

Electric Actuator



LEM Series

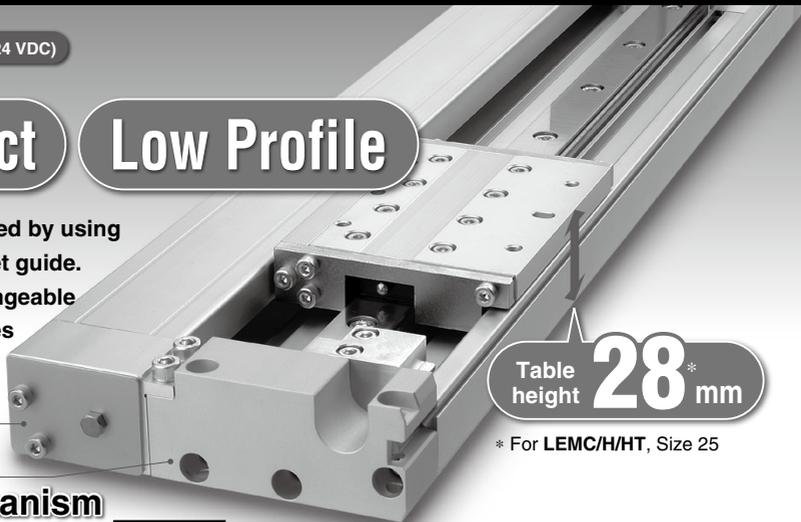
Low Profile/Slider Type

Step Motor (Servo/24 VDC)

Compact

Low Profile

Table height reduced by using belt drive and offset guide.
Mounting interchangeable with the E-MY series



Belt drive unit

Guide unit

Table height **28*** mm

* For LEMC/H/HT, Size 25

Guide mechanism can be selected.

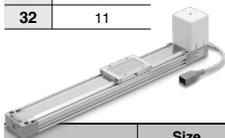
►Page 170

Basic type

LEMB Series

- Light load transfer
- Combining with external guide
- Long stroke

| Size | Work load [kg] |
|------|----------------|
| 25 | 6 |
| 32 | 11 |



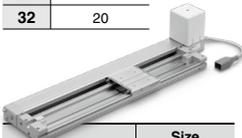
| | Size | |
|-------------------|------|------|
| | 25 | 32 |
| Stroke [mm] | 2000 | 2000 |
| Table height [mm] | 40 | 40 |
| Speed [mm/s] | 1000 | 1000 |

Cam follower guide type

LEMC Series

- Workpiece direct mounting
- Long stroke

| Size | Work load [kg] |
|------|----------------|
| 25 | 10 |
| 32 | 20 |



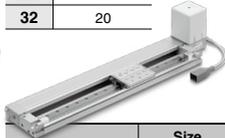
| | Size | |
|-------------------|------|------|
| | 25 | 32 |
| Stroke [mm] | 2000 | 2000 |
| Table height [mm] | 28 | 37 |
| Speed [mm/s] | 1000 | 1000 |

Linear guide single axis type

LEMH Series

- Workpiece direct mounting
- Provides more moment resistance than the cam follower guide type.
- High speed transfer

| Size | Work load [kg] |
|------|----------------|
| 25 | 10 |
| 32 | 20 |



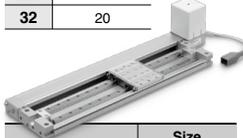
| | Size | |
|-------------------|------|------|
| | 25 | 32 |
| Stroke [mm] | 1000 | 1500 |
| Table height [mm] | 28 | 37 |
| Speed [mm/s] | 2000 | 2000 |

Linear guide double axis type

LEMHT Series

- Workpiece direct mounting
- Provides more moment resistance than the linear guide single axis type.
- High speed transfer

| Size | Work load [kg] |
|------|----------------|
| 25 | 10 |
| 32 | 20 |



| | Size | |
|-------------------|------|------|
| | 25 | 32 |
| Stroke [mm] | 1000 | 1500 |
| Table height [mm] | 28 | 37 |
| Speed [mm/s] | 2000 | 2000 |

Selectable controllability

(Controller)

Step Motor (Servo/24 VDC)

► Programless type (With stroke study)

LECP2 Series

- End to end operation similar to an air cylinder
- 2 stroke end points + 12 intermediate points positioning
- Control panel setting
- Wire-saving design



Specialized for LEM Series

► Programless type

LECP1 Series

- 14 points positioning
- Control panel setting



►Page 547

► Step data input type

LECP6 Series

- 64 points positioning

► CC-Link direct input type

LECPMJ Series*

- EtherCAT®/EtherNet/IP™/PROFINET™/DeviceNet™/IO-Link direct input type
- JXCE1/91/P1/D1/L1 Series

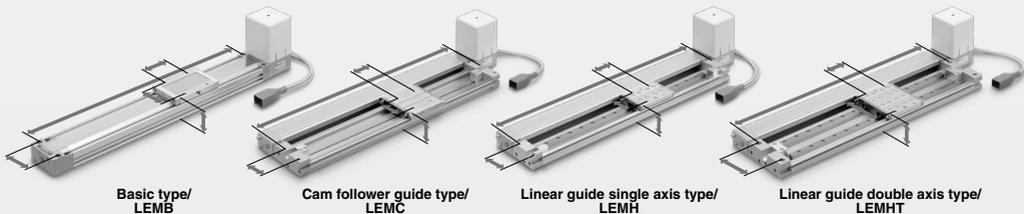
* Not applicable to CE.



LEM Series

- Mounting interchangeable with the former E-MY series

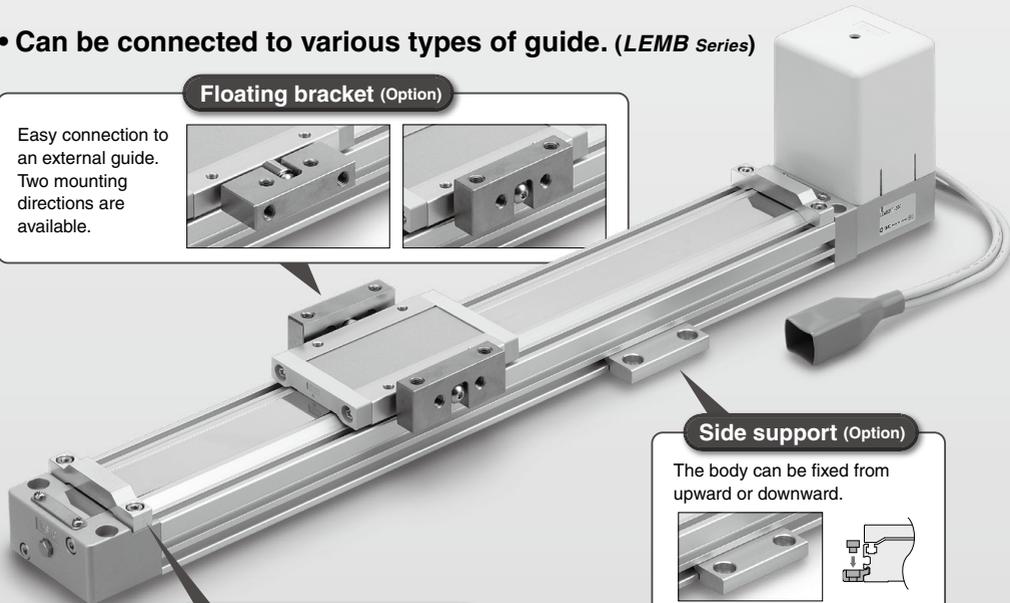
| | | | | |
|------------|--------|---|-------------|---------|
| LEM series | LEM□25 | ← | E-MY series | E-MY□16 |
| | LEM□32 | | | E-MY□25 |



- Can be connected to various types of guide. (*LEMB Series*)

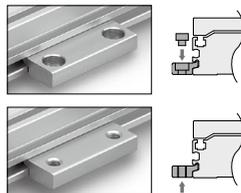
Floating bracket (Option)

Easy connection to an external guide. Two mounting directions are available.



Side support (Option)

The body can be fixed from upward or downward.



Stroke adjustment unit (Option)

To adjust the stroke end like an air cylinder, use the LECP2 controller and the stroke adjustment unit.

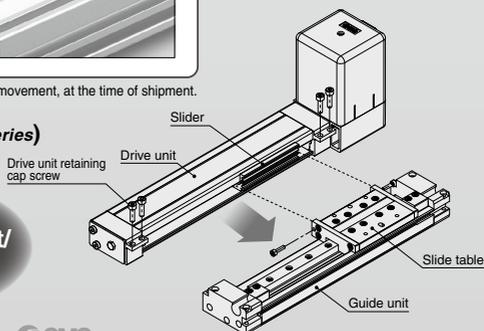


* The movable length of the LEM is the stroke + 6 mm of table movement, at the time of shipment.

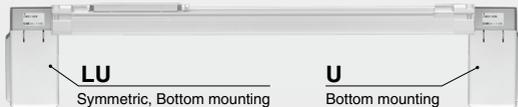
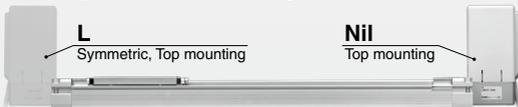
- Easy maintenance (*LEMC/H/HT Series*)

The drive unit and the guide unit are separable.

Easy attachment/
detachment



- **Motor placement:** Mounting position of the motor is user selectable and can either be on the top, bottom, left, or right of the actuator.

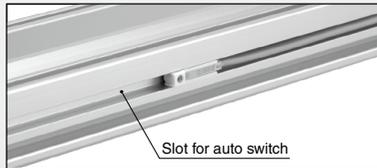


Motor mounting position

| | |
|-----|----------------------------|
| Nil | Top mounting |
| U | Bottom mounting |
| L' | Symmetric, Top mounting |
| LU' | Symmetric, Bottom mounting |

* Can be selected only for the LEMC, LEMH, LEMHT.

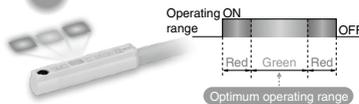
- **Solid state auto switch can be mounted for checking the limit and intermediate signal.**



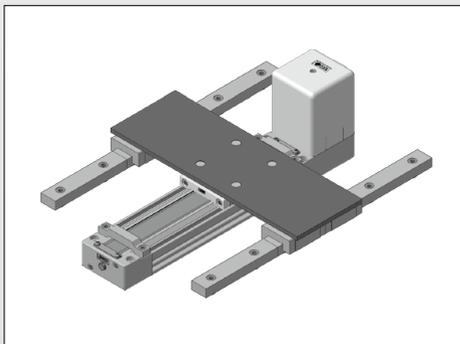
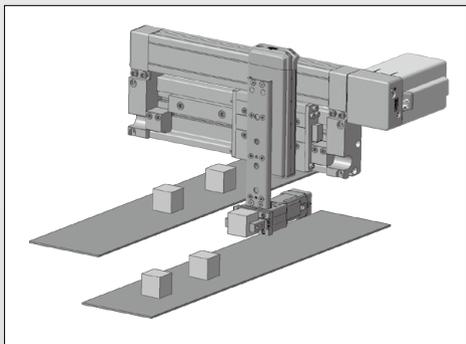
2-color indicator solid state auto switch

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

A green light lights up at the optimum operating range.



Application Examples



Variations

Belt Drive

(Note) Cannot be used for vertical transfer.

| Series | Size | Equivalent lead [mm] | Stroke [mm]* | Work load: Horizontal [kg] | Speed [mm/s] | Page |
|--|------|----------------------|--|----------------------------|--------------|----------|
| LEMB Basic type | 25 | 48 | 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000, (1100), 1200, (1300), (1400), 1500, (1600), (1700), (1800), (1900), 2000 | 6 (10)** | 1000 | Page 170 |
| | 32 | | | 11 (20)** | 1000 | Page 170 |
| LEMC Cam follower guide type | 25 | 48 | 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000, (1100), 1200, (1300), (1400), 1500, (1600), (1700), (1800), (1900), 2000 | 10 | 1000 | Page 170 |
| | 32 | | | 20 | 1000 | Page 170 |
| LEMH Linear guide single axis type | 25 | 48 | 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, (700), (800), (900), (1000) | 10 | 2000 | Page 170 |
| | 32 | | 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, (700), (800), (900), (1000), (1100), (1200), (1300), (1400), (1500) | 20 | 2000 | Page 170 |
| LEMHT Linear guide double axis type | 25 | 48 | 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, (700), (800), (900), (1000), (1100), (1200), (1300), (1400), (1500) | 10 | 2000 | Page 170 |
| | 32 | | 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, (700), (800), (900), (1000), (1100), (1200), (1300), (1400), (1500) | 20 | 2000 | Page 170 |

* Strokes shown in () are produced upon receipt of order. Please consult with SMC as all non-standard and non-made-to-order strokes are produced as special orders.
 ** (): Using an external guide (Provided by customer).

Model Selection Page 170

Step Motor (Servo/24 VDC)

Electric Actuator/Low Profile Slider Type: Basic Type *LEMB Series*



How to Order Page 178
 Specifications Page 180
 Construction Page 181
 Dimensions Page 182

Step Motor (Servo/24 VDC)

Electric Actuator/Low Profile Slider Type: Cam Follower Guide Type *LEMC Series*



How to Order Page 186
 Specifications Page 188
 Construction Page 189
 Dimensions Page 190

Step Motor (Servo/24 VDC)

Electric Actuator/Low Profile Slider Type: Linear Guide Type *LEMH/HT Series*



How to Order Page 196
 Specifications Page 198
 Construction Page 199
 Dimensions Page 201
 Auto Switch Page 210
 Specific Product Precautions Page 213

Step Motor (Servo/24 VDC) Controller

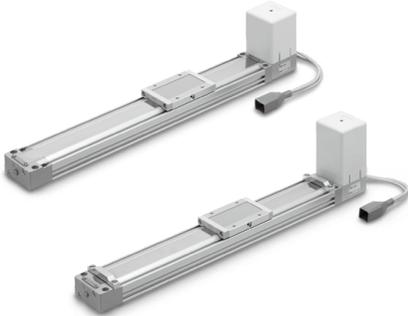
Programless Controller (With Stroke Study)/
LECP2 Series Page 583
 Programless Controller/*LECP1 Series* Page 576
 Step Data Input Type/*LECP6 Series* Page 560
 Controller Setting Kit/*LEC-W2* Page 569
 Teaching Box/*LEC-T1* Page 570
 CC-Link Direct Input Type/*LECPMJ Series* Page 600
 Controller Setting Kit/*LEC-W2* Page 603-2
 Teaching Box/*LEC-T1* Page 603-3
 EtherCAT®/EtherNet/IP™/PROFINET/DeviceNet™/IO-Link
 Direct Input Type/*JXCE1/91/P1/D1/L1 Series* Page 603-5
 Controller Setting Kit/*LEC-W2* Page 603-10
 Teaching Box/*LEC-T1* Page 605
 Gateway Unit/*LEC-G Series* Page 572



Low Profile Slider Type

Basic Type *LEMB Series*

Step Motor (Servo/24 VDC)



Cam Follower Guide Type *LEMC Series*

Step Motor (Servo/24 VDC)



Linear Guide Single Axis Type *LEMH Series*

Step Motor (Servo/24 VDC)



Linear Guide Double Axis Type *LEMHT Series*

Step Motor (Servo/24 VDC)



Model Selection

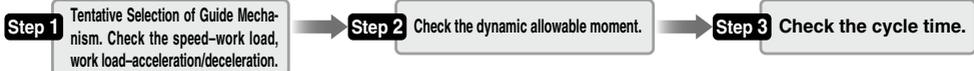


LEMB Series ▶ Pages 178, 179-1

LEMC Series ▶ Pages 186, 187-1

LEMH/HT Series ▶ Pages 196, 197-1

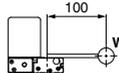
Selection Procedure



Selection Example

Operating conditions

- Work load: 10 [kg]
- Speed: 1000 [mm/s]
- Acceleration/Deceleration: 2500 [mm/s²]
- Stroke: 600 [mm]
- Mounting orientation: Horizontal upward
- Workpiece mounting condition



Step 1

Tentative Selection of Guide Mechanism

| Series | Type | Guideline for tentative model selection | | | | | | Max. stroke [mm] | Max. speed [mm/s] | Note |
|--------|-------------------------------|---|----------------------------|----------------------------------|------------------------------|-------------------|--------------------------------|------------------|---|------|
| | | Use of external guide | Direct loaded (Horizontal) | Table accuracy ^(Note) | Direct mount (Wall mounting) | Moment resistance | | | | |
| LEMB | Basic type | ⊙ | ○ | △ | △ | △ | 2000 | 1000 | <ul style="list-style-type: none"> • Light load transfer • Combining with external guide • Long stroke | |
| LEMC | Cam follower guide type | × | ⊙ | ⊙ | ○ | ○ | 2000 | 1000 | <ul style="list-style-type: none"> • Workpiece direct mounting • Long stroke | |
| LEMH | Linear guide single axis type | × | ⊙ | ⊙ | ⊙ | ⊙ | Size 25: 1000 Size 32: 1500 | 2000 | <ul style="list-style-type: none"> • Workpiece direct mounting • Provides more moment resistance than the cam follower guide type. • High speed transfer | |
| LEMHT | Linear guide double axis type | × | ⊙ | ⊙ | ⊙ | ⊙ | Size 25: 1000 Size 32: 1500 | 2000 | <ul style="list-style-type: none"> • Workpiece direct mounting • Provides more moment resistance than the linear guide single axis type. • High speed transfer | |

⊙: Most suitable ○: Suitable △: Usable ×: Not recommended

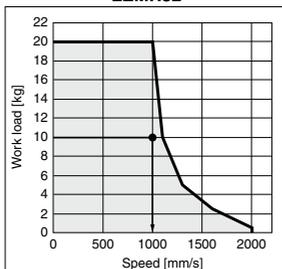
(Note) The table accuracy means the amount of table deflection when a moment is applied.

In conditions where a moment is generated, tentatively select the LEMH series.

<Speed-Work Load Graph>

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

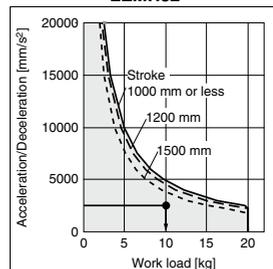
LEMH32



<Work Load-Acceleration/Deceleration Graph>

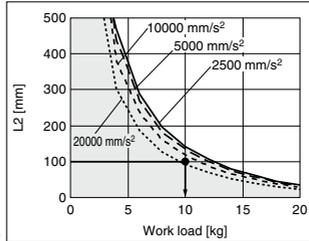
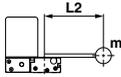
Check that the set acceleration/deceleration of the work load is within the allowable range, with reference to the <Work Load-Acceleration/Deceleration Graph>.

LEMH32



Selection Procedure

Step 2 Check the dynamic allowable moment.



Based on the above calculation result, the LEMH32T-500 is selected.

Step 3 Check the cycle time.

Refer to method 1 for a rough estimate, and method 2 for a more precise value.

Method 1: Check the cycle time graph. (Page 172)

Method 2: Calculation

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.

$$T4 = 0.3 \text{ [s]}$$

Calculation example)

T1 to T4 can be calculated as follows.

$$T1 = V/a1 = 1000/2500 = 0.4 \text{ [s]}$$

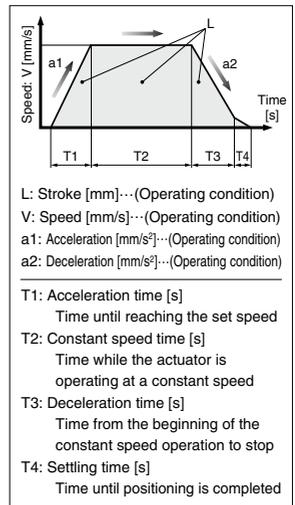
$$T3 = V/a2 = 1000/2500 = 0.4 \text{ [s]}$$

$$\begin{aligned} T2 &= \frac{L - 0.5 \cdot V \cdot (T1 + T3)}{V} \\ &= \frac{600 - 0.5 \cdot 1000 \cdot (0.4 + 0.4)}{1000} \\ &= 0.2 \text{ [s]} \end{aligned}$$

$$T4 = 0.3 \text{ [s]}$$

Therefore, the **cycle time** can be obtained as follows.

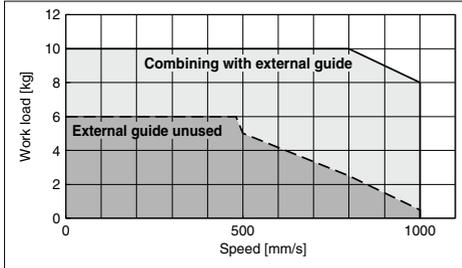
$$\begin{aligned} T &= T1 + T2 + T3 + T4 \\ &= 0.4 + 0.2 + 0.4 + 0.3 \\ &= 1.3 \text{ [s]} \end{aligned}$$



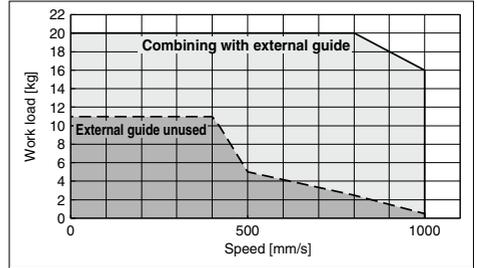
Speed-Work Load Graph (Guide) Step Motor (Servo/24 VDC)

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

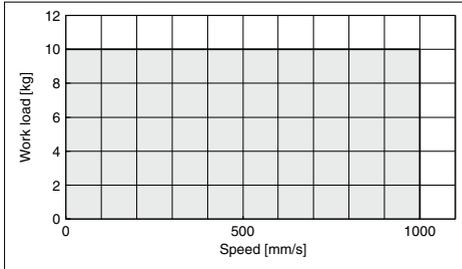
LEMB25



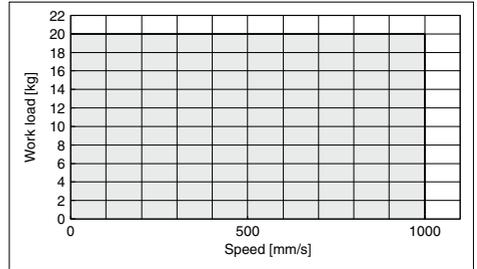
LEMB32



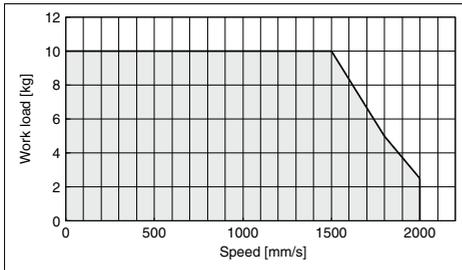
LEMC25



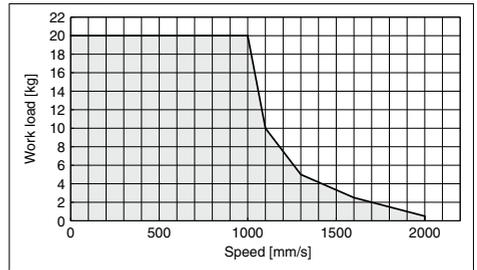
LEMC32



LEMH/HT25

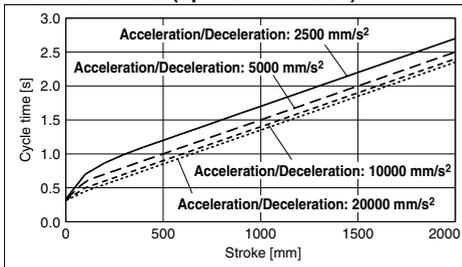


LEMH/HT32

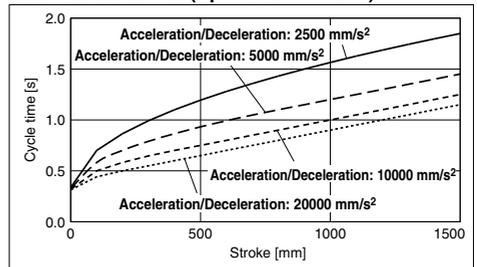


Cycle Time Graph (Guide)

LEMB□/LEMC□ (Speed: 1000 mm/s)



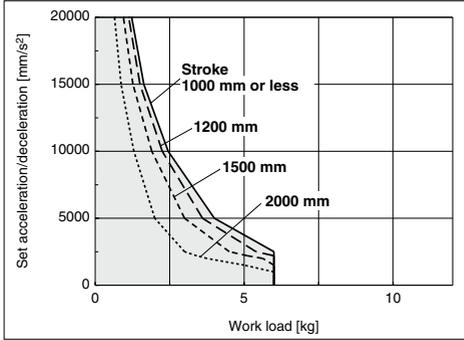
LEMH□/LEMHT□ (Speed: 2000 mm/s)



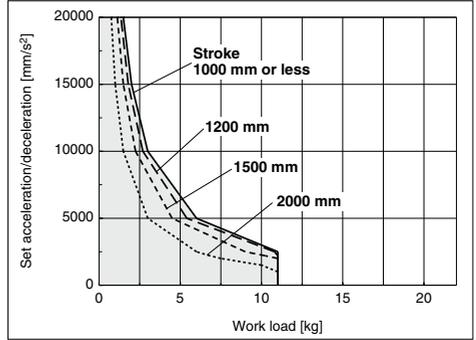
The following shows the allowable values of set acceleration to the work loads. Set the acceleration within the allowable range.

Work Load–Acceleration/Deceleration Graph (Guide)

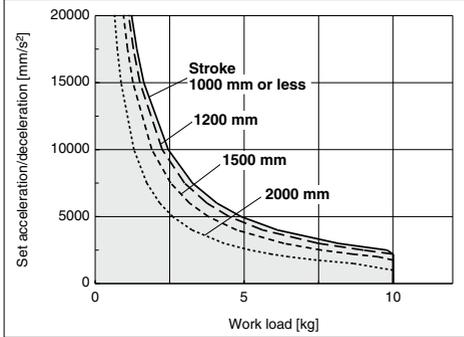
LEMB25



LEMB32

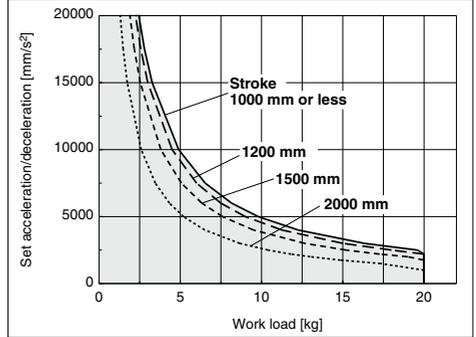


LEMB25 (Combining with external guide)/LEMC25



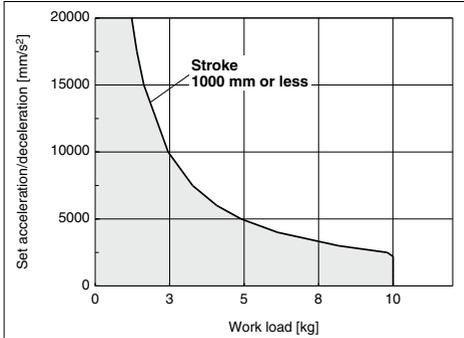
* Friction coefficient for combining with external guide is 0.1 or less.

LEMB32 (Combining with external guide)/LEMC32

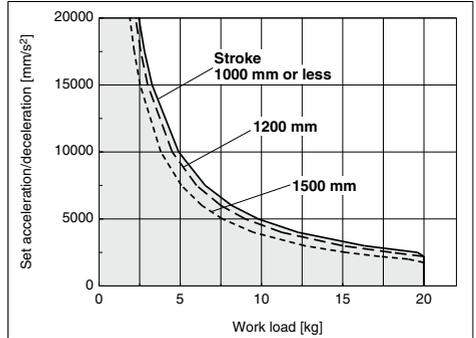


* Friction coefficient for combining with external guide is 0.1 or less.

LEMH25/LEMHT25



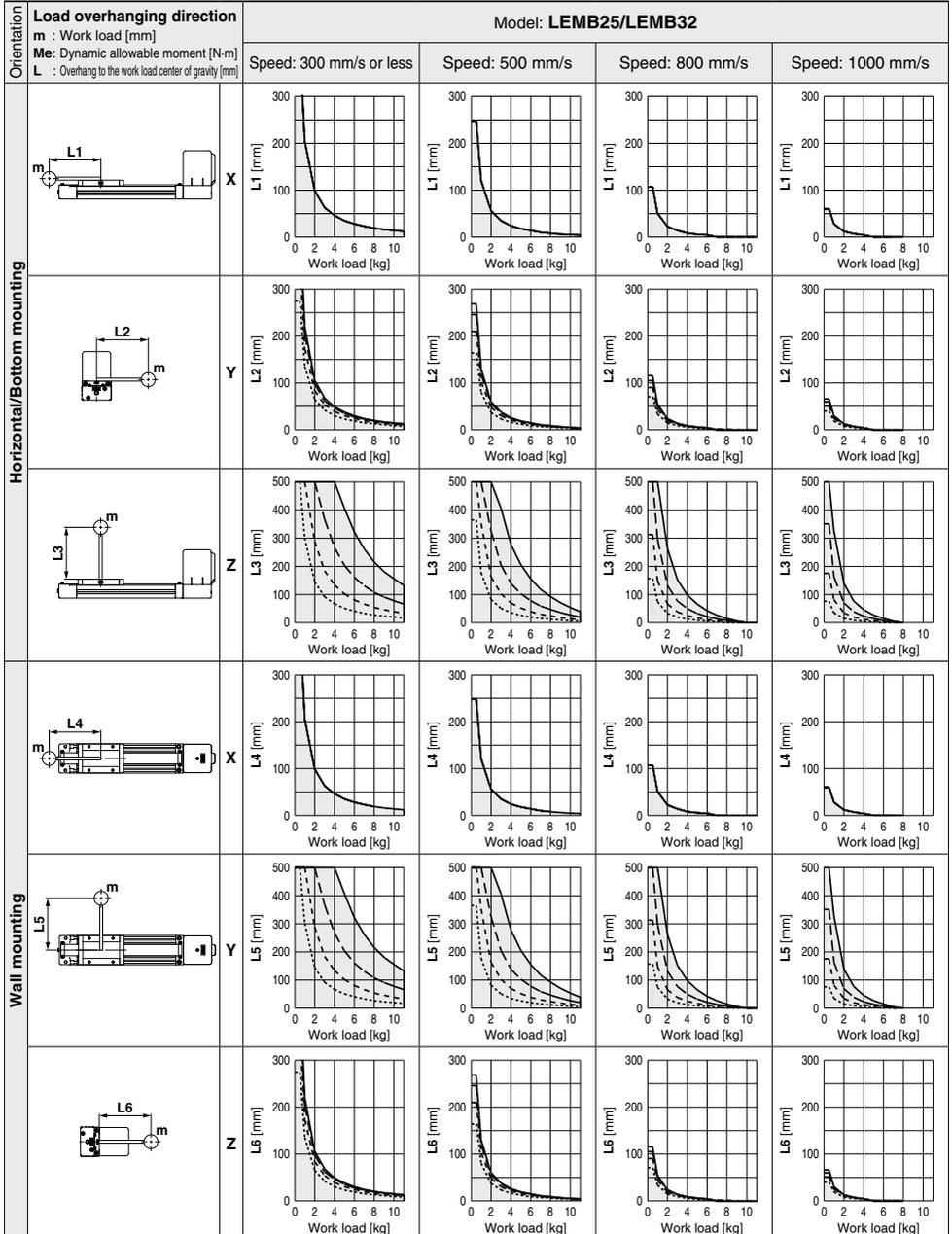
LEMH32/LEMHT32



* This graph shows the amount of allowable overhang (guide unit) when the center of gravity of the workpiece overhangs in one direction. When selecting the overhang, refer to "Calculation of Guide Load Factor" for confirmation.

Dynamic Allowable Moment (LEMB Series)

Acceleration/Deceleration — 2500 mm/s² - - - 5000 mm/s² - - - - 10000 mm/s² ······ 20000 mm/s²

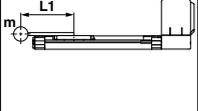
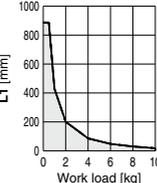
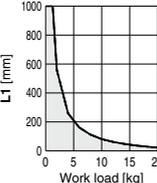
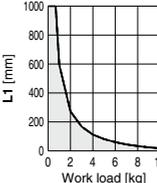
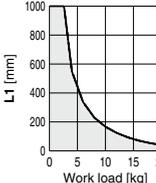
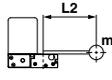
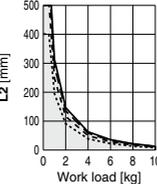
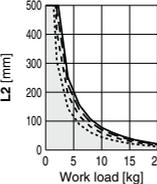
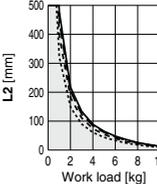
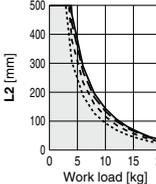
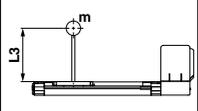
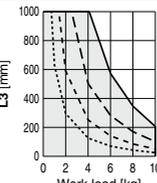
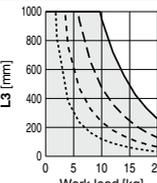
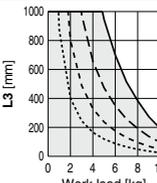
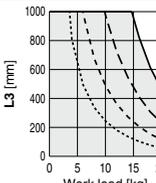
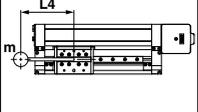
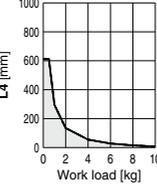
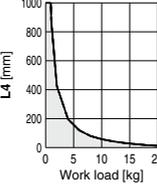
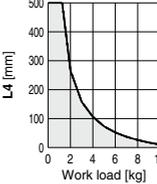
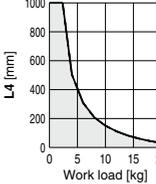
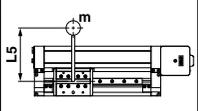
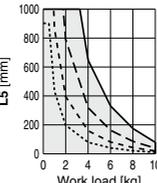
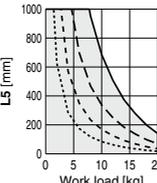
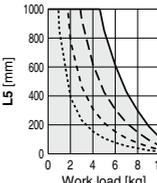
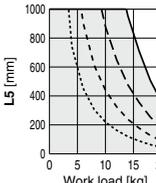
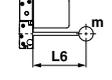
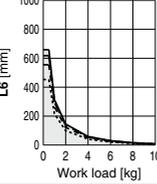
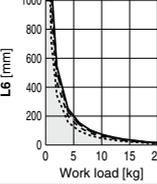
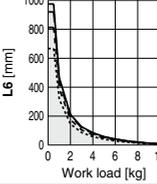
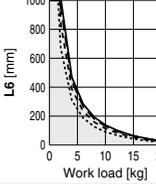


* Vertical mounting is not available.

Dynamic Allowable Moment (LEMC/LEMH Series)

* This graph shows the amount of allowable overhang (guide unit) when the center of gravity of the workpiece overhangs in one direction. When selecting the overhang, refer to "Calculation of Guide Load Factor" for confirmation.

Acceleration/Deceleration — 2500 mm/s² - - - 5000 mm/s² - - - - 10000 mm/s² ······ 20000 mm/s²

| Orientation | Load overhanging direction m : Work load [mm] Me : Dynamic allowable moment [N·m] L : Overhang to the work load center of gravity [mm] | Model | | | | |
|----------------------------|---|---|---|---|---|--|
| | | LEMC25 | LEMC32 | LEMH25 | LEMH32 | |
| Horizontal/Bottom mounting | X |  |  |  |  |  |
| | Y |  |  |  |  |  |
| | Z |  |  |  |  |  |
| Wall mounting | X |  |  |  |  |  |
| | Y |  |  |  |  |  |
| | Z |  |  |  |  |  |

* Vertical mounting is not available.

* This graph shows the amount of allowable overhang (guide unit) when the center of gravity of the workpiece overhangs in one direction. When selecting the overhang, refer to "Calculation of Guide Load Factor" for confirmation.

Dynamic Allowable Moment (LEMHT Series)

Acceleration/Deceleration ——— 2500 mm/s² - - - - 5000 mm/s² - - - - 10000 mm/s² ······ 20000 mm/s²

| Orientation | Load overhanging direction m : Work load [mm] Me: Dynamic allowable moment [N·m] L : Overhang to the work load center of gravity [mm] | Model | |
|----------------------------|--|---------|---------|
| | | LEMHT25 | LEMHT32 |
| Horizontal/Bottom mounting | X | | |
| | Y | | |
| | Z | | |
| Wall mounting | X | | |
| | Y | | |
| | Z | | |

* Vertical mounting is not available.

Calculation of Guide Load Factor

1. Decide operating conditions.

Model: LEM

Size: 25/32

Mounting orientation: Horizontal/Bottom/Wall

Acceleration [mm/s^2]: a

Work load [kg]: m

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

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

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

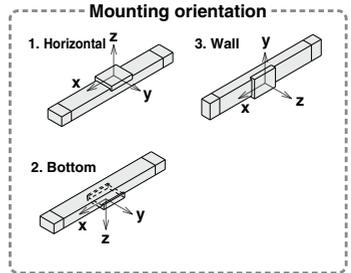
4. Calculate the load factor for each direction.

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

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

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

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



Example

1. Operating conditions

Model: LEMH

Size: 32

Mounting orientation: Horizontal

Acceleration [mm/s^2]: 5000

Work load [kg]: 5

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

2. Select three graphs from the top of the right side first row on page 175.

3. $Lx = 420 \text{ mm}, Ly = 300 \text{ mm}, Lz = 1000 \text{ mm}$

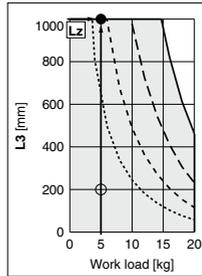
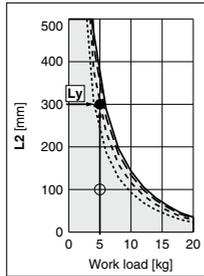
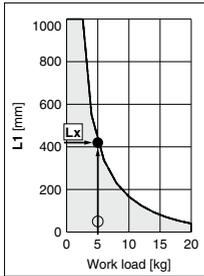
4. The load factor for each direction can be obtained as follows.

$$\alpha_x = 50/420 = 0.12$$

$$\alpha_y = 100/300 = 0.34$$

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

5. $\alpha_x + \alpha_y + \alpha_z = 0.66 \leq 1$



Electric Actuator/Low Profile Slider Type Basic Type



Applicable to the
LEC□ series

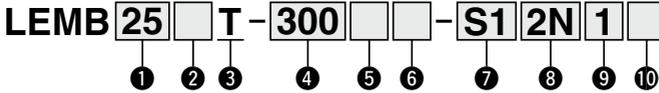
LEMB Series LEMB25, 32

Refer to page 179-1 for the communication protocols EtherCAT®, EtherNet/IP™, PROFINET, DeviceNet™, and IO-Link.

Caution

| | | | |
|------------|------------------|-------------|--------------------|
| LEM series | LEM□25 LEM□32 | E-MY series | E-MY□16 E-MY□25 |
|------------|------------------|-------------|--------------------|

How to Order

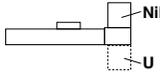


1 Size

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

2 Motor mounting position

| | |
|-----|-----------------|
| NII | Top mounting |
| U | Bottom mounting |



3 Equivalent lead

| | |
|---|-------|
| T | 48 mm |
|---|-------|

5 Motor option

| | |
|-----|----------------|
| NII | Without option |
| B | With lock |

6 Stroke adjustment unit (Included)

| | |
|-----|-----------------|
| NII | None |
| M | Motor side only |
| E | End side only |
| W | Both sides |

4 Stroke

●: Standard ○: Produced upon receipt of order

| Model | Stroke | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 |
|--------|--------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|
| LEMB25 | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ○ | ● | ○ | ○ | ● | ○ | ○ | ○ | ○ | ● |
| LEMB32 | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | ○ |

* Please consult with SMC as all non-standard and non-made-to-order strokes are produced as special orders.

Caution

[CE-compliant products]

① EMC compliance was tested by combining the electric actuator LEM 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 CC-Link direct input type (LECPMJ) is not CE-compliant.

[UL-compliant products]

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

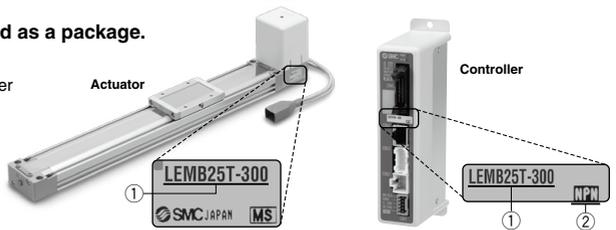
Refer to pages 210 to 212 for auto switches.

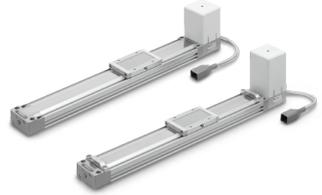
The actuator and controller are sold as a package. (They can be ordered separately.)

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

<Check the following before use.>

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





7 Actuator cable type/length

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

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

*2 The standard cable should only be used on fixed parts.
For use on moving parts, select the robotic cable.

8 Controller type

| | | |
|------------|---|-----|
| Nii | Without controller | |
| 6N | LECP6 | NPN |
| 6P | (Step data input type) | PNP |
| 2N | LECP2* | NPN |
| 2P | (Programless type (With stroke study)) | PNP |
| 1N | LECP1 | NPN |
| 1P | (Programless type) | PNP |
| MJ | LECPMJ | — |
| | (CC-Link direct input type) | |

* Select the LECP2 when setting the stroke range using the stroke adjustment unit or an external stopper.

9 I/O cable length*¹, Communication plug

| | |
|------------|--|
| Nii | Without cable (Without communication plug connector)* ² |
| 1 | 1.5 m |
| 3 | 3 m |
| 5 | 5 m |
| S | Straight type communication plug connector* ² |
| T | T-branch type communication plug connector* ² |

*1 When "Without controller" is selected for controller types, I/O cable cannot be selected. Refer to page 589 (For LECP2), page 582 (For LECP1) or page 568 (For LECP6) if I/O cable is required.

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

10 Controller mounting

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

* DIN rail is not included. Order it separately.

Compatible Controller

| Type | Programless type (With stroke study) | Programless type | Step data input type | CC-Link direct input type |
|------------------------------------|---|---|---|---|
| |  |  |  |  |
| Series | LECP2 | LECP1 | LECP6 | LECPMJ |
| Features | End to end operation similar to an air cylinder using the stroke study function | Capable of setting up operation (step data) without using a PC or teaching box | Value (Step data) input Standard controller | CC-Link direct input |
| Compatible motor | Step motor (Servo/24 VDC) | | | |
| Maximum number of step data | 14 points (2 stroke end points + 12 intermediate points) | 14 points | | 64 points |
| Power supply voltage | 24 VDC | | | |
| Reference page | Page 583 | Page 576 | Page 560 | Page 600 |

Electric Actuator/Low Profile Slider Type Basic Type



Applicable to the
JXC□ series

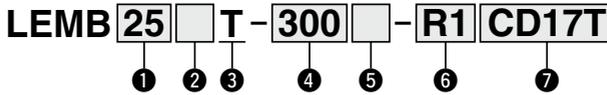
LEMB Series LEMB25, 32

Caution

Refer to page 178 for the communication protocol CC-Link.

How to Order

| | | | | |
|------------|--------|---|-------------|---------|
| LEM series | LEM□25 | ← | E-MY series | E-MY□16 |
| | LEM□32 | | | E-MY□25 |

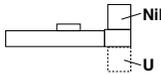


1 Size

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

2 Motor mounting position

| | |
|-----|-----------------|
| Nil | Top mounting |
| U | Bottom mounting |



3 Equivalent lead

| | |
|---|-------|
| T | 48 mm |
|---|-------|

5 Motor option

| | |
|-----|----------------|
| Nil | Without option |
| B | With lock |

4 Stroke

●: Standard/○: Produced upon receipt of order

| Model \ Stroke | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | |
|----------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|---|
| LEMB25 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| LEMB32 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

* Please consult with SMC as all non-standard and non-made-to-order strokes are produced as special orders.

Caution

[CE-compliant products]

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

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

Refer to pages 210 to 212 for auto switches.



6 Actuator cable type/length

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

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

*2 The standard cable should only be used on fixed parts.
For use on moving parts, select the robotic cable.

7 Controller

| | |
|--------------|--------------------|
| Nil | Without controller |
| C□1□□ | With controller |



Communication protocol

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

For single axis

Communication plug connector for DeviceNet™

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

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

Mounting

| | |
|-----------|----------------|
| 7 | Screw mounting |
| 8* | DIN rail |

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

Compatible Controller

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

LEMB Series

Step Motor (Servo/24 VDC)



Speed/Acceleration (Set values for LEC1P/2)

Table 1 Switch and Speed ^{Note 1)}

| Switch no. | Speed [mm/s] |
|------------|--------------|
| 0 | 48 |
| 1 | 75 |
| 2 | 100 |
| 3 | 150 |
| 4 | 200 |
| 5 | 250 |
| 6 | 300 |
| 7 | 350 |
| 8 | 400 |
| 9 | 450 |
| 10 | 500 |
| 11 | 600 |
| 12 | 700 |
| 13 | 800 |
| 14 | 900 |
| 15 | 1000 |

Table 2 Switch and Acceleration ^{Note 1)}

| Switch no. | Acceleration [mm/s ²] |
|------------|-----------------------------------|
| 0 | 250 |
| 1 | 500 |
| 2 | 1000 |
| 3 | 1500 |
| 4 | 2000 |
| 5 | 2500 |
| 6 | 3000 |
| 7 | 4000 |
| 8 | 5000 |
| 9 | 6000 |
| 10 | 7500 |
| 11 | 10000 |
| 12 | 12500 |
| 13 | 15000 |
| 14 | 17500 |
| 15 | 20000 |

Note) The factory default setting for the switch is No.0.

Weight

| Stroke | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 700 | 800 | 900 | 1000 | (1100) | 1200 | (1300) | (1400) | 1500 | (1600) | (1700) | (1800) | (1900) | 2000 | |
|----------------------------------|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------|------|--------|--------|------|--------|--------|--------|--------|------|------|
| Product weight [kg] | LEMB25 | 1.66 | 1.75 | 1.84 | 1.92 | 2.01 | 2.10 | 2.19 | 2.27 | 2.37 | 2.45 | 2.54 | 2.62 | 2.80 | 2.97 | 3.15 | 3.33 | 3.50 | 3.68 | 3.85 | 4.03 | 4.20 | 4.38 | 4.55 | 4.73 | 4.90 | 5.08 |
| | LEMB32 | 2.02 | 2.11 | 2.20 | 2.29 | 2.38 | 2.47 | 2.55 | 2.64 | 2.73 | 2.82 | 2.91 | 3.00 | 3.17 | 3.35 | 3.53 | 3.70 | 3.88 | 4.06 | 4.23 | 4.41 | 4.59 | 4.76 | 4.94 | 5.12 | 5.29 | 5.47 |
| Additional weight with lock [kg] | | 0.60 | | | | | | | | | | | | | | | | | | | | | | | | | |

Specifications

Step Motor (Servo/24 VDC)

| Model | | LEMB25 | LEMB32 |
|--------------------------------|--|--|--|
| Stroke [mm] ^{Note 1)} | | 50, 100, 150, 200, 250 300, 350, 400, 450, 500 550, 600, 700, 800, 900 1000, (1100), 1200, (1300) (1400), 1500, (1600), (1700) (1800), (1900), 2000 | 50, 100, 150, 200, 250 300, 350, 400, 450, 500 550, 600, 700, 800, 900 1000, (1100), 1200, (1300) (1400), 1500, (1600), (1700) (1800), (1900), 2000 |
| Actuator specifications | Work load [kg] ^{Note 2)} | Horizontal | 6 (10) |
| | Speed [mm/s] ^{Note 2)} | 48 to 1000 (Refer to Table 1 for set values when LEC1P or 2 is selected.) | |
| | Max. acceleration/deceleration [mm/s ²] ^{Note 9)} | 20000 (Depends on the work load.) (Refer to Table 2 for set values when LEC1P or 2 is selected.) | |
| | Positioning repeatability [mm] | ±0.08 | |
| | Lost motion [mm] ^{Note 10)} | 0.1 or less | |
| | Lead [mm] | 48 | |
| | Actuation type | Belt | |
| | Guide type | Sliding bearing | |
| | Operating temperature range [°C] | 5 to 40 | |
| Electric specifications | Operating humidity range [%RH] | 90 or less (No condensation) | |
| | Allowable external force [N] ^{Note 8)} | 10 | 20 |
| | Motor size | □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 3)} | 50 | 52 |
| | Standby power consumption when operating [W] ^{Note 4)} | 44 | 44 |
| | Max. instantaneous power consumption [W] ^{Note 5)} | 123 | 127 |
| Lock unit specifications | Type ^{Note 6)} | Non-magnetizing lock | |
| | Holding force [N] | 36 | |
| | Power consumption [W] ^{Note 7)} | 5 | |
| Rated voltage [V] | 24 VDC±10% | | |

Note 1) Please consult with SMC as all non-standard and non-made-to-order strokes are produced as special orders.

Note 2) Speed changes according to the work load.

Check "Speed-Work Load Graph (Guide)" on page 172. The work load changes according to the work load mounting condition. Check "Dynamic Allowable Moment" on page 174.

Furthermore, if the cable length exceeds 5 m, then it will decrease by up to 10% for each 5 m. () : When combined with external guide and the friction coefficient is 0.1 or less.

Note 3) The power consumption (including the controller) is for when the actuator is operating.

Note 4) The standby power consumption when operating (including the controller) is for when the actuator is stopped in the set position during operation.

Note 5) 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 6) With lock only

Note 7) For an actuator with lock, add the power consumption for the lock.

Note 8) The resistance value of the attached equipment should be within the allowable external resistance value.

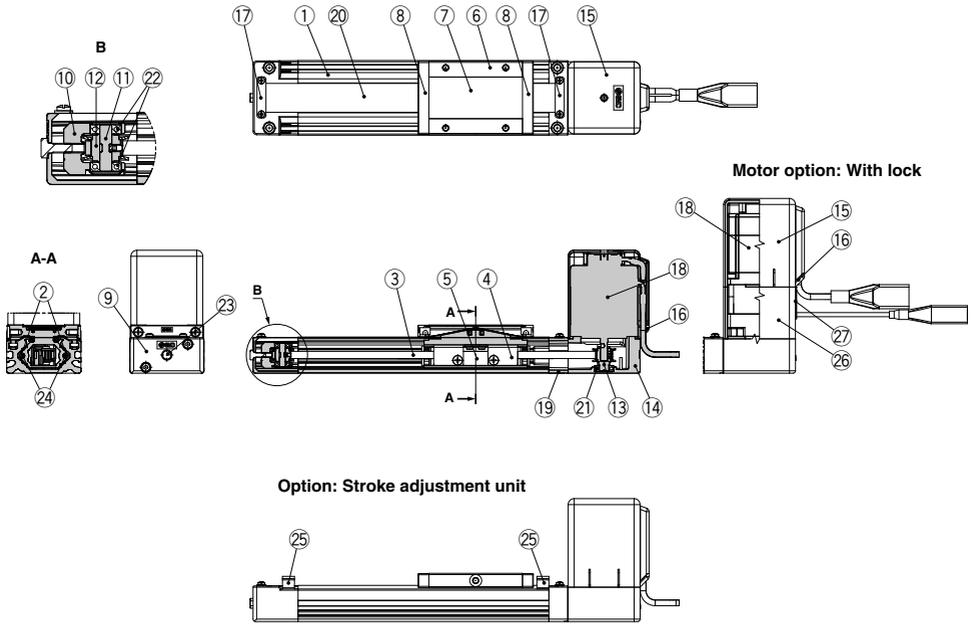
Note 9) Maximum acceleration and deceleration are limited by the work load and stroke.

Refer to "Work Load-Acceleration/Deceleration Graph (Guide)" on page 173.

Note 10) A reference value for correcting an error in reciprocal operation.

Construction

LEMB



Component Parts

| No. | Description | Material | Note |
|-----|------------------|---------------------|------------------------------------|
| 1 | Body | Aluminum alloy | Anodized |
| 2 | Guide plate | Synthetic resin | |
| 3 | Belt | — | |
| 4 | Belt holder | Carbon steel | Chromated |
| 5 | Belt stopper | Aluminum alloy | |
| 6 | Table | Aluminum alloy | Anodized |
| 7 | Blanking plate | Aluminum alloy | Anodized |
| 8 | Seal band holder | Synthetic resin | |
| 9 | End block | Aluminum die-casted | Painting |
| 10 | Pulley holder | Aluminum alloy | |
| 11 | Pulley shaft | Stainless steel | Heat treatment + Special treatment |
| 12 | Pulley | Aluminum alloy | Anodized |
| 13 | Motor pulley | Aluminum alloy | Anodized |
| 14 | Motor mount | Aluminum die-casted | Painting |
| 15 | Motor cover | Synthetic resin | |

Component Parts

| No. | Description | Material | Note |
|-----|----------------------|---------------------|-------------------------------------|
| 16 | Grommet | Synthetic resin | |
| 17 | Band stopper | Stainless steel | |
| 18 | Motor | — | |
| 19 | Motor end block | Aluminum die-casted | Painting |
| 20 | Dust seal band | Stainless steel | |
| 21 | Bearing | — | |
| 22 | Bearing | — | |
| 23 | Hexagon bolt | Carbon steel | Chromated |
| 24 | Magnet | — | |
| 25 | Stroke adjuster | Aluminum alloy | Anodized (Optional) |
| 26 | Motor cover for lock | Aluminum alloy | Anodized Only "with lock" |
| 27 | Grommet | CR | Chloroprene rubber Only "with lock" |

LEMB Series

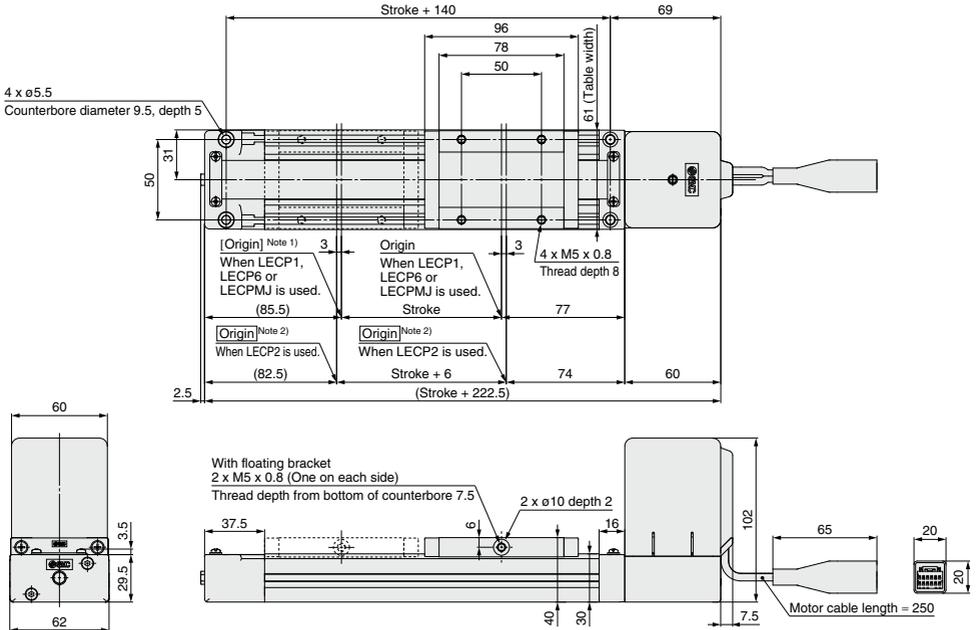
Step Motor (Servo/24 VDC)

Dimensions **Size 25**

Refer to page 547 and after for dimensions of the controllers.

Top mounting

LEMB25T-□□-□□□□□□

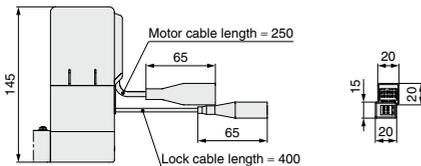


Note 1) [] for when the direction of return to origin has changed. (When the LECP6, LECP1 or LECPMJ is used.)

Note 2) Origin for when the LECP2 is used. The movable stroke is "Stroke + 6 mm".

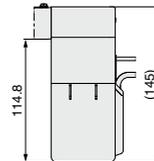
Top mounting

With lock
LEMB25T-□B□-□□□□□□



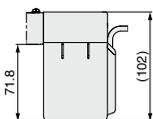
Bottom mounting

With lock
LEMB25UT-□B□-□□□□□□



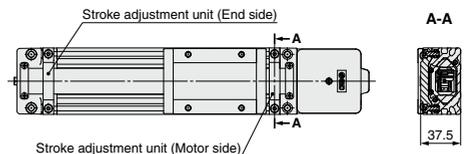
Bottom mounting

LEMB25UT-□□-□□□□□□



Stroke adjustment unit mounting position

LEMB25□T-□□□□□□□□□□

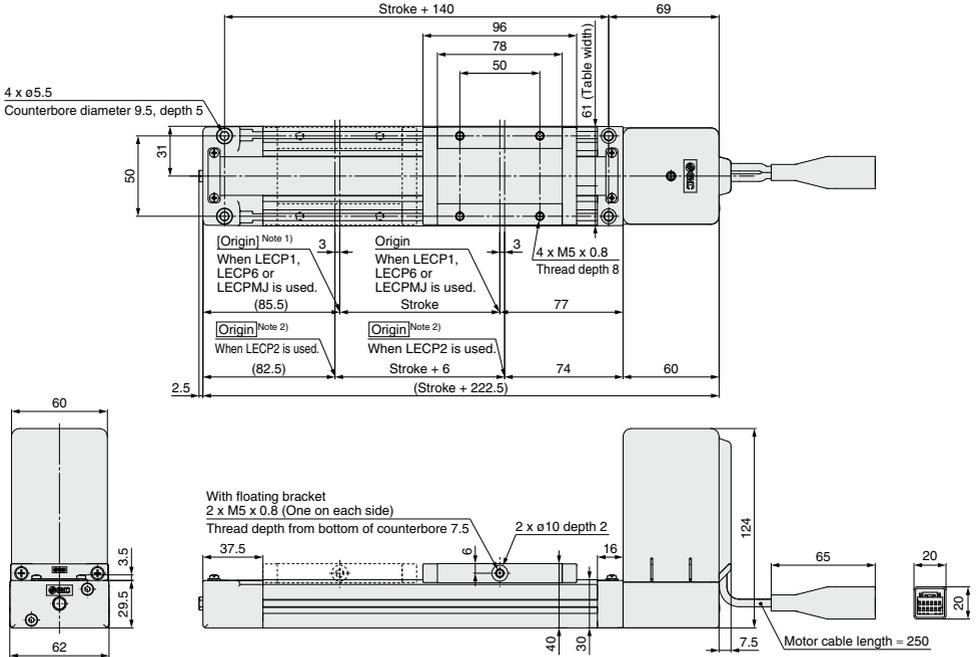


Dimensions Size 32

Refer to page 547 and after for dimensions of the controllers.

Top mounting

LEMB32T-□□-□□□□□

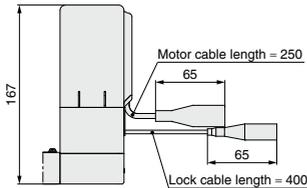


Note 1) [] for when the direction of return to origin has changed. (When the LECP6, LECP1 or LECPMJ is used.)
Note 2) Origin for when the LECP2 is used. The movable stroke is "Stroke + 6 mm".

Top mounting

With lock

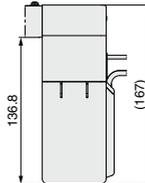
LEMB32T-□B□-□□□□□



Bottom mounting

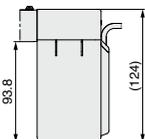
With lock

LEMB32UT-□B□-□□□□□



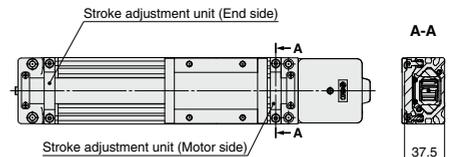
Bottom mounting

LEMB32UT-□□-□□□□□



Stroke adjustment unit mounting position

LEMB32□T-□□^M_W-□□□□□

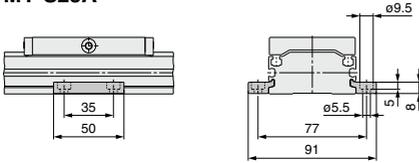


LEMB Series

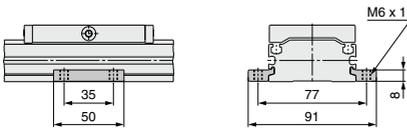
Step Motor (Servo/24 VDC)

Side Support

Side support A MY-S25A



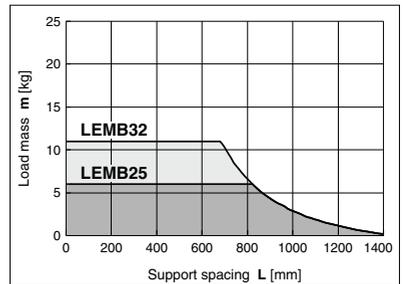
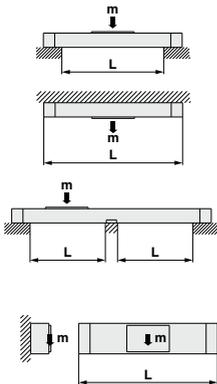
Side support B MY-S25B



* A set of side supports consists of a left support and a right support.

Guide for Side Support Application

When using actuator with longer stroke, implement intermediate support to prevent frame deflection or deflection caused by vibration or external impacts. The spacing (L) of the intermediate supports must be no more than the values shown in the following graph.



⚠ Caution

1. If the actuator mounting surfaces are not measured accurately, using the intermediate support may cause poor operation. Make sure to level the mounting surface when mounting the actuator. For long stroke operation involving overhang of workpiece, implement intermediate support as recommended even if the support spacing is within the allowable limits shown in the graph. For the intermediate support, order a side support separately.
2. Support brackets are not for mounting. Use them solely for providing support.

Electric Actuator/Low Profile Slider Type Cam Follower Guide Type



Applicable to the
LEC□ series

LEM C Series LEMC25, 32

Refer to page 187-1 for the communication protocols EtherCAT®, EtherNet/IP™, PROFINET, DeviceNet™, and IO-Link.

Caution

| | | | | |
|------------|---------|---|-------------|----------|
| LEM series | LEM_C25 | ← | E-MY series | E-MY_C16 |
| | LEM_C32 | | | E-MY_C25 |

How to Order

LEM C **25** **□** T - **300** **□** - **S1** **2N** **1** **□**

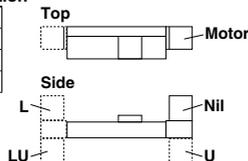
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Size

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

② Motor mounting position

| | |
|-----|----------------------------|
| Nil | Top mounting |
| U | Bottom mounting |
| L | Symmetric, Top mounting |
| LU | Symmetric, Bottom mounting |



③ Equivalent lead

| | |
|---|-------|
| T | 48 mm |
|---|-------|

⑤ Motor option

| | |
|-----|----------------|
| Nil | Without option |
| B | With lock |

④ Stroke

●: Standard/O: Produced upon receipt of order

| Model | Stroke | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | |
|---------|--------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|---|
| LEM C25 | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| LEM C32 | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

* Please consult with SMC as all non-standard and non-made-to-order strokes are produced as special orders.

⚠ Caution

[CE-compliant products]

① EMC compliance was tested by combining the electric actuator LEM 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 CC-Link direct input type (LECPMJ) is not CE-compliant.

[UL-compliant products]

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

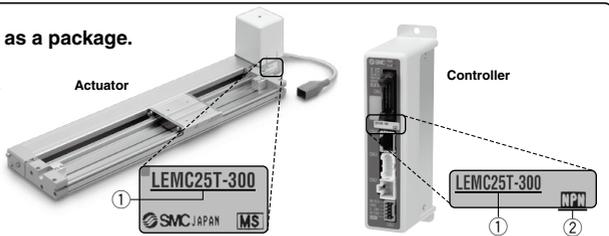
Refer to pages 210 to 212 for auto switches.

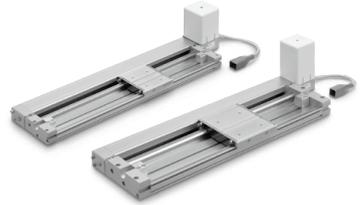
The actuator and controller are sold as a package. (They can be ordered separately.)

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

<Check the following before use.>

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





6 Actuator cable type/length

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

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

*2 The standard cable should only be used on fixed parts.
For use on moving parts, select the robotic cable.

7 Controller type

| | | |
|------------|---|-----|
| Nii | Without controller | |
| 6N | LECP6 | NPN |
| 6P | (Step data input type) | PNP |
| 2N | LECP2* | NPN |
| 2P | (Programless type) (With stroke study) | PNP |
| 1N | LECP1 | NPN |
| 1P | (Programless type) | PNP |
| MJ | LECPMJ | — |
| | (CC-Link direct input type) | |

* Select the LECP2 when setting the stroke range using the stroke adjustment unit or an external stopper.

8 I/O cable length*¹, Communication plug

| | | |
|------------|--|-------|
| Nii | Without cable (Without communication plug connector)* ² | |
| 1 | | 1.5 m |
| 3 | | 3 m |
| 5 | | 5 m |
| S | Straight type communication plug connector* ² | |
| T | T-branch type communication plug connector* ² | |

*1 When "Without controller" is selected for controller types, I/O cable cannot be selected. Refer to page 589 (For LECP2), page 582 (For LECP1) or page 568 (For LECP6) if I/O cable is required.

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

9 Controller mounting

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

* DIN rail is not included. Order it separately.

The stroke adjustment unit is built into the product.

Compatible Controller

| Type | Programless type (With stroke study) | Programless type | Step data input type | CC-Link direct input type |
|------------------------------------|---|---|---|---|
| |  |  |  |  |
| Series | LECP2 | LECP1 | LECP6 | LECPMJ |
| Features | End to end operation similar to an air cylinder using the stroke study function | Capable of setting up operation (step data) without using a PC or teaching box | Value (Step data) input Standard controller | CC-Link direct input |
| Compatible motor | Step motor (Servo/24 VDC) | | | |
| Maximum number of step data | 14 points (2 stroke end points + 12 intermediate points) | 14 points | | 64 points |
| Power supply voltage | 24 VDC | | | |
| Reference page | Page 583 | Page 576 | Page 560 | Page 600 |

Electric Actuator/Low Profile Slider Type Cam Follower Guide Type



LEMC Series LEMC25, 32

Applicable to the
JXC□ series

Refer to page 186 for the communication protocol CC-Link.

How to Order

Caution

| | | | |
|------------|------------------|-------------|--------------------|
| LEM series | LEM□25 LEM□32 | E-MY series | E-MY□16 E-MY□25 |
|------------|------------------|-------------|--------------------|

LEMC **25** **□** **T** - **300** **□** - **R1** **CD17T**

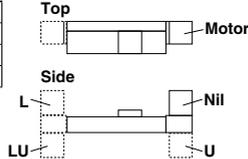
① ② ③ ④ ⑤ ⑥ ⑦

① Size

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

② Motor mounting position

| | |
|-----|----------------------------|
| Nil | Top mounting |
| U | Bottom mounting |
| L | Symmetric, Top mounting |
| LU | Symmetric, Bottom mounting |



③ Equivalent lead

| | |
|---|-------|
| T | 48 mm |
|---|-------|

⑤ Motor option

| | |
|-----|----------------|
| Nil | Without option |
| B | With lock |

④ Stroke

●: Standard/○: Produced upon receipt of order

| Model \ Stroke | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | |
|----------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|---|
| LEMC25 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ○ | ● | ○ | ○ | ● | ○ | ○ | ○ | ○ | ● | |
| LEMC32 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | ● |

* Please consult with SMC as all non-standard and non-made-to-order strokes are produced as special orders.

⚠ Caution

[CE-compliant products]

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

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

Refer to pages 210 to 212 for auto switches.



6 Actuator cable type/length

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

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

*2 The standard cable should only be used on fixed parts.
For use on moving parts, select the robotic cable.

7 Controller

| | |
|--------------|--------------------|
| Nil | Without controller |
| C□1□□ | With controller |



Communication protocol

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

For single axis

Communication plug connector for DeviceNet™

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

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

Mounting

| | |
|-----------|----------------|
| 7 | Screw mounting |
| 8* | DIN rail |

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

The stroke adjustment unit is built into the product.

Compatible Controller

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

LEMC Series

Step Motor (Servo/24 VDC)



Speed/Acceleration (Set values for LEC1/2)

Table 1 Switch and Speed ^{Note 1)}

| Switch no. | Speed [mm/s] |
|------------|--------------|
| 0 | 48 |
| 1 | 75 |
| 2 | 100 |
| 3 | 150 |
| 4 | 200 |
| 5 | 250 |
| 6 | 300 |
| 7 | 350 |
| 8 | 400 |
| 9 | 450 |
| 10 | 500 |
| 11 | 600 |
| 12 | 700 |
| 13 | 800 |
| 14 | 900 |
| 15 | 1000 |

Table 2 Switch and Acceleration ^{Note 1)}

| Switch no. | Acceleration [mm/s ²] |
|------------|-----------------------------------|
| 0 | 250 |
| 1 | 500 |
| 2 | 1000 |
| 3 | 1500 |
| 4 | 2000 |
| 5 | 2500 |
| 6 | 3000 |
| 7 | 4000 |
| 8 | 5000 |
| 9 | 6000 |
| 10 | 7500 |
| 11 | 10000 |
| 12 | 12500 |
| 13 | 15000 |
| 14 | 17500 |
| 15 | 20000 |

Note) The factory default setting for the switch is No.0.

Weight

| Stroke | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 700 | 800 | 900 | 1000 | (1100) | 1200 | (1300) | (1400) | 1500 | (1600) | (1700) | (1800) | (1900) | 2000 | |
|----------------------------------|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------|------|--------|--------|------|--------|--------|--------|--------|-------|-------|
| Product weight [kg] | LEMC25 | 2.04 | 2.18 | 2.32 | 2.46 | 2.60 | 2.74 | 2.88 | 3.01 | 3.15 | 3.29 | 3.43 | 3.57 | 3.85 | 4.12 | 4.40 | 4.68 | 4.95 | 5.23 | 5.51 | 5.79 | 6.06 | 6.34 | 6.62 | 6.90 | 7.17 | 7.45 |
| Additional weight with lock [kg] | LEMC32 | 3.85 | 4.06 | 4.27 | 4.49 | 4.70 | 4.91 | 5.12 | 5.33 | 5.55 | 5.76 | 5.97 | 6.18 | 6.61 | 7.03 | 7.45 | 7.88 | 8.30 | 8.72 | 9.15 | 9.57 | 10.00 | 10.42 | 10.84 | 11.27 | 11.69 | 12.11 |

0.60

Specifications

Step Motor (Servo/24 VDC)

| Model | | LEMC25 | LEMC32 |
|--|-----------------------------------|--|--|
| Stroke [mm] ^{Note 1)} | | 50, 100, 150, 200, 250 300, 350, 400, 450, 500 550, 600, 700, 800, 900 1000, (1100), 1200, (1300) (1400), 1500, (1600), (1700) (1800), (1900), 2000 | 50, 100, 150, 200, 250 300, 350, 400, 450, 500 550, 600, 700, 800, 900 1000, (1100), 1200, (1300) (1400), 1500, (1600), (1700) (1800), (1900), 2000 |
| | Work load [kg] ^{Note 2)} | Horizontal | 10 |
| Speed [mm/s] ^{Note 2)} | | 48 to 1000 (Refer to Table 1 for set values when LEC1 or 2 is selected.) | |
| Max. acceleration/deceleration [mm/s ²] ^{Note 9)} | | 20000 (Depends on the work load.) (Refer to Table 2 for set values when LEC1 or 2 is selected.) | |
| Positioning repeatability [mm] | | ±0.08 | |
| Lost motion [mm] ^{Note 10)} | | 0.1 or less | |
| Lead [mm] | | 48 | |
| Actuation type | | Belt | |
| Guide type | | Cam follower guide | |
| Operating temperature range [°C] | | 5 to 40 | |
| Operating humidity range [%RH] | | 90 or less (No condensation) | |
| Allowable external force [N] ^{Note 8)} | | 10 | 20 |
| Motor size | | □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 3)} | | 50 | 52 |
| Standby power consumption when operating [W] ^{Note 4)} | | 44 | 44 |
| Max. instantaneous power consumption [W] ^{Note 5)} | | 123 | 127 |
| Type ^{Note 6)} | | Non-magnetizing lock | |
| Holding force [N] | | 36 | |
| Power consumption [W] ^{Note 7)} | | 5 | |
| Rated voltage [V] | | 24 VDC±10% | |

Note 1) Please consult with SMC as all non-standard and non-made-to-order strokes are produced as special orders.

Note 2) Speed changes according to the work load.

Check "Speed-Work Load Graph (Guide)" on page 172.

The work load changes according to the work load mounting condition.

Check "Dynamic Allowable Moment" on page 175.

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

Note 3) The power consumption (including the controller) is for when the actuator is operating.

Note 4) The standby power consumption when operating (including the controller) is for when the actuator is stopped in the set position during operation.

Note 5) 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 6) With lock only

Note 7) For an actuator with lock, add the power consumption for the lock.

Note 8) The resistance value of the attached equipment should be within the allowable external resistance value.

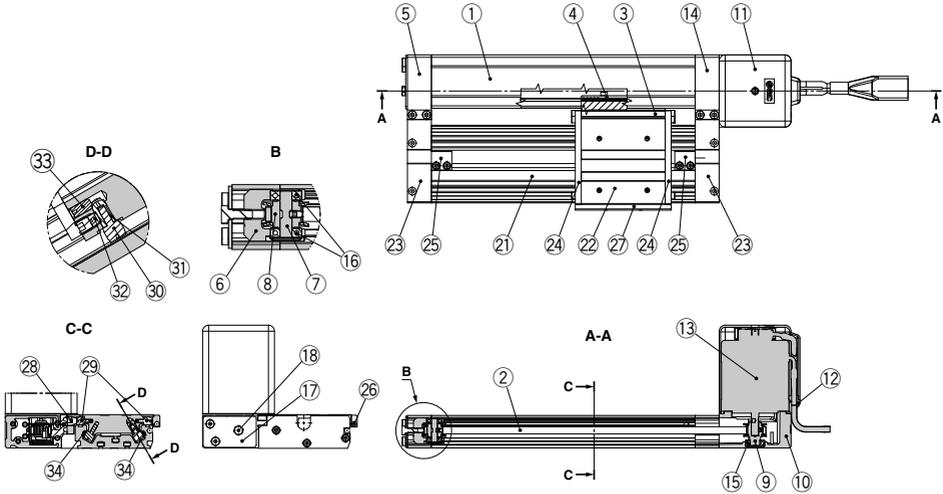
Note 9) Maximum acceleration and deceleration are limited by the work load and stroke.

Refer to "Work Load-Acceleration/Deceleration Graph (Guide)" on page 173.

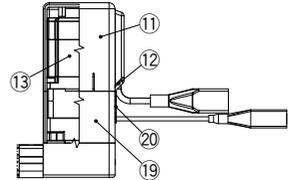
Note 10) A reference value for correcting an error in reciprocal operation.

Construction

LEMC



Motor option: With lock



Component Parts

| No. | Description | Material | Note |
|-----|-----------------|---------------------|------------------------------------|
| 1 | Body | Aluminum alloy | Anodized |
| 2 | Belt | — | |
| 3 | L-type bracket | Aluminum alloy | Anodized |
| 4 | Belt stopper | Aluminum alloy | |
| 5 | End block | Aluminum alloy | Anodized |
| 6 | Pulley holder | Aluminum alloy | |
| 7 | Pulley shaft | Stainless steel | Heat treatment + Special treatment |
| 8 | Pulley | Aluminum alloy | Anodized |
| 9 | Motor pulley | Aluminum alloy | Anodized |
| 10 | Motor mount | Aluminum die-casted | Painting |
| 11 | Motor cover | Synthetic resin | |
| 12 | Grommet | Synthetic resin | |
| 13 | Motor | — | |
| 14 | Motor end block | Aluminum alloy | Anodized |
| 15 | Bearing | — | |
| 16 | Bearing | — | |
| 17 | Tension plate | Aluminum alloy | Anodized |
| 18 | Hexagon bolt | Carbon steel | Chromated |

Component Parts

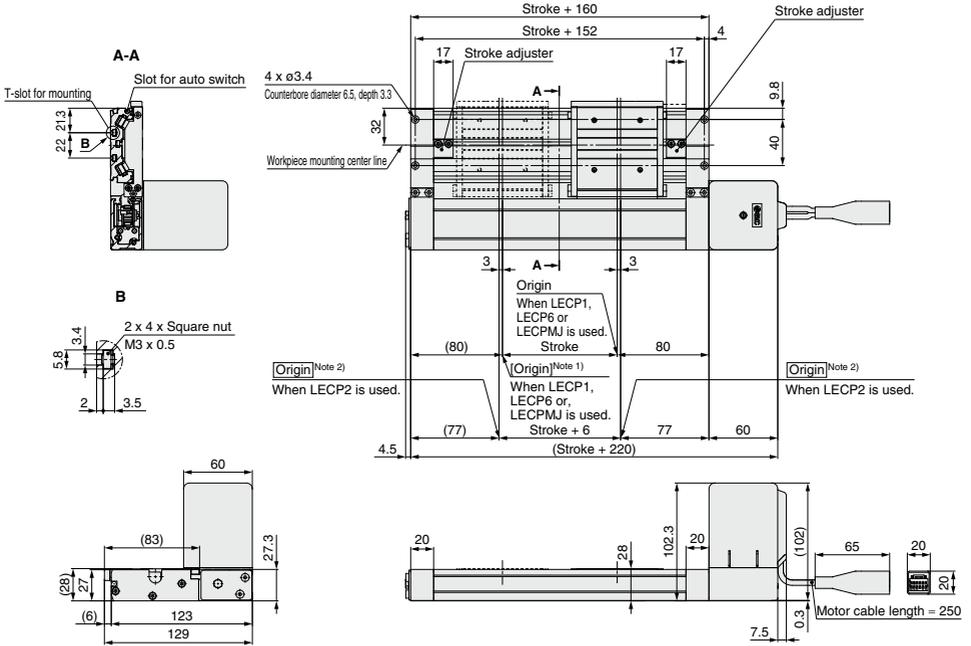
| No. | Description | Material | Note |
|-----|----------------------|--------------------------|--|
| 19 | Motor cover for lock | Aluminum alloy | Anodized Only "with lock" |
| 20 | Grommet | CR | Chloroprene rubber Only "with lock" |
| 21 | Guide unit body | Aluminum alloy | Anodized |
| 22 | Slide table | Aluminum alloy | Anodized |
| 23 | End plate | Aluminum alloy | Anodized |
| 24 | Stopper | Carbon steel | Nickel plating |
| 25 | Stroke adjuster | Aluminum alloy | Anodized |
| 26 | Magnet | — | |
| 27 | Side cover | Aluminum alloy | Anodized |
| 28 | Cam follower cap | Aluminum alloy | Anodized |
| 29 | Cam follower | — | |
| 30 | Cam follower | — | |
| 31 | Eccentric gear | Stainless steel | |
| 32 | Gear bracket | Stainless steel | |
| 33 | Adjustment gear | Stainless steel | |
| 34 | Rail | Hard steel wire material | |

Dimensions **Size 25**

Refer to page 547 and after for dimensions of the controllers.

Symmetric/Top mounting

LEMC25LT-□-□□□□□

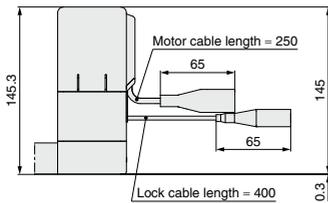


Note 1) [] for when the direction of return to origin has changed. (When the LECP1, LECP6 or LECPMJ is used.)
Note 2) Origin for when the LECP2 is used. The movable stroke is "Stroke + 6 mm".

Top mounting

With lock

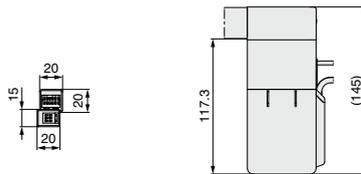
LEMC25LT-□B-□□□□□



Bottom mounting

With lock

LEMC25LUT-□B-□□□□□



Bottom mounting

LEMC25LUT-□-□□□□□

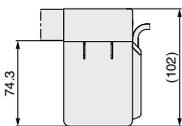
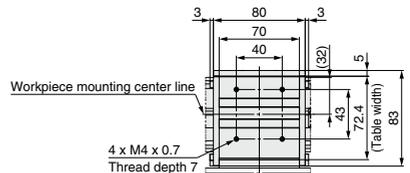


Table details



LEMC Series

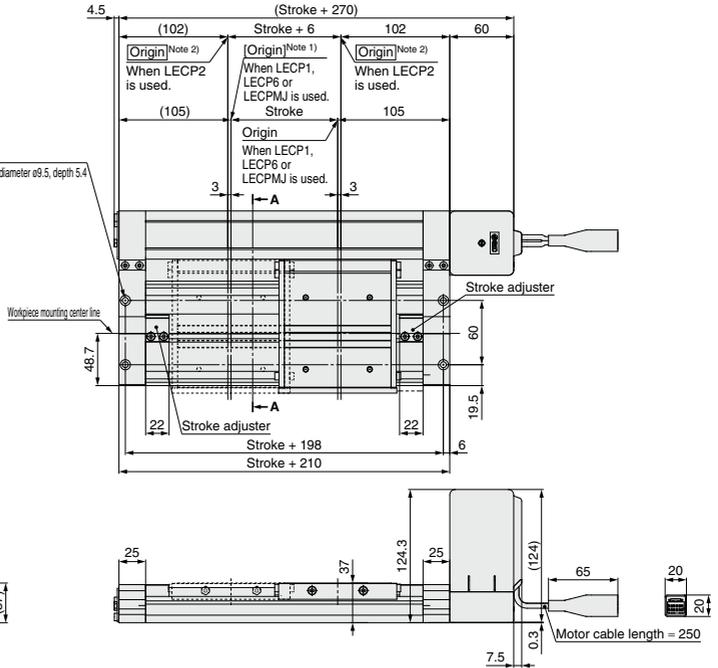
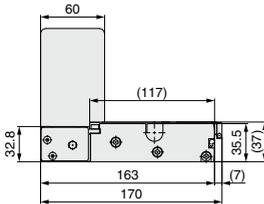
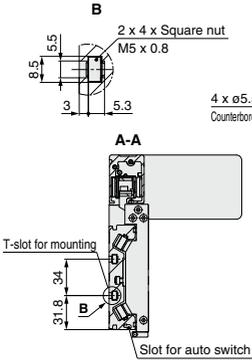
Step Motor (Servo/24 VDC)

Dimensions **Size 32**

Refer to page 547 and after for dimensions of the controllers.

Top mounting

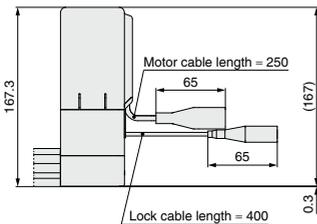
LEMC32T-□-□□□□□



Note 1) [] for when the direction of return to origin has changed. (When the LECP1, LECP6 or LECPMJ is used.)
 Note 2) Origin for when the LECP2 is used. The movable stroke is "Stroke + 6 mm".

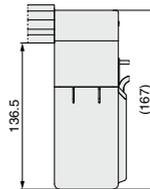
Top mounting

With lock
LEMC32T-□B-□□□□□



Bottom mounting

With lock
LEMC32UT-□B-□□□□□



Bottom mounting

LEMC32UT-□-□□□□□

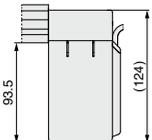
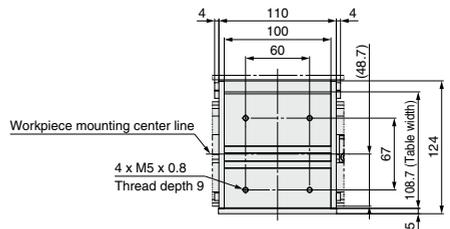


Table details

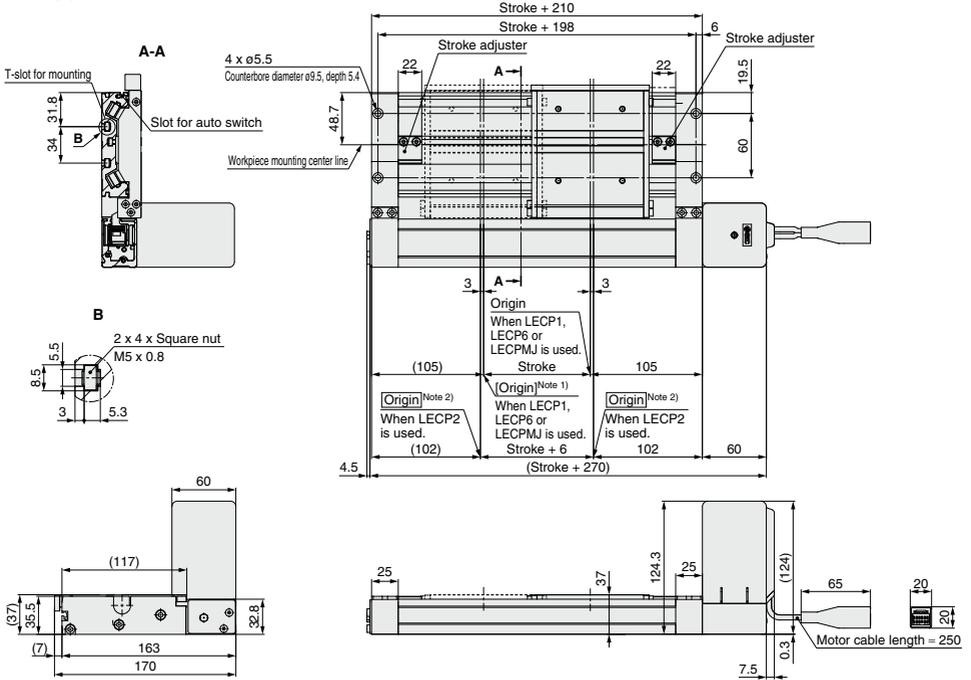


Dimensions Size 32

Refer to page 547 and after for dimensions of the controllers.

Symmetric/Top mounting

LEMC32LT-□-□□□□□

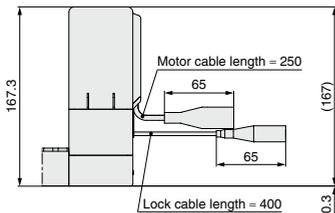


Note 1) [] for when the direction of return to origin has changed. (When the LECP1, LECP6 or LECPMJ is used.)
 Note 2) Origin for when the LECP2 is used. The movable stroke is "Stroke + 6 mm".

Top mounting

With lock

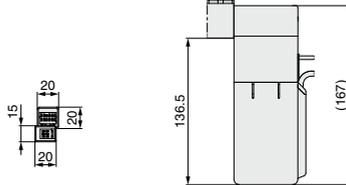
LEMC32LT-□B-□□□□□



Bottom mounting

With lock

LEMC32LUT-□B-□□□□□



Bottom mounting

LEMC32LUT-□-□□□□□

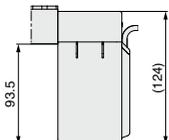
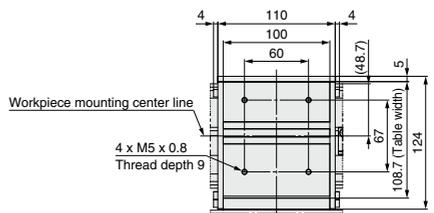


Table details

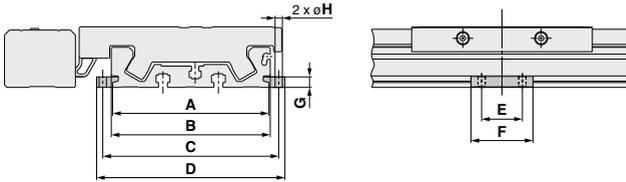


LEMC Series

Step Motor (Servo/24 VDC)

Side Support

Side support MYC-S□A

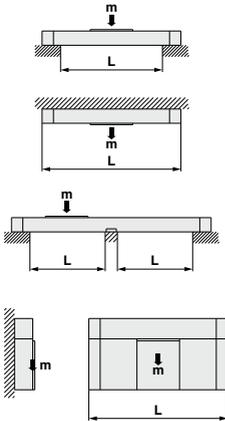


| Model | Applicable actuator | A | B | C | D | E | F | G | øH |
|----------|---------------------|------|------|-------|-------|----|----|-----|-----|
| MYC-S16A | LEMC25 | 60.6 | 64.6 | 70.6 | 77.2 | 15 | 26 | 4.9 | 3.4 |
| MYC-S25A | LEMC32 | 95.9 | 97.5 | 107.9 | 115.5 | 25 | 38 | 6.4 | 4.5 |

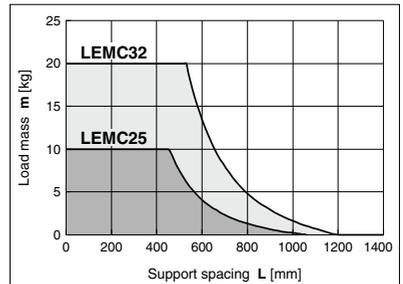
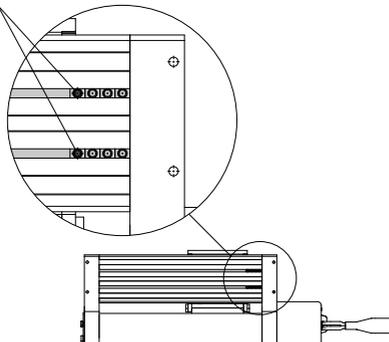
* A set of side supports consists of a left support and a right support.

Guide for Side Support Application

When using actuator with longer stroke, implement intermediate support to prevent frame deflection or deflection caused by vibration or external impacts. The spacing (L) of the intermediate supports must be no more than the values shown in the following graph.



Square nuts on the bottom



Caution

1. If the actuator mounting surfaces are not measured accurately, using the intermediate support may cause poor operation. Make sure to level the mounting surface when mounting the actuator. For long stroke operation involving overhang of workpiece, implement intermediate support as recommended even if the support spacing is within the allowable limits shown in the graph. For the intermediate support, use the square nuts at the bottom of the body or order a side support separately.
2. Support brackets are not for mounting. Use them solely for providing support.

Electric Actuator/Low Profile Slider Type Linear Guide Single Axis Type/Double Axis Type



LEMH/HT Series LEMH/LEMHT25, 32

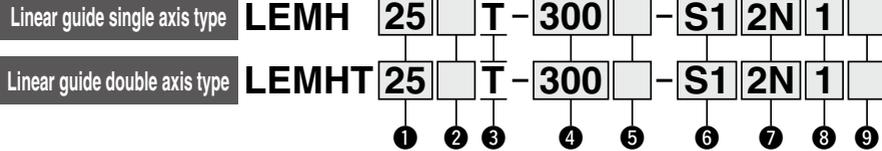
Applicable to the
LEC□ series

Refer to page 197-1 for the communication protocols EtherCAT®, EtherNet/IP™, PROFINET, DeviceNet™, and IO-Link.

Caution

| | | | | |
|------------|--------|---|-------------|---------|
| LEM series | LEM□25 | ← | E-MY series | E-MY□16 |
| | LEM□32 | | | E-MY□25 |

How to Order

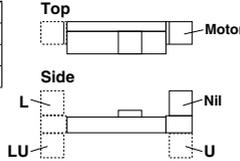


1 Size

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

2 Motor mounting position

| | |
|-----|----------------------------|
| Nil | Top mounting |
| U | Bottom mounting |
| L | Symmetric, Top mounting |
| LU | Symmetric, Bottom mounting |



3 Equivalent lead

| | |
|---|-------|
| T | 48 mm |
|---|-------|

5 Motor option

| | |
|-----|----------------|
| Nil | Without option |
| B | With lock |

4 Stroke

●: Standard/○: Produced upon receipt of order

| Model | Stroke | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | |
|-----------|--------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|---|
| LEMH/HT25 | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ○ | ○ | ○ | ○ | | | | | | |
| LEMH/HT32 | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

* Please consult with SMC as all non-standard and non-made-to-order strokes are produced as special orders.

Caution

[CE-compliant products]

① EMC compliance was tested by combining the electric actuator LEM 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 CC-Link direct input type (LECPMJ) is not CE-compliant.

[UL-compliant products]

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

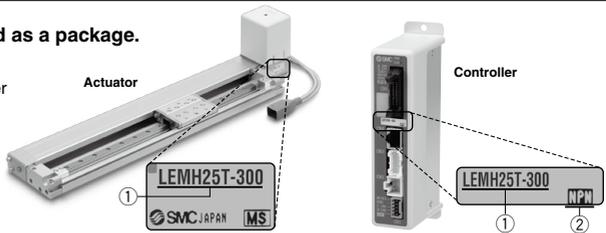
Refer to pages 210 to 212 for auto switches.

**The actuator and controller are sold as a package.
(They can be ordered separately.)**

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

<Check the following before use.>

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



Electric Actuator/Low Profile Slider Type Linear Guide Single Axis Type/Double Axis Type **LEMH/HT Series**

Step Motor (Servo/24 VDC)



6 Actuator cable type/length

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

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

*² The standard cable should only be used on fixed parts.
For use on moving parts, select the robotic cable.

9 Controller mounting

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

* DIN rail is not included. Order it separately.

7 Controller type

| | | |
|------------|---|-----|
| Nii | Without controller | |
| 6N | LECP6 | NPN |
| 6P | (Step data input type) | PNP |
| 2N | LECP2* | NPN |
| 2P | (Programless type) (With stroke study) | PNP |
| 1N | LECP1 | NPN |
| 1P | (Programless type) | PNP |
| MJ | LECPMJ | — |
| | (CC-Link direct input type) | |

* Select the LECP2 when setting the stroke range using the stroke adjustment unit or an external stopper.

8 I/O cable length*¹, Communication plug

| | |
|------------|--|
| Nii | Without cable (Without communication plug connector)* ² |
| 1 | 1.5 m |
| 3 | 3 m |
| 5 | 5 m |
| S | Straight type communication plug connector* ² |
| T | T-branch type communication plug connector* ² |

*¹ When "Without controller" is selected for controller types, I/O cable cannot be selected. Refer to page 589 (For LECP2), page 582 (For LECP1) or page 568 (For LECP6) if I/O cable is required.

*² For the LECPMJ, only "Nii", "S" and "T" are selectable since I/O cable is not included.

The stroke adjustment unit is built into the product.

Compatible Controller

| Type | Programless type (With stroke study) | Programless type | Step data input type | CC-Link direct input type |
|------------------------------------|---|--|--|---------------------------|
| | | | | |
| Series | LECP2 | LECP1 | LECP6 | LECPMJ |
| Features | End to end operation similar to an air cylinder using the stroke study function | Capable of setting up operation (step data) without using a PC or teaching box | Value (Step data) input Standard controller | CC-Link direct input |
| Compatible motor | Step motor (Servo/24 VDC) | | | |
| Maximum number of step data | 14 points (2 stroke end points + 12 for intermediate points) | 14 points | | 64 points |
| Power supply voltage | 24 VDC | | | |
| Reference page | Page 583 | Page 576 | Page 560 | Page 600 |

Electric Actuator/Low Profile Slider Type Linear Guide Single Axis Type/Double Axis Type



LEMH/HT Series LEMH/LEMHT25, 32

Applicable to the JXC□ series

Refer to page 196 for the communication protocol CC-Link.

How to Order

Caution

| | | | | |
|------------|------------------|---|-------------|--------------------|
| LEM series | LEM□25 LEM□32 | ← | E-MY series | E-MY□16 E-MY□25 |
|------------|------------------|---|-------------|--------------------|

Linear guide single axis type

LEMH 25 □ T - 300 □ - R1 CD17T

Linear guide double axis type

LEMHT 25 □ T - 300 □ - R1 CD17T

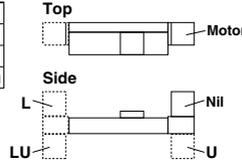


1 Size

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

2 Motor mounting position

| | |
|-----|----------------------------|
| NII | Top mounting |
| U | Bottom mounting |
| L | Symmetric, Top mounting |
| LU | Symmetric, Bottom mounting |



3 Equivalent lead

| | |
|---|-------|
| T | 48 mm |
|---|-------|

5 Motor option

| | |
|-----|----------------|
| NII | Without option |
| B | With lock |

4 Stroke

●: Standard/○: Produced upon receipt of order

| Model \ Stroke | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | |
|----------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|---|
| LEMH/HT25 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| LEMH/HT32 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

* Please consult with SMC as all non-standard and non-made-to-order strokes are produced as special orders.

Caution

[CE-compliant products]

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

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

Refer to pages 210 to 212 for auto switches.



6 Actuator cable type/length

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

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

*2 The standard cable should only be used on fixed parts.
 For use on moving parts, select the robotic cable.

7 Controller

| | |
|--------------|--------------------|
| Nil | Without controller |
| C□1□□ | With controller |



Communication protocol

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

For single axis

Communication plug connector for DeviceNet™

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

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

Mounting

| | |
|-----------|----------------|
| 7 | Screw mounting |
| 8* | DIN rail |

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

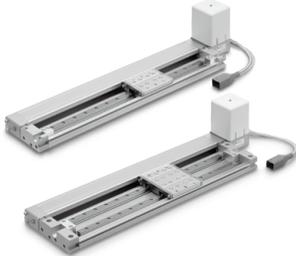
The stroke adjustment unit is built into the product.

Compatible Controller

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

LEMH/HT Series

Step Motor (Servo/24 VDC)



Speed/Acceleration (Set values for LEC1P/2)

Table 1 Switch and Speed (Note)

| Switch no. | Speed [mm/s] |
|------------|--------------|
| 0 | 48 |
| 1 | 75 |
| 2 | 100 |
| 3 | 150 |
| 4 | 200 |
| 5 | 300 |
| 6 | 400 |
| 7 | 500 |
| 8 | 600 |
| 9 | 800 |
| 10 | 1000 |
| 11 | 1200 |
| 12 | 1400 |
| 13 | 1600 |
| 14 | 1800 |
| 15 | 2000 |

Table 2 Switch and Acceleration (Note)

| Switch no. | Acceleration [mm/s ²] |
|------------|-----------------------------------|
| 0 | 250 |
| 1 | 500 |
| 2 | 1000 |
| 3 | 1500 |
| 4 | 2000 |
| 5 | 2500 |
| 6 | 3000 |
| 7 | 4000 |
| 8 | 5000 |
| 9 | 6000 |
| 10 | 7500 |
| 11 | 10000 |
| 12 | 12500 |
| 13 | 15000 |
| 14 | 17500 |
| 15 | 20000 |

Note) The factory default setting for the switch is No.0.

Weight

Linear Guide Single Axis Type

| Stroke | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | (700) | (800) | (900) | (1000) | (1100) | (1200) | (1300) | (1400) | (1500) | |
|----------------------------------|--------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| Product weight [kg] | LEMH25 | 1.91 | 2.05 | 2.18 | 2.32 | 2.46 | 2.59 | 2.73 | 2.87 | 3.00 | 3.14 | 3.28 | 3.42 | 3.69 | 3.96 | 4.24 | 4.51 | — | — | — | — | — |
| Additional weight with lock [kg] | LEMH32 | 3.47 | 3.70 | 3.93 | 4.17 | 4.40 | 4.63 | 4.87 | 5.10 | 5.33 | 5.57 | 5.80 | 6.03 | 6.50 | 6.97 | 7.44 | 7.90 | 8.37 | 8.84 | 9.30 | 9.77 | 10.24 |
| | | 0.60 | | | | | | | | | | | | | | | | | | | | |

Linear Guide Double Axis Type

| Stroke | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | (700) | (800) | (900) | (1000) | (1100) | (1200) | (1300) | (1400) | (1500) | |
|----------------------------------|--------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| Product weight [kg] | LEMH25 | 2.40 | 2.61 | 2.82 | 3.03 | 3.24 | 3.45 | 3.66 | 3.87 | 4.08 | 4.29 | 4.50 | 4.71 | 5.13 | 5.55 | 5.97 | 6.38 | — | — | — | — | — |
| Additional weight with lock [kg] | LEMH32 | 4.82 | 5.20 | 5.58 | 5.97 | 6.35 | 6.73 | 7.12 | 7.50 | 7.88 | 8.27 | 8.65 | 9.04 | 9.80 | 10.57 | 11.34 | 12.10 | 12.87 | 13.64 | 14.41 | 15.17 | 15.94 |
| | | 0.60 | | | | | | | | | | | | | | | | | | | | |

Specifications

Step Motor (Servo/24 VDC)

| Model | | LEMH25/LEMHT25 | LEMH32/LEMHT32 |
|---|------------------------|--|--|
| Stroke [mm] Note 1) | | 50, 100, 150, 200, 250 300, 350, 400, 450 500, 550, 600, (700) (800), (900), (1000) | 50, 100, 150, 200, 250, 300, 350 400, 450, 500, 550, 600, (700) (800), (900), (1000), (1100) (1200), (1300), (1400), (1500) |
| | Work load [kg] Note 2) | Horizontal | 10 |
| Speed [mm/s] Note 2) | | 48 to 2000 (Refer to Table 1 for set values when LEC1P or 2 is selected.) | |
| Max. acceleration/deceleration [mm/s ²] Note 9) | | 20000 (Depends on the work load.) (Refer to Table 2 for set values when LEC1P or 2 is selected.) | |
| Positioning repeatability [mm] | | ±0.08 | |
| Lost motion [mm] Note 10) | | 0.1 or less | |
| Lead [mm] | | 48 | |
| Actuation type | | Belt | |
| Guide type | | Linear guide | |
| Operating temperature range [°C] | | 5 to 40 | |
| Operating humidity range [%RH] | | 90 or less (No condensation) | |
| Allowable external force [N] Note 8) | | 10 | 20 |
| Motor size | | □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 3) | | 50 | 52 |
| Standby power consumption when operating [W] Note 4) | | 44 | 44 |
| Max. instantaneous power consumption [W] Note 5) | | 123 | 127 |
| Type Note 6) | | Non-magnetizing lock | |
| Holding force [N] | | 36 | |
| Power consumption [W] Note 7) | | 5 | |
| Rated voltage [V] | | 24 VDC ±10% | |

Note 1) Please consult with SMC as all non-standard and non-made-to-order strokes are produced as special orders.

Note 2) Speed changes according to the work load.

Check "Speed-Work Load Graph (Guide)" on page 172.

The work load changes according to the work load mounting condition. Check "Dynamic Allowable Moment" on pages 175 and 176.

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

Note 3) The power consumption (including the controller) is for when the actuator is operating.

Note 4) The standby power consumption when operating (including the controller) is for when the actuator is stopped in the set position during operation.

Note 5) 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 6) Lock only

Note 7) For an actuator with lock, add the power consumption for the lock.

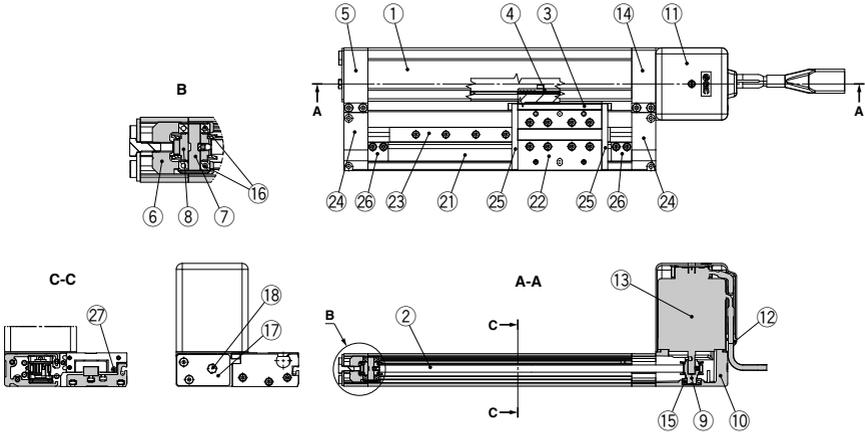
Note 8) The resistance value of the attached equipment should be within the allowable external resistance value.

Note 9) Maximum acceleration and deceleration are limited by the work load and the stroke. Refer to "Work Load-Acceleration/Deceleration Graph (Guide)" on page 173.

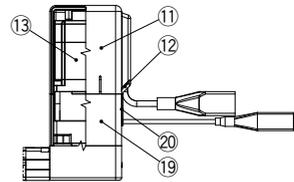
Note 10) A reference value for correcting an error in reciprocal operation.

Construction

LEMH



Motor option: With lock



Component Parts

| No. | Description | Material | Note |
|-----|-----------------|---------------------|------------------------------------|
| 1 | Body | Aluminum alloy | Anodized |
| 2 | Belt | — | |
| 3 | L-type bracket | Aluminum alloy | Anodized |
| 4 | Belt stopper | Aluminum alloy | |
| 5 | End block | Aluminum alloy | Anodized |
| 6 | Pulley holder | Aluminum alloy | |
| 7 | Pulley shaft | Stainless steel | Heat treatment + Special treatment |
| 8 | Pulley | Aluminum alloy | Anodized |
| 9 | Motor pulley | Aluminum alloy | Anodized |
| 10 | Motor mount | Aluminum die-casted | Painting |
| 11 | Motor cover | Synthetic resin | |
| 12 | Grommet | Synthetic resin | |
| 13 | Motor | — | |
| 14 | Motor end block | Aluminum alloy | Anodized |
| 15 | Bearing | — | |

Component Parts

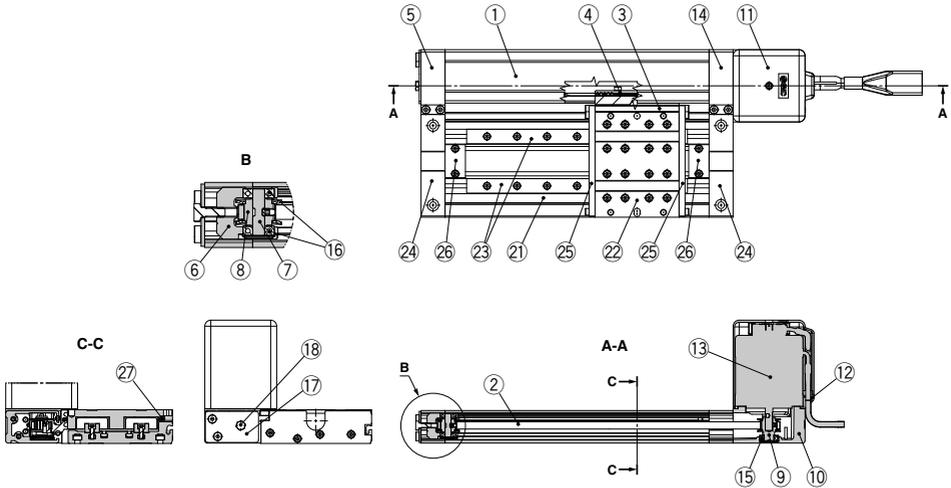
| No. | Description | Material | Note |
|-----|----------------------|----------------|--|
| 16 | Bearing | — | |
| 17 | Tension plate | Aluminum alloy | Anodized |
| 18 | Hexagon bolt | Carbon steel | Chromated |
| 19 | Motor cover for lock | Aluminum alloy | Anodized Only "with lock" |
| 20 | Grogmet | CR | Chloroprene rubber Only "with lock" |
| 21 | Guide unit body | Aluminum alloy | Anodized |
| 22 | Slide table | Aluminum alloy | Anodized |
| 23 | Guide | — | |
| 24 | End plate | Aluminum alloy | Anodized |
| 25 | Stopper | Carbon steel | Nickel plating |
| 26 | Stroke adjuster | Aluminum alloy | Anodized |
| 27 | Magnet | — | |

LEMHT Series

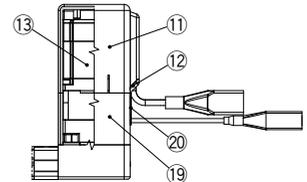
Step Motor (Servo/24 VDC)

Construction

LEMHT



Motor option: With lock



Component Parts

| No. | Description | Material | Note |
|-----|-----------------|---------------------|------------------------------------|
| 1 | Body | Aluminum alloy | Anodized |
| 2 | Belt | — | |
| 3 | L-type bracket | Aluminum alloy | Anodized |
| 4 | Belt stopper | Aluminum alloy | |
| 5 | End block | Aluminum alloy | Anodized |
| 6 | Pulley holder | Aluminum alloy | |
| 7 | Pulley shaft | Stainless steel | Heat treatment + Special treatment |
| 8 | Pulley | Aluminum alloy | Anodized |
| 9 | Motor pulley | Aluminum alloy | Anodized |
| 10 | Motor mount | Aluminum die-casted | Painting |
| 11 | Motor cover | Synthetic resin | |
| 12 | Grommet | Synthetic resin | |
| 13 | Motor | — | |
| 14 | Motor end block | Aluminum alloy | Anodized |
| 15 | Bearing | — | |

Component Parts

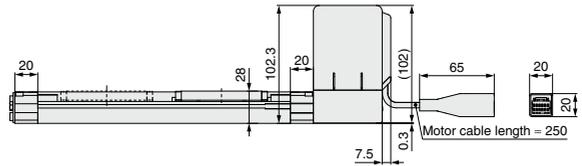
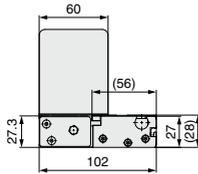
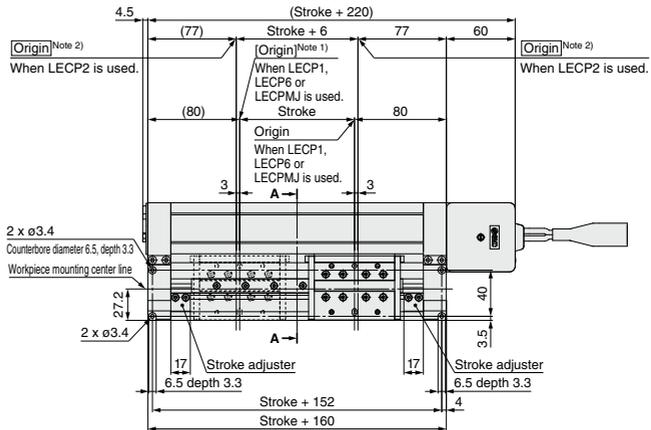
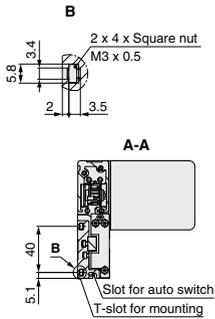
| No. | Description | Material | Note |
|-----|----------------------|----------------|---------------------------------------|
| 16 | Bearing | — | |
| 17 | Tension plate | Aluminum alloy | Anodized |
| 18 | Hexagon bolt | Carbon steel | Chromated |
| 19 | Motor cover for lock | Aluminum alloy | Anodized Only "with lock" |
| 20 | Grogmet | CR | Chlorprene rubber Only "with lock" |
| 21 | Guide unit body | Aluminum alloy | Anodized |
| 22 | Slide table | Aluminum alloy | Anodized |
| 23 | Guide | — | |
| 24 | End plate | Aluminum alloy | Anodized |
| 25 | Stopper | Carbon steel | Nickel plating |
| 26 | Stroke adjuster | Aluminum alloy | Anodized |
| 27 | Magnet | — | |

Dimensions: Linear Guide Single Axis Type **Size 25**

Refer to page 547 and after for dimensions of the controllers.

Top mounting

LEMH25T-□-□□□□□

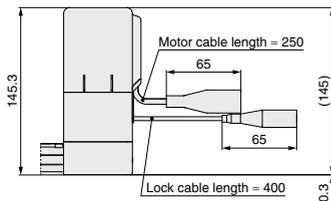


Note 1) [] for when the direction of return to origin has changed. (When the LECP1, LECP6 or LECPMJ is used.)
 Note 2) Origin for when the LECP2 is used. The movable stroke is "Stroke + 6 mm".

Top mounting

With lock

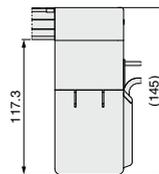
LEMH25T-□B-□□□□□



Bottom mounting

With lock

LEMH25UT-□B-□□□□□



Bottom mounting

LEMH25UT-□-□□□□□

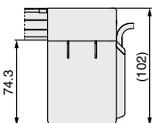
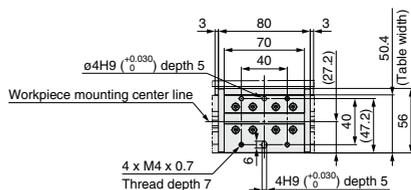


Table details

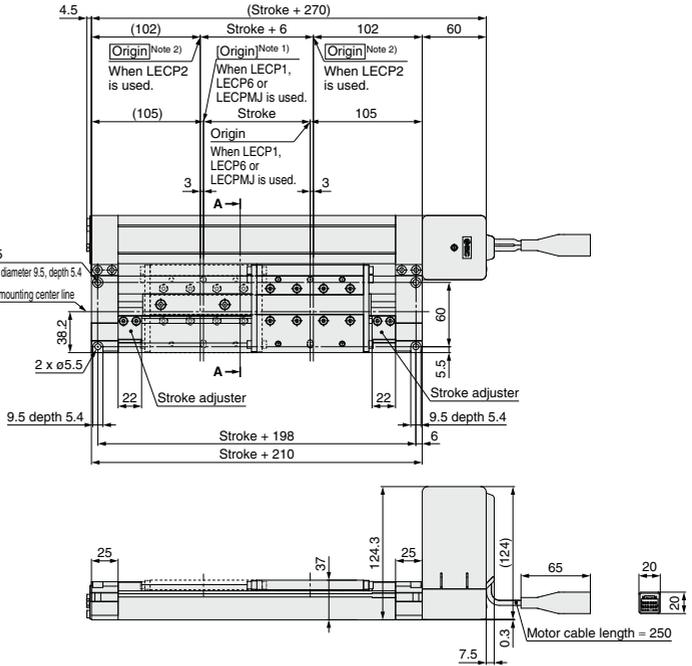
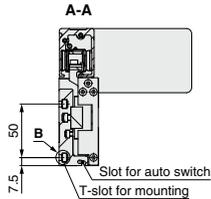
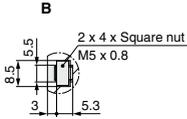


Dimensions: Linear Guide Single Axis Type **Size 32**

Refer to page 547 and after for dimensions of the controllers.

Top mounting

LEMH32T-□-□□□□□

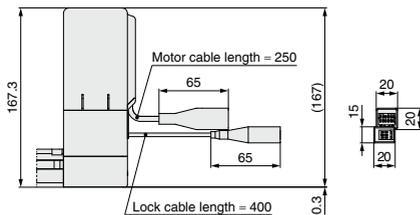


Note 1) [] for when the direction of return to origin has changed. (When the LECP1, LECP6 or LECPMJ is used.)
 Note 2) Origin for when the LECP2 is used. The movable stroke is "Stroke + 6 mm".

Top mounting

With lock

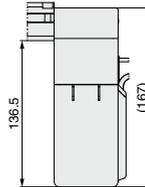
LEMH32T-□B-□□□□□



Bottom mounting

With lock

LEMH32UT-□B-□□□□□



Bottom mounting

LEMH32UT-□-□□□□□

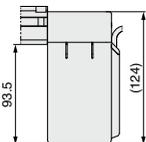
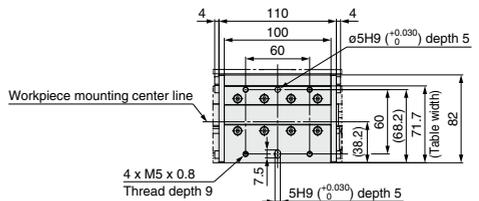


Table details



LEMH Series

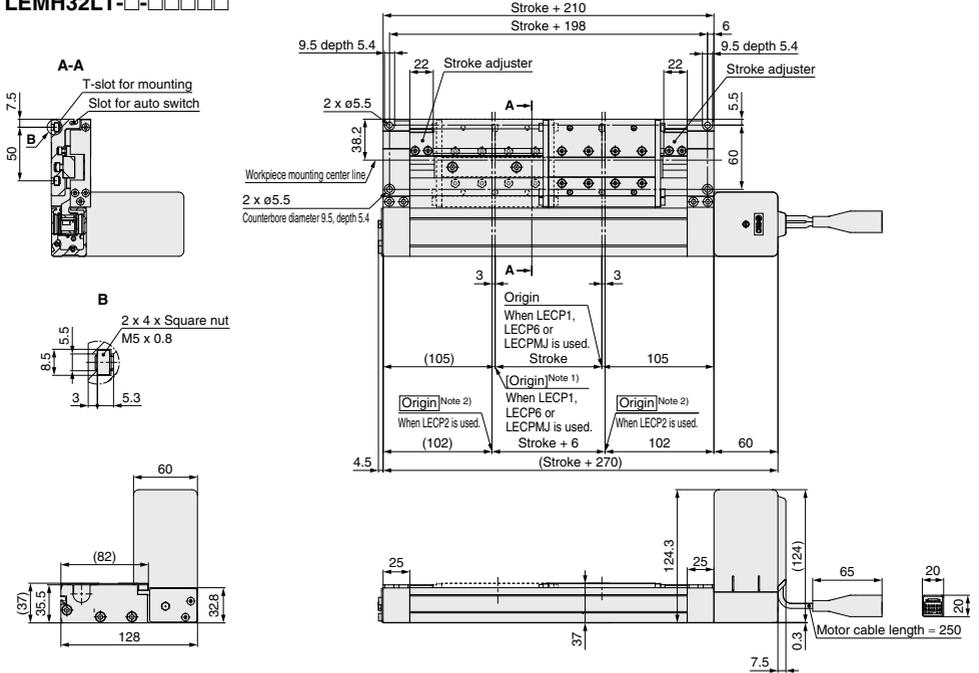
Step Motor (Servo/24 VDC)

Dimensions: Linear Guide Single Axis Type **Size 32**

Refer to page 547 and after for dimensions of the controllers.

Symmetric/Top mounting

LEMH32LT-□-□□□□

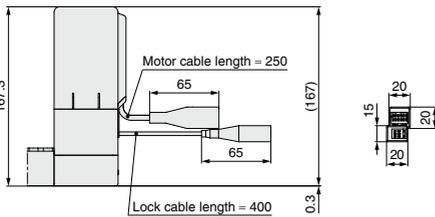


Note 1) [] for when the direction of return to origin has changed. (When the LECP1, LECP6 or LECPMJ is used.)
 Note 2) Origin for when the LECP2 is used. The movable stroke is "Stroke + 6 mm".

Top mounting

With lock

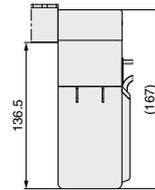
LEMH32LT-□B-□□□□



Bottom mounting

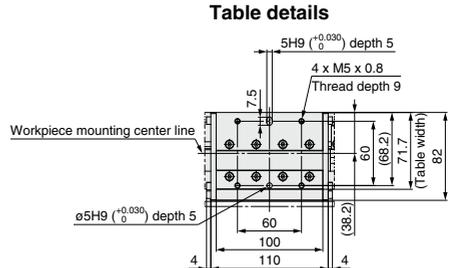
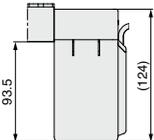
With lock

LEMH32LUT-□B-□□□□



Bottom mounting

LEMH32LUT-□-□□□□

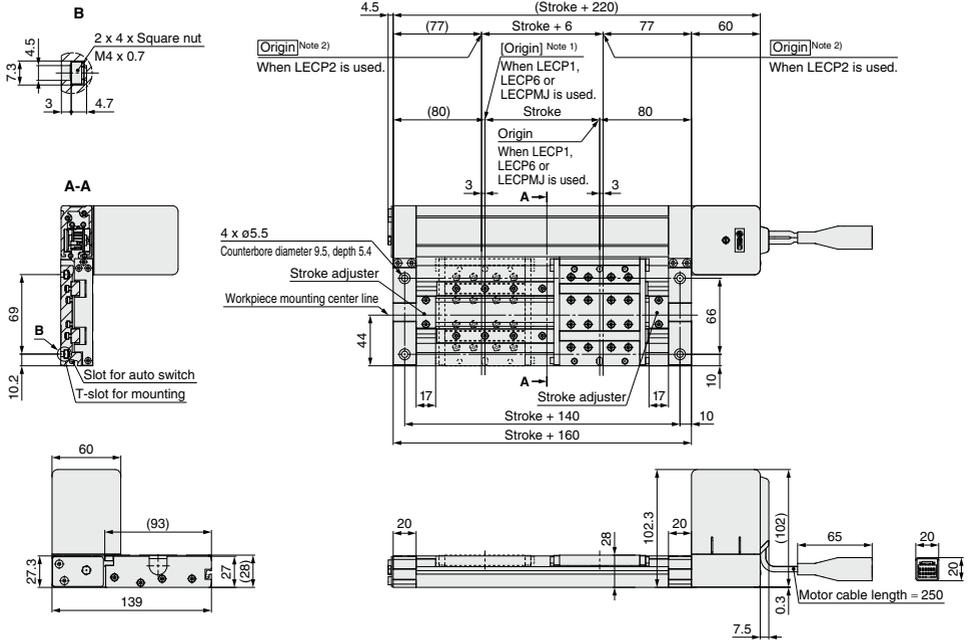


Dimensions: Linear Guide Double Axis Type Size 25

Refer to page 547 and after for dimensions of the controllers.

Top mounting

LEMHT25T-□-□□□□□

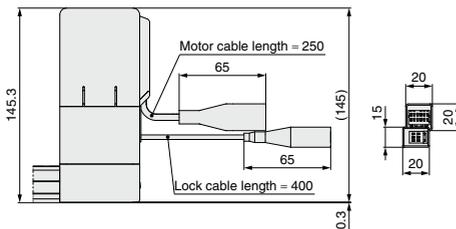


Note 1) [] for when the direction of return to origin has changed. (When the LECIP1, LECIP6 or LECIPMJ is used.)

Note 2) Origin for when the LECIP2 is used. The movable stroke is "Stroke + 6 mm".

Top mounting

With lock
LEMHT25T-□B-□□□□□



Bottom mounting

With lock
LEMHT25UT-□B-□□□□□

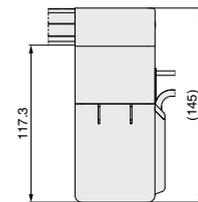
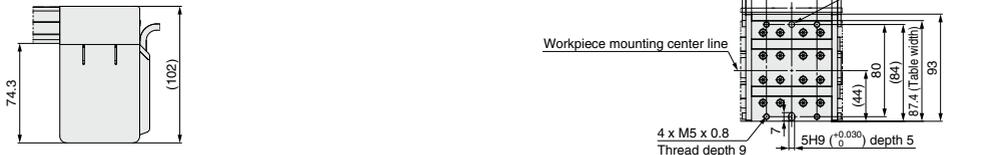


Table details

Bottom mounting

LEMHT25UT-□-□□□□□



LEMHT Series

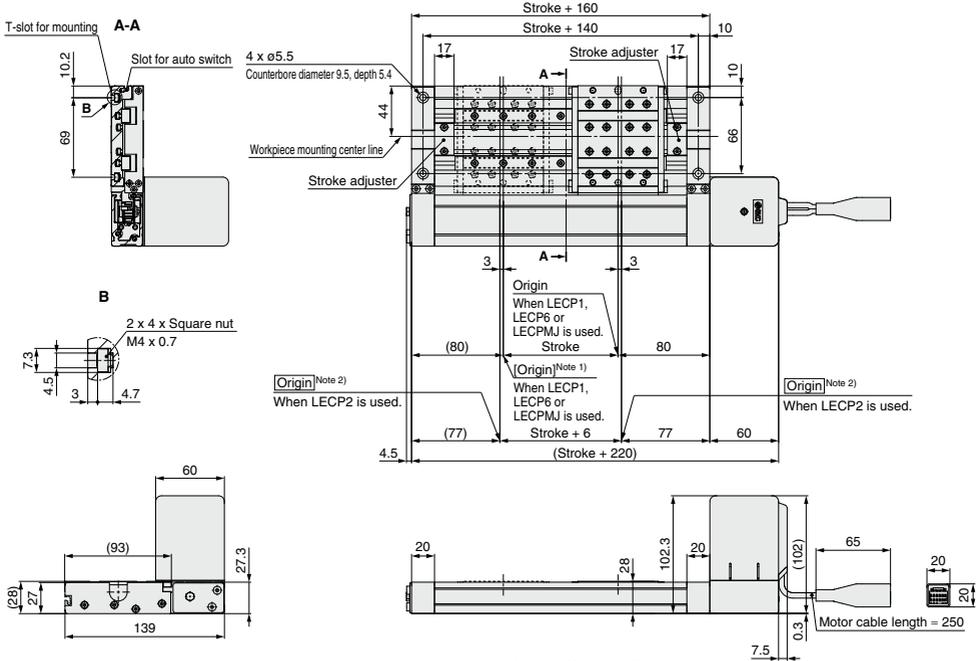
Step Motor (Servo/24 VDC)

Dimensions: Linear Guide Double Axis Type **Size 25**

Refer to page 547 and after for dimensions of the controllers.

Symmetric/Top mounting

LEMHT25LT-□-□□□□

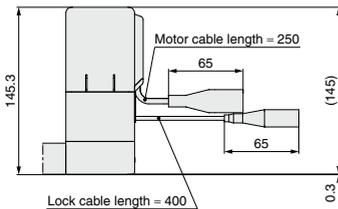


Note 1) [] for when the direction of return to origin has changed. (When the LECP1, LECP6 or LECPMJ is used.)

Note 2) Origin for when the LECP2 is used. The movable stroke is "Stroke + 6 mm".

Top mounting

With lock
LEMHT25LT-□B-□□□□



Bottom mounting

With lock
LEMHT25LUT-□B-□□□□

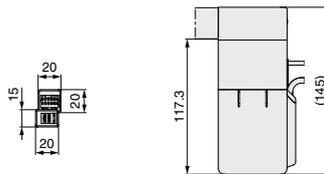
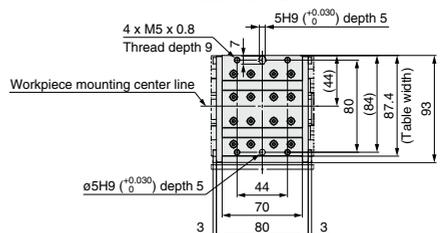


Table details

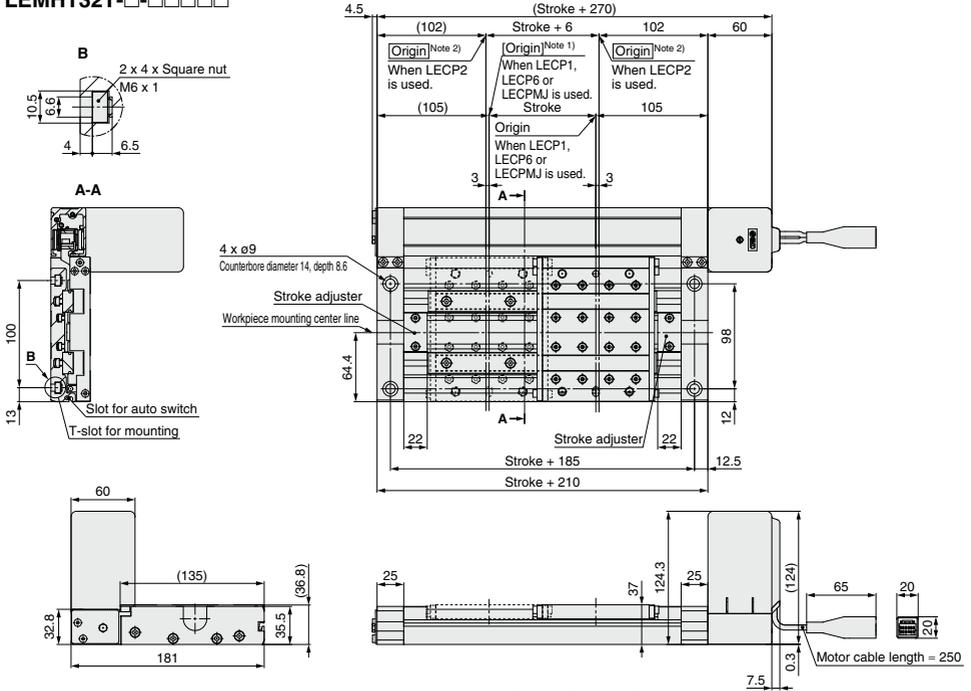


Dimensions: Linear Guide Double Axis Type Size 32

Refer to page 547 and after for dimensions of the controllers.

Top mounting

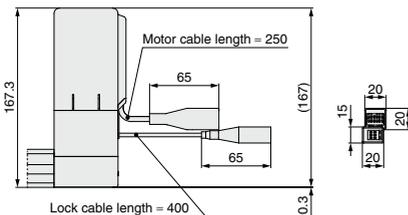
LEMHT32T-□-□□□□□



Top mounting

With lock

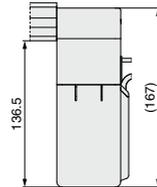
LEMHT32T-□B-□□□□□



Bottom mounting

With lock

LEMHT32UT-□B-□□□□□



Bottom mounting

LEMHT32UT-□-□□□□□

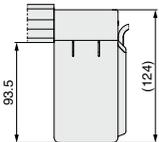
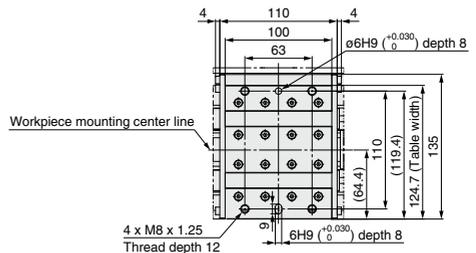


Table details



LEMHT Series

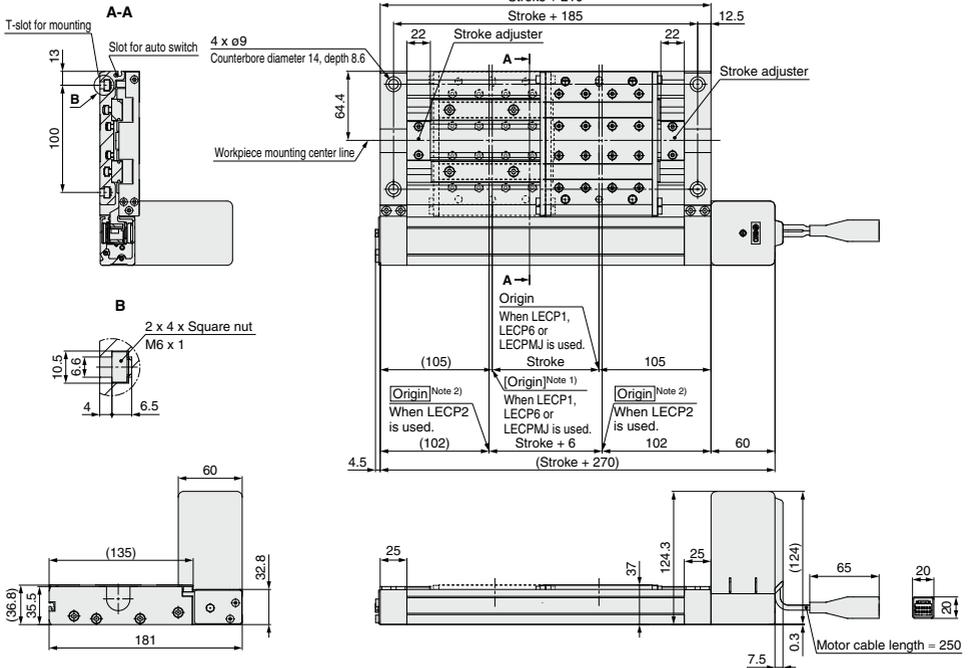
Step Motor (Servo/24 VDC)

Dimensions: Linear Guide Double Axis Type **Size 32**

Refer to page 547 and after for dimensions of the controllers.

Symmetric/Top mounting

LEMHT32LT-□-□□□□

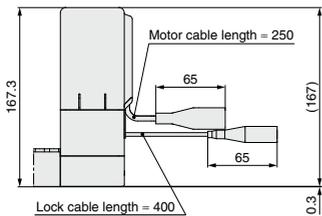


Note 1) [] for when the direction of return to origin has changed. (When the LECP1, LECP6 or LECPMJ is used.)

Note 2) Origin for when the LECP2 is used. The movable stroke is "Stroke + 6 mm".

Top mounting

With lock
LEMHT32LT-□B-□□□□



Bottom mounting

With lock
LEMHT32LUT-□B-□□□□

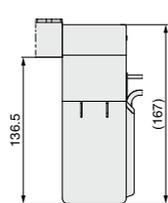
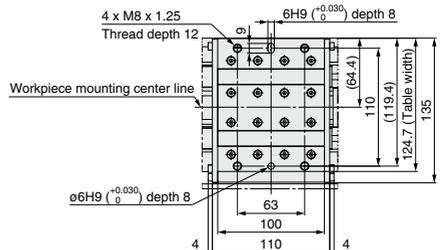
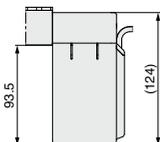


Table details



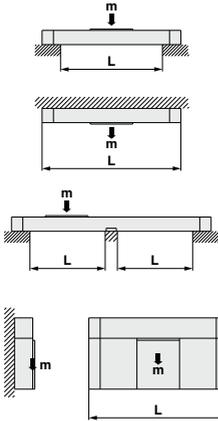
Bottom mounting

LEMHT32LUT-□-□□□□

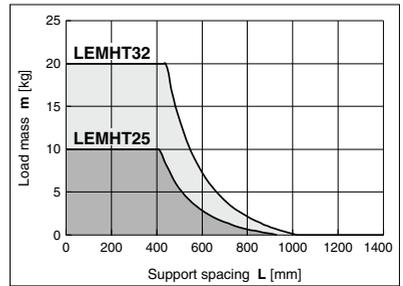
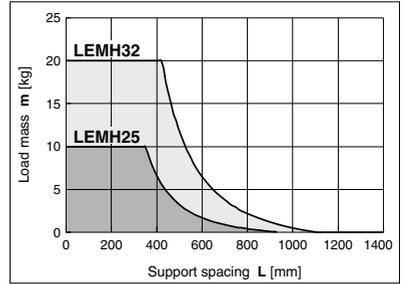
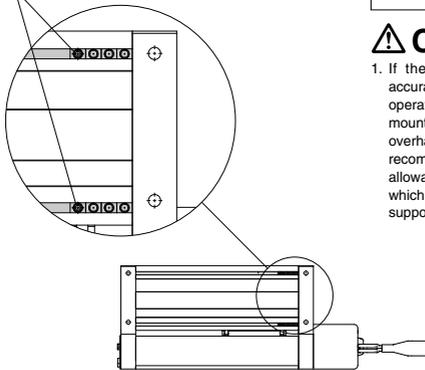


Guide for Intermediate Support

When using actuator with longer stroke, implement intermediate support to prevent frame deflection or deflection caused by vibration or external impacts. The spacing (L) of the intermediate supports must be no more than the values shown in the following graph.



Square nuts on the bottom



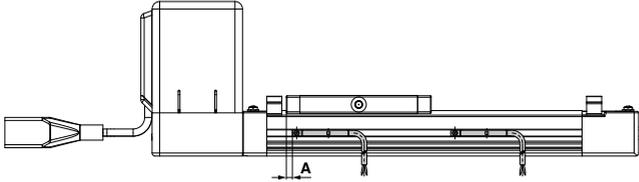
⚠ Caution

1. If the actuator mounting surfaces are not measured accurately, using the intermediate support may cause poor operation. Make sure to level the mounting surface when mounting the actuator. For long stroke operation involving overhang of workpiece, implement intermediate support as recommended even if the support spacing is within the allowable limits shown in the graph. Use the square nuts which are on the bottom of the actuator for the intermediate support.

LEM Series Auto Switch Mounting

Auto Switch Proper Mounting Position at Stroke End Detection

For LEMB



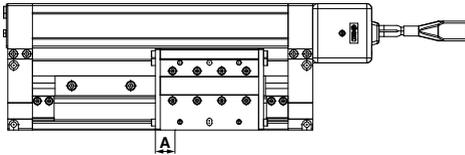
| D-M9, D-M9□V | | D-M9□V, D-M9□WV | | |
|--------------|--------------|-----------------|----------------------|-----|
| Model | Nominal size | A | Operating range [mm] | |
| LEMB | 25 | 40 | 5.5 | |
| LEMC | | 8 | 3.5 | |
| LEMH | | 10 | 6 | |
| LEMHT | 32 | 34 | 7 | |
| LEMB | | 40 | 5.5 | |
| LEMC | | 8.4 | 4 | 5.5 |
| LEMH | | | 5.5 | |
| LEMHT | | 5.5 | | |

Note) The operating range is a guideline including hysteresis, not meant to be guaranteed. There may be large variations (as much as $\pm 30\%$) depending on the ambient environment.

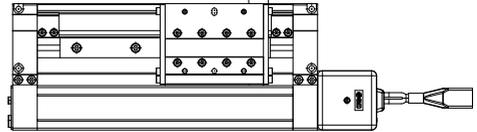
For LEMC/H/HT

The proper mounting position at stroke end detection (A dimension) changes depending on the motor mounting position (standard or symmetric).

Motor mounting position: Standard



Motor mounting position: Symmetric

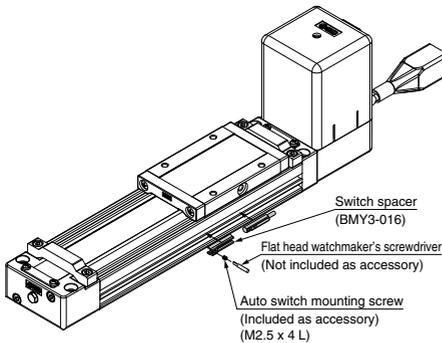


Auto Switch Mounting

LEMB Series

When mounting an auto switch, first hold the switch spacer with your fingers and push it into the slot. Confirm that it is aligned evenly within the slot and adjust the position if necessary. Then, insert the auto switch into the slot and slide it into the spacer.

After establishing the mounting position, use a flat head watchmaker's screwdriver to tighten the included auto switch mounting screw.



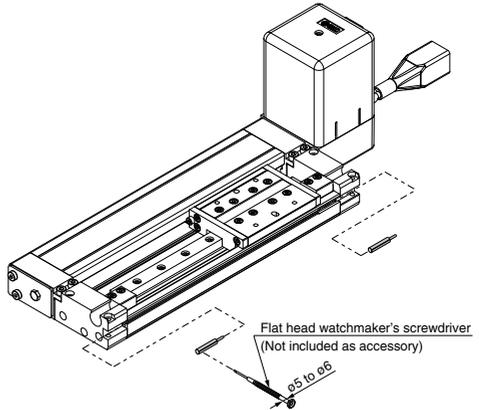
Note) When tightening the auto switch mounting screw, use a watchmaker's screwdriver with a handle of approximately 5 to 6 mm in diameter. Also, tighten with a torque of about 0.05 to 0.1 N·m. As a guide, turn about 90° past the point at which tightening can first be felt.

Switch Spacer Part No.

| Applicable bore size [mm] | 25 | 32 |
|---------------------------|----------|----|
| Switch spacer part no. | BMY3-016 | |

LEMC/H/HT Series

When mounting an auto switch, insert the auto switch into the actuator's auto switch mounting slot as shown below. Once in the mounting position, use a flat head watchmaker's screwdriver to tighten the included auto switch mounting screw.



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

Tightening Torque for Auto Switch Mounting Screw [N·m]

| Auto switch model | Tightening torque |
|-------------------|-------------------|
| D-M9□(V) | 0.10 to 0.15 |
| D-M9□W(V) | |

Solid State Auto Switch Direct Mounting Type

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



Grommet

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



Caution

Precautions

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

Auto Switch Specifications

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

PLC: Programmable Logic Controller

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

Oilproof Heavy-duty Lead Wire Specifications

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

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

Weight

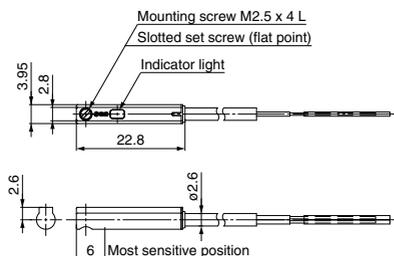
(g)

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

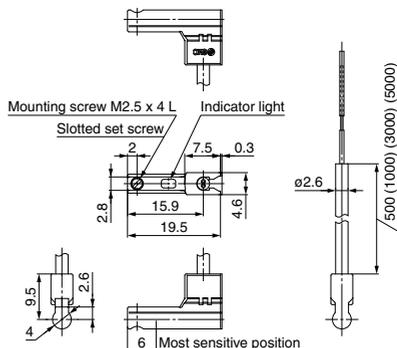
Dimensions

(mm)

D-M9□



D-M9□V



2-Color Indicator Solid State Auto Switch Direct Mounting Type

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



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

Grommet

- 2-wire load current is reduced (2.5 to 40 mA).
- Using flexible cable as standard spec.
- The proper operating range can be determined by the color of the light. (Red → Green ← Red)



Caution

Precautions

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

Auto Switch Specifications

PLC: Programmable Logic Controller

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

Oilproof Flexible Heavy-duty Lead Wire Specifications

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

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

Weight

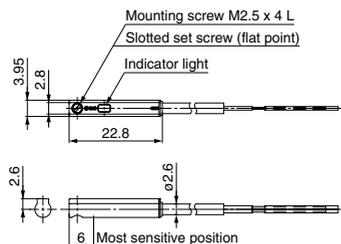
(g)

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

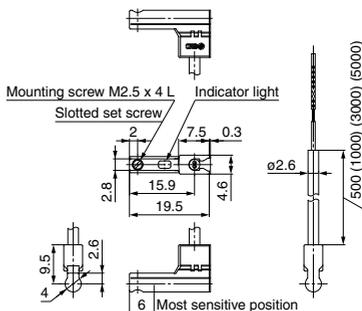
Dimensions

(mm)

D-M9□W



D-M9□WV



LEM Series Electric Actuator Specific Product Precautions 1

Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 8 for Electric Actuator Precautions.



Design

⚠ Caution

- Do not apply a load in excess of the specification limits.**
Select a suitable actuator by work load and allowable moment. If the product is used outside of the specification limits, the eccentric load applied to the guide will be excessive and have adverse effects such as creating play on the guide, degrading accuracy and shortening the life of the product.
- Do not increase the speed in excess of the specification limits.**
Select a suitable actuator by the relationship between the "speed-work load", and the "work load-acceleration/deceleration". If the product is used outside of the specification limits, it will have adverse effects such as creating noise, 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 a failure.
- When external force is applied to the table, it is necessary to add external force to the work load as the total carried load for the sizing.**
When a cable duct or flexible moving tube is attached in parallel to the actuator, it is necessary to add the friction to the work load as the total carried load for the sizing, too.
- The resistance value of the attached equipment should be within the allowable external resistance value.**
- When the product repeatedly cycles with partial strokes (see the table below), operate it at a full stroke at least once every 10 dozens of cycles.**

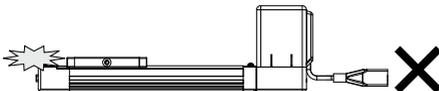
Otherwise, lubrication can run out.

| Model | Partial stroke |
|---------|----------------|
| LEMB25 | 45 mm or less |
| LEMB32 | 45 mm or less |
| LEMC25 | 30 mm or less |
| LEMC32 | 40 mm or less |
| LEMH25 | 20 mm or less |
| LEMH32 | 25 mm or less |
| LEMHT25 | 20 mm or less |
| LEMHT32 | 25 mm or less |

Handling

⚠ Caution

- INP output signal (LECP6)**
1) Positioning operation
When the product comes within the set range by step data [In position], the INP output signal will turn on.
Initial value: Set to [1] or higher.
- Never hit at the stroke end except during return to origin. (Except when the LECP2 controller is used.)**
Internal stopper can be broken.



- The moving force should be the initial value.**
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 work 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.

Handling

⚠ Caution

- Do not dent, scratch or cause other damage to the body and table mounting surfaces.**
This may cause unevenness in the mounting surface, play in the guide or an increase in the sliding resistance.
- Do not apply strong impact or an excessive moment while mounting a workpiece.**
If an external force over the allowable moment is applied, it may cause play in the guide or an increase in the sliding resistance.
- Provide a flat surface for installing the actuator. The degree of surface flatness should be determined by the machine precision requirement, or its corresponding precision.**
The degree of surface flatness for installing the actuator should be within 0.05 mm/200 mm. The degree of surface flatness for mounting a workpiece should be within 0.05 mm (LEMB), 0.02 mm (LEMC/H/HT).
- When mounting the actuator, keep a 40 mm or longer diameter for bends in the cable.**
- Do not hit the table with the workpiece in the positioning operation and positioning range.**
- When mounting the product, use screws with adequate length and tighten them with adequate torque.**
Tightening the screws with a higher torque than the maximum 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.

Body fixed

LEMB type

LEMC/H/HT type

| Model | Screw size | Maximum tightening torque [N·m] | øA [mm] | L [mm] |
|---------|------------|---------------------------------|---------|--------|
| LEMB□ | M5 | 3 | 5.5 | 24.5 |
| LEMC25 | M3 | 0.6 | 3.4 | 23.7 |
| LEMH32 | M5 | 3 | 5.5 | 30.1 |
| LEMHT25 | M5 | 3 | 5.5 | 21.6 |
| LEMHT32 | M8 | 12.5 | 9 | 26.9 |

Workpiece fixed

LEMB type

LEMC/H/HT type

| Model | Screw size | Maximum tightening torque [N·m] | L (Maximum screw-in depth) [mm] |
|---------|------------|---------------------------------|---------------------------------|
| LEMB□ | M5 x 0.8 | 3 | 8 |
| LEMC25 | M4 x 0.5 | 1.5 | 7 |
| LEMH32 | M5 x 0.8 | 3 | 9 |
| LEMHT25 | M5 x 0.8 | 3 | 9 |
| LEMHT32 | M8 x 1.25 | 12.5 | 12 |

To prevent the workpiece retaining screws from touching the body, use screws that are 0.5 mm or shorter than the maximum screw-in depth. If long screws are used, they can touch the body and cause a malfunction.

LEM Series Electric Actuator Specific Product Precautions 2

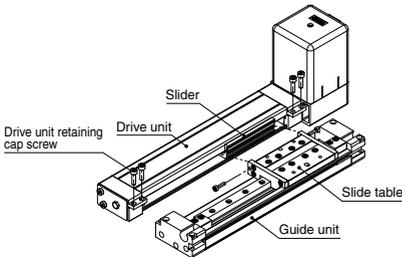
Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 8 for Electric Actuator Precautions.



Handling

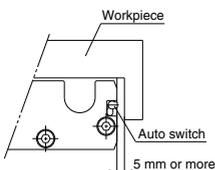
⚠ Caution

12. Do not operate by fixing the table and moving the actuator body.
13. The belt drive actuator cannot be used vertically for applications.
14. Check the specifications for the minimum speed of each actuator.
Otherwise, unexpected malfunctions, such as knocking, may occur.
15. In the case of the belt drive actuator, vibration may occur during operation at speeds within the actuator specifications, this could be caused by the operating conditions. Change the speed setting to a speed that does not cause vibration.
16. High frequency noise will be generated during deceleration depending on the operating conditions. This is a noise generated during processing the regenerative power. It is not a failure.
17. When using actuator with longer stroke, implement an intermediate support.
When using actuator with longer stroke, implement intermediate support to prevent frame deflection or deflection caused by vibration or external impacts.
18. Attaching and detaching the drive unit
To remove the drive unit, remove the 6 drive unit retaining cap screws and remove the slider from the guide unit. To install the drive unit, insert its slider into the slide table on the guide unit and tighten 2 screws of connection part, and then equally tighten the 4 retaining cap screws. Tighten the retaining cap screws securely because if they become loose, problems may occur such as damage, malfunction.



19. Workpiece mounting

When mounting a magnetic workpiece, keep a clearance of 5 mm or greater between the auto switch and the workpiece. Otherwise, the magnetic force within the actuator may be lost, resulting in malfunction of the auto switch.



Handling

⚠ Caution

20. Grease is applied to the dust seal band for sliding. When wiping off the grease to remove foreign matter etc., be sure to apply it again.
21. Do not apply external force to the dust seal band.
Particularly during the transportation

Maintenance

⚠ Warning

Maintenance frequency

Perform maintenance according to the table below.

| Frequency | Appearance check | Internal check | Belt check |
|---|------------------|----------------|------------|
| Inspection before daily operation | ○ | — | — |
| Inspection every 6 months/1000 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 internal check

1. Lubricant condition on moving parts.
2. Loose or mechanical play in fixed parts or fixing screws.

● 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