**Single Axis Actuator LX Maximum Travel Speed / Accuracy Standards**

### Notes for Using Single Axis Actuator LX / Low Particle Generation Grease Specifications

- **Maintenance**
  - **Routine Inspections:**
    - Perform the inspection once per 3 to 6 months.
    - Check for proper lubrication conditions, clean-up and grease refill.
    - Check on mounting screws for looseness.
  - **Lubrication:**
    - The recommended lubricants are shown as below:
      - LX15, LX20, LX26 Series → Showa Shell Sekiyu-made Alvania Grease (No. 2, No. 3)
      - LX30, LX45 Series → Showa Shell Sekiyu-made Cartridge Grease (EP2)
    - **Low Particle Grease Type:** → NSK LG2
  - **Recommendation:**
    - Gear meshing cycle is per 6 months or 1.000 km under normal operating conditions.
    - *Lubrication interval,* however, depend on usage conditions and environments.
  - **Cautions for Operating Environments:**
    - Ensure that it is used at an ambient temperature of 50°C or less. It is recommended to provide mechanical stoppers to prevent overrun.

### Accuracy Standards Table

**Accuracy Standards Items**

- **Positioning Accuracy**
  - Positioning is performed from a reference position incrementally in one direction, and measured.
  - Measurement values are the maximum difference between actual travel distance and commanded distance.
  - See Accuracy Standards Table for design values.

- **Positioning Repeatability**
  - Repeat positioning and measurement seven times at the same point in a specified direction.
  - 1/2 of the maximum difference with “a” in front is defined as the measurement value.
  - See Accuracy Standards Table for design values.

- **Backlash**
  - Loads are applied to the block from the reference position, and then released.
  - The difference between the reference position and returned value is the measurement value.
  - See Accuracy Standards Table for design values.

- **Parallelism**
  - A dial indicator is set on the block to the reference surface.
  - Measurements while traveling along with the rail mounted on the reference surface.
  - The maximum difference taken by the measurement is the measurement value.
  - See Accuracy Standards Table for design values.

### Accuracy Standards Table

#### Single Axis Actuator LX

<table>
<thead>
<tr>
<th>Type</th>
<th>Lead (mm)</th>
<th>Rail Length L (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LX15</td>
<td>2</td>
<td>10 - 2500</td>
</tr>
<tr>
<td>LX20</td>
<td>2</td>
<td>10 - 2500</td>
</tr>
<tr>
<td>LX26</td>
<td>2</td>
<td>10 - 2500</td>
</tr>
<tr>
<td>LX30</td>
<td>2</td>
<td>10 - 2500</td>
</tr>
<tr>
<td>LX45</td>
<td>2</td>
<td>10 - 2500</td>
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</table>

### Maximum Travel Speed

<table>
<thead>
<tr>
<th>Max. Velocity (mm/sec)</th>
<th>75</th>
<th>80</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>175</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
<th>400</th>
<th>450</th>
<th>500</th>
<th>550</th>
<th>600</th>
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<tr>
<td>LX15</td>
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<td>12</td>
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<tr>
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<td>8</td>
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<td>19</td>
</tr>
<tr>
<td>LX26</td>
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<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>12</td>
<td>13</td>
<td>15</td>
<td>16</td>
<td>14</td>
<td>18</td>
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<td>19</td>
</tr>
<tr>
<td>LX30</td>
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<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>12</td>
<td>13</td>
<td>15</td>
<td>16</td>
<td>14</td>
<td>18</td>
<td>19</td>
<td>17</td>
<td>18</td>
<td>19</td>
</tr>
</tbody>
</table>

### Allowable Rotational Speed

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Lead</th>
<th>Rail Length</th>
<th>Allowable Rotational Speed (min⁻¹)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LX15</td>
<td>2</td>
<td>75-200</td>
<td>6000</td>
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<tr>
<td>LX20</td>
<td>1</td>
<td>80-200</td>
<td>6000</td>
</tr>
<tr>
<td>LX26</td>
<td>5</td>
<td>100-200</td>
<td>6000</td>
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<tr>
<td>LX30</td>
<td>10</td>
<td>340-690</td>
<td>3300</td>
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</tbody>
</table>

### About Single Axis Actuator LX Low Particle Grease

The products are shipped with low particle grease applied for high cleanliness environments.

- **Low Particle Grease Type:** → NSK LG2
- LG2 (Made by NSK Ltd.) generates less particles and exhibits excellent corrosion resistance.
- The products are shipped with low particle grease applied for high cleanliness environments.

### Particle Generation Test Evaluation Equipment - Overview

- **Evaluation Conditions:**
  - Clean Room Class 100 (in a clean room)
  - Room Temperature: 24°C ± 2°C, Humidity: 45% ± 5% (Particle Name)

#### Hand-held Particle Counter KR-12A (Rion Co., Ltd.)

- Test Actuator: LX2001-B1-A2004-200
- **Hand-held Particle Counter KR-12A (Rion Co., Ltd.)**
  - **3.5mm or larger particle count:**
  - **Tested Actuator:** LX2001-B1-A2004-200
  - **Measurements:**
    - **LX (Standard):**
      - 20: 6
  - **Particles less than 3.5mm count:**
  - **Tested Actuator:** LX2001-B1-A2004-200
  - **Measurements:**
    - **LX (Standard):**
      - 20: 6