These Installation Instructions are valid for antennas in the following version:

- reflector ∅ 2.4 m (8 ft)
- waveguide feed single or dual polarized
- pipe mount for installation on pipe ∅115mm
- antenna offset to the left or the right
- safety collar for easy installation
- 2 spindles for fine adjustment of azimuth and elevation of ± 5 deg
- one sway bar
- reflector (Standard)
- reflector with shroud, shroud aperture covered by a radome (High-Performance)

It is important to mount the antenna exactly as described in these installation instructions. The installed antenna shall be inspected once per year by qualified personnel. RFS disclaims all responsibility for antenna malfunction due to improper or unsafe installation. These installation instructions have been written for qualified, skilled personnel.

We reserve the right to alter details, especially with respect to technical improvement.
1. **Tools required for installation**

Tools are not included with antenna:
- Hoisting device for 4000 N
- Shackle
- 2 ropes
- Water balance and compass
- Mallet
- Wrenches for hexagon bolts: M5(8), M6(10), M10(17), M12(19), M14(21), M16(24), M20(30) (values in brackets=openings of spanners)
- Torque wrench from 5 to 250 Nm
- Nail set or punch for Ø6mm.

2. **Assembly of the mount**

For easy operation of the bolted joints, « Anti Seize » Installation Paste should be applied to all threads of bolts and fine adjustment spindles except galvanized u-bolts and hardware. See Page 12. After this, keep the lubricated threads free of dust and dirt!

For fastener torque specification, see Page 13.
3. **Antenna offset**

Offset left

![Antenna offset left diagram]

- Sway bar attachment

Offset right

![Antenna offset right diagram]

- Sway bar attachment
4. **Sway bar positioning**

2.1 Loosen nut of mounting bracket.
2.2 Turn the mounting bracket in the right position.
2.3 Angle the sway bar.
2.4 After installation, tighten all nuts.

**Important**: Do not angle the sway bar more than 25 degrees in any direction for tower installation!
5. Assembly of the shroud (only for High Performance Series)

- The rim of the reflector must be clean and dry
- Stick on the RF gasket tape 360 deg in a way, that:
  - all mounting holes are covered by the tape and
  - the wire mesh is directed to the center of reflector
- position the shroud –clean and dry- onto the reflector.
6.  **Shroud Sections Attachment**

- 4 screws M6x25
- 4 sl nuts M6
- 8 washers 6.4

or

- 7* screws M6x16
- 7 sl nuts M6 (short section)
- 14 washers 6.4

or

- 8* screws M6x16
- 8 sl nuts M6 (long section)
- 16 washers 6.4

*9/10 long shroud
7. Feed installation

The feed is a precision component which should be handled with special care during installation. For instance, always carry the feed, supporting both ends. Any damage may degrade the antenna’s performance. Repair of feeds is not possible in the field.

7.1. Guy Wire Assemblies

- Insert the feed 3 guy wire assemblies into the mounting holes from the reflector rear, hang them into the feed guy ring. Please note: spring length + 2 washers = 30 mm
- Hang the guy wires into the rotatable guy ring
- Fix the feed with the clamp brackets and screws M6, spring washers A6.4.
- The length “a” of all guy wires must be equal. The max. spring contraction during the alignment is 5 mm.
### 7.2. Single polarized antennas

**Antenna TOP**

<table>
<thead>
<tr>
<th>Vertical</th>
<th>Horizontal</th>
</tr>
</thead>
</table>

clamp brackets with:
screws M6
spring washers A6.4.

### 7.3. Dual polarized antennas

**Antenna TOP**

clamp brackets with:
screws M6
spring washers A6.4.
8. Installation of the planar radome (only High Performance Series)

Take care to avoid kinking of planar radomes during installation. Kinking will destroy the radomes, which are non-repairable!

- Unpack the radome and carefully stretch it over the shroud aperture.
- Position the drainhole grommet exactly to the bottom point of antenna, opposite TOP.
- Attach J-bolts with springs and smooth radome down as the springs are attached, but do not displace the edge protector.
- Align the length of springs to approximately 135 mm at each J-bolts, this will provide proper radome tension.

9. Hoisting on tower

2 ropes fixed on the mount for optimal balance
**10. Elevation adjustment**

Loosen elevation pivots

Loosen nuts and adjust elevation

**11. Azimuth adjustment**

Loosen nuts of the U-Bolts

Loosen nuts and adjust azimuth

**Important:** After azimuth adjustment, lock the first nut on the U-bolts with a torque of 95Nm, then the second lock nut is fixed against the first one. **Don’t use two wrenches to fix the second nut.**
12. **Polarization adjustment**

Loosen screws M6 and adjust polarization

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13. **Final Check**

When the installation of the antenna has been completed, it is necessary to make sure that the installation instructions have been followed in all aspects. It is especially important to check that all bolted joints are tightly locked.
Installation Paste for Threads

Installation Paste « Anti-seize »

Corrosion preventing and lubricating liquid especially for all threads of stainless steel bolts, U-bolts, spindles.

The installation paste has to be applied to all threads of bolts and fine adjustment spindles. After this, keep the lubricated threads free of dust and dirt!

Fastener torque specifications are valid for bolts with installation paste only.

Sample: Casting-mount

Sample: Steel-mount
### Table of torques for nut and bolt connections
Valid for Microwave Parabolic Antennas

**Attention:** The values in the following table are valid for screws and bolts which have been greased according to the installation instructions.

<table>
<thead>
<tr>
<th>Torques</th>
<th>Bolt</th>
<th>M5</th>
<th>5</th>
<th>Nm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M6</td>
<td>8</td>
<td>Nm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M8</td>
<td>17</td>
<td>Nm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M10</td>
<td>35</td>
<td>Nm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M12</td>
<td>50</td>
<td>Nm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M16</td>
<td>140</td>
<td>Nm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M20/24</td>
<td>240</td>
<td>Nm</td>
<td></td>
</tr>
<tr>
<td>U-Bolt</td>
<td>M10</td>
<td>20</td>
<td>Nm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1/2 - 13</td>
<td>75</td>
<td>Nm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M16</td>
<td>124</td>
<td>Nm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M20</td>
<td>206</td>
<td>Nm</td>
<td></td>
</tr>
<tr>
<td>Hexagonal brass nut of fine adjustment</td>
<td>M8</td>
<td>5</td>
<td>Nm</td>
<td></td>
</tr>
<tr>
<td>(Azimuth, Elevation)</td>
<td>M10</td>
<td>10</td>
<td>Nm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M12</td>
<td>17</td>
<td>Nm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M16</td>
<td>50</td>
<td>Nm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M20</td>
<td>80</td>
<td>Nm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M24</td>
<td>115</td>
<td>Nm</td>
<td></td>
</tr>
</tbody>
</table>

**Exceptions**

| Fixing screw of the fine adjustment (Azimuth) | M8x30 | 8 | Nm |
|                                              | M12x55 | 17 | Nm |

| U-Bolt for safety collar 4 ft                | M14   | 45 | Nm |
| U-Bolt for safety collar 4 ft                | M10   | 12 | Nm |

**Special application : NOT greased**

| Fixing screw of the plastic radome           | B4.2  | 3  | Nm |

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