Mounting Instructions for Roller Rail Systems
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1. **Safety, cross-references and symbols**  
   1.1 Safety notes and their symbols  
   The following symbols are used to identify safety notes:  
   - **WARNING!**  
     Risk of injury!  
   - **Caution!**  
     Risk of damaging the Roller Rail System or adjacent structures!  
   - **Caution!**  
     Keep Roller Rail System clean!  
     If necessary, protect with a cover!  

1.2 Cross-referencing symbols  
   The symbols below are used to refer to repeat or follow-on work operations:  
   - ➡️ 3.5 See Section 3.5  
   - ➡️ 3.5.2 See Figure 3.5.2  
     (Figure 2 in Section 3.5)  
     Note, recommendation  

1.3 Symbols  
   - **Screw** Strength class 8.8  
   - **Tightening torque**
2. **Roller Rail Systems overview**

2.1 **Overview of components and accessories**

Roller Rail Systems can be assembled from the following components and accessories:

1. Guide rails, for mounting from above, with mounted Rail Seals and protective caps
2. Guide rails, for mounting from above, and mounting hole plugs
3. Guide rails, for mounting from below
4. Rail Seals
5. Mounting hole plugs
6. Wedge profile retaining strips
7. Various runner blocks
8. Front lubrication units
9. Lubrication plates
10. Lube adapters
11. Lube fittings
12. Bellows
13. End seals
14. Measuring system

Each component and accessory can be individually ordered and stocked. See Roller Rail Systems catalog for exact data and dimensions.

⚠️ These instructions will help appropriately trained experts to mount Roller Rail Systems.

2.2 **How to order components, accessories, catalogs and instructions**

- For details of how to order components, see the Roller Rail Systems catalog.

The catalog supplements these instructions and should therefore be kept handy for easy reference.

The mounting instructions for the Rail Seal and the maintenance instructions supplement this publication.

- Please order the latest publications from your local Bosch Rexroth sales partner.
3. Mounting the guide rails

3.1 Shipment

One-piece guide rails:
If a Rail Seal is also ordered, one-piece guide rails are supplied with already clipped-on Rail Seal and screwed-down protective caps in one package (1).

Composite guide rails:
Matching sections of a composite guide rail are identified by a label on the packaging.
The guide rails (2) are shipped in their own packaging, separate from the Rail Seal also possibly ordered.
The Rail Seal is supplied in one piece, matching the overall length, together with protective caps, screws and washers, in its own packaging (3). This packaging is labeled with the same production job number as the guide rail labels.

Unpacking
Do not recycle packaging until mounting has been completed! The packaging can protect not yet mounted guide rails or Rail Seals while mounting work is in progress.
• Carefully remove guide rails from the packaging.
• Use a cutter to cut through the wrapping paper.

3.2 Preparing composite guide rails for mounting

The joints (1) are numbered consecutively (2).
All sections of a guide rail comprising three or more sections have the same number (3).
• Sort sections.

Stamp shown on both sections
for example

Stamp shown on both end sections
### 3.3 Mounting the guide rails

- For one-piece guide rails, remove the clipped-on Rail Seal. See mounting instructions for the Rail Seal.
- Tap a hole to mount the guide rails on the supporting structure.
- Thoroughly clean mating surfaces for the guide rails.
- Check corner radii \( r_1 \), heights of fitting edges \( h_1 \), and supporting and reference surfaces.

The end faces of the guide rails must be chamfered and free from burrs to slide on the runner blocks.

The transitions at the chamfered edges (1) must be rounded.

Check supporting and reference surfaces of the guide rails.

Contamination, out-of-flatness (material displaced by damage to the surface) or burrs are not permitted.

Select and line up screws ready to mount the guide rails. Type \( O_3 \) for guide rails mounted from above, and type \( O_6 \) for guide rails mounted from below.

Press guide rail against the fitting edge (2) and tighten screws lightly.

If necessary, fix the guide rails in place with clamping strips (3) or wedge profile retaining strips (4).

Guide rails without any lateral retention are to be aligned straight and parallel, preferably using a straightedge.

Tighten the screws to the appropriate tightening torque \( M_A \).

For composite guide rails, ensure flush rail surfaces at joints.

- For composite guide rails without fitting edges, use aligner bars (5).

For details of how to order aligner bars see the Roller Rail Systems catalog. A new catalog is in preparation; until this is available, please consult your local Bosch Rexroth sales partner.

- Check joints.

### Table: Size, \( h_1 \), \( r_1 \), and \( M_A \) (Nm)

<table>
<thead>
<tr>
<th>Size</th>
<th>( h_1 ) min (mm)</th>
<th>( h_1 ) max (mm)</th>
<th>( r_1 ) max (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>3,0</td>
<td>4,5</td>
<td>0,8</td>
</tr>
<tr>
<td>35</td>
<td>3,5</td>
<td>5,0</td>
<td>0,8</td>
</tr>
<tr>
<td>45</td>
<td>4,5</td>
<td>7,0</td>
<td>0,8</td>
</tr>
<tr>
<td>55</td>
<td>7,0</td>
<td>9,0</td>
<td>1,2</td>
</tr>
<tr>
<td>65</td>
<td>7,0</td>
<td>9,0</td>
<td>1,2</td>
</tr>
</tbody>
</table>

### Diagrams and Figures

- Figure 3.3.1: Diagram of guide rail installation.
- Figure 3.3.2: Table of screw sizes and torques for different guide rail sizes.
- Figure 3.3.3: Photograph of guide rail and aligner bar setup.
3.4 Mounting the wedge profile retaining strips

- Mount wedge profile retaining strip (1).
  Tightening torque $M_A$.

<table>
<thead>
<tr>
<th>Size</th>
<th>25 ... 35</th>
<th>45 ... 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screw</td>
<td>M5x20</td>
<td>M8x25</td>
</tr>
<tr>
<td>$M_A$ (Nm)</td>
<td>5.5</td>
<td>23</td>
</tr>
</tbody>
</table>

3.5 Parallelism of the mounted guide rails

Always check the parallelism of the mounted guide rails before plugging the mounting holes.

For guide rails with steel mounting hole plugs, care must be taken with the sharp-edged holes. Caution! Sliding over the holes may cause damage to the sealing lips on the runner blocks. For measurement purposes, therefore, use separate runner blocks that are not intended for installation, or otherwise protect the sealing lips.

- Check the parallelism of the mounted guide rails.

The parallelism offset $P_1$ causes a slight rise in the preload on one side. As long as the values specified in the table are met, the effect of this on the service life can generally be neglected.

<table>
<thead>
<tr>
<th>Size</th>
<th>$\parallel P_1$ (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.03 C</td>
</tr>
<tr>
<td>25</td>
<td>0.012</td>
</tr>
<tr>
<td>35</td>
<td>0.015</td>
</tr>
<tr>
<td>45</td>
<td>0.019</td>
</tr>
<tr>
<td>55</td>
<td>0.025</td>
</tr>
<tr>
<td>65</td>
<td>0.035</td>
</tr>
</tbody>
</table>
3.6 Vertical offset

Always check the actual vertical offsets $S_1$ and $S_2$ before plugging the mounting holes.

⚠️ For guide rails with steel mounting hole plugs, care must be taken with the sharp-edged holes. Caution! Sliding over the holes may cause damage to the sealing lips on the runner blocks. To measure the vertical offset, therefore, use separate runner blocks that are not intended for installation, or otherwise protect the sealing lips.

Provided the vertical offset is kept within the stated tolerances $S_{1\text{max}}$ and $S_{2\text{max}}$, its influence on the service life can generally be neglected.

**Permissible vertical offset in transverse direction** $S_{1\text{max}}$  

\[
S_{1\text{max}} = a \cdot Y
\]

- $a =$ distance between the guide rails (mm)
- $Y =$ calculation factor

The permissible vertical offset $S_{1\text{max}}$ includes the tolerance for dimension $H$, as given in the Technical Data section of the Roller Rail Systems catalog.

**Permissible vertical offset in longitudinal direction** $S_{2\text{max}}$  

\[
S_{2\text{max}} = b \cdot 4,3 \cdot 10^{-5}
\]

- $b =$ distance between runner blocks (mm)

The permissible vertical offset $S_{2\text{max}}$ includes the tolerance maximum difference in dimension $H$ on the same guide rail, as given in the Technical Data section of the Roller Rail Systems catalog.

3.7 Mounting the Rail Seal

For mounting separately packaged and shipped Rail Seals, or for replacing worn Rail Seals, see Rail Seal mounting instructions.
3.8 Mounting the plastic mounting hole plugs
Plastic mounting hole plugs are supplied with the guide rails.
- Fit plastic mounting hole plugs (1) flush with the rail surface with the aid of a plastic pad (2).

3.9 Mounting the steel mounting hole plugs
Steel mounting hole plugs are not included in the scope of supply for the guide rails. They must be ordered separately. See Roller Rail Systems catalog.

Mounting jigs
Part number e.g. 1619-210-20
Size 25: code no. 2
" 35: " " 3
" 45: " " 4
" 55: " " 5
" 65: " " 6
one-piece jig: suffix ...-20
two-piece jig: suffix ...-30

Application of the two-piece mounting jig
If the mounting jig cannot be slid onto one end of the guide rail:
- Loosen mounting screws (1).
- Pull mounting jig apart.
- Fit mounting jig over guide rail.
- Tighten mounting screws (1).
Mounting the steel mounting hole plugs

- Fit steel mounting hole plugs on straight.

⚠️ Do not hammer the steel mounting hole plugs in, but use mounting jig!

- Position the mounting jig centrally over the steel mounting hole plug.
- Tighten pressure screw until the pressure plate of the mounting jig lies flat on the guide rail.
  Tightening torques:

<table>
<thead>
<tr>
<th>Size</th>
<th>Tightening torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>approx. 20 Nm</td>
</tr>
<tr>
<td>35</td>
<td>approx. 20 Nm</td>
</tr>
<tr>
<td>45</td>
<td>approx. 35 Nm</td>
</tr>
<tr>
<td>55</td>
<td>approx. 55 Nm</td>
</tr>
<tr>
<td>65</td>
<td>approx. 75 Nm</td>
</tr>
</tbody>
</table>

- Loosen the pressure screw by about four turns and slide mounting jig centrally over the next steel mounting hole plug.

Completing the mounting procedure

- Remove mounting jig.
- Smooth down steel mounting hole plugs until flush with the guide rails. Do not exceed the center line average roughness value of the guide rails (Rₐ, 0.4 µm)!
- Using a straightedge, check vertical offset of the steel mounting hole plugs in relation to the guide rail. Each steel mounting hole plug must be flush with the guide rail at points (1) and (2).
4. Mounting the runner blocks

4.1 Preparing for the mounting procedure

The runner blocks are supplied on a plastic mandrel.

⚠️ The runner blocks must remain on the plastic mandrels until they are to be slid onto the guide rails. Otherwise, the rollers may fall out!

The runner blocks are treated with an oil-based preservative before leaving the factory.

- Tap holes in the guided load for runner block mounting.
- Thoroughly clean mating surfaces for the runner blocks.
- Check corner radii \( r_2 \), heights of fitting edges \( h_2 \), and supporting and reference surfaces.
- Select and line up screws ready for mounting the runner blocks onto the guided load.

The depicted mounting combinations are only examples.

<table>
<thead>
<tr>
<th>Size</th>
<th>( O_1 )</th>
<th>( O_2 )</th>
<th>( O_4 )</th>
<th>( O_5 )</th>
<th>( h_2 )</th>
<th>( r_2 ) max</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>M6x20</td>
<td>M6x16</td>
<td>M8x20</td>
<td>M6x18</td>
<td>5</td>
<td>0,8</td>
</tr>
<tr>
<td>35</td>
<td>M8x25</td>
<td>M8x20</td>
<td>M10x25</td>
<td>M8x25</td>
<td>6</td>
<td>0,8</td>
</tr>
<tr>
<td>45</td>
<td>M10x30</td>
<td>M10x25</td>
<td>M12x30</td>
<td>M10x30</td>
<td>8</td>
<td>0,8</td>
</tr>
<tr>
<td>55</td>
<td>M12x40</td>
<td>M12x35</td>
<td>M14x40</td>
<td>M12x35</td>
<td>10</td>
<td>1,0</td>
</tr>
<tr>
<td>65</td>
<td>M14x45</td>
<td>M14x35</td>
<td>M16x45</td>
<td>M16x40</td>
<td>14</td>
<td>1,0</td>
</tr>
</tbody>
</table>
4.2 Sliding-on the runner blocks

⚠️ If guide rails with steel mounting hole plugs are used, do not slide on runner blocks until the plugs have been mounted and are flush! Otherwise, the seals on the runner blocks could be damaged!

- To slide on the runner blocks, the end faces of the guide rails must be chamfered and free from burrs.
- The transitions at the chamfered edges (1) must be rounded.
- Slide on runner blocks only over Rail Seal ends pre-fabricated (2) at the factory, not over ends which you have machined or cut to length yourself!
- Check whether the Rail Seals fit snugly at the rail ends and on the end faces!
- When using runner blocks with pre-assembled measuring systems, always slide the assembly onto the guide rail with the runner block end first.  ⇒ 5.7

⚠️ Do not remove the mandrel from the runner block. Otherwise, the rollers may fall out!

- Turn runner block over.
- Move mandrel along only until the sealing lips of the runner blocks are exposed.
- Lubricate sealing lips with oil or grease.

- Apply oil or grease to chamfers and Rail Seal on the end face of the guide rail.
- Position runner block at the end of the guide rail with the aid of the mandrel and carefully slide on.
- Check parallelism.  ⇒ 3.5
- Check vertical offset.  ⇒ 3.6

---

### Size Table

<table>
<thead>
<tr>
<th>Size</th>
<th>w</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>3.5...4.5 x 10</td>
</tr>
<tr>
<td>35</td>
<td>3.5...4.5 x 12</td>
</tr>
<tr>
<td>45</td>
<td>3.5...4.5 x 12</td>
</tr>
<tr>
<td>55</td>
<td>3.5...4.5 x 12</td>
</tr>
<tr>
<td>65</td>
<td>3.5...4.5 x 12</td>
</tr>
</tbody>
</table>
4.3 Preliminary and initial lubrication

It is necessary to perform **preliminary lubrication** immediately after runner blocks have been mounted if:
- the period of time between mounting and start-up - that is, until initial lubrication - is to be several weeks,
- the runner blocks are to be moved under load.

### Preliminary lubrication with oil
- Lubricate the runner blocks in one go with the quantity of oil specified in Table 4.3.1.
- Slide runner blocks manually back and forth over at least three times the block length for three full cycles.

### Preliminary lubrication with grease
- Lubricate the runner blocks with the quantity of grease specified in Table 4.3.3.
- Slide runner blocks manually back and forth over at least three times the block length for three full cycles.
- Re-lubricate runner blocks with the quantity of grease specified in Table 4.3.3.
- Slide runner blocks manually back and forth over at least three times the block length for three full cycles.

### Initial lubrication

⚠️ Ensure adequate initial lubrication before start-up!

I. Lubricate runner blocks with the quantity of oil or grease specified in Table 4.3.4.
II. Slide runner blocks manually back and forth over at least three times the block length for three full cycles.
III. Repeat steps I. and II. twice more.
IV. Check whether a film of lubricant is visible on the guide rail.

For further data, e.g. on re-lubrication see the Roller Rail Systems catalog or maintenance instructions (in preparation).

---

### Preliminary lubrication with oil

<table>
<thead>
<tr>
<th>Size</th>
<th>Quantity of oil for preliminary lubrication (cm³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>1,2</td>
</tr>
<tr>
<td>35</td>
<td>1,3</td>
</tr>
<tr>
<td>45</td>
<td>1,5</td>
</tr>
<tr>
<td>55</td>
<td>2,0</td>
</tr>
<tr>
<td>65</td>
<td>4,0</td>
</tr>
</tbody>
</table>

### Preliminary lubrication with grease

<table>
<thead>
<tr>
<th>Size</th>
<th>Part-quantity of grease for preliminary lubrication (cm³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>0,6</td>
</tr>
<tr>
<td>35</td>
<td>0,7</td>
</tr>
<tr>
<td>45</td>
<td>0,8</td>
</tr>
<tr>
<td>55</td>
<td>1,0</td>
</tr>
<tr>
<td>65</td>
<td>2,0</td>
</tr>
</tbody>
</table>

### Initial lubrication

<table>
<thead>
<tr>
<th>Size</th>
<th>Part-quantity of lubricant for initial lubrication (cm³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>0,8</td>
</tr>
<tr>
<td>35</td>
<td>0,9</td>
</tr>
<tr>
<td>45</td>
<td>1,0</td>
</tr>
<tr>
<td>55</td>
<td>1,4</td>
</tr>
<tr>
<td>65</td>
<td>2,7</td>
</tr>
</tbody>
</table>
4.4 Screwing down the runner blocks

- Position and press fitting edge (1) of the guided load (2) against the fitting edges (3) of all the runner blocks on the one rail (4).
- Tighten screws to tightening torque $M_A$.
  Do not yet tighten $O_2$ screws.
- Screw all the runner blocks (5) on the second guide rail (6) to tightening torque $M_A$.

4.4.2

<table>
<thead>
<tr>
<th>strength class</th>
<th>8.8</th>
<th>10.9</th>
<th>12.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>M6</td>
<td>9.5</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>M8</td>
<td>23</td>
<td>32</td>
<td>39</td>
</tr>
<tr>
<td>M10</td>
<td>46</td>
<td>64</td>
<td>77</td>
</tr>
<tr>
<td>M12</td>
<td>80</td>
<td>110</td>
<td>135</td>
</tr>
<tr>
<td>M14</td>
<td>125</td>
<td>180</td>
<td>215</td>
</tr>
<tr>
<td>M16</td>
<td>195</td>
<td>275</td>
<td>330</td>
</tr>
</tbody>
</table>

Installing centerline screws $O_2$ [DIN 6912] for mounting from below

- Carefully remove the runner blocks and guided load with the aid of the mandrels.
- Tighten screws $O_2$ (strength class 8.8) to tightening torque $M_A$.

⚠️ Lubricate sealing lips with oil or grease. 4.2.2

- Carefully slide runner blocks and guided load onto the guide rails.
4.5 Securing the runner blocks

- If the recommended limits for permissible side loads (see catalog) are exceeded, the runner block must be secured by means of additional fitting edges or locating pins after mounting. Ready-drilled holes may exist at the recommended pin hole positions. These may be bored open. Do not prepare the pin holes until installation has been completed.

⚠️ When drilling the pin holes, ensure that no chips/swarf remain on the guide rails and runner blocks.

<table>
<thead>
<tr>
<th>Size</th>
<th>E₁</th>
<th>E₄</th>
<th>N₉ max</th>
<th>S₁₀</th>
<th>L₁₀</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>35</td>
<td>55</td>
<td>9</td>
<td>6</td>
<td>32</td>
</tr>
<tr>
<td>35</td>
<td>50</td>
<td>80</td>
<td>13</td>
<td>8</td>
<td>40</td>
</tr>
<tr>
<td><strong>45</strong></td>
<td><strong>60</strong></td>
<td><strong>98</strong></td>
<td><strong>18</strong></td>
<td><strong>10</strong></td>
<td><strong>50</strong></td>
</tr>
<tr>
<td>55</td>
<td>75</td>
<td>114</td>
<td>19</td>
<td>12</td>
<td>60</td>
</tr>
<tr>
<td>65</td>
<td>76</td>
<td>140</td>
<td>22</td>
<td>14</td>
<td>60</td>
</tr>
</tbody>
</table>

4.6 Removing the runner blocks

⚠️ Use a mandrel when removing runner blocks from the guide rails.

⚠️ The removed runner blocks must remain on the mandrels at all times! Otherwise, the rollers may fall out!
5. Mounting the accessories

5.1 Mounting the front lubrication unit

Initial lubrication of runner blocks

⚠️ Before mounting the front lubrication units, always lubricate the runner blocks with grease first!

- If the runner block already contains a lubricant, or if lubricant greases other than those recommended have to be used: see “Lubricant Compatibility”.

I. Grease the runner blocks as specified in the table.
II. Slide runner blocks back and forth over at least three times the block length for three full cycles.
III. Repeat steps I. and II. twice more.
IV. Check whether a film of lubricant is visible on the guide rail.

Recommended greases:

- Microlube GB 0, Klüber Lubrication KG, KP 0 N-20
- Paragon EP 1, DEA, KP 1 N-30
- Optimol Longtime PD 0, Optimol…lwerke, KP 0 N-30
- Optimol Longtime PD 1, Optimol…lwerke, KP 1 N-40
- Optimol Longtime PD 2, Optimol…lwerke, KP 2 N-40

Recommended lubricating oil:

- Mobil SHC 639 (Viscosity 1000 mm²/s at 40C)

Front Lubrication Units
As-supplied condition

There are two types of front lubrication unit.
The part numbers signify:
......-00: ready-to-mount, ready-filled with lubricating oil
......-10: supplied without lubricating oil filling

Filling unfilled front lubrication units with oil for the first time (part numbers ......-10)

- If other lubricating oils have to be used: see “Lubricant Compatibility”.
- Remove the set screw from the lube hole (1) and keep it ready for later use.
- Screw in lube nipple (2).
- Lay front lubrication units (3) down flat and fill with quantity of oil specified in the table. Leave in that position for 36 hours.
- Check whether the lubricant insert is fully soaked with oil. If necessary, repeat procedure.
- Remove lube nipple, screw in set screw.

<table>
<thead>
<tr>
<th>Size</th>
<th>Part-quantity of lubricant for initial lubrication</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>0,8 cm³</td>
</tr>
<tr>
<td>35</td>
<td>0,9 cm³</td>
</tr>
<tr>
<td>45</td>
<td>1,0 cm³</td>
</tr>
<tr>
<td>55</td>
<td>1,4 cm³</td>
</tr>
<tr>
<td>65</td>
<td>2,7 cm³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Size</th>
<th>Quantity of oil for first filling</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>2,6 cm³</td>
</tr>
<tr>
<td>35</td>
<td>8,3 cm³</td>
</tr>
<tr>
<td>45</td>
<td>14,6 cm³</td>
</tr>
<tr>
<td>55</td>
<td>22,8 cm³</td>
</tr>
<tr>
<td>65</td>
<td>47,6 cm³</td>
</tr>
</tbody>
</table>
Lubricant Compatibility

Synthetic base lubricants are superior to those with a petroleum base, and to paraffin oils in particular.

The standard filling in the front lubrication units is Mobil SHC 639. This oil is a fully synthetic lubricant with a synthetic hydrocarbon base (polyalpha olefins).

Mobil SHC 639 can be mixed with petroleum base oils in any proportion. Compatibility with STAR anti-corrosion oil is assured.

Mobil SHC 639 is also chemically compatible with lubricant greases with a synthetic hydrocarbon oil, polyalpha olefin, petroleum or ester oil base.

⚠️ If using other lubricants, check compatibility of lubricating oil and grease.

⚠️ Compatibility problems can be expected particularly with lubricant greases with a silicon oil, polyglycol oil, polyphenyl ether oil or perfluoroalkyl ether oil base.

Mounting of Front Lubrication Units

Coated screws (4) and a lube nipple are provided. Additional end seals (5) are also supplied for roller rail systems.

⚠️ Mount one front lubrication unit (3) at either end of the runner block!

⚠️ Do not remove runner block from the rail!

- Remove screws (6) ⬤ there are four screws for size 65. Do not re-utilize screws (6)!
- Already mounted end seals (7) remain on the runner block.
- Slide on front lubrication units (3) and additional end seals (5), and align on the runner block.

⚠️ The additional end seals (5) must be mounted in such a way that the sealing lips fit snugly and uniformly all around on the guide rail.

- Tighten screws (4) to tightening torque $M_A$. There are four screws for size 65.

⚠️ Do not allow the guide rails and runner blocks to come into contact with aqueous cooling lubricants!

### Minimum requirements applicable to other oils

Oils of ISO viscosity class 1000, to DIN 51519, without any solid lubricant particles, e.g. lubricating oil CLP to DIN 51517, Part 3.

The lubricating oils must be chemically and physically comparable to Mobil SHC.

<table>
<thead>
<tr>
<th>Size</th>
<th>D</th>
<th>$M_A$ (Nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>M3 x 18</td>
<td>0,7</td>
</tr>
<tr>
<td>35</td>
<td>M3 x 22</td>
<td>0,7</td>
</tr>
<tr>
<td>45</td>
<td>M4 x 25</td>
<td>1,0</td>
</tr>
<tr>
<td>55</td>
<td>M5 x 30</td>
<td>1,3</td>
</tr>
<tr>
<td>65</td>
<td>M4 x 30</td>
<td>1,0</td>
</tr>
</tbody>
</table>
5.2 Mounting the lubrication plate

For size 25, for example, a lubrication plate must be fitted if the lube port on the runner block is hidden by bellows.

- Remove lube nipple or set screw from the lube hole (1) as well as upper mounting screws (2) of the end seal.
- There is only one lateral lube hole (3).
  If necessary, turn lubrication plate round.
- Screw in lube nipple (4).
- Insert the O-ring (5) into the lube hole facing toward the runner block.
- Screw on lubrication plate (6). The tightening torque for size 25 is 0.8 Nm.
- Plug unused lube hole with a set screw (7).
5.3 Mounting the lube adapter

A lube adapter is necessary for high runner blocks if lubricant is to be applied through the carriage.

⚠️ In the recess provided for the O-ring is a further, small, ready-formed recess (1). Do not drill this open. Risk of dirt penetration!

- Heat up a metal spike (2) that has a diameter of 1.5 mm.
- Carefully open the recess (1) with the spike, penetrating to a depth of 5 mm.
- Insert the O-ring (3) into the recess.
- For sizes 35-65, there is a double-sided adhesive tape located on the straight side of the lube adapter (4). Remove strip of paper.
- Insert lube adapter at an angle into the recess and press against the steel part (5) with the adhesive tape.
- No adhesive tape is provided on the lube adapter for size 25. Use grease to fix in place.
- Insert O-ring (6) into the lube adapter.

5.4 Mounting the lube fittings

- Screw in lube fittings to a maximum tightening torque of 1.2 Nm.

Use lube fittings (7) only in laterally located bore holes.

For dimensions and part numbers, see the Roller Rail Systems catalog or consult your Bosch Rexroth sales partner.
5.5 Mounting/removing the bellows

- Drill and tap a hole of M4 size in the end face of the guide rail (1). See sketch for the position of the hole (N7).
- If a tapped hole already exists, fabricate a bevel 2x45°.
- If required, exchange lube nipple in the front lube hole (2) for a set screw (3) in a lateral lube hole.
- Remove upper mounting screws of the end seal (4).
- Screw mounting frame with hook and loop fastener (5) to runner block. Where applicable, insert front lubrication unit or lubrication plate in-between (5.1 or 5.2).
- Slide on bellows.
- Screw tight at the end of the rail (6).

Connecting the hook and loop fastener to the mounting frame (5):
- Position at one side.
- Make sure the fastener is properly aligned!
- Then press on firmly.

Disconnecting the hook and loop fastener:
- Apply a flat tool at one side, preferably a corner.
- Carefully lever apart.

⚠️ Be careful not to shear off the hook and loop fastener!

<table>
<thead>
<tr>
<th>Size (mm)</th>
<th>N7</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>15</td>
</tr>
<tr>
<td>35</td>
<td>22</td>
</tr>
<tr>
<td>45</td>
<td>30</td>
</tr>
<tr>
<td>55</td>
<td>30</td>
</tr>
<tr>
<td>65</td>
<td>40</td>
</tr>
</tbody>
</table>
5.6 Removing/mounting the end seals and protective caps

Available options:
- protective caps with integrated seal (1) including screws (2)  
  part number 1810-.90-00
- end seals (3) including screws (4) and (5)  
  part number 1810-.10-00
  complete seal kits (parts 1 - 5)  
  part number 1810-.90-10

⚠️ If runner blocks have already been in use, always replace the complete seal kit!
⚠️ Do not move runner blocks when they are without protective caps, otherwise the rollers may fall out!

Removal:
- Remove end seals and protective caps.
- **Do not re-utilize** used screws, end seals and protective caps with integrated seal.

Mounting:
- Mount new protective cap with integrated seal (1) using new screws (2).

<table>
<thead>
<tr>
<th>Size</th>
<th>2</th>
<th>( \text{Nm} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>M4 x 16</td>
<td>1,0</td>
</tr>
<tr>
<td>35</td>
<td>M4 x 18,5</td>
<td>1,0</td>
</tr>
<tr>
<td>45</td>
<td>M5 x 22</td>
<td>1,7</td>
</tr>
<tr>
<td>55</td>
<td>M6 x 26</td>
<td>3,2</td>
</tr>
<tr>
<td>65</td>
<td>M5 x 35</td>
<td>1,7</td>
</tr>
</tbody>
</table>
5.6.4

- Mount new end seal (3) using new screws (4) and (5) in such a way that the sealing lips fit snugly and uniformly all around on the guide rail.

### 5.7 Mounting the measuring system

Measuring systems are supplied pre-assembled to the runner block.

⚠️ Handle measuring systems with extreme care!

- When mounting the assembly, always slide it onto the guide rail with the runner block end first.
- When removing the assembly, always slide it off the guide rail with the measuring system end first.

For dimensions and pin allocation plans, refer to the enclosed instruction sheet, to the Roller Rail Systems catalog, or consult your local Bosch Rexroth representative.