Install. Instr. for Microwave Parabolic Antennas ∅ 3.7 m (12 ft)

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

- reflector ∅ 3.7 m (12 ft)
- waveguide feed single or dual polarized
- pipe mount for installation on ∅115mm
- 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, 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 8000 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 Ø 6mm

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 galv. hardware. See Page 12. After this, keep the lubricated threads free of dust and dirt! Fastener torque specification see table attached! See Page 13.

![Diagram](image-url)
3. **Antenna offset**

Offset left

[Diagram showing antenna offset left with labeled parts]

Offset right

[Diagram showing antenna offset right with labeled parts]

Sway bar attachment
4. **Sway bar positionning**

2.1 Loose 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 deg 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 Attachement**

- **40 screws M6x30**
- **80 washers 6.4 Ø18mm**
- **40 sl nuts M6**

- **RF gasket tape, Self-adhesive**
- **6mm (punched after positioning of the shroud)**

- **Wire mesh directed to center of reflector**
- **Hoisting eye dismounted**
- **Edge protector**
- **Complete reflector with mount**

* For spots free of paint 90° a side TOP (left and right) add 2 serrated lock washers A6.4.

- **4 screws M6x25**
- **4 sl nuts M6**
- **8 washers 6.4 Ø18**

**Long shroud**
- **11 screws M6x16**
- **11 sl nuts M6 (short and middle section)**
- **22 washers 6.4 Ø18**
  
or
- **12 screws M6x16**
- **12 sl nuts M6 (long section)**
- **24 washers 6.4 Ø18**

**Short shroud**
- **9* screws M6x16**
- **9 nuts M6 (short section)**
- **18 washers 6.4 Ø18**
  
or
- **10 screws M6x16**
- **10 sl nuts M6 (middle and long section)**
- **20 washers 6.4 Ø18**
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 clamps 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**

Vertical  
Horizontal

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

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7.3 **Dual polarized antennas**

**Antenna TOP**

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

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

- Unpack the radome and carefully stretch it over the shroud aperture.
- Orient the drain hole 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 approx. 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**

![Diagram of elevation adjustment](image)

**Important**: After azimuth adjustment, lock the first nut on the U-Bolt with a torque of 75Nm then the second lock nut is fixed against the first one. **Don’t use two wrenches to fix the second nut.**

11. **Azimuth adjustment**

![Diagram of azimuth adjustment](image)
12. **Polarization adjustment**

Loosen screws M6 and adjust polarization

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 « 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.
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>U-Bolt</th>
<th>Hexagonal brass nut of fine adjustment (Azimuth, Elevation)</th>
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<tbody>
<tr>
<td></td>
<td>M5</td>
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**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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