Install. Instr. for Microwave Parabolic Antennas ∅ 1.8 m (6 ft)

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

- reflector ∅ 1,8 m (6 ft)
- waveguide feed single or dual polarized
- pipe mount for installation on ∅ 115 mm
- antenna offset to the left or the right
- safety collar for easy installation
- 2 spindles for fine adjustment azimuth and elevation of ± 5 degrees
- 1 sway bar
- reflector (Standard)
- reflector with shroud, aperture covered by a radome (High-Performance)

Taking into account a slight reduction of the operational windspeed, the antenna can be installed without sway bar if additional fixing points for a sway bar are not available (urban areas).

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 2500 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 for galvanized u-bolt and hardware. See Page 12. After this, keep the lubricated threads free of dust and dirt!

For fastener torque specification, see Page 13.

Be careful of the position of the 2 different washers.
3. **Antenna offset**

Offset right

Offset left

Sway bar attachment

4. **Assembly of sway bar**

- Screw M20x100
- Washer 21
- Spring lock washers A20
- Nuts M20

- 2 U-bolts
- 4 flat washers Ø13
- 8 nuts M12

- Screw M20x60
- Washer 21
- Spring lock washers A20
- Nuts M20
- U Brackets

Mounting bracket
5. **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!
6. **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 degrees in a way, that
  - all mounting holes are covered by the tape.
  - the wire mesh is directed to the center of reflector.
- Position the shroud **-clean** and **dry**- on inside of the reflector.

* for spots free of paint 90 degrees from TOP (left and right) add 2 serrated lock washers A6.4
7. **Shroud Sections Attachment**

The diagram illustrates the attachment of shroud sections using the specified hardware:

- **Short Section**
  - 6 screws M6x16
  - 6 sl nuts M6
  - 12 washers 6.4 Ø18

- **Long Section**
  - 7 screws M6x16
  - 7 sl nuts M6
  - 14 washers 6.4 Ø18

* *7/8 long shroud

8. **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.
8.1. **Guy Wire Assemblies**

- Insert the 3 guy wires in the mounting holes by the rear of the reflector.
- Move the feed assembly partway through the connecting ring.
- Hook the guy wires into the rotatable guy ring.
- Move the feed and fix it in the connecting ring using the 4 screws M5.

![Diagram of guy wire assembly]

- The length "a" of all guy wires must be **equal**. The maximum spring contraction during the alignment is **5 mm**.
8.2. **Single polarized antennas**

**Antenna TOP**

**Vertical**

**Horizontal**

- 4 screws M5
- 4 washers 5.3

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8.3. **Dual polarized antennas**

**Antenna TOP**

- 4 screws M5
- 4 washers 5.3

clamp brackets with:
- screws M6
- spring washers A6.4.
9. **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.

10. **Hoisting on tower**

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

**IMPORTANT**: Before adjustments (ELEVATION and AZIMUTH) dismount the sway bar attachment from the tower.

Loosen elevation pivots

Loosen nuts and adjust elevation

12. **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.**
13. **Polarization adjustment**

Loosen 4 screws M5 and adjust polarization

Loosen screws M6 and adjust polarization

14. **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>
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<tr>
<td></td>
<td>M6</td>
<td>8</td>
<td></td>
<td>Nm</td>
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<tr>
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<td>Nm</td>
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<td></td>
<td>M16</td>
<td>140</td>
<td></td>
<td>Nm</td>
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<td></td>
<td>M20/24</td>
<td>240</td>
<td></td>
<td>Nm</td>
</tr>
<tr>
<td>U-Bolt</td>
<td>M10</td>
<td>20</td>
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<td>Nm</td>
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<td></td>
<td>Nm</td>
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<td></td>
<td>M16</td>
<td>124</td>
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<tr>
<td></td>
<td>M20</td>
<td>206</td>
<td></td>
<td>Nm</td>
</tr>
<tr>
<td>Hexagonal brass nut of fine adjustment</td>
<td>M8</td>
<td>5</td>
<td>Nm</td>
<td></td>
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<tr>
<td>(Azimuth, Elevation)</td>
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<td>Nm</td>
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<td>M24</td>
<td>115</td>
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<td>Nm</td>
</tr>
</tbody>
</table>

Exceptions

| Fixing screw of the fine adjustment (Azimuth) | M8x30 | 8 | Nm |
| U-Bolt for safety collar 4 ft | M12x55 | 17 | Nm |
| U-Bolt for safety collar 4 ft | M14  | 45 | Nm |
| Fixing screw of the plastic radome | B4.2 | 3 | Nm |

Special application: NOT greased

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