NEW

LM Guide
Ultra-large Radial Type
Capable of Achieving Rolling in
Ultra-large Machines

THK CO., LTD.
TOKYO. JAPAN

CATALOG No. 344-1E
**LM Guide**

**Ultra-large Radial Type**
Adopted a 4-row structure with a contact angle of 90° for the upper groove as a rolling guide for ultra-large machines such as 5-axis milling machines and plano-millers.

**Ultra-heavy Load Type**
Achieves a basic static load rating \( C_b = 6540 \text{ [kN]} \) (model JUP780) in the radial direction to ensure a load carrying capacity for an ultra-heavy load.

### Accuracy Standards

As shown in Tables 1 and 2, accuracy of LM Guide model JUP is specified in terms of running parallelism, dimensional tolerance for height M, and difference in height M between a pair when 2 or more LM blocks are used on one rail or when 2 or more rails are mounted on the same plane.

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Dimensional tolerance in height M</th>
<th>Difference in height M</th>
</tr>
</thead>
<tbody>
<tr>
<td>JUP250</td>
<td>20.5</td>
<td>0.2</td>
</tr>
<tr>
<td>JUP385</td>
<td>10.5</td>
<td>0.2</td>
</tr>
<tr>
<td>JUP500</td>
<td>10.5</td>
<td>0.3</td>
</tr>
<tr>
<td>JUP780</td>
<td>10.5</td>
<td>0.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rail length [mm]</th>
<th>Running Parallelism Values Above 500</th>
<th>500 or less</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>630</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>800</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>1000</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>1250</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>1600</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>2500</td>
<td>21</td>
<td></td>
</tr>
</tbody>
</table>

**Running of Parallelism**
See General Catalog for details.

**Difference in height M**
See General Catalog for details.

### Radial Clearance

Table 3 shows the radial clearance of LM Guide model JUP.

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Radial clearance Unit: ( \mu \text{m} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>JUP250</td>
<td>-13 to 0</td>
</tr>
<tr>
<td>JUP385</td>
<td>-16 to 0</td>
</tr>
<tr>
<td>JUP500</td>
<td>-19 to 0</td>
</tr>
<tr>
<td>JUP780</td>
<td>-24 to 0</td>
</tr>
</tbody>
</table>

**THK**
### Dimension Table for Model JUP-A

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Outer dimensions</th>
<th>LM block dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Height W</td>
<td>Width L</td>
</tr>
<tr>
<td>JUP250A</td>
<td>170</td>
<td>330</td>
</tr>
<tr>
<td>JUP385A</td>
<td>210</td>
<td>410</td>
</tr>
<tr>
<td>JUP500A</td>
<td>235</td>
<td>465</td>
</tr>
<tr>
<td>JUP780A</td>
<td>290</td>
<td>560</td>
</tr>
</tbody>
</table>

#### LM rail dimensions

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Width W₀</th>
<th>Height W₁</th>
<th>Pitch F</th>
<th>S₀</th>
<th>ε</th>
<th>L₀</th>
<th>T₀</th>
<th>N</th>
<th>E</th>
<th>ε₀</th>
<th>LM block [kg]</th>
<th>LM rail [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>JUP250A</td>
<td>65</td>
<td>70</td>
<td>120</td>
<td>M20</td>
<td>40</td>
<td>1190</td>
<td>519</td>
<td>319</td>
<td>2100</td>
<td>744</td>
<td>372</td>
<td>119</td>
</tr>
<tr>
<td>JUP385A</td>
<td>80</td>
<td>85</td>
<td>150</td>
<td>M24</td>
<td>45</td>
<td>1890</td>
<td>821</td>
<td>506</td>
<td>3220</td>
<td>1140</td>
<td>579</td>
<td>200</td>
</tr>
<tr>
<td>JUP500A</td>
<td>90</td>
<td>98</td>
<td>150</td>
<td>M27</td>
<td>55</td>
<td>2560</td>
<td>1110</td>
<td>686</td>
<td>4290</td>
<td>1520</td>
<td>759</td>
<td>280</td>
</tr>
<tr>
<td>JUP780A</td>
<td>110</td>
<td>120</td>
<td>200</td>
<td>M30</td>
<td>60</td>
<td>4090</td>
<td>1782</td>
<td>1097</td>
<td>6540</td>
<td>2310</td>
<td>1157</td>
<td>530</td>
</tr>
</tbody>
</table>

#### Basic dynamic load rating (kN)

- C: Radial direction
- C₀: Reversal direction
- C₉₀: Horizontal direction

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#### Mass

<table>
<thead>
<tr>
<th>Model No.</th>
<th>LM block [kg]</th>
<th>LM rail [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>JUP250A</td>
<td>119</td>
<td>119</td>
</tr>
<tr>
<td>JUP385A</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>JUP500A</td>
<td>280</td>
<td>280</td>
</tr>
<tr>
<td>JUP780A</td>
<td>530</td>
<td>530</td>
</tr>
</tbody>
</table>

### Maximum Seal Resistance

For the maximum value of the seal resistance per LM block attached with SS seal with a lubricant applied, see Table 4.

### Dimension Table for Model JUP-B

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Outer dimensions</th>
<th>LM block dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Height W</td>
<td>Width L</td>
</tr>
<tr>
<td>JUP250B</td>
<td>170</td>
<td>330</td>
</tr>
<tr>
<td>JUP385B</td>
<td>210</td>
<td>410</td>
</tr>
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<td>465</td>
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<tr>
<th>Model No.</th>
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<td>200</td>
</tr>
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<td>JUP500B</td>
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<td>280</td>
</tr>
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<td>JUP780B</td>
<td>530</td>
<td>530</td>
</tr>
</tbody>
</table>

### Model Number Coding

- **JUP250 A 1 SS + 1450L**
- **Model No.**
- **Type of block (A/B)**
- **Overall LM rail length**
- **Dust control symbol**
- **Number of blocks mounted on one rail**

**Note:** SS seal = end seal + side seal + inner seal

**Maximum manufacturable length of LM rail**

- Single rail: 3,000 mm
- If a desired length exceeding 3,000 mm, contact THK.

### Maximum Seal Resistance

Evaluate the service conditions while referring to the THK General Catalog.
Precautions on Use

- Handling
  - This product is a heavy object (20 kg or more). When carrying a heavy object, use carrier equipment. This could cause injury or product damage. When we deliver a heavy LM Guide product, it is normally provided with a hoisting bolt and a stopper for preventing the block from falling.
  - Do not disassemble the parts. This will cause dust to enter the product resulting in loss of functionality.
  - Tilting an LM block or LM rail may cause them to fall by their own weight.
  - Take care not to drop or strike the LM guide. This could cause injury or product damage. Giving an impact to it could also cause damage to its function even if the product looks intact.
  - Prevent foreign material, such as dust or cutting chips, from entering the system. This could cause damage to ball circulation components and loss of functionality.
  - Some types of coolant may affect the product functionality. If planning to use the product in an environment where the coolant may penetrate the LM block, contact THK.
  - Do not use the product at temperature of 80°C or higher. Contact THK if you desire to use the product at a temperature of 80°C or higher.
  - If foreign material such as dust or cutting chips adheres to the product, replenish the lubricant after cleaning the product with pure white kerosene. For available types of detergent, contact THK.
  - If considering using the product in inverse or wall-mounted application, contact THK.
  - When using the product in locations exposed to constant vibrations or in special environments such as clean rooms, vacuum and low/medium temperature, contact THK in advance.
  - Removing the LM block from the LM rail will cause balls to fall. Take much care in handling the product.

- Lubrication
  - Thoroughly remove anti-rust oil and feed lubricant before using the product.
  - Do not mix lubricants of different physical properties.
  - In locations exposed to constant vibrations or in special environments such as clean rooms, vacuum and low/medium temperature, normal lubricants may not be used. Contact THK for details.
  - When planning to use a special lubricant, contact THK before using it.
  - When adopting oil lubrication, the lubricant may not be distributed throughout the LM system depending on the mounting orientation of the system. Contact THK for details.
  - Lubrication interval varies according to the conditions. Contact THK for details.

- Storage
  - When storing the LM Guide, enclose it in a package designated by THK and store it in a horizontal orientation while avoiding high temperature, low temperature and high humidity.

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- The photo may differ slightly in appearance from the actual product.
- The appearance and specifications of the product are subject to change without notice. Contact THK before placing an order.
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