LINEAR BEARING SETS
TYPE RSD
ASSEMBLY PROCEDURE

PRIOR TO ASSEMBLY
PM linear bearings are precision components; they have to be handled with meticulous care. To achieve a perfect linear bearing, it is necessary to respect the following guidelines:

• When handling the components. Damage on the rail surface will impact the running performance and operational lifetime
• Prevent contact with any foreign materials when mounting the rails
• During assembly, ensure that all linear bearing components have the same temperature
• For uniform tightening of the bolts the use of a torque screw driver is recommended. Various models are available.

ASSEMBLY LINEAR BEARINGS

For satisfactory installation of all types of linear bearings in this catalogue, it is necessary to consider the following points:

1) To determine the location of fixing holes in the support structure (slide base) the holes in the rails should be taken as a reference and “copied” onto the support structure. This is highly desirable as the original pitch of individual holes may have altered during hardening by as much as 0.4 mm. To compensate this, special type GD or GDN attachment screws can be supplied. The dimensions of these screws are listed in the tables at the end of each chapter.

2) Carefully de-burr and clean all elements, to ensure a flat surface and a perfect fit of the rails.

3) Now, as a required first step, to fasten the inner rail pair (marked as 1 in figure above) the base and reference face 1 of the linear bearing rails should be lightly oiled before they are clamped against the mounting and reference shoulder. Subsequently, they can be fastened by starting from one end and working towards the opposite end.

4) Parallelism of the V-groove of the rails (A and B) should be checked to ensure they don’t exceed the tolerance of the linear bearings (page 14). After these steps have been followed, the slide element is ready for assembly.

Parallelism of rails V-groove: ΔA and ΔB

4.1) The fixed bearing rail (2) should be mounted as described under step 3 above, but care should be taken not to tighten the adjustable rail (marked as 3 in figure on the left side) too much, so as to leave a gap between the V-grooves for the insertion of ball cages, roller cages or needle cages.

5) If any end stop screws are present, remove them now.

6) Carefully insert the cages. When placed in their exact position, lightly secure the adjustable rail until the screws are finger-tight.

7) Fit the end screws or end pieces.

8) The linear bearing set is now ready to be backlash free-adjusted using the lateral preload set screws (page 18, Preload Settings). The amount of preload is given in the tables at page 21.

9) Secure the attachment screws on the adjusting rail.

10) When assembly is complete, the linear bearings must be checked for absence of play and inspected for running quality.
## TABLES

### RECOMMENDED PRELOAD SETTINGS

**Table 1 Linear bearings type RSD with roller cages**

<table>
<thead>
<tr>
<th>Roller size (mm)</th>
<th>Pitch cage (mm)</th>
<th>Set screw</th>
<th>Pitch* (mm)</th>
<th>Preload (Ncm)</th>
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<tbody>
<tr>
<td>1.5</td>
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<td>M2.5</td>
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<td>4</td>
<td>7</td>
<td>M5</td>
<td>40</td>
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**Table 2 Linear bearings type RSD with ball cages**

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**Table 5 Linear bearings type N/O and M/V with needle cages**

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### RECOMMENDED TIGHTENING TORQUE FOR ATTACHMENT SCREWS

**Table 6 Tightening torque strength grade 12.9**

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<th>Size</th>
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**Max. tightening torques (Nm)**

**Type GD and GDN**

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<td>M14</td>
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*pitch between the preload setscrews*
LINEAR BEARING SET

User benefits

- Packaged as a set
- Standard stroke lengths*
- Ready for assembly, reducing cost
- Cages are straightened
- Short lead times
- Global standard
- All parts come pre-selected with stroke and load ratings

Linear bearings set type RSD

Used by industries around the world, type RSD linear bearings provide high accuracy and superior reliability. A standard set consists of:

- 4 pcs. Rails type RSD
- 2 pcs. Roller cages type AA
- 8 pcs. End screws type GA inserted in the rail ends Packaged and delivered as a set.

Example: RSD-3100x14AA

One set consists of:

- 4 pcs. Rails type RSD-3100
- 2 pcs. Roller cages type R3x14AA
- 8 pcs. End screws type GA-3

*Do you require longer stroke lengths? Roller cages can easily be shortened. Cage length should be at least 70% of the rail length.

PRODUCT CODES

To specify your detailed order, please follow the product code format as set out in the table below.

<table>
<thead>
<tr>
<th>Type + Size</th>
<th>Rail length</th>
<th>Quality grade (Suffix Q4, O2)</th>
<th>Rail finishing</th>
<th>Number of rollers</th>
<th>Cage type (Suffix KRE, KREV...)</th>
<th>Stainless steel (Suffix SS)</th>
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<tr>
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<td>Q4</td>
<td>SF</td>
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<td>AA</td>
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Order template (adjust as needed): Standard: 1 set RSD-3100x10AA

Stainless steel: 1 set RSD-3100x10AA-SS
One set includes: 4 rails + 2 roller cages + 8 end screws

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<thead>
<tr>
<th>RSD Kit</th>
<th>Stainless steel</th>
<th>Main dimensions</th>
<th>Mounting holes</th>
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<td>RSD-1520x4KZR</td>
<td>RSD-1520x4KZR-SS</td>
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**Bold** = Short lead time item

**Regular** = Long lead time item - please ask us about prices and lead times
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<tr>
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<th>End pieces a</th>
<th>Weight (g)</th>
<th>Load rating $C_{dynamic}$ (N)</th>
<th>Roller cage</th>
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$F =$ For load direction please refer to picture provided

Units: mm
One set includes: 4 rails + 2 roller cages + 8 end screws

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**Bold** = Short lead time item  
Regular = Long lead time item - please ask us about prices and lead times
## LINEAR BEARINGS

**RSD SETS**

![Diagram of linear bearings](image)

The table below provides specifications for various roller cage types. Each row represents a different roller cage type with specifications for number of rollers, weight, and load rating. The table also includes the type of bearing and stroke length.

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<th>Load rating $C_{mn}$ (N)</th>
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Units: mm
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