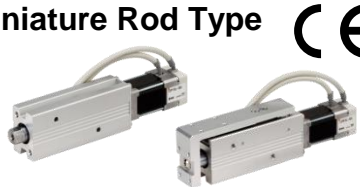




Installation and Maintenance Manual
Electric Actuator / Miniature Rod Type
Series LEPY / LEPS

Applicable model number:
LEPY*-*
LEPS*-*



Note: For special models LEP*-X* please check the appropriate drawing for the dimensions and specifications.

1 Safety Instructions

This manual contains essential information for the protection of users and others from possible injury and/or equipment damage.

- Read this manual before using the product to ensure correct handling and also read the manuals of related apparatus before use.
- Keep this manual in a safe place for future reference.
- These instructions indicate the level of potential hazard by label of “Caution”, “Warning” or “Danger”, followed by important safety information which must be carefully followed.
- To ensure safety of personnel and equipment the safety instructions in this manual and the product catalogue must be observed, along with other relevant safety practices.

	Caution	Indicates a hazard with a low level of risk. Which if not avoided, could result in minor or moderate injury.
	Warning	Indicates a hazard with a medium level of risk. Which if not avoided, could result in death or serious injury.
	Danger	Indicates a hazard with a high level of risk. Which if not avoided, will result in death or serious injury.

- Electromagnetic compatibility: This product is class A equipment that is intended for use in an industrial environment. There may be potential difficulties in ensuring electromagnetic compatibility in other environments due to conducted as well as radiated disturbances.

Warning

- **Do not disassemble, modify (including change of printed circuit board) or repair the product.**
An injury or product failure may result.
- **Do not operate the product beyond the specification range.**
Fire, malfunction or equipment damage may result.
Use the product only after confirming the specifications.
- **Do not use the product in the presence of flammable, explosive or corrosive gas.**
Fire, explosion or corrosion may result.
This product does not have an explosion proof construction.
- **When using the product as part of an interlocking system:**
Provide a double interlocking system, for example a mechanical system.
Check the product regularly to ensure correct operation.
- **Before performing maintenance, be sure of the following:**
Turn off the power supply.

Caution

- **Always perform a system check after maintenance.**
Do not use the product if any error occurs.
Safety cannot be assured if caused by un-intentional malfunction.
- **Provide grounding to ensure correct operation and to improve noise resistance of the product.**
This product should be individually grounded using a short cable.
- **Follow the instructions given below when handling the product.**
Failing to do so may result in product damage.
- **Maintenance space should always be provided around the product.**
- **Do not remove labels from the product.**
- **Do not drop, hit or apply excessive shock to the product.**
- **Unless stated otherwise, follow all specified tightening torques.**
- **Do not bend, apply tensile force, or apply force by placing heavy loads on the cables.**

1 Safety Instructions (continued)

- **Connect wires and cables correctly and do not connect while the power is turned on.**
- **Do not route input/output wires and cables together with power or high-voltage cables.**
- **Check the insulation of wires and cables.**
- **Take appropriate measures against noise, such as noise filters, when the product is incorporated into other equipment or devices.**
- **Take sufficient shielding measures when the product is to be used in the following conditions:**
 - Where noise due to static electricity is generated.
 - Where electro-magnetic field strength is high.
 - Where radioactivity is present.
 - Where power lines are located.
- **Do not use the product in a place where electrical surges are generated.**
- **Use suitable surge protection when a surge generating load such as a solenoid valve is to be directly driven.**
- **Prevent any foreign matter from entering this product.**
- **Do not expose the product to vibration or impact.**
- **Use the product within the specified ambient temperature range.**
- **Do not expose the product to any heat radiation.**
- **Use a precision screwdriver with flat blade to adjust the DIP switch.**
- **Close the cover over the switches before power is turned on.**
- **Do not clean the product with chemicals such as benzene or thinners.**

2 General Instructions

2.1 Wiring

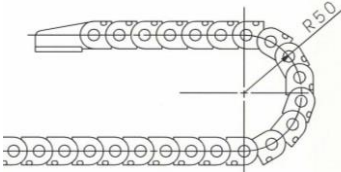
Warning

- **Adjusting, mounting or wiring change should not be done before disconnecting the power supply to the product.**
Electrical shock, malfunction and damage can result.
- **Do not disassemble the cables.**
- **Use only specified cables.**

- **Do not connect or disconnect the wires, cables and connectors when the power is turned on.**

Caution

- **Wire the connector securely.**
Check the connector for polarity and do not apply any voltage to the terminals other than those specified in the Operation Manual.
- **Take appropriate measures against noise.**
Noise in a signal line may cause malfunction. As a countermeasure separate the high voltage and low voltage cables, and shorten the wiring lengths, etc.
- **Do not route input/output wires and cables together with power or high voltage cables.**
The product can malfunction due to interference of noise and surge voltage from power and high voltage cables to the signal line. Route the wires of the product separately from power or high voltage cables.
- **Take care that actuator movement does not catch cables.**
- **Operate with all wires and cables secured.**
- **Avoid bending cables at sharp angles where they enter the product.**
- **Avoid twisting, folding, rotating or applying an external force to the cable.**
Risk of electric shock, wire breakage, contact failure and loss of control of the product can happen.
- **Fix the motor cables protruding from the actuator in place before use.**
The motor and lock cables are not robotic type cables and can be damaged when moved.
- **The actuator cables connecting the actuator and the controller are robotic type cables. But should not be placed in a flexible moving tube with a radius smaller than the specified value. (Min. 50 mm)**



2 General Instructions (continued)

- **Confirm correct insulation of the product.**
Poor insulation of wires, cables, connectors, terminals etc. can cause interference with other circuits. Also there is the possibility that excessive voltage or current may be applied to the product causing damage.

2.2 Transportation

Caution

- **Do not carry or swing the product by the cables.**

2.3 Mounting

Warning

- **Observe the tightening torque for screws.**
Unless stated otherwise, tighten the screws to the recommended torque for mounting the product.
- **Do not make any alterations to this product.**
Alterations made to this product may lead to a loss of durability and damage to the product, which can lead to human injury and damage to other equipment and machinery.
- **When an external guide is used, connect the moving parts of the product and the load in such a way that there is no interference at any point within the stroke.**
Do not scratch or dent the sliding parts of the table or mounting face etc., by striking or holding them with other objects. The components are manufactured to precise tolerances, so that even a slight deformation may cause faulty operation or seizure.
- **Do not use the product until you verify that the equipment can be operated correctly.**
After mounting or repair, connect the power supply to the product and perform appropriate functional inspections to check it is mounted correctly.
- **When attaching to the work piece, do not apply strong impact or large moment.**
If an external force over the allowable moment is applied, it may cause looseness in the guide unit, an increase in sliding resistance or other problems.
- **Maintenance space**
Allow sufficient space for maintenance and inspection.

2.4 Handling

Warning

- **Do not touch the motor while in operation.**
The surface temperature of the motor can increase to approx. 80°C due to operating conditions.
Energizing alone may also cause this temperature increase.
As it may cause burns, do not touch the motor when in operation.
- **If abnormal heating, smoking or fire, etc. occurs in the product, immediately turn off the power supply.**
- **Immediately stop operation if abnormal operation noise or vibration occurs.**
If abnormal operation noise or vibration occurs, the product may have been mounted incorrectly. Unless operation of the product is stopped for inspection, the product can be seriously damaged.
- **Never touch the rotating part of the motor or the moving part of the actuator while in operation.**
There is a serious risk of injury.
- **When installing, adjusting, inspecting or performing maintenance on the product, controller and related equipment, be sure to turn off the power supply to each of them. Then, lock it so that no one other than the person working can turn the power on, or implement measures such as a safety plug.**
- **In the case of the actuator that has a servo motor (24VDC), the “motor phase detection step” is done by inputting the servo on signal just after the controller power is turned on.**
- **The “motor phase detection step” operates the table/rod to the maximum distance of the lead screw. (The motor rotates in the reverse direction if the table hits an obstacle such as the end stop damper.) Take the “motor phase detection step” into consideration for the installation and operation of this actuator**

Caution

- **Keep the controller and product combined as delivered for use.**
The product is set in parameters for shipment.
If it is combined with a different product parameter, failure can result.

2 General Instructions (continued)

- **Check the product for the following points before operation.**
 - Damage to electric driving line and signal lines.
 - Looseness of the connector to each power line and signal line.
 - Looseness of the actuator/cylinder and controller/driver mounting.
 - Abnormal operation.
 - Stop function
- **When more than one person is performing work, decide on the procedures, signals, measures and resolution for abnormal conditions before beginning the work.**
- **Also designate a person to supervise the work, other than those performing the work.**
- **An operation test should be performed at low speed, start the test at a predefined speed, after confirming there are no problems.**
- **Actual speed of the product will be changed by the workload.**
Before selecting a product, check the catalogue for the instructions regarding selection and specifications.
- **Do not apply a load, impact or resistance in addition to a transferred load during return to origin.**
In the case of the return to origin by pushing force, additional force will cause displacement of the origin position since it is based on detected motor torque.
- **Do not remove the nameplate.**

2.5 Actuator with lock

Warning

- **Do not use the lock as a safety lock or a control that requires a locking force.**
The lock used for the product with a lock is designed to prevent dropping of work piece.
- **For vertical mounting, use the product with a lock.**
If the product is not equipped with a lock, the product will move and drop the work piece when the power is removed.
- **“Measures against drops,” means preventing a work piece from dropping due to its weight when the product operation is stopped and the power supply is turned off.**

- **Do not apply an impact load or strong vibration while the lock is activated.**
If an external impact load or strong vibration is applied to the product, the lock will lose its holding force and damage to the sliding part of the lock or reduced lifetime can result. The same situation will happen when the lock slips due to a force higher than its holding force, as this will accelerate the wear to the lock.
- **Do not apply liquid, oil or grease to the lock or its surroundings.**
When liquid, oil or grease is applied to the sliding part of the lock, its holding force will be reduced significantly.
- **Take “measures against drops” and check that safety is assured before mounting, adjustment and inspection of the product.**
If the lock is released with the product mounted vertically, a work piece can drop due to its weight.
- **When the actuator is operated manually (when SVRE output signal is off), supply 24DCV to the [BK RLS] terminal of the power supply connector.**
If the product is operated without releasing the lock, wearing of the lock sliding surface will be accelerated, causing reduction in the holding force and the life of the locking mechanism.
- **Do not supply 24VDC power supply constantly to the [BK RLS(Lock release)] terminal.**
Stop supplying 24VDC power supply to the [BK RLS(Lock release)] terminal during normal operation. If power is supplied to the [BK RLS] terminal continuously, the lock will be released, and workpieces may be dropped at stop (EMG).

- 2.6 Please refer to the auto switch references in “Best Pneumatics “ when an auto switch is to be used.

2.7 Unpacking

Caution

- **Check the received product is as ordered.**
If a different product is installed from the one ordered, injury or damage could result.

3 Specifications

Model			LEPY 6		LEPY 10		
Actuator specification	Stroke [mm]		25, 50, 75				
	Screw Lead [mm]		4	8	5	10	
	Pushing force [N] <small>Note 1) Note 6)</small>		Basic	14 ~ 20	7 ~ 10	25 ~ 50	12.5 ~ 25
			Compact	-	-	24 ~ 40	12 ~ 20
	Work load [kg] <small>Note 2) Note 3) Note 6)</small>	Horizontal	Basic	2	1	6	3
			Compact	-	-	4	2
		Vertical	Basic	0.5	0.25	1.5	1
			Compact	-	-	1.5	1
	Speed [mm/s] <small>Note 3) Note 6)</small>	Horizontal	Basic	10 to 150	20 to 300	10 to 200	20 to 350 <small>Note 4)</small>
			Compact	-	-	10 to 200	20 to 350 <small>Note 4)</small>
		Vertical	Basic	10 to 150	20 to 300	10 to 150	20 to 300 <small>Note 4)</small>
			Compact	-	-	10 to 150	20 to 300 <small>Note 4)</small>
	Pushing speed [mm/s] ^{Note 5)}			10	20	10	20
	Acceleration / Deceleration [mm/s ²]			3000			
	Backlash [mm]			0.2 or less			
	Positioning repeatability [mm]			± 0.05			
	Lost Motion [mm] ^{Note 7)}			0.2 or less			
Impact resistance/vibration resistance [m/s ²] ^{Note 8)}			50 / 20				
Actuation type			Sliding screw				
Guide type			Sliding bush				
Max. operating frequency (c.p.m)			60				
Operating temperature range [°C]			5 to 40				
Operating humidity range [%]			90 or less (No condensation)				
Electric specification	Motor size		□20		□28		
	Motor type		Step motor (Servo 24VDC)				
	Encoder		Incremental A/B phase (800 pulse/rotation)				
	Rated voltage [VDC]		24 ± 10%				
	Power consumption [W] ^{Note 9)}	Basic	12		28		
		Compact	-		22		
	Standby power consumption when operating [W] ^{Note 10)}	Basic	11		22		
		Compact	-		16		
Max. instantaneous power Consumption [W] ^{Note 11)}	Basic	22		55			
	Compact	-		45			

Model		LEPY 6			LEPY 10		
Stroke [mm]		25	50	75	25	50	75
Weight [kg]	Basic	0.24	0.29	0.34	0.47	0.55	0.65
	Compact	-	-	-	0.41	0.49	0.59

- Note 1) Pushing force accuracy is LEPY6: ±30% (F.S.), LEPY10: ±25% (F.S.).
The pushing force and the duty ratio change according to the set value.
Refer to the catalog.
- Note 2) The maximum value of the work load for the positioning operation. An external guide is necessary to support the load.
The actual work load and transfer speed change according to the condition of the external guide.
- Note 3) Speed changes according to the work load. Refer to the catalog.
- Note 4) When the stroke is 25 mm, the maximum speed will be 250 mm/sec.
- Note 5) Set to the pushing speed when pushing operation.
- Note 6) The speed and force may change depending on the cable length, load and mounting conditions. Furthermore, if the cable length exceeds 5 m, then it will decrease by up to 10% for each 5 m. (At 15 m: Reduced by up to 20%)
- Note 7) A reference value for correcting an error in reciprocal operation.
- Note 8) Impact resistance:
No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw.
(Test was performed with the actuator in the initial state.)
Vibration resistance:
No malfunction occurred in a test ranging between 45 to 2000 Hz. Test was performed in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)
- Note 9) The power consumption (including the controller) is for when the actuator is operating.
- Note 10) The standby power consumption when operating (including the controller) is for when the actuator is stopped in the set position during operation. Except during the pushing operation.
- Note 11) The maximum instantaneous power consumption (including the controller) is for when the actuator is operating. This value can be used for the selection of the power supply.

3 Specifications (continued)


Model			LEPS 6		LEPS 10		
Actuator specification	Stroke [mm]		25, 50				
	Screw Lead [mm]		4	8	5	10	
	Pushing force [N] <small>Note 1) Note 6)</small>	Basic	14 ~ 20	7 ~ 10	25 ~ 50	12.5 ~ 25	
		Compact	-	-	24 ~ 40	12 ~ 20	
	Work load [kg] <small>Note 2) Note 3) Note 6)</small>	Horizontal	Basic	1	0.75	2	1.5
			Compact	-	-	2	1.5
		Vertical	Basic	0.5	0.25	1.5	1
			Compact	-	-	1.5	1
	Speed [mm/s] <small>Note 3) Note 6)</small>	Horizontal	Basic	10 to 150	20 to 300 <small>Note 4)</small>	10 to 200	20 to 350 <small>Note 4)</small>
			Compact	-	-	10 to 200	20 to 350 <small>Note 4)</small>
		Vertical	Basic	10 to 150	20 to 300 <small>Note 4)</small>	10 to 150	20 to 300 <small>Note 4)</small>
			Compact	-	-	10 to 150	20 to 300 <small>Note 4)</small>
	Pushing speed [mm/s] <small>Note 5)</small>		10	20	10	20	
	Acceleration / Deceleration [mm/s ²]		3000				
	Backlash [mm]		0.2 or less				
	Positioning repeatability [mm]		± 0.05				
	Lost Motion [mm] <small>Note 7)</small>		0.2 or less				
Impact resistance/vibration resistance [m/s ²] <small>Note 8)</small>		50 / 20					
Actuation type		Sliding screw					
Guide type		Linear guide					
Max. operating frequency (c.p.m)		60					
Operating temperature range [°C]		5 to 40					
Operating humidity range [%]		90 or less (No condensation)					
Electric specification	Motor size		□20		□28		
	Motor type		Step motor (Servo 24VDC)				
	Encoder		Incremental A/B phase (800 pulse/rotation)				
	Rated voltage [VDC]		24 ± 10%				
	Power consumption [W] <small>Note 9)</small>	Basic	12		28		
		Compact	-		22		
	Standby power consumption when operating [W] <small>Note 10)</small>	Basic	11		22		
		Compact	-		16		
Max. instantaneous power Consumption [W] <small>Note 11)</small>	Basic	22		55			
	Compact	-		45			

Model		LEPS 6		LEPS 10	
Stroke [mm]		25	50	25	50
Weight [kg]	Basic	0.29	0.35	0.56	0.65
	Compact	-	-	0.50	0.59


- Note 1) Pushing force accuracy is LEPY6: ±30% (F.S.), LEPY10: ±25% (F.S.).
The pushing force and the duty ratio change according to the set value.
Refer to the catalog.
- Note 2) The maximum value of the work load for the positioning operation. An external guide is necessary to support the load.
The actual work load and transfer speed change according to the condition of the external guide.
- Note 3) Speed changes according to the work load. Refer to the catalog.
- Note 4) When the stroke is 25 mm, the maximum speed will be 250 mm/sec.
- Note 5) Set to the pushing speed when pushing operation.
- Note 6) 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%)
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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.
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No malfunction occurred in a test ranging between 45 to 2000 Hz. Test was performed in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)
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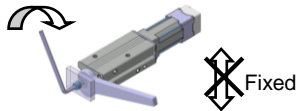
4 Installation

4.1 Design and selection

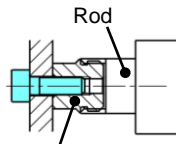
-  **Warning**
- **Do not apply a load in excess of the operating limit.**
Select a suitable actuator by work load and allowable lateral load on the rod end. If the product is used outside of the operating limit, the eccentric load applied to the rod will be excessive and have adverse effects such as creating play on the sliding parts of the rod, reducing accuracy and shortening the life of the product
 - **Do not use the product in applications where excessive external force (including vibration) or impact force is applied to it.**
Do not apply impact and vibration outside of the specifications; it may lead to a malfunction
 - **If gravity acts on the workpiece due to vertical mounting, it may drop due to its own weight depending on the conditions when the product is not energized (SVON signal is OFF) or stopped (EMG is not energized).**
 - **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.

4.2 Mounting

-  **Caution**
- **When mounting workpieces or jigs to the rod end, hold the flats of the rod end with a wrench so that the rod does not rotate (Rod type only).**
When attaching a bolt or workpiece to the end of the rod, hold the flats of the rod end with a wrench (the rod should be fully retracted). Do not apply tightening torque to the rod non-rotating mechanism. The rod is manufactured to precise tolerances, so even a slight deformation may cause a malfunction and damage.



- **When mounting a bolt, workpiece or jig to the rod end, the bolt should be tightened with a torque within the specified range (Rod type only).**
Tightening to a torque higher than the specified value may cause a malfunction due to deformation of the component, whilst under-tightening can cause displacement of the mounting position or in extreme conditions detaching of the workpiece. If the bolt is screwed in more than the maximum depth, the lead screw will be damaged, leading to operation failure.



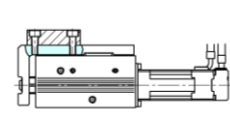
Rod end

Model	Bolt	Max. tightening torque [Nm]	Max.thread depth [mm]	Rod end width across flats [mm]
LEPY6	M4 x 0.7	1.4	7	10
LEPY10	M5 x 0.8	3.0	9	12

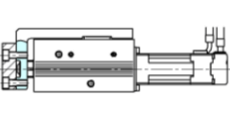
- **The angular position of the rod end flats cannot be changed because the rod has a non-rotating mechanism inside (Rod type only).**
The angular position of the rod end flats is not specified; it depends on the actuator type. The rod rotates slightly due to the clearance of the non-rotating mechanism: Install the bolt or workpiece with consideration to the rotation.
- **When attaching the workpiece to the table, hold the table and tighten the bolts with a torque within the specified range (Slide table type only).**
The table is supported by a linear guide, do not apply impact or moment when mounting the work load. If the bolts are screwed to more than the maximum screw-in depth, it may lead to a malfunction due to damage of the linear guide or body.

4 Installation (continued)

Top mounting

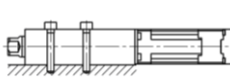


Front mounting



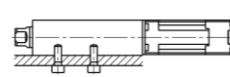
- **When mounting the product, tighten the mounting screws within the specified torque range.**
Tightening the screws with a higher torque than recommended may cause a malfunction, whilst the tightening with a lower torque can cause the displacement of the mounting position or in extreme conditions the actuator could become detached from its mounting position.

Side mounting (Body mounting through-hole)



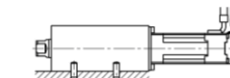
Model	Bolt	Max. tightening torque [Nm]
LEPY6	M3 x 0.5	0.9
LEPS6	M4 x 0.7	1.4
LEPY10		
LEPS10		

Side mounting (Body tapped)



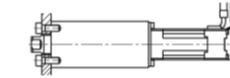
Model	Bolt	Max. tightening torque [Nm]	Max. Screw-in depth [mm]
LEPY6	M4 x 0.7	1.4	7
LEPS6			
LEPY10			
LEPS10	M5 x 0.8	3.0	9

Bottom mounting (Body tapped)




Model	Bolt	Max. tightening torque [Nm]	Max. Screw-in depth [mm]
LEPY6	M4 x 0.7	1.4	5
LEPS6			
LEPY10	M5 x 0.8	3.0	9
LEPS10			

Rod side end mounting (Rod type only)



Model	Bolt	Max. tightening torque [Nm]	Max. Screw-in depth [mm]
LEPY6	M4X0.7	1.4	7
LEPY10	M5X0.8	3.0	9

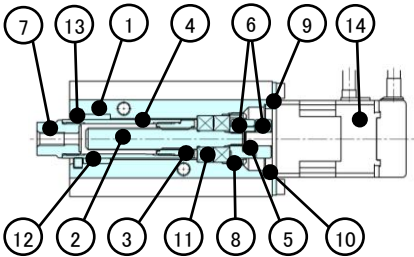
4.3 Handling

-  **Caution**
- **For the pushing operation, ensure that the force is applied in the direction of the rod axis.**
 - **Avoid using the electric actuator in such a way that rotational torque would be applied to the rod.**
It may cause deformation of the non-rotating sliding part, leading to clearance in the internal guide or an increase in the sliding resistance. Refer to the table below for the approximate values of the allowable range of rotational torque.
- | Allowable rotational torque
(N · m or less) | LEPY6 | LEPY10 |
|--|-------|--------|
| | 0.04 | 0.08 |

- **Do not operate by fixing the rod and moving the actuator body.**
Excessive load will be applied to the rod, leading to damage to the actuator and reduced the life of the product.
- **Return to origin.**
Do not apply a load, impact or resistance in addition to the transferred load during return to origin.

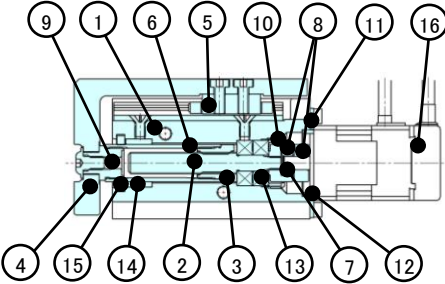
5 Names and Functions of Individual Parts

LEPY



No.	Part	Material	Remarks
1	Body	Aluminium alloy	Anodized
2	Screw shaft	Stainless steel	Heat treated Specially treated
3	Screw nut	Stainless steel	Heat treated Specially treated
4	Rod	Stainless steel	
5	Sleeve	NBR	
6	Hub	Aluminium alloy	
7	Rod end	Free cutting carbon steels	Nickel plated
8	Bearing holder	Size 6: Aluminium alloy Size 10: Carbon steel	
9	Motor Plate	Aluminium alloy	Anodized
10	Guide ring	Aluminium alloy	Size10 only
11	Bearing	-	
12	Bushing	Oil impregnated sintered copper alloy	
13	Soft wiper	-	
14	Step motor (Servo 24VDC)	-	

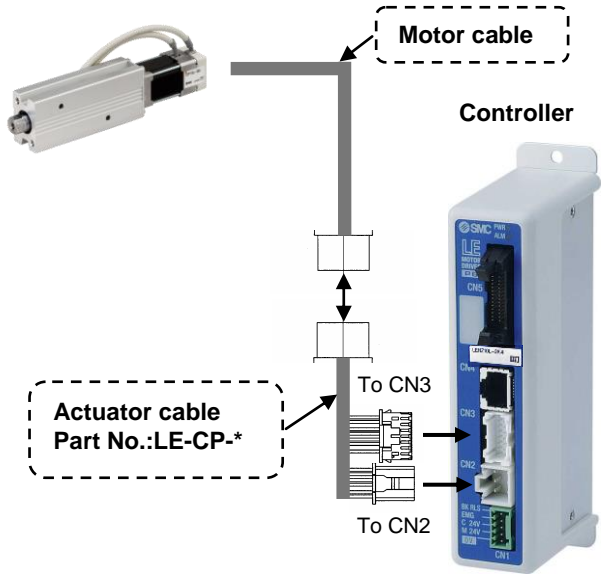
LEPS



No.	Part	Material	Remarks
1	Body	Aluminium alloy	Anodized
2	Screw shaft	Stainless steel	Heat treated Specially treated
3	Screw nut	Stainless steel	Heat treated Specially treated
4	Table	Aluminium alloy	Anodized
5	Linear guide	-	
6	Rod	Stainless steel	
7	Sleeve	NBR	
8	Hub	Aluminium alloy	
9	Rod end	Free cutting carbon steels	Nickel plated
10	Bearing holder	Size 6: Aluminium alloy Size 10: Carbon steel	
11	Motor Plate	Aluminium alloy	Anodized
12	Guide ring	Aluminium alloy	Size10 only
13	Bearing	-	
14	Bushing	Oil impregnated sintered copper alloy	
15	Soft wiper	-	
16	Step motor (Servo 24VDC)	-	

6 Wiring

Electric Actuator



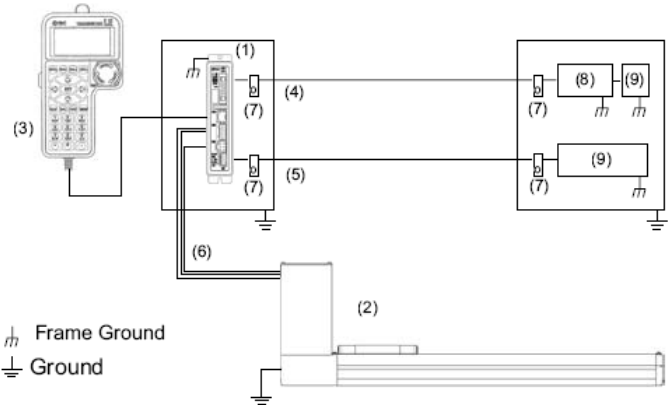
Warning

Use only specified cables otherwise there may be risk of fire and damage

8 CE Directive

The LE series of actuators, motor controllers and teaching box conform to the EU EMC directive, if they are installed in accordance with the following instructions. These components are intended for incorporation into machinery and assemblies forming part of a larger system. The CE compliance was achieved when the above three components were connected as shown in the diagram below.

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



Machinery parts list

No.	Part name	Part no./Material
1	Motor controller	LECP6 Series
2	Actuator	LE Series
3	Teaching box	LEC-T1 Series
4	I/O cable (with shield)	LEC-CN5-[]
5	Power supply cable (with shield)	5 wire with shield Heavy-duty cable (5 m)
6	Actuator cable	LEC-CP-[]
7	P-clip (for shield ground)	Metal
8	Programmable controller	-
9	Switching power supply	-

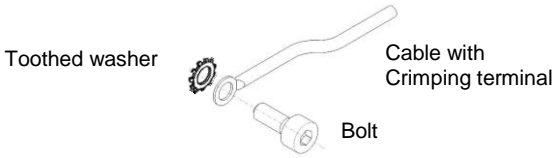
Please refer to the IMM of the LEC controller being used for information on the LEC installation procedure.

• Grounding the Actuator

The actuator must be bolted to a conductor plate as shown below on the "Location of grounding point" drawing.

The conductor plate must then be grounded to shield the actuator from electrical noise; the bolt and plate should be made of conductive material.

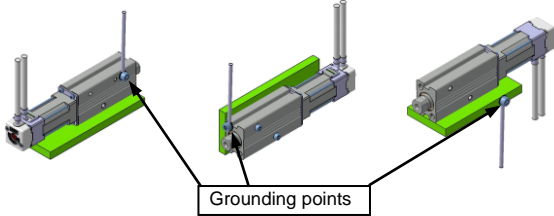
The bolt, cable with crimping terminal and toothed washer should be obtained separately.



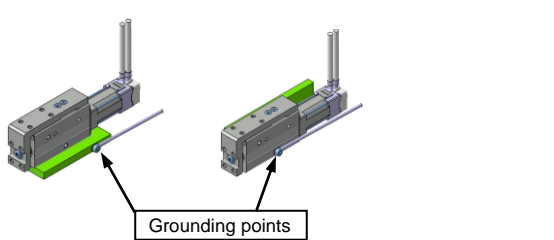
8 CE Directive (continued)

• Location of grounding points

• LEPY series

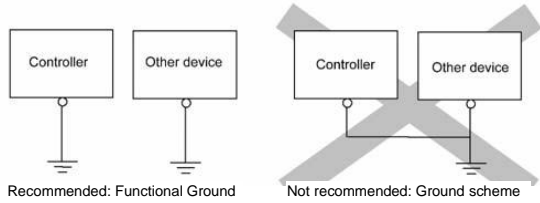


• LEPS series



Caution

The product should be connected to a ground. The cross-sectional area of this wire shall be a minimum of 2 mm². The grounding point should be as near as possible to the actuator to keep the wire length short.



• Grounding the controller

Please refer to the IMM of the LEC being used, for information on grounding the controller.

7 Maintenance

Warning

- **Do not disassemble or repair the product.**
Fire or electric shock can result.
- **Before modifying or checking the wiring, the voltage should be checked with a tester 5 minutes after the power supply is turned off.**
Electrical shock can result.

Caution

- **Maintenance should be performed according to the procedure indicated in the Operating Manual.**
Incorrect handling can cause an injury, damage or malfunction of equipment and machinery.
- **Removal of product.**
When equipment is serviced, first confirm that measures are in place to prevent dropping of work pieces and run-away of equipment, etc, and then turn off the power supply to the system.
When machinery is restarted, check that operation is normal with actuators in the correct positions.

Lubrication

Caution

- **The product has been lubricated for life at manufacturer, and does not require lubrication in service.**
When lubrication is applied, special grease must be used.
Please read the maintenance manual for each actuator.

9 Contacts

AUSTRIA	(43) 2262 62280-0	LATVIA	(371) 781 77 00
BELGIUM	(32) 3 355 1464	LITHUANIA	(370) 5 264 8126
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