Safety Instructions (continued)

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

General Instructions

1. Wiring
   - Adjusting, mounting or wiring change should not be done before disconnecting the power supply to the product.
   - Electrical shock, malfunction and damage can result.
   - Use only specified cables.
   - Do not disconnect the wires, cables and connectors when the power is turned on.

2. Handling
   - Wire the connector correctly and 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 line length.
   - Do not route input/output wires and cables together with power or high-voltage cables.
   - Do not route input/output wires and cables together with power or high-voltage cables.
   - Risk of electric shock, noise and 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 a double insulation 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.
   - Always perform a system check after maintenance.
   - Do not use the product if any error occurs.
   - Safety cannot be assured in the production and 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 be avoided around the product.
   - Do not remove labels from the product.
   - Do not drop, hit or apply excessive shock to the product.
   - Unless stated otherwise, do not apply any specified tightening torques.
   - Do not bend, apply tensile force, or apply force by placing heavy loads on the cables.

2. Transportation
   - Do not carry or swing the product by the cables.

3. Mounting
   - Observe the tightening torque for screws.
   - Unless stated otherwise, tighten the screws to the recommended torque for the mounting parts.
   - 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.

4. Actuator with lock
   - 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.

5. Actuator with lock
   - Do not use the lock as a safety lock or a control that requires a locking force.
   - The lock is designed to prevent dropping of work piece.
   - Do not apply liquid, oil or grease to the lock or its surroundings.
   - If the product is not equipped with a lock, the product will move and drop if the work piece is removed.
   - 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 the will accelerate the w ear 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,” means preventing a work piece from dropping due to its weight. If 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.

6. Auto-switch operation
   - Check the received product as is ordered.
   - If a different product is installed from the one ordered, injury or damage could result.
### 3 Specifications (continued)

#### Note 1:
The actual stroke length may vary depending on the stroke length.

#### Note 2:
The allowable stroke length is indicated by the stroke length.

#### Note 3:
Thrust setting range when "pushing" operation in torque control mode, etc.

#### Note 4:
Impact resistance: No malfunction occurred when the actuator was tested for a drop test from both an axial direction and perpendicular direction to the lead screw. (The load was performed with the actuator in the initial state.)

#### Note 5:
Vibration resistance: No malfunction occurred in a test range between 45 to 2000 Hz, when the actuator was tested in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)

Note 7: Only when the actuator, with lock, is selected.

Note 8: For an actuator with lock, add the power consumption for the lock.

Note 9: A reference value for correcting an error in reciprocation operation.

#### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>LEVY25</th>
<th>LEVY32</th>
<th>LEVY63</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke [mm]</td>
<td>101</td>
<td>131</td>
<td>250</td>
</tr>
<tr>
<td>Screw</td>
<td>M8 x 1.25</td>
<td>M8 x 1.25</td>
<td>M8 x 2</td>
</tr>
<tr>
<td>Max. tightening torque [N]</td>
<td>12.5</td>
<td>13.5</td>
<td>25.0</td>
</tr>
<tr>
<td>Max. thread depth L [mm]</td>
<td>13</td>
<td>21</td>
<td>26</td>
</tr>
<tr>
<td>Rod end with across flats [mm]</td>
<td>36</td>
<td>36</td>
<td>36</td>
</tr>
</tbody>
</table>

#### Work fixed/Rod end female thread

- **Model**: LEVY25, LEVY32, LEVY63
- **Screw**: M8 x 1.25, M8 x 1.25, M8 x 2
- **Max. tightening torque [N]**: 12.5, 13.5, 25.0
- **Max. thread depth L [mm]**: 13, 21, 26
- **Rod end with across flats [mm]**: 36, 36, 36

#### Work fixed/Rod end male thread

- **Model**: LEVY25, LEVY32, LEVY63
- **Screw**: M8 x 1.25, M8 x 1.25, M8 x 2
- **Max. tightening torque [N]**: 12.5, 13.5, 25.0
- **Max. thread depth L [mm]**: 13, 21, 26
- **Rod end with across flats [mm]**: 36, 36, 36

#### Work fixed/Rod end male thread

- **Model**: LEVY25, LEVY32, LEVY63
- **Screw**: M8 x 1.25, M8 x 1.25, M8 x 2
- **Max. tightening torque [N]**: 12.5, 13.5, 25.0
- **Max. thread depth L [mm]**: 13, 21, 26
- **Rod end with across flats [mm]**: 36, 36, 36

### 4 Installation (continued)

#### 4.1 Design and selection

- **Warning**
  - Do not apply a load in excess of the actuator specification. A product should be selected based on the maximum work load and allowable moment if the product is used outside of the operating specification, the eccentric load applied to the guide will become excessive and have adverse effects such as creating play in the guide, reduced accuracy and reduced product life.
  - Do not exceed the speed limit of the actuator specification.
  - Select a suitable actuator by the relationship of allowable work load and speed.
  - Do not use the product in applications where excessive external force or impact force is applied to it.
  - This can lead to premature failure of the product.

#### 4.2 Handling

- **CAUTION**
  - Do not operate by fixing the piston rod and moving the actuator body. An excessive load will be applied to the piston rod, leading to damage to the actuator and reduced lifetime.
  - Avoid using the electric actuator in a way that rotational torque would be applied to the piston rod.
  - If rotational torque is applied to the piston rod the non-rotating guide will become damaged or deformed and non-rotational accuracy will be reduced. (Refer to the allowable rotational torque table below.)

### 5 Names and Functions of Individual Parts

- **Parallel motor**
  - Rod end male thread
  - In-line motor type [LEY32]
  - In-line motor type [LEY63]

<table>
<thead>
<tr>
<th>Model</th>
<th>Screw</th>
<th>Max. tightening torque [N]</th>
<th>Max. thread depth L [mm]</th>
<th>Rod end with across flats [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEVY25</td>
<td>M8 x 1.25</td>
<td>12.5</td>
<td>13</td>
<td>36</td>
</tr>
<tr>
<td>LEVY32</td>
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<td>13.5</td>
<td>21</td>
<td>36</td>
</tr>
<tr>
<td>LEVY63</td>
<td>M8 x 2</td>
<td>25.0</td>
<td>26</td>
<td>36</td>
</tr>
</tbody>
</table>

### 6 Mounting bracket part number

<table>
<thead>
<tr>
<th>Size</th>
<th>Flange</th>
<th>Width</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>LEY4025</td>
<td>45</td>
<td>24</td>
</tr>
<tr>
<td>25</td>
<td>LEY4025</td>
<td>65</td>
<td>24</td>
</tr>
<tr>
<td>32</td>
<td>LEY4025</td>
<td>85</td>
<td>24</td>
</tr>
<tr>
<td>32</td>
<td>LEY4025</td>
<td>105</td>
<td>24</td>
</tr>
</tbody>
</table>

#### CAUTION

- When mounting the product, use screws with adequate length and tighten them to the recommended torque.
  - Tightening with larger torque than the specified range may cause malfunction while the tightening with smaller torque can allow the displacement of actuator position. In extreme conditions the actuator could become detached from its mounting position.

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Note: Additional weight for lock, etc. is included.

Note: The maximum value of the horizontal workload. (An external guide is necessary.) The actual workload will depend on the type of external guide.

Note: Thrust setting range when "pushing" operation in torque control mode, etc.

Note: Refer to the thrust correction graph shown in the catalogue as a guide.

Set value LEVY75: T120 to 240%
Set value LEVY32: T120 to 40%
Set value LEVY25+Y: T80 to 90%
Set value LEVY25+Y: V10 to 50%
Set value LEVY35: S15 to 50%
6 Wiring

LECSA (Pulse input / Positioning) driver

LECSB (Pulse input) driver

LECSH (CC-Link) driver

LECS8 (SSCNET) driver

LECVM/LECYU (MECHATROLINK) driver

7 Maintenance (continued)

- The product has been lubricated for life at manufacture, and does not require lubrication in service. Contact SMC if lubrication is applied. Please read the maintenance manual for each actuator.

- Maintenance frequency.
  Perform maintenance according to the table below.
  Contact SMC if any abnormality is found.

<table>
<thead>
<tr>
<th>Inspection before daily operation</th>
<th>Appearance check</th>
<th>Belt check</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspection every 6 months</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>256 km / 5 million cycles</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Inspection every 5 million cycles yearly</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Whichever occurs first

- Items for visual appearance check.
  Loose screws, abnormal dirt.
  Check of flaps and cable print.
  Vibration, noise.

- Items for belt check
  Check the belt regularly as shown in “maintenance frequency”.
  Check operation immediately and contact SMC when the belt appears to be like the photographs shown below.
  - Tooth shape canvas is worn out
  - Canvas fibre becomes fuzzy
  - Rubber is removed and the fibre becomes white.
  - Lines of fibres become unclear.

- Belt partially cut
  Belt is partially cut.
  Foreign matter caught in teeth other than cut part causes flaw.
  - Vertical line of belt teeth Raw which is made when the belt runs on the flange.
  - Rubber back of the belt is softened and sticky.
  - Crack on the back of the belt.

8 CE Directive

- Location of grounding point
  - The actuator needs the ground that is bolted, see below figure.
  - The bolt, cable with crimping terminal and toothed washer should be obtained separately.

Top mounting type

Location of grounding point

In-line mounting type

Location of grounding point

9 CE Directive

- Electromagnetic Compatibility (EMC) Directive
  The LE series actuators and motor drivers conform to the EMC directive, if they are installed in accordance with the following instructions.
  These components are intended for incorporation into machinery and assembles forming part of a larger system.
  The CE compliance was achieved when the above two components were connected as shown in the diagram below.

- Low Voltage Directive (LVD)
  The LE series of actuators and motor drivers are in compliance with the LVD.

- Grounding the actuator and the driver
  Please refer to the relevant manuals for installation guidelines.