

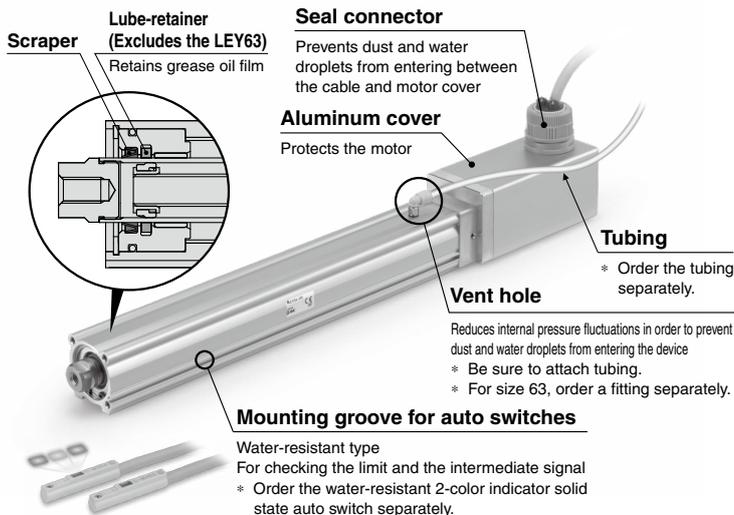
Environment

Model Selection

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

- **Enclosure: IP65 equivalent***1
- **Max. stroke: 500 mm***2

*2 For size 32



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

Secondary Battery Compatible

- **Copper (Cu) and zinc (Zn) free***1

*1 Excludes motors, cables, controllers/drivers

- **Compatible with dew points as low as -70°C**

Uses grease compatible with low dew points

Rod Type/25A-LEY

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

p. 175



Motor type	Size 16	Size 25	Size 32	Size 40
Step motor (Servo/24 VDC)	●	●	●	●
Servo motor (24 VDC)	●	●		

* Copper and zinc materials are used for the motors, cables, controllers/drivers.

LEY-X5 (Made to Order)

Size 25, 32

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC) Type

p. 155



AC Servo Motor (100/200 W) Type

p. 163, 169



LEY63□□□-□P

Size 63

AC Servo Motor (400 W) Type

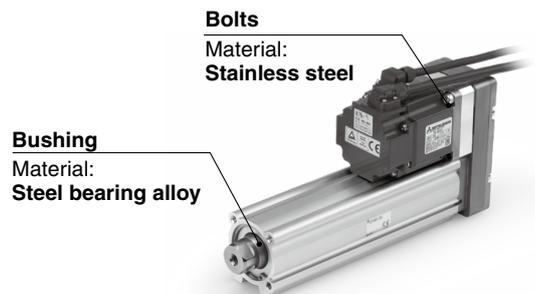
p. 81

* Option



AC Servo Motor Type

p. 179, 181



Motor type	Size 25	Size 32
AC servo motor	●	●

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

LEY

LEYG

AC Servo Motor

LEY

LEYG

Environment

LEY-X5

25A-LEY

LECA6
LECP6

LECG

LECP1

LECPA

LECPMJ

JXC□

AC Servo Motor

LECY□

LECS□

Specific Product Precautions

Model Selection



Refer to page 108 for the LECPA, JXC $\frac{1}{2}$ and page 109 for the LECA6.

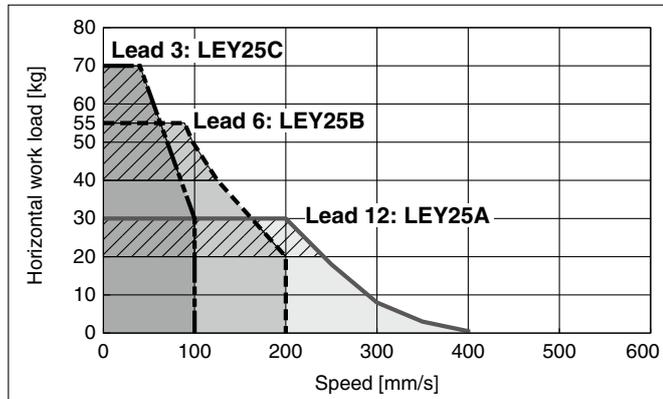
LEY-X5 Series ▶ p. 155

Speed-Work Load Graph (Guide) for Step Motor (Servo/24 VDC) LECP6, LECP1, LECPMJ, JXC $\frac{1}{2}$

Horizontal

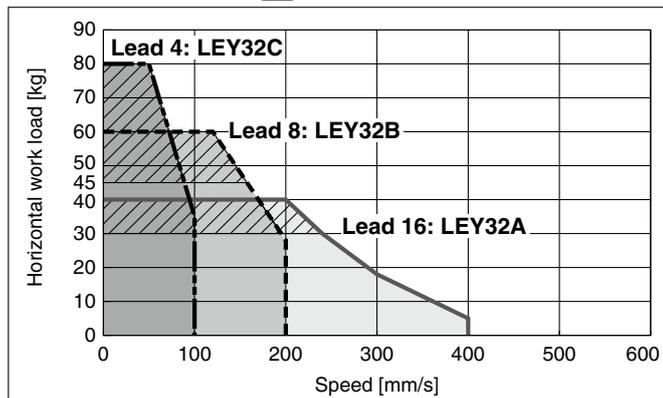
LEY25 \square -X5

for acceleration/deceleration: 2000 mm/s²



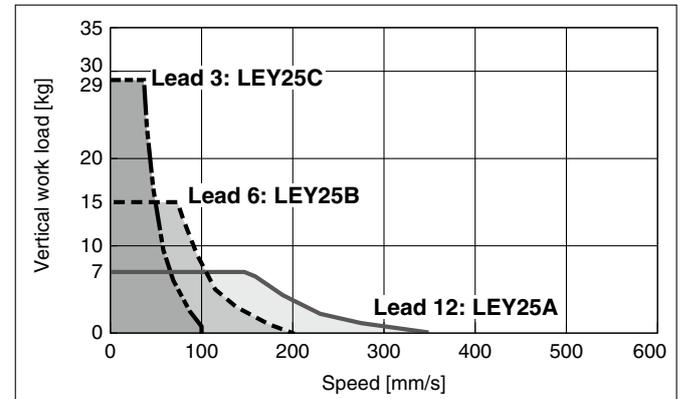
LEY32 \square -X5

for acceleration/deceleration: 2000 mm/s²

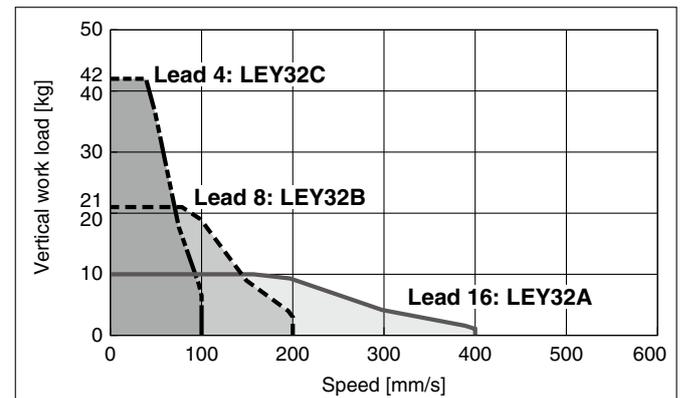


Vertical

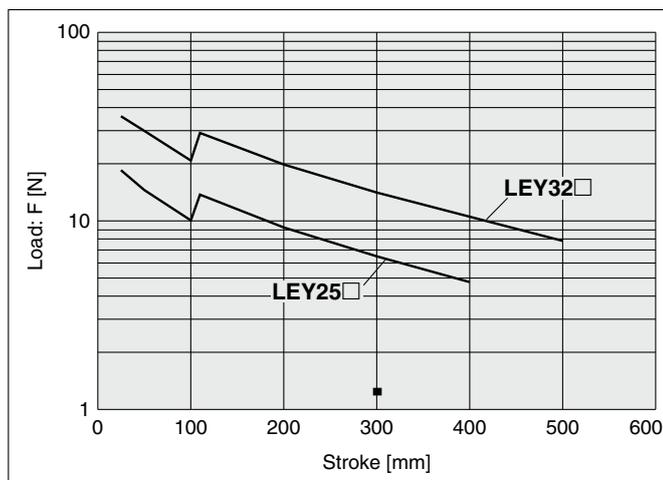
LEY25 \square -X5



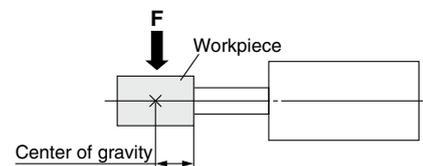
LEY32 \square -X5



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

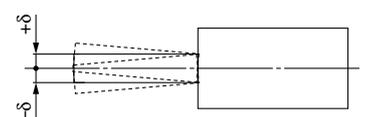


[Stroke] = [Product stroke] + [Distance from the rod end to the center of gravity of the workpiece]



Rod Displacement: δ [mm]

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

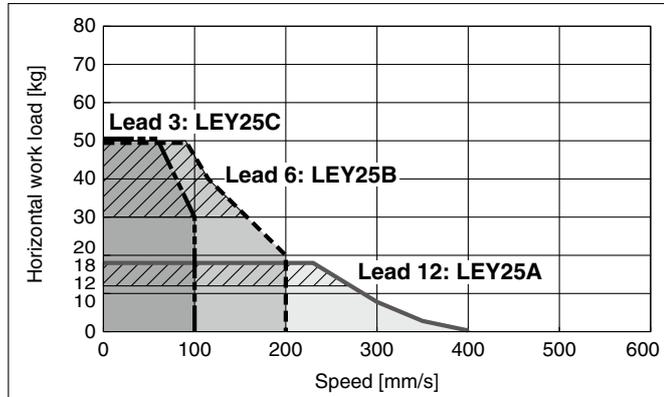


Refer to page 107 for the LECP6, LEC1, LECPMJ, JXC□1 and page 109 for the LECA6.

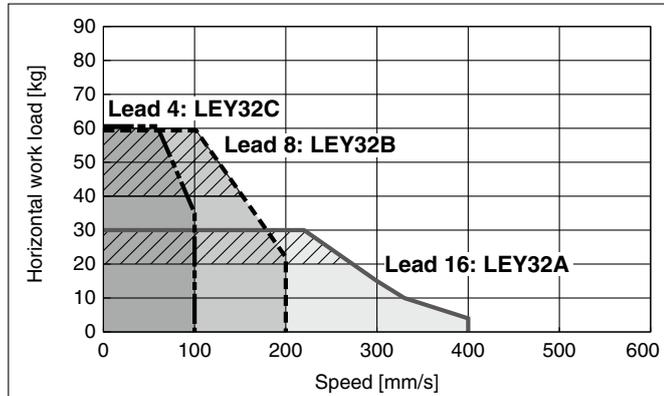
Speed-Work Load Graph (Guide) For Step Motor (Servo/24 VDC) LECPA, JXC□₂₃

Horizontal

LEY25□-X5  for acceleration/deceleration: 2000 mm/s²

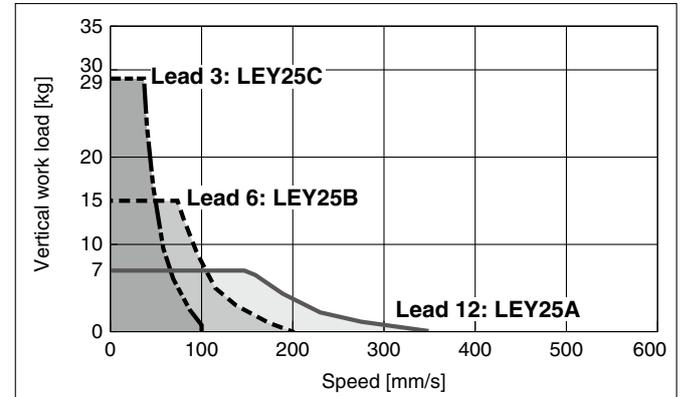


LEY32□-X5  for acceleration/deceleration: 2000 mm/s²

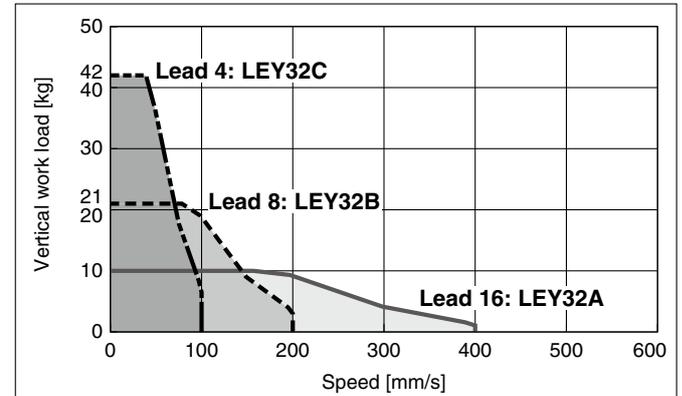


Vertical

LEY25□-X5



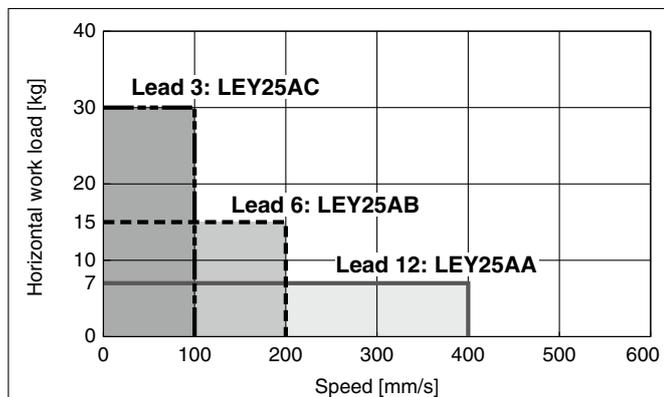
LEY32□-X5



For Servo Motor (24 VDC) LECA6

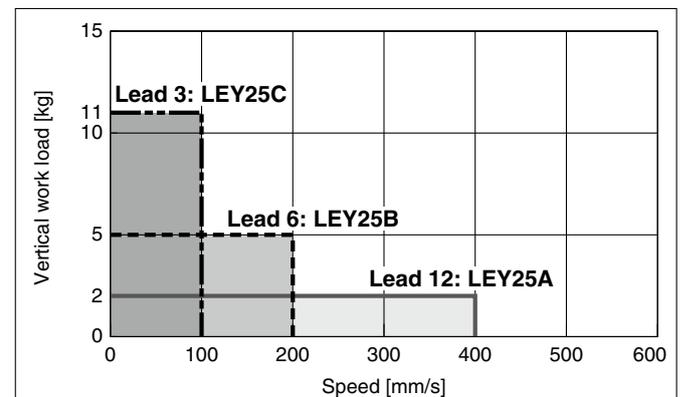
Horizontal

LEY25□A-X5



Vertical

LEY25□A-X5



LEY-X5 Series

Step Motor (Servo/24 VDC)

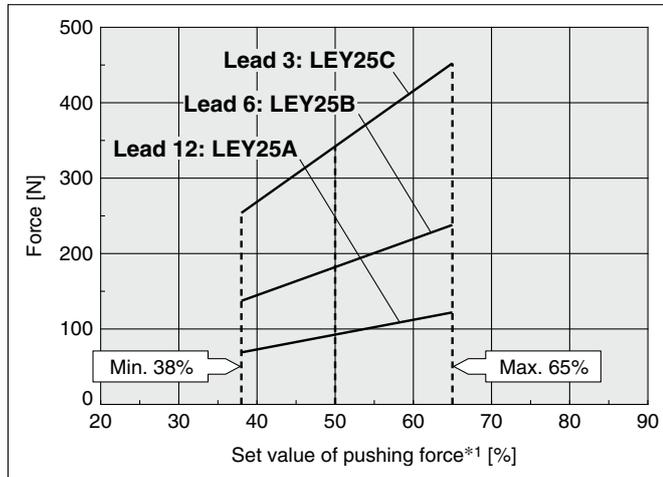
Servo Motor (24 VDC)

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

Force Conversion Graph

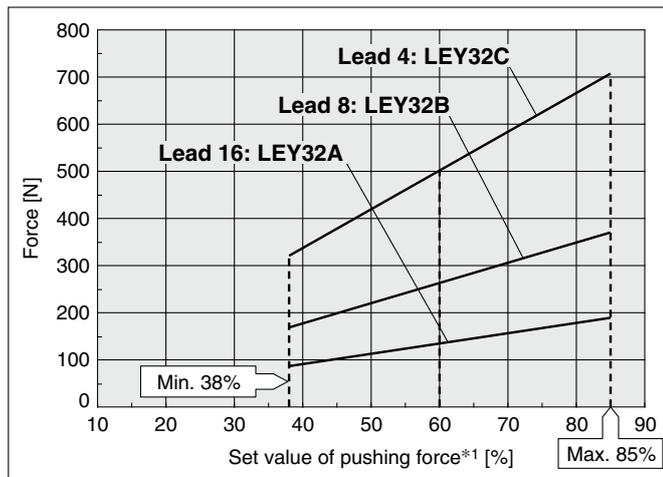
Step Motor (Servo/24 VDC)

LEY25□-X5



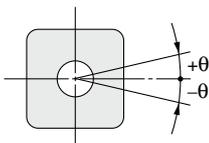
Ambient temperature	Set value of pushing force*1 [%]	Duty ratio [%]	Continuous pushing time [minute]
40°C or less	65 or less	100	—

LEY32□-X5



Ambient temperature	Set value of pushing force*1 [%]	Duty ratio [%]	Continuous pushing time [minute]
25°C or less	85 or less	100	—
40°C	65 or less	100	—
	85	50	15

Non-rotating Accuracy of Rod



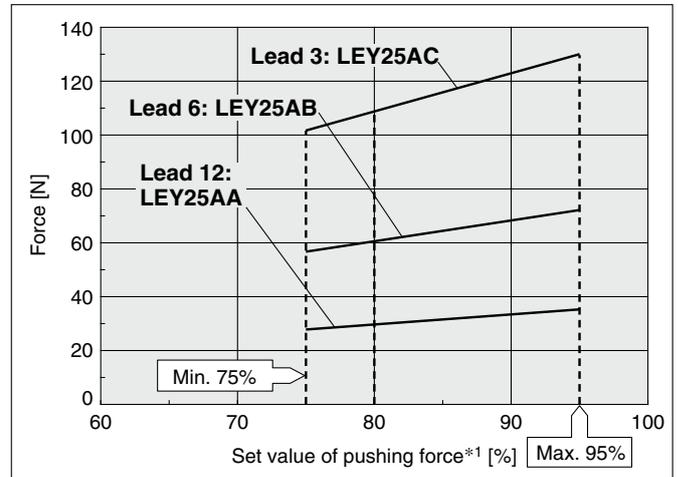
Size	Non-rotating accuracy θ
25	$\pm 0.8^\circ$
32	$\pm 0.7^\circ$

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

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

Servo Motor (24 VDC)

LEY25□A-X5



Ambient temperature	Set value of pushing force*1 [%]	Duty ratio [%]	Continuous pushing time [minute]
40°C or less	95 or less	100	—

<Limit Values for Pushing Force and Trigger Level in Relation to Pushing Speed> Without Load

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

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

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

<Set Values for Vertical Upward Transfer Pushing Operations>

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

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

*1 Set values for the controller

Model Selection

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

AC Servo Motor
 LEYG LEY

Environment
 25A-LEY LEY-X5

Step Motor (Servo/24 VDC)/Servo Motor (24 VDC)
 LEC-A6 LEC-P6
 LEC-G
 LEC-PMJ LEC-PA LEC-P1
 JXC

AC Servo Motor
 LECY LECS

Specific Product Precautions

Electric Actuator/ Rod Type

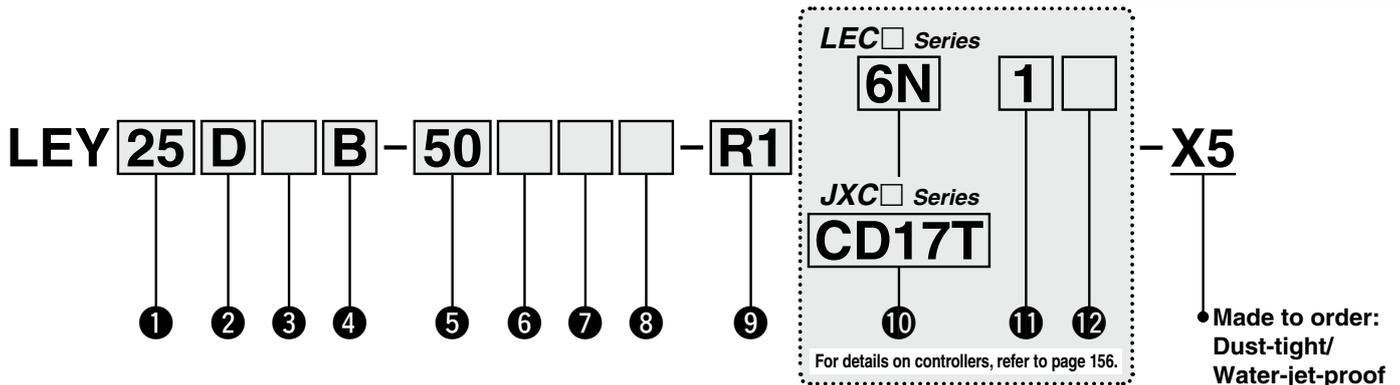
Dust-tight/Water-jet-proof (IP65 Equivalent)

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



Refer to page 151 for model selection.

How to Order



1 Size

25
32

2 Motor mounting position

Nil	Top mounting
D	In-line

3 Motor type

Symbol	Type	Size		Compatible controller/driver
		25	32	
Nil	Step motor (Servo/24 VDC)	●	●	LECP6 JXCE1 LECP1 JXC91 LECPA JXCP1 LECPMJ JXCD1 JXCL1
A	Servo motor (24 VDC)	●	—	LECA6

4 Lead [mm]

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

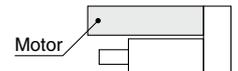
5 Stroke [mm]

30	30
to	to
500	500

* For details, refer to the applicable stroke table below.

6 Motor option*2

Nil	Without option
B	With lock



7 Rod end thread

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

8 Mounting*3

Symbol	Type	Motor mounting position	
		Top mounting	In-line
Nil	Ends tapped/Body bottom tapped*4	●	●
L	Foot	●	—
F	Rod flange*4	●*5	●
G	Head flange*4	●*6	—

9 Actuator cable type/length

Robotic cable		[m]	
R1	1.5	RA	10*7
R3	3	RB	15*7
R5	5	RC	20*7
R8	8*7		

Applicable Stroke Table*1

●: Standard

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

* For auto switches, refer to page 174.
* "-X5" is not added to an actuator model with a controller/driver part number suffix.
Example) "LEY25DB-100" for the LEY25DB-100BMU-R16N1D-X5

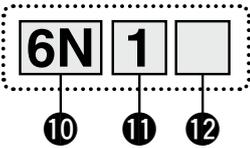
Electric Actuator/Rod Type **LEY-X5 Series**

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

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

LEC Series (For details, refer to page 157.)



10 Controller/Driver type*8

Nil	Without controller/driver	
6N	LECP6/LECA6	NPN
6P	(Step data input type)	PNP
1N	LECP1 *9	NPN
1P	(Programless type)	PNP
MJ	LECPMJ *9 *10 (CC-Link direct input type)	—
AN	LECPA *9 *11	NPN
AP	(Pulse input type)	PNP

11 I/O cable length*12, Communication plug

Nil	Without cable	
1	1.5 m	
3	3 m*13	
5	5 m*13	
S	Straight type communication plug connector*14	
T	T-branch type communication plug connector*14	

12 Controller/Driver mounting

Nil	Screw mounting	
D	DIN rail*15	



JXC Series (For details, refer to page 157.)

10 Controller

Nil	Without controller	
C□1□□	With controller	



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

Mounting	
7	Screw mounting
8*15	DIN rail

Communication plug connector for DeviceNet™*16

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



- *1 Please consult with SMC for non-standard strokes as they are produced as special orders.
- *2 When "With lock" is selected for the top mounting type, the motor body will stick out from the end of the body for strokes of 50 mm or less. Check for interference with workpieces before selecting a model.
- *3 The mounting bracket is shipped together with the product but does not come assembled.
- *4 For the horizontal cantilever mounting of the rod flange, head flange, or ends tapped types, use the actuator within the following stroke range.
- LEY25: 200 mm or less - LEY32: 100 mm or less
- *5 The rod flange type is not available for the LEY25/32 with strokes of 50 mm or less and motor option "With lock."
- *6 The head flange type is not available for the LEY32.
- *7 Produced upon receipt of order (Robotic cable only)
- *8 For details on controllers/drivers and compatible motors, refer to the compatible controller/driver on the next page.

- *9 Only available for the motor type "Step motor"
- *10 Not compliant with CE
- *11 When pulse signals are open collector, order the current limiting resistor (LEC-PA-R-□) on page 218 separately.
- *12 When "Without controller/driver" is selected for controller/driver types, I/O cable cannot be selected. Refer to page 197 (For LECP6/LECA6), page 211 (For LECP1), or page 218 (For LECPA) if I/O cable is required.
- *13 When "Pulse input type" is selected for controller/driver types, pulse input usable only with differential. Only 1.5 m cables usable with open collector
- *14 For the LECPMJ, only "Nil," "S," and "T" are selectable since I/O cable is not included.
- *15 The DIN rail is not included. Order it separately.
- *16 Select "Nil" for anything other than DeviceNet™.

⚠ Caution

[CE-compliant products]

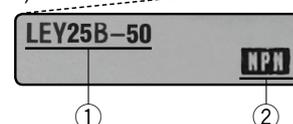
- ① EMC compliance was tested by combining the electric actuator LEY series and the controller LEC/JXC series.
The EMC depends on the configuration of the customer's control panel and the relationship with other electrical equipment and wiring. Therefore, compliance with the EMC directive cannot be certified for SMC components incorporated into the customer's equipment under actual operating conditions. As a result, it is necessary for the customer to verify compliance with the EMC directive for the machinery and equipment as a whole.
- ② For the servo motor (24 VDC) specification, EMC compliance was tested by installing a noise filter set (LEC-NFA). Refer to page 197 for the noise filter set. Refer to the LECA series Operation Manual for installation.
- ③ CC-Link direct input type (LECPMJ) is not CE-compliant.

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

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

<Check the following before use.>

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



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

LEY-X5 Series

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

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

Compatible Controller/Driver

LEC□ Series

Type					
Series	LECP6	LECA6	LECPMJ	LECP1	LECPA
Features	Value (Step data) input Standard controller		CC-Link direct input	Capable of setting up operation (step data) without using a PC or teaching box	Operation by pulse signals
Compatible motor	Step motor (Servo/24 VDC)	Servo motor (24 VDC)	Step motor (Servo/24 VDC)		
Max. number of step data	64 points		14 points		—
Power supply voltage	24 VDC				
Reference page	189	189	222	205	212

JXC□ Series

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)				
Max. number of step data	64 points				
Power supply voltage	24 VDC				
Reference page	230				

Electric Actuator/Rod Type **LEY-X5 Series**

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

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

Specifications

Step Motor (Servo/24 VDC)

Model		LEY25□-X5			LEY32□-X5									
Work load [kg]*1	Horizontal	For LECP6 LECP1 LECPMJ JXC□1	(3000 [mm/s ²])	20	40	60	30	45	60					
			(2000 [mm/s ²])	30	60	70	40	60	80					
	Vertical*14	For LECPA JXC□ ₂ ₃	(3000 [mm/s ²])	12	30	30	20	40	40					
			(2000 [mm/s ²])	18	50	50	30	60	60					
			(3000 [mm/s ²])	7	15	29	10	21	42					
Pushing force [N]*2 *3 *4		63 to 122			126 to 238		232 to 452		80 to 189		156 to 370		296 to 707	
Speed [mm/s]*4		18 to 400			9 to 200		5 to 100		24 to 400		12 to 200		6 to 100	
Max. acceleration/deceleration [mm/s ²]		3000												
Pushing speed [mm/s]*5		35 or less					30 or less							
Positioning repeatability [mm]		±0.02												
Lost motion [mm]*6		0.1 or less												
Screw lead [mm]		12		6		3		16		8		4		
Impact/Vibration resistance [m/s ²]*7		50/20												
Actuation type		Ball screw + Belt (LEY□) Ball screw (LEY□D)												
Guide type		Sliding bushing (Piston rod)												
Enclosure*8		IP65 equivalent												
Operating temperature range [°C]		5 to 40												
Operating humidity range [%RH]		90 or less (No condensation)												
Motor size		□42					□56.4							
Motor type		Step motor (Servo/24 VDC)												
Encoder		Incremental A/B phase (800 pulse/rotation)												
Rated voltage [V]		24 VDC ±10%												
Power consumption [W]*9		40					50							
Standby power consumption when operating [W]*10		15					48							
Max. instantaneous power consumption [W]*11		48					104							
Type*12		Non-magnetizing lock												
Holding force [N]		78		157		294		108		216		421		
Power consumption [W]*13		5					5							
Rated voltage [V]		24 VDC ±10%												

*1 Horizontal: The maximum value of the work load. An external guide is necessary to support the load. (Friction coefficient of guide: 0.1 or less) The actual work load and transfer speed change according to the condition of the external guide. Also, speed changes according to the work load. Check "Model Selection" on pages 151 and 152.

Vertical: Speed changes according to the work load. Check "Model Selection" on pages 151 and 152. The values shown in () are the acceleration/deceleration. Set these values to be 3000 [mm/s²] or less.

*2 Pushing force accuracy is ±20% (F.S.).

*3 The thrust setting values for LEY25□ is 38% to 65% and for LEY32□ is 38% to 85%. The pushing force values change according to the duty ratio and pushing speed. Check "Model Selection" on page 153.

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

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

*6 A reference value for correcting an error in reciprocal operation

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

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

*8 Cannot be used in an environment where oil such as cutting oil splashes or it is constantly exposed to water

Take appropriate protective measures. For details on enclosure, refer to "Enclosure" on page 186.

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

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

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

*12 With lock only

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

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

LEY-X5 Series

Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

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

Specifications

Servo Motor (24 VDC)

Model		LEY25□A-X5					
Actuator specifications	Work load [kg] ^{*1}	Horizontal	(3000 [mm/s ²])		7	15	30
		Vertical ^{*13}	(3000 [mm/s ²])		2	5	11
	Pushing force [N] ^{*2 *3}				18 to 35	37 to 72	66 to 130
	Speed [mm/s]				2 to 400	1 to 200	1 to 100
	Max. acceleration/deceleration [mm/s ²]				3000		
	Pushing speed [mm/s] ^{*4}				35 or less		
	Positioning repeatability [mm]				±0.02		
	Lost motion [mm] ^{*5}				0.1 or less		
	Screw lead [mm]		12	6	3		
	Impact/Vibration resistance [m/s ²] ^{*6}				50/20		
	Actuation type				Ball screw + Belt (LEY□) Ball screw (LEY□D)		
	Guide type				Sliding bushing (Piston rod)		
	Enclosure ^{*7}				IP65 equivalent		
Operating temperature range [°C]				5 to 40			
Operating humidity range [%RH]				90 or less (No condensation)			
Electric specifications	Motor size				□42		
	Motor type				Servo motor (24 VDC)		
	Encoder				Incremental A/B phase (800 pulse/rotation)/Z-phase		
	Rated voltage [V]				24 VDC ±10%		
	Power consumption [W] ^{*8}				86		
	Standby power consumption when operating [W] ^{*9}				4 (Horizontal)/12 (Vertical)		
Lock unit specifications	Max. instantaneous power consumption [W] ^{*10}				96		
	Type ^{*11}				Non-magnetizing lock		
	Holding force [N]		78	157	294		
	Power consumption [W] ^{*12}				5		
Rated voltage [V]				24 VDC ±10%			

- *1 Horizontal: The maximum value of the work load. An external guide is necessary to support the load. (Friction coefficient of guide: 0.1 or less) The actual work load and transfer speed change according to the condition of the external guide. Vertical: Speed changes according to the work load. Check "Model Selection" on page 152. The values shown in () are the acceleration/deceleration. Set these values to be 3000 [mm/s²] or less.
- *2 Pushing force accuracy is ±20% (F.S.).
- *3 The thrust setting values for LEY25A□ is 75% to 95%. The pushing force values change according to the duty ratio and pushing speed. Check "Model Selection" on page 153.
- *4 The allowable speed for pushing operation When push conveying a workpiece, operate at the vertical work load or less.
- *5 A reference value for correcting an error in reciprocal operation
- *6 Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.) Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
- *7 Cannot be used in an environment where oil such as cutting oil splashes or it is constantly exposed to water Take appropriate protective measures. For details on enclosure, refer to "Enclosure" on page 186.
- *8 The power consumption (including the controller) is for when the actuator is operating.
- *9 The standby power consumption when operating (including the controller) is for when the actuator is stopped in the set position during the operation with the maximum work load. Except during the pushing operation
- *10 The maximum instantaneous power consumption (including the controller) is for when the actuator is operating. This value can be used for the selection of the power supply.
- *11 With lock only
- *12 For an actuator with lock, add the power consumption for the lock.
- *13 When mounting vertically and using the product facing upwards in an environment where water is present, take necessary measures to prevent water from splashing on the rod cover, because water will accumulate on the rod seal due to the structure of the product.

Weight

Weight: Motor Top Mounting Type

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

Weight: In-line Motor Type

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

Additional Weight

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

Electric Actuator/Rod Type **LEY-X5 Series**

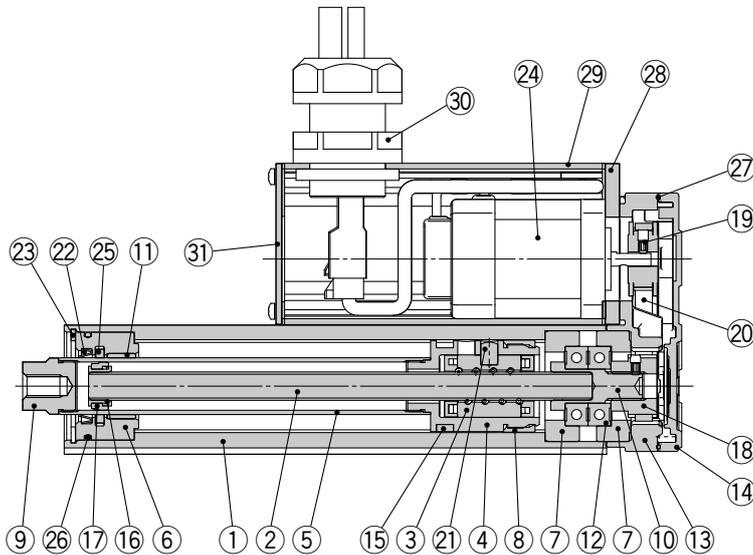
Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

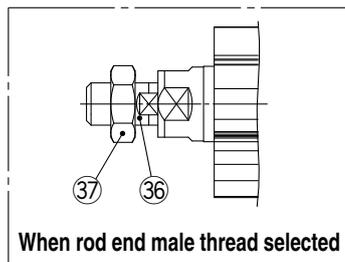
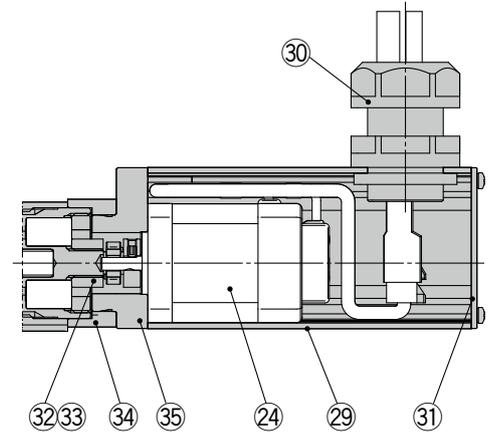
Dust-tight/Water-jet-proof (IP65 Equivalent)

Construction

Motor top mounting type: **LEY²⁵₃₂**



In-line motor type: **LEY²⁵₃₂D**



Component Parts

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

Replacement Parts (Motor top mounting only)/Belt

No.	Size	Order no.
20	25	LE-D-2-2
	32	LE-D-2-3

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

Replacement Parts/Grease Pack

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

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

Model Selection

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

AC Servo Motor

Environment

25A-LEY LEY-X5

LECA6 LECP6

LECA6 LECG

LECP1

LECPA

LECPMJ

JXC

AC Servo Motor

LECY

LECS

Specific Product Precautions

LEY-X5 Series

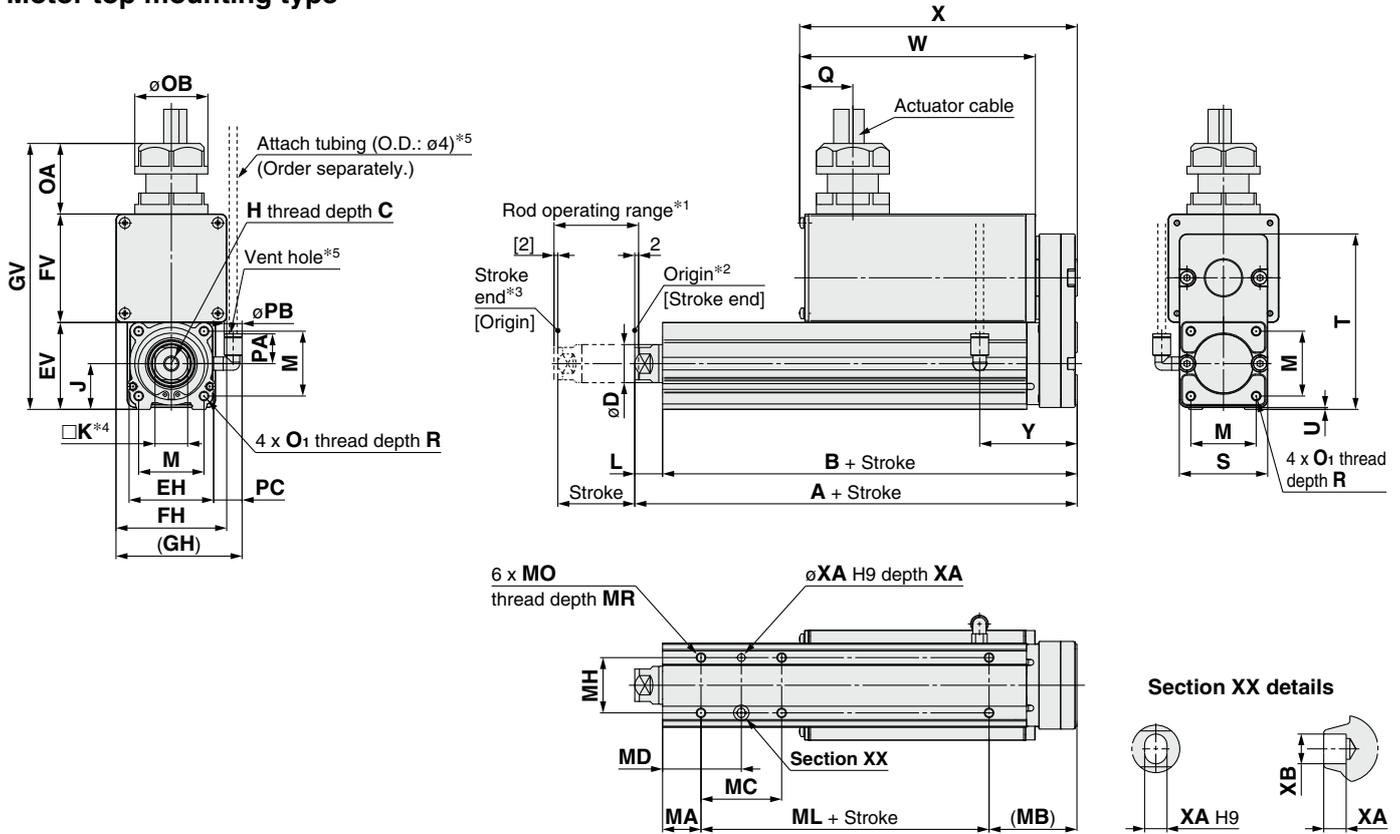
Step Motor (Servo/24 VDC)

Servo Motor (24 VDC)

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

Dimensions

Motor top mounting type



[mm]

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

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

Body Bottom Tapped

[mm]

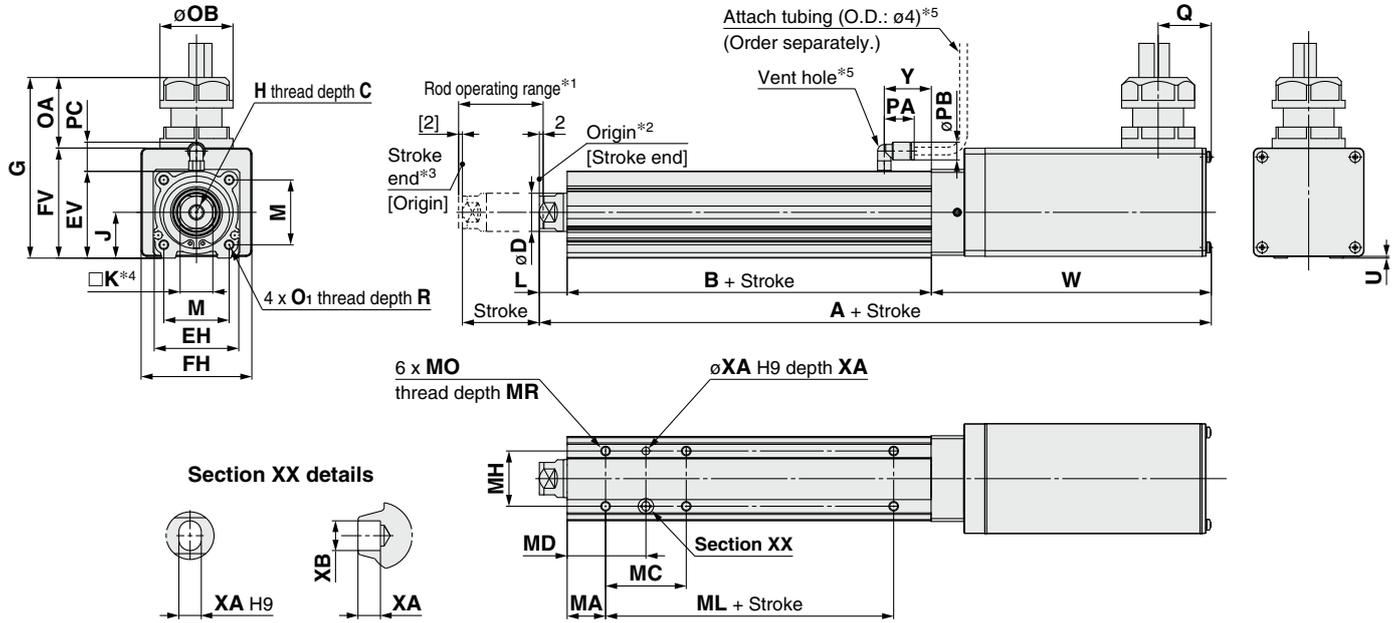
Size	Stroke range [mm]	MA	MB	MC	MD	MH	ML	MO	MR	XA	XB
25	15 to 39	20	46	24	32	29	50	M5 x 0.8	6.5	4	5
	40 to 100			42	41						
	101 to 124			59	49.5						
	125 to 200			76	58						
	201 to 400			76	58						
32	20 to 39	25	55	22	36	30	50	M6 x 1	8.5	5	6
	40 to 100			36	43						
	101 to 124			53	51.5				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

- *1 Range within which the rod can move when it returns to origin
Make sure workpieces mounted on the rod do not interfere with the workpieces and facilities around the rod.
- *2 Position after return to origin
- *3 [] for when the direction of return to origin has changed
- *4 The direction of rod end width across flats (□K) differs depending on the products.
- *5 The vent hole is the port for releasing to atmosphere. Do not apply pressure to this hole.
Attach tubing to the vent hole and place the end of the tubing so it is not exposed to dust or water.

For the rod end male thread, refer to page 69. For the mounting bracket dimensions, refer to page 99.

Dimensions

In-line motor type



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

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

Body Bottom Tapped

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

- *1 Range within which the rod can move when it returns to origin
Make sure workpieces mounted on the rod do not interfere with the workpieces and facilities around the rod.
- *2 Position after return to origin
- *3 [] for when the direction of return to origin has changed
- *4 The direction of rod end width across flats (K) differs depending on the products.
- *5 The vent hole is the port for releasing to atmosphere. Do not apply pressure to this hole.
Attach tubing to the vent hole and place the end of the tubing so it is not exposed to dust or water.

For the rod end male thread, refer to page 69. For the mounting bracket dimensions, refer to page 99.

Electric Actuator/ Rod Type

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

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



Refer to page 43 for model selection.

Size 63 is available by selecting option P. Refer to page 81.

LEY Series ▶ p. 169

How to Order

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

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

Made to order:
Dust-tight/
Water-jet-proof

① Accuracy

Nil	Basic type
H	High-precision type

② Size

25
32

③ Motor mounting position

Nil	Top mounting
D	In-line

⑤ Lead [mm]

Symbol	LEY25□	LEY32□*1
A	12	16 (20)
B	6	8 (10)
C	3	4 (5)

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

⑥ Stroke [mm]

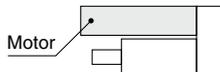
30	30
to	to
500	500

* For details, refer to the applicable stroke table below.

⑦ Motor option

Nil	Without option
B	With lock*1

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



⑧ Rod end thread

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

⑪ Cable length [m]*1

Nil	Without cable
2	2
5	5
A	10

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

Applicable Stroke Table

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

●: Standard

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

④ Motor type

Symbol	Type	Output [W]	Actuator size	Compatible driver
S2*1	AC servo motor (Incremental encoder)	100	25	LECSA□-S1
S3		200	32	LECSA□-S3
S6*1	AC servo motor (Absolute encoder)	100	25	LECSB□-S5 LECSC□-S5 LECSS□-S5
S7		200	32	LECSB□-S7 LECSC□-S7 LECSS□-S7
T6*2	AC servo motor (Absolute encoder)	100	25	LECSB2-T5 LECS2-T5 LECSS2-T5
T7		200	32	LECSB2-T7 LECS2-T7 LECSS2-T7

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

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

⑨ Mounting*1

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

*1 The mounting bracket is shipped together with the product but does not come assembled.

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

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

*3 The rod flange type is not available for the LEY25 with a 30 mm stroke and motor option "With lock."

*4 The head flange type is not available for the LEY32.

⑬ I/O cable length [m]*1

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

*1 When "Without driver" is selected for driver type, only "Nil: Without cable" can be selected. Refer to page 271 if I/O cable is required. (Options are shown on page 271.)

⑩ Cable type*1 *2

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

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

*2 Standard cable entry direction is

- Top mounting: (A) Axis side
- In-line: (B) Counter axis side

(Refer to page 270 for details.)

⑫ Driver type*1

	Compatible driver	Power supply voltage [V]
Nil	Without driver	—
A1	LECSA1-S□	100 to 120
A2	LECSA2-S□	200 to 230
B1	LECSB1-S□	100 to 120
B2	LECSB2-S□	200 to 230
	LECSB2-T□	200 to 240
C1	LECS1-S□	100 to 120
C2	LECS2-S□	200 to 230
	LECS2-T□	200 to 230
S1	LECS1-S□	100 to 120
S2	LECS2-S□	200 to 230
	LECS2-T□	200 to 240

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

Example)

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

S2 : Standard cable (2 m)

Nil : Without cable and driver

* For auto switches, refer to page 174.

Electric Actuator/Rod Type **LEY-X5 Series**

AC Servo Motor

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

Specifications: LECSA/LECSB/LECSC/LECSS

Model		LEY25S ₆ ² /T6-X5 / LEY25DS ₆ ² /T6-X5				LEY32S ₃ ³ /T7-X5 (Top mounting)				LEY32DS ₃ ³ /T7-X5 (In-line)					
Actuator specifications	Work load [kg]	Horizontal* ¹		18	50	50	30	60	60	30	60	60			
		Vertical* ⁸		8	16	30	9	19	37	12	24	46			
	Force [N]* ² (Set value: 15 to 30%)* ¹⁵		65 to 131	127 to 255	242 to 485	79 to 157	154 to 308	294 to 588	98 to 197	192 to 385	368 to 736				
	Max. speed [mm/s]* ³	Stroke range	Up to 300	900	450	225	1200	600	300	1000	500	250			
			305 to 400	600	300	150	800	400	200	640	320	160			
			405 to 500	—	—	—	—	—	—	—	—	—	—		
	Pushing speed [mm/s]* ⁴		35 or less				30 or less				30 or less				
	Max. acceleration/deceleration [mm/s ²]		5000				5000				5000				
	Positioning repeatability [mm]	Basic type						±0.02							
		High-precision type						±0.01							
Lost motion [mm]* ⁵	Basic type						0.1 or less								
	High-precision type						0.05 or less								
Lead [mm] (including pulley ratio)		12	6	3	20	10	5	16	8	4					
Impact/Vibration resistance [m/s ²]* ⁶		50/20				50/20				50/20					
Actuation type		Ball screw + Belt/Ball screw				Ball screw + Belt [1.25:1]				Ball screw					
Guide type		Sliding bushing (Piston rod)				Sliding bushing (Piston rod)				Sliding bushing (Piston rod)					
Enclosure* ⁷		IP65 equivalent													
Operating temperature range [°C]		5 to 40				5 to 40				5 to 40					
Operating humidity range [%RH]		90 or less (No condensation)				90 or less (No condensation)				90 or less (No condensation)					
Regeneration option		May be required depending on speed and work load (Refer to pages 45 and 46.)													
Motor output/Size		100 W/□40				200 W/□60				200 W/□60					
Motor type		AC servo motor (100/200 VAC)				AC servo motor (100/200 VAC)				AC servo motor (100/200 VAC)					
Encoder* ¹⁴		Motor type S2, S3: Incremental 17-bit encoder (Resolution: 131072 p/rev) Motor type S6, S7: Absolute 18-bit encoder (Resolution: 262144 p/rev) Motor type T6, T7: Absolute 22-bit encoder (Resolution: 4194304 p/rev) (For LECSB-T□, LECSA-T□) Motor type T6, T7: Absolute 18-bit encoder (Resolution: 262144 p/rev) (For LECSC-T□)													
Electric specifications	Power consumption [W]* ⁹	Horizontal	45				65				65				
		Vertical	145				175				175				
	Standby power consumption when operating [W]* ¹⁰	Horizontal	2				2				2				
		Vertical	8				8				8				
Max. instantaneous power consumption [W]* ¹¹		445				724				724					
Lock unit specifications	Type* ¹²		Non-magnetizing lock												
	Holding force [N]		131	255	485	157	308	588	197	385	736				
	Power consumption [W] at 20°C* ¹³		6.3				7.9				7.9				
Rated voltage [V]		24 VDC _{-10%} ⁰													

- *1 This is the maximum value of the horizontal work load. An external guide is necessary to support the load. The actual work load changes according to the condition of the external guide. Confirm the load using the actual device.
- *2 The force setting range (set values for the driver) for the force control with the torque control mode. Set it with reference to "Force Conversion Graph (Guide)" on pages 47, 48. When the control equivalent to the pushing operation of the LECP6 series controller is performed, select the LECSA-T or LECSC-T driver.
The point table no. input method is used for the LECSB2-T. When selecting the LECSA2-T, combine it with a Simple Motion module (manufactured by Mitsubishi Electric Corporation) which has a pushing operation function.
- *3 The allowable speed changes according to the stroke.
- *4 The allowable collision speed for collision with the workpiece with the torque control mode
- *5 A reference value for correcting an error in reciprocal operation
- *6 Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)

- *7 Cannot be used in an environment where oil such as cutting oil splashes or it is constantly exposed to water. Take appropriate protective measures. For details on enclosure, refer to "Enclosure" on page 186.
- *8 When mounting vertically and using the product facing upwards in an environment where water is present, take necessary measures to prevent water from splashing on the rod cover, because water will accumulate on the rod seal due to the structure of the product.
- *9 The power consumption (including the driver) is for when the actuator is operating.
- *10 The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.
- *11 The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.
- *12 Only when motor option "With lock" is selected
- *13 For an actuator with lock, add the power consumption for the lock.
- *14 The resolution will change depending on the driver type.
- *15 For motor type T6 and T7, the set value is from 12 to 24%.

Weight

Product Weight

Series		LEY25S ₆ ² /T6-X5 (Motor mounting position: Top mounting)									LEY32S ₃ ³ /T7-X5 (Motor mounting position: Top mounting)											
Stroke [mm]		30	50	100	150	200	250	300	350	400	30	50	100	150	200	250	300	350	400	450	500	
Motor type	Incremental encoder	1.31	1.38	1.55	1.81	1.99	2.16	2.34	2.51	2.69	2.42	2.53	2.82	3.29	3.57	3.85	4.14	4.42	4.70	4.98	5.26	
	Absolute encoder	S6/S7	1.37	1.44	1.61	1.87	2.05	2.22	2.40	2.57	2.75	2.36	2.47	2.76	3.23	3.51	3.79	4.08	4.36	4.64	4.92	5.20
	encoder	T6/T7	1.4	1.5	1.6	1.9	2.0	2.2	2.4	2.6	2.7	2.3	2.4	2.7	3.2	3.5	3.8	4.1	4.3	4.6	4.9	5.2

Series		LEY25DS ₆ ² /T6-X5 (Motor mounting position: In-line)									LEY32DS ₃ ³ /T7-X5 (Motor mounting position: In-line)											
Stroke [mm]		30	50	100	150	200	250	300	350	400	30	50	100	150	200	250	300	350	400	450	500	
Motor type	Incremental encoder	1.34	1.41	1.58	1.84	2.02	2.19	2.37	2.54	2.72	2.44	2.55	2.84	3.31	3.59	3.87	4.16	4.44	4.72	5.00	5.28	
	Absolute encoder	S6/S7	1.40	1.47	1.64	1.90	2.08	2.25	2.43	2.60	2.78	2.38	2.49	2.78	3.25	3.53	3.81	4.10	4.38	4.66	4.94	5.22
	encoder	T6/T7	1.4	1.5	1.6	1.9	2.1	2.2	2.4	2.6	2.8	2.4	2.5	2.8	3.2	3.5	3.8	4.1	4.4	4.6	4.9	5.2

Additional Weight

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

Model Selection

LEY

LEYG

LEY

LEYG

LEY-X5

25A-LEY

LECA6
LECP6

LECA6
LECP6

LECP1

LECP1

LECP1

LECSA
LECSB
LECSC
LECSS

Specific Product Precautions

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

Environment

Environment

Environment

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

LEY-X5 Series

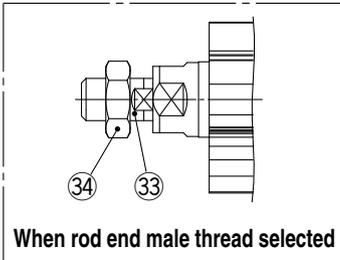
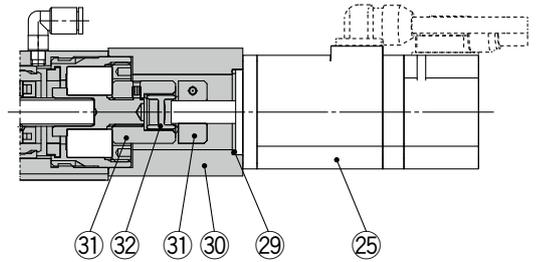
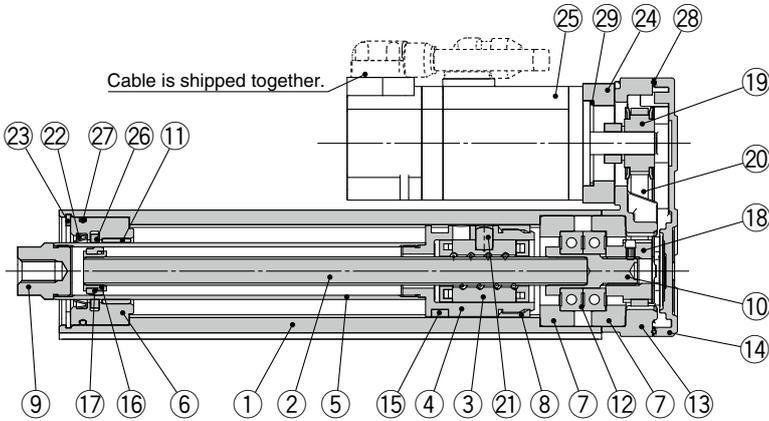
AC Servo Motor

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

Construction

Motor top mounting type: LEY²⁵₃₂

In-line motor type: LEY²⁵₃₂D



Component Parts

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

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

Replacement Parts (Motor top mounting only)/Belt

No.	Size	Order no.
20	25	LE-D-2-2
	32	LE-D-2-4

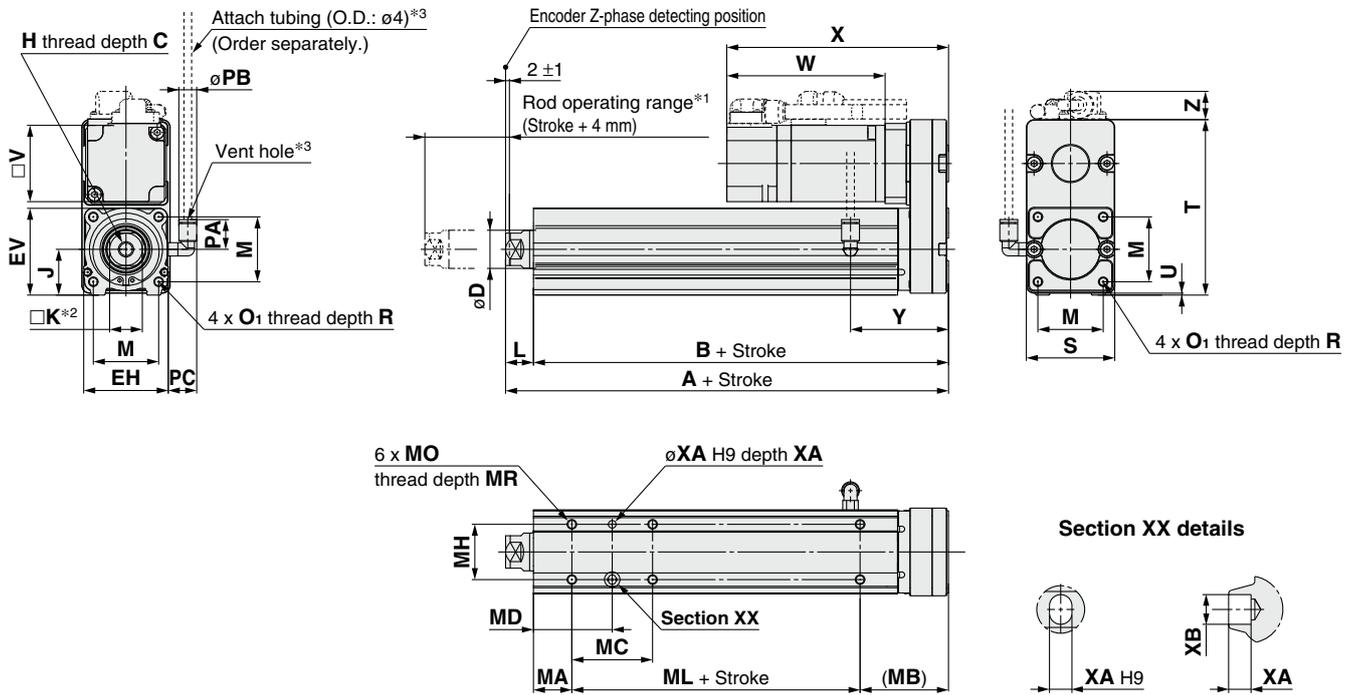
Replacement Parts/Grease Pack

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

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

Dimensions

Motor top mounting type: LEY²⁵₃₂



Size	Stroke range [mm]	A	B	C	D	EH	EV	H	J	K	L	M	O ₁	R	PA	PB	V	S	T	U	Encoder				
																					Incremental encoder			Absolute encoder [S6/S7]	
Size	Stroke range [mm]	PC	Without lock			With lock			Without lock			With lock			Without lock			With lock			Y				
			W	X	Z	W	X	Z	W	X	Z	W	X	Z	W	X	Z	W	X	Z					
25	15 to 100	130.5	116	13	20	44	45.5	M8 x 1.25	24	17	14.5	34	M5 x 0.8	8	15.4	8.2	40	46	92	1					
	101 to 400	155.5	141																						
32	20 to 100	148.5	130	13	25	51	56.5	M8 x 1.25	31	22	18.5	40	M6 x 1.0	10	15.4	8.2	60	60	118	1					
	101 to 500	178.5	160																						
25	15 to 100	15.4	87	120	14.1	123.9	156.9	15.8	82.4	115.4	14.1	123.5	156.5	15.8	82.4	115.4	14.1	123	156	15.8	51				
	101 to 400																								
32	20 to 100	15.9	88.2	128.2	17.1	116.8	156.8	17.1	76.6	116.6	17.1	116.1	156.1	17.1	76.6	116.6	17.1	113.4	153.4	17.1	61				
	101 to 500																								

Body Bottom Tapped

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

- *1 Range within which the rod can move
Make sure workpieces mounted on the rod do not interfere with the workpieces and facilities around the rod.
- *2 The direction of rod end width across flats (□K) differs depending on the products.
- *3 The vent hole is the port for releasing to atmosphere. Do not apply pressure to this hole.
Attach tubing to the vent hole and place the end of the tubing so it is not exposed to dust or water.

For the rod end male thread, refer to page 79. For the mounting bracket dimensions, refer to page 99.

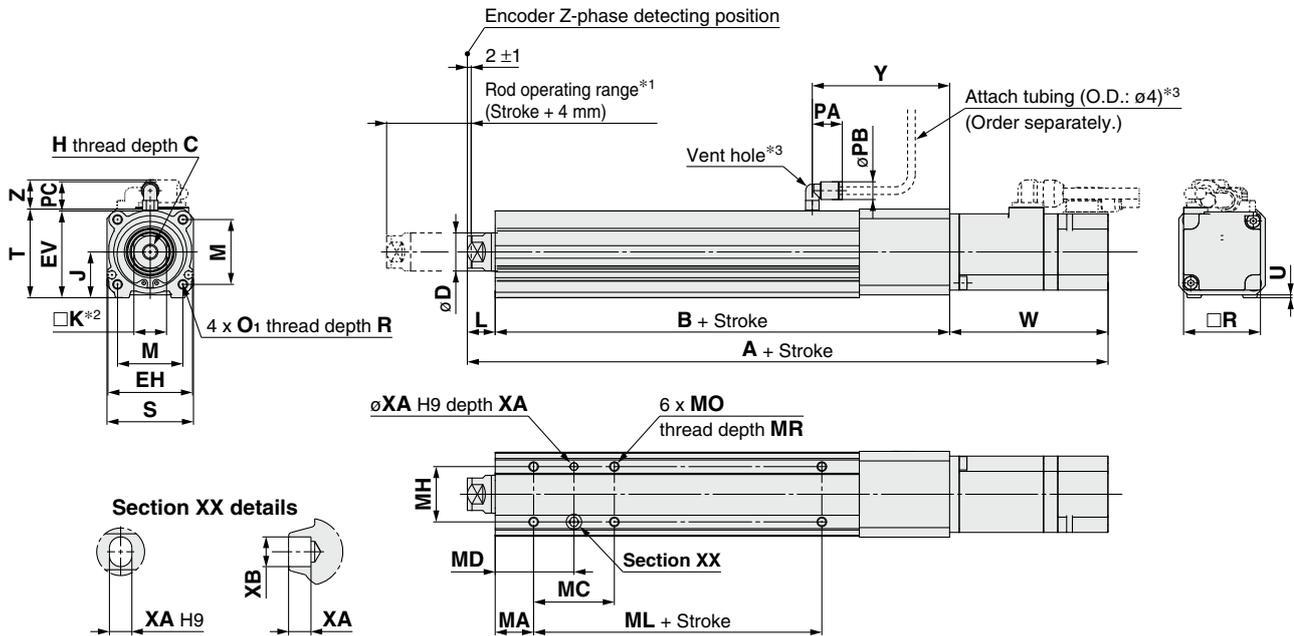
LEY-X5 Series

AC Servo Motor

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

Dimensions

In-line motor type: LEY²⁵/₃₂D



Size	Stroke range [mm]	Incremental encoder						Absolute encoder [S6/S7]						Absolute encoder [T6/T7]						B
		Without lock			With lock			Without lock			With lock			Without lock			With lock			
		A	W	Z	A	W	Z	A	W	Z	A	W	Z	A	VB	VC	A	VB	VC	
25	15 to 100	238	87	14.6	274.9	123.9	16.3	233.4	82.4	14.6	274.5	123.5	16.3	233.4	82.4	14.6	274	123	16.3	136.5
	101 to 400	263			299.9			258.4			299.5			258.4			299			161.5
32	20 to 100	262.7	88.2	17.1	291.3	116.8	17.1	251.1	76.6	17.1	290.6	116.1	17.1	251.1	76.6	17.1	287.9	113.4	17.1	156
	101 to 500	292.7			321.3			281.1			320.6			281.1			317.9			186

Size	Stroke range [mm]	C	D	EH	EV	H	J	K	L	M	O ₁	R	PA	PB	V	S	T	U	PC	Y
25	15 to 100	13	20	44	45.5	M8 x 1.25	24	17	14.5	34	M5 x 0.8	8	15.4	8.2	40	45	46.5	1.5	15.9	71.5
	101 to 400																			
32	20 to 100	13	25	51	56.5	M8 x 1.25	31	22	18.5	40	M6 x 1.0	10	15.4	8.2	60	60	61	1	15.9	87
	101 to 500																			

Body Bottom Tapped

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

*1 Range within which the rod can move

Make sure workpieces mounted on the rod do not interfere with the workpieces and facilities around the rod.

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

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

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

For the rod end male thread, refer to page 79. For the mounting bracket dimensions, refer to page 99.

Specific Product Precautions	AC Servo Motor		Step Motor (Servo/24 VDC)/Servo Motor (24 VDC)				Environment		AC Servo Motor		Step Motor (Servo/24 VDC)/Servo Motor (24 VDC)		Model Selection	
	LECY <input type="checkbox"/>	LECS <input type="checkbox"/>	JXC <input type="checkbox"/>	LECPMJ	LECPA	LECP1	LEC-G	LECA6	LECP6	25A-LEY	LEY-X5	LEYG		LEY

Electric Actuator/ Rod Type

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

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

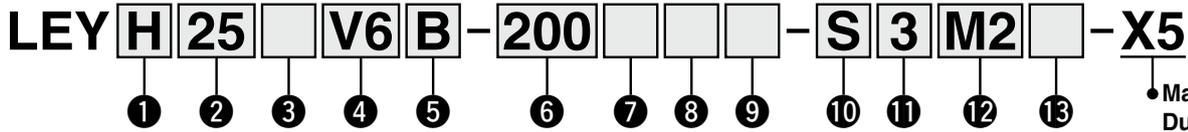
Refer to page 50 for model selection.

Size 63 is available by selecting option P. Refer to page 89.



LECS Series ▶ p. 163

How to Order



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

1 Accuracy

Nil	Basic type
H	High-precision type

2 Size

25
32

3 Motor mounting position

Nil	Top mounting
D	In-line

4 Motor type

Symbol	Type	Output [W]	Size	Compatible driver
V6 *1	AC servo motor (Absolute encoder)	100	25	LECYM2-V5 LECYU2-V5
V7		200	32	LECYM2-V7 LECYU2-V7

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

5 Lead [mm]

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

* The values shown in () are the leads for the top mounting type. (Equivalent leads which include the pulley ratio [1.25:1])

6 Stroke [mm]

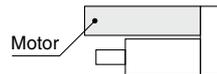
30	30
to	to
500	500

* For details, refer to the applicable stroke table below.

7 Motor option

Nil	Without option
B	With lock

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



8 Rod end thread

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

Applicable Stroke Table

●: Standard

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

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

For auto switches, refer to page 174.

Electric Actuator/Rod Type **LEY-X5 Series**

AC Servo Motor

Size **25, 32**



Motor mounting position: Top mounting



Motor mounting position: In-line

9 Mounting*1

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

*1 The mounting bracket is shipped together with the product but does not come assembled.

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

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

*3 The rod flange type is not available for the LEY25 with a 30 mm stroke and motor option "With lock."

*4 The head flange type is not available for the LEY32.

10 Cable type*1

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

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

11 Cable length [m]*1

Nil	Without cable
3	3
5	5
A	10
C	20

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

12 Driver type

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

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

13 I/O cable length [m]*1

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

*1 When "Without driver" is selected for driver type, only "Nil: Without cable" can be selected. Refer to page 284 if I/O cable is required. (Options are shown on page 284.)

Compatible Driver

Driver type	MECHATROLINK-II type	MECHATROLINK-III type
		
Series	LECYM	LECYU
Applicable network	MECHATROLINK-II	MECHATROLINK-III
Control encoder	Absolute 20-bit encoder	
Communication device	USB communication, RS-422 communication	
Power supply voltage [V]	200 to 230 VAC (50/60 Hz)	
Reference page	277	

LEY-X5 Series

AC Servo Motor

Size **25, 32**

Specifications: LECY

Model			LEY25V6-X5/LEY25DV6-X5						LEY32V7-X5 (Top mounting)			LEY32DV7-X5 (In-line)										
Actuator specifications	Work load [kg]	Horizontal ^{*1}	18	50	50	30	60	60	30	60	60	Force [N] ^{*2} (Set value: 45 to 90%)	65 to 131	127 to 255	242 to 485	79 to 157	154 to 308	294 to 588	98 to 197	192 to 385	368 to 736	
		Vertical ^{*9}	8	16	30	9	19	37	12	24	46											
	Max. speed [mm/s]	Stroke range	Up to 300	900	450	225	1200	600	300	150	800	400	200	640	320	160						
			305 to 400	600	300	150																
	Pushing speed [mm/s] ^{*4}		35 or less						30 or less			30 or less										
	Max. acceleration/deceleration [mm/s ²]		5000						5000			5000										
	Positioning repeatability [mm]	Basic type		±0.02						±0.02			±0.02									
		High-precision type		±0.01						±0.01			±0.01									
	Lost motion [mm] ^{*5}	Basic type		0.1 or less						0.1 or less			0.1 or less									
		High-precision type		0.05 or less						0.05 or less			0.05 or less									
	Lead [mm] (including pulley ratio)		12		6		3		20 ^{*6}		10 ^{*6}		5 ^{*6}		16		8		4			
	Impact/Vibration resistance [m/s ²] ^{*7}		50/20						50/20			50/20										
	Actuation type		Ball screw + Belt (LEY□)/Ball screw (LEY□)						Ball screw + Belt [1.25:1]			Ball screw										
	Guide type		Sliding bushing (Piston rod)						Sliding bushing (Piston rod)			Sliding bushing (Piston rod)										
Enclosure ^{*8}		IP65 equivalent						IP65 equivalent			IP65 equivalent											
Operating temperature range [°C]		5 to 40						5 to 40			5 to 40											
Operating humidity range [%RH]		90 or less (No condensation)						90 or less (No condensation)			90 or less (No condensation)											
Conditions for ^{*10} "Regenerative resistor" [kg]	Horizontal		Not required						Not required			Not required										
	Vertical		6 or more						4 or more			4 or more										
Motor output/Size		100 W/□40						200 W/□60			200 W/□60											
Motor type		AC servo motor (200 VAC)						AC servo motor (200 VAC)			AC servo motor (200 VAC)											
Encoder		Absolute 20-bit encoder (Resolution: 1048576 p/rev)						Absolute 20-bit encoder (Resolution: 1048576 p/rev)			Absolute 20-bit encoder (Resolution: 1048576 p/rev)											
Electric specifications	Power consumption [W] ^{*11}	Horizontal	45						65			65										
		Vertical	145						175			175										
	Standby power consumption when operating [W] ^{*12}	Horizontal	2						2			2										
		Vertical	8						8			8										
Max. instantaneous power consumption [W] ^{*13}		445						724			724											
Type ^{*14}		Non-magnetizing lock						Non-magnetizing lock			Non-magnetizing lock											
Lock unit specifications	Holding force [N]		131	255	485	157	308	588	197	385	736	Power consumption [W] at 20°C ^{*15}		5.5			6			6		
	Power consumption [W] at 20°C ^{*15}		5.5						6			6										
	Rated voltage [V]		24 VDC ^{+10%} / ₀						24 VDC ^{+10%} / ₀			24 VDC ^{+10%} / ₀										

*1 This is the maximum value of the horizontal work load. An external guide is necessary to support the load. The actual work load changes according to the condition of the external guide. Confirm the load using the actual device.

*2 The force setting range (set values for the driver) for the force control with the torque control mode

Set it with reference to "Force Conversion Graph (Guide)" on page 54.

*3 The allowable speed changes according to the stroke.

*4 The allowable collision speed for collision with the workpiece with the torque control mode

*5 A reference value for correcting an error in reciprocal operation

*6 Equivalent leads which include the pulley ratio [1.25:1]

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

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

*8 Cannot be used in an environment where oil such as cutting oil splashes or it is constantly exposed to water. Take appropriate protective measures. For details on enclosure, refer to "Enclosure" on page 186.

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

*10 The work load conditions which require "Regenerative resistor" when operating at the maximum speed (Duty ratio: 100%)

Order the regenerative resistor separately. For details, refer to "Conditions for Regenerative Resistor (Guide)" on pages 52 and 53.

*11 The power consumption (including the driver) is for when the actuator is operating.

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

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

*14 Only when motor option "With lock" is selected

*15 For an actuator with lock, add the power consumption for the lock.

Weight

Product Weight

[kg]

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

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

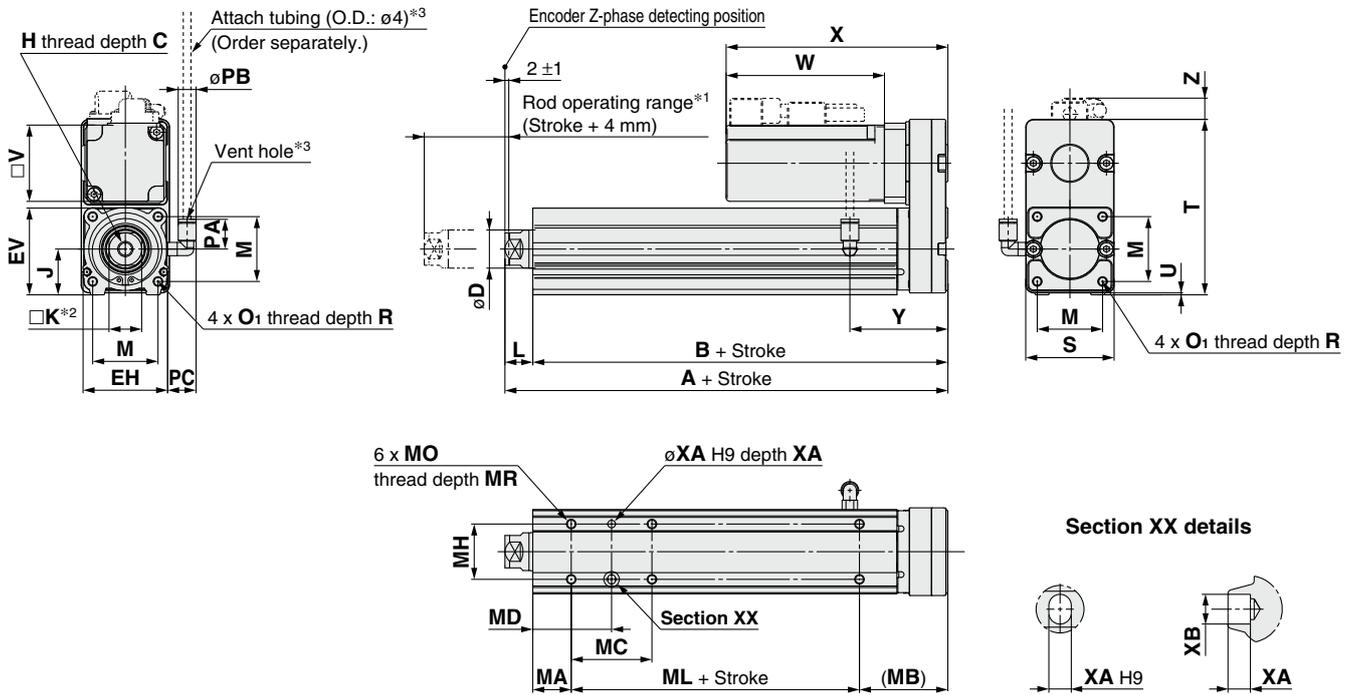
Additional Weight

[kg]

Size		25	32
Lock		0.30	0.60
Rod end male thread	Male thread	0.03	0.03
	Nut	0.02	0.02
Foot bracket (2 sets including mounting bolt)		0.08	0.14
Rod flange (including mounting bolt)		0.17	0.20
Head flange (including mounting bolt)			

Dimensions

Motor top mounting type: LEY²⁵₃₂



Size	Stroke range [mm]	A	B	C	D	EH	EV	H	J	K	L	M	O ₁	R	PA	PB	V
25	15 to 100	130.5	116	13	20	44	45.5	M8 x 1.25	24	17	14.5	34	M5 x 0.8	8	15.4	8.2	40
	101 to 400	155.5	141														
32	20 to 100	148.5	130	13	25	51	56.5	M8 x 1.25	31	22	18.5	40	M6 x 1.0	10	15.4	8.2	60
	101 to 500	178.5	160														

Size	Stroke range [mm]	S	T	U	PC	Without lock			With lock			Y
						W	X	Z	W	X	Z	
25	15 to 100	46	92	1	15.4	82.5	115.5	11	127.5	160.5	11	51
	101 to 400											
32	20 to 100	60	118	1	15.9	80	120	14	120	160	14	61
	101 to 500											

Body Bottom Tapped

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

*1 Range within which the rod can move

Make sure workpieces mounted on the rod do not interfere with the workpieces and facilities around the rod.

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

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

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

For the rod end male thread, refer to page 79. For the mounting bracket dimensions, refer to page 99.

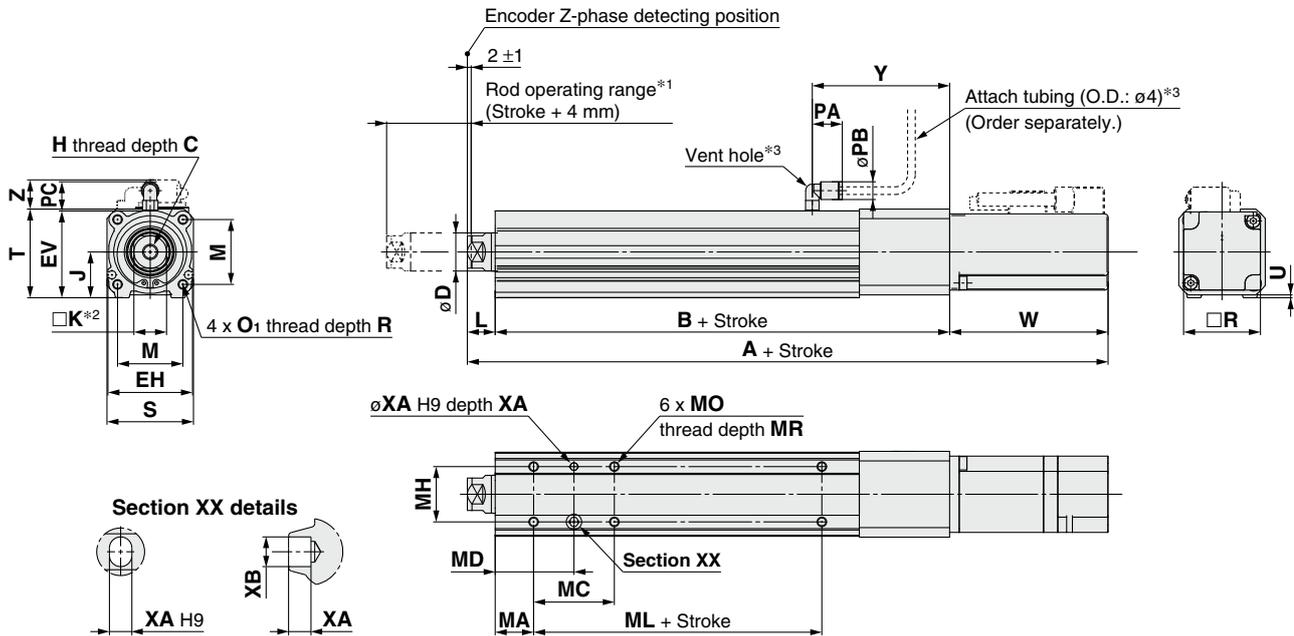
LEY-X5 Series

AC Servo Motor

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

Dimensions

In-line motor type: LEY²⁵₃₂D



[mm]

Size	Stroke range [mm]	Without lock			With lock			B	C	D	EH	EV
		A	W	Z	A	W	Z					
25	15 to 100	233.5	82.5	11.5	278.5	127.5	11.5	136.5	13	20	44	45.5
	101 to 400	258.5			303.5			161.5				
32	20 to 100	254.5	80	14	294.5	120	14	156	13	25	51	56.5
	101 to 500	284.5			324.5			186				

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

Body Bottom Tapped

[mm]

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

*1 Range within which the rod can move

Make sure workpieces mounted on the rod do not interfere with the workpieces and facilities around the rod.

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

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

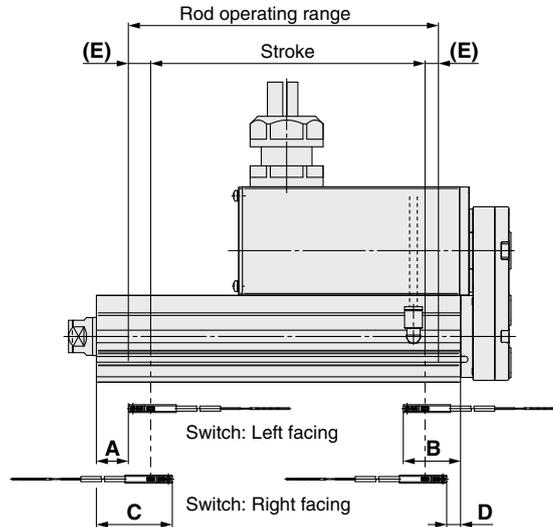
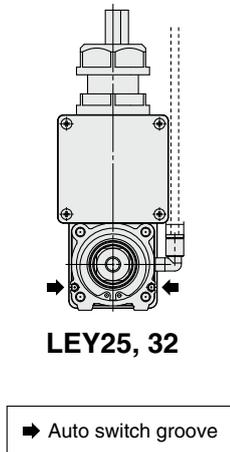
Attach tubing to the vent hole and place the end of the tubing so it is not exposed to dust or water.

For the rod end male thread, refer to page 79. For the mounting bracket dimensions, refer to page 99.

LEY-X5 Series Auto Switch Mounting

Proper Auto Switch Mounting Position

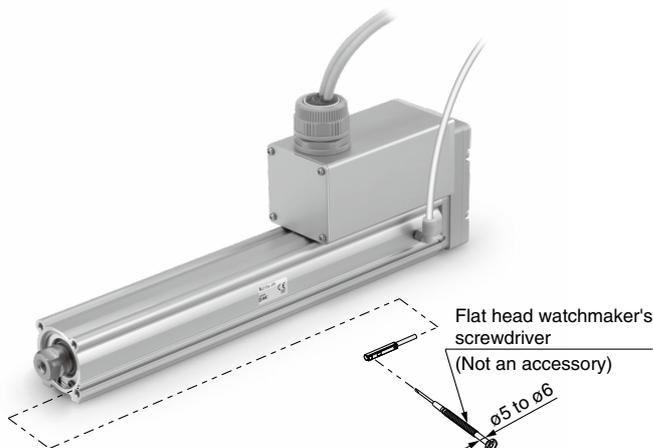
Applicable auto switches: D-M9□A(V)



Size	Stroke range	Auto switch position				Return to origin distance	Operating range
		Mounting: Left facing		Mounting: Right facing			
		A	B	C	D		
25	15 to 100	27	62.5	39	50.5	(2)	—
	105 to 400	52		64			
32	20 to 100	30.5	85.5	42.5	53.5	(2)	4.9
	105 to 500	90.5		102.5			

- *1 Figures in the table above are used as a reference when mounting the auto switches for stroke end detection. Adjust the auto switch after confirming the operating condition in the actual setting.
- *2 Switches cannot be mounted on the motor mounting side surface.
- *3 For the LEYG with a guide, switches cannot be mounted on the guide attachment side (rod side).
- *4 Since the operating range is provided as a guideline including hysteresis, it cannot be guaranteed (assuming approximately $\pm 30\%$ dispersion). It may change substantially depending on the ambient environment.

Auto Switch Mounting



Auto Switch Mounting Screw Tightening Torque

Auto switch model	Tightening torque
D-M9□A(V)	0.05 to 0.10

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

Water Resistant 2-Color Indicator Solid State Auto Switch: Direct Mounting Type D-M9NA(V)/D-M9PA(V)/D-M9BA(V)

Grommet

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



Caution

Precautions

Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used. Please consult with SMC if using coolant liquid other than water based solution.

Weight

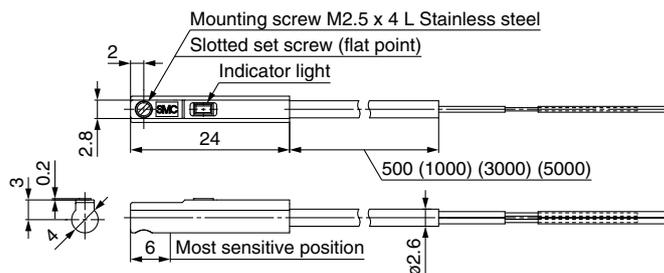
[g]

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

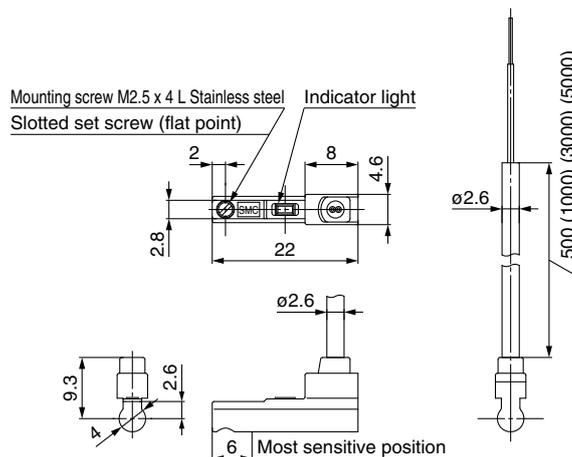
Dimensions

[mm]

D-M9□A



D-M9□AV



Auto Switch Specifications

PLC: Programmable Logic Controller

D-M9□A, D-M9□AV (With indicator light)						
Auto switch model	D-M9NA	D-M9NAV	D-M9PA	D-M9PAV	D-M9BA	D-M9BAV
Electrical entry direction	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring type	3-wire				2-wire	
Output type	NPN		PNP		—	
Applicable load	IC circuit, Relay, PLC				24 VDC relay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V)				—	
Current consumption	10 mA or less				—	
Load voltage	28 VDC or less		—		24 VDC (10 to 28 VDC)	
Load current	40 mA or less				2.5 to 40 mA	
Internal voltage drop	0.8 V or less at 10 mA (2 V or less at 40 mA)				4 V or less	
Leakage current	100 μA or less at 24 VDC				0.8 mA or less	
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.					
Standard	CE marking (EMC directive/RoHS directive)					

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		D-M9NA□	D-M9NAV□	D-M9PA□	D-M9PAV□	D-M9BA□	D-M9BAV□
Sheath	Outside diameter [mm]	2.6					
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]		17					

- * Refer to the **Web Catalog** for solid state auto switch common specifications.
- * Refer to the **Web Catalog** for lead wire lengths.