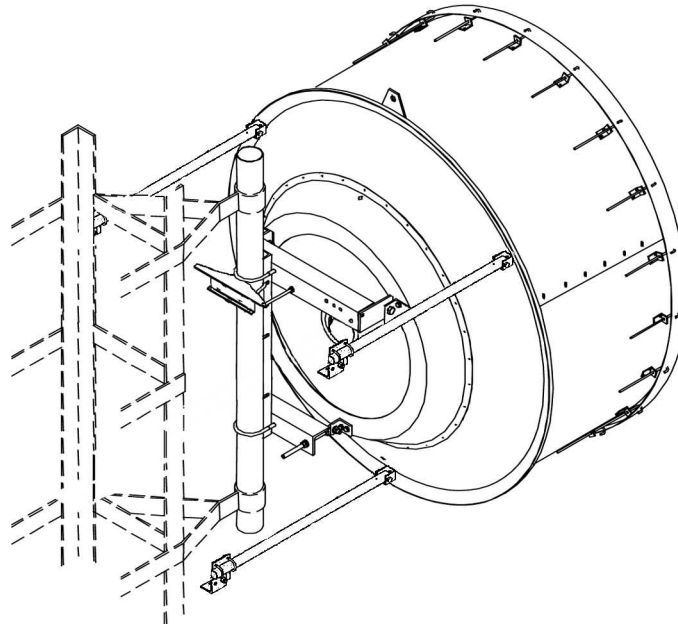


# Instruction Sheet

No. 412781  
Rev. F  
ECO RFS16351

## Install. Instr. for Microwave Parabolic Antennas Ø 1.8 m (6 ft) Class 2



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

- reflector Ø 1,8 m (6 ft)
- waveguide feed single or dual polarized
- pipe mount for installation on Ø115mm (4" IPS)
- antenna offset to the left or the right
- safety collar for easy installation
- 2 spindles for fine adjustment **azimuth** and **elevation** of  $\pm 5$  degrees
- 3 sway bars (2 from perimeter to tower and 1 from perimeter to the mounting pipe)
- reflector (Standard)
- reflector with 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.

*Page 1 of 13*

### Radio Frequency Systems

200 Pondview Drive  
Meriden, CT 06450  
Ph (203) 630-3311  
Fax (203) 634-2272  
www.rfsworld.com

**RADIO FREQUENCY SYSTEMS**

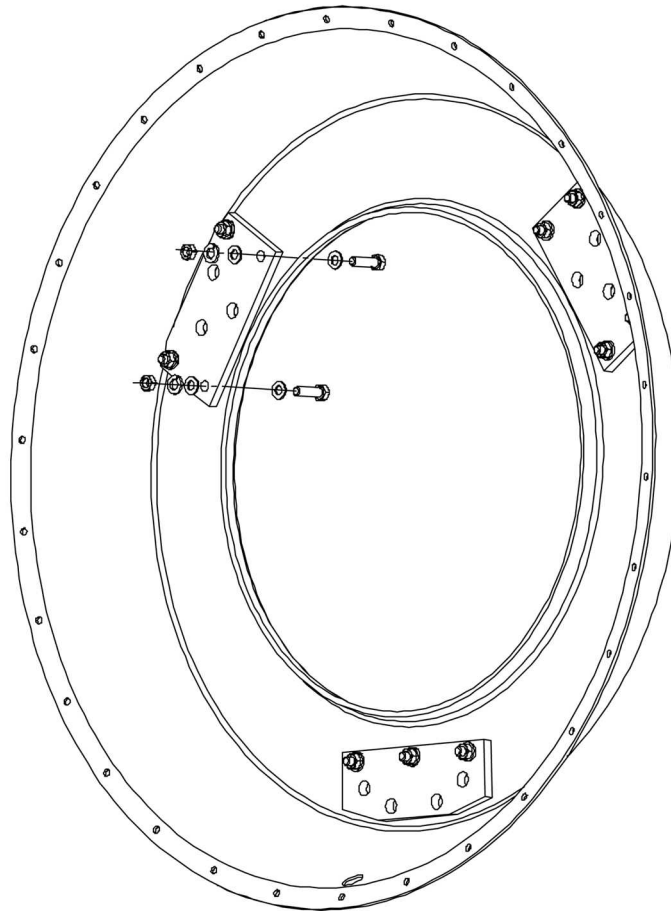


## 1. Tools required for installation

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), M8(13), M10(17), M12(19), M14(21), M16(24), M20(30)  
1/2"(3/4"), 3/4"(1 1/4") - (values in brackets=openings of spanners)
- Torque wrench from 5 to 250 Nm
- Nail set or punch for  $\varnothing$ 6mm.

## 2. Assembly of the Backring Plates under Backring



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.

Use the 11 M8x30 bolts with 22 washers, 11 split lockwashers and 11 nuts.  
Install Left and Right Pivot Backring Plates with 4 bolts and washers at the corner of each. It seems easiest to put the bolt end and washer in the underside, and put a nut, washer and lockwasher on the top.

Page 2 of 13

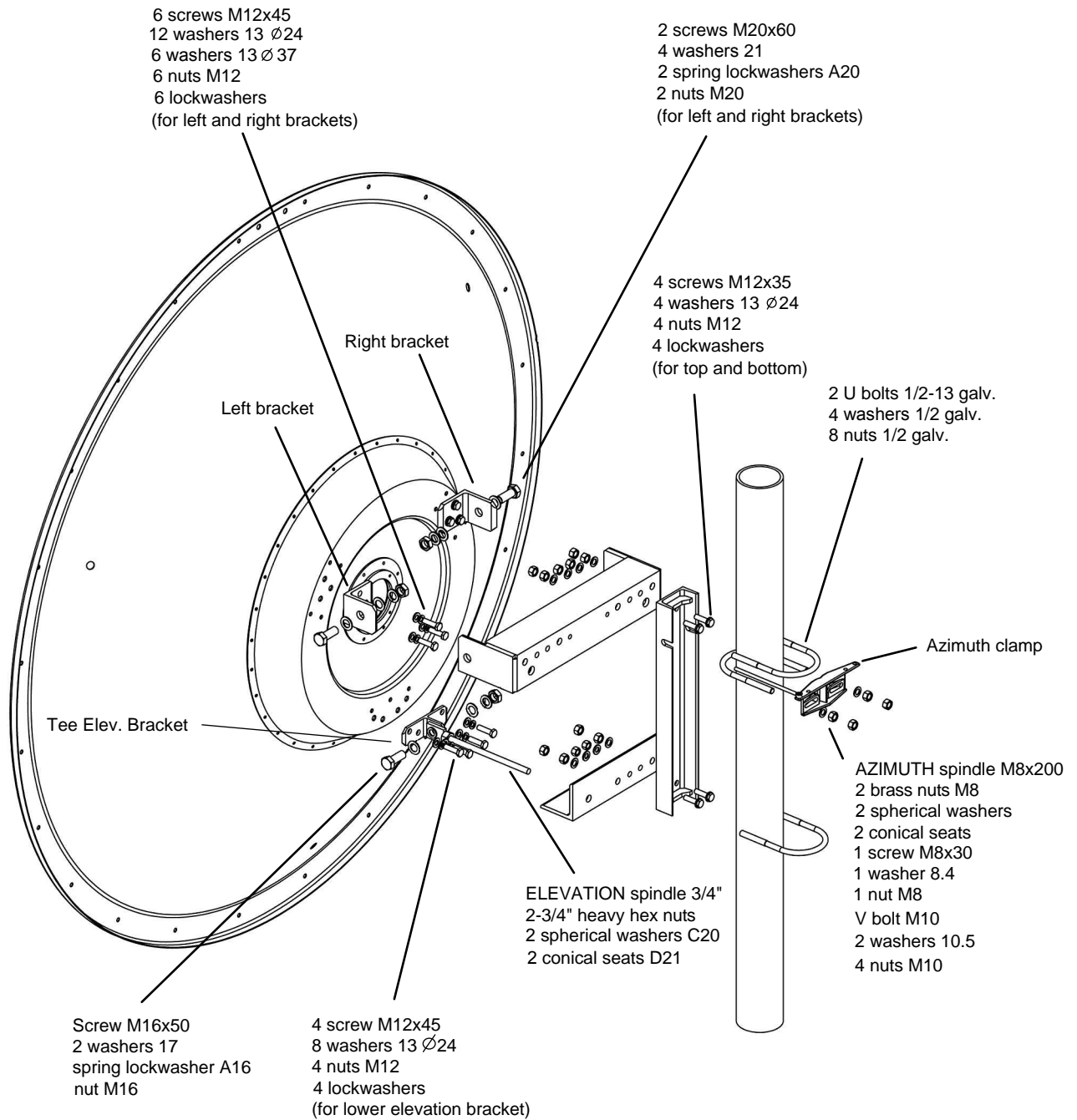
### Radio Frequency Systems

200 Pondview Drive  
Meriden, CT 06450  
Ph (203) 630-3311  
Fax (203) 634-2272  
www.rfsworld.com

**RADIO FREQUENCY SYSTEMS**

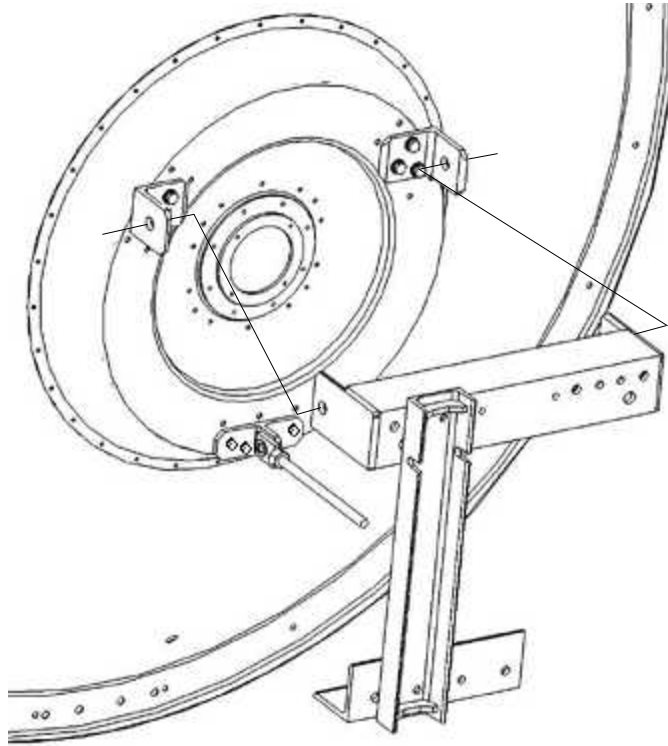


### 3. Assembly of the Brackets and Structure

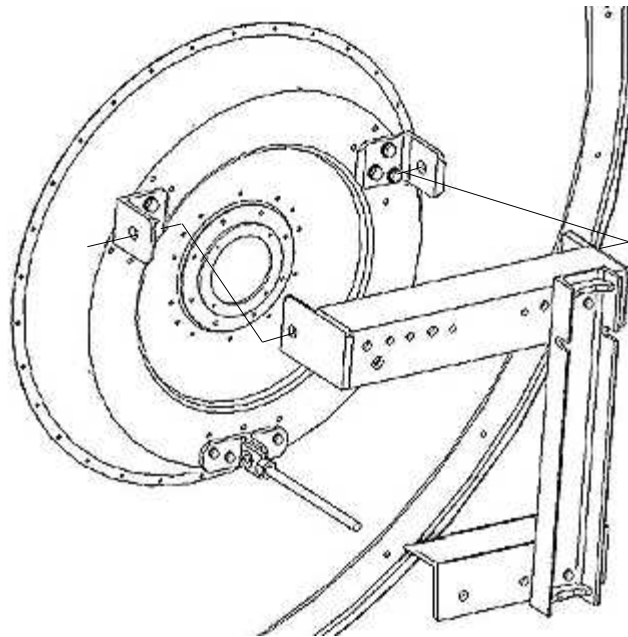


#### 4. Antenna offset

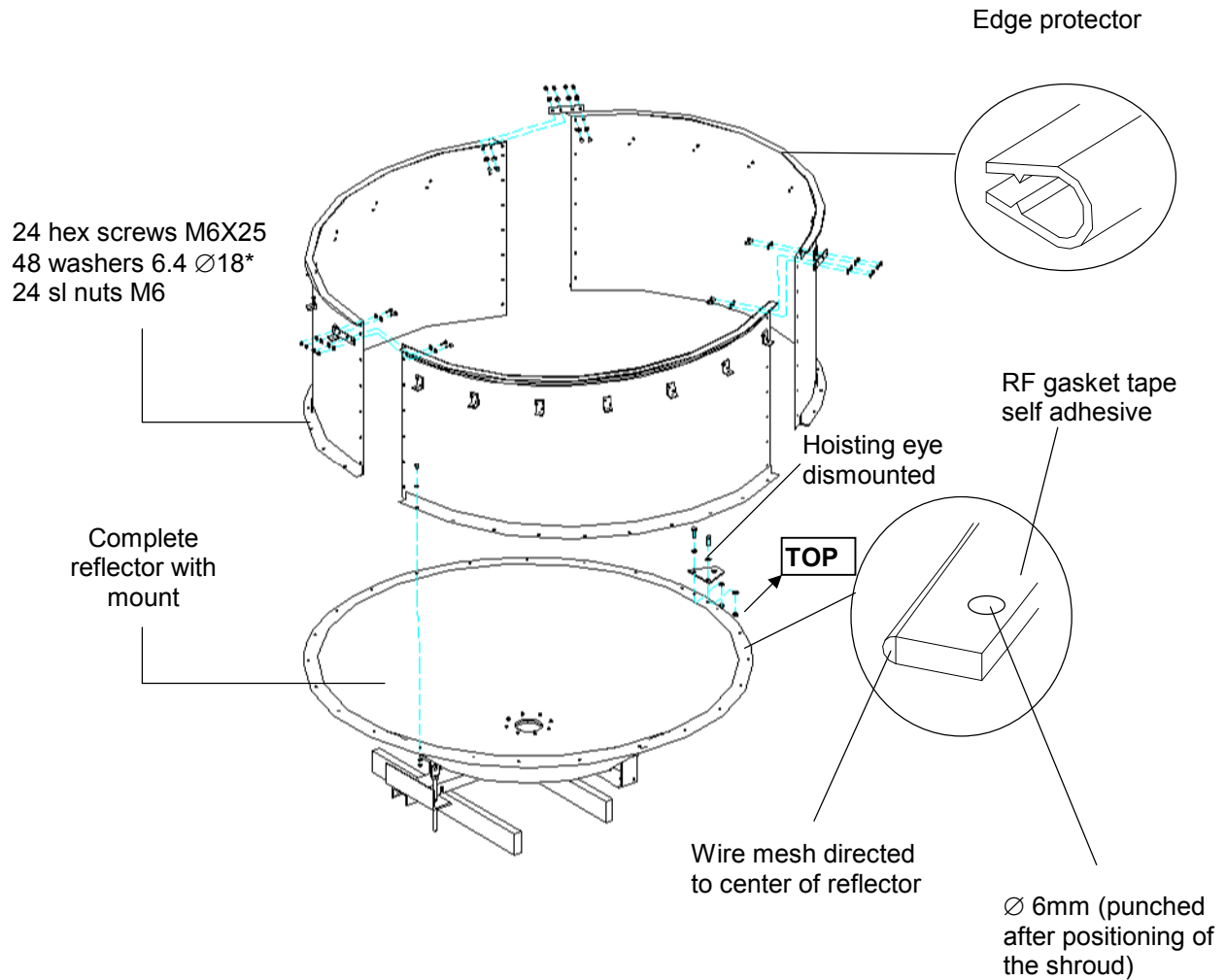
Offset right



Offset left



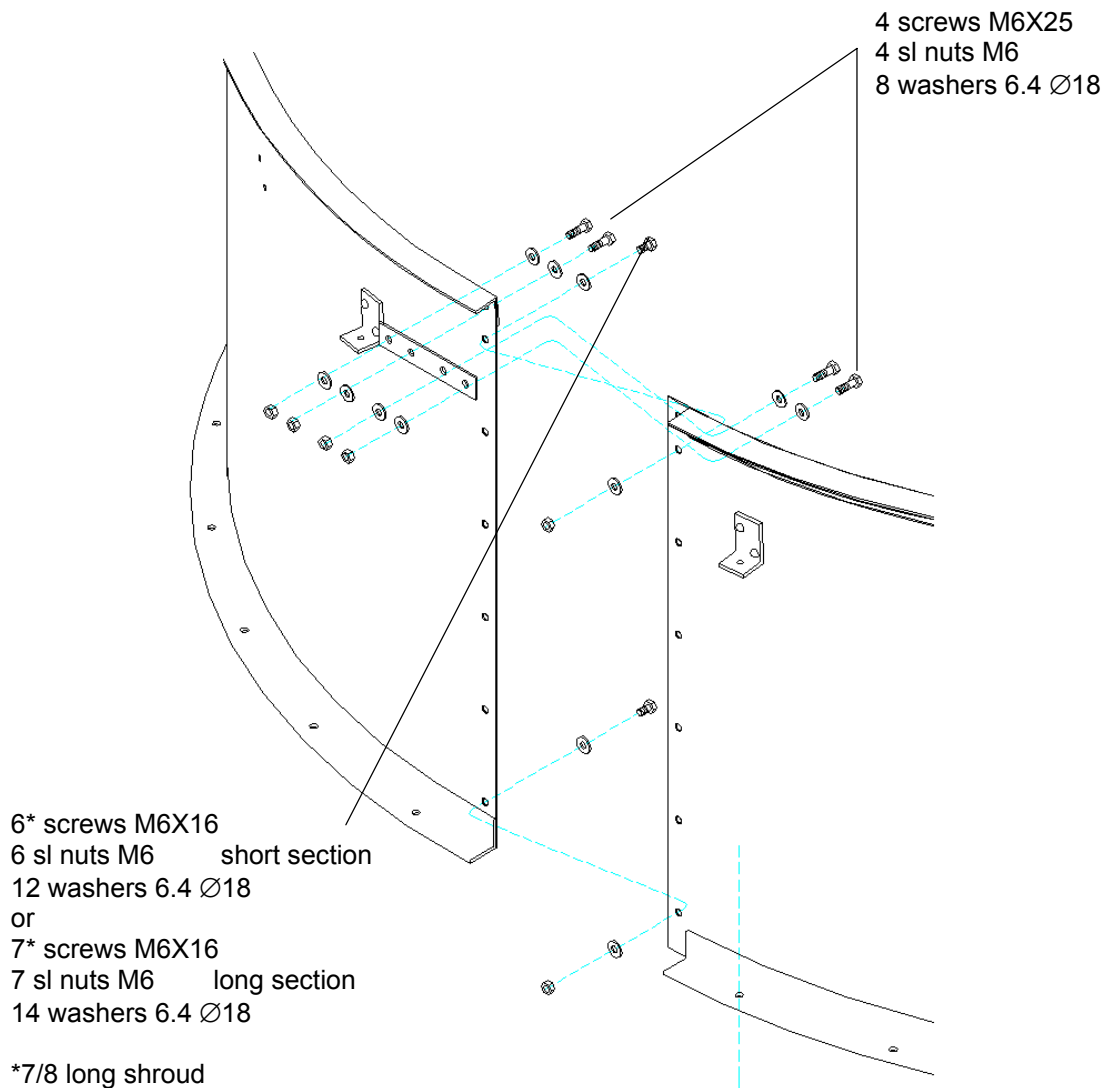
## 5. Assembly of the shroud (only for High Performance Series)



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

- 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.

## 6. Shroud Sections Attachment



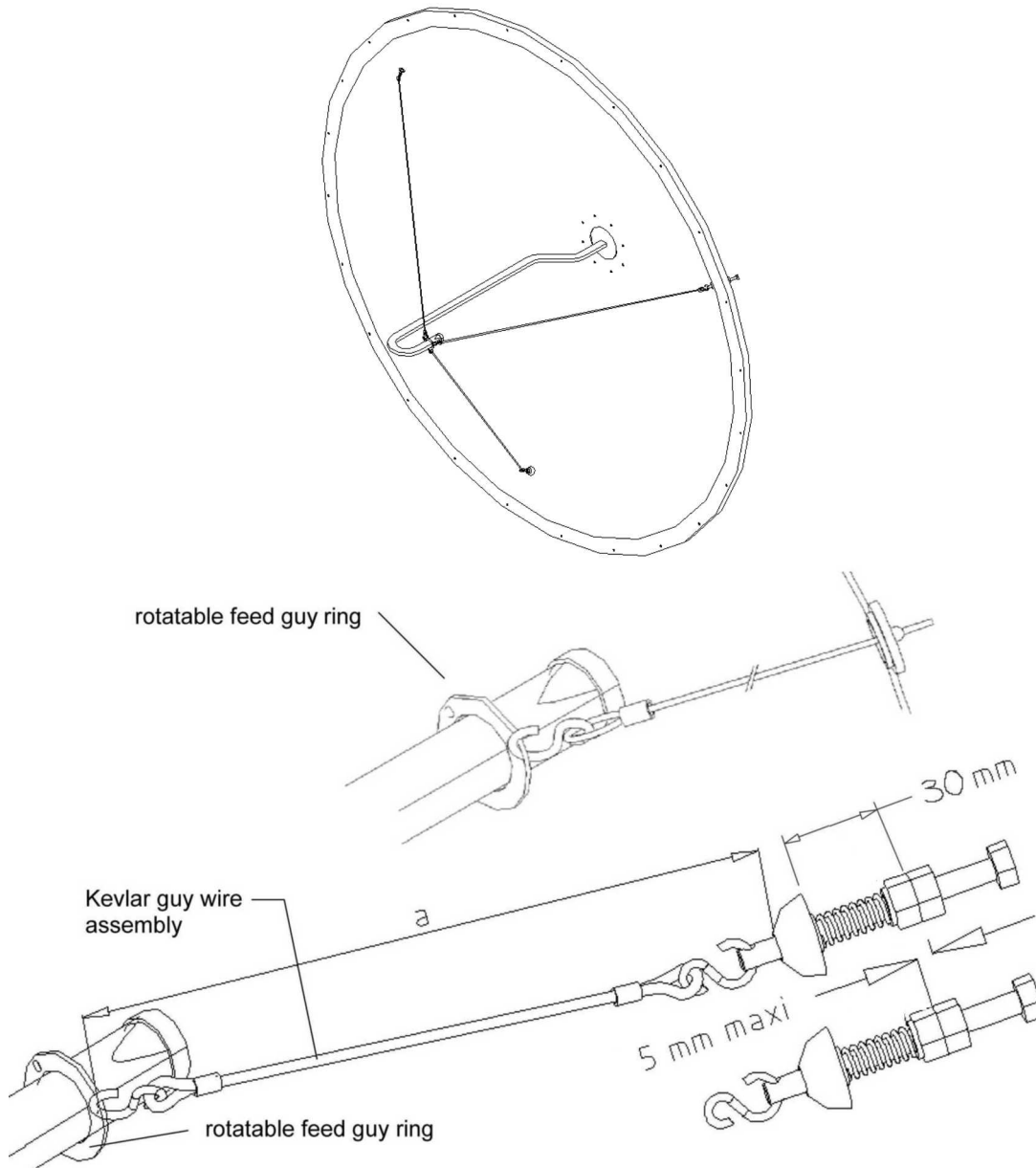
## 7. Feed installation

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.

**NOTE!** On UXA antennas, install feed into dish before mounting to the horizontal and elevation brackets.

## 7.1. 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 (see next page) or 4 screws M6 depending on alternate design for larger waveguide.



- The length "a" of all guy wires must be equal. The maximum spring contraction during the alignment is 5mm. from the totally unloaded length in the assembly of 30mm.

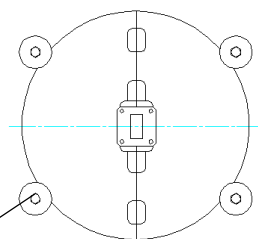
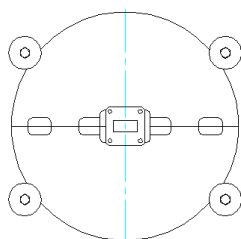
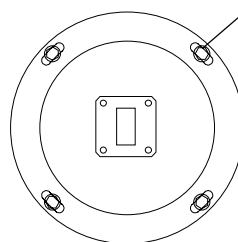
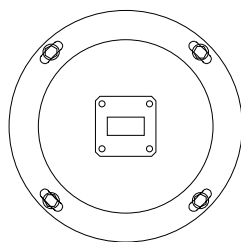
## 7.2. Single polarized antennas

### Antenna TOP

Vertical

Horizontal

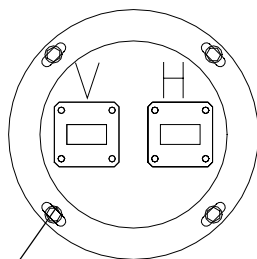
4 screws M5  
4 washers 5.3



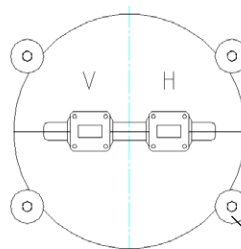
clamp brackets with :  
screws M6  
spring washers A6.4.

## 7.3. Dual polarized antennas

### Antenna TOP



4 screws M5  
4 washers 5.3

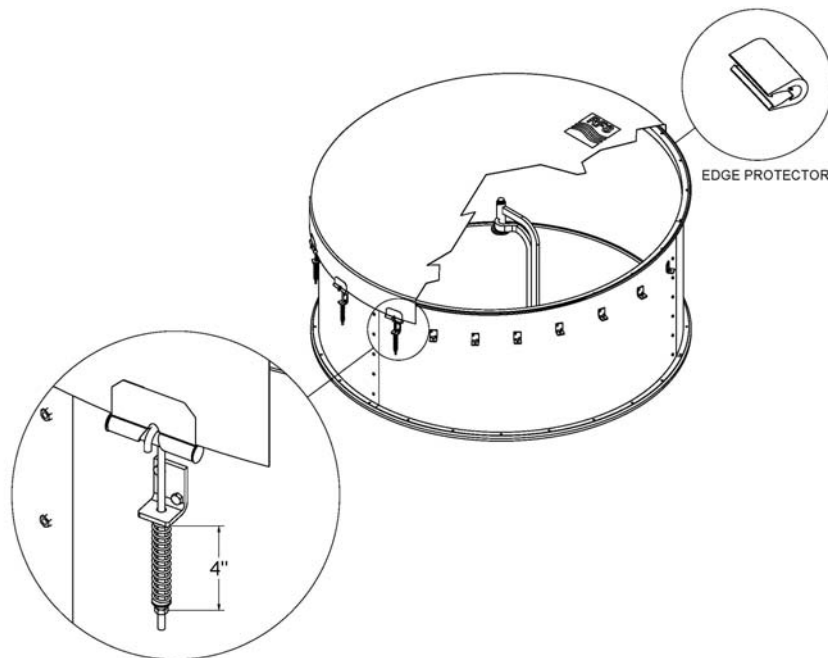


clamp brackets with :  
screws M6  
spring washers A6.4.



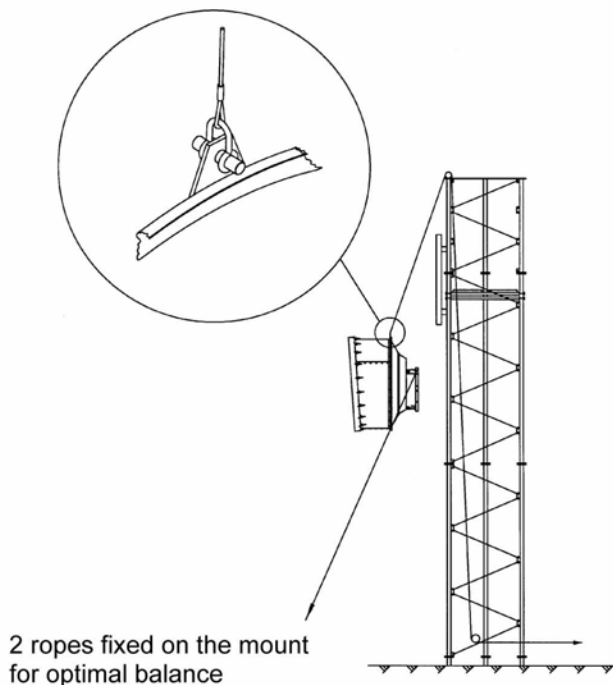
## 8. Installation of the planar radome (only for High Performance Series)

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



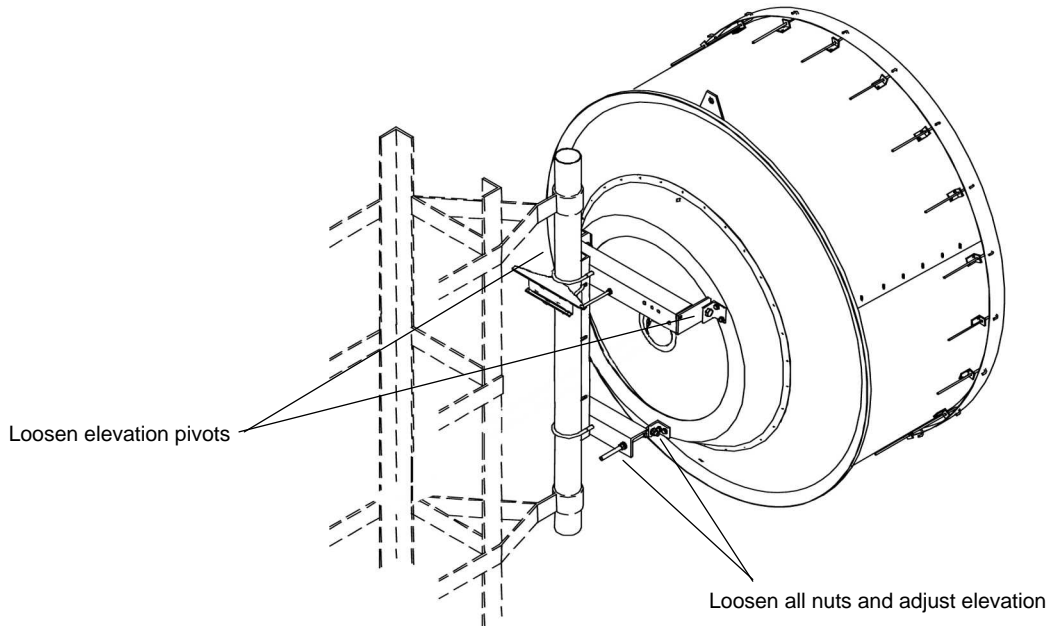
- Unpack the radome and carefully stretch it over the shroud aperture.
- Orient the drain hole grommet exactly to the bottom point of antenna, opposite TOP.
- Attach J-bolts with springs and smooth radome down as the springs are attached, but do not displace the edge protector.
- Align the length of springs to approx. 4" (102mm) at each J-bolts, this will provide proper radome tension.

## 9. Hoisting on tower



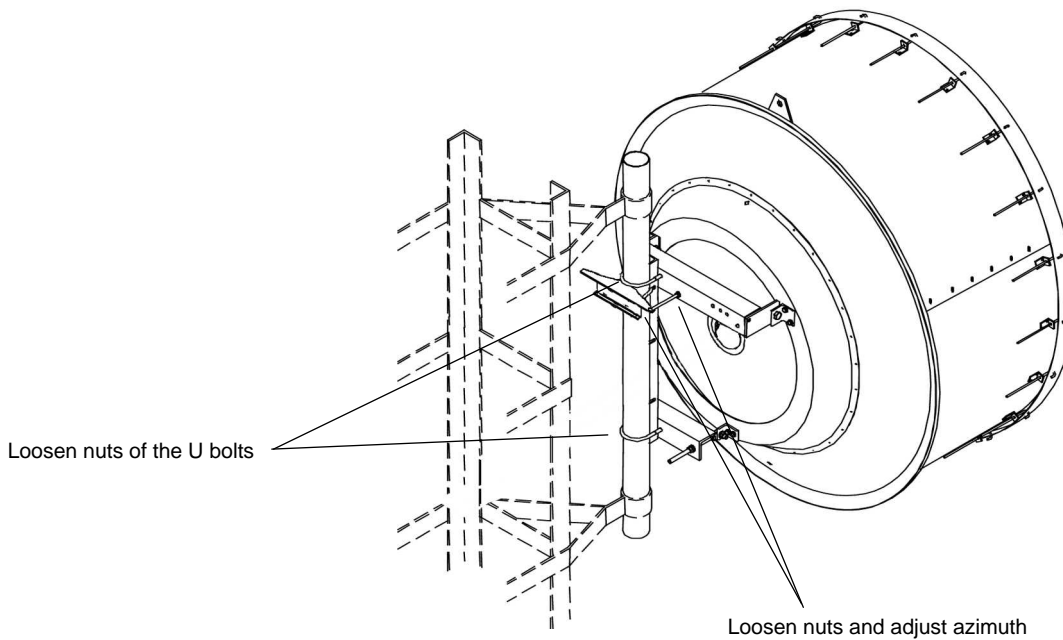
The antenna should have all of the perimeter sway bar parts, except the sway bar, installed before hoisting.

## 10. Elevation adjustment



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

## 11. Azimuth adjustment



**After adjustment fix the sway bar to the tower.**

**Important:** After azimuth adjustment, lock the first nut on the U-bolts with a torque of 90Nm, then the second lock nut is fixed against the first one. **Don't use two wrenches to fix the second nut.**

Page 10 of 13

### Radio Frequency Systems

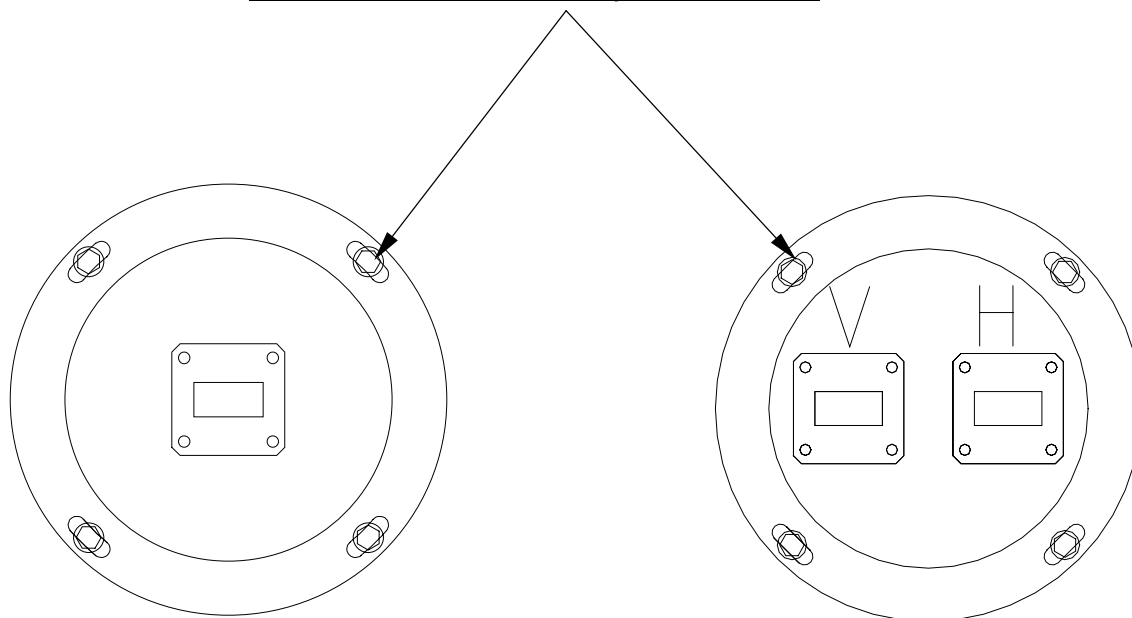
200 Pondview Drive  
Meriden, CT 06450  
Ph (203) 630-3311  
Fax (203) 634-2272  
www.rfsworld.com

**RADIO FREQUENCY SYSTEMS**

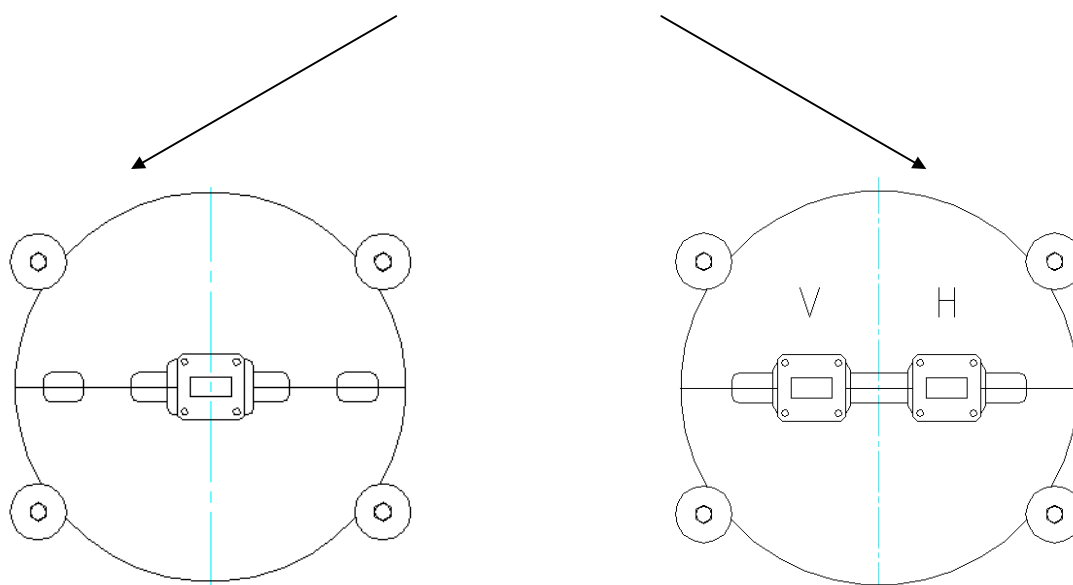


## 12. Polarization adjustment

Loosen 4 screws M5 and adjust polarization



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.

Page 11 of 13

## Installation Paste for Threads

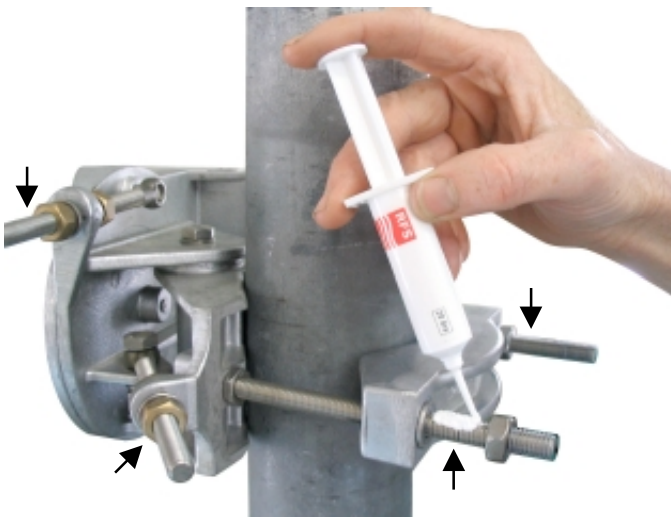
---

### Installation Paste « Anti-seize »

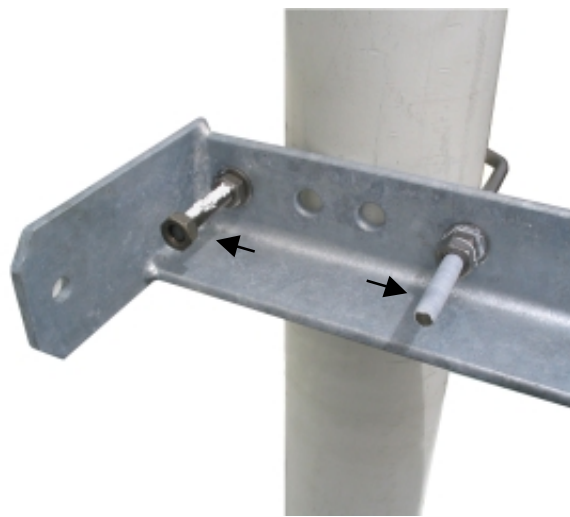
Corrosion preventing and lubricating liquid especially for all threads of stainless steel bolts, U-bolts, spindles.

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.

Torques			
Bolt	M5	5	Nm
	M6	8	Nm
	M8	17	Nm
	M10	35	Nm
	M12	50	Nm
	M16	140	Nm
	M20/24	240	Nm
U-Bolt	M10	20	Nm
	1/2-13	90	Nm
	M16	124	Nm
	M20	206	Nm
Hexagonal brass nut of fine adjustment (Azimuth, Elevation)	M8	5	Nm
	M10	10	Nm
	M12	17	Nm
	M16	50	Nm
	M20	80	Nm
	3/4	150	Nm
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 6 ft	M10	12	Nm

## Special application : NOT greased

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

We reserve the right to alter details, especially with respect to technical improvement.

Page 13 of 13

### Radio Frequency Systems

200 Pondview Drive  
Meriden, CT 06450  
Ph (203) 630-3311  
Fax (203) 634-2272  
www.rfsworld.com

**RADIO FREQUENCY SYSTEMS**

