

Electric Rotary Table



Step Motor (Servo/24 VDC)

RoHS

**Low
profile**



Basic type [mm]

Model	H
LER10	42
LER30	53
LER50	68

High precision type [mm]

Model	H
LERH10	49
LERH30	62
LERH50	78

**Continuous
rotation
specification**

● **Rotation angle: 360°**



● Shock-less/High speed actuation

Max. speed: 420°/sec (7.33 rad/sec)

Max. acceleration/deceleration: 3000°/sec² (52.36 rad/sec²)

● Positioning repeatability: $\pm 0.03^\circ$ (High precision type)

Repeatability at the end: $\pm 0.01^\circ$ (Pushing control/With external stopper)

● Rotation angle

360°, 320° (310°), 180°, 90°

The value indicated in brackets shows the value for the LER10.

● Possible to set speed, acceleration/deceleration, and position. Max. 64 points

● Energy-saving product

Automatic 40 % power reduction after the table has stopped.

Size	Rotating torque [N·m]		Max. speed [°/s]	
	Basic	High torque	Basic	High torque
10	0.22	0.32		
30	0.8	1.2	420	280
50	6.6	10		

* Value when an external stopper is mounted.

Step Motor (Servo/24 VDC)

Controllers/Drivers

▶ Step data input type

JXC51/61 Series

- 64 positioning points
- Input using controller setting kit or teaching box



▶ EtherCAT®/EtherNet/IP™/PROFINET/DeviceNet™/IO-Link/CC-Link direct input type

JXCE1/91/P1/D1/L1/M1 Series



▶ Programless type

LECP1 Series

- 14 positioning points
- Control panel setting



▶ Pulse input type

LECPA Series

- * Not applicable to the continuous rotation specification



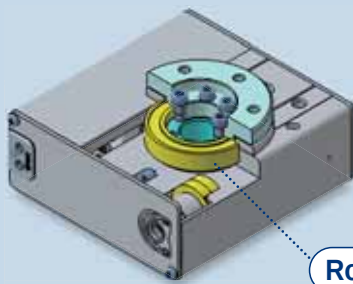
LER Series



CAT.EUS100-94Ccccc-UK

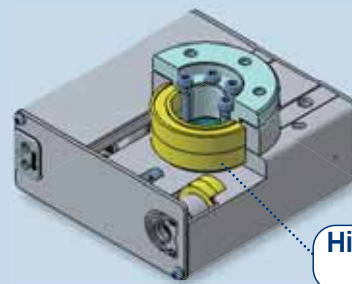
Basic and high-precision types are available.

Basic type/LER



Rolling bearing

High-precision type/LERH



High-precision bearing

The movement in the table's radial thrust direction is reduced.

Rotation angle

360°, 320°(310°), 180°, 90°

The value indicated in brackets shows the value for the LER10.

Built-in step motor (Servo/24 VDC)

Space-saving

High torque

Output is **30** times with special worm gear. Special worm gear with reduced backlash is used.

Maximum rotation torque can be selected.

Belt deceleration ratio can be selected.

[N·m]

Model	Basic	High torque
LER10	0.22	0.32
LER30	0.8	1.2
LER50	6.6	10.0

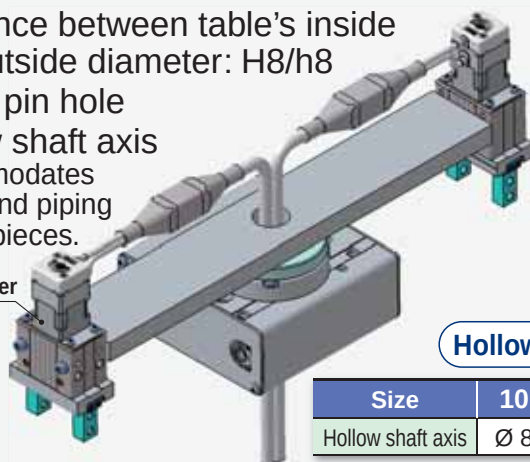
Manual override screw (Both sides)

Possible to rotate the table with power OFF by manual override.

Easy Mounting of Workpieces

- Tolerance between table's inside and outside diameter: H8/h8
- Dowel pin hole
- Hollow shaft axis
Accommodates wiring and piping of workpieces.

Electric gripper
LEH Series



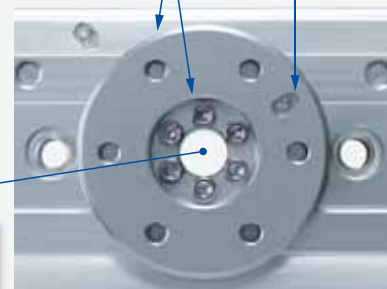
For alignment of rotation center and workpiece

Dowel pin hole

Positioning of rotating direction

Hollow shaft axis

Size	10	30	50
Hollow shaft axis	Ø 8	Ø 17	Ø 20



Easy Mounting of the Main Body

Dowel pin hole

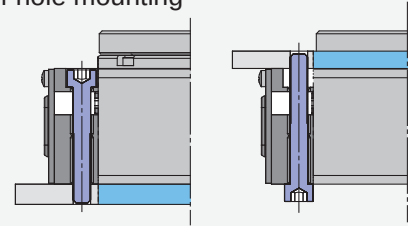
Reference diameter
(hole)

Reference diameter
(boss)

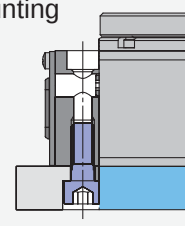
Dowel pin hole

Mounting Variations

■ Through-hole mounting



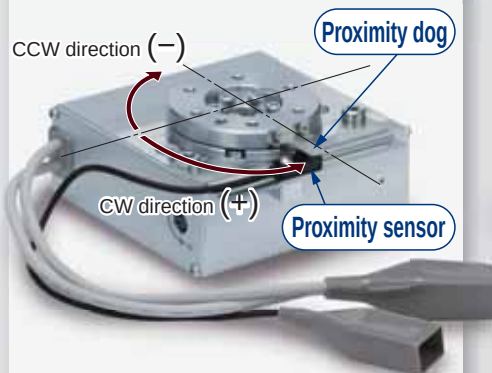
■ Body tapped mounting



Continuous Rotation Specification

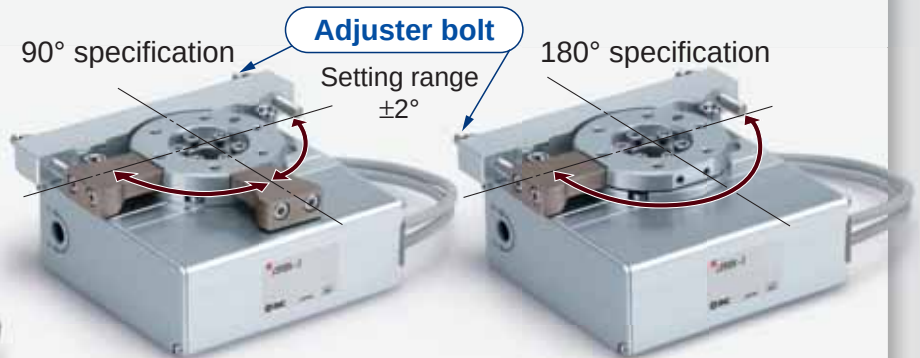
Rotation angle: 360°

Return to origin with proximity sensor



With External Stopper/Rotation Angle: 90°/180° Specification

Repeatability at the end: $\pm 0.01^\circ$

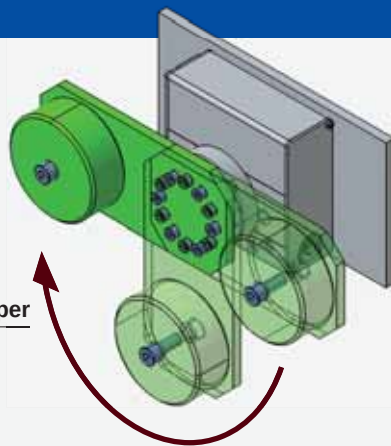


Application Examples

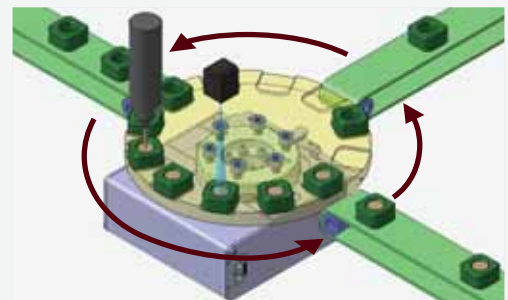


Electric gripper
LEH Series

For rotation transfer after gripping
in combination with a gripper



For vertical transfer: No change
in speed due to load fluctuation



For continuous operation of multiple
processes with 360° continuous rotation

Model Selection	p. 5
-----------------------	------

Step Motor (Servo/24 VDC)

Electric Rotary Table *LER series*



How to Order	p. 12
Specifications	p. 15
Construction	p. 16
Dimensions	p. 17

Step Motor (Servo/24 VDC)

Continuous Rotation Specification Electric Rotary Table *LER series*



How to Order	p. 20
Specifications	p. 23
Construction	p. 24
Dimensions	p. 25

Specific Product Precautions	p. 28
------------------------------------	-------

Electric Rotary Table

LER Series

Step Motor (Servo/24 VDC)

p. 12



Continuous Rotation Specification p. 20



Model Selection

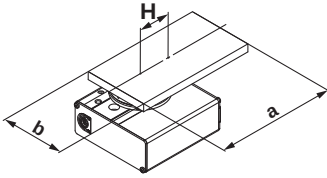
Series LER ▶ p. 12

Continuous Rotation Specification Series LER-1 ▶ p. 20



Selection Procedure

Operating conditions



Electric rotary table: LER30J
 Mounting position: Horizontal
 Load type: Inertial load T_a
 Configuration of load: 150 mm x 80 mm
 (Rectangular plate)
 Rotation angle θ : 180°

Angular acceleration/
 angular deceleration $\dot{\omega}$: 1000°/sec²
 Angular speed ω : 420°/sec
 Load mass [m]: 2.0 kg
 Distance between shaft and center
 of gravity H: 40 mm

Step 1 Moment of inertia—Angular acceleration/deceleration

① Calculation of moment of inertia

Formula

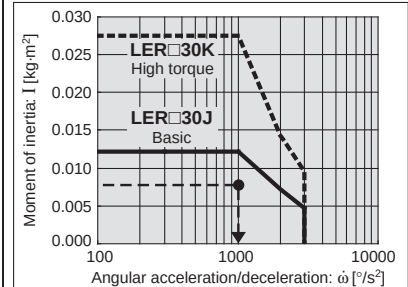
$$I = m \times (a^2 + b^2)/12 + m \times H^2$$

- ② **Moment of inertia—Check the angular acceleration/deceleration**
 Select a model based on the moment of inertia and angular acceleration and deceleration while referencing the (Moment of Inertia—Angular Acceleration/Deceleration graph).

Selection example

$$I = 2.0 \times (0.15^2 + 0.08^2)/12 + 2.0 \times 0.04^2 \\ = 0.00802 \text{ kg} \cdot \text{m}^2$$

LER30



Step 2 Necessary torque

① Load type

- Static load: T_s
- Resistance load: T_f
- Inertial load: T_a

Formula

$$\begin{aligned} \text{Effective torque} &\geq T_s \\ \text{Effective torque} &\geq T_f \times 1.5 \\ \text{Effective torque} &\geq T_a \times 1.5 \end{aligned}$$

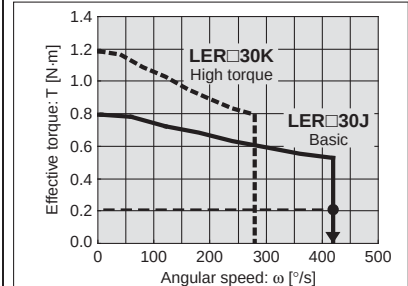
② Check the effective torque

Confirm whether it is possible to control the speed based on the effective torque corresponding with the angular speed while referencing the (Effective Torque—Angular Speed graph).

Selection example

$$\begin{aligned} \text{Inertial load: } T_a \\ T_a \times 1.5 &= I \times \dot{\omega} \times 2 \pi / 360 \times 1.5 \\ &= 0.00802 \times 1000 \times 0.0175 \times 1.5 \\ &= 0.21 \text{ N} \cdot \text{m} \end{aligned}$$

LER30



Step 3 Allowable load

① Check the allowable load

- Radial load
- Thrust load
- Moment

Formula

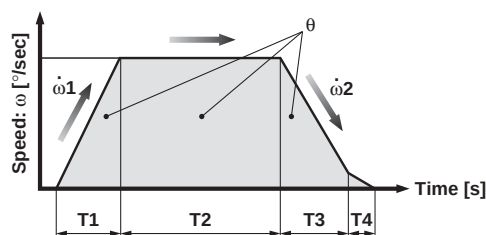
$$\begin{aligned} \text{Allowable thrust load} &\geq m \times 9.8 \\ \text{Allowable moment} &\geq m \times 9.8 \times H \end{aligned}$$

Selection example

- Thrust load
 $2.0 \times 9.8 = 19.6 \text{ N} < \text{Allowable load OK}$
- Allowable moment
 $2.0 \times 9.8 \times 0.04 \\ = 0.784 \text{ N} \cdot \text{m} < \text{Allowable moment OK}$

Step 4 Rotation time

① Calculation of cycle time (rotation time)



θ : Rotation angle [°]
 ω : Angular speed [°/sec]
 $\dot{\omega}1$: Angular acceleration [°/sec²]
 $\dot{\omega}2$: Angular deceleration [°/sec²]

T1: Acceleration time [s]... Time until reaching the set speed
 T2: Constant speed time [s]... Time while the actuator is operating at a constant speed
 T3: Deceleration time [s]... Time from the beginning of the constant speed operation to stop
 T4: Settling time [s]... Time until positioning is completed

Formula

$$\begin{aligned} \text{Angular acceleration time } T1 &= \omega / \dot{\omega}1 \\ \text{Angular deceleration time } T3 &= \omega / \dot{\omega}2 \\ \text{Constant speed time } T2 &= \{\theta - 0.5 \times \omega \times (T1 + T3)\} / \omega \\ \text{Settling time } T4 &= 0.2 \text{ [s]} \\ \text{Cycle time } T &= T1 + T2 + T3 + T4 \end{aligned}$$

Selection example

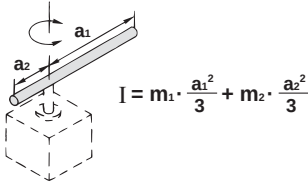
- Angular acceleration time $T1 = 420/1000 = 0.42 \text{ sec}$
- Angular deceleration time $T3 = 420/1000 = 0.42 \text{ sec}$
- Constant speed time
 $T2 = \{180 - 0.5 \times 420 \times (0.42 + 0.42)\} / 420 \\ = 0.009 \text{ sec}$
- Cycle time
 $T = T1 + T2 + T3 + T4 \\ = 0.42 + 0.009 + 0.42 + 0.2 \\ = 1.049 \text{ [s]}$

Formulas for Moment of Inertia (Calculation of moment of inertia I)

I: Moment of inertia [kg·m²] m: Load mass [kg]

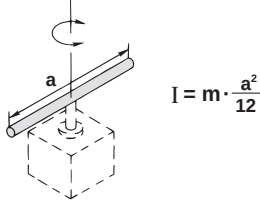
1. Thin bar

Position of rotation shaft:
Perpendicular to a bar
through one end



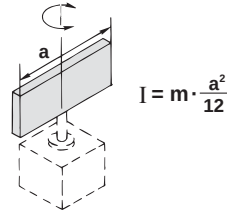
2. Thin bar

Position of rotation shaft:
Passes through the centre of
gravity of the bar.



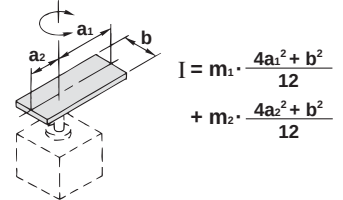
3. Thin rectangular plate (cuboid)

Position of rotation shaft: Passes
through the center of gravity of a plate.



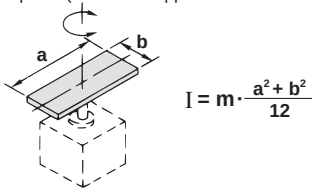
4. Thin rectangular plate (cuboid)

Position of rotation shaft: Perpendicular
to the plate and passes through one end.
(The same applies to thicker cuboids.)



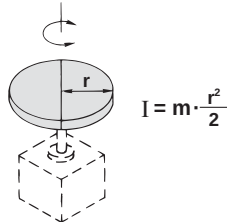
5. Thin rectangular plate (cuboid)

Position of the rotation shaft: Passes through the
center of gravity of the plate and perpendicular to
the plate. (The same applies to thicker cuboids.)



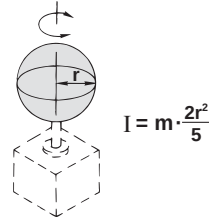
6. Cylindrical shape (including a thin disk)

Position of rotation shaft:
Center axis



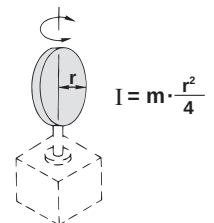
7. Sphere

Position of rotation shaft:
Diameter

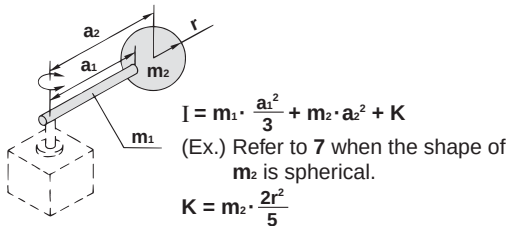


8. Thin disk (mounted vertically)

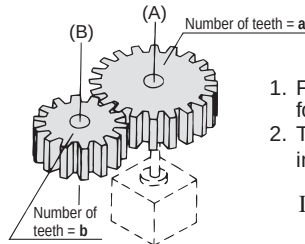
Position of rotation shaft:
Diameter



9. When a load is mounted on the end of the lever



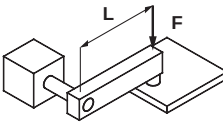
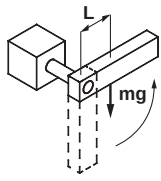
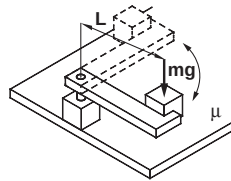
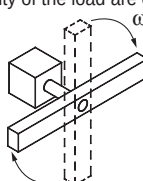
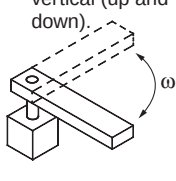
10. Gear transmission



1. Find the moment of inertia I_B for the rotation of shaft (B).
2. Then, replace the moment of inertia I_B around the shaft (A) by I_A ,

$$I_A = \left(\frac{a}{b}\right)^2 \cdot I_B$$

Load Type

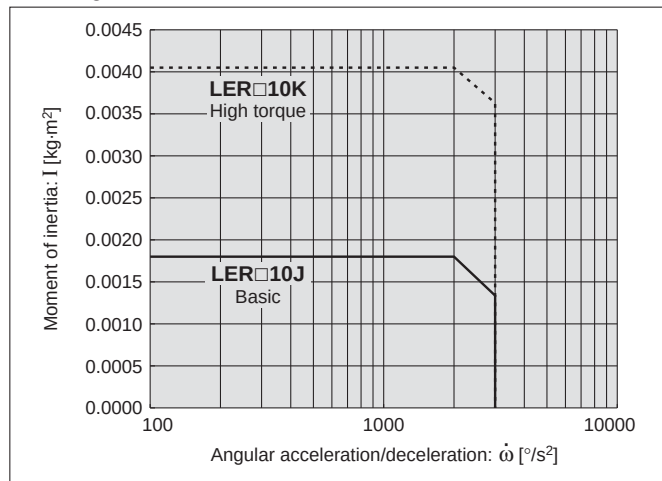
Load type		
Static load: Ts	Resistance load: Tf	Inertial load: Ta
Only pressing force is necessary. (e.g. for clamping)	Gravity or friction force is applied to rotating direction.	Rotate the load with inertia.
	Gravity is applied.  Friction force is applied. 	Centre of rotation and centre of gravity of the load are concentric.  Rotation shaft is vertical (up and down). 
Ts = F · L Ts: Static load [N·m] F : Clamping force [N] L : Distance from the rotation centre to the clamping position [m]	Gravity is applied to rotating direction. Tf = m · g · L Friction force is applied to rotating direction. Tf = μ · m · g · L Tf: Resistance load [N·m] m : Load mass [kg] g : Gravitational acceleration 9.8 [m/s ²] L : Distance from the rotation centre to the point of application of the gravity or friction force [m] μ : Friction coefficient	Ta = I · ω̇ · 2 π/360 (Ta = I · ω̇ · 0.0175) Ta: Inertial load [N·m] I : Moment of inertia [kg·m ²] ω̇ : Angular acceleration/deceleration [°/sec ²] ω : Angular speed [°/sec]
Necessary torque: T = Ts	Necessary torque: T = Tf x 1.5*1	Necessary torque: T = Ta x 1.5*1
• Resistance load: Gravity or friction force is applied to rotating direction. Ex. 1) Rotation shaft is horizontal (lateral), and the rotation centre and the centre of gravity of the load are not concentric. Ex. 2) Load moves by sliding on the floor. * The total of resistance load and inertial load is the necessary torque. T = (Tf + Ta) x 1.5 • Not resistance load: Neither gravity or friction force is applied to rotating direction. Ex. 1) Rotation shaft is vertical (up and down). Ex. 2) Rotation shaft is horizontal (lateral), and rotation centre and the centre of gravity of the load are concentric. * Necessary torque is inertial load only. T = Ta x 1.5		

*1 To adjust the speed, margin is necessary for Tf and Ta.

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

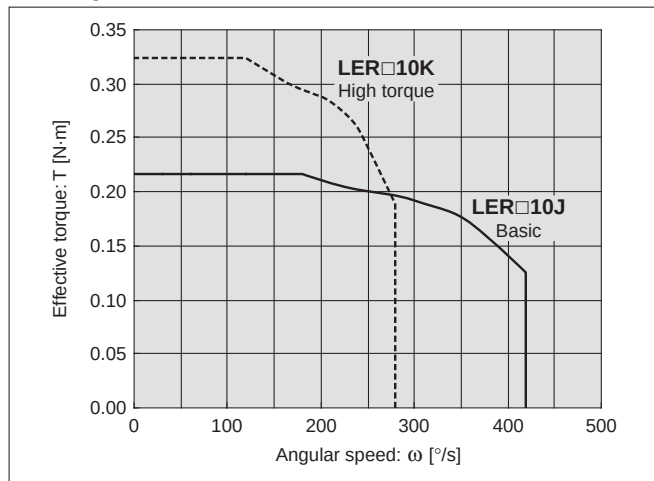
Moment of Inertia—Angular Acceleration/Deceleration

LER10

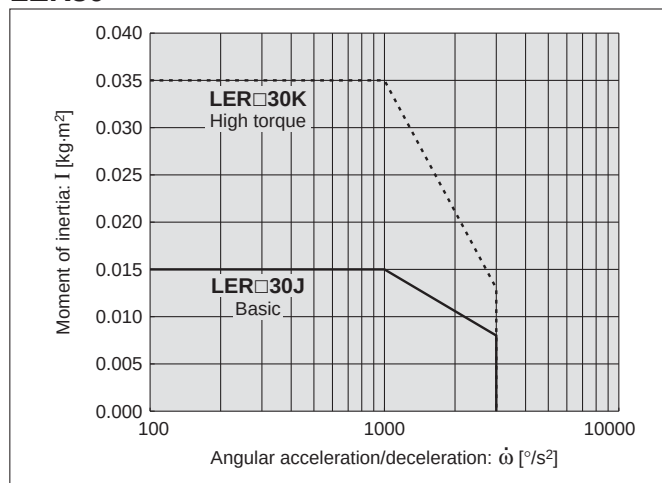


Effective Torque—Angular Speed

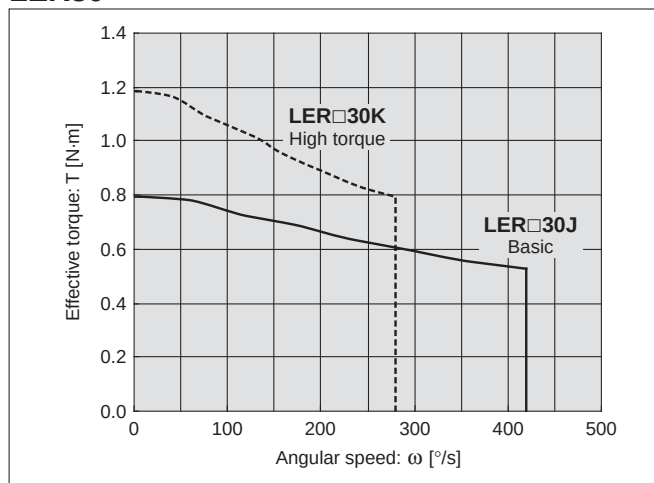
LER10



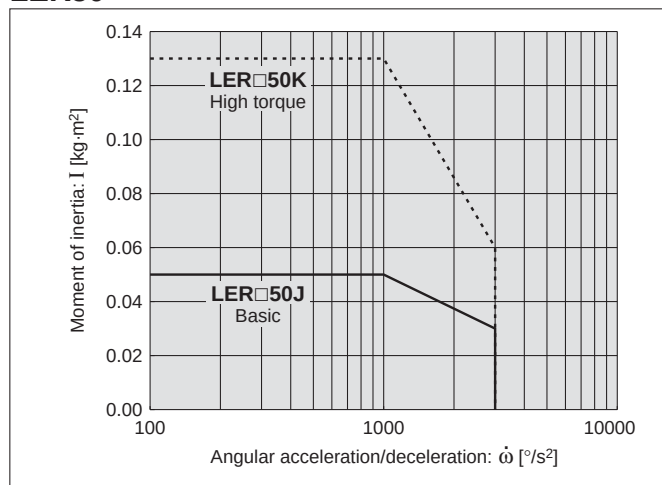
LER30



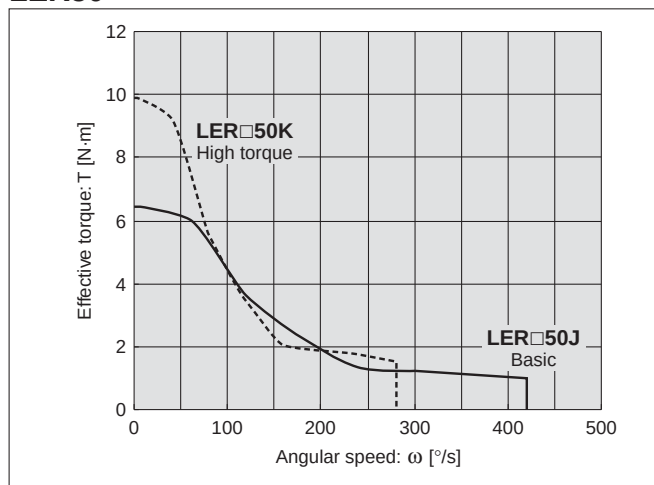
LER30



LER50



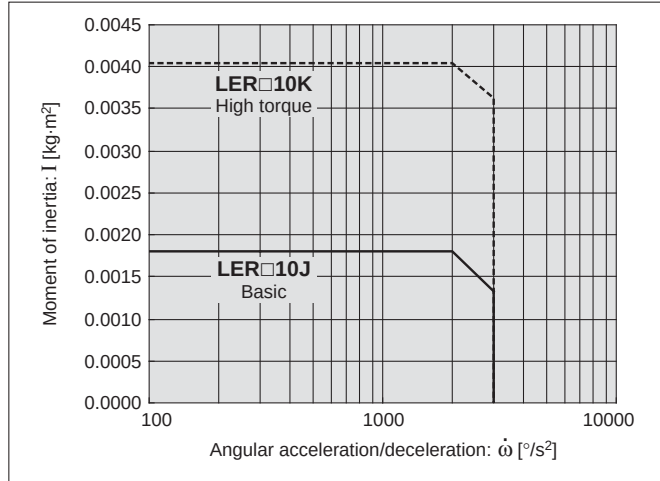
LER50



For Step Motor (Servo/24 VDC) LECPA, JXC□3

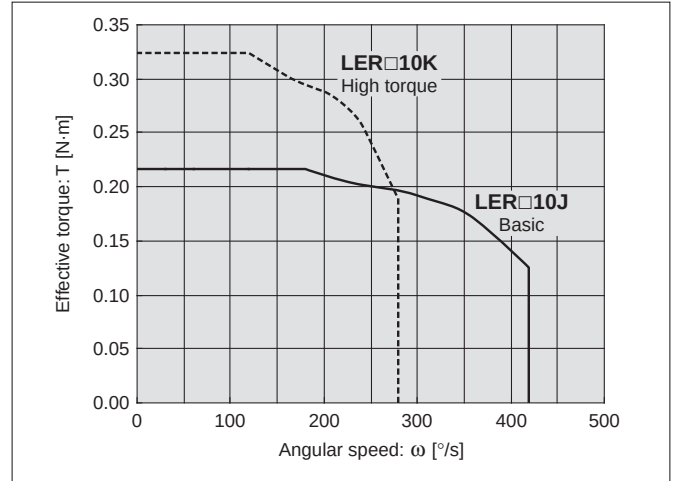
Moment of Inertia—Angular Acceleration/Deceleration

LER10

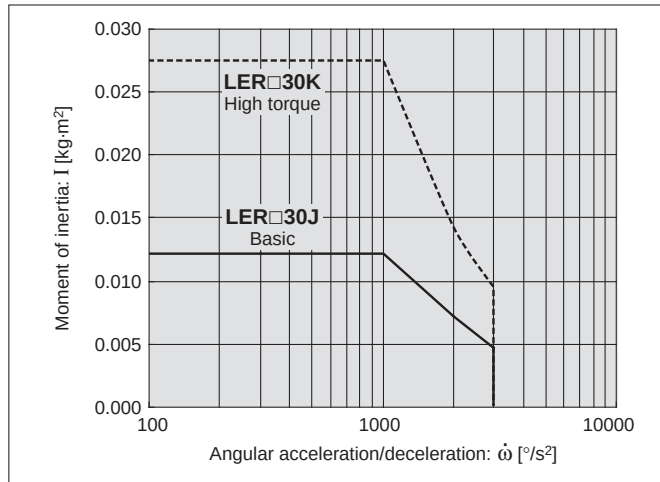


Effective Torque—Angular Speed

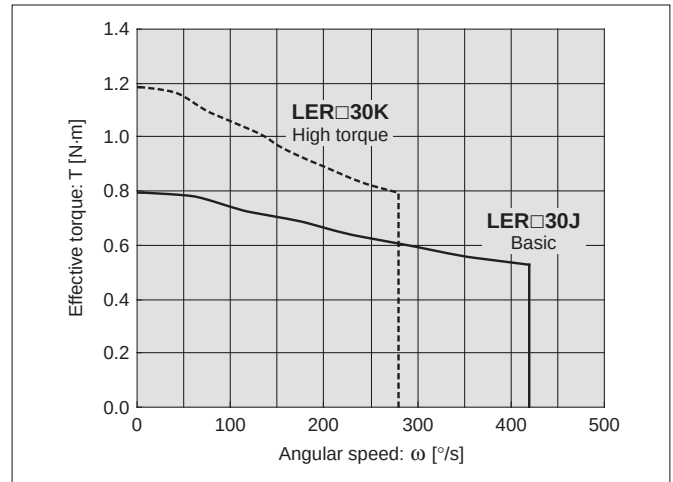
LER10



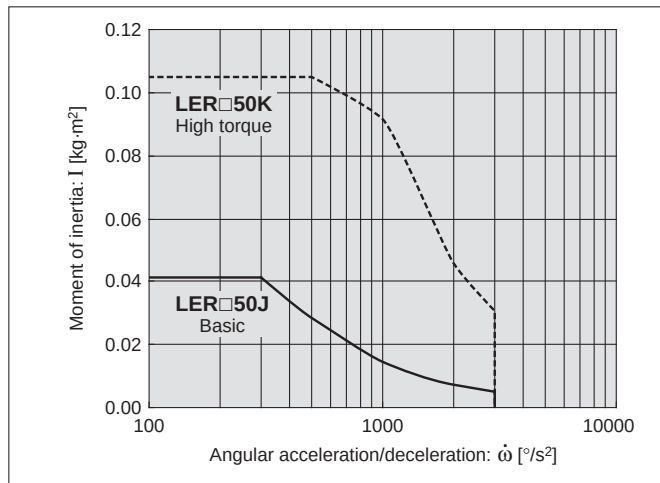
LER30



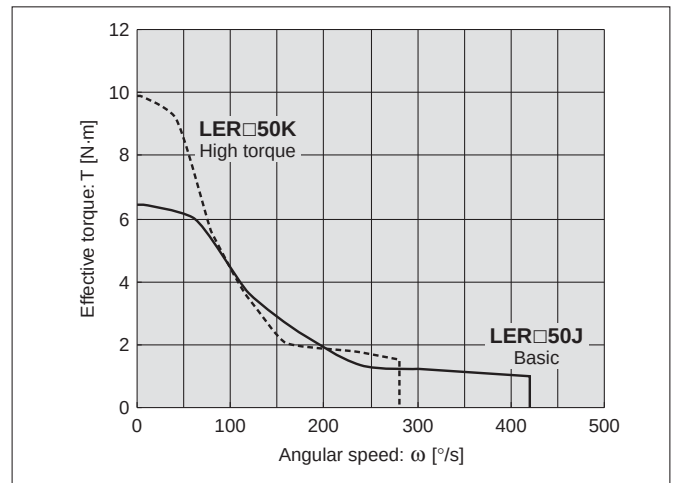
LER30



LER50



LER50



LER Series

Step Motor (Servo/24 VDC)

Allowable Load

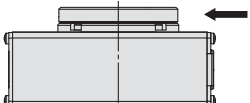
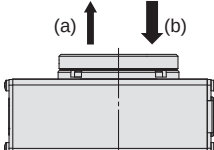
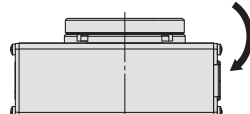
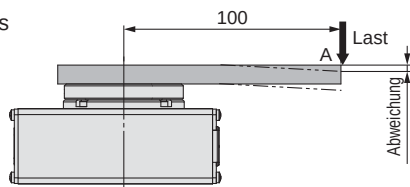
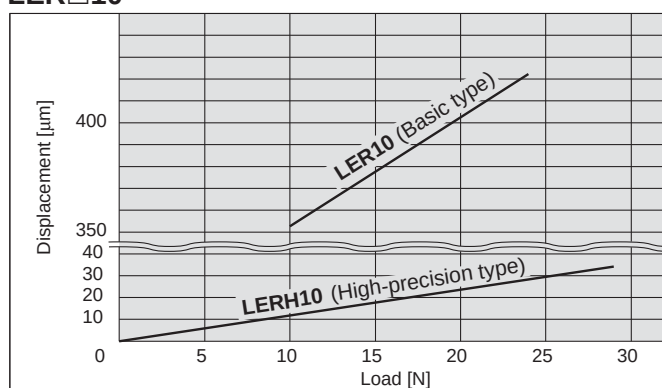
								
Size	Allowable radial load [N]		Allowable thrust load [N]				Allowable moment [N·m]	
	Basic type	High-precision type	(a) Basic type	(a) High-precision type	(b) Basic type	(b) High-precision type	Basic type	High-precision type
10	78	86	74		78	107	2.4	2.9
30	196	233	197		363	398	5.3	6.4
50	314	378	296		398	517	9.7	12.0

Table Displacement (Reference Value)

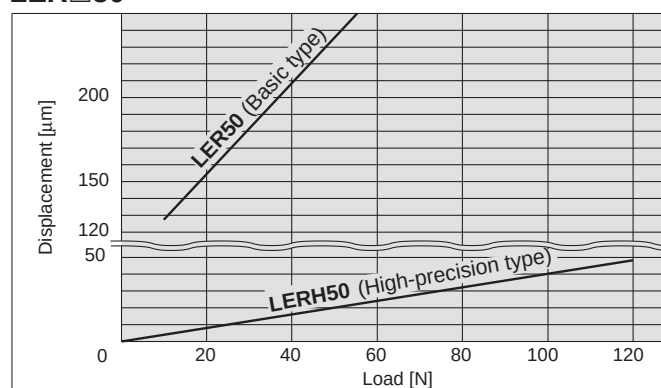
- Displacement at point A when a load is applied to point A 100 mm away from the rotation centre.



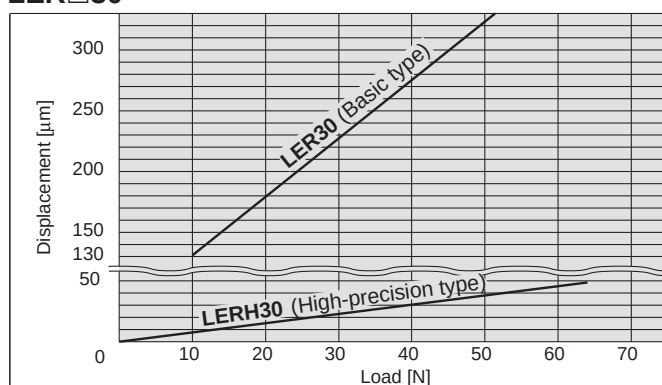
LER□10



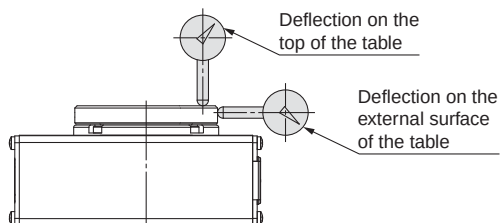
LER□50



LER□30



Deflection Accuracy: Displacement at 180° Rotation (Guide)



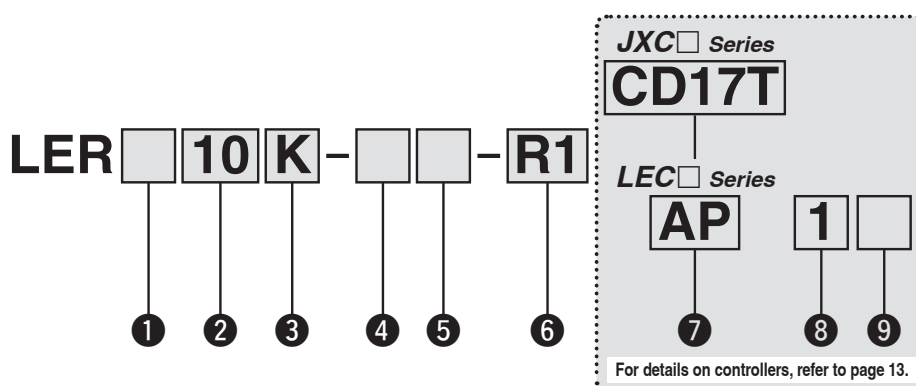
Measured part	LER (Basic type)	LERH (High-precision type)
Deflection on the top of the table	0.1	0.03
Deflection on the external surface of the table	0.1	0.03

[mm]

Electric Rotary Table

LER Series LER10, 30, 50

How to Order



1 Table accuracy

—	Basic type
H	High-precision type

2 Size

10
30
50

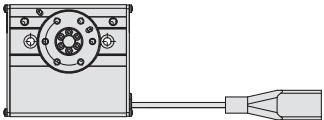
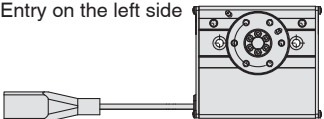
3 Max. rotating torque [N·m]

Symbol	Type	LER10	LER30	LER50
K	High torque	0.32	1.2	10
J	Basic	0.22	0.8	6.6

4 Rotation angle [°]

Symbol	LER10	LER30	LER50
—	310	320	
2	External stopper: 180		
3	External stopper: 90		

5 Motor cable entry

—	Basic type (entry on the right side)	
L	Entry on the left side	

6 Actuator cable type/length*2

Standard cable [m]		Robotic cable [m]			
—	None	R1	1.5	RA	10*1
S1	1.5	R3	3	RB	15*1
S3	3	R5	5	RC	20*1
S5	5	R8	8*1		

JXC Series (For details, refer to page 14.)

7 Controller

—	Without controller
C□1□□	With controller

C D 1 7 T

Interface (Communication protocol/Input/Output)

Symbol	Type	Number of axes, Special specification	Standard	With STO sub-function
5	Parallel input (NPN)	●		
6	Parallel input (PNP)	●		
E	EtherCAT	●	●	
9	EtherNet/IP™	●	●	
P	PROFINET	●	●	
D	DeviceNet®	●		
L	IO-Link	●		●
M	CC-Link	●		

Mounting

7	Screw mounting
8*7	DIN rail

Number of axes, Special specification

Symbol	Number of axes	Specification
1	Single axis	Standard
F	Single axis	With STO sub-function

Communication plug connector I/O cable*8

Symbol	Type	Applicable interface
—	Without accessory	—
S	Straight type communication plug connector	DeviceNet™ CC-Link Ver1.10
T	T-branch type communication plug connector	
1	I/O cable (1.5 m)	Parallel input (NPN)
3	I/O cable (3 m)	Parallel input (PNP)
5	I/O cable (5 m)	

LEC Series (For details, refer to page 14.)

AP 1

7 Controller/Driver type*3

—	Without controller/driver	
1N	LECP1	NPN
1P	(Programless type)	PNP
AN	LECPA*4	NPN
AP	(Pulse input type)	PNP

8 I/O cable length*5, Communication plug

—	Without cable (Without communication plug connector)
1	1.5 m
3	3 m*6
5	5 m*6

9 Controller/Driver mounting

—	Screw mounting
D	DIN rail*7

- *1 Produced upon receipt of order (Robotic cable only)
- *2 The standard cable should only be used on fixed parts.
For use on moving parts, select the robotic cable.
- *3 For details on controllers/drivers and compatible motors, refer to the compatible controllers/drivers on the next page.
- *4 When pulse signals are open collector, order the current limiting resistor separately.

- *5 When "Without controller/driver" is selected for controller/driver types, I/O cable cannot be selected.
- *6 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
- *7 The DIN rail is not included. It must be ordered separately.
- *8 Select "—" for anything other than DeviceNet™, CC-Link, or parallel input.
Select "—," "S," or "T" for DeviceNet™ or CC-Link.
Select "—," "1," "3," or "5" for parallel input.

⚠ Caution

[CE-compliant products]

- ① EMC compliance was tested by combining the electric actuator LER 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.

[UL-compliant products (For the LEC series)]

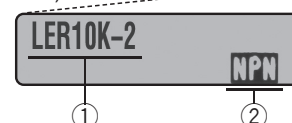
When compliance with UL is required, the electric actuator and controller/driver should be used with a UL1310 Class 2 power supply.

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

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

<Check the following before use.>

- ① Check the actuator label for 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.smc.eu>

LER Series

Step Motor (Servo/24 VDC)

Compatible Controllers/Drivers

Type	Step data input type 	Programless type 	Pulse input type 
Series	JXC51 JXC61	LECP1	LECPA
Features	Parallel I/O	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)		
Max. number of step data	64 points	14 points	—
Power supply voltage	24 VDC		

Type	EtherCAT direct input type 	EtherCAT direct input type with STO sub-function 	EtherNet/IP™ direct input type 	EtherNet/IP™ direct input type with STO sub-function 	PROFINET direct input type 	PROFINET direct input type with STO sub-function 	DeviceNet® direct input type 	IO-Link direct input type 	IO-Link direct input type with STO sub-function 	CC-Link direct input type 
Series	JXCE1	JXCEF	JXC91	JXC9F	JXCP1	JXCPF	JXCD1	JXCL1	JXCLF	JXCM1
Features	EtherCAT direct input	EtherCAT direct input with STO sub-function	EtherNet/IP™ direct input	EtherNet/IP™ direct input with STO sub-function	PROFINET direct input	PROFINET direct input with STO sub-function	DeviceNet® direct input	IO-Link direct input	IO-Link direct input with STO sub-function	CC-Link direct input
Compatible motor	Step motor (Servo/24 VDC)									
Max. number of step data	64 points									
Power supply voltage	24 VDC									

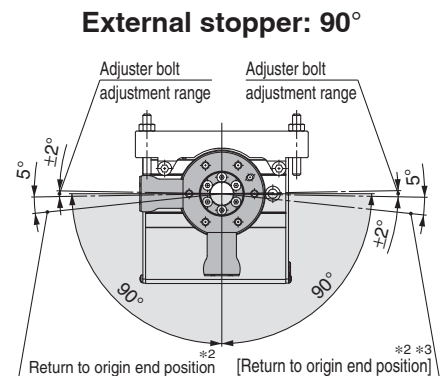
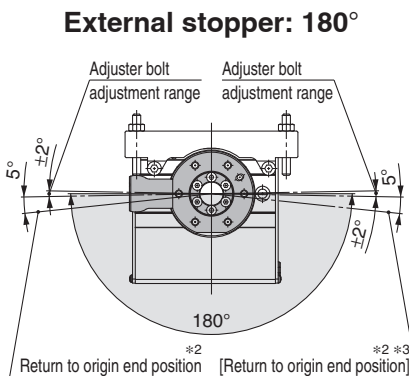
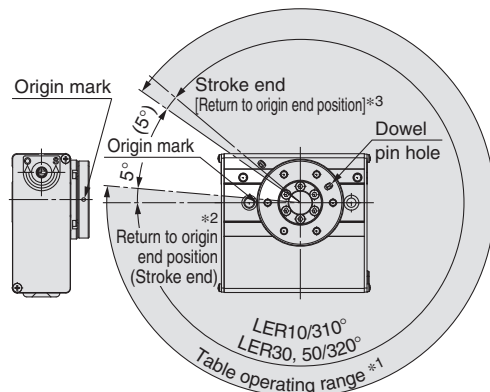
Specifications

Step Motor (Servo/24 VDC)

Model			LER□10K	LER□10J	LER□30K	LER□30J	LER□50K	LER□50J	
Actuator specifications	Rotation angle [°]		310		320				
	Lead [°]		8	12	8	12	7.5	12	
	Max. rotating torque [N·m]		0.32	0.22	1.2	0.8	10	6.6	
	Max. pushing torque 40 to 50 % [N·m]*1 *3		0.13 to 0.16	0.09 to 0.11	0.48 to 0.60	0.32 to 0.40	4.0 to 5.0	2.6 to 3.3	
	Max. moment of inertia [kg·m ²]*2 *3	JXC□1 LECP1	0.0040	0.0018	0.035	0.015	0.13	0.05	
		LECPA			0.027	0.012	0.10	0.04	
		JXC□2 JXC□3							
	Angular speed [°/sec]*2 *3		20 to 280	30 to 420	20 to 280	30 to 420	20 to 280	30 to 420	
	Pushing speed [°/sec]		20	30	20	30	20	30	
	Max. angular acceleration/deceleration [°/sec ²]*2		3000						
	Backlash [°]	Basic type	±0.3		±0.2				
		High-precision type			±0.1				
	Positioning repeatability [°]	Basic type	±0.05		±0.05				
		High-precision type			±0.03				
	Lost motion [°]*4	Basic type	0.3 or less		0.3 or less				
		High-precision type			0.2 or less				
Impact/Vibration resistance [m/s ²]*5		150/30							
Actuation type		Special worm gear + Belt drive							
Max. operating frequency [c.p.m]		60							
Operating temp. range [°C]		5 to 40							
Operating humidity range [%RH]		90 or less (No condensation)							
Weight [kg]	Basic type	0.49		1.1		2.2			
	High-precision type	0.52		1.2		2.4			
External stopper type	Rotation angle [°]	-2/ arm (1 pc.)	180						
		-3/ arm (2 pcs.)	90						
	Repeatability at the end [°]/ with external stopper		±0.01						
	External stopper setting range [°]		±2						
	Weight [kg]	-2/external arm (1 pc.)	Basic type	0.55		1.2		2.5	
			High-precision type	0.61		1.4		2.7	
		-3/external arm (1 pc.)	Basic type	0.57		1.2		2.6	
			High-precision type	0.63		1.4		2.8	
	Electric specifications	Motor size		□20		□28		□42	
		Motor type		Step motor (Servo/24 VDC)					
Encoder		Incremental							
Power supply voltage [V]		24 VDC ±10 %							
Power [W]*6		Max. power 14		Max. power 42		Max. power 57			

- *1 Pushing force accuracy is LER10: ±30 % (F.S.), LER30: ±25 % (F.S.), LER50: ±20 % (F.S.).
- *2 The angular acceleration, angular deceleration and angular speed may fluctuate due to variations in the moment of inertia. Refer to the "Moment of Inertia—Angular Acceleration/Deceleration, Effective Torque—Angular Speed" graphs on pages 517 and 518 for confirmation.
- *3 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 %)
- *4 A reference value for correcting an error in reciprocal operation
- *5 Impact resistance: No malfunction occurred when the slide table 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.)
- *6 Indicates the max. power during operation (including the controller). This value can be used for the selection of the power supply.

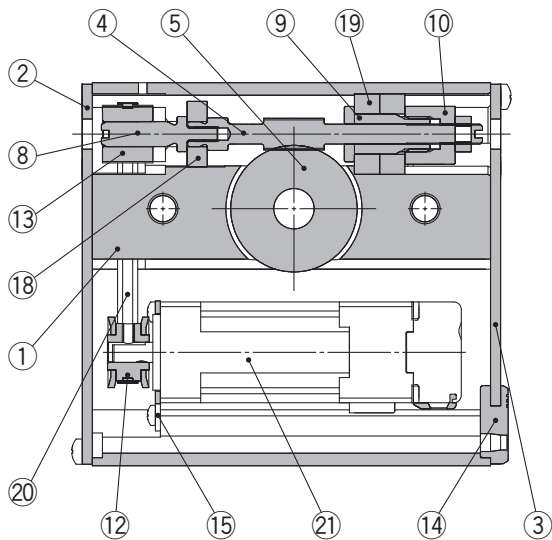
Table Rotation Angle Range



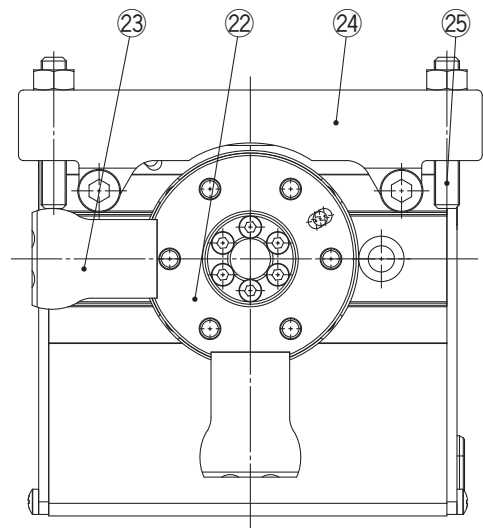
- *1 This is the range within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
- *2 Position after returning to origin. The position varies depending on whether there is an external stopper.
- *3 [] for when the direction of return to origin has changed.

* The figures show the origin position for each actuator.

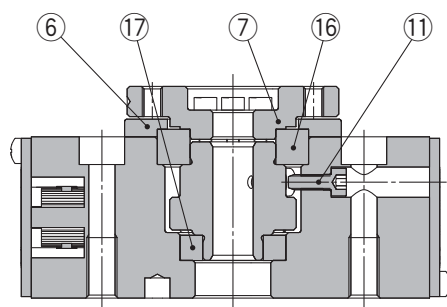
Construction



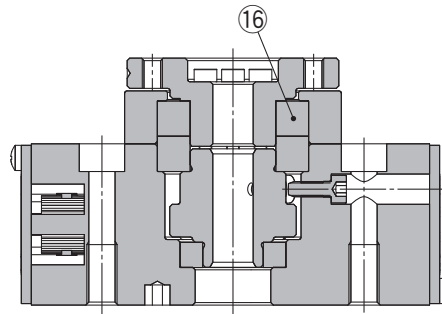
External stopper type



Basic type



High-precision type



Component Parts

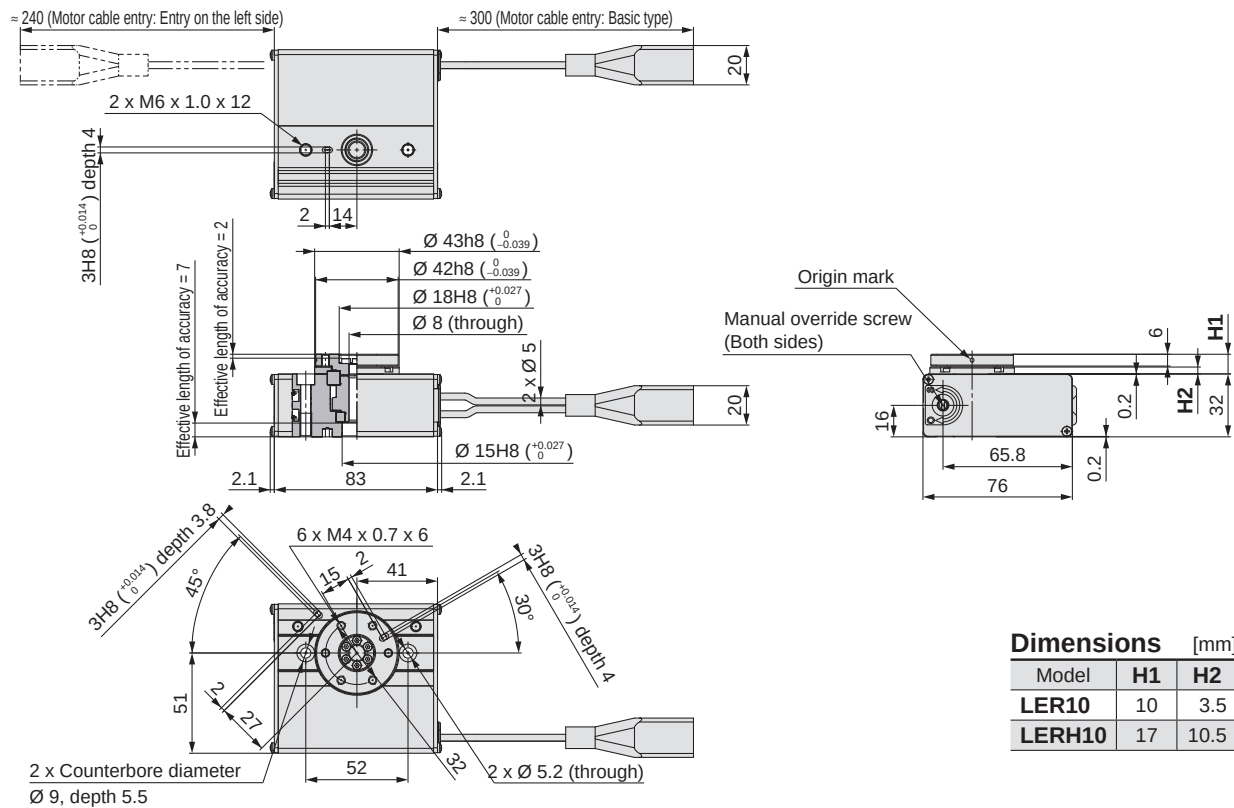
No.	Description	Material	Note
1	Body	Aluminium alloy	Anodised
2	Side plate A	Aluminium alloy	Anodised
3	Side plate B	Aluminium alloy	Anodized
4	Worm screw	Stainless steel	Heat treatment + Special treatment
5	Worm wheel	Stainless steel	Heat treatment + Special treatment
6	Bearing cover	Aluminium alloy	Anodized
7	Table	Aluminium alloy	
8	Joint	Stainless steel	
9	Bearing holder	Aluminium alloy	
10	Bearing stopper	Aluminium alloy	
11	Origin bolt	Carbon steel	
12	Pulley A	Aluminium alloy	
13	Pulley B	Aluminium alloy	
14	Grommet	NBR	
15	Motor plate	Carbon steel	
16	Basic type	Deep groove ball bearing	
	High-precision type	Special ball bearing	
17	Deep groove ball bearing	—	
18	Deep groove ball bearing	—	
19	Deep groove ball bearing	—	
20	Belt	—	
21	Step motor (Servo/24 VDC)	—	

Component Parts

No.	Description	Material	Note
22	Table	Aluminium alloy	Anodised
23	Arm	Carbon steel	Heat treatment + Electroless nickel treated
24	Holder	Aluminium alloy	Anodised
25	Adjuster bolt	Carbon steel	Heat treatment + Chromating

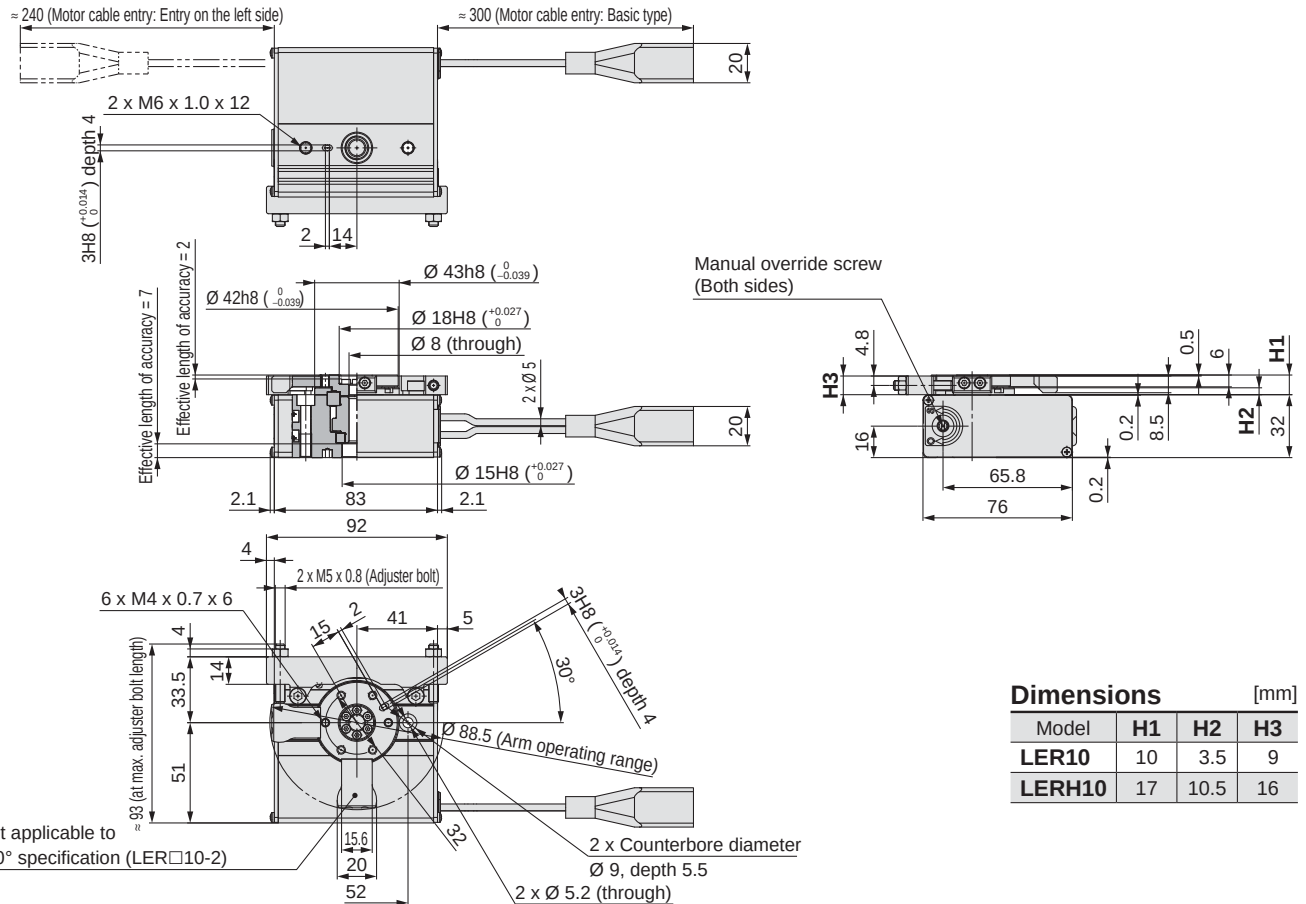
Dimensions

LER□10□ (Rotation angle: 310°)



LER□10-2 (Rotation angle: 180°)

LER□10-3 (Rotation angle: 90°)



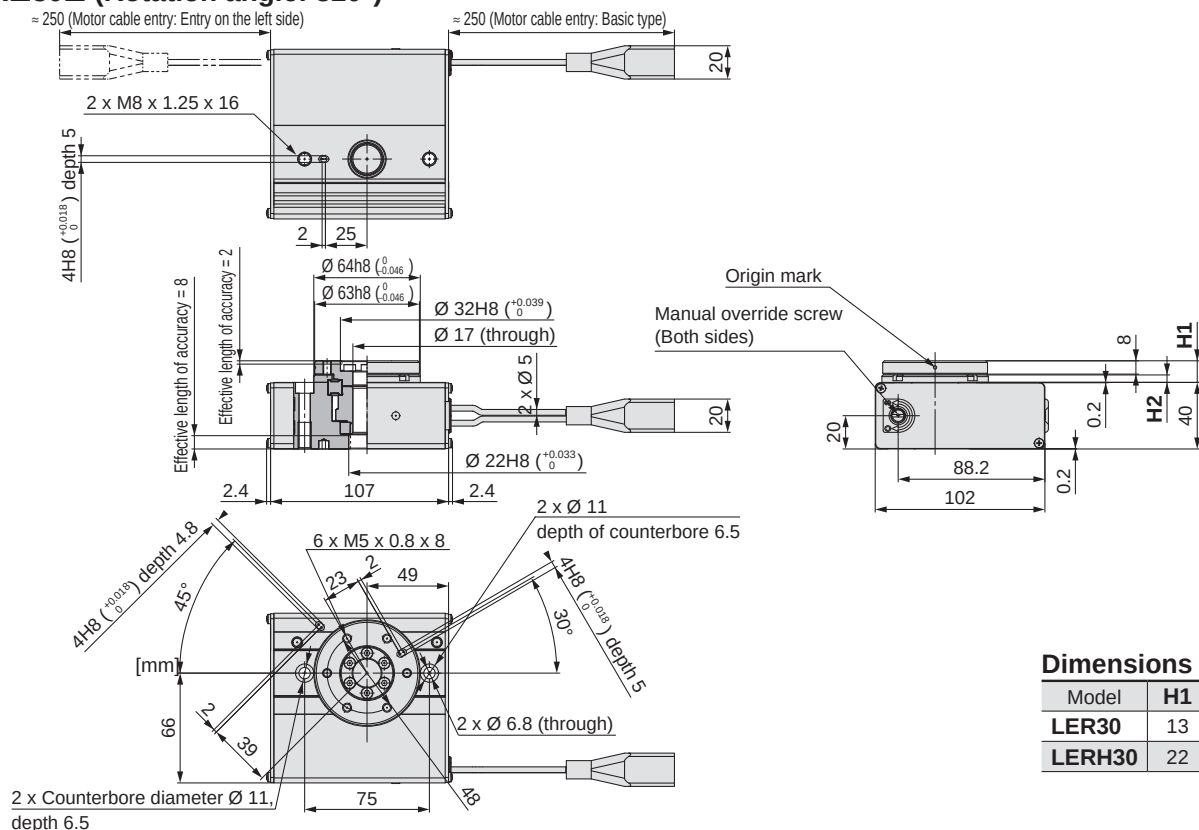
Note) Not applicable to 180° specification (LER□10-2)

LER Series

Step Motor (Servo/24 VDC)

Dimensions

LER□30□ (Rotation angle: 320°)

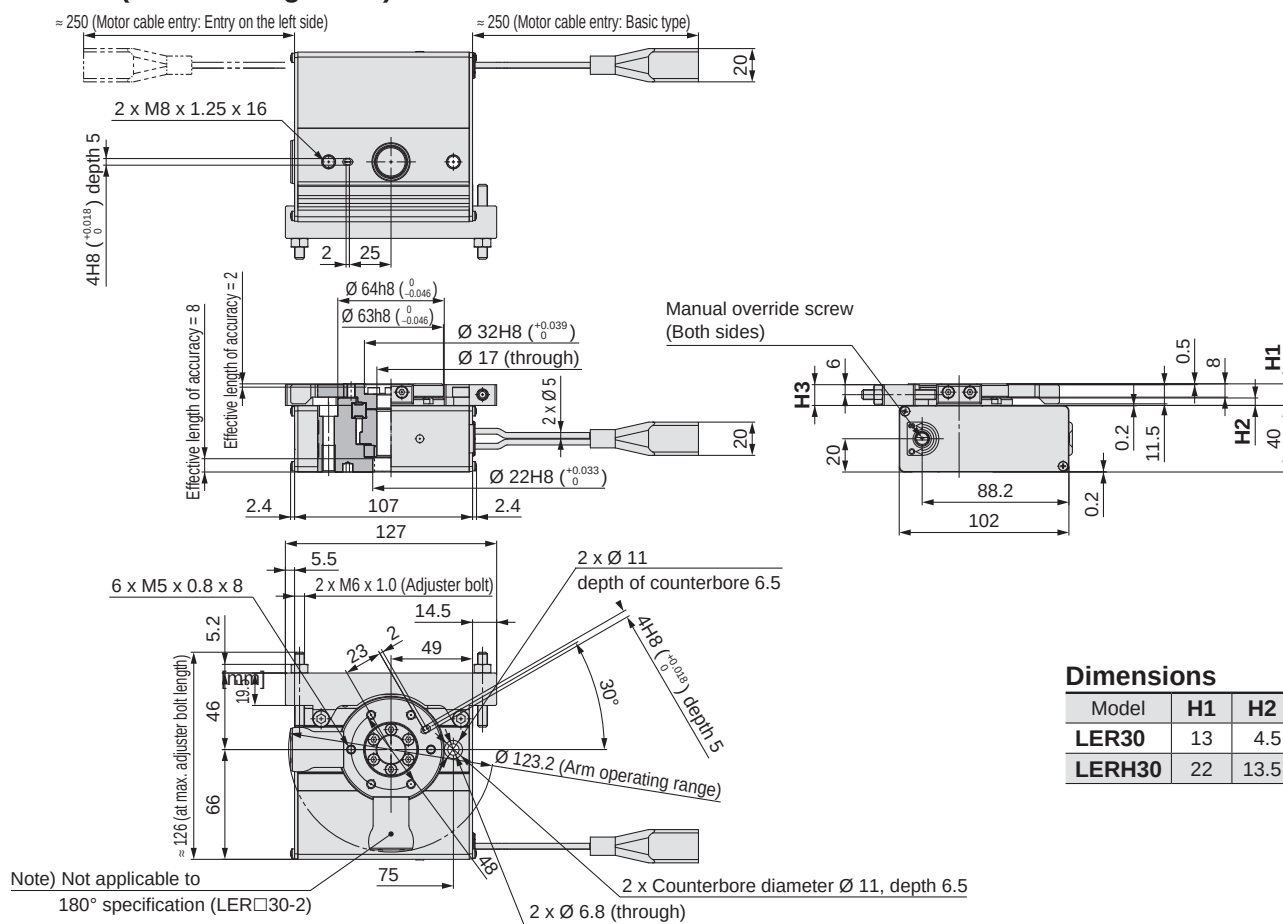


Dimensions

Model	H1	H2
LER30	13	4.5
LERH30	22	13.5

LER□30-2 (Rotation angle: 180°)

LER□30-3 (Rotation angle: 90°)

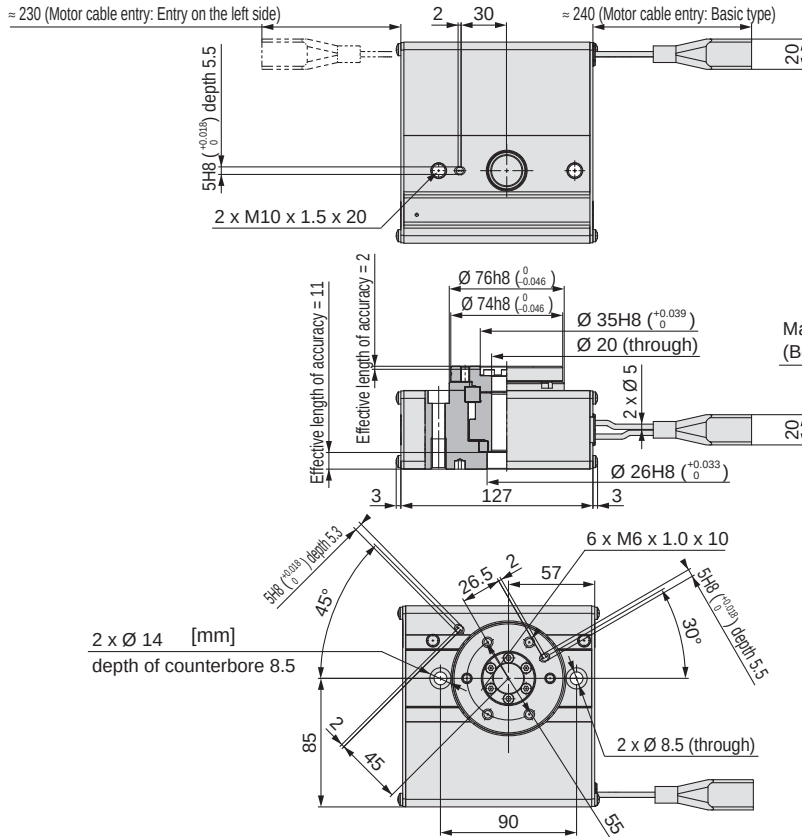


Dimensions

Model	H1	H2	H3
LER30	13	4.5	12.5
LERH30	22	13.5	21.5

Dimensions

LER□50□ (Rotation angle: 320°)

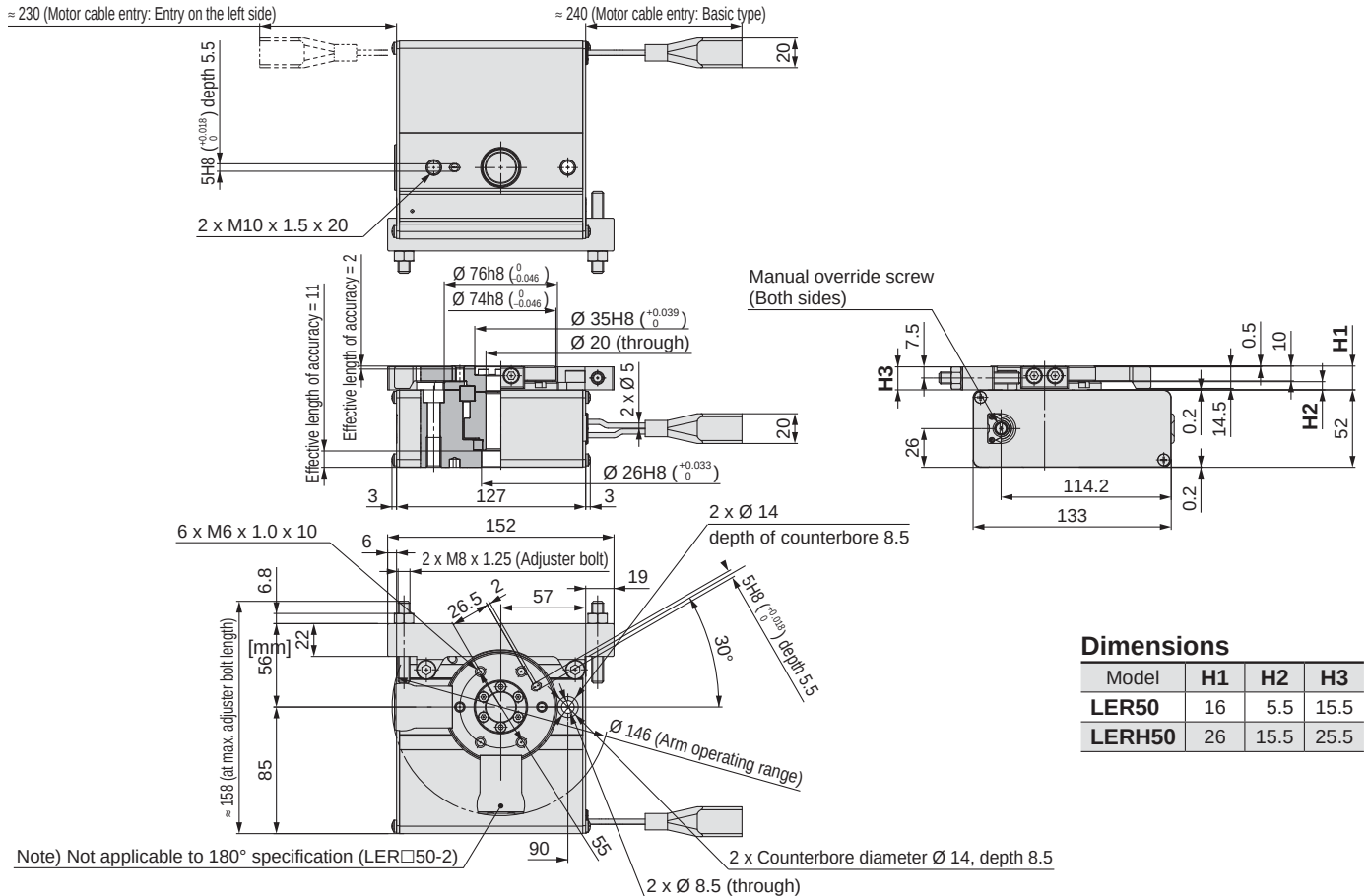


Dimensions

Model	H1	H2
LER50	16	5.5
LERH50	26	15.5

LER□50-2 (Rotation angle: 180°)

LER□50-3 (Rotation angle: 90°)



Dimensions

Model	H1	H2	H3
LER50	16	5.5	15.5
LERH50	26	15.5	25.5

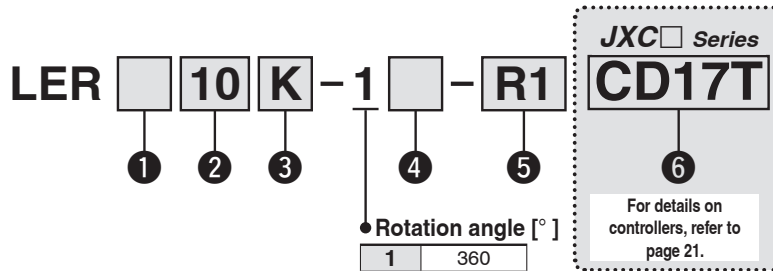
Note) Not applicable to 180° specification (LER□50-2)

Continuous Rotation Specification

Electric Rotary Table

LER Series LER10, 30, 50

How to Order



① Table accuracy

—	Basic type
H	High-precision type

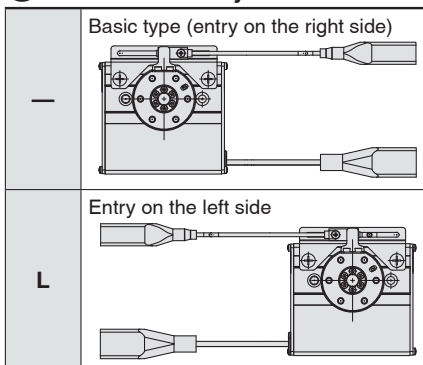
② Size

10
30
50

③ Max. rotating torque [N·m]

Symbol	Type	LER10	LER30	LER50
K	High torque	0.32	1.2	10
J	Basic	0.22	0.8	6.6

④ Motor cable entry



⑤ Actuator cable type/length*2

Standard cable [m]		Robotic cable [m]			
—	None	R1	1.5	RA	10*1
S1	1.5	R3	3	RB	15*1
S3	3	R5	5	RC	20*1
S5	5	R8	8*1		

JXC Series (For details, refer to page 22.)**6 Controller**

—	Without controller
C□1□□	With controller

C D 1 7 T**Interface (Communication protocol/Input/Output)**

Symbol	Type	Number of axes, Special specification	
		Standard	With STO sub-function
5	Parallel input (NPN)	●	
6	Parallel input (PNP)	●	
E	EtherCAT	●	●
9	EtherNet/IP™	●	●
P	PROFINET	●	●
D	DeviceNet®	●	
L	IO-Link	●	●
M	CC-Link	●	

Mounting

7	Screw mounting
8*3	DIN rail

Number of axes, Special specification

Symbol	Number of axes	Specification
1	Single axis	Standard
F	Single axis	With STO sub-function

Communication plug connector I/O cable*4

Symbol	Type	Applicable interface
—	Without accessory	—
S	Straight type communication plug connector	DeviceNet™
T	T-branch type communication plug connector	CC-Link Ver1.10
1	I/O cable (1.5 m)	Parallel input (NPN) Parallel input (PNP)
3	I/O cable (3 m)	
5	I/O cable (5 m)	

- *1 Produced upon receipt of order (Robotic cable only)
 *2 The standard cable should only be used on fixed parts.
 For use on moving parts, select the robotic cable.
 *3 The DIN rail is not included. It must be ordered separately.
 *4 Select “—” for anything other than DeviceNet™, CC-Link, or parallel input.
 Select “—,” “S,” or “T” for DeviceNet™ or CC-Link.
 Select “—,” “1,” “3,” or “5” for parallel input.

⚠ Caution**[CE-compliant products]**

- ① EMC compliance was tested by combining the electric actuator LER 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.

[UL-compliant products (For the LEC series)]

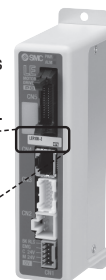
When compliance with UL is required, the electric actuator and controller/driver should be used with a UL1310 Class 2 power supply.

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

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

<Check the following before use.>

- ① Check the actuator label for 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.smc.eu>

LER Series

Step Motor (Servo/24 VDC)

Compatible Controllers

Type	Step data input type 
Series	JXC51 JXC61
Features	Parallel I/O
Compatible motor	Step motor (Servo/24 VDC)
Max. number of step data	64 points
Power supply voltage	24 VDC

Type	EtherCAT direct input type 	EtherCAT direct input type with STO sub-function 	EtherNet/IP™ direct input type 	EtherNet/IP™ direct input type with STO sub-function 	PROFINET direct input type 	PROFINET direct input type with STO sub-function 	DeviceNet® direct input type 	IO-Link direct input type 	IO-Link direct input type with STO sub-function 	CC-Link direct input type 
Series	JXCE1	JXCEF	JXC91	JXC9F	JXCP1	JXCPF	JXCD1	JXCL1	JXCLF	JXCM1
Features	EtherCAT direct input	EtherCAT direct input with STO sub-function	EtherNet/IP™ direct input	EtherNet/IP™ direct input with STO sub-function	PROFINET direct input	PROFINET direct input with STO sub-function	DeviceNet® direct input	IO-Link direct input	IO-Link direct input with STO sub-function	CC-Link direct input
Compatible motor	Step motor (Servo/24 VDC)									
Max. number of step data	64 points									
Power supply voltage	24 VDC									

Specifications

Step Motor (Servo/24 VDC)



Model		LER□10K	LER□10J	LER□30K	LER□30J	LER□50K	LER□50J	
Actuator specifications	Rotation angle [°]		360					
	Angle setting range [°]*7		±20000000					
	Max. rotating torque [N·m]		0.32	0.22	1.2	0.8	10	6.6
	Max. pushing torque 40 to 50 % [N·m]*1 *3		0.13 to 0.16	0.09 to 0.11	0.48 to 0.60	0.32 to 0.40	4.0 to 5.0	2.6 to 3.3
	Max. moment of inertia [kg·m ²]*2 *3		0.0040	0.0018	0.035	0.015	0.13	0.05
	Angular speed [°/sec]*2 *3		20 to 280	30 to 420	20 to 280	30 to 420	20 to 280	30 to 420
	Pushing speed [°/sec]		20	30	20	30	20	30
	Max. angular acceleration/deceleration [°/sec ²]*2		3000					
	Backlash [°]	Basic type	±0.3	±0.2				
		High-precision type		±0.1				
	Positioning repeatability [°]	Basic type	±0.05	±0.05				
		High-precision type		±0.03				
	Lost motion [°]*4	Basic type	0.3 or less	0.3 or less				
		High-precision type		0.2 or less				
	Impact/Vibration resistance [m/s ²]*5		150/30					
	Actuation type		Special worm gear + Belt drive					
	Max. operating frequency [c.p.m]		60					
Operating temperature range [°C]		5 to 40						
Operating humidity range [%RH]		90 or less (No condensation)						
Weight [kg]	Basic type	0.51	1.2		2.3			
	High-precision type	0.55	1.3		2.5			
Electric specifications	Motor size	□20		□28		□42		
	Motor type	Step motor (Servo/24 VDC)						
	Encoder	Incremental						
	Proximity sensor (for return to origin)/Input circuit	2-wire						
	Proximity sensor (for return to origin)/Input point	1 input						
	Power supply voltage [V]	24 VDC ±10 %						
	Power*6	Max. power 14		Max. power 42		Max. power 57		

*1 Pushing force accuracy is LER10: ±30 % (F.S.), LER30: ±25 % (F.S.), LER50: ±20 % (F.S.).

*2 The angular acceleration, angular deceleration and angular speed may fluctuate due to variations in the moment of inertia. Refer to the "Moment of Inertia—Angular Acceleration/Deceleration, Effective Torque—Angular Speed" graphs on pages 8 and 9 for confirmation.

*3 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 %)

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

*5 Impact resistance: No malfunction occurred when the slide table 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.)

*6 Indicates the max. power during operation (including the controller)

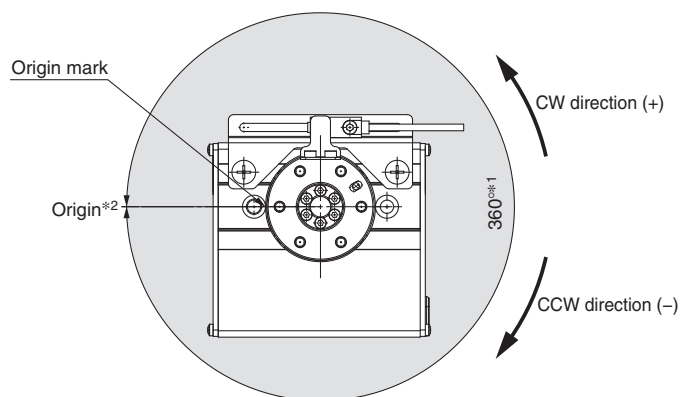
This value can be used for the selection of the power supply.

*7 The angle displayed on the monitor is automatically reset to 0° every 360°.

To set an angle (position), use the "Relative" movement mode.

If an angle of 360° or more is set using the "Absolute" movement mode, the correct operation cannot be performed.

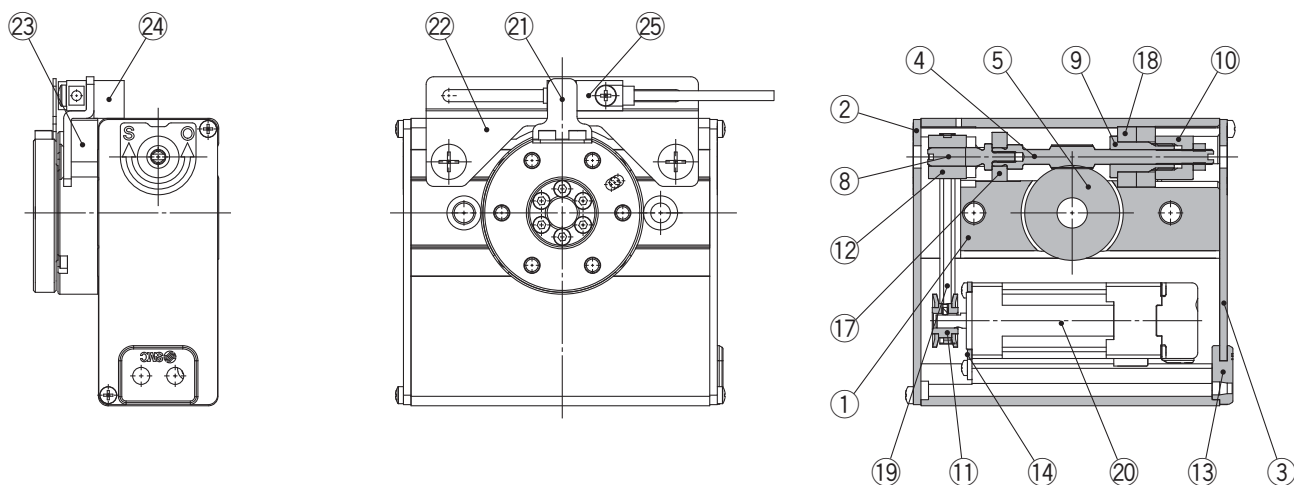
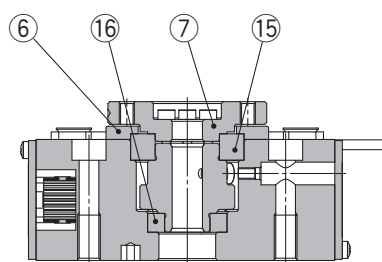
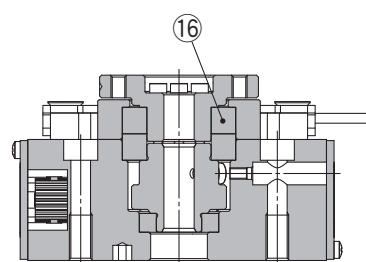
Table Rotation Angle Range



*1 This is the range within which the table can move.

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

*2 The sensor detection range is recognized as origin. When detecting the sensor, the table rotates in the reverse direction within the sensor detection range.

Construction**Basic type****High-precision type****Component Parts**

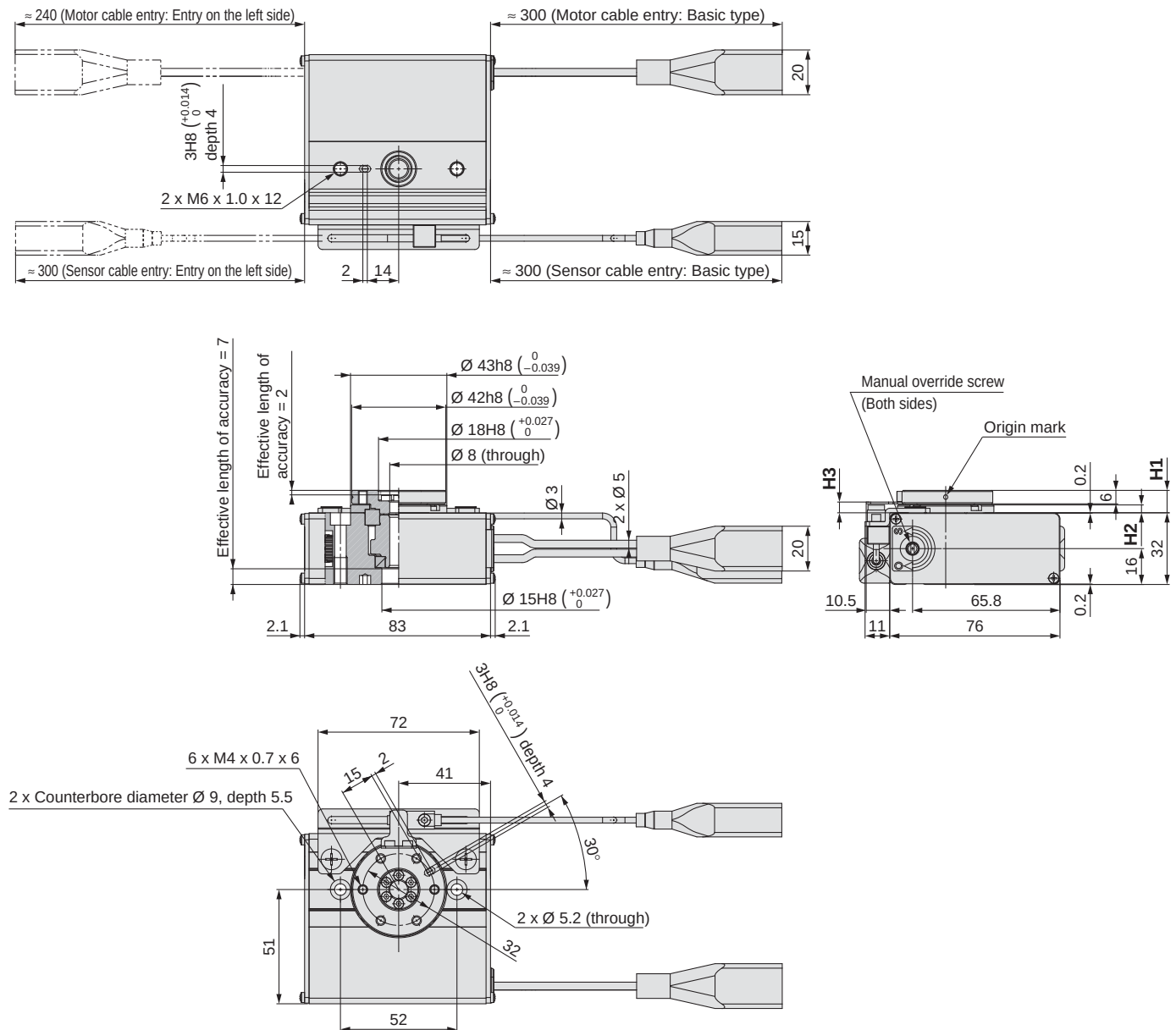
No.	Description	Material	Note
1	Body	Aluminium alloy	Anodised
2	Side plate A	Aluminium alloy	Anodised
3	Side plate B	Aluminium alloy	Anodised
4	Worm screw	Stainless steel	Heat treatment + Special treatment
5	Worm wheel	Stainless steel	Heat treatment + Special treatment
6	Bearing cover	Aluminium alloy	Anodised
7	Table	Aluminium alloy	
8	Joint	Stainless steel	
9	Bearing holder	Aluminium alloy	
10	Bearing stopper	Aluminium alloy	
11	Pulley A	Aluminium alloy	
12	Pulley B	Aluminium alloy	
13	Grommet	NBR	
14	Motor plate	Carbon steel	
15	Basic type	Deep groove ball bearing	
	High-precision type	Special ball bearing	
16	Deep groove ball bearing	—	
17	Deep groove ball bearing	—	
18	Deep groove ball bearing	—	
19	Belt	—	
20	Step motor (Servo/24 VDC)	—	

Component Parts (360° type)

No.	Description	Material	Note
21	Proximity dog	Stainless steel	
22	Sensor holder	Carbon steel	Chromating
23	Sensor holder spacer	Aluminium alloy	Anodised (High-precision type can be used only)
24	Square nut	Aluminium alloy	
25	Proximity sensor assembly	—	

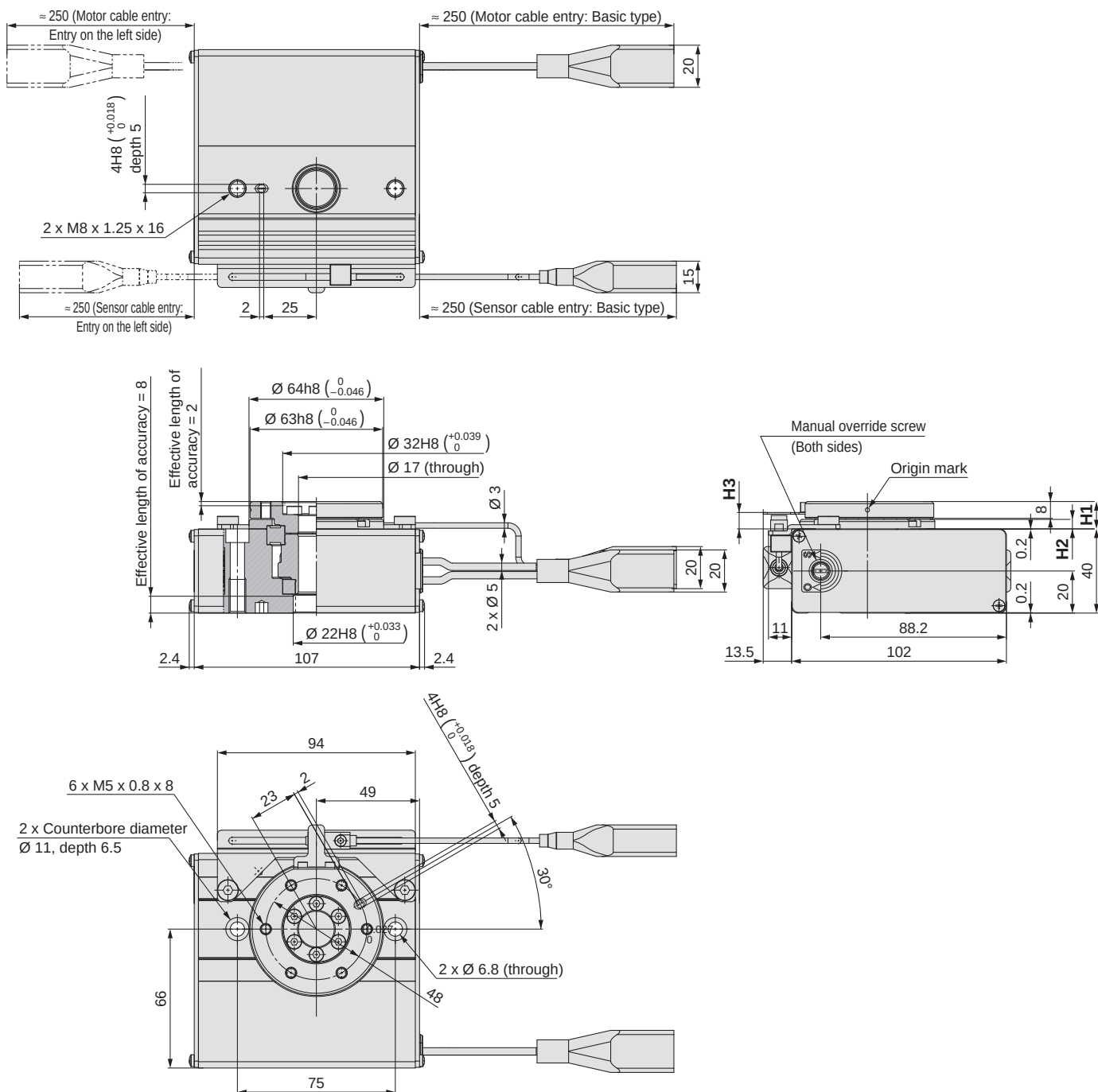
Dimensions

LER□10□



Dimensions [mm]

Model	H1	H2	H3
LER10	10	3.5	4.8
LERH10	17	10.5	11.8

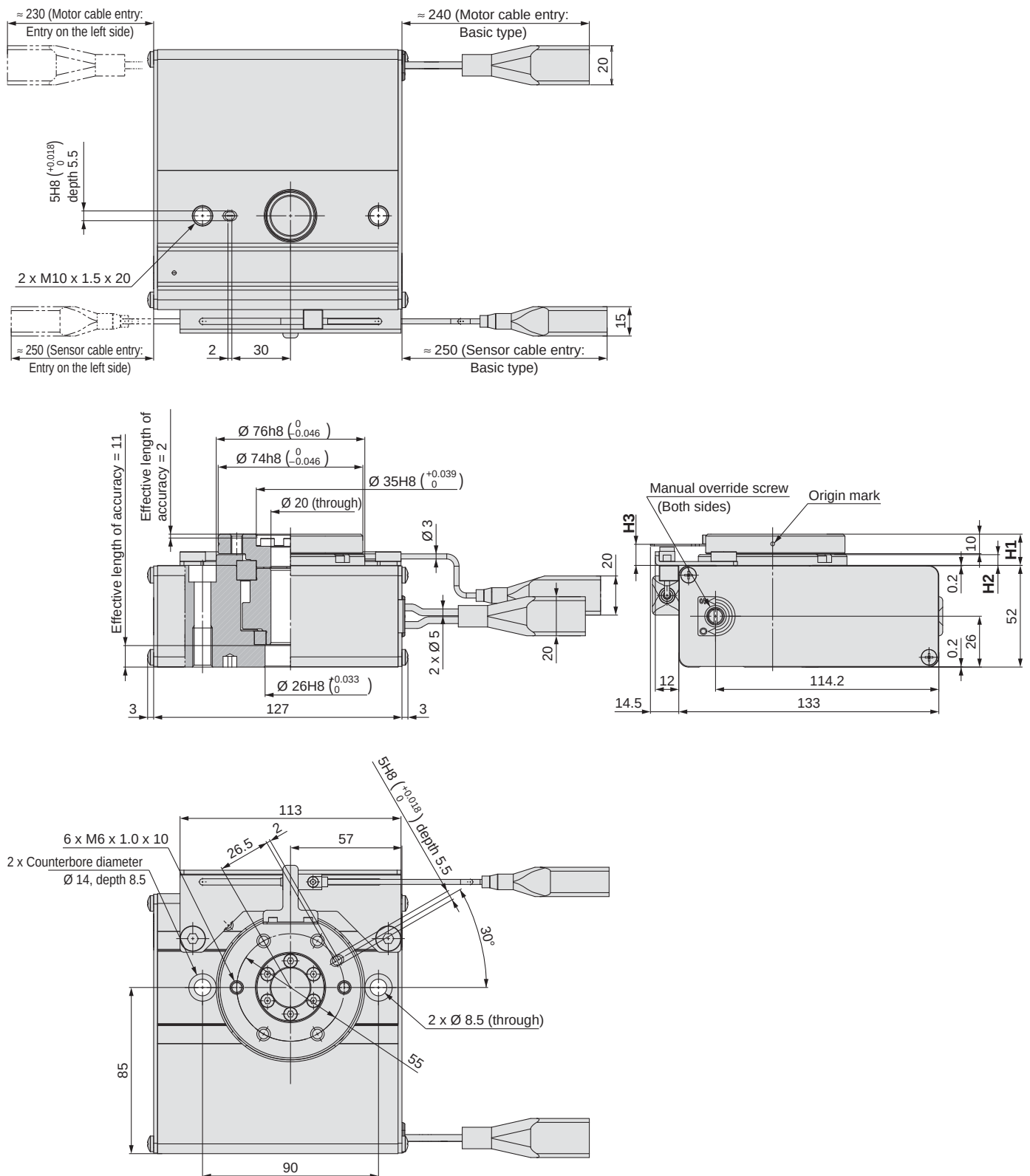
Dimensions**LER□30****Dimensions**

[mm]

Model	H1	H2	H3
LER30	13	4.5	7.8
LERH30	22	13.5	16.8

Dimensions

LER□50



Dimensions

[mm]

Model	H1	H2	H3
LER50	16	5.5	10.8
LERH50	26	15.5	20.8



LER Series Specific Product Precautions 1

Be sure to read this before handling the products. Refer to the last page for safety instructions and the Operation Manual for electric actuator precautions at www-smc.eu.

Design / Selection

Warning

1. If the operating conditions involve load fluctuations, ascending/descending movements, or changes in the frictional resistance, ensure that safety measures are in place to prevent injury to the operator or damage to the equipment.
Failure to provide such measures could accelerate the operation speed, which may be hazardous to humans, machinery, and other equipment.
2. Power failure may result in a decrease in the pushing force; ensure that safety measures are in place to prevent injury to the operator or damage to the equipment.
When the product is used for clamping, the clamping force could be decreased due to power failure, potentially creating a hazardous situation in which the workpiece is released.

Caution

1. If the operating speed is set too fast and the moment of inertia is too large, the product could be damaged.
Set appropriate product operating conditions in accordance with the model selection procedure.
2. If more precise repeatability of the rotation angle is required, use the product with an external stopper, with repeatability of $\pm 0.01^\circ$ (180° and 90° with adjustment of $\pm 2^\circ$) or by directly stopping the workpiece using an external object utilizing the pushing operation.
3. When using the electric rotary table with an external stopper, or by directly stopping the load externally, be sure to set to [Pushing operation].
Also, ensure that the workpiece is not impacted externally during the positioning operation or in the range of positioning operation.

Mounting

Warning

1. Do not drop or hit the electric rotary table to avoid scratching and denting the mounting surfaces.
Even a slight deformation can cause the deterioration of accuracy and operation failure.
2. When mounting the load, tighten the mounting screws within the specified torque range.
Tightening the screws with a higher torque than recommended may result in a malfunction, while tightening with a lower torque can result in the displacement of the mounting position.

Mounting the workpiece to the electric rotary table

The load should be mounted with the torque specified in the following table by screwing the screw into the mounting female thread. If long screws are used, they can interfere with the body and cause a malfunction.

Model	Screw size	Thread length [mm]	Max. tightening torque [N·m]
LER□10	M4 x 0.7	6	1.4
LER□30	M5 x 0.8	8	3.0
LER□50	M6 x 1	10	5.0

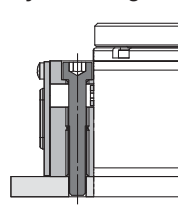
3. When mounting the electric rotary table, tighten the mounting screws within the specified torque range.
Tightening the screws with a higher torque than recommended may result in a malfunction, while tightening with a lower torque can result in the displacement of the mounting position.

Mounting

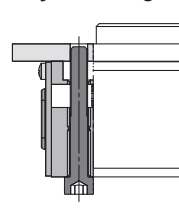
Warning

Through-hole mounting

Body mounting/Bottom



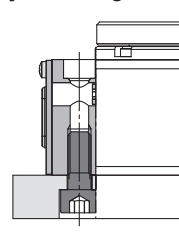
Body mounting/Top



Model	Screw size	Max. tightening torque [N·m]
LER□10	M5 x 0.8	3.0
LER□30	M6 x 1	5.0
LER□50	M8 x 1.25	12.0

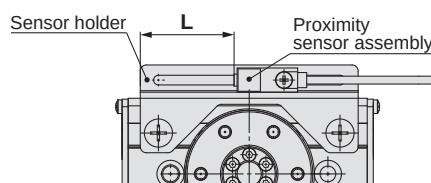
Body tapped mounting

Body mounting/Bottom



Model	Screw size	Max. tightening torque [N·m]	Max. screw-in depth [mm]
LER□10	M6 x 1	5.0	12
LER□30	M8 x 1.25	12.0	16
LER□50	M10 x 1.5	25.0	20

4. The mounting face has holes and slots for positioning. Use them for accurate positioning of the electric rotary table if required.
5. If it is necessary to operate the electric rotary table when it is not energized, use the manual override screws.
When it is necessary to operate the product by the manual override screws, check the position of the manual override screws of the product, and leave necessary space. Do not apply excessive torque to the manual override screws. This may lead to damage and malfunction.
6. The 360° type proximity sensor for return to origin can be changed $\pm 30^\circ$. When changing the position of the proximity sensor for return to origin, tighten the screws with a tightening torque of 0.6 ± 0.1 [N·m].



Model	L [mm] (Initial setting) Cable entry: Basic type/Entry on the left side (Between the sensor holder end face and proximity sensor end face)
LER□10-1	31/31
LER□30-1	42/42
LER□50-1	51.5/51.5



LER Series Specific Product Precautions 2

Be sure to read this before handling the products. Refer to the last page for safety instructions and the Operation Manual for electric actuator precautions at www-smc.eu.

Handling

Caution

1. When an external guide is used, connect it in such a way that no impact or load is applied to it.
Use a free moving connector (such as a coupling).

2. The moving force should be the initial value (100 %).
If the moving force is set below the initial value, there may be variation in the cycle time, or an alarm may be generated.

3. INP output signal

- 1) Positioning operation

When the product comes within the set range of the step data [In position], the INP output signal will turn ON.
Initial value: Set to [0.50] or higher.

- 2) Pushing operation

When the effective force exceeds the [Trigger LV] value (including force during operation), the INP output signal will turn ON.

The [Trigger LV] should be set between 40 % and [Pushing force].

- a) To ensure that the clamping and external stop is achieved by [Pushing force], it is recommended that the [Trigger LV] be set to the same value as the [Pushing force].

- b) When the [Trigger LV] and the [Pushing force] are set below the specified range, there is the possibility that the INP output signal will turn ON from the pushing start position.

<Pushing force and trigger LV range>

Model	Pushing force set value [%]	Trigger LV set value [%]
LER□	40 to 50	40 to 50

4. When using the electric rotary table with an external stopper, or by directly stopping the load externally, be sure to set to [Pushing operation].

Also, ensure that the workpiece is not impacted externally during the positioning operation or in the range of positioning operation.

If the product is used in the positioning operation mode, there may be galling or other problems when the product/workpiece comes into contact with the external stopper or external object.

5. When the table is stopped by the pushing operation mode (stopping/clamping), set the product to a position of at least 1 ° away from the workpiece. (This position is referred to as the pushing start position.)

If the pushing start position (stopping or clamping) is set to the same position as the external stop position, the following alarms may be generated and operation may become unstable.

- a. "Posn failed"

The product cannot reach the pushing start position within the target time.

- b. "Pushing ALM"

The product is pushed back from the pushing start position after starting to push.

- c. "Deviation over flow"

Displacement exceeding the specified value is generated at the pushing start position.

- 6 . There is no backlash effect when the product is stopped externally by pushing operation.

For the return to origin, the origin position is set by the pushing operation.

Handling

Caution

7. For the specification with an external stopper, an angle adjuster bolt is provided as standard.

The rotation angle adjustment range is $\pm 2^\circ$ from the angle rotation end.

If the angle adjustment range is exceeded, the rotation angle may change due to insufficient strength of the external stopper. One revolution of the adjuster bolt is approximately equal to 1° of rotation.

8. In case that gravity is added to the workpiece along the rotation direction when product is mounted vertically, the workpiece may fall down when "SVON" signal is OFF or EMG is not energizing.

9. When mounting the product, secure a bending diameter of 40 mm or longer for the motor cable.

10. The 360 ° type proximity sensor for return to origin responds when it approaches anything made of metal. For this reason, be sure to keep metal objects other than the proximity dog away from the sensor during return to origin.

Recommended distance: 5 mm or more

Maintenance

Danger

- 1 . The high-precision type bearing is assembled by pressing into position. It is not possible to disassemble it.

Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “Caution,” “Warning” or “Danger.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)¹⁾, and other safety regulations.

-  **Caution:** **Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
-  **Warning:** **Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
-  **Danger:** **Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

- 1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines.
(Part 1: General requirements)
ISO 10218-1: Manipulating industrial robots - Safety.
etc.

Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.

1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.

1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalogue.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

Caution

1. The product is provided for use in manufacturing industries.

The product herein described is basically provided for peaceful use in manufacturing industries.
If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
If anything is unclear, contact your nearest sales branch.

Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”. Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.²⁾ Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.
- 2) Vacuum pads are excluded from this 1 year warranty.
A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

Caution

SMC products are not intended for use as instruments for legal metrology.

Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country. Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.

Safety Instructions

Be sure to read “Handling Precautions for SMC Products” (M-E03-3) before using.

SMC Corporation (Europe)

Austria	+43 (0)2262622800	www.smc.at	office@smc.at
Belgium	+32 (0)33551464	www.smc.be	info@smc.be
Bulgaria	+359 (0)2807670	www.smc.bg	office@smc.bg
Croatia	+385 (0)13707288	www.smc.hr	office@smc.hr
Czech Republic	+420 541424611	www.smc.cz	office@smc.cz
Denmark	+45 70252900	www.smc.dk.com	smc@smcdk.com
Estonia	+372 6510370	www.smc.pneumatics.ee	smc@info@smcee.ee
Finland	+358 207513513	www.smc.fi	smc@info@smc.fi
France	+33 (0)164761000	www.smc-france.fr	info@smc-france.fr
Germany	+49 (0)61034020	www.smc.de	info@smc.de
Greece	+30 210 2717265	www.smchellas.gr	sales@smchellas.gr
Hungary	+36 23513000	www.smc.hu	office@smc.hu
Ireland	+353 (0)14039000	www.smcautomation.ie	sales@smcautomation.ie
Italy	+39 03990691	www.smcitalia.it	mailbox@smcitalia.it
Latvia	+371 67817700	www.smc.lv	info@smc.lv

Lithuania	+370 5 2308118	www.smc.lt	info@smc.lt
Netherlands	+31 (0)205318888	www.smc.nl	info@smc.nl
Norway	+47 67129020	www.smc-norge.no	post@smc-norge.no
Poland	+48 222119600	www.smc.pl	office@smc.pl
Portugal	+351 214724500	www.smc.eu	apoiocliente@smc.smces.es
Romania	+40 213205111	www.smcromania.ro	smcromania@smcromania.ro
Russia	+7 8127185445	www.smc-pneumatik.ru	info@smc-pneumatik.ru
Slovakia	+421 (0)413213212	www.smc.sk	office@smc.sk
Slovenia	+386 (0)73885412	www.smc.si	office@smc.si
Spain	+34 945184100	www.smc.eu	post@smc.smces.es
Sweden	+46 (0)86031240	www.smc.nu	smc@smc.nu
Switzerland	+41 (0)523963131	www.smc.ch	info@smc.ch
Turkey	+90 212 489 0 440	www.smc.pneumatik.com.tr	info@smc.pneumatik.com.tr
UK	+44 (0)845 121 5122	www.smc.uk	sales@smc.uk

South Africa	+27 10 900 1233	www.smcza.co.za	zasales@smcza.co.za
--------------	-----------------	-----------------	---------------------