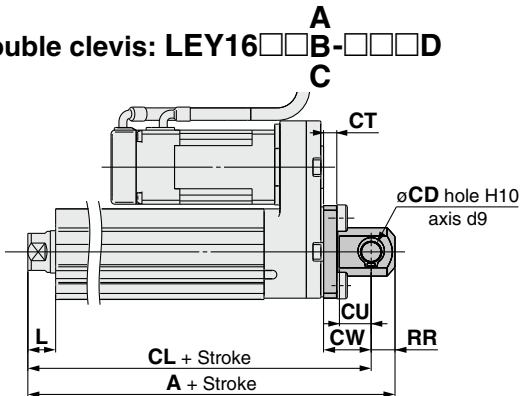
- Included parts
- Flange
 - Body mounting bolt

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



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

* Refer to page 241 for details about the rod end nut and mounting bracket.

Double Clevis [mm]

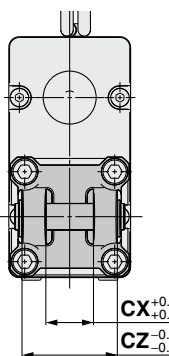
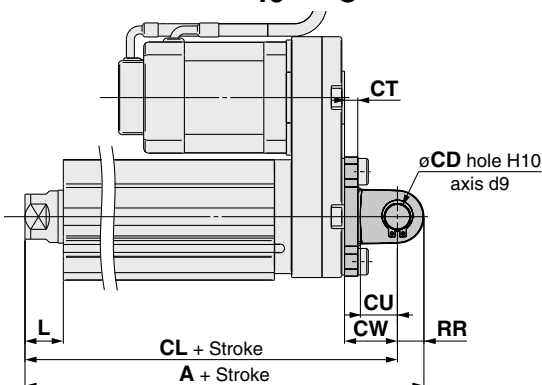
| Size | Stroke range [mm] | A | CL | CB | CD | CT |
|------|-------------------|-------|-------|----|----|----|
| 16 | 10 to 100 | 128 | 119 | 20 | 8 | 5 |
| | 15 to 100 | 160.5 | 150.5 | — | 10 | 5 |
| 25 | 101 to 200 | 185.5 | 175.5 | — | 10 | 6 |
| | 20 to 100 | 180.5 | 170.5 | — | 10 | 6 |
| 40 | 101 to 200 | 210.5 | 200.5 | — | 10 | 6 |

| Size | Stroke range [mm] | CU | CW | CX | CZ | L | RR |
|------|-------------------|----|----|----|----|------|----|
| 16 | 10 to 100 | 12 | 18 | 8 | 16 | 10.5 | 9 |
| | 15 to 100 | 14 | 20 | 18 | 36 | 14.5 | 10 |
| 25 | 101 to 200 | 14 | 22 | 18 | 36 | 18.5 | 10 |
| | 20 to 100 | 14 | 22 | 18 | 36 | 18.5 | 10 |
| 40 | 101 to 200 | 14 | 22 | 18 | 36 | 18.5 | 10 |

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.

Double clevis: LEY32□□B-□□□D
40 C



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

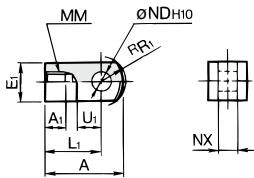
Series LEY Accessory Mounting Brackets

Accessory Brackets/Support Brackets

Single Knuckle Joint

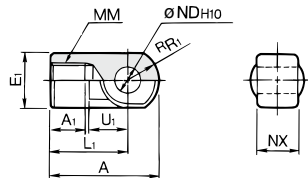
* If a knuckle joint is used, select the body option [end male thread].

I-G02



Material: Carbon steel
Surface treatment: Nickel plating

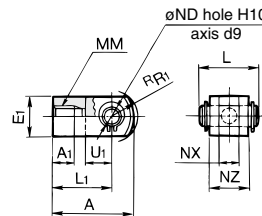
I-G04



Material: Cast iron
Surface treatment: Nickel plating

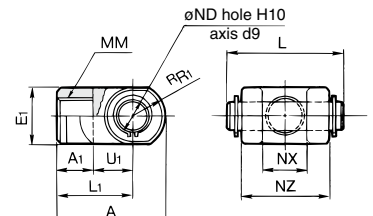
Double Knuckle Joint

Y-G02



Material: Carbon steel
Surface treatment: Nickel plating

Y-G04



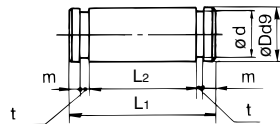
Material: Cast iron
Surface treatment: Nickel plating

| 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 |
| I-G04 | 25, 32, 40 | 42 | 14 | ∅22 | 30 | M14 x 1.5 | 12 | 14 | 10 ^{+0.058} ₀ | 18 ^{+0.3} ₀ |
| I-G05 | 63 | 56 | 18 | ∅28 | 40 | M18 x 1.5 | 16 | 20 | 14 ^{+0.070} ₀ | 22 ^{+0.3} ₀ |

| 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 |

| 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 ^{+0.4} ₀ | 16 | 21 | IY-G02 |
| Y-G04 | 25, 32, 40 | 14 | 10 ^{+0.058} ₀ | 18 ^{+0.5} ₀ | 36 | 41.6 | IY-G04 |
| Y-G05 | 63 | 20 | 14 ^{+0.070} ₀ | 22 ^{+0.5} ₀ | 44 | 50.6 | IY-G05 |

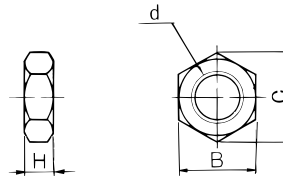
Knuckle Pin (Common with double clevis pin)



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 |

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 |

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

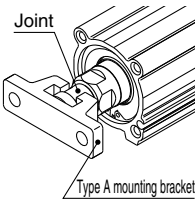
Double clevis: Clevis pin, Type C retaining ring for axis, Body mounting bolt

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

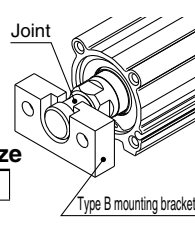
Applicable size
025 25, 32, 40



Joint
Type A mounting bracket

Mounting bracket YA-03

Applicable size
03 25, 32, 40



Joint
Type B mounting bracket

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 | | |

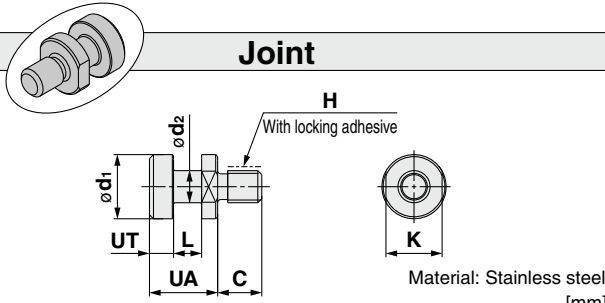
<How to Order>

- The joint is not included in type A and type B mounting brackets. Therefore, it must be ordered separately.
- Example) Order no. Joint..... 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 |

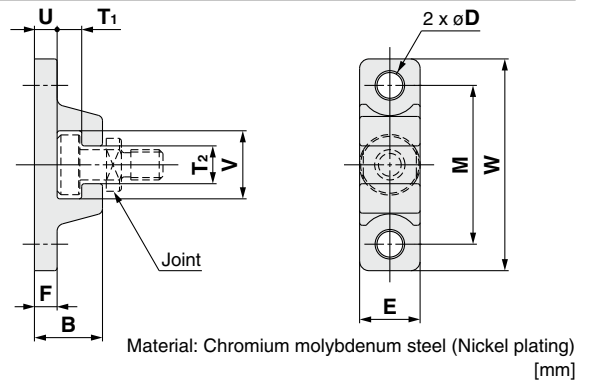
Joint



Material: Stainless steel [mm]

| 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 |

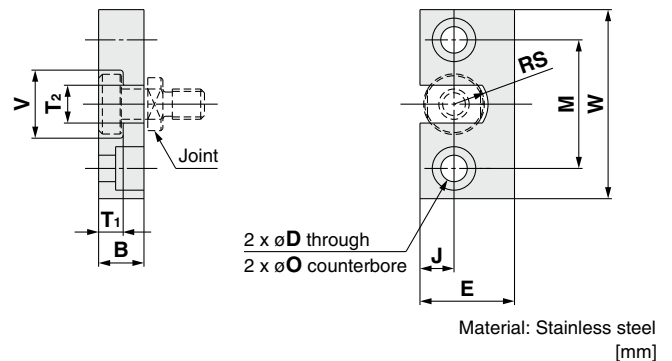
Type A Mounting Bracket



| 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 the WEB catalog or the Best Pneumatics No. 2 for details.)

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



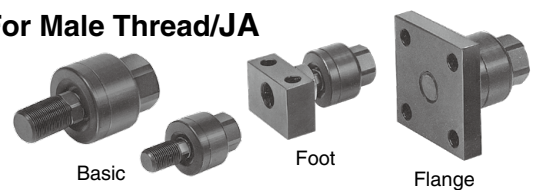
- For Male Thread/JS (Stainless steel)

- 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 |

- For Male Thread/JA



- For Female Thread/JB



| Applicable size | Thread size |
|-----------------|-------------|
| 16 | M5 x 0.8 |
| 25, 32, 40 | M8 x 1.25 |

LEFS
LEJB
LEJ
LEM
LEY
LESH
LEPS
LER
LEH
LEY-X5
11-LEFS
11-LEJS
25A-
LEC
LECS-T
LECS-Y
LEC
Motorless
LAT3

Solid State Auto Switch Direct Mounting Style

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



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

Grommet

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



Auto Switch Specifications

PLC: Programmable Logic Controller

| D-M9□, D-M9□V (With indicator light) | | | | | | |
|--------------------------------------|---|---------------|---------|---------------|-----------------------|---------------|
| Auto switch model | D-M9N | D-M9NV | D-M9P | D-M9PV | D-M9B | D-M9BV |
| Electrical entry | In-line | Perpendicular | In-line | Perpendicular | In-line | Perpendicular |
| Wiring type | 3-wire | | | | 2-wire | |
| Output type | NPN | | PNP | | — | |
| Applicable load | IC circuit, Relay, PLC | | | | 24 VDC relay, PLC | |
| Power supply voltage | 5, 12, 24 VDC (4.5 to 28 V) | | | | — | |
| Current consumption | 10 mA or less | | | | — | |
| Load voltage | 28 VDC or less | | — | | 24 VDC (10 to 28 VDC) | |
| Load current | 40 mA or less | | | | 2.5 to 40 mA | |
| Internal voltage drop | 0.8 V or less at 10 mA (2 V or less at 40 mA) | | | | 4 V or less | |
| Leakage current | 100 μA or less at 24 VDC | | | | 0.8 mA or less | |
| Indicator light | Red LED lights up when turned ON. | | | | | |
| Standards | CE marking, RoHS | | | | | |

Oilproof Heavy-duty Lead Wire Specifications

| Auto switch model | D-M9N□ | D-M9P□ | D-M9B□ |
|---|-----------------------------------|--------|----------------------|
| Sheath | Outside diameter [mm] | | |
| | 2.7 x 3.2 (ellipse) | | |
| Insulator | Number of cores | | |
| | 3 cores (Brown/Blue/Black) | | 2 cores (Brown/Blue) |
| Conductor | Outside diameter [mm] | | |
| | ø0.9 | | |
| | Effective area [mm ²] | | |
| | 0.15 | | |
| | Strand diameter [mm] | | |
| | ø0.05 | | |
| Minimum bending radius [mm] (Reference value) | 20 | | |

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

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.

Weight

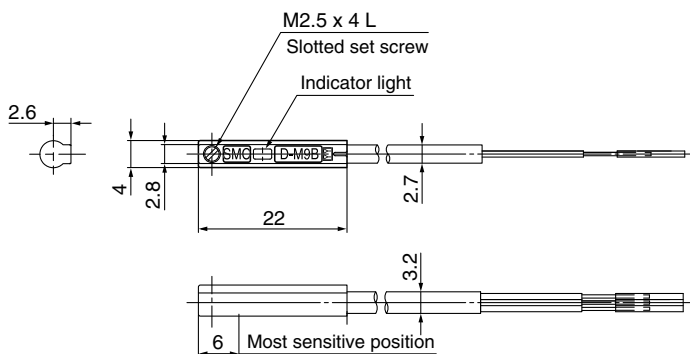
[g]

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

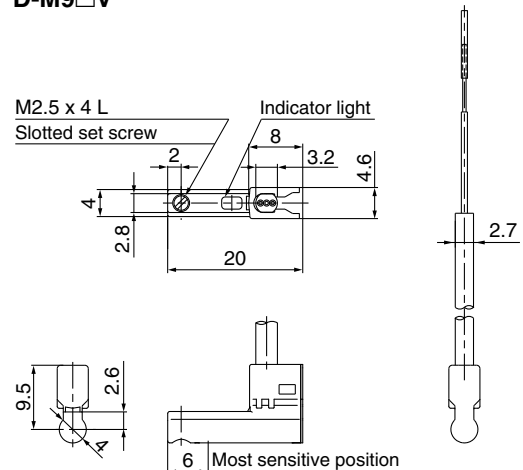
Dimensions

[mm]

D-M9□



D-M9□V



2-Color Indication Solid State Auto Switch Direct Mounting Style

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



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

Grommet

- 2-wire load current is reduced (2.5 to 40 mA).
- Flexibility is 1.5 times greater than the former model (SMC comparison).
- Using flexible cable as standard.
- The optimum operating range can be determined by the color of the light. (Red → Green ← Red)



Caution

Precautions

Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Specifications

PLC: Programmable Logic Controller

| D-M9□W, D-M9□WV (With indicator light) | | | | | | |
|--|--|---------------|---------|---------------|-----------------------|---------------|
| Auto switch model | D-M9NW | D-M9NWV | D-M9PW | D-M9PWV | D-M9BW | D-M9BWV |
| Electrical entry | In-line | Perpendicular | In-line | Perpendicular | In-line | Perpendicular |
| Wiring type | 3-wire | | | 2-wire | | |
| Output type | NPN | | PNP | | — | |
| Applicable load | IC circuit, Relay, PLC | | | | 24 VDC relay, PLC | |
| Power supply voltage | 5, 12, 24 VDC (4.5 to 28 V) | | | | — | |
| Current consumption | 10 mA or less | | | | — | |
| Load voltage | 28 VDC or less | | — | | 24 VDC (10 to 28 VDC) | |
| Load current | 40 mA or less | | | | 2.5 to 40 mA | |
| Internal voltage drop | 0.8 V or less at 10 mA (2 V or less at 40 mA) | | | | 4 V or less | |
| Leakage current | 100 μA or less at 24 VDC | | | | 0.8 mA or less | |
| Indicator light | Operating range Red LED lights up. Optimum operating range Green LED lights up. | | | | | |
| Standards | CE marking, RoHS | | | | | |

Oilproof Flexible Heavy-duty Lead Wire Specifications

| Auto switch model | | D-M9NW□ | D-M9PW□ | D-M9BW□ |
|---|-----------------------------------|----------------------------|---------|----------------------|
| Sheath | Outside diameter [mm] | 2.7 x 3.2 (ellipse) | | |
| Insulator | Number of cores | 3 cores (Brown/Blue/Black) | | 2 cores (Brown/Blue) |
| | Outside diameter [mm] | ø0.9 | | |
| Conductor | Effective area [mm ²] | 0.15 | | |
| | Strand diameter [mm] | ø0.05 | | |
| Minimum bending radius [mm] (Reference value) | | 20 | | |

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

Weight

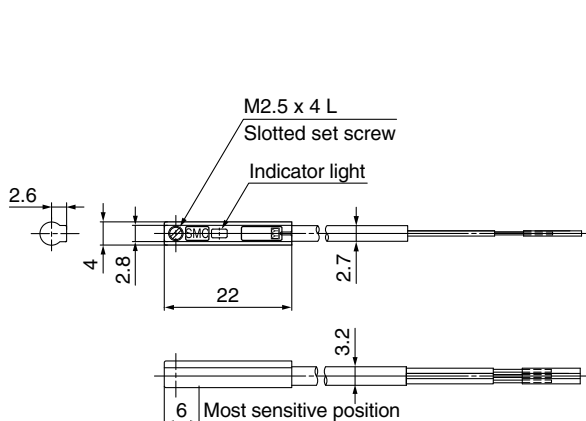
[g]

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

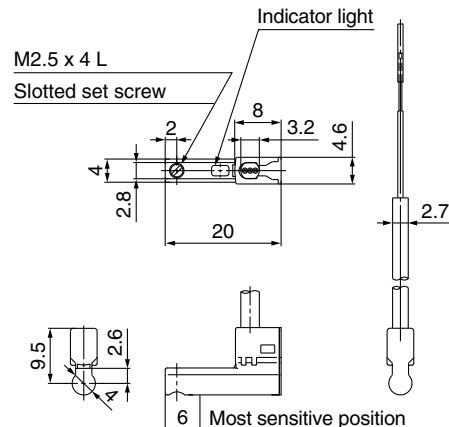
Dimensions

[mm]

D-M9□W



D-M9□WV



LEFS
LEJB
LEJ
LEM
LEY
LESH
LEPS
LER
LEH
LEY-X5
11-LEFS
11-LEJS
25A-
LEC□
LECS□
LECS-T
LECYM
LECYU
Motorless
LAT3

Electric Actuator/ Rod Type

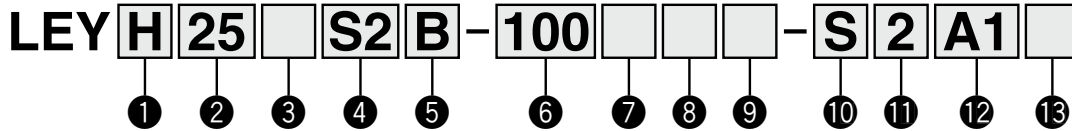
Series **LEY** LEY25, 32 Size **25, 32**



Dust-tight/Water-jet-proof ▶ Page 485 Secondary Battery Compatible ▶ Page 535 Motorless Type ▶ Page 833

SSCNET III/H Compatible ▶ Page 627 MECHATROLINK Compatible ▶ Page 725

How to Order



1 Accuracy

| | |
|-----|---------------------|
| Nil | Basic type |
| H | High precision type |

2 Size

| |
|----|
| 25 |
| 32 |

4 Motor type*1

| Symbol | Type | Output [W] | Actuator size | Compatible drivers*2 |
|--------|--------------------------------------|------------|---------------|------------------------------------|
| 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 |

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

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

3 Motor mounting position

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

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]

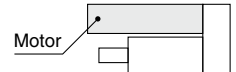
| | |
|-----|-----|
| 30 | 30 |
| to | to |
| 500 | 500 |

* 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

●: Standard

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

For auto switches, refer to pages 243 and 244.

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*

| | |
|-----|--------------------------------|
| 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/Parallel: (A) Axis side
 - In-line: (B) Counter axis side
 (Refer to page 614 for details.)

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.

12 Driver type*

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





- * 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]*

| | |
|-----|--------------------------------|
| 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 615 if I/O cable is required. (Options are shown on page 615.)

Compatible Driver

| Driver type | Pulse input type /Positioning type | Pulse input type | CC-Link direct input type | SSCNET III type |
|---------------------------------|---|---|---|---|
| |  |  |  |  |
| Series | LECSA | LECSB | LECSC | LECSS |
| Number of point tables | Up to 7 | — | Up to 255 (2 stations occupied) | — |
| Pulse input | ○ | ○ | — | — |
| Applicable network | — | — | CC-Link | SSCNET III |
| Control encoder | Incremental 17-bit encoder | Absolute 18-bit encoder | Absolute 18-bit encoder | Absolute 18-bit encoder |
| Communication function | USB communication | USB communication, RS422 communication | USB communication, RS422 communication | USB communication |
| Power supply voltage [V] | 100 to 120 VAC (50/60 Hz) 200 to 230 VAC (50/60 Hz) | | | |
| Reference page | Page 598 | | | |

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

Series LEY

AC Servo Motor

Size 25, 32

Specifications

| Model | | LEY25S [‡] (Top/Parallel)/LEY25DS [‡] (In-line) | | | LEY32S [‡] (Top/Parallel) | | | LEY32DS [‡] (In-line) | | | | |
|---|---|---|------------|---|---|--------------|---|---|--------------|--------------|-----|-----|
| Actuator specifications | 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 | |
| | | Vertical | 8 | 16 | 30 | 9 | 19 | 37 | 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 | | | | | | |
| | | | 405 to 500 | — | — | — | | | | | | |
| | Pushing speed [mm/s ²] ^{Note 5)} | 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 | | | | | | |
| | | 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] (including pulley ratio) | 12 | 6 | 3 | 20 | 10 | 5 | 16 | 8 | 4 | | |
| | Impact/Vibration resistance [m/s ²] ^{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) | | | | | |
| Required conditions for ^{Note 8)} "Regeneration option" [kg] | Horizontal | 8 or more | 31 or more | Not required | 15 or more | Not required | Not required | 23 or more | Not required | Not required | | |
| | Vertical | 3 or more | 2 or more | 2 or more | 6 or more | 7 or more | 11 or more | 6 or more | 7 or more | 12 or more | | |
| 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) | | | 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 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 9)} | Horizontal | 45 | | | 65 | | | 65 | | | | |
| | Vertical | 145 | | | 175 | | | 175 | | | | |
| Standby power consumption when operating [W] ^{Note 10)} | Horizontal | 2 | | | 2 | | | 2 | | | | |
| | Vertical | 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 | 588 | 197 | 385 | 736 | | | |
| Power consumption [W] at 20°C ^{Note 13)} | 6.3 | | | 7.9 | | | 7.9 | | | | | |
| Rated voltage [V] | 24 VDC | | | 24 VDC | | | 24 VDC | | | | | |

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 227. When the control equivalent to the pushing operation of the controller LECP 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 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 work load conditions which require "Regeneration option" when operating at the maximum speed (Duty ratio: 100%). Order the regeneration option separately. For details and order numbers, refer to "Required Conditions for Regeneration Option" on pages 225 and 226.

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 | | LEY25S□ (Motor mounting position: Top/Parallel) | | | | | | | | | LEY32S□ (Motor mounting position: Top/Parallel) | | | | | | | | | | |
|------------|---------------------|---|------|------|------|------|------|------|------|------|---|------|------|------|------|------|------|------|------|------|------|
| Motor type | Stroke [mm] | 30 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 30 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
| | 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 |

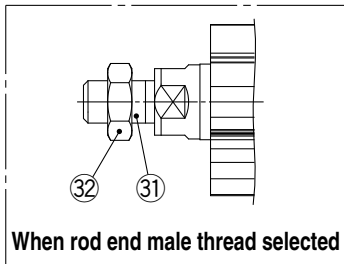
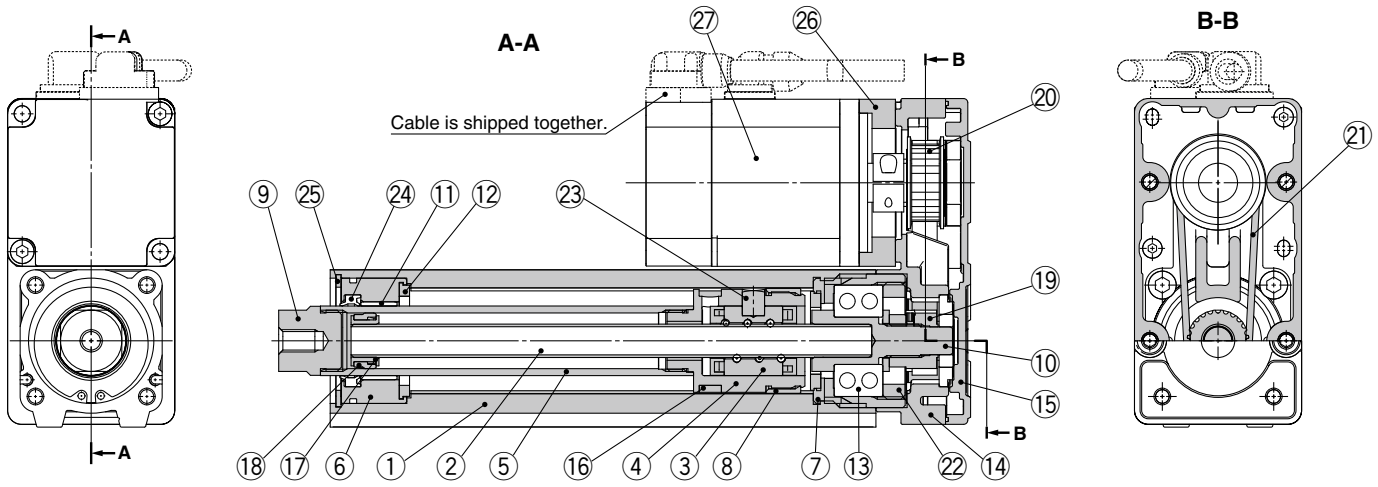
| Series | | LEY25DS□ (Motor mounting position: In-line) | | | | | | | | | LEY32DS□ (Motor mounting position: In-line) | | | | | | | | | | |
|------------|---------------------|---|------|------|------|------|------|------|------|------|---|------|------|------|------|------|------|------|------|------|------|
| Motor type | Stroke [mm] | 30 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 30 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
| | 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

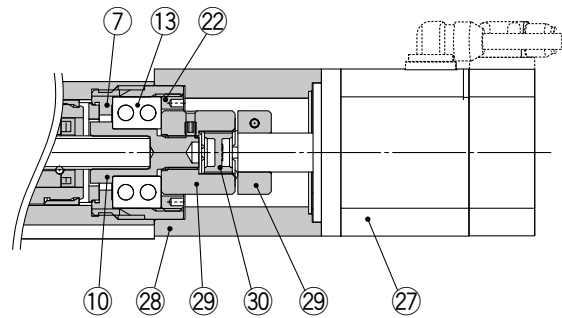
| Size | | 25 | 32 |
|---|---------------------|------|------|
| Lock | Incremental encoder | 0.20 | 0.40 |
| | Absolute encoder | 0.30 | 0.66 |
| Rod end male thread | Male thread | 0.03 | 0.03 |
| | Nut | 0.02 | 0.02 |
| Foot (2 sets including mounting bolt) | | 0.08 | 0.14 |
| Rod flange (including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

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 | Resin/Alloy steel | |
| 4 | Piston | Aluminum alloy | |
| 5 | Piston rod | Stainless steel | Hard chrome plating |
| 6 | Rod cover | Aluminum alloy | |
| 7 | Housing | 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 | Lead bronze cast | |
| 12 | Bumper | Urethane | |
| 13 | Bearing | — | |
| 14 | Return box | Aluminum die-cast | Coating |
| 15 | Return plate | Aluminum die-cast | Coating |
| 16 | Magnet | — | |
| 17 | Wear ring holder | Stainless steel | Stroke 101 mm or more |
| 18 | Wear ring | POM | Stroke 101 mm or more |
| 19 | Screw shaft pulley | Aluminum alloy | |
| 20 | Motor pulley | Aluminum alloy | |
| 21 | Belt | — | |
| 22 | Bearing stopper | Aluminum alloy | |
| 23 | Parallel pin | Stainless steel | |

| No. | Description | Material | Note |
|-----|----------------------|---------------------------|------------------|
| 24 | Seal | NBR | |
| 25 | Retaining ring | Steel for spring | Phosphate coated |
| 26 | Motor adapter | Aluminum alloy | Coating |
| 27 | Motor | — | |
| 28 | Motor block | Aluminum alloy | Coating |
| 29 | Hub | Aluminum alloy | |
| 30 | Spider | Urethane | |
| 31 | Socket (Male thread) | Free cutting carbon steel | Nickel plating |
| 32 | 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.

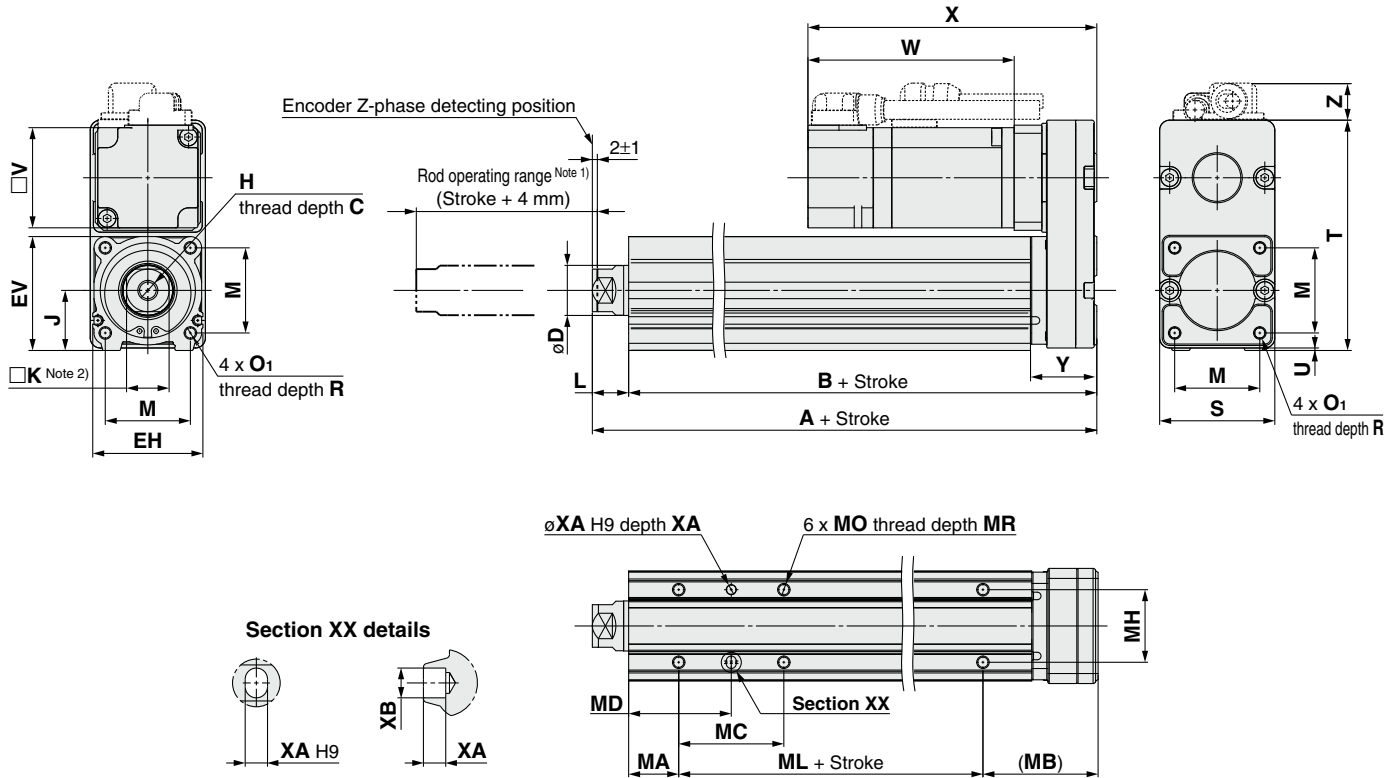
LEFS
LEFB
LEJS
LEJB
LEL
LEM
LEY
LEYG
LES
LESH
LEPY
LEPS
LER
LEH
LEH
LEY-X5
11-LEFS
11-LEJS
25A-
LEC
LECS
LECSS-T
LECYM
LECYU
Motorless
LAT3

Series LEY

AC Servo Motor

Size 25, 32

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 |
|------|-------------------|-------|-----|----|----|----|------|-----------|----|----|------|----|----------------|----|----|
| 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 |
| | 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 |
| | 105 to 500 | 178.5 | 160 | | | | | | | | | | | | |

| Size | Stroke range [mm] | T | U | Y | V | Incremental encoder | | | | | | Absolute encoder | | | | | |
|------|-------------------|-----|---|------|----|---------------------|-------|------|-----------|-------|------|------------------|-------|------|-----------|-------|------|
| | | | | | | Without lock | | | With lock | | | Without lock | | | With lock | | |
| | | | | | | W | X | Z | W | X | Z | W | X | Z | W | X | Z |
| 25 | 15 to 100 | 92 | 1 | 26.5 | 40 | 87 | 120 | 14.1 | 123.9 | 156.9 | 15.8 | 82.4 | 115.4 | 14.1 | 123.5 | 156.5 | 15.8 |
| | 105 to 400 | | | | | 87 | 120 | 14.1 | 123.9 | 156.9 | 15.8 | 82.4 | 115.4 | 14.1 | 123.5 | 156.5 | 15.8 |
| 32 | 20 to 100 | 118 | 1 | 34 | 60 | 88.2 | 128.2 | 17.1 | 116.8 | 156.8 | 17.1 | 76.6 | 116.6 | 17.1 | 116.1 | 156.1 | 17.1 |
| | 105 to 500 | | | | | 88.2 | 128.2 | 17.1 | 116.8 | 156.8 | 17.1 | 76.6 | 116.6 | 17.1 | 116.1 | 156.1 | 17.1 |

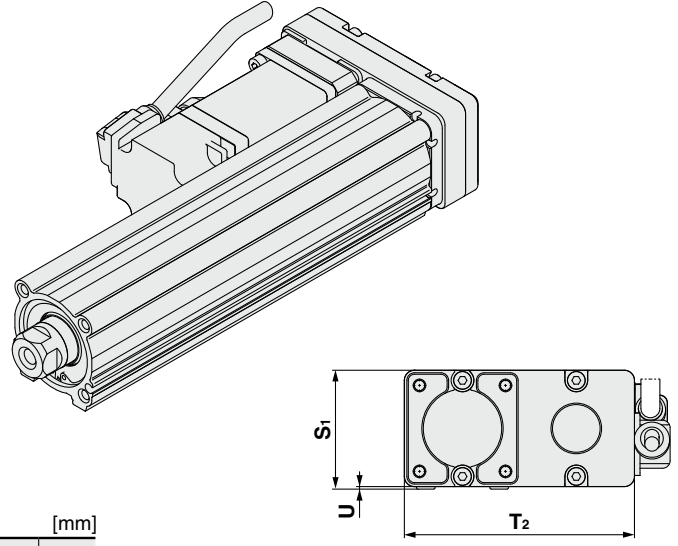
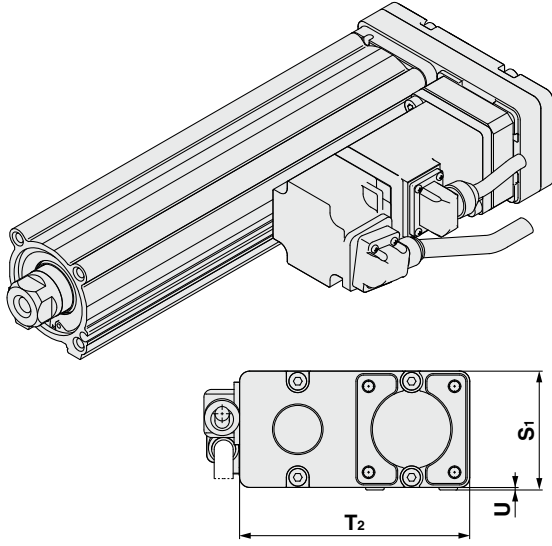
Body Bottom Tapped

| 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 | | | 53 | 51.5 | | | | | | |
| | 201 to 500 | | | 70 | 60 | | | | | | |

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.

LEFS
LEFB

LEJS
LEJB

LEL

LEM

LEY
LEYG

LES
LESH

LEPY
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC□

LECS□

LECSS-T

LECYM
LECYU

Motorless

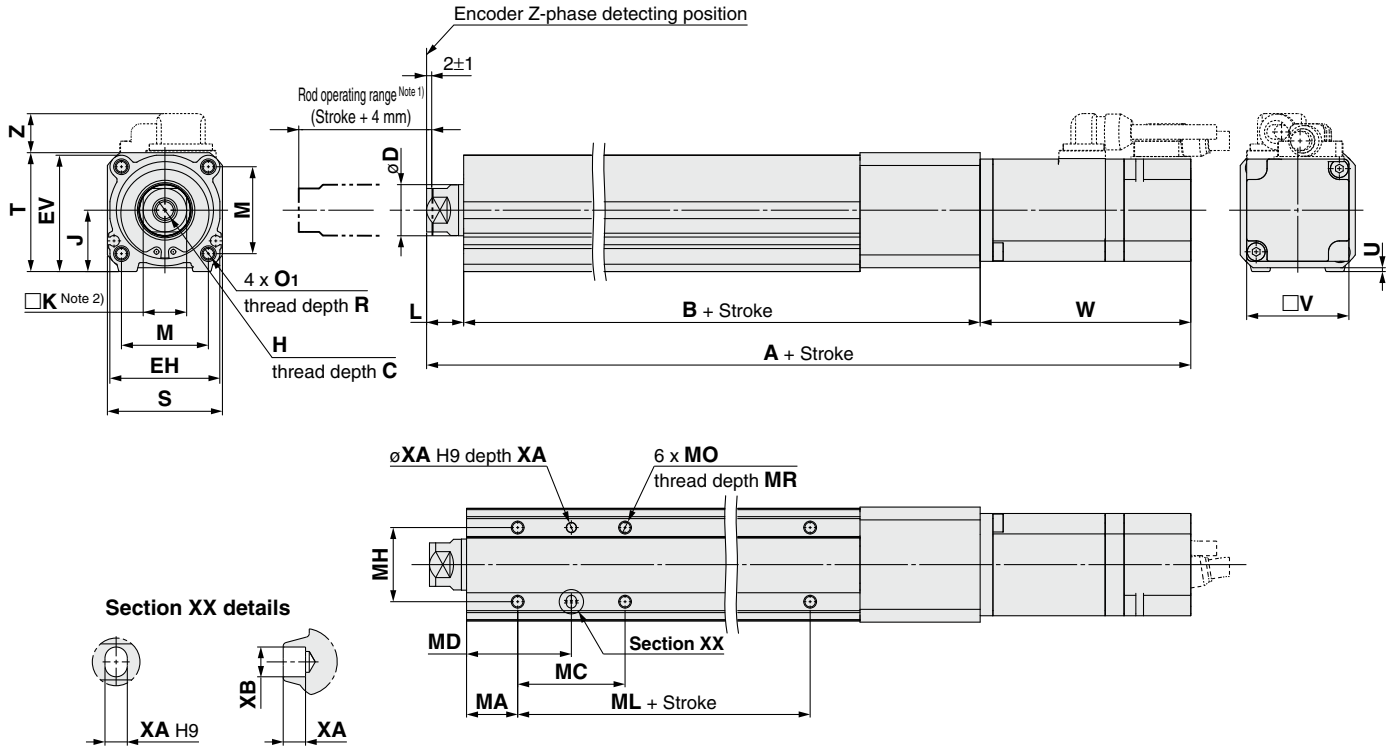
LAT3

Series LEY

AC Servo Motor

Size 25, 32

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 |
|------|-------------------|----|----|----|------|-----------|----|----|------|----|----------------|----|----|------|-----|
| 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 |
| | 105 to 400 | | | | | | | | | | | | | | |
| 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 |
| | 105 to 500 | | | | | | | | | | | | | | |

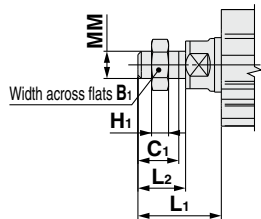
| Size | Stroke range [mm] | B | V | Incremental encoder | | | | | | Absolute encoder | | | | | |
|------|-------------------|-------|----|---------------------|------|------|-----------|-------|------|------------------|------|------|-----------|-------|------|
| | | | | Without lock | | | With lock | | | Without lock | | | With lock | | |
| | | | | A | W | Z | A | W | Z | A | W | Z | A | W | Z |
| 25 | 15 to 100 | 136.5 | 40 | 238 | 87 | 14.6 | 274.9 | 123.9 | 16.3 | 233.4 | 82.4 | 14.6 | 274.5 | 123.5 | 16.3 |
| | 105 to 400 | 161.5 | | 263 | | | 299.9 | | | 258.4 | | | 299.5 | | |
| 32 | 20 to 100 | 156 | 60 | 262.7 | 88.2 | 17.1 | 291.3 | 116.8 | 17.1 | 251.1 | 76.6 | 17.1 | 290.6 | 116.1 | 17.1 |
| | 105 to 500 | 186 | | 292.7 | | | 321.3 | | | 281.1 | | | 320.6 | | |

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 | | 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 | | | | | | |

Dimensions

End male thread: LEY²⁵₃₂□□^A□□^B□□^CM



* Refer to page 241 for details about the rod end nut and mounting bracket.

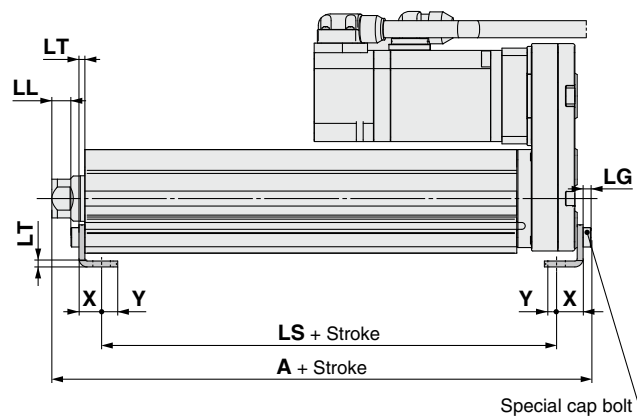
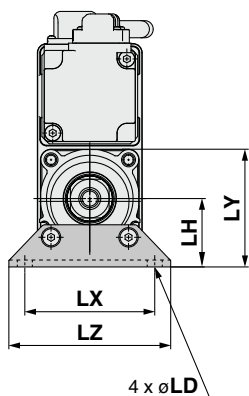
Note) Refer to the precautions on page 296 when mounting end brackets such as knuckle joint or workpieces.

| 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 |

[mm]

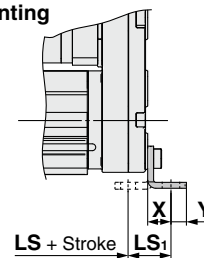
* The L₁ measurement is when the unit is in the original position. At this position, 2 mm at the end.

Foot: LEY²⁵₃₂□□^A□□^B□□□□^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 |
| | 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 | | | | | | | | | | | |

[mm]

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.

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

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

Electric Actuator/ Rod Type

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

* Select options

Series **LEY** LEY63 Size **63**

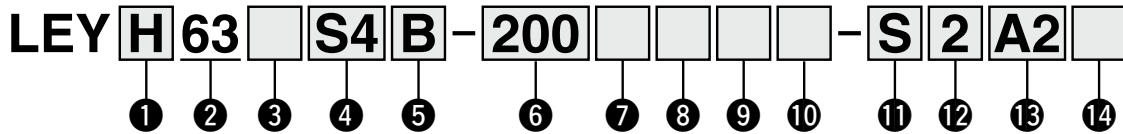


Motorless Type ▶ Page 833

SSCNET III/H Compatible ▶ Page 627

MECHATROLINK Compatible ▶ Page 725

How to Order



1 Accuracy

| | |
|-----|---------------------|
| Nil | Basic type |
| H | High precision type |

2 Size

| |
|----|
| 63 |
|----|

4 Motor type

| Symbol | Type | Output [W] | Actuator size | Compatible driver |
|--------|--------------------------------------|------------|---------------|-------------------------------------|
| S4 | AC servo motor (Incremental encoder) | 400 | 63 | LECSA2-S4 |
| S8 | AC servo motor (Absolute encoder) | 400 | 63 | LECSB2-S8 LECSC2-S8 LECSS2-S8 |

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.

3 Motor mounting position

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

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 environments exposed to cutting oil etc. Take suitable protective measures. For details about enclosure, refer to "Enclosure" on page 297.

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 614 for details.)

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 |
|-----|--|----------------------|
| 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 | LECSC2/CC-Link (Absolute encoder) | 200 V to 230 V |
| S2 | LECSS2/SSCNET III (Absolute encoder) | 200 V to 230 V |

* 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

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 615 if I/O cable is required. (Options are shown on page 615.)

* Applicable stroke table

| Model | Stroke [mm] | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | Manufacturable stroke range |
|-------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----------------------------|
| LEY63 | | ● | ● | ● | ● | ● | ● | ● | ● | 50 to 800 |

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

Specifications

| Model | | LEY63S ₈ □ (Top/Parallel) | | | | LEY63DS ₈ □ (In-line) | | | |
|---|-------------------------------|---|--------------|--------------|--------------|----------------------------------|--------------|--------------|-----|
| Stroke [mm] ^{Note 1)} | | 100, 200, 300, 400, 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)} : 15 to 50% ^{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 | | | |
| 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 | | | |
| Guide type | | Sliding bushing (Piston rod) | | | | | | | |
| Operating temperature range [°C] | | 5 to 40 | | | | | | | |
| Operating humidity range [%RH] | | 90 or less (No condensation) | | | | | | | |
| Required conditions for ^{Note 9)} "Regeneration option" [kg] | Horizontal | Not required | Not required | Not required | Not required | Not required | Not required | Not required | |
| | Vertical | 2 or more | 5 or more | 12 or more | 46 or more | 2 or more | 5 or more | 12 or more | |
| Motor output/Size | | 400 W/□60 | | | | | | | |
| 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) | | | | | | | |
| 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)} | | 7.9 | | | | | | | |
| 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) 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 227. When the control equivalent to the pushing operation of the controller LECF 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 5) The allowable speed changes according to the stroke. Set the number of rotations according to speed.

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 "Regeneration option" 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 | | LEY63S□ (Motor mounting position: Top/Parallel) | | | | | | | |
|-------------|---------------------|---|-----|-----|-----|------|------|------|------|
| Stroke [mm] | | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 |
| Motor type | Incremental encoder | 5.4 | 6.6 | 8.3 | 9.4 | 10.5 | 12.2 | 13.4 | 14.5 |
| | Absolute encoder | 5.5 | 6.7 | 8.4 | 9.5 | 10.6 | 12.3 | 13.5 | 14.6 |
| Series | | LEY63DS□□ (Motor mounting position: In-line) | | | | | | | |
| Stroke [mm] | | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 |
| Motor type | Incremental encoder | 5.6 | 6.7 | 8.4 | 9.6 | 10.7 | 12.4 | 13.5 | 14.7 |
| | Absolute encoder | 5.7 | 6.8 | 8.5 | 9.7 | 10.8 | 12.5 | 13.6 | 14.8 |

Additional Weight

| Size | | 63 |
|---|---------------------|------|
| Lock | Incremental encoder | 0.4 |
| | Absolute encoder | 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 |

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

Series LEY

AC Servo Motor

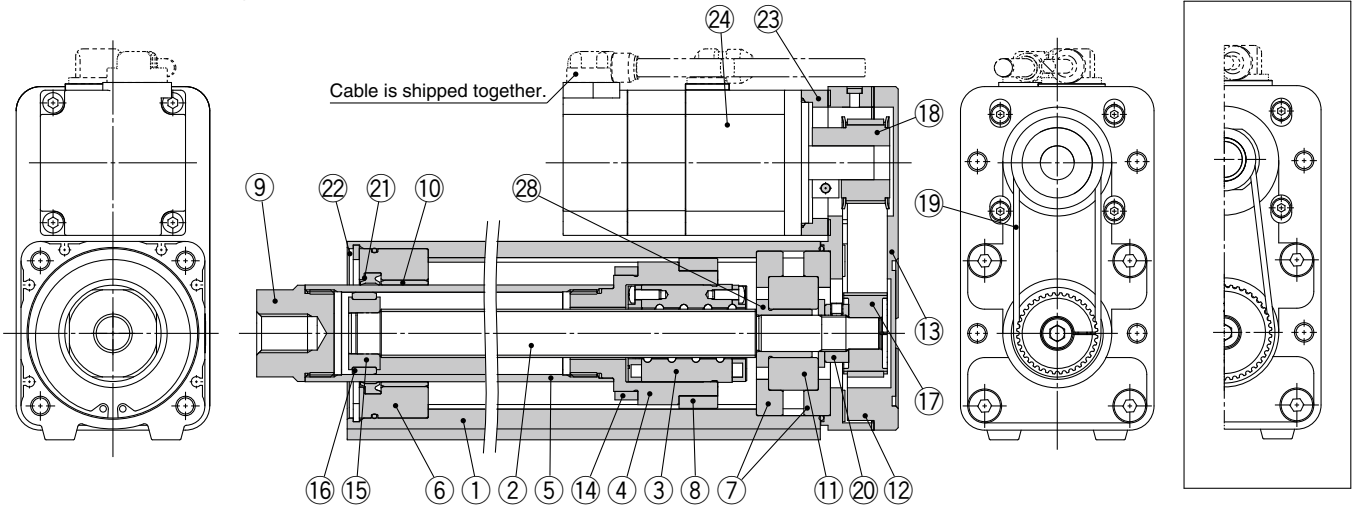
Size **63**

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

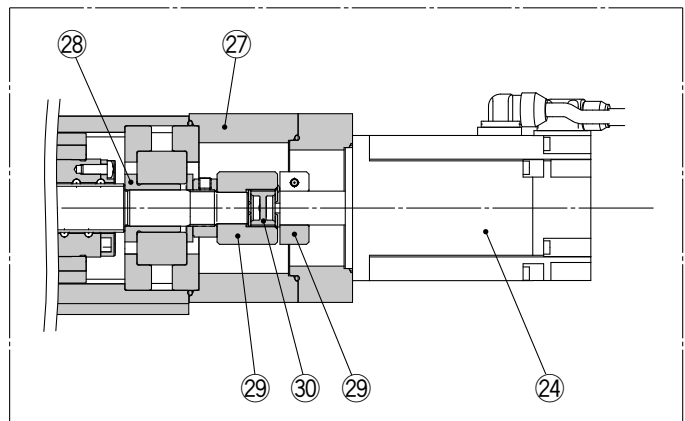
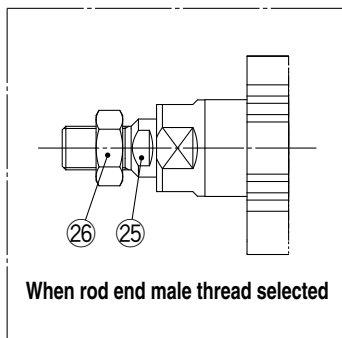
* Select options

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 |

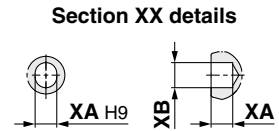
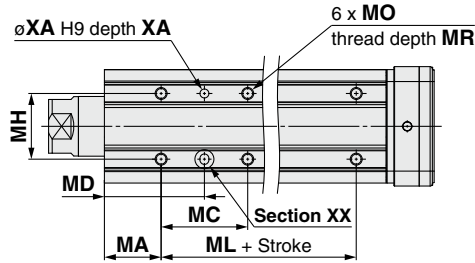
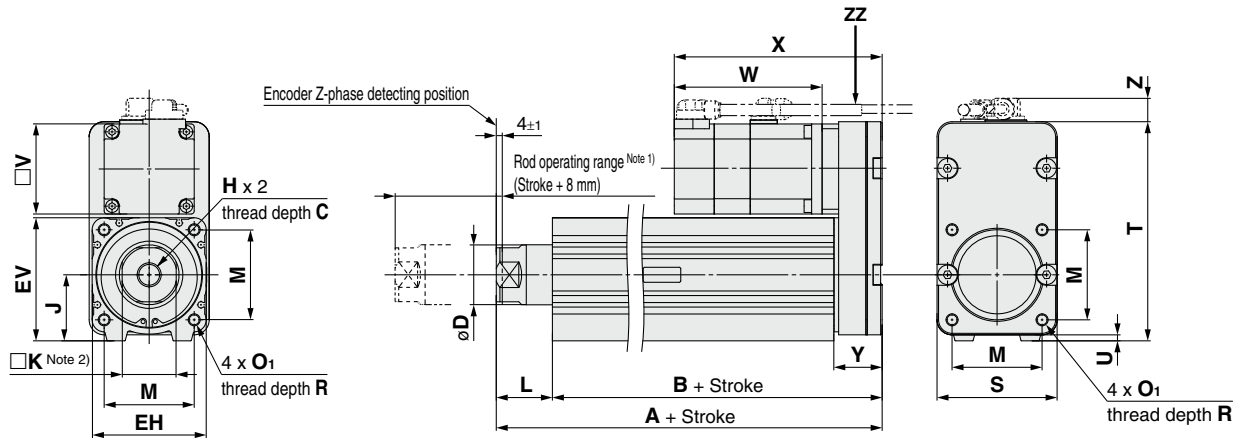
Replacement Parts/Grease Pack

| 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.

* Select options

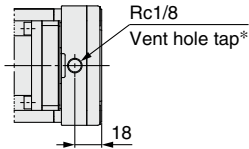
Dimensions: Motor Top/Parallel



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 ($\square K$) 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.: $\phi 4$ 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 | Y |
|------|-------------------|-------|-------|----|----|----|----|---------|----|----|------|----|----------------|----|----|------|
| 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 | 32.2 |
| | 205 to 500 | 227.6 | 190.2 | | | | | | | | | | | | | |
| | 505 to 800 | 262.6 | 225.2 | | | | | | | | | | | | | |

| Size | Stroke range [mm] | T | U | V | Incremental encoder | | | | | | Absolute encoder | | | | | |
|------|-------------------|-----|---|----|---------------------|---------|---------|-----------|-------|------|------------------|-------|------|-----------|-----|------|
| | | | | | Without lock | | | With lock | | | Without lock | | | With lock | | |
| | | | | | W | X | Z | W | X | Z | W | X | Z | W | X | Z |
| 63 | Up to 200 | 146 | 4 | 60 | 110.2 | 150.2 | 15.6 | 138.8 | 178.8 | 15.6 | 98.5 | 138.5 | 15.6 | 138 | 178 | 15.6 |
| | 205 to 500 | | | | (16.6)* | (16.6)* | (16.6)* | (16.6)* | | | | | | | | |
| | 505 to 800 | | | | | | | | | | | | | | | |

* The values in () are the dimensions when L is selected for screw lead.

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 | | | | | | | 100 |
| | 501 to 800 | | | | | | | | | | 135 |

LEFS
LEJBS
LEJLB
LEL
LEM
LEY
LEYG
LES
LESH
LEPY
LEPS
LER
LEH
LEY-X5
11-LEFS
11-LEJBS
25A-
LEC
LECS
LECS-T
LECYM
LECYU
Motorless
LAT3

Series LEY

AC Servo Motor

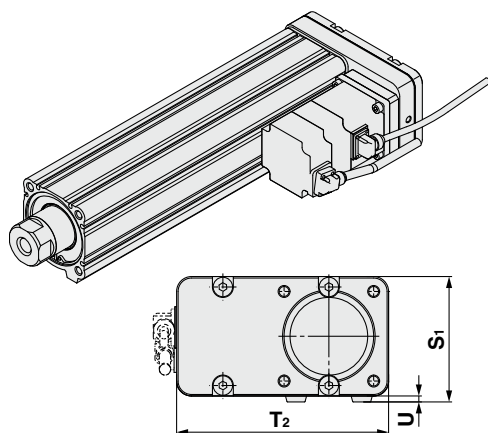
Size **63**

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

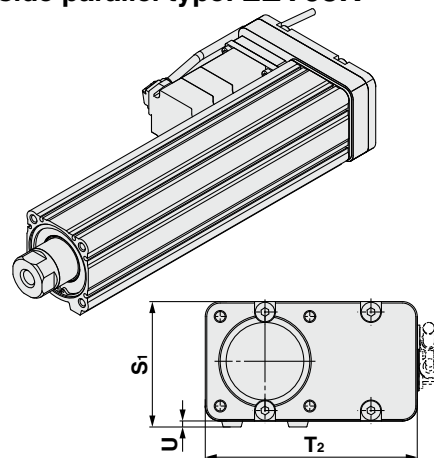
* Select options

Dimensions: Motor Top/Parallel

Motor left side parallel type: LEY63L



Motor right side parallel type: LEY63R



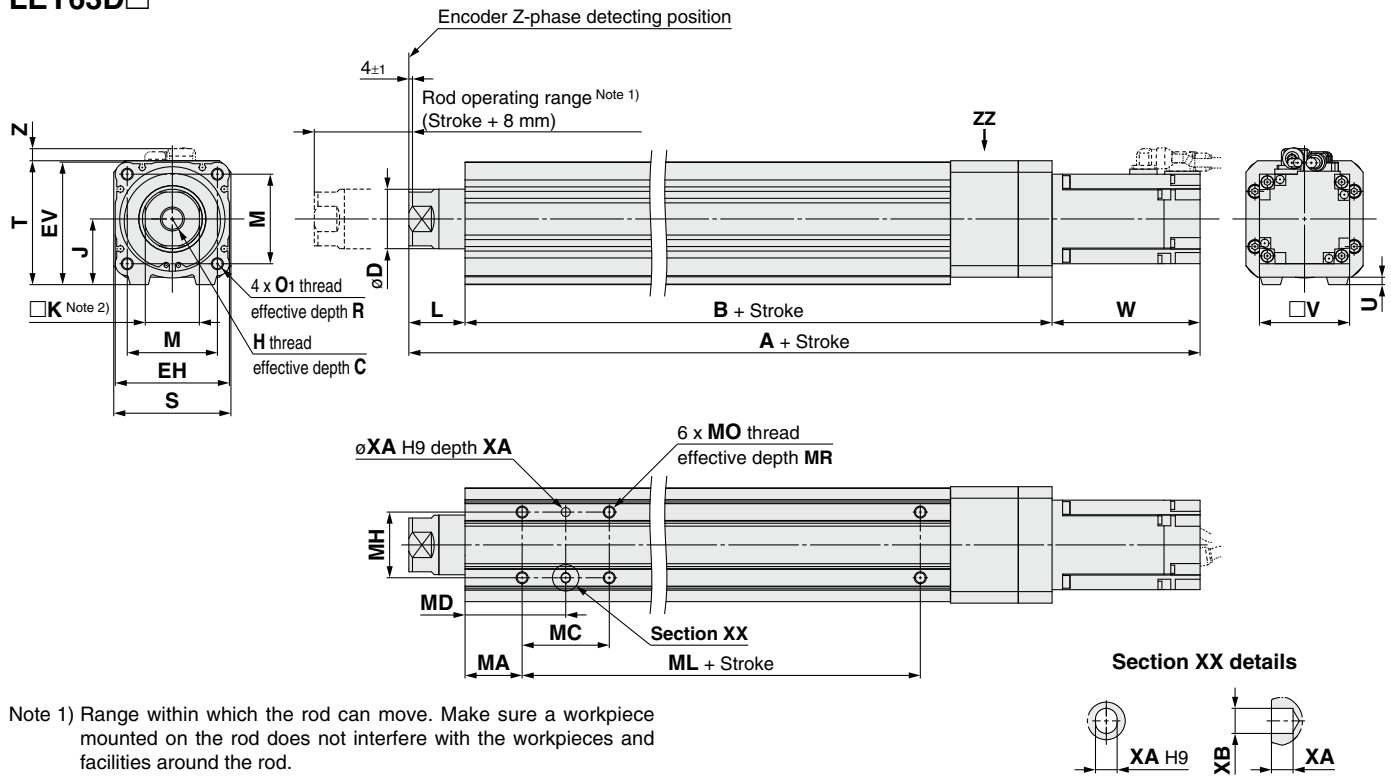
| Size | S ₁ | T ₂ | U |
|-----------|----------------|----------------|---|
| 63 | 84 | 142 | 4 |

[mm]

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.

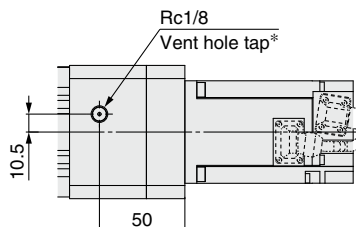
| Size | Stroke range [mm] | C | D | EH | EV | H | J | K | L | M | O1 | R | S | T | U |
|------|-------------------|----|----|----|----|---------|----|----|------|----|-----------|----|----|----|---|
| 63 | Up to 200 | 21 | 40 | 76 | 82 | M16 x 2 | 44 | 36 | 37.4 | 60 | M8 x 1.25 | 16 | 78 | 83 | 5 |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

| Size | Stroke range [mm] | B | V | Incremental encoder | | | | | | Absolute encoder | | | | | |
|------|-------------------|-------|----|---------------------|-------|-----|-----------|-------|-----|------------------|------|-----|-----------|-----|-----|
| | | | | Without lock | | | With lock | | | Without lock | | | With lock | | |
| | | | | A | W | Z | A | W | Z | A | W | Z | A | W | Z |
| 63 | Up to 200 | 190.7 | 60 | 338.3 | 110.2 | 8.1 | 366.9 | 138.8 | 8.1 | 326.6 | 98.5 | 8.1 | 366.1 | 138 | 8.1 |
| | 205 to 500 | 225.7 | | 373.3 | | | 401.9 | | | 361.6 | | | 401.1 | | |
| | 505 to 800 | 260.7 | | 408.3 | | | 436.9 | | | 396.6 | | | 436.1 | | |

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 | | | | | | | 100 |
| | 501 to 800 | | | | | | | | | | 135 |

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].

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

Series LEY

AC Servo Motor

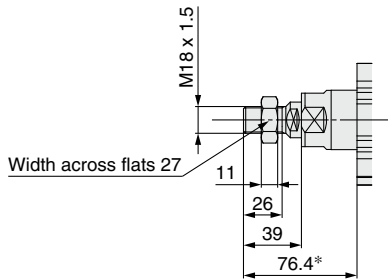
Size **63**

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

* Select options

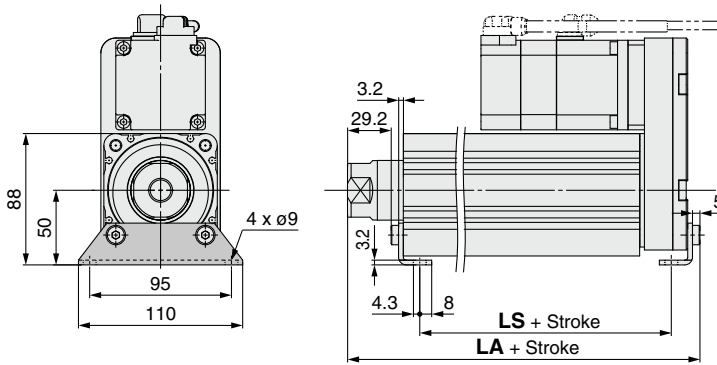
Dimensions

End male thread: LEY63□□□-□□M

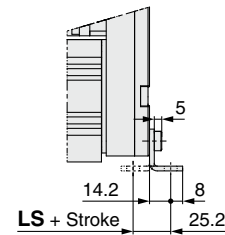


* The measurement 76.4 is when the unit is in the Z-phase detecting position. At this position, 4 mm from the end of the operating range.

Foot: LEY63□□□-□□L



Outward mounting

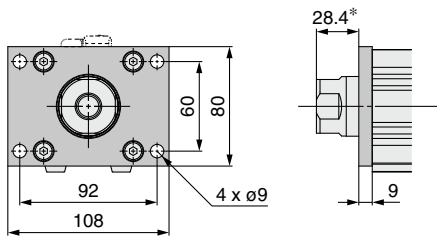


Included parts
• Foot
• Body mounting bolt

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.

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

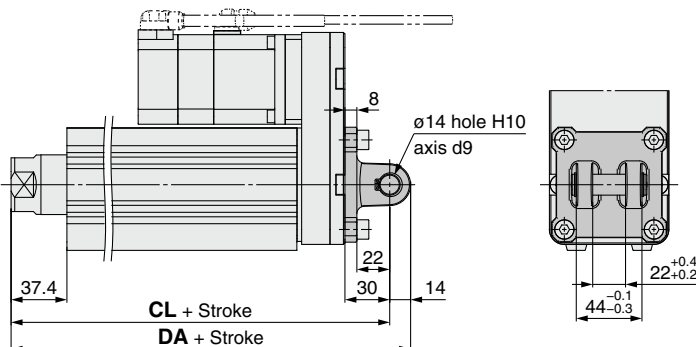
Rod flange: LEY63□□□-□□F



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.

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

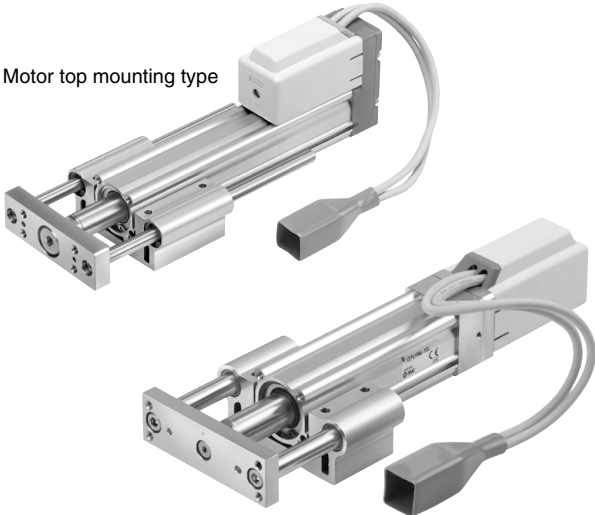
Guide Rod Type

Series LEYG

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

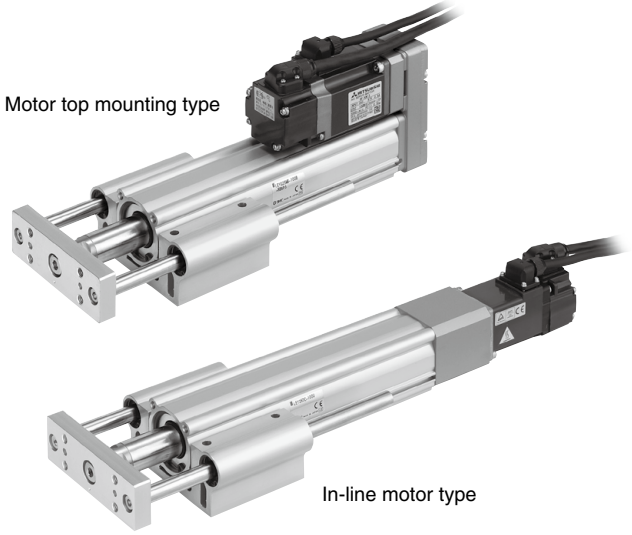
Motor top mounting type



In-line motor type

AC Servo Motor

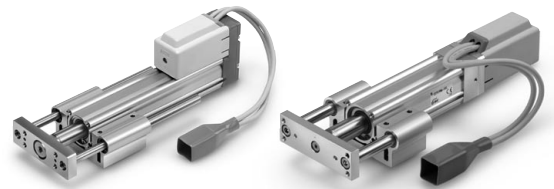
Motor top mounting type



In-line motor type

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

Model Selection



Moment Load Graph

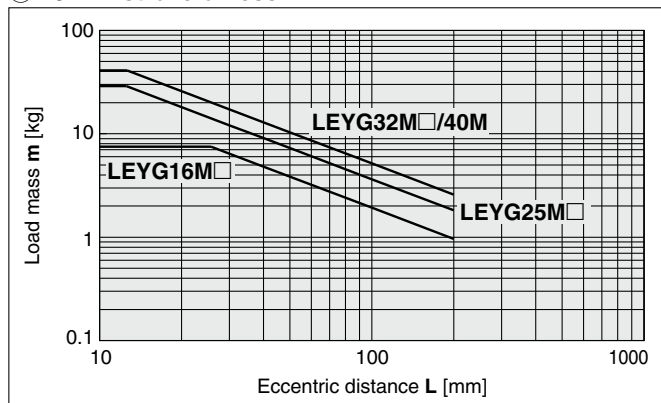
Selection conditions

| 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.

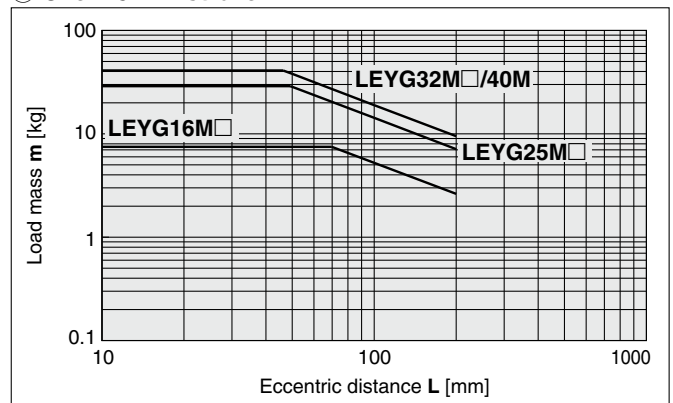
Vertical Mounting, Sliding Bearing

① 70 mm stroke or less



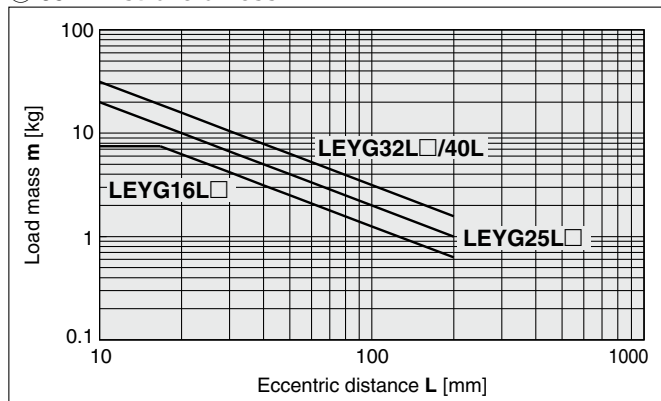
* The limit of vertical load mass varies depending on "lead" and "speed".
Check "Speed-Vertical Work Load Graph" on pages 265 to 267.

② Over 75 mm stroke



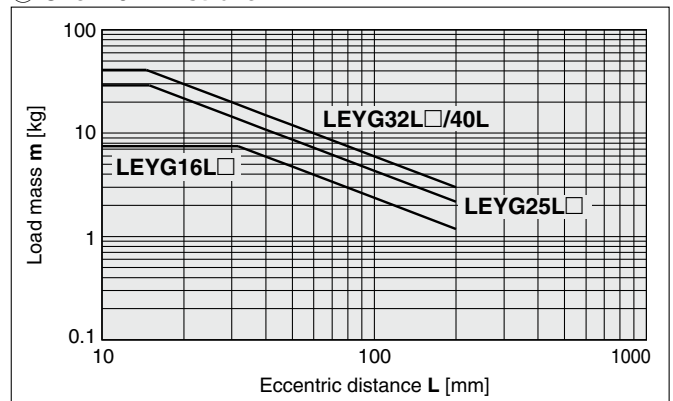
Vertical Mounting, Ball Bushing Bearing

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 265 to 267.

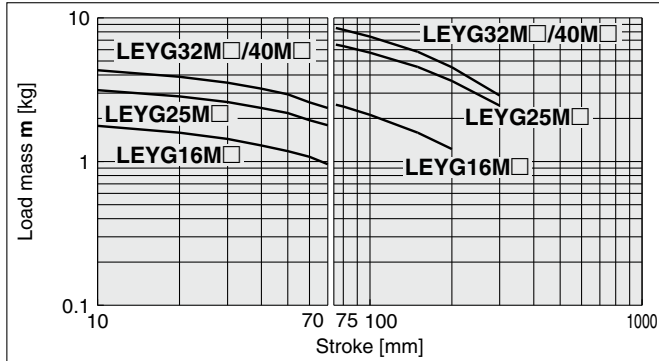
④ Over 40 mm stroke



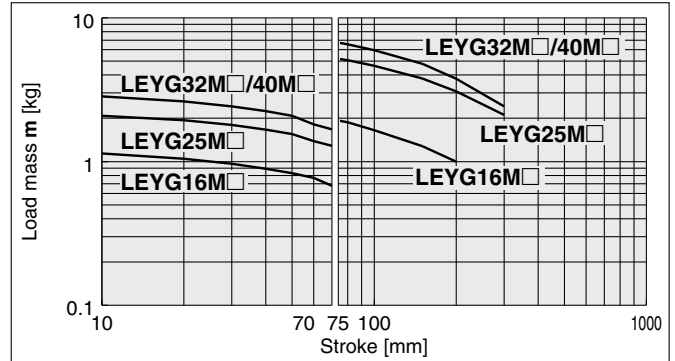
Moment Load Graph

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.

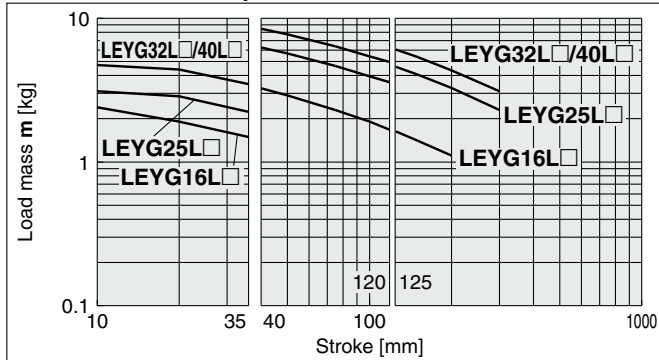
| Motor type | LEYG□M□A | LEYG□M□B | LEYG□M□C |
|---------------------------|----------|----------|----------|
| Step motor (Servo/24 VDC) | 200 mm/s | 125 mm/s | 75 mm/s |
| Servo motor (24 VDC) | 200 mm/s | 200 mm/s | 125 mm/s |

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

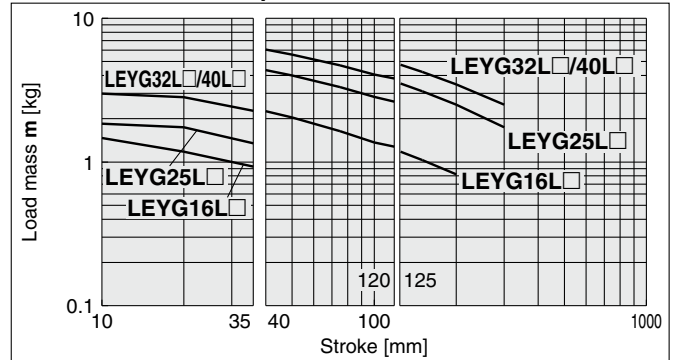
- LEYG25MAA/Servo motor (24 VDC), Lead 12

Horizontal Mounting, Ball Bushing Bearing

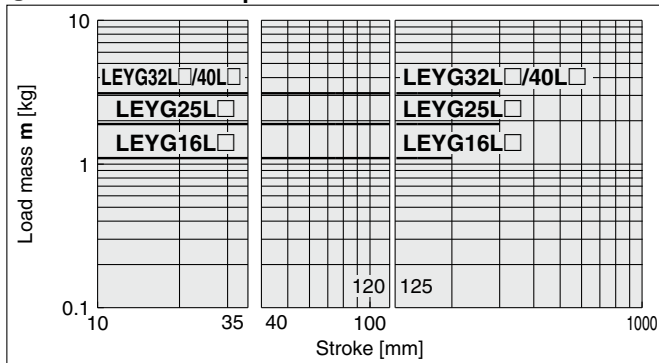
⑦ L = 50 mm Max. speed = 200 mm/s or less



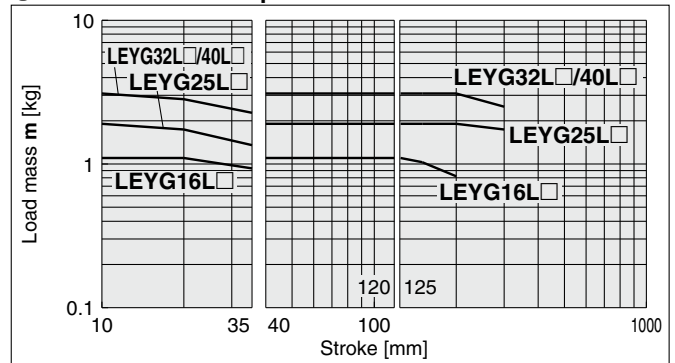
⑧ L = 100 mm Max. speed = 200 mm/s or less



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

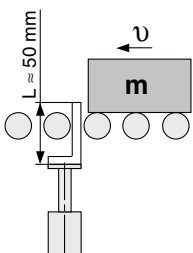


⑩ L = 100 mm Max. speed = Over 200 mm/s



Operating Range when Used as Stopper

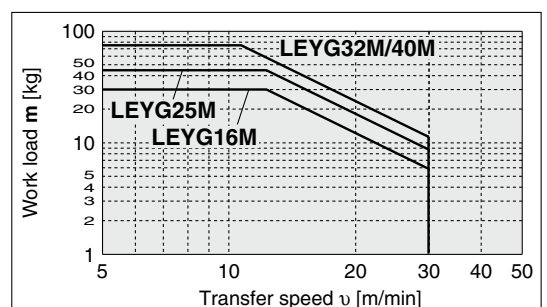
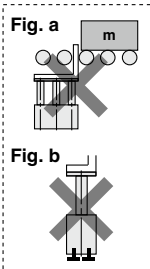
LEYG□M (Sliding bearing)



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).



Series LEYG

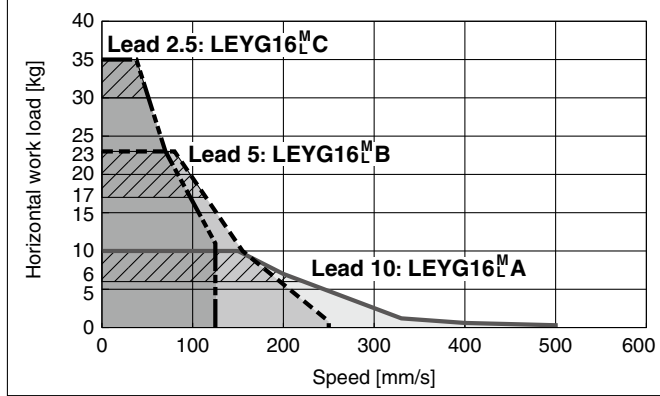
Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

Refer to page 266 for the LECPA and page 267 for the LECA6.

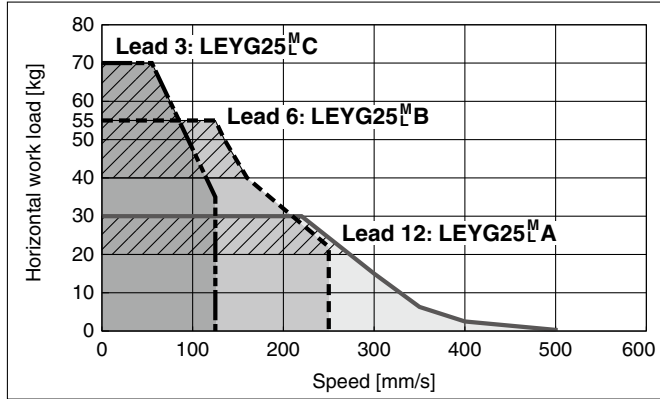
Speed-Work Load Graph (Guide) For Step Motor (Servo/24 VDC) LECP6, LECP1, LECPMJ

Horizontal

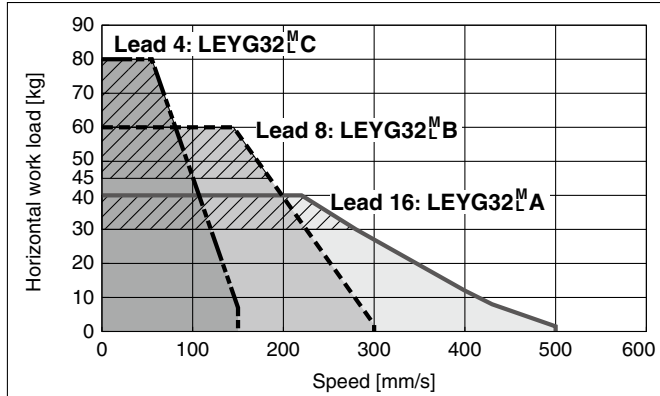
LEYG16^M_L □ for acceleration/deceleration: 2000 mm/s²



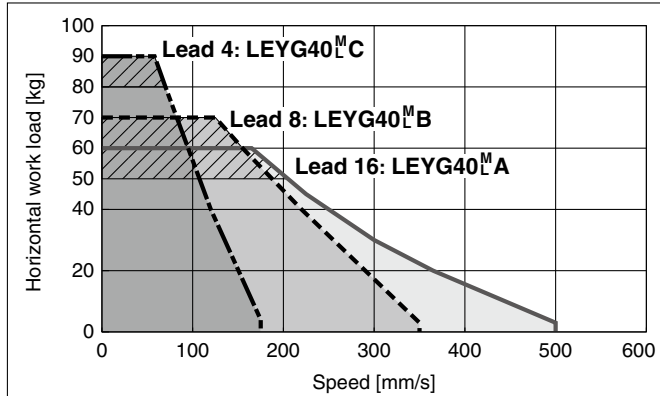
LEYG25^M_L □ for acceleration/deceleration: 2000 mm/s²



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

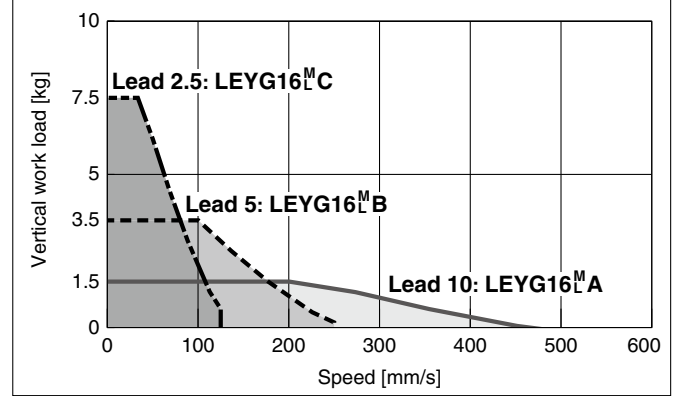


LEYG40^M_L □ for acceleration/deceleration: 2000 mm/s²

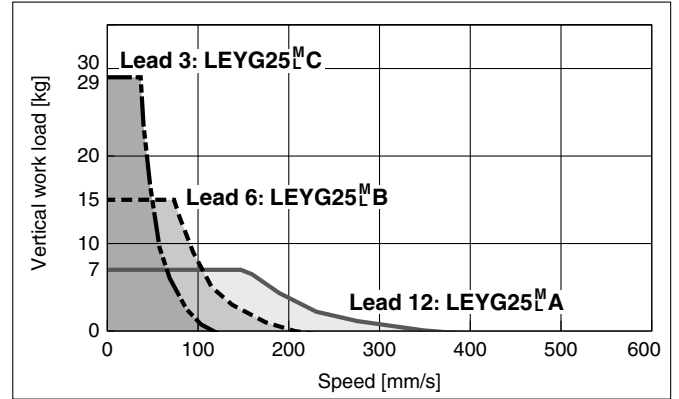


Vertical

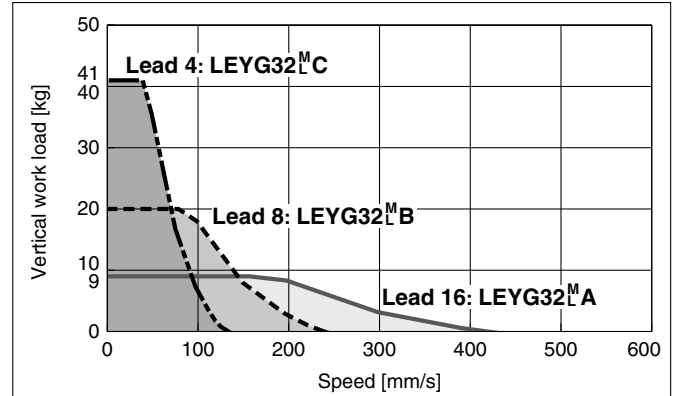
LEYG16^M_L □



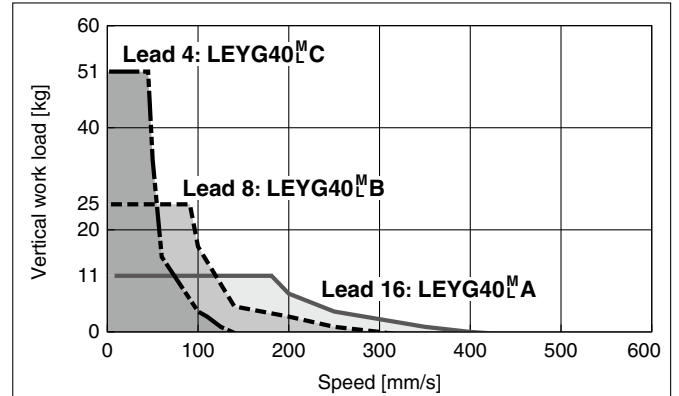
LEYG25^M_L □



LEYG32^M_L □



LEYG40^M_L □

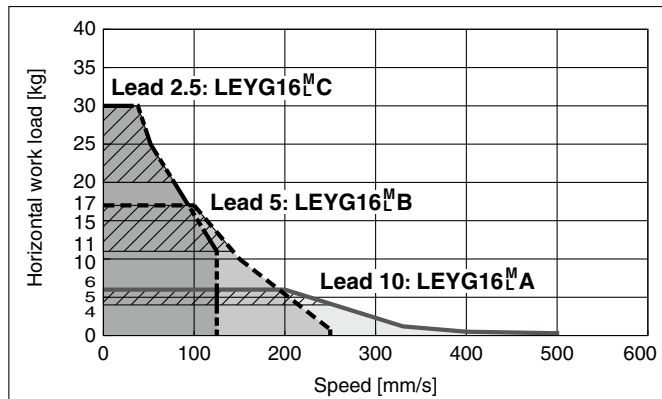


Refer to page 265 for the LECP6, LECP1, LECPMJ, and page 267 for the LECA6.

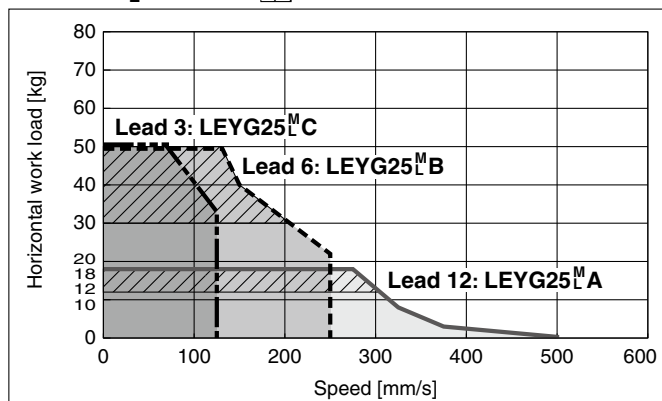
Speed-Work Load Graph (Guide) For Step Motor (Servo/24 VDC) LECPA

Horizontal

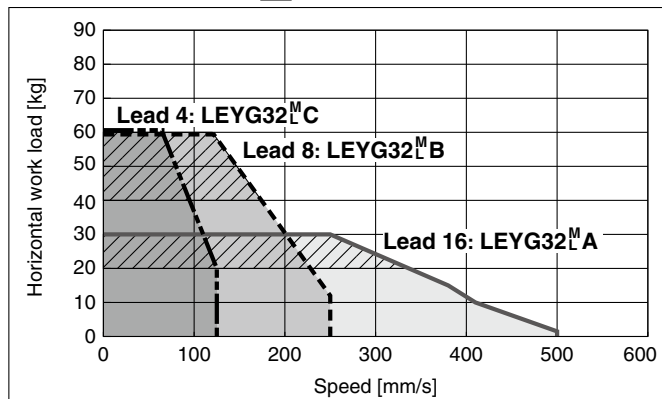
LEYG16^M_L for acceleration/deceleration: 2000 mm/s²



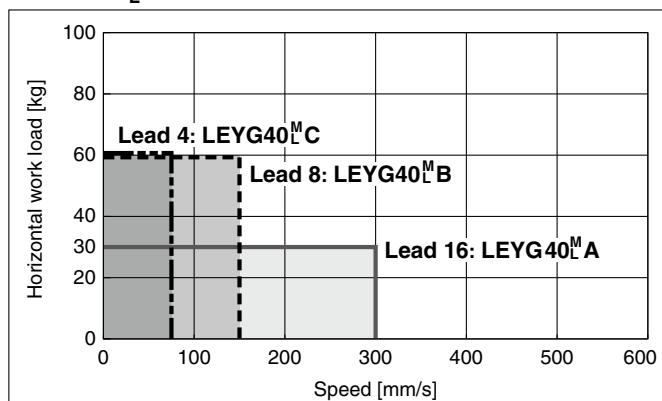
LEYG25^M_L for acceleration/deceleration: 2000 mm/s²



LEYG32^M_L for acceleration/deceleration: 2000 mm/s²

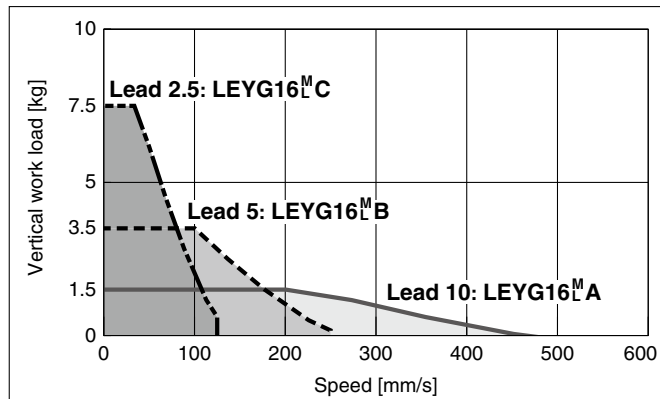


LEYG40^M_L

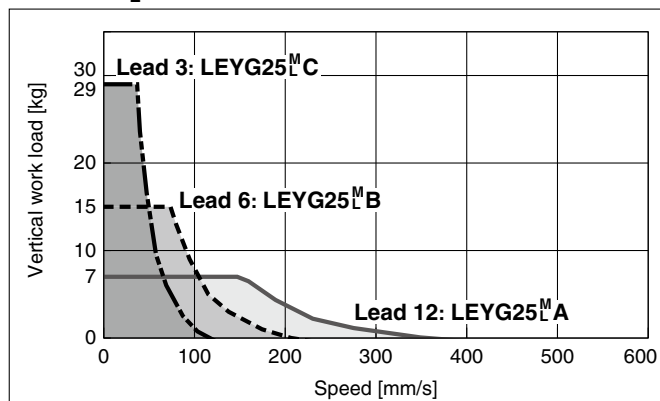


Vertical

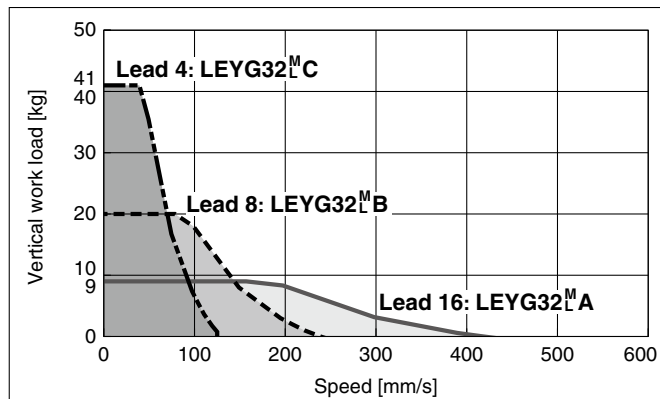
LEYG16^M_L



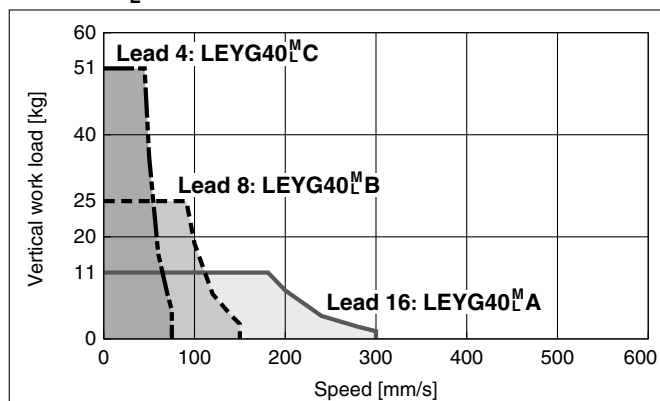
LEYG25^M_L



LEYG32^M_L



LEYG40^M_L



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

Series LEYG

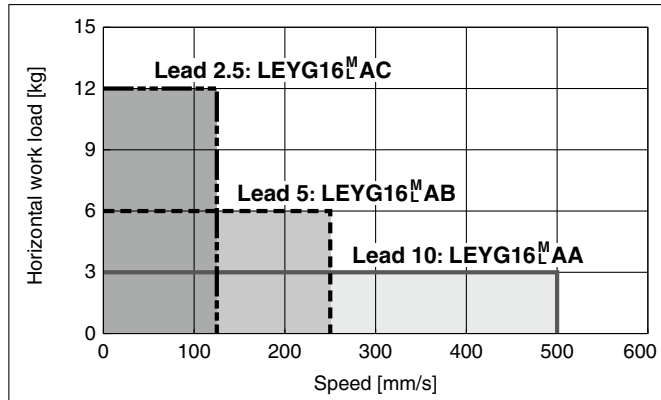
Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

Refer to page 265 for the LEC6, LEC1, LECPMJ, and page 266 for the LECPA.

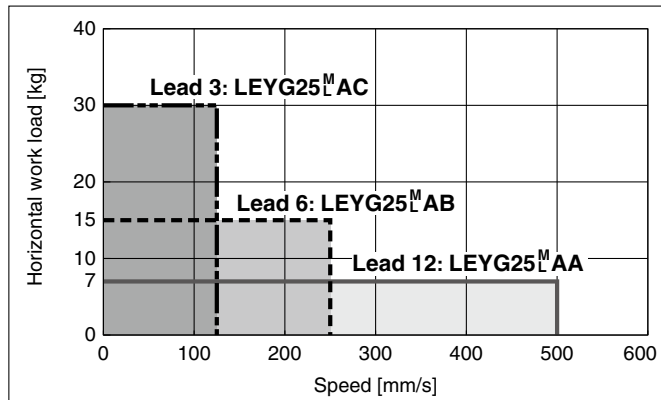
Speed-Work Load Graph (Guide) For Servo Motor (24 VDC) LECA6

Horizontal

LEYG16^MA□

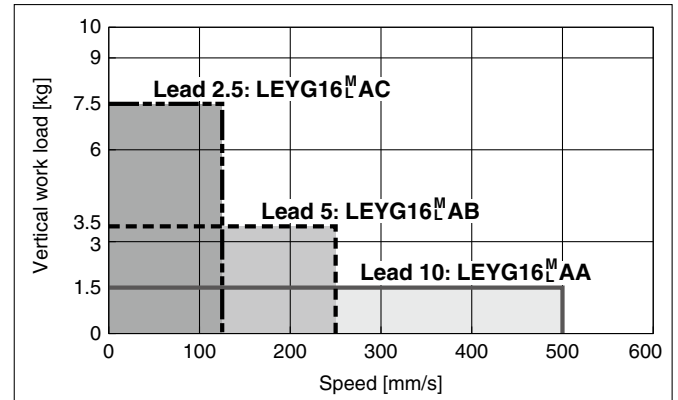


LEYG25^MA□

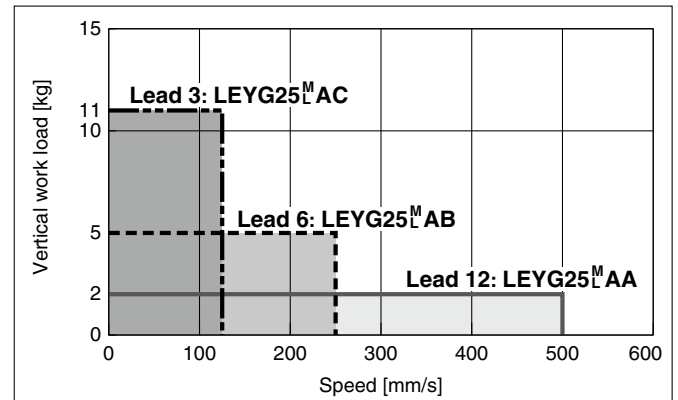


Vertical

LEYG16^MA□



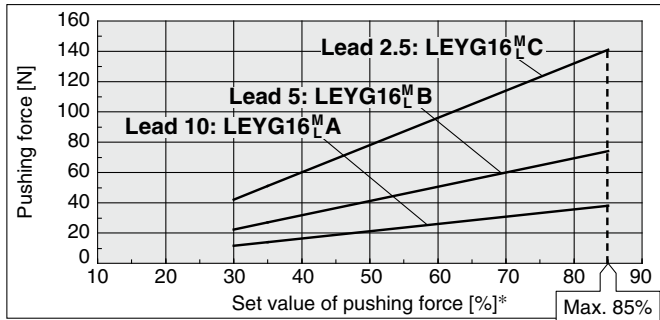
LEYG25^MA□



Force Conversion Graph (Guide)

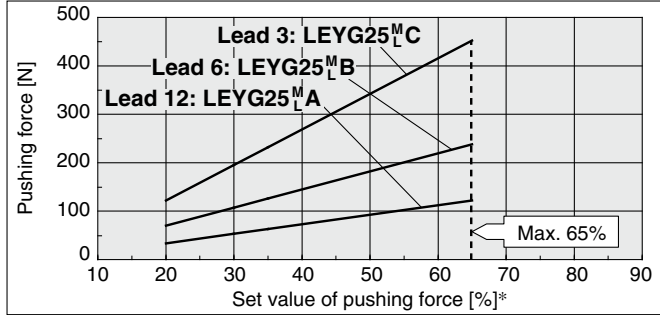
Step Motor (Servo/24 VDC)

LEYG16^M_L□



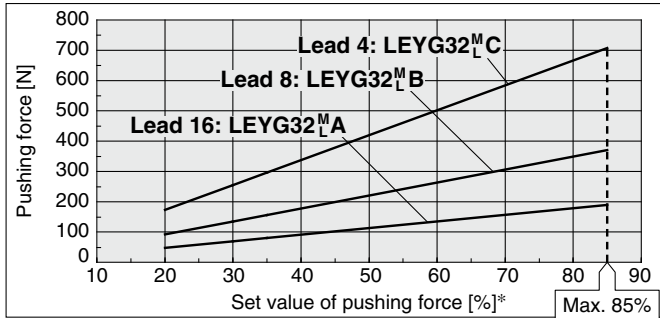
| Ambient temperature | Set value of pushing force [%] | Duty ratio [%] | Continuous pushing time [minute] |
|---------------------|--------------------------------|----------------|----------------------------------|
| 25°C or less | 85 or less | 100 | — |
| | 40 or less | 100 | — |
| 40°C | 50 | 70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

LEYG25^M_L□



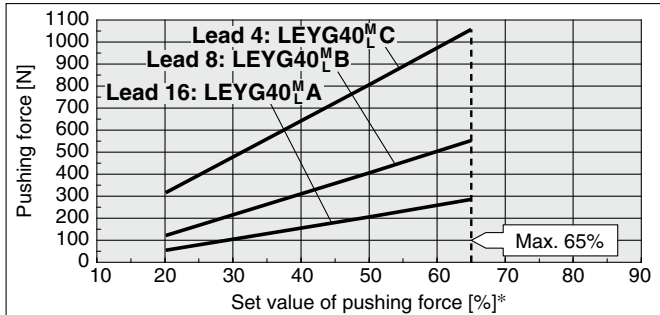
| Ambient temperature | Set value of pushing force [%] | Duty ratio [%] | Continuous pushing time [minute] |
|---------------------|--------------------------------|----------------|----------------------------------|
| 40°C or less | 65 or less | 100 | — |

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□

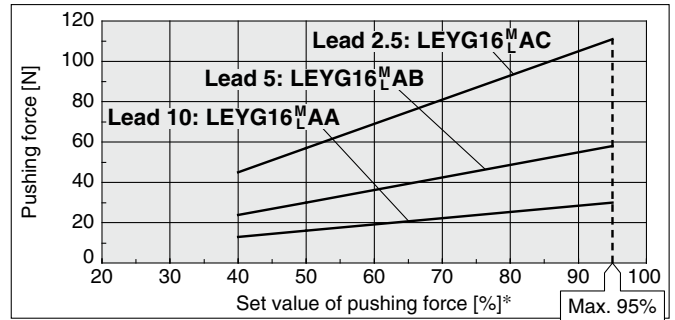


| Ambient temperature | Set value of pushing force [%] | Duty ratio [%] | Continuous pushing time [minute] |
|---------------------|--------------------------------|----------------|----------------------------------|
| 40°C or less | 65 or less | 100 | — |

* Set values for the controller.

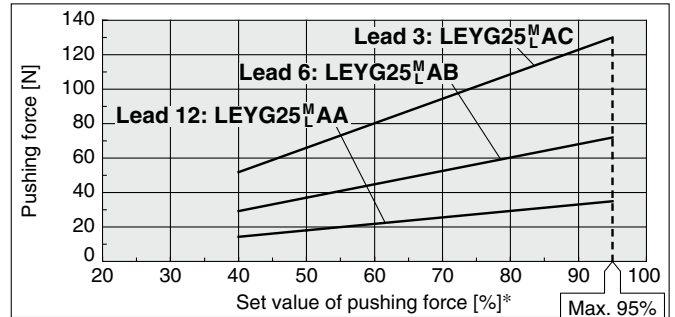
Servo Motor (24 VDC)

LEYG16^M_LA□



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

LEYG25^M_LA□



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

<Pushing Force and Trigger Level Range> Without Load

| Model | Pushing speed [mm/s] | Pushing force (Setting input value) | Model | Pushing speed [mm/s] | Pushing force (Setting input value) |
|------------------------------------|----------------------|-------------------------------------|---|----------------------|-------------------------------------|
| LEYG16 ^M _L □ | 1 to 4 | 30% to 85% | LEYG16 ^M _L A□ | 1 to 4 | 40% to 95% |
| | 5 to 20 | 35% to 85% | | 5 to 20 | 60% to 95% |
| | 21 to 50 | 60% to 85% | | 21 to 50 | 80% to 95% |
| LEYG25 ^M _L □ | 1 to 4 | 20% to 65% | LEYG25 ^M _L A□ | 1 to 4 | 40% to 95% |
| | 5 to 20 | 35% to 65% | | 5 to 20 | 60% to 95% |
| | 21 to 35 | 50% to 65% | | 21 to 35 | 80% to 95% |
| LEYG32 ^M _L □ | 1 to 4 | 20% to 85% | * The pushing force in the table shows the range within which the completion signal [INP] is normally output. If the product is operated outside this range (low pushing force), the [INP] signal may be output when the actuator is moving (before pushing). | | |
| | 5 to 20 | 35% to 85% | | | |
| | 21 to 30 | 60% to 85% | | | |
| LEYG40 ^M _L □ | 1 to 4 | 20% to 65% | | | |
| | 5 to 20 | 35% to 65% | | | |
| | 21 to 30 | 50% to 65% | | | |

<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.

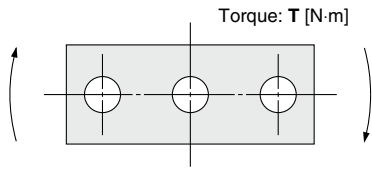
| Model | LEYG16 ^M _L □ | | | LEYG25 ^M _L □ | | | LEYG32 ^M _L □ | | | LEYG40 ^M _L □ | | | LEYG16 ^M _L A□ | | | LEYG25 ^M _L A□ | | |
|----------------|------------------------------------|---|-----|------------------------------------|---|---|------------------------------------|---|----|------------------------------------|----|----|-------------------------------------|---|-----|-------------------------------------|-----|---|
| 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% | | |

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

Series LEYG

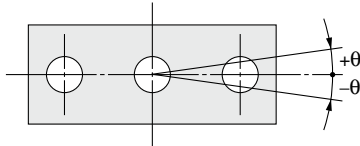
Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

Allowable Rotational Torque of Plate



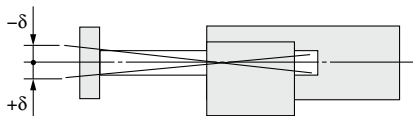
| Model | Stroke [mm] | | | | | T [N·m] |
|----------------|-------------|------|------|------|------|---------|
| | 30 | 50 | 100 | 200 | 300 | |
| LEYG16M | 0.70 | 0.57 | 1.05 | 0.56 | — | |
| LEYG16L | 0.82 | 1.48 | 0.97 | 0.57 | — | |
| LEYG25M | 1.56 | 1.29 | 3.50 | 2.18 | 1.36 | |
| LEYG25L | 1.52 | 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 | 0.05° | |
| 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 | |

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

Model Selection



Series LEYG ▶ Page 287

Moment Load Graph

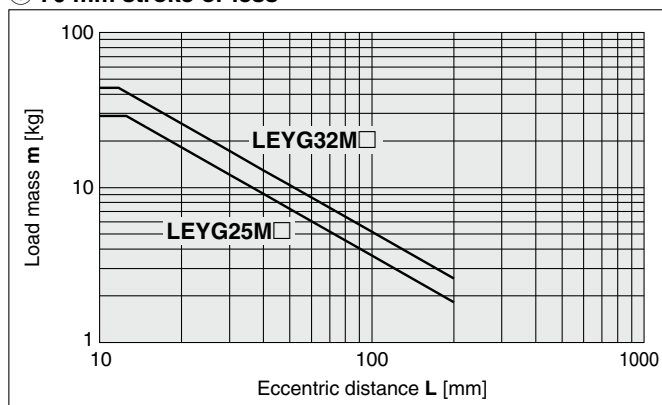
Selection conditions

| 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.

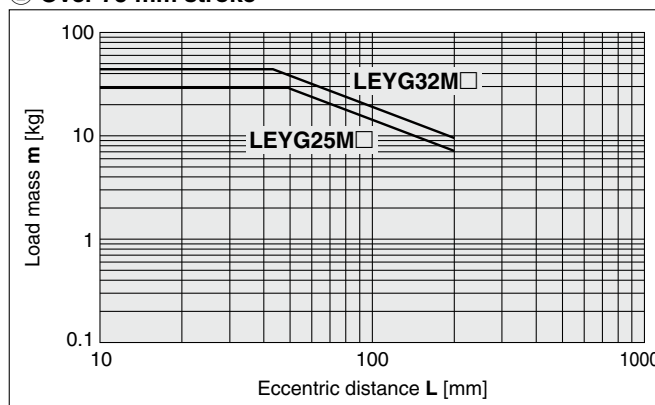
Vertical Mounting, Sliding Bearing

① 70 mm stroke or less



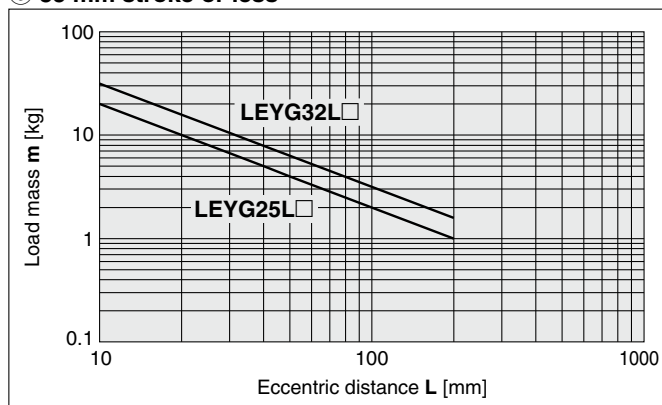
* The limit of vertical load mass varies depending on “lead” and “speed”.
Check “Speed-Vertical Work Load Graph” on page 273.

② Over 75 mm stroke



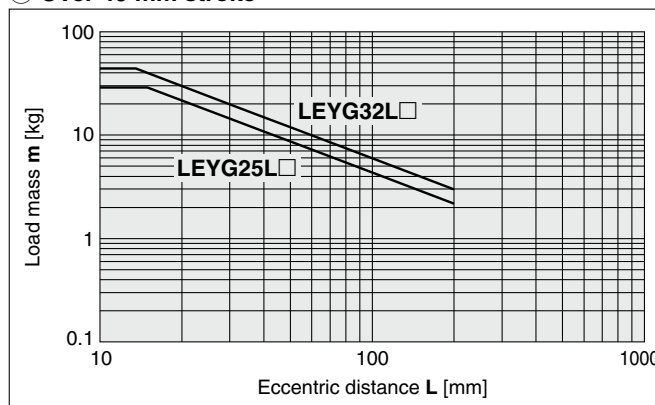
Vertical Mounting, Ball Bushing Bearing

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 273.

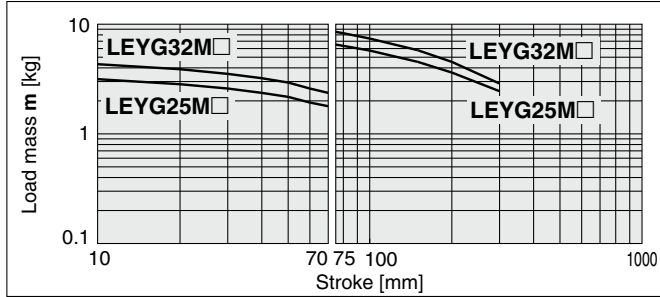
④ Over 40 mm stroke



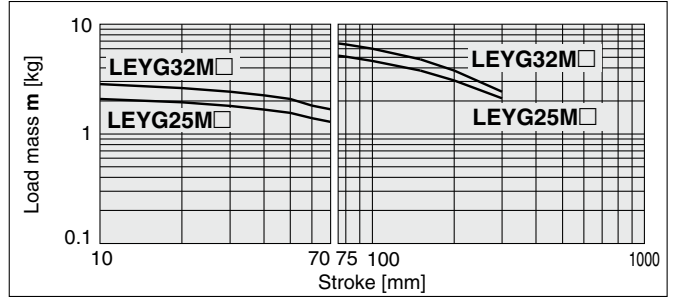
Moment Load Graph

Horizontal Mounting, Sliding Bearing

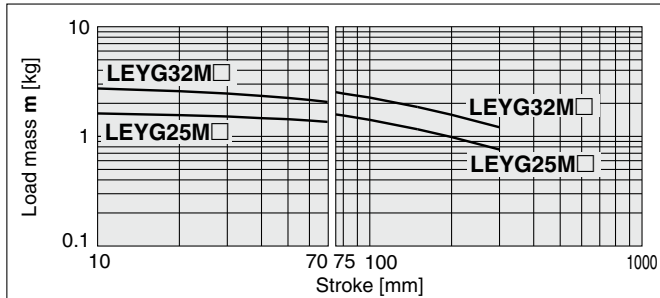
⑤ L = 50 mm Max. speed = 200 mm/s or less



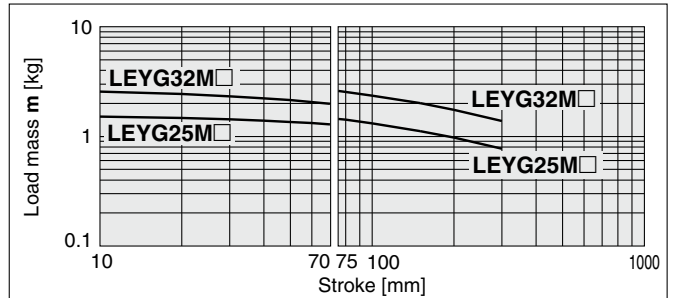
⑥ L = 100 mm Max. speed = 200 mm/s or less



⑦ L = 50 mm Max. speed = Over 200 mm/s

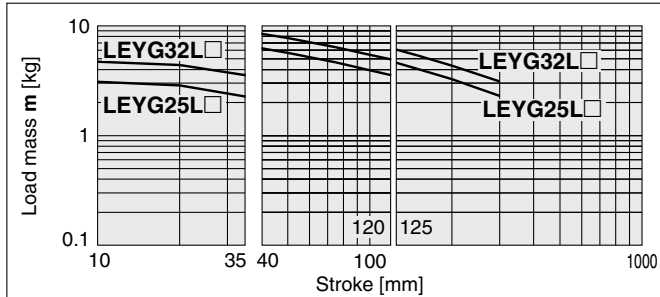


⑧ L = 100 mm Max. speed = Over 200 mm/s

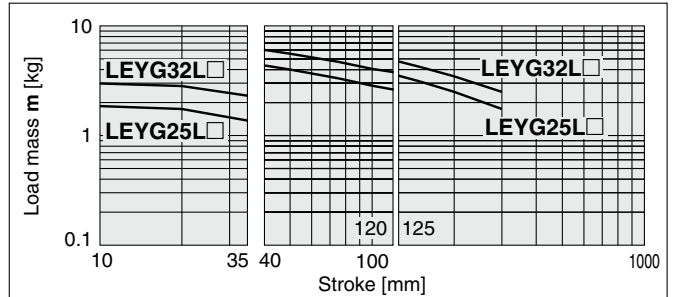


Horizontal Mounting, Ball Bushing Bearing

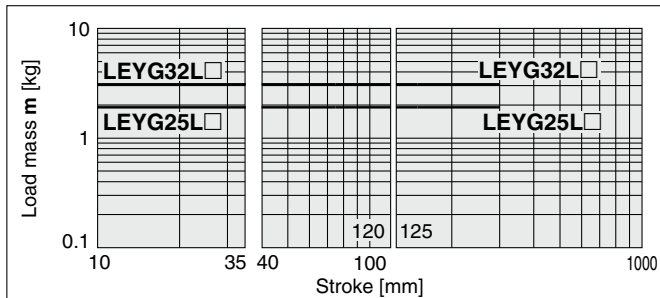
⑨ L = 50 mm Max. speed = 200 mm/s or less



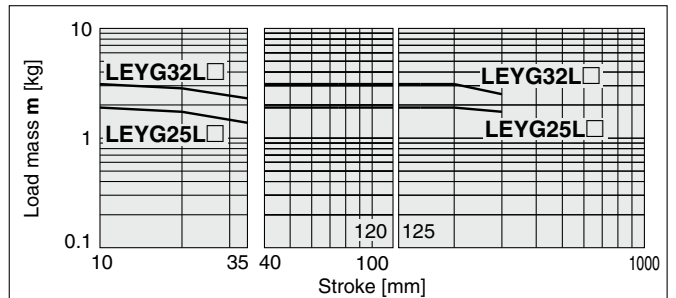
⑩ L = 100 mm Max. speed = 200 mm/s or less



⑪ L = 50 mm Max. speed = Over 200 mm/s

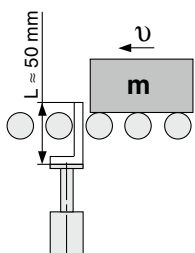


⑫ L = 100 mm Max. speed = Over 200 mm/s



Operating Range when Used as Stopper

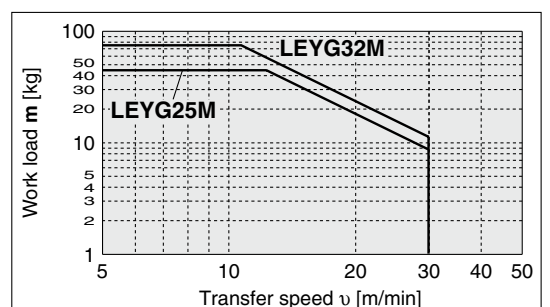
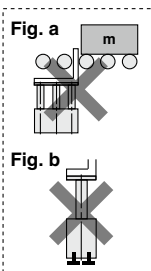
LEYG□M (Sliding bearing)



⚠ 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).



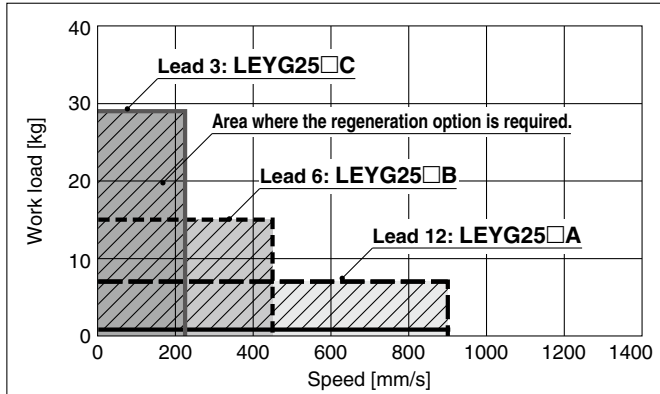
- LEFS
- LEFB
- LEJS
- LEJB
- LEL
- LEM
- LEY
- LEYG
- LES
- LESH
- LEPY
- LEPS
- LER
- LEH
- LEH
- LEY-X5
- 11-LEFS
- 11-LEJS
- 25A-
- LEC□
- LECS□
- LECS-T
- LECS-S-T
- LECYM
- LECYU
- Motorless
- LAT3

Series LEYG

AC Servo Motor

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

LEYG25 (Motor mounting position: Top mounting/In-line)



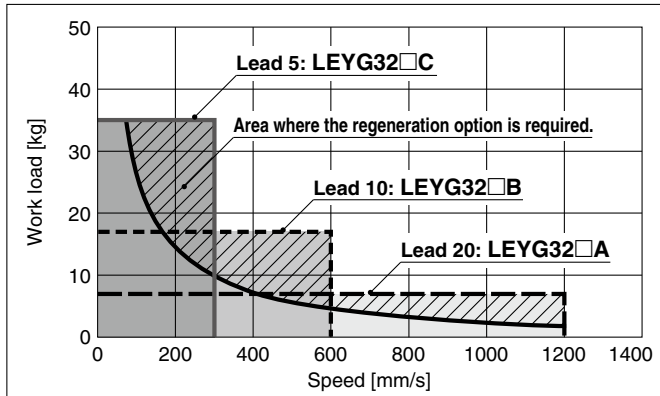
Required conditions for “Regeneration option”

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

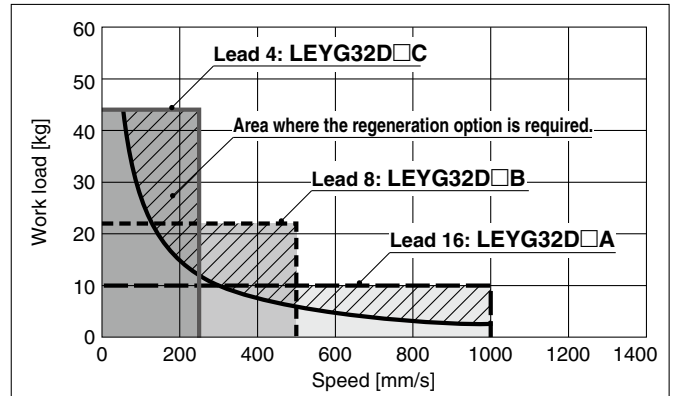
“Regeneration Option” Models

| Size | Model |
|--------|---------------|
| LEYG25 | LEC-MR-RB-032 |
| LEYG32 | LEC-MR-RB-032 |

LEYG32 (Motor mounting position: Top mounting)

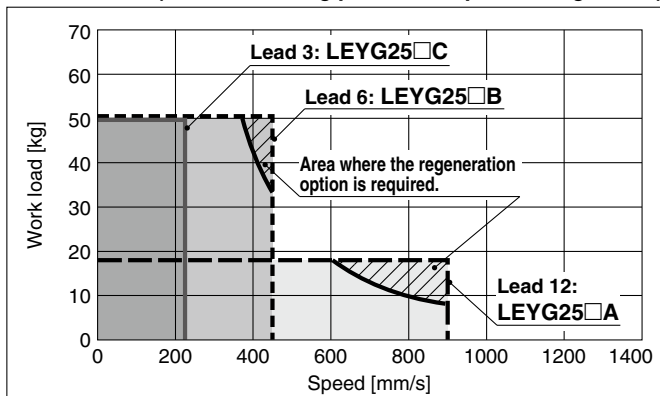


LEYG32D (Motor mounting position: In-line)



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

LEYG25 (Motor mounting position: Top mounting/In-line)



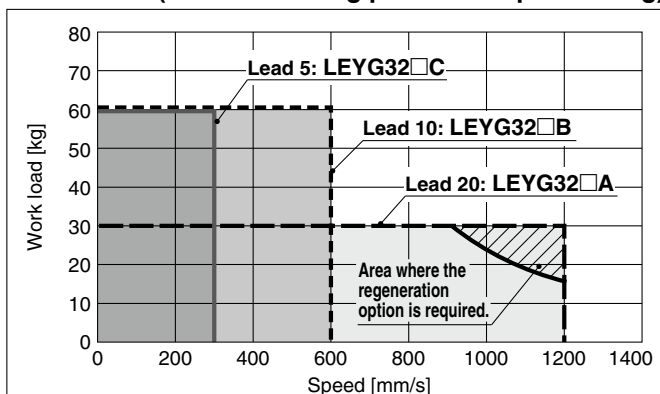
Required conditions for “Regeneration option”

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

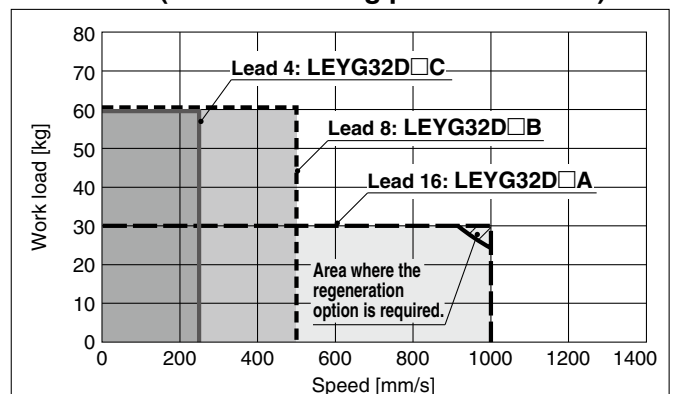
“Regeneration Option” Models

| Size | Model |
|--------|---------------|
| LEYG25 | LEC-MR-RB-032 |
| LEYG32 | LEC-MR-RB-032 |

LEYG32 (Motor mounting position: Top mounting)

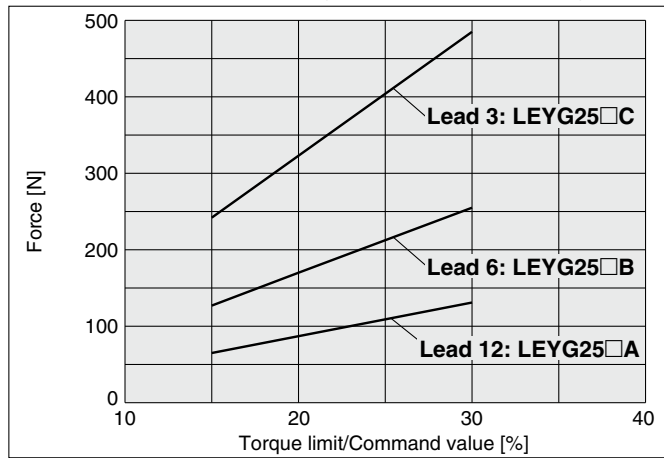


LEYG32D (Motor mounting position: In-line)



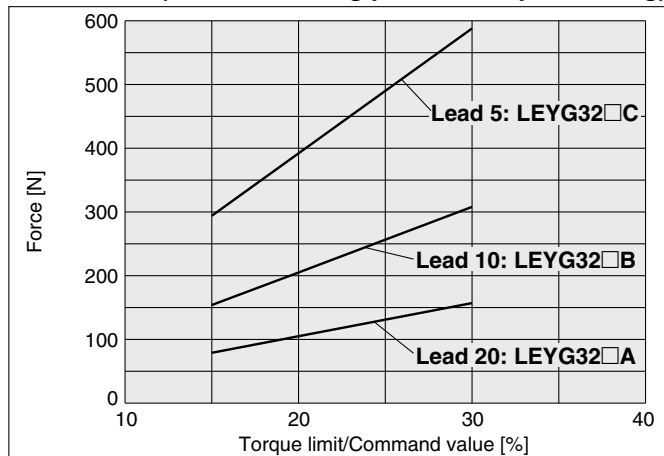
Force Conversion Graph

LEYG25□ (Motor mounting position: Top mounting/In-line)



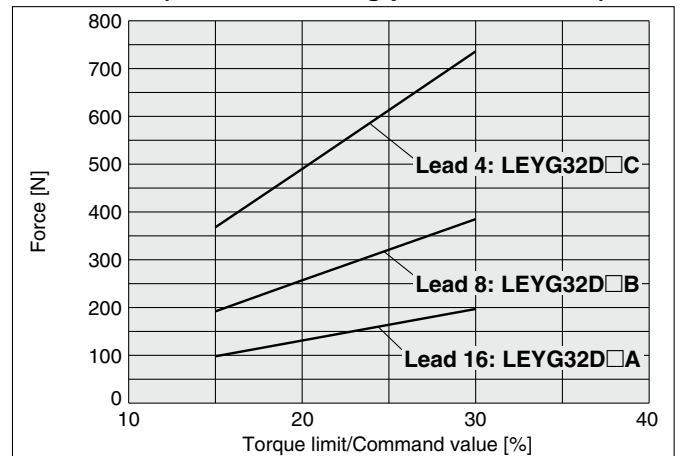
| Torque limit/Command value [%] | Duty ratio [%] | Continuous pushing time [minute] |
|--------------------------------|----------------|----------------------------------|
| 25 or less | 100 | — |
| 30 | 60 | 1.5 |

LEYG32□ (Motor mounting position: Top mounting)



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

LEYG32D (Motor mounting position: In-line)



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

LEFS
LEFBLEJS
LEJB

LEL

LEM

LEY
LEYGLES
LESHLEPY
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC□

LECS□

LECSS-T

LECYM
LECYU

Motorless

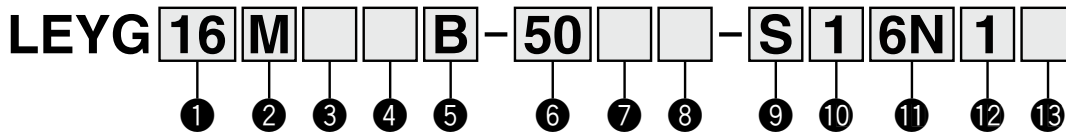
LAT3

Electric Actuator/ Guide Rod Type

Series **LEYG** LEYG16, 25, 32, 40



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 263.

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 and 32 sliding bearings. (Refer to "Construction" on page 280.)

Caution

[CE-compliant products]

- 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.
- For the servo motor (24 VDC) specification, EMC compliance was tested by installing a noise filter set (LEC-NFA). Refer to page 559 for the noise filter set. Refer to the LECA Operation Manual for installation.
- CC-Link direct input type (LECPMJ) is not CE-compliant.

[UL-compliant products]

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

* Applicable stroke table

| Model | Stroke [mm] | | | | | | | Manufacturable stroke range [mm] |
|------------------|-------------|----|-----|-----|-----|-----|-----|----------------------------------|
| | 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.

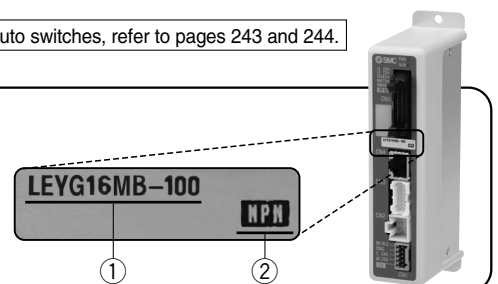
For auto switches, refer to pages 243 and 244.

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.>

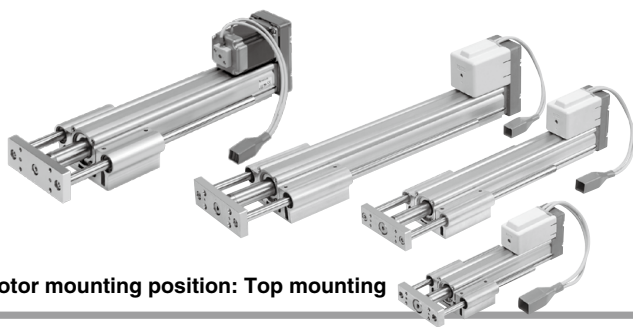
- Check the actuator label for model number. This matches the controller/driver.
- Check Parallel I/O configuration matches (NPN or PNP).



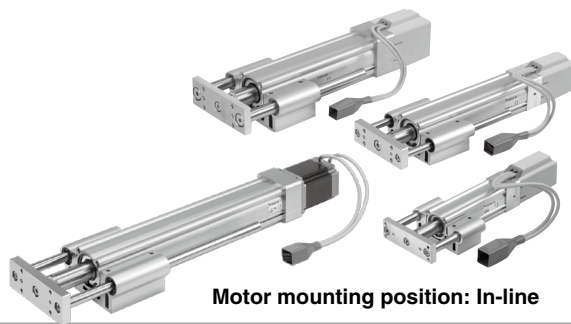
* Refer to the operation manual for using the products. Please download it via our website, <http://www.smcworld.com>

Electric Actuator/Guide Rod Type **Series LEYG**

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



Motor mounting position: Top mounting



Motor mounting position: In-line

9 Actuator cable type*1

| | |
|-----|----------------------------------|
| Nil | Without cable |
| S | Standard cable*2 |
| R | Robotic cable (Flexible cable)*3 |

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

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

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

12 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 559 (For LECP6/LECA6), page 573 (For LECP1) or page 587 (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.

10 Actuator cable length [m]

| | |
|-----|---------------|
| Nil | Without cable |
| 1 | 1.5 |
| 3 | 3 |
| 5 | 5 |
| 8 | 8* |
| A | 10* |
| B | 15* |
| C | 20* |

* Produced upon receipt of order (Robotic cable only)
Refer to the specifications Note 5) on page 277.

13 Controller/Driver mounting

| | |
|-----|--------------------|
| Nil | Screw mounting |
| D | DIN rail mounting* |

* DIN rail is not included. Order it separately.

11 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 587 separately.

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 551 | Page 551 | Page 591 | Page 567 | Page 581 |

LEFS
LEJB

LEJS
LEJB

LEL

LEM

LEY
LEYG

LES
LESH

LEPY
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC□

LECS□

LECS-T

LECYM
LECYU

Motorless

LAT3

Series LEYG

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

Specifications

Step Motor (Servo/24 VDC)

| Model | | | LEYG16 ^M | | | LEYG25 ^M | | | LEYG32 ^M | | | LEYG40 ^M | | | |
|---|---|---|---|--|-----------|---------------------------------|------------|------------|---------------------------------|------------|------------|---------------------------------|------------|-------------|-----|
| 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, LECPMJ) | 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) | 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□□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 | | | □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 unit specifications | 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: 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 265 and 266.

Vertical: Speed changes according to the work load. Check "Model Selection" on pages 265 and 266.

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 268.

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 263.

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 | | |
|---|------------|--|---|----------|-----------|---------------------------------|----------|-----------|
| 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 | 7 | 15 | 30 |
| | Vertical | Acceleration/Deceleration at 3000 [mm/s ²] | 1.5 | 3.5 | 7.5 | 2 | 5 | 11 |
| 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/s²] | | | 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/s²] ^{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) | | | | | |
| 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 | | |
| 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: 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 267 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 pushing force values for LEYG16□□□ is 50% to 95% and for LEYG25□□□ is 50% to 95%. The pushing force values change according to the duty ratio and pushing speed. Check "Model Selection" on page 268.

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

| 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 |

LEFS

LEJS
LEJB

LEL

LEM

LEY
LEYGLES
LESHLEPY
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC□

LECS□

LECS-T

LECYM
LECYU

Motorless

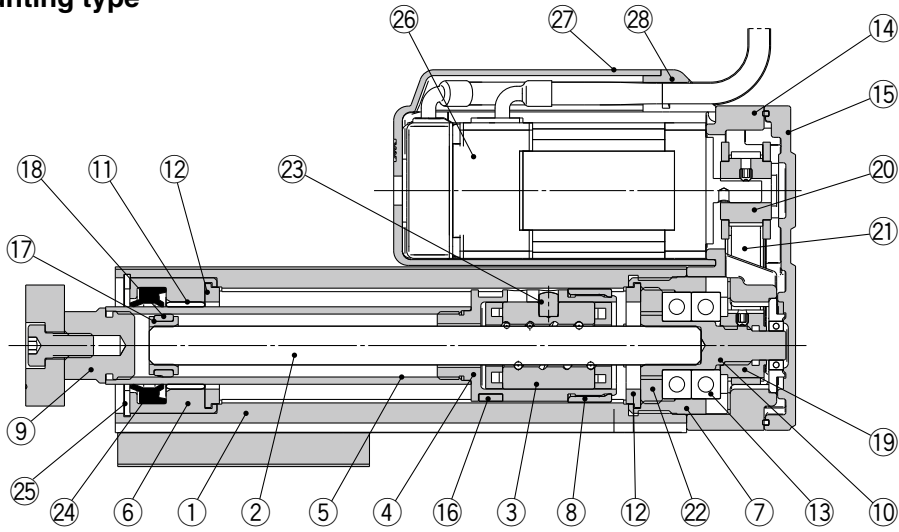
LAT3

Series LEYG

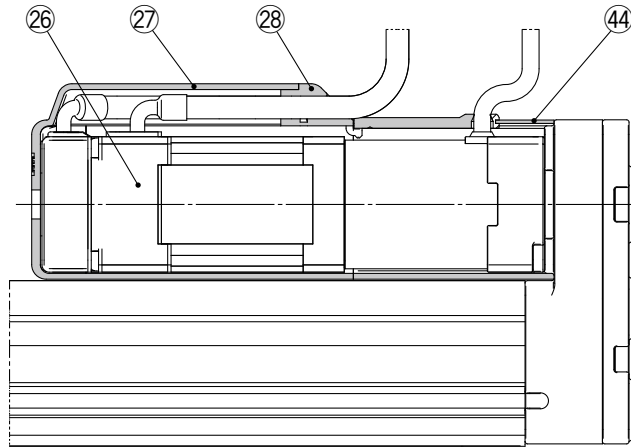
Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

Construction

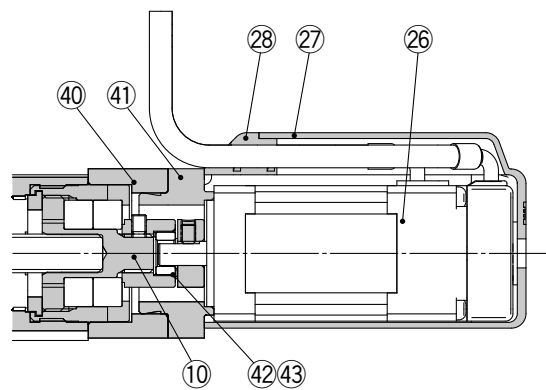
Motor top mounting type



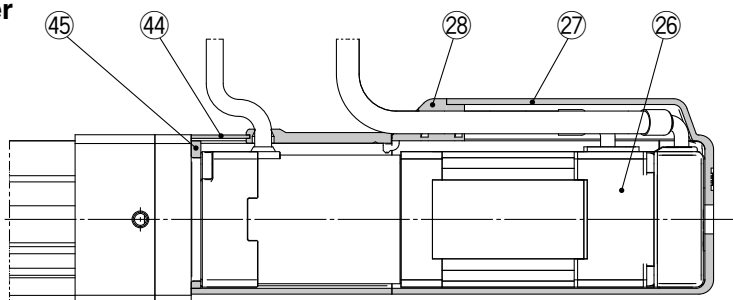
Motor top mounting type With lock/motor cover



In-line motor type

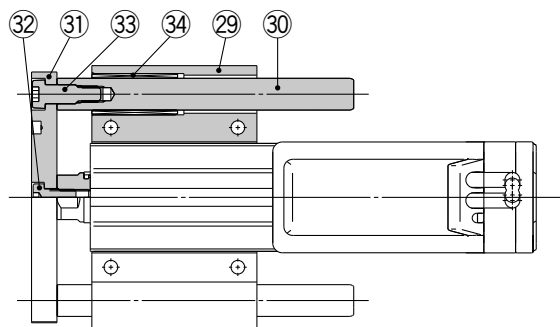


In-line motor type With lock/motor cover



Construction

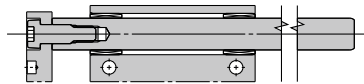
LEYG□M



LEYG¹⁶₂₅₃₂₄₀M: 50st or less

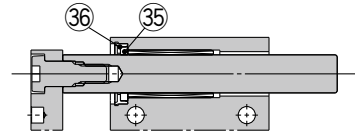


LEYG¹⁶₂₅₃₂₄₀M: Over 50st

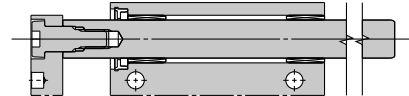


When grease retaining function selected

LEYG²⁵₃₂₄₀M□□^A_B^C-□□F: 50st or less

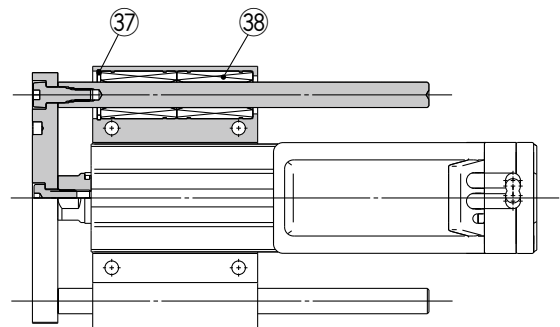


LEYG²⁵₃₂₄₀M□□^A_B^C-□□F: Over 50st



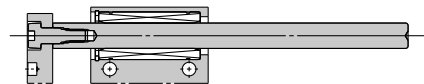
Note) Felt material is inserted to retain grease at the sliding part of the sliding bearing. This lengthens the life of the sliding part, but does not guarantee it permanently.

LEYG□L

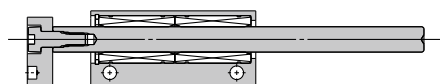


LEYG16L: 30st or less

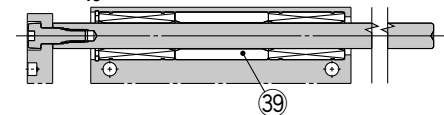
LEYG²⁵₃₂₄₀L: 100st or less



LEYG16L: Over 30st, 100st or less



LEYG¹⁶₂₅₃₂₄₀L: Over 100st



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 | Housing | 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 | Lead bronze cast | |
| 12 | Bumper | Urethane | |
| 13 | Bearing | — | |
| 14 | Return box | Aluminum die-cast | Coating |
| 15 | Return plate | Aluminum die-cast | Coating |
| 16 | Magnet | — | |
| 17 | Wear ring holder | Stainless steel | Stroke 101 mm or more |
| 18 | Wear ring | POM | Stroke 101 mm or more |
| 19 | Screw shaft pulley | Aluminum alloy | |
| 20 | Motor pulley | Aluminum alloy | |
| 21 | Belt | — | |
| 22 | Bearing stopper | Aluminum alloy | |
| 23 | Parallel pin | Stainless steel | |
| 24 | Seal | NBR | |
| 25 | Retaining ring | Steel for spring | Phosphate coated |
| 26 | Motor | — | |
| 27 | Motor cover | Synthetic resin | Only "With motor cover" |
| 28 | Grommet | Synthetic resin | Only "With motor cover" |

| No. | Description | Material | Note |
|-----|--------------------------|------------------|------------------------------|
| 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 | — | |
| 35 | Lube-retainer | Felt | |
| 36 | Holder | Resin | |
| 37 | Retaining ring | Steel for spring | Phosphate coated |
| 38 | Ball bushing | — | |
| 39 | Spacer | Aluminum alloy | Chromated |
| 40 | Motor block | Aluminum alloy | Anodized |
| 41 | Motor adapter | Aluminum alloy | Anodized/LEY16, 25 only |
| 42 | Hub | Aluminum alloy | |
| 43 | Spider | NBR | |
| 44 | Motor cover with lock | Aluminum alloy | Only "With lock/motor cover" |
| 45 | Cover support | Aluminum alloy | Only "With lock/motor cover" |

Replacement Parts/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) |
| Guide rod | GR-S-020 (20 g) |

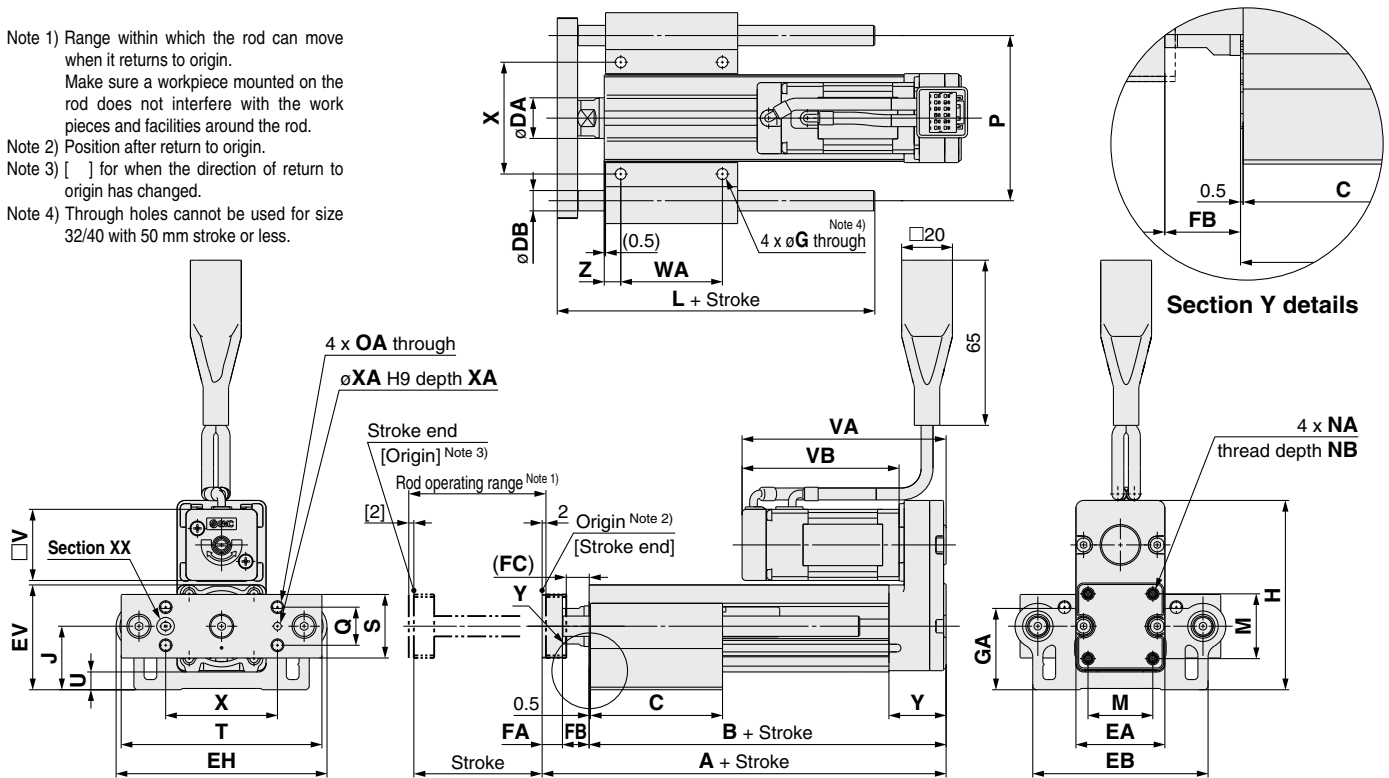
* Apply grease on the piston rod periodically.
Grease should be applied at 1 million cycles or 200 km, whichever comes first.

Series LEYG

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

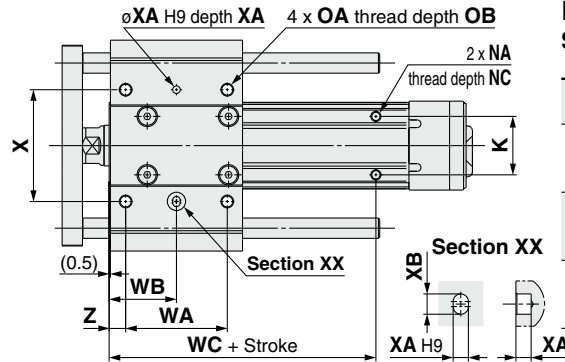
Dimensions: Motor Top Mounting

- 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 | |
| | 191st or more, 300st or less | 133 | |
| 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

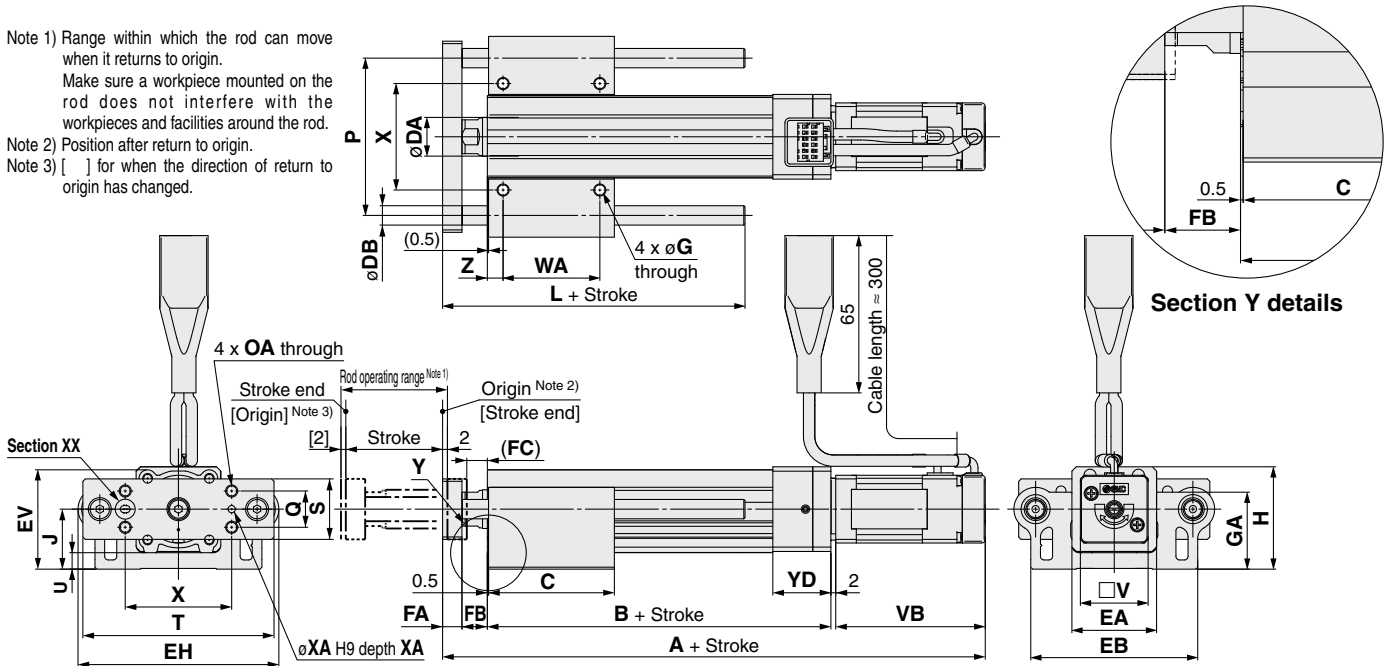
| Size | Stroke range | A | B | C | DA | EA | EB | EH | EV | FA | FB | FC | G | GA | H | J | K | M | NA | NB | NC |
|------|------------------------------|----------|------|------|----|----|-----|-----|------|---------------|---------------|----------------|----------------|------|-------|------|----|------|----------|------|-----|
| 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 | | | 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 | | | | | | | | | | | | | | | | | |
| | 125st or more, 200st or less | | | 102 | | | | | | | | | | | | | | | | | |
| | 201st or more, 300st or less | | | 102 | | | | | | | | | | | | | | | | | |
| 32 | 39st or less | 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 |
| | 40st or more, 100st or less | | | 68 | | | | | | | | | | | | | | | | | |
| | 101st or more, 124st or less | | | 85 | | | | | | | | | | | | | | | | | |
| | 125st or more, 200st or less | | | 102 | | | | | | | | | | | | | | | | | |
| 40 | 39st or less | 190.5 | 160 | 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 |
| | 40st or more, 100st or less | | | 68 | | | | | | | | | | | | | | | | | |
| | 101st or more, 124st or less | | | 85 | | | | | | | | | | | | | | | | | |
| | 125st or more, 200st or less | | | 102 | | | | | | | | | | | | | | | | | |
| | 201st or more, 300st or less | | | 102 | | | | | | | | | | | | | | | | | |
| Size | Stroke range | OA | OB | P | Q | S | T | U | V | Step motor VA | Step motor VB | Servo motor VA | Servo motor VB | WA | WB | WC | X | XA | XB | Y | Z |
| 16 | 39st or less | M5 x 0.8 | 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 | | | | | | | | | | | | | 40 | 26.5 | | | | | | |
| | 101st or more, 200st or less | | | | | | | | | | | | | 70 | 41.5 | | | | | | |
| 25 | 39st or less | M6 x 1.0 | 12 | 80 | 18 | 30 | 95 | 6.8 | 42 | 85.4 | 63.4 | 81.6 | 59.6 | 35 | 26 | 70 | 54 | 4 | 5 | 26.5 | 8.5 |
| | 40st or more, 100st or less | | | | | | | | | | | | | 50 | 33.5 | | | | | | |
| | 101st or more, 124st or less | | | | | | | | | | | | | 70 | 43.5 | | | | | | |
| | 125st or more, 200st or less | | | | | | | | | | | | | 85 | 51 | | | | | | |
| | 201st or more, 300st or less | | | | | | | | | | | | | 85 | 51 | | | | | | |
| 32 | 39st or less | M6 x 1.0 | 12 | 95 | 28 | 40 | 117 | 7.3 | 56.4 | 95.4 | 68.4 | — | — | 40 | 28.5 | 75 | 64 | 5 | 6 | 34 | 8.5 |
| | 40st or more, 100st or less | | | | | | | | | | | | | 50 | 33.5 | | | | | | |
| | 101st or more, 124st or less | | | | | | | | | | | | | 70 | 43.5 | | | | | | |
| | 125st or more, 200st or less | | | | | | | | | | | | | 85 | 51 | | | | | | |
| 40 | 39st or less | M6 x 1.0 | 12 | 95 | 28 | 40 | 117 | 7.3 | 56.4 | 117.4 | 90.4 | — | — | 40 | 28.5 | 75 | 64 | 5 | 6 | 34 | 8.5 |
| | 40st or more, 100st or less | | | | | | | | | | | | | 50 | 33.5 | | | | | | |
| | 101st or more, 124st or less | | | | | | | | | | | | | 70 | 43.5 | | | | | | |
| | 125st or more, 200st or less | | | | | | | | | | | | | 85 | 51 | | | | | | |
| | 201st or more, 300st or less | | | | | | | | | | | | | 85 | 51 | | | | | | |

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.

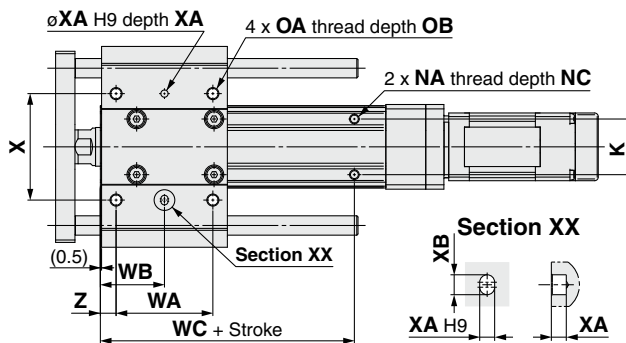
Note 2) Position after return to origin.

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 | |
| 25 | 114st or less | 91 | 10 |
| | 115st or more, 190st or less | 115 | |
| | 191st or more, 300st or less | 133 | |
| 32 | 114st or less | 97.5 | 13 |
| | 115st or more, 190st or less | 116.5 | |
| 40 | 191st or more, 300st or less | 134 | 13 |



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 | 16 |

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 | 52 | | | | | | | | | | | | | | | | | |
| | 101st or more, 200st or less | 194.3 | 195 | 112 | 82 | | | | | | | | | | | | | | | | | |
| 25 | 39st or less | 206.4 | 202.6 | 115.5 | 50 | 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 | 231.4 | 227.6 | 140.5 | 67.5 | | | | | | | | | | | | | | | | | |
| | 101st or more, 124st or less | | | | 84.5 | | | | | | | | | | | | | | | | | |
| | 125st or more, 200st or less | | | | 102 | | | | | | | | | | | | | | | | | |
| | 201st or more, 300st 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 | 258.9 | — | 158 | 68 | | | | | | | | | | | | | | | | | |
| | 101st or more, 124st or less | | | | 85 | | | | | | | | | | | | | | | | | |
| | 125st or more, 200st or less | | | | 102 | | | | | | | | | | | | | | | | | |
| | 201st or more, 300st or less | | | | 102 | | | | | | | | | | | | | | | | | |
| 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 | 280.9 | — | 158 | 68 | | | | | | | | | | | | | | | | | |
| | 101st or more, 124st or less | | | | 85 | | | | | | | | | | | | | | | | | |
| | 125st or more, 200st or less | | | | 102 | | | | | | | | | | | | | | | | | |
| | 201st or more, 300st or less | | | | 102 | | | | | | | | | | | | | | | | | |
| Size | Stroke range | OA | OB | P | Q | S | T | U | V | Step motor | | WA | WB | WC | X | XA | XB | YD | Z | | | |
| | | | | | | | | | | VB | VB | | | | | | | | | | | |
| 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 | 75 | | | | | | | | |
| | 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 | 35 | 26 | 70 | 54 | 4 | 5 | 26 | 8.5 | | | |
| | 40st or more, 100st or less | | | | | | | | | | | 50 | 33.5 | 95 | | | | | | | | |
| | 101st or more, 124st or less | | | | | | | | | | | 70 | 43.5 | 95 | | | | | | | | |
| | 125st or more, 200st or less | | | | | | | | | | | 85 | 51 | 95 | | | | | | | | |
| | 201st or more, 300st or less | | | | | | | | | | | 85 | 51 | 95 | | | | | | | | |
| 32 | 39st or less | M6 x 1.0 | 12 | 95 | 28 | 40 | 117 | 7.3 | 56.4 | 68.4 | — | 40 | 28.5 | 75 | 64 | 5 | 6 | 32 | 8.5 | | | |
| | 40st or more, 100st or less | | | | | | | | | | | 50 | 33.5 | 75 | | | | | | | | |
| | 101st or more, 124st or less | | | | | | | | | | | 70 | 43.5 | 105 | | | | | | | | |
| | 125st or more, 200st or less | | | | | | | | | | | 85 | 51 | 105 | | | | | | | | |
| | 201st or more, 300st or less | | | | | | | | | | | 85 | 51 | 105 | | | | | | | | |
| 40 | 39st or less | M6 x 1.0 | 12 | 95 | 28 | 40 | 117 | 7.3 | 56.4 | 90.4 | — | 40 | 28.5 | 75 | 64 | 5 | 6 | 32 | 8.5 | | | |
| | 40st or more, 100st or less | | | | | | | | | | | 50 | 33.5 | 75 | | | | | | | | |
| | 101st or more, 124st or less | | | | | | | | | | | 70 | 43.5 | 105 | | | | | | | | |
| | 125st or more, 200st or less | | | | | | | | | | | 85 | 51 | 105 | | | | | | | | |
| | 201st or more, 300st or less | | | | | | | | | | | 85 | 51 | 105 | | | | | | | | |

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

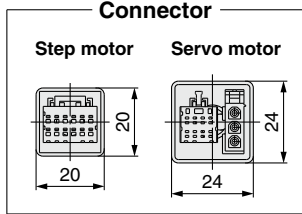
Series LEYG

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

Dimensions

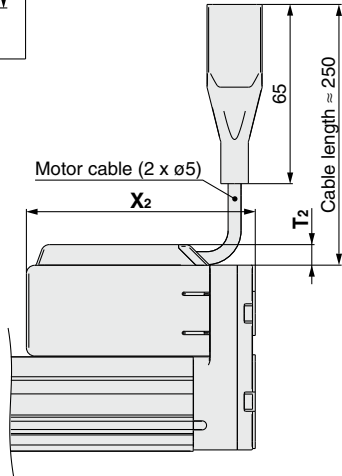
Motor top mounting type

With motor cover: LEYG $\begin{matrix} 16 \\ 25 \\ 32 \\ 40 \end{matrix} \square \square \square \begin{matrix} A \\ B-C \\ C \end{matrix}$

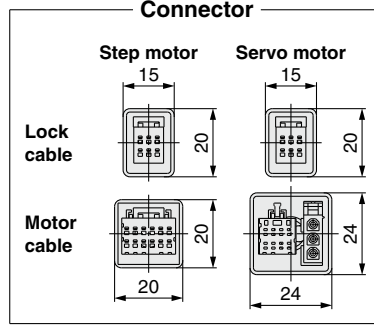


| Size | T ₂ | X ₂ |
|------|----------------|----------------|
| 16 | 7.5 | 83 |
| 25 | 7.5 | 88.5 |
| 32 | 7.5 | 98.5 |
| 40 | 7.5 | 120.5 |

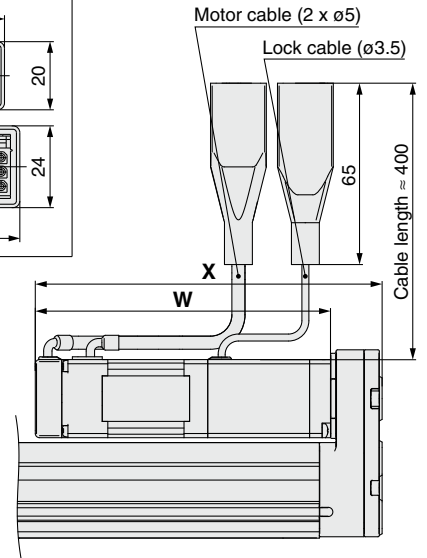
Motor cover material:
Synthetic resin



With lock: LEYG $\begin{matrix} 16 \\ 25 \\ 32 \\ 40 \end{matrix} \square \square \square \begin{matrix} A \\ B-C \\ C \end{matrix} B$

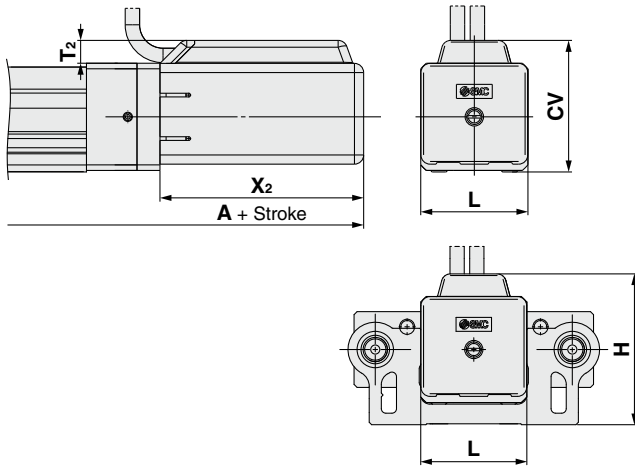


| Size | Step motor | | Servo motor | |
|------|------------|-------|-------------|-------|
| | W | X | W | X |
| 16 | 103.3 | 121.8 | 104.0 | 122.5 |
| 25 | 103.9 | 125.9 | 100.1 | 122.1 |
| 32 | 111.4 | 138.4 | — | — |
| 40 | 133.4 | 160.4 | — | — |



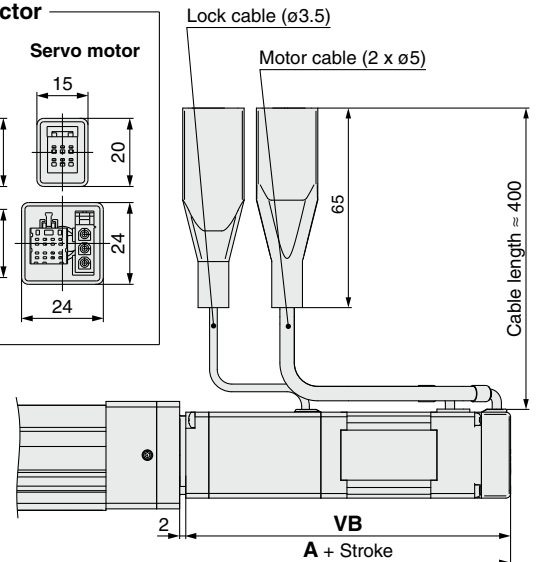
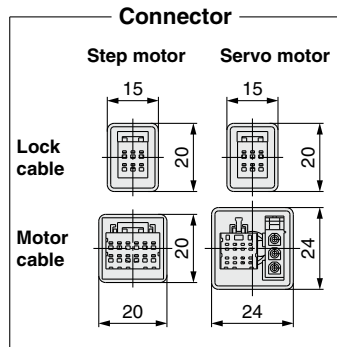
In-line motor type

With motor cover: LEYG $\begin{matrix} 16 \\ 25 \\ 32 \\ 40 \end{matrix} \square \square \square \begin{matrix} A \\ B-C \\ C \end{matrix}$



| Size | Stroke range | A | T ₂ | X ₂ | L | H | CV |
|------|------------------------------|-------|----------------|----------------|----|------|------|
| 16 | 100st or less | 177 | 7.5 | 66.5 | 35 | 49.8 | 43 |
| | 101st or more, 200st or less | 197 | | | | | |
| 25 | 100st or less | 209.5 | 7.5 | 68.5 | 46 | 61.3 | 54.5 |
| | 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 | | | | | |
| 40 | 100st or less | 254 | 7.5 | 95.5 | 60 | 75.8 | 68.5 |
| | 101st or more, 300st or less | 284 | | | | | |

With lock: LEYG $\begin{matrix} 16 \\ 25 \\ 32 \\ 40 \end{matrix} \square \square \square \begin{matrix} A \\ B-C \\ C \end{matrix} B$



| Size | Stroke range | Step motor | Servo motor | Step motor | Servo motor |
|------|------------------------------|------------|-------------|------------|-------------|
| | | A | | VB | |
| 16 | 100st or less | 215.8 | 216.5 | 103.3 | 104 |
| | 101st or more, 200st or less | 235.8 | 236.5 | | |
| 25 | 100st or less | 246.9 | 243.1 | 103.9 | 100.1 |
| | 101st or more, 300st or less | 271.9 | 268.1 | | |
| 32 | 100st or less | 271.9 | — | 111.4 | — |
| | 101st or more, 300st or less | 301.9 | — | | |
| 40 | 100st or less | 293.9 | — | 133.4 | — |
| | 101st or more, 300st or less | 323.9 | — | | |

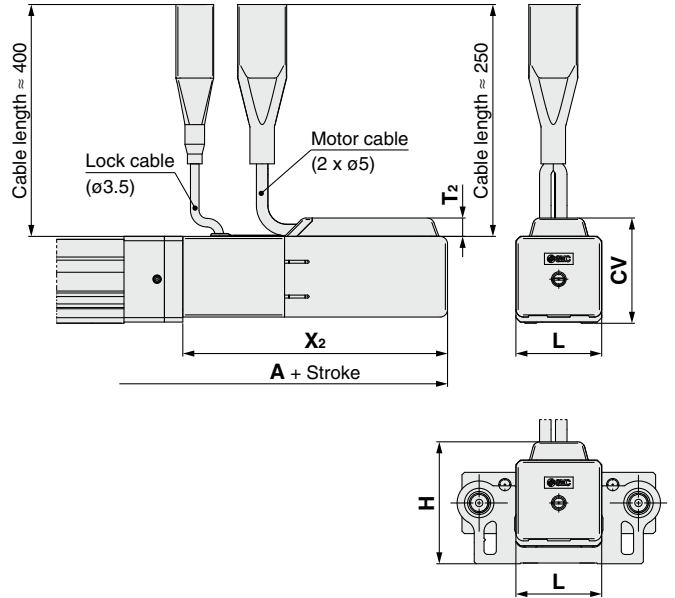
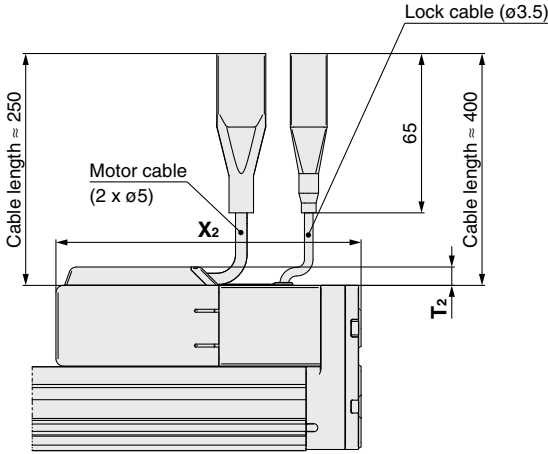
Electric Actuator/Guide Rod Type **Series LEYG**

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

Dimensions

Motor top mounting type
With lock/motor cover: LEYG $\begin{matrix} 16 \\ 25 \\ 32 \\ 40 \end{matrix} \square \square \square \begin{matrix} A \\ B \\ C \end{matrix} - \square W$

In-line motor type
With lock/motor cover: LEYG $\begin{matrix} 16 \\ 25 \\ 32 \\ 40 \end{matrix} D \square \square \begin{matrix} A \\ B \\ C \end{matrix} - \square W$



[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 | | | | | |

LEFS
LEFB

LEJS
LEJB

LEL

LEM

LEY
LEYG

LES
LESH

LEPY
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC

LECS

LECS-T

LECYM
LECYU

Motorless

LAT3

Series LEYG

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

Support Block

● Guide for support block application

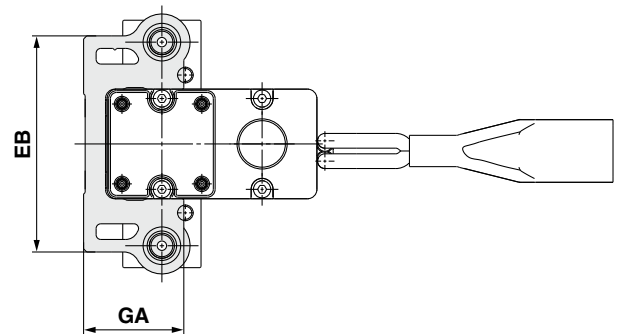
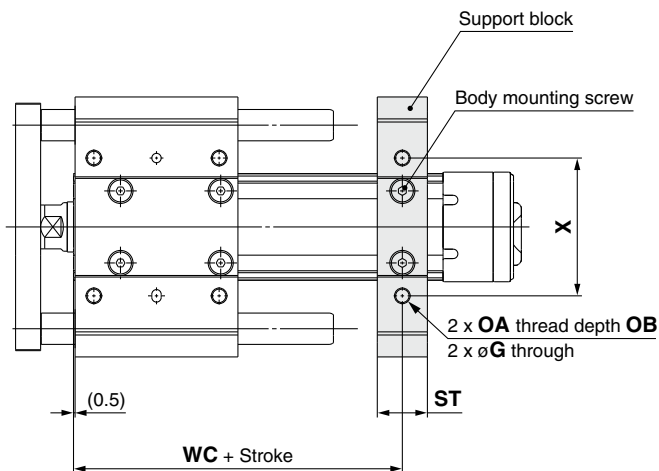
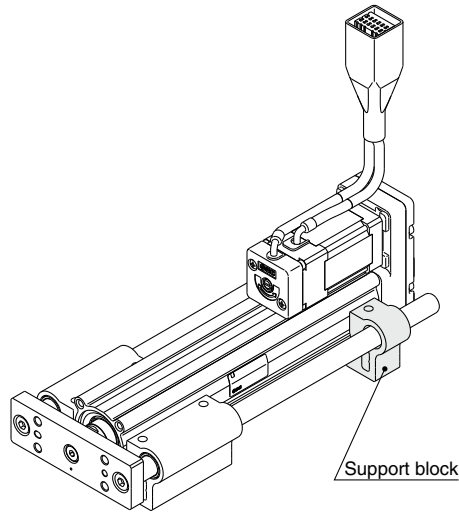
When the stroke exceeds 100 mm and the mounting orientation is horizontal, the body will be bent. Mounting the support block is recommended. (Please order it separately from the models shown below.)

Support Block Model

LEYG-S 016

● 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. Use taps on the bottom.

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

Electric Actuator/ Guide Rod Type

Series **LEYG** LEYG25, 32


Motorless Type ▶ Page 847
SSCNET III/H Compatible ▶ Page 635
MECHATROLINK Compatible ▶ Page 741

How to Order

LEY **H** **G** **25** **M** **S2** **B** - **100** - **S** **2** **A1**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

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* ² |
|--------|---|------------|---------------|-----------------------------------|
| 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 LECS□-S5 |
| S7 | AC servo motor (Absolute encoder) | 200 | 32 | LECSB□-S7 LECS□-S7 LECS□-S7 |

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

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

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 290.)

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 614 for details.)

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.

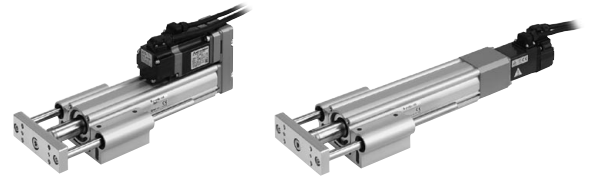
* Applicable stroke table

●: Standard

| Model | Stroke [mm] | 30 | 50 | 100 | 150 | 200 | 250 | 300 | Manufacturable stroke range |
|--------|-------------|----|----|-----|-----|-----|-----|-----|-----------------------------|
| 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 243 and 244.



Motor mounting position: Top mounting

Motor mounting position: In-line

12 Driver type*

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

* 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]*





| | |
|------------|--------------------------------|
| 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 615 if I/O cable is required.
(Options are shown on page 615.)

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 |
|---------------------------------|---|---|---|---|
| |  |  |  |  |
| Series | LECSA | LECSB | LECSC | LECSS |
| Number of point tables | Up to 7 | — | Up to 255 (2 stations occupied) | — |
| Pulse input | ○ | ○ | — | — |
| Applicable network | — | — | CC-Link | SSCNET III type |
| Control encoder | Incremental 17-bit encoder | Absolute 18-bit encoder | Absolute 18-bit encoder | Absolute 18-bit encoder |
| Communication function | USB communication | USB communication, RS422 communication | USB communication, RS422 communication | USB communication |
| Power supply voltage [V] | 100 to 120 VAC (50/60 Hz) 200 to 230 VAC (50/60 Hz) | | | |
| Reference page | Page 598 | | | |

Series LEYG

AC Servo Motor

Specifications

| Model | | LEYG25□S ₆ ² (Top mounting) LEYG25□DS ₆ ² (In-line) | | | LEYG32□S ₇ ³ (Top mounting) | | | LEYG32□DS ₇ ³ (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)} | | 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: 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] | 900 | | | 450 | 225 | 1200 | 600 | 300 | 1000 | 500 | 250 | | | | | | | |
| | 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 | | | | | | | | | | | | | | | |
| | | High precision type | | ±0.01 | | | | | | | | | | | | | | | |
| | Lost motion [mm] ^{Note 5)} | 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 6)} | 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 | | | | | | | | | | | | |
| Operating humidity range [%RH] | 90 or less (No condensation) | | | | | | 90 or less (No condensation) | | | | | | | | | | | | |
| Required conditions for "Regeneration option" [kg] ^{Note 7)} | Horizontal | | 8 or more | 31 or more | Not required | | 15 or more | Not required | | Not required | | 23 or more | Not required | | Not required | | | | |
| | Vertical | | 2 or more | 1 or more | 1 or more | | 4 or more | 5 or more | | 9 or more | | 4 or more | | 5 or more | | 9 or more | | | |
| 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 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 | | | | | | Non-magnetizing lock | | | | | | | | | | | | |
| Holding force [N] | 131 | | 255 | | 485 | | 157 | | 308 | | 588 | | 197 | | 385 | | 736 | | |
| Power consumption at 20°C [W] ^{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 274. When the control equivalent to the pushing operation of the controller LECP 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 work load conditions which require "Regeneration option" when operating at the maximum speed (Duty ratio: 100%). Order the regeneration option separately. For details and order numbers, refer to "Required Conditions for Regeneration Option" on page 273.

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 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

Weight: Top Mounting Type

| Series | | LEYG25M | | | | | | LEYG32M | | | | | | | |
|-------------|---------------------|---------|------|------|------|------|------|---------|------|------|------|------|------|------|------|
| Stroke [mm] | | 30 | 50 | 100 | 150 | 200 | 250 | 300 | 30 | 50 | 100 | 150 | 200 | 250 | 300 |
| Motor type | 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 | 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 |

| Series | | LEYG25L | | | | | | LEYG32L | | | | | | | |
|-------------|---------------------|---------|------|------|------|------|------|---------|------|------|------|------|------|------|------|
| Stroke [mm] | | 30 | 50 | 100 | 150 | 200 | 250 | 300 | 30 | 50 | 100 | 150 | 200 | 250 | 300 |
| Motor type | 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 | 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 |

Weight: In-line Motor Type

| Series | | LEYG25MD | | | | | | LEYG32MD | | | | | | | |
|-------------|---------------------|----------|------|------|------|------|------|----------|------|------|------|------|------|------|------|
| Stroke [mm] | | 30 | 50 | 100 | 150 | 200 | 250 | 300 | 30 | 50 | 100 | 150 | 200 | 250 | 300 |
| Motor type | 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 | 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 |

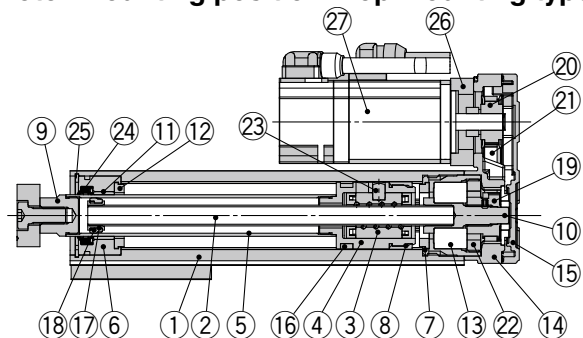
| Series | | LEYG25LD | | | | | | LEYG32LD | | | | | | | |
|-------------|---------------------|----------|------|------|------|------|------|----------|------|------|------|------|------|------|------|
| Stroke [mm] | | 30 | 50 | 100 | 150 | 200 | 250 | 300 | 30 | 50 | 100 | 150 | 200 | 250 | 300 |
| Motor type | 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 | 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 |

Additional Weight

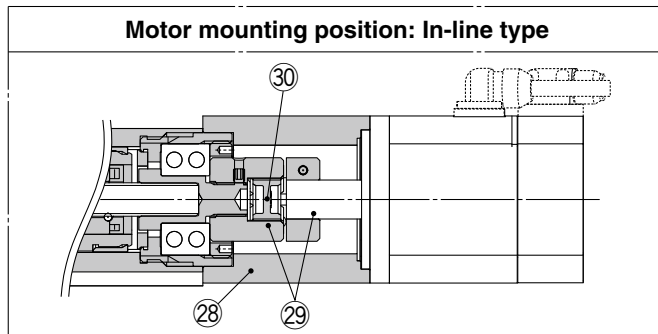
| Size | | 25 | 32 |
|------|---------------------|------|------|
| Lock | Incremental encoder | 0.20 | 0.40 |
| | Absolute encoder | 0.30 | 0.66 |

Construction

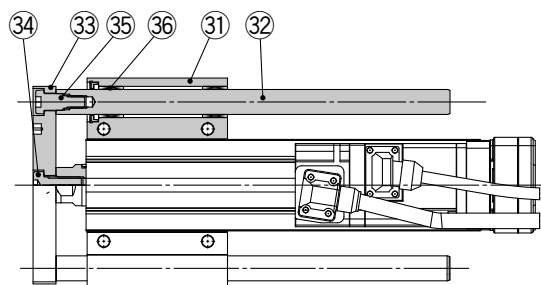
Motor mounting position: Top mounting type



Motor mounting position: In-line type



LEYG□M

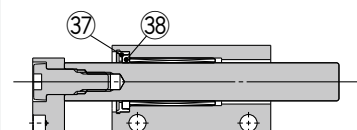


LEYG25/32M: 50st or less



When grease retaining function selected

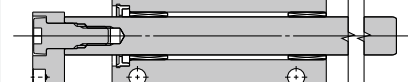
LEYG25/32M: 50st or less



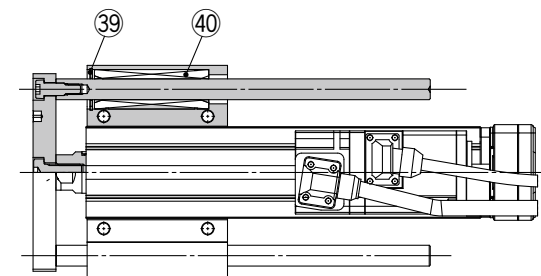
LEYG25/32M: Over 50st



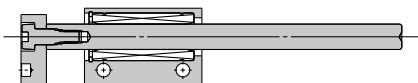
LEYG25/32M: Over 50st



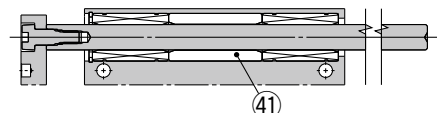
LEYG□L



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 | — | |
| 4 | Piston | Aluminum alloy | |
| 5 | Piston rod | Stainless steel | Hard chrome plating |
| 6 | Rod cover | Aluminum alloy | |
| 7 | Housing | 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 | Lead bronze cast | |
| 12 | Bumper | Urethane | |
| 13 | Bearing | — | |
| 14 | Return box | Aluminum die-cast | Coating |
| 15 | Return plate | Aluminum die-cast | Coating |
| 16 | Magnet | — | |
| 17 | Wear ring holder | Stainless steel | Stroke 101 mm or more |
| 18 | Wear ring | POM | Stroke 101 mm or more |
| 19 | Screw shaft pulley | Aluminum alloy | |
| 20 | Motor pulley | Aluminum alloy | |
| 21 | Belt | — | |
| 22 | Bearing stopper | Aluminum alloy | |
| 23 | Parallel pin | Stainless steel | |
| 24 | Seal | NBR | |
| 25 | Retaining ring | Steel for spring | Phosphate coated |
| 26 | Motor adapter | Aluminum alloy | Coating |
| 27 | Motor | — | |

| No. | Description | Material | Note |
|-----|--------------------------|------------------|------------------|
| 28 | Motor block | Aluminum alloy | Coating |
| 29 | Hub | Aluminum alloy | |
| 30 | Spider | Urethane | Spider |
| 31 | Guide attachment | Aluminum alloy | Anodized |
| 32 | Guide rod | Carbon steel | |
| 33 | Plate | Aluminum alloy | Anodized |
| 34 | Plate mounting cap screw | Aluminum alloy | Nickel plating |
| 35 | Guide cap screw | Carbon steel | Nickel plating |
| 36 | Sliding bearing | — | |
| 37 | Felt | Felt | |
| 38 | Holder | Resin | |
| 39 | Retaining ring | Steel for spring | Phosphate coated |
| 40 | Ball bushing | — | |
| 41 | Spacer | Aluminum alloy | Chromated |

Support Block

| Size | Order no. |
|------|-----------|
| 25 | LEYG-S025 |
| 32 | LEYG-S032 |

Replacement Parts /Belt

| Size | Order no. |
|------|-----------|
| 25 | LE-D-2-2 |
| 32 | LE-D-2-4 |

* Two body mounting screws are included with the support block.

Replacement Parts/Grease Pack

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

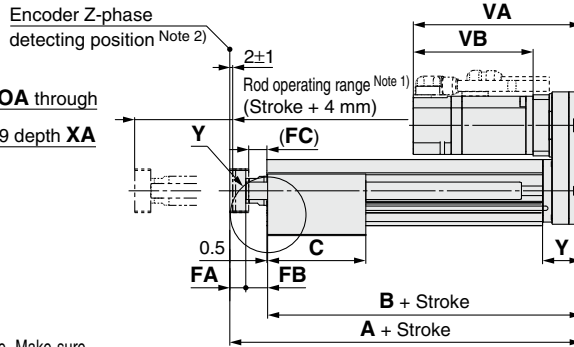
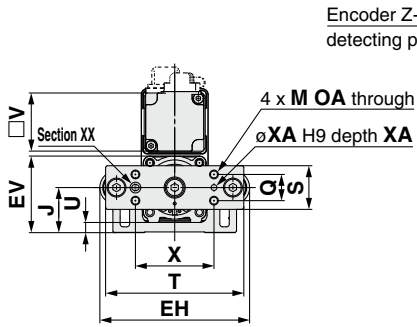
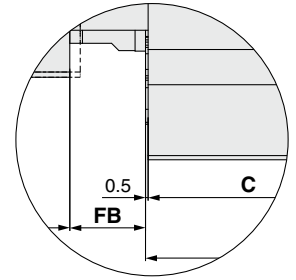
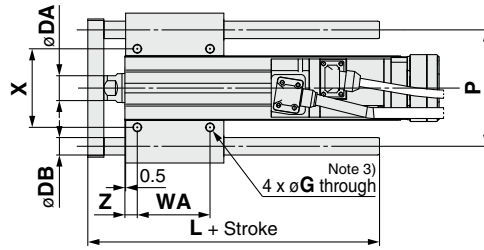
* Apply grease on the piston rod periodically. Grease should be applied at 1 million cycles or 200 km, whichever comes first.

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

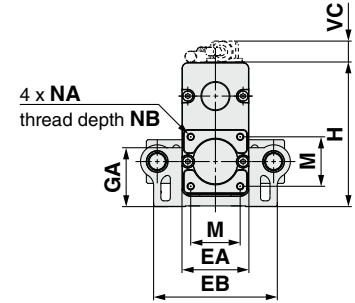
Series LEYG

AC Servo Motor

Dimensions: Top Mounting



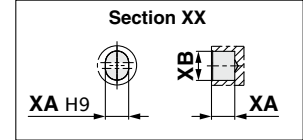
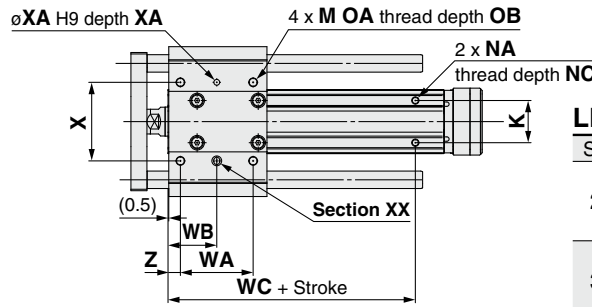
Section Y details



- 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 | Up to 114 | 91 | 10 |
| | 115 to 190 | 115 | |
| | 191 to 300 | 133 | |
| | 201 to 300 | 133 | |
| 32 | Up to 114 | 97.5 | 13 |
| | 115 to 190 | 116.5 | |
| | 191 to 300 | 134 | |
| | 201 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 | |

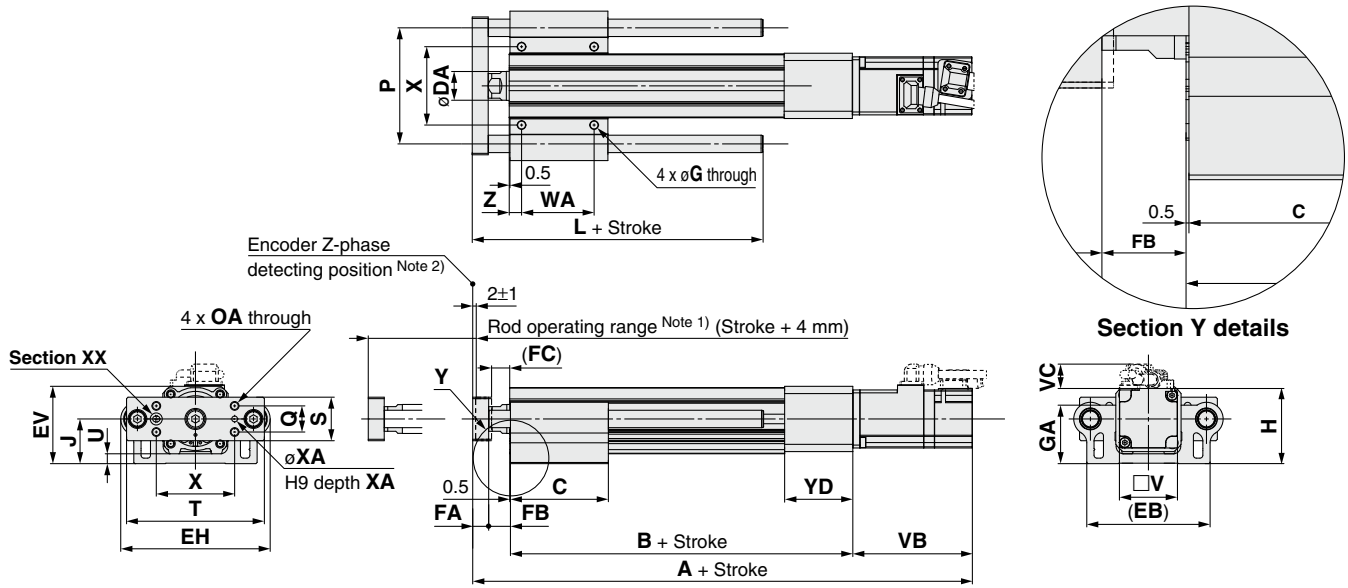
LEYG□M, LEYG□L Common

| 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 | M5 x 0.8 | 8 | 6.5 |
| | 40 to 100 | | | 67.5 | | | | | | | | | | | | | | | | | |
| | 101 to 124 | | | 84.5 | | | | | | | | | | | | | | | | | |
| | 125 to 200 | | | 84.5 | | | | | | | | | | | | | | | | | |
| | 201 to 300 | | | 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 | M6 x 1.0 | 10 | 8.5 |
| | 40 to 100 | | | 68 | | | | | | | | | | | | | | | | | |
| | 101 to 124 | | | 85 | | | | | | | | | | | | | | | | | |
| | 125 to 200 | | | 85 | | | | | | | | | | | | | | | | | |
| | 201 to 300 | | | 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 | | | | | | |
| | 201 to 300 | | | | | | | | | 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 | | | | | | |
| | 201 to 300 | | | | | | | | | 85 | 51 | | | | | | |

| Size | Incremental encoder | | | | | | Absolute encoder | | | | | |
|------|---------------------|------|------|-----------|-------|------|------------------|------|------|-----------|-------|------|
| | Without lock | | | With lock | | | Without lock | | | With lock | | |
| | 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 |
| 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 |

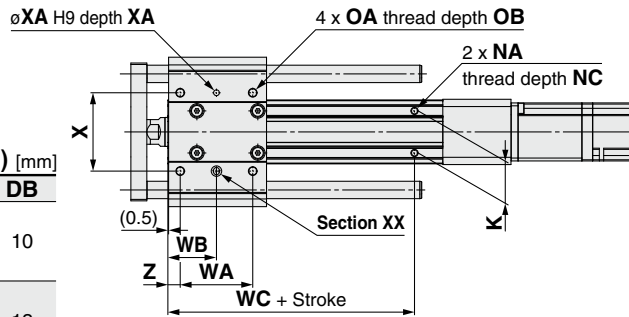
Dimensions: In-line Motor



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 | M5x0.8 | 6.5 |
| | 40 to 100 | | 67.5 | | | | | | | | | | | | | | |
| | 101 to 124 | 84.5 | | | | | | | | | | | | | | | |
| | 125 to 200 | 102 | | | | | | | | | | | | | | | |
| | 201 to 300 | 161.5 | | | | | | | | | | | | | | | |
| 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 | M6x1.0 | 8.5 |
| | 40 to 100 | | 68 | | | | | | | | | | | | | | |
| | 101 to 124 | 85 | | | | | | | | | | | | | | | |
| | 125 to 200 | 186 | | | | | | | | | | | | | | | |
| | 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 | 95 | | | | | | 64 | 5 | 6 | 60 | 8.5 |
| | 125 to 200 | | | | | | | | | 85 | 51 | | | | | | | | | | | |
| | 201 to 300 | | | | | | | | | 161.5 | 70 | 43.5 | | | | | | | | | | |
| 101 to 100 | 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 | 105 | | | | | | | | | | |
| | 125 to 200 | | | | | | | | | 85 | 51 | | | | | | | | | | | |
| | 201 to 300 | | | | | | | | | 161.5 | 85 | 51 | | | | | | | | | | |

| Size | Stroke range [mm] | Incremental encoder | | | | | | Absolute encoder | | | | | |
|------|-------------------|---------------------|------|------|-----------|-------|------|------------------|------|------|-----------|-------|------|
| | | Without lock | | | With lock | | | Without lock | | | With lock | | |
| | | 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 |
| | 105 to 300 | 274 | | | 310.9 | | | 269.4 | | | 315.5 | | |
| 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 |
| | 105 to 300 | 304.7 | | | 333.3 | | | 293.1 | | | 332.6 | | |

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

Series LEYG

AC Servo Motor

Support Block

● Guide for support block application

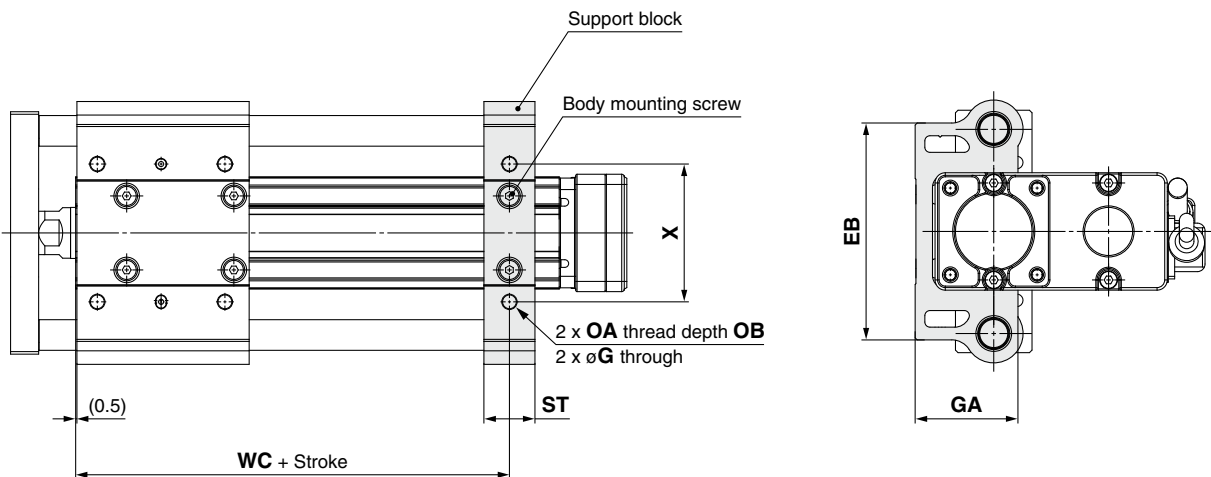
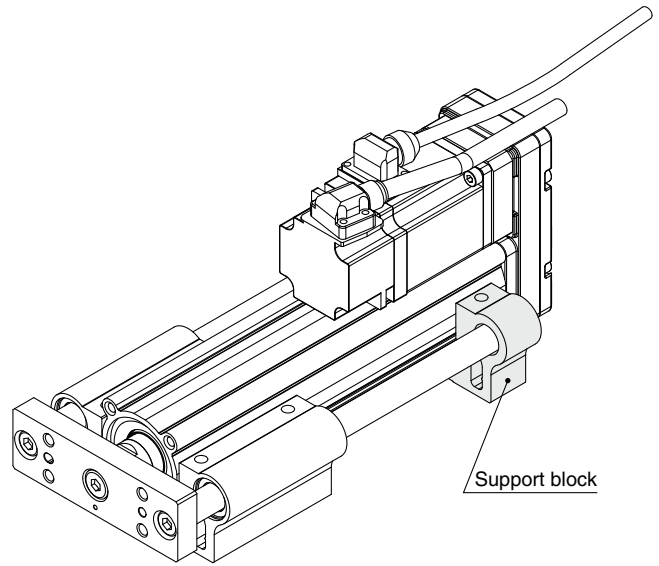
When the stroke exceeds 100 mm and the mounting orientation is horizontal, the body will be bent. Mounting the support block is recommended. (Please order it separately from the models shown below.)

Support Block Model

LEYG-S 025

● 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.

| [mm] | | | | | | | | | | |
|------|-----------|------------------------------|-----|-------|--------|----------|----|----|----|----|
| Size | Model | Stroke range | EB | G | GA | OA | OB | ST | WC | X |
| 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. Use taps on the bottom.



Series LEY/LEYG Electric Actuators/ Specific Product Precautions 1

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

Design/Selection

Warning

- 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.
- Do not use the product in applications where excessive external force or impact force is applied to it.**
This can cause failure.
- When used as a stopper, select the LEYG series “Sliding bearing” for a stroke of 30 mm or less.**
- 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

- INP output signal**
 - 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.
 - 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.

<Pushing Force and Trigger Level Range> Without load/With lateral load on rod end

| Model | Pushing speed [mm/s] | Pushing force (Setting input value) | Model | Pushing speed [mm/s] | Pushing force (Setting input value) |
|---------|----------------------|-------------------------------------|---|----------------------|-------------------------------------|
| LEY□16□ | 1 to 4 | 30% to 85% | LEY□16□A | 1 to 4 | 40% to 95% |
| | 5 to 20 | 35% to 85% | | 5 to 20 | 60% to 95% |
| | 21 to 50 | 60% to 85% | | 21 to 50 | 80% to 95% |
| LEY□25□ | 1 to 4 | 20% to 65% | LEY□25□A | 1 to 4 | 40% to 95% |
| | 5 to 20 | 35% to 65% | | 5 to 20 | 60% to 95% |
| | 21 to 35 | 50% to 65% | | 21 to 35 | 80% to 95% |
| LEY□32□ | 1 to 4 | 20% to 85% | * The pushing force in the table shows the range within which the completion signal [INP] is normally output. If the product is operated outside this range (low pushing force), the [INP] signal may be output when the actuator is moving (before pushing). | | |
| | 5 to 20 | 35% to 85% | | | |
| | 21 to 30 | 60% to 85% | | | |
| LEY□40□ | 1 to 4 | 20% to 65% | | | |
| | 5 to 20 | 35% to 65% | | | |
| | 21 to 30 | 50% to 65% | | | |

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% | | |

- 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.
- Use the product within the specified pushing speed range for the pushing operation.**
It may lead to damage and malfunction.
- 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.
- The actual speed of this actuator is affected by the load.**
Check the model selection section of the catalog.
- 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.
- 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.

- “Posn failed” alarm is generated.**
The product cannot reach a pushing start position due to variation in the target position.
- “Pushing ALM” alarm is generated.**
The product is pushed back from a pushing start position after starting to push.

LEFS
LEFBLEJS
LEJB

LEL

LEM

LEY
LEYGLES
LESHLEPY
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC□

LECS□

LECS-T

LECYM
LECYU

Motorless

LAT3



Series LEY/LEYG Electric Actuators/ Specific Product Precautions 2

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

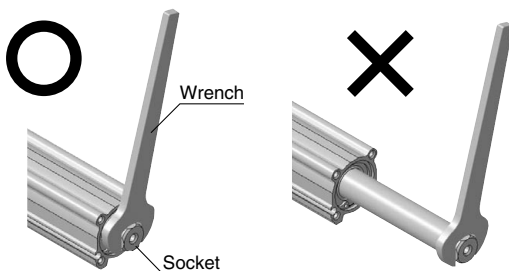
Handling

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. [Series LEYG]
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)

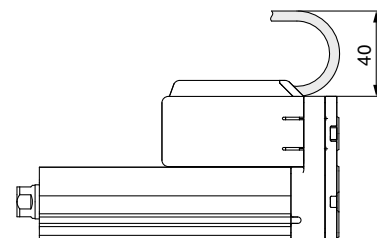
LEY16A□

| 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.



Series LEY/LEYG

Electric Actuators/ Specific Product Precautions 3

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

Handling

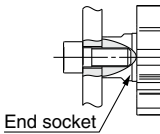
⚠ Caution

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.

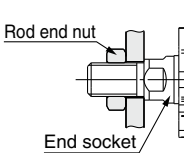
<Series LEY>

Workpiece fixed/Rod end female thread

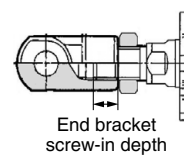


| Model | Screw size | Max. tightening torque [N·m] | Max. screw-in depth [mm] | End socket width across flats [mm] |
|----------|------------|------------------------------|--------------------------|------------------------------------|
| LEY16 | M5 x 0.8 | 3.0 | 10 | 14 |
| LEY25 | M8 x 1.25 | 12.5 | 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.)



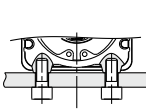
| Model | Thread size | Max. tightening torque [N·m] | Effective thread length [mm] | End socket width across flats [mm] |
|----------|-------------|------------------------------|------------------------------|------------------------------------|
| LEY16 | M8 x 1.25 | 12.5 | 12 | 14 |
| LEY25 | M14 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 Width across flats [mm] | Rod end nut Length [mm] | End bracket screw-in depth [mm] |
|----------|-------------------------------------|-------------------------|---------------------------------|
| LEY16 | 13 | 5 | 5 or more |
| LEY25 | 22 | 8 | 8 or more |
| LEY32/40 | 22 | 8 | 8 or more |
| LEY63 | 27 | 11 | 18 |

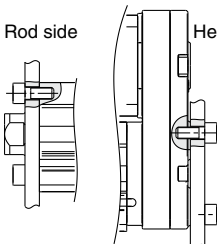
* Rod end nut is an accessory.

Body fixed/Body bottom tapped style (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 style

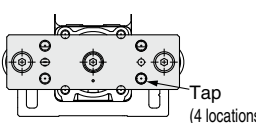


| Model | Screw size | Max. tightening torque [N·m] | Max. screw-in depth [mm] |
|----------|------------|------------------------------|--------------------------|
| LEY16 | M4 x 0.7 | 1.5 | 7 |
| LEY25 | M5 x 0.8 | 3.0 | 8 |
| LEY32/40 | M6 x 1.0 | 5.2 | 10 |
| LEY63 | M8 x 1.25 | 12.5 | 16 |

* Except the LEY□D.

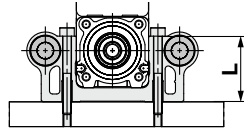
<Series LEYG>

Workpiece fixed/Plate tapped style



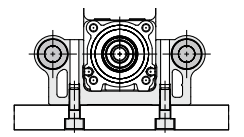
| Model | Screw size | Max. tightening torque [N·m] | Max. screw-in depth [mm] |
|--------------------------------------|------------|------------------------------|--------------------------|
| LEYG16 ^M | M5 x 0.8 | 3.0 | 8 |
| LEYG25 ^M | M6 x 1.0 | 5.2 | 11 |
| LEYG32 ^M / _{40L} | M6 x 1.0 | 5.2 | 12 |

Body fixed/Top mounting



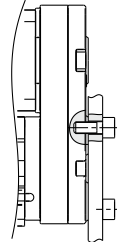
| Model | Screw size | Max. tightening torque [N·m] | Length: L [mm] |
|--------------------------------------|------------|------------------------------|----------------|
| LEYG16 ^M | M4 x 0.7 | 1.5 | 32 |
| LEYG25 ^M | M5 x 0.8 | 3.0 | 40.3 |
| LEYG32 ^M / _{40L} | M5 x 0.8 | 3.0 | 50.3 |

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 ^M / _{40L} | M6 x 1.0 | 5.2 | 12 |

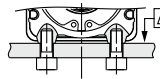
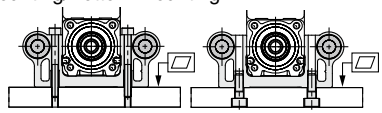
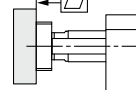
Body fixed/Head side tapped style



| 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 ^M / _{40L} | 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 base 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  | 0.05 mm or less |
| | Workpiece/Plate mounting  | 0.05 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.

LEFS
LEFB

LEJS
LEJB

LEL

LEM

LEY
LEYG

LES
LESH

LEPY
LEPS

LER

LEH

LEY-X5

11-LEFS

11-LEJS

25A-

LEC□

LECS□

LECS-T

LECYM
LECYU

Motorless

LAT3



Series LEY/LEYG Electric Actuators/ Specific Product Precautions 4

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

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 mmø and greater |
| 2 | Protected against solid foreign objects of 12 mmø and greater |
| 3 | Protected against solid foreign objects of 2.5 mmø and greater |
| 4 | Protected against solid foreign objects of 1.0 mmø 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 | Dripproof type 1 |
| 2 | Protected against vertically falling water drops when enclosure tilted up to 15° | Dripproof type 2 |
| 3 | Protected against rainfall when enclosure tilted up to 60° | Rainproof type |
| 4 | Protected against splashing water | Splashproof 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