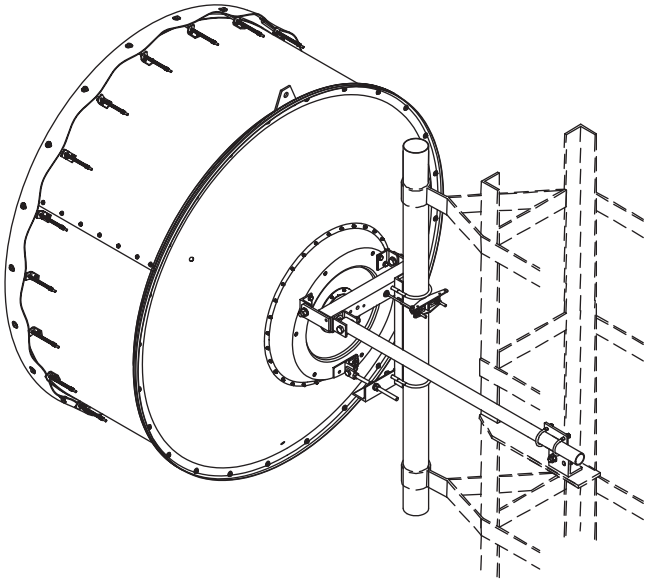
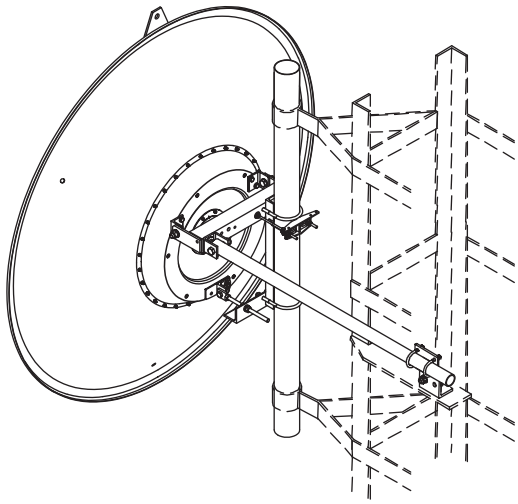
# Installation Instructions
# 6 ft Antennas Adv. Backring (with T-Mount)
# PA, PAL, PAD, SP, PAX, PADX, SPX
# DA, UA, SU, SD, SDF, DAX, UDA, UXA, SDX, SUX

NMT 628-04(e)



DA, UA, SU, SD, SDF
DAX, UDA, UXA, SDX, SUX



PA, PAL, PAD, SP, PAX,
PADX, SPX

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 pipe ∅ 115 mm
- Antenna offset to the left or to the right
- Safety collar for easy installation
- 2 spindles for fine adjustment of **Elevation** & **Azimuth** ± 5°
- 1 Sway bar Ø 60 mm x 1.9 m
- Reflector with shroud, the aperture covered by **a flexible planar radome,** or without shroud (see sketch above)

**Taking into account a slight reduction of the operational wind speed, the antenna can be installed <u>without</u> 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 this installation instruction.**
**The installed antenna shall be inspected once per year by qualified personnel.**
**RFS disclaims any responsibility for the result of improper or unsafe installation.**
**This installation instruction has been written for qualified, skilled personnel.**

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

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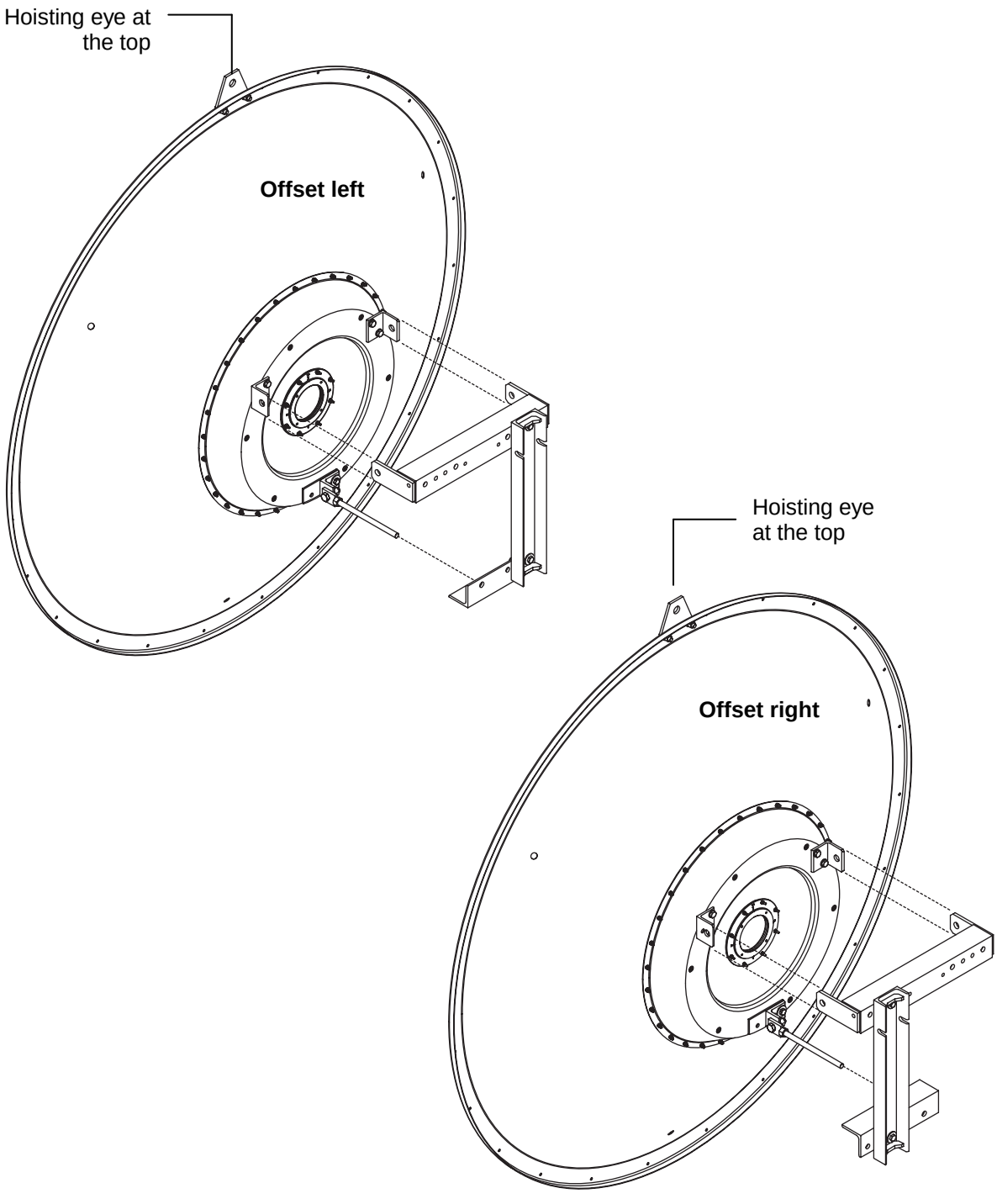
## 1. Tools required for installation

Tools are not included with antenna

- Hoisting device for 250 daN
- Water balance and compass
- Torque wrench from 0,5 to 240 Nm
- Wrenches for hexagon bolts :
  M5(8), M6(10), M10(17), M12(19), M14(21), M16(24) , M20(30)*
- Tape-measure
- 2 ropes
- Mallet
- Shackle
- Square

*(values in brackets = openings of spanners)

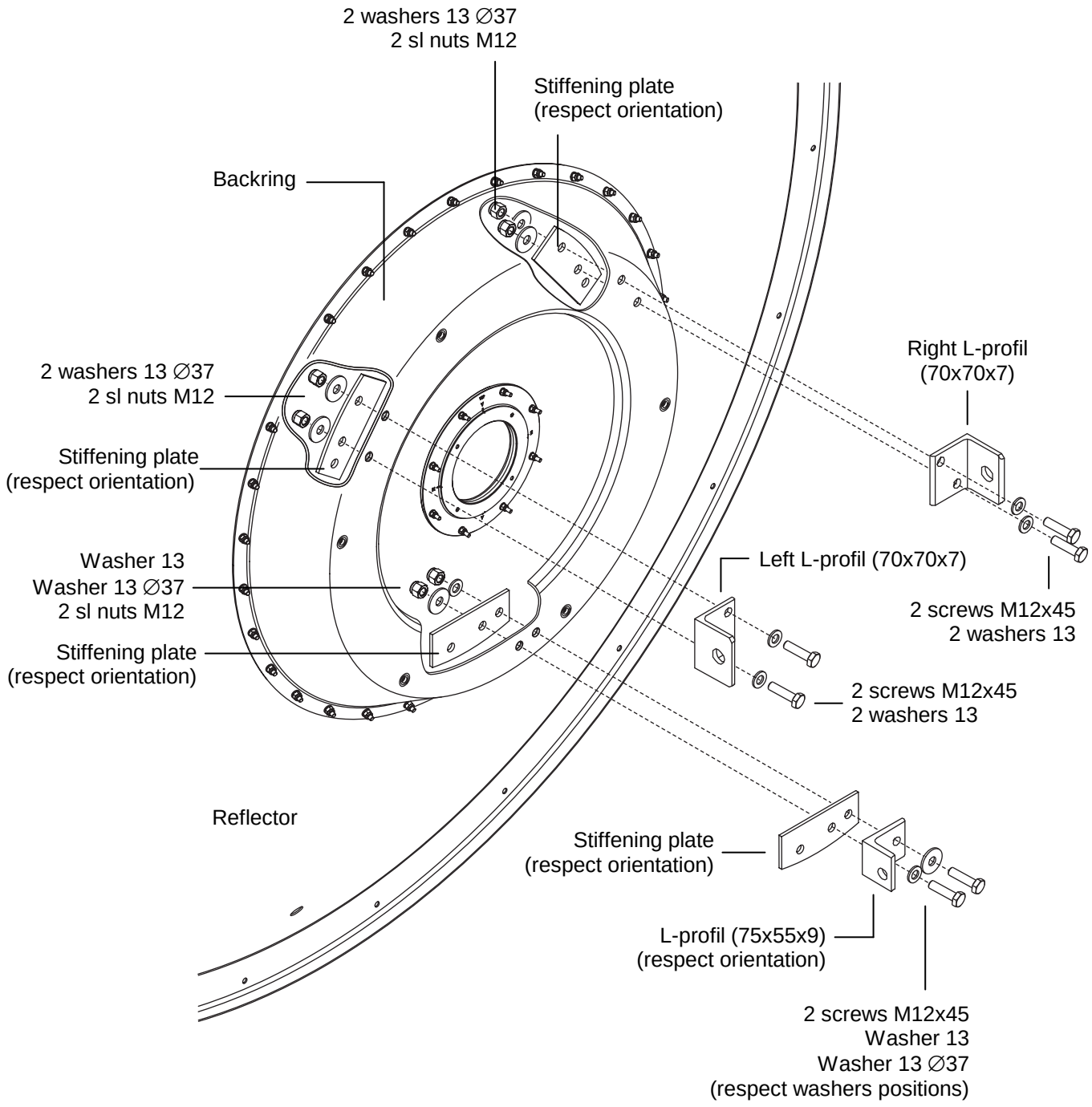
## 2. Antenna Offset



## 3. Assembly of the mount

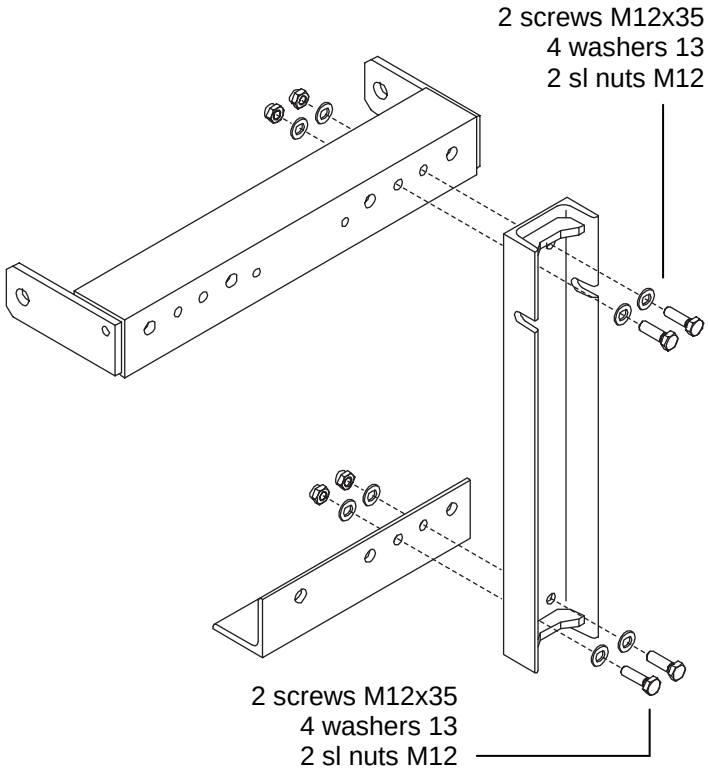
For easy operation of the bolted joints, and correct torque tightening, « Anti Seize » installation paste must be applied to all threads of bolts and fine adjustment spindles. After this, keep the lubricated threads free of dust and dirt! (a Torque Table is attached for specifications)

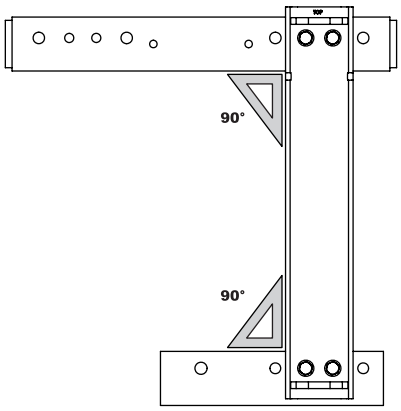
### 3.1 Brackets installation on backring (valid for an antenna installation offset left or right)




After complete brackets and stiffening plates installation, torque tighten each M12 bolted joints.

### 3.2 **Pre-assembly of the T-mount** (for an antenna installed with an offset to the left)

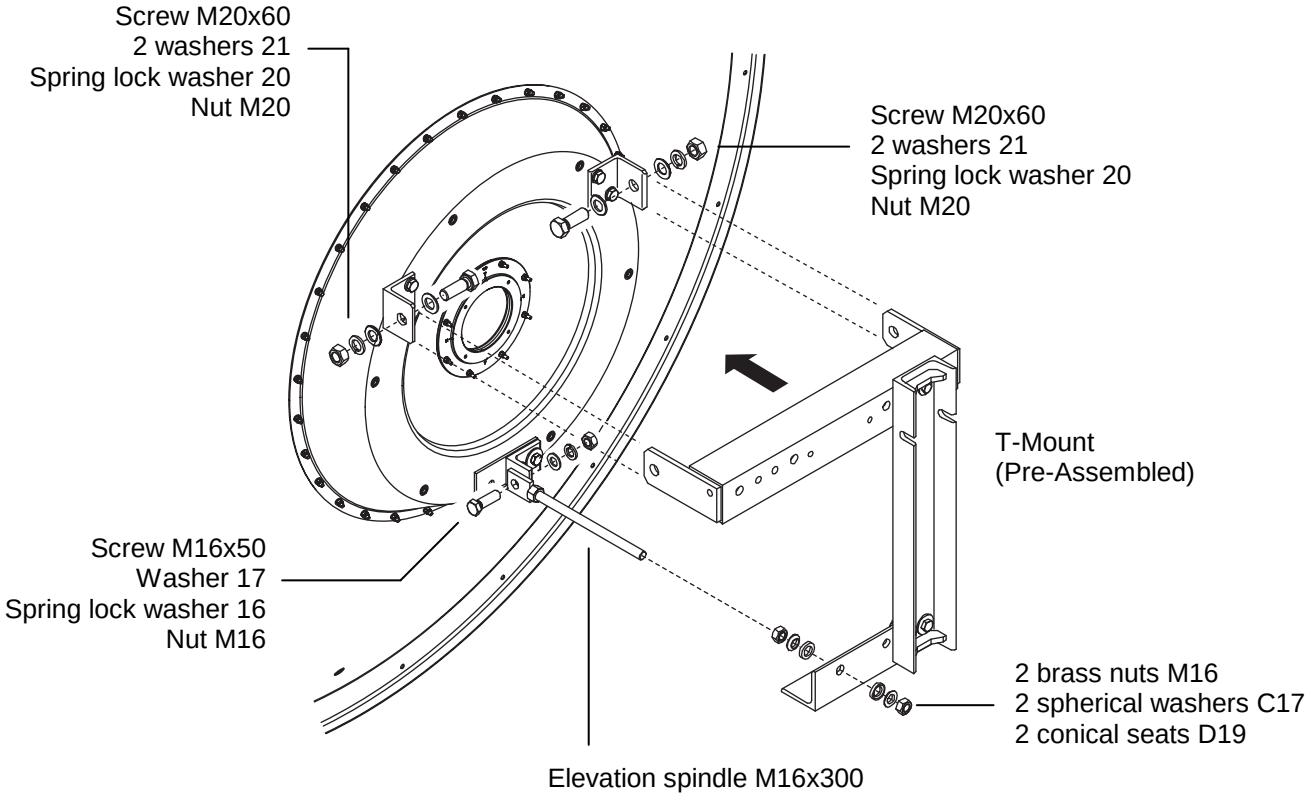



(Rear view)

After perpendicularity check between the 3 parts of the T-Mount, torque tighten the M12 bolts to lock the assembly*. (Without square, you can help you with a sheet of paper).*

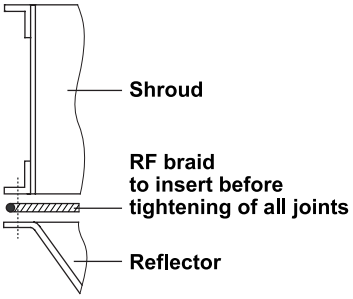
### 3.3 **T-Mount installation on the backring** (principle for an offset to the left)




***Install the antenna on wooden beam to not damage or dust mount parts***

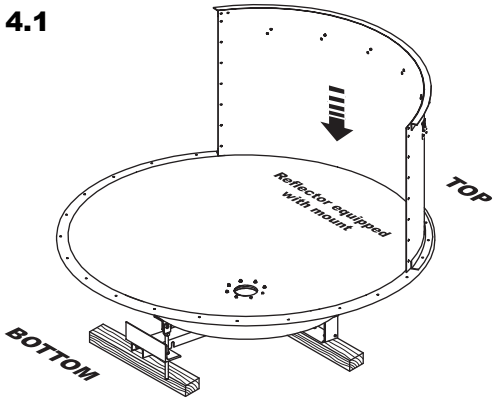
## 4. **Installation of shroud panels** (for antennas with shroud)

- Dismount the hoisting eye of the reflector (pre-installed in factory)
- Install the reflector equipped with its mount on wooden beams (to not damage mount parts with the ground) & keep bolt threads free of dust.
- The reflector's rim and the shroud panels must be clean and dry

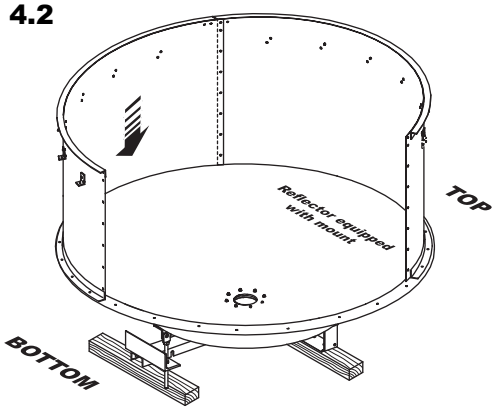



**Do not tighten all joints before complete shroud installation.**

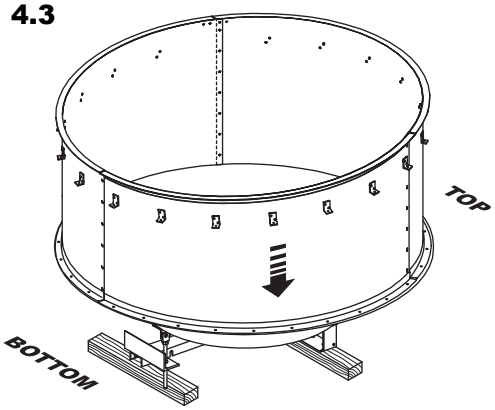
**4.1**



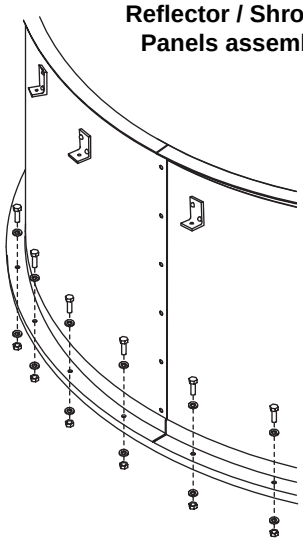

**4.2**




**4.3**



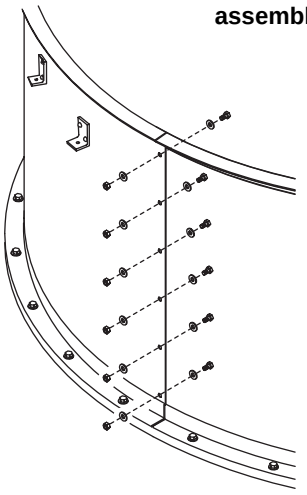

**Reflector / Shroud Panels assembly**



24 hex screws M6x25
48 washers 6.4 ∅18*
24 sl nuts M6

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

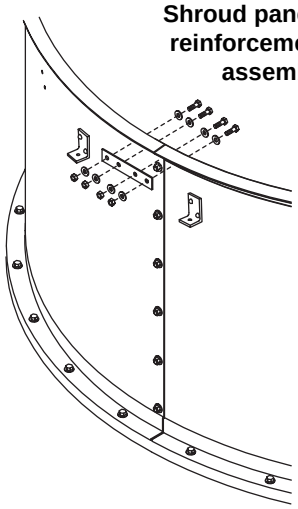
**Shroud panels assembly**



**(Short shroud length)**
6 hex screws M6x16
12 washers 6.4 ∅18
6 sl nuts M6

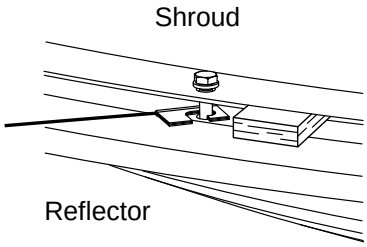
**(Long Shroud length)**
7 hex screws M6x16
14 washers 6.4 ∅18
7 sl nuts M6

**Shroud panels reinforcement assembly**

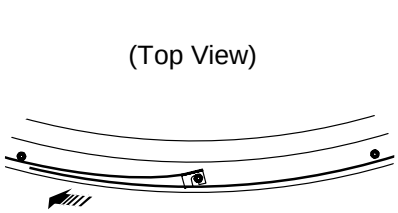


4 hex screws M6x25
8 washers 6.4 ∅18
4 sl nuts M6

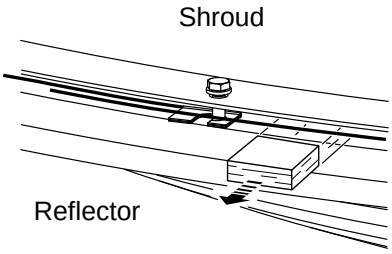
## 5. **RF Braid installation between shroud & reflector rim** (for antennas with shroud)




- Squeeze the clip onto the RF braid, then hook it onto the a flange bolt between the reflector and the shroud rims

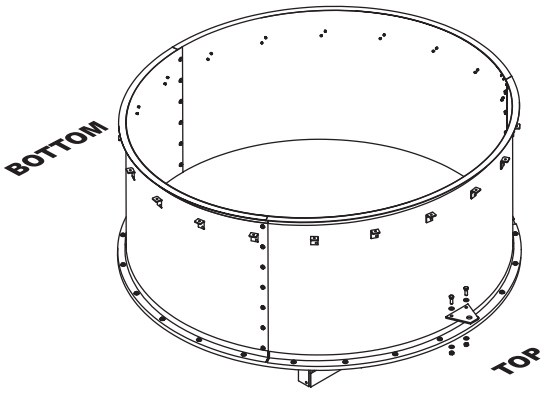


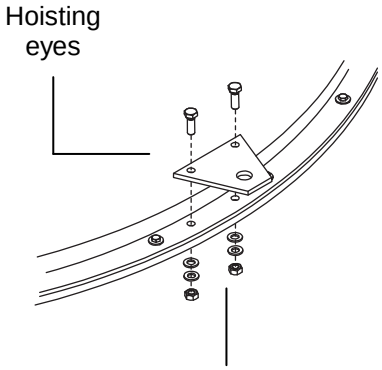

- Overlap the RF braid ends




- Removed spacers, and tighten all the bolts

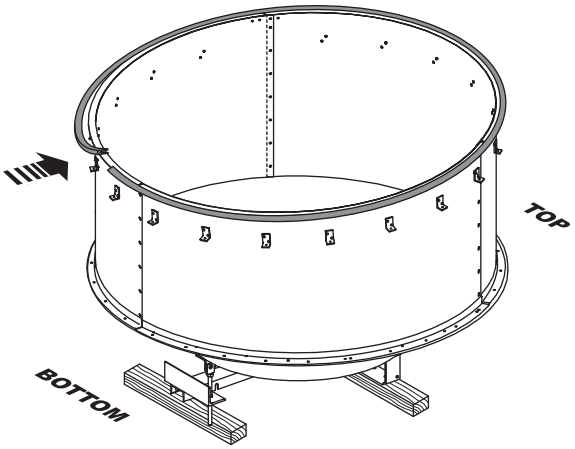
## 6. **Hoisting eye installation** (pre-installed in factory for antennas without shroud)

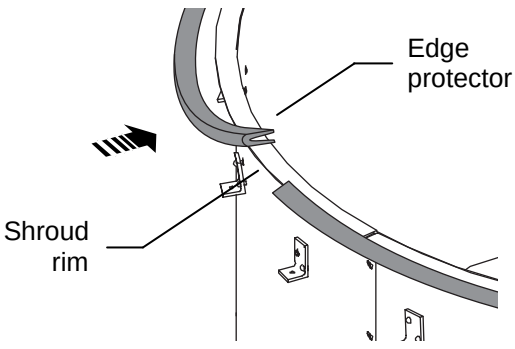



2 screws M12x35
2 washers 13
2 spring lock washers
4 nuts M12

## 7. **Radome protection installation on shroud rim** (for antennas with shroud)



## 8. Feed Installation (for customized antennas, see specific Feed Install. Instructions joined).

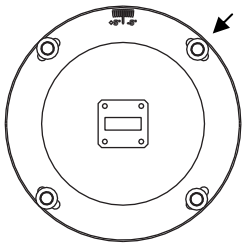
The feed is a precision component which should be handled with special care during installation. For instance, always carry the feed, supporting casting plate side. Any damage may degrade the antenna's performance. Repair of feeds is not possible in the field.

### 8.1 Polarization choice

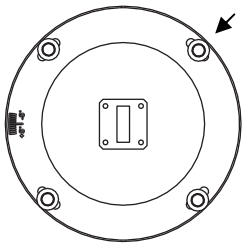
***Single polarization***

**120 mm Feed System**

**Vertical polarization** — **TOP Antenna**



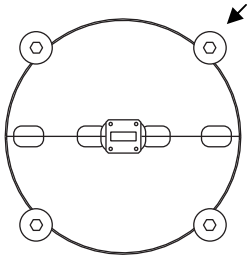
**Horizontal polarization** — **TOP Antenna**



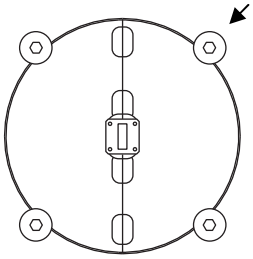
- Unscrew the 4 screws M5
- Carefully rotate the feed of 90°
- Lock the 4 screws M5

**9" Feed System**

**Vertical polarization** — **TOP Antenna**



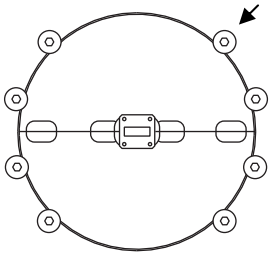
**Horizontal polarization** — **TOP Antenna**



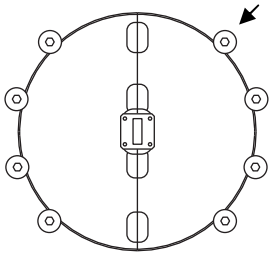
- Unscrew the 4 screws M6
- Carefully rotate the feed of 90°
- Lock the 4 screws M6

**14.5" Feed System**

**Vertical polarization** — **TOP Antenna**



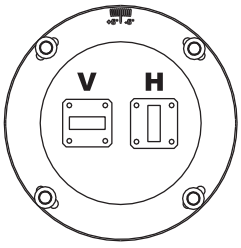
**Horizontal polarization** — **TOP Antenna**



- Unscrew the 8 screws M6
- Carefully rotate the feed of 90°
- Lock the 8 screws M6

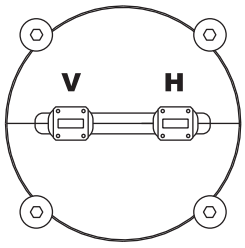
***Dual polarization***

**TOP Antenna**



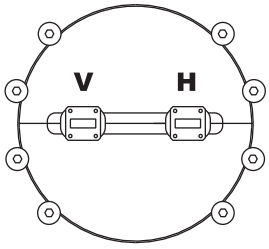

**120 mm Feed System**

**TOP Antenna**




**9" Feed System**

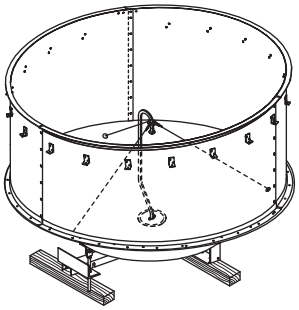
**TOP Antenna**



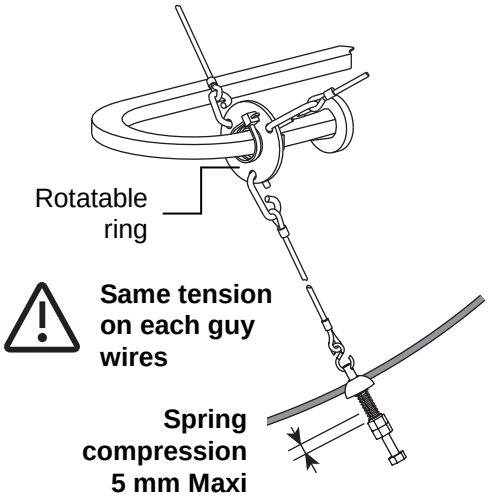

**14.5" Feed System**

## 8.2 Guy wires assembly / reflector holes obturation

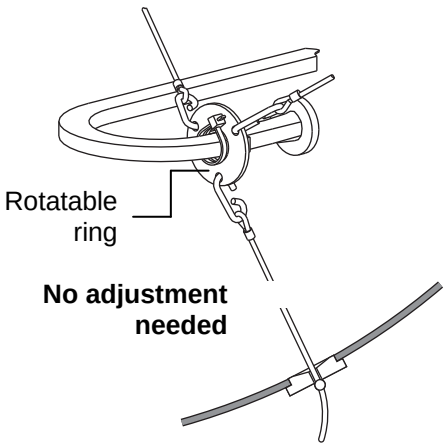
- For feed systems equipped with guy wires, insert the 3 guy wires in the mounting holes from the rear of the reflector
- Move the feed assembly partway through the reflector connecting ring
- Hook the guy wires into rotatable ring
- Move the feed and fix it, with the 4 screws M5, in the connecting ring.
- For feed systems without guy wires, install the 3 obturation plugs on the reflector *( 6 ft frequency codes 34-35-36-44).*



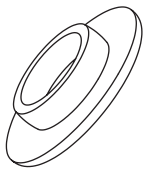
**Tension for feed system delivered with MW guy wires**




**Tension for feed system delivered with SL guy wires**



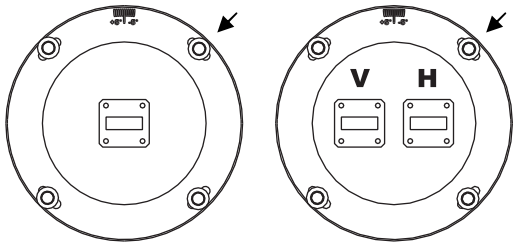

**Feed system without guy wires**



**Install the 3 plugs Ø20 mm from the rear of the reflector**

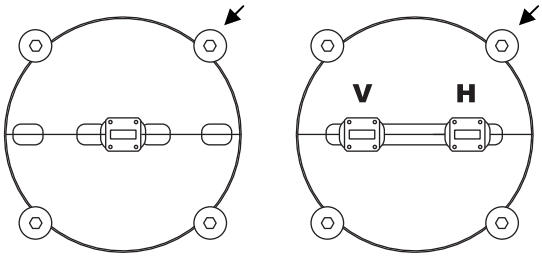
## 8.3 Polarization fine adjustment

**120 mm Feed System**



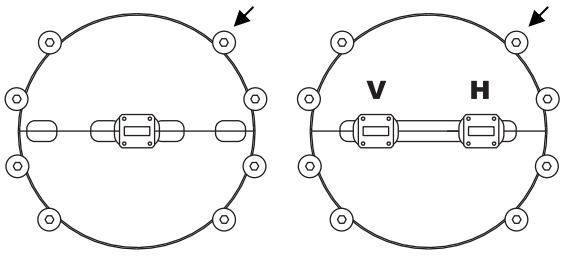

Loosen the 4 screws M5
and adjust polarization

**9" Feed System**




Loosen the 4 screws M6
and adjust polarization

**14.5" Feed System**

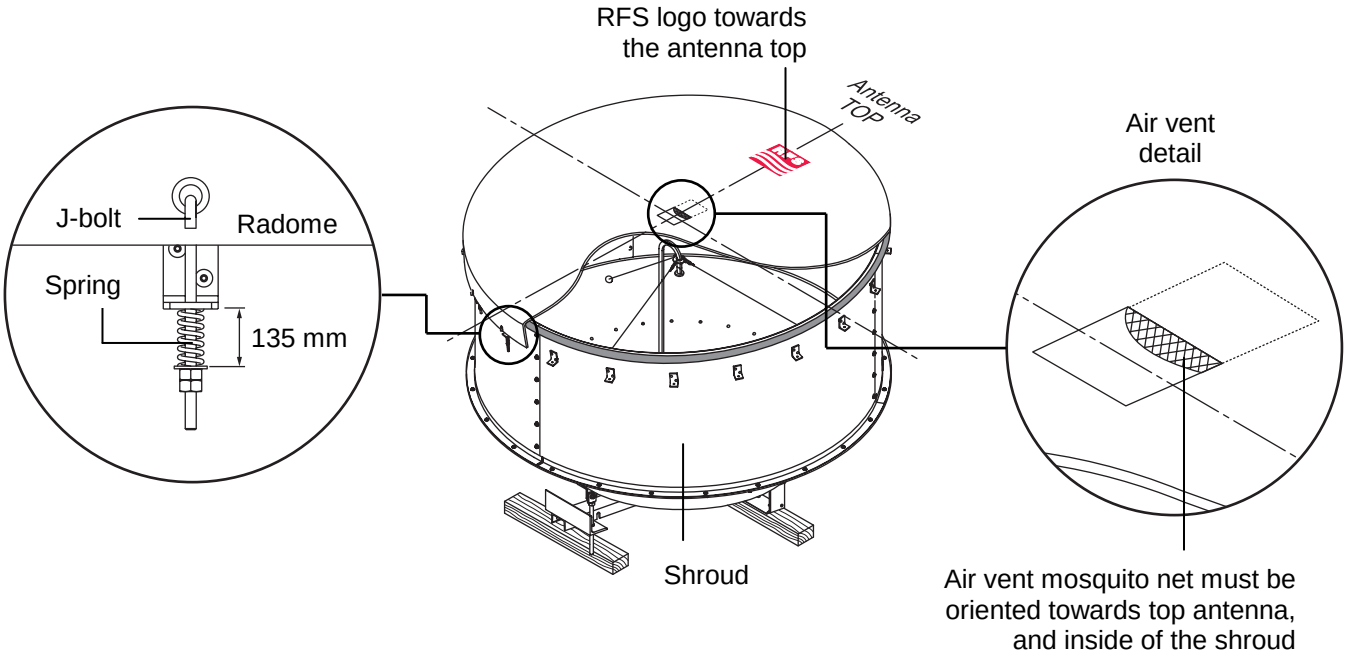



Loosen the 8 screws M6
and adjust polarization

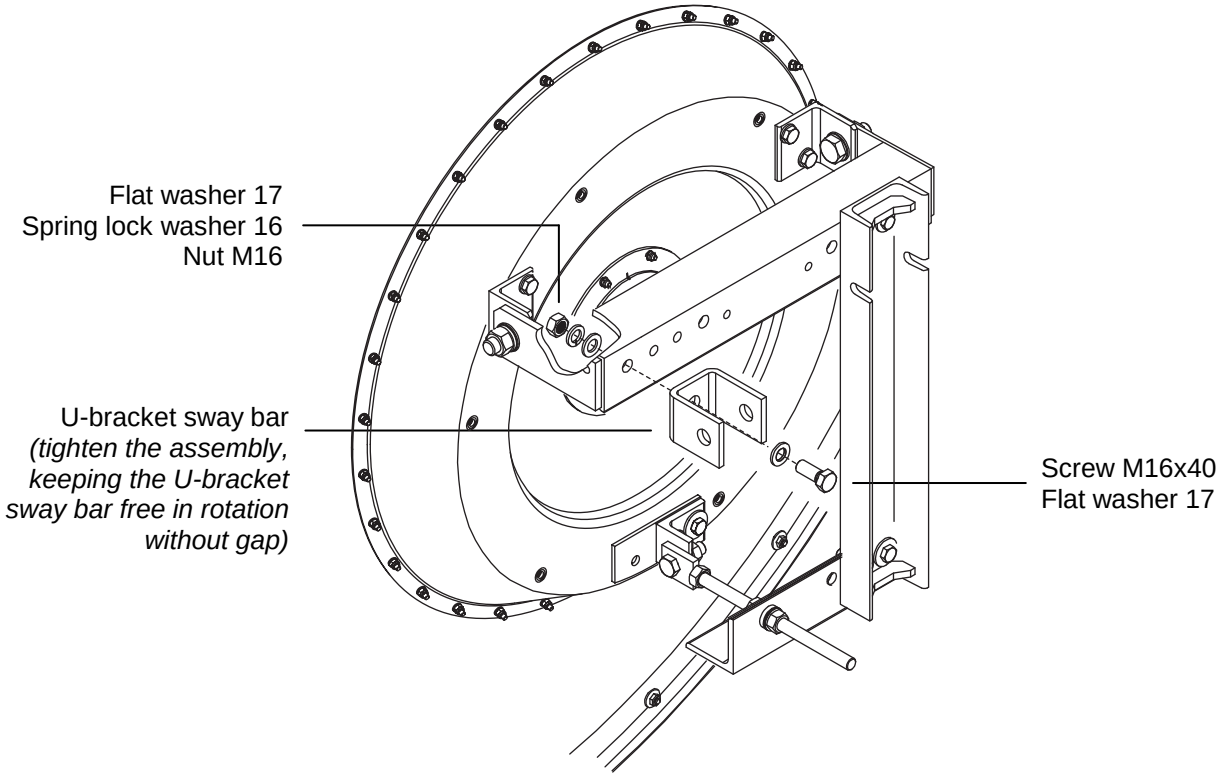
## 9. **Radome Installation** (for antennas with shroud)

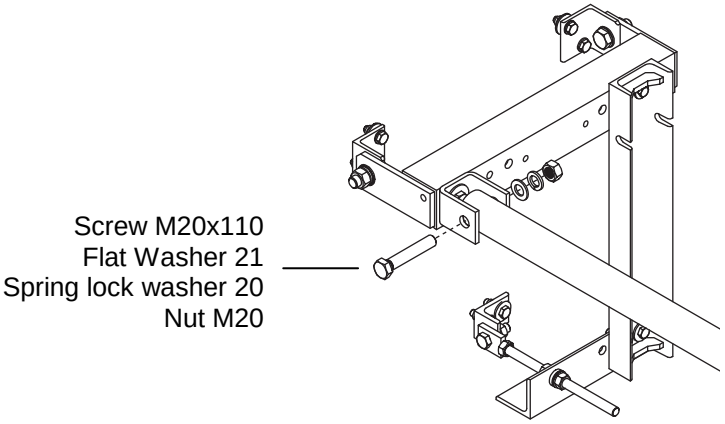
Take care to not kinking of planar radomes during installation.
Kinking will destroy the radomes, which are non-repairable.

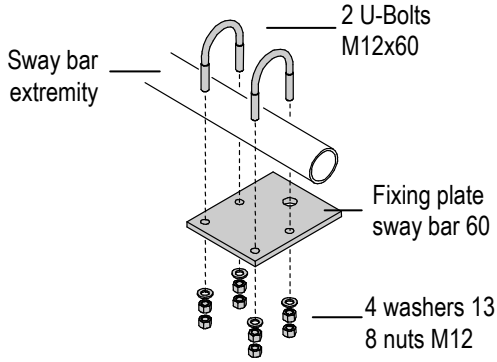
- Unpack the radome and carefully strech it over the shroud aperture
- For radomes with RFS logo, align it with the vertical axis of the antenna
- For radomes without RFS logo, the central air vent mosquito net aperture must be oriented towards the antenna top
- Attach J-bolt with springs and smooth radome down as the springs are attached, but do not displace the edge protector on the shroud rim.
- Align the length of the springs to approximately 135 mm at each J-bolt, this will provide proper radome tension.




## 10. **Sway bar assembly**

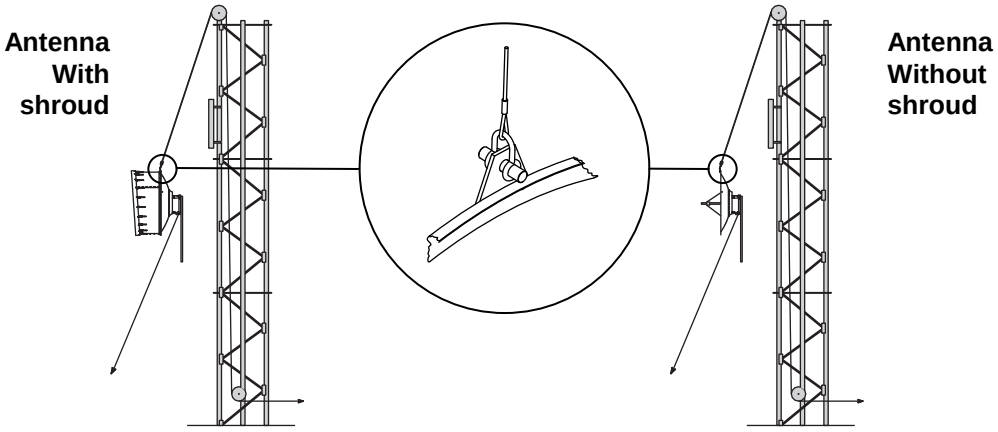




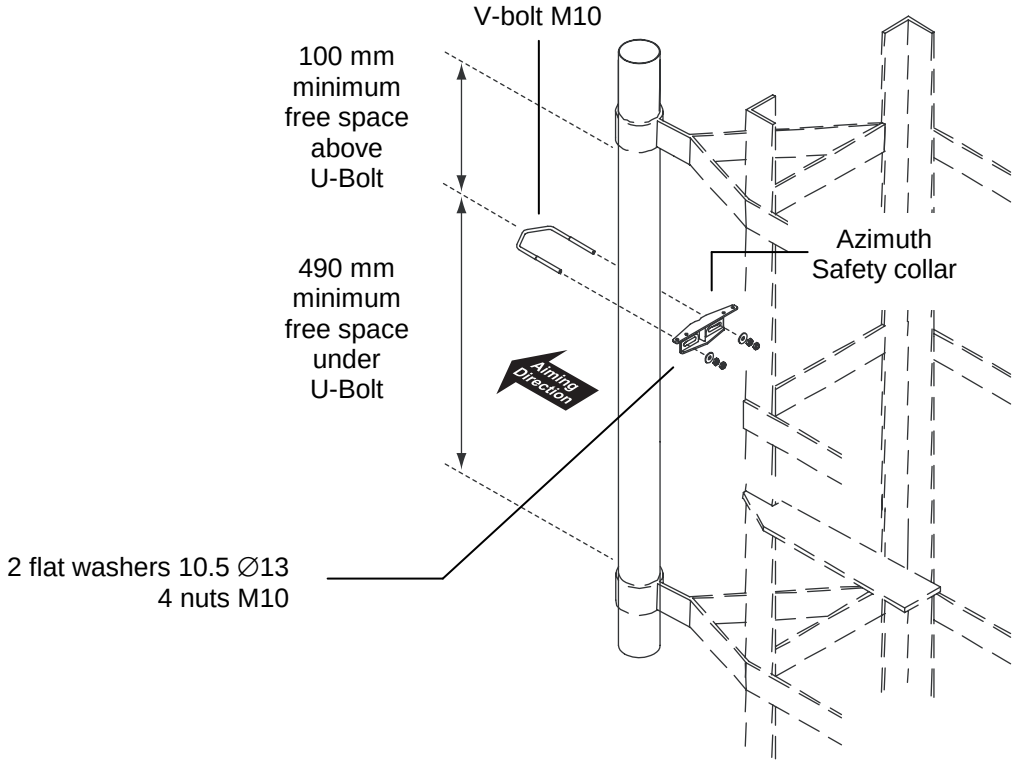

## 11. Lifting of antenna & hoisting on the tower

Before antenna hoisting on the pylon, it is mandatory that all the bolted joint of the T-Mount structure have been torque tighten, otherwise the installation on the pipe support could be problematic.

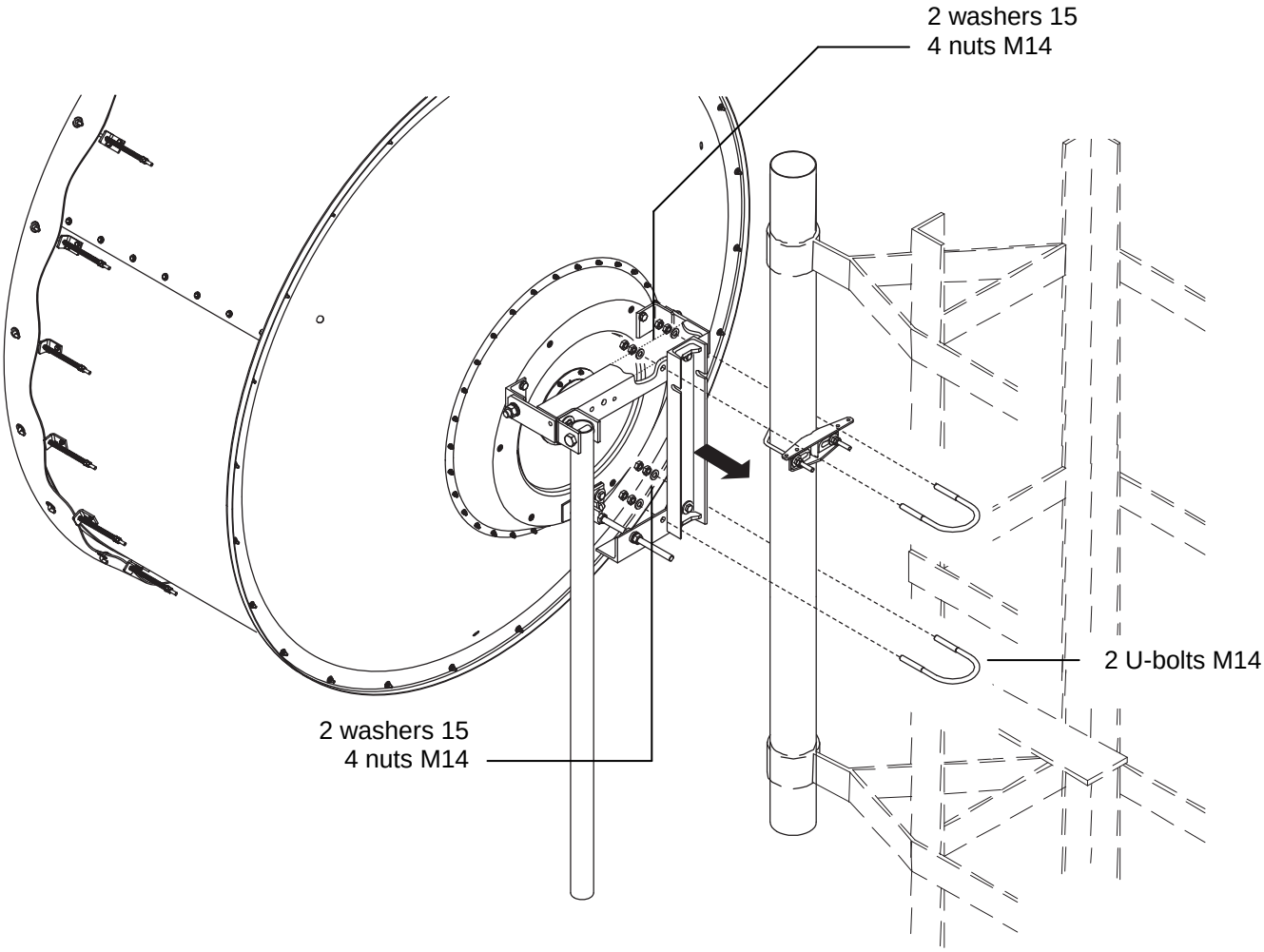



2 ropes fixed on the mount for optimal balance to avoid antenna collision with tower structure

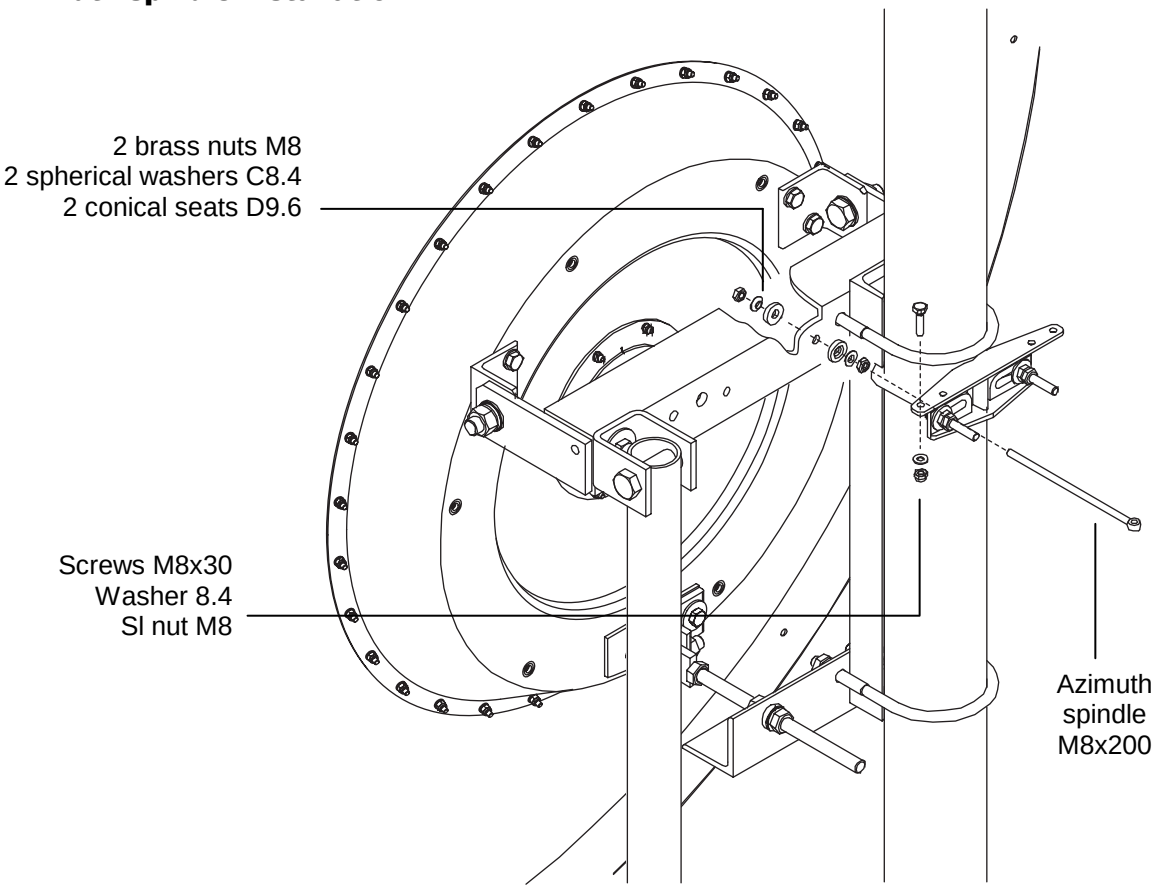
## 12. Safety collar installation on pipe support



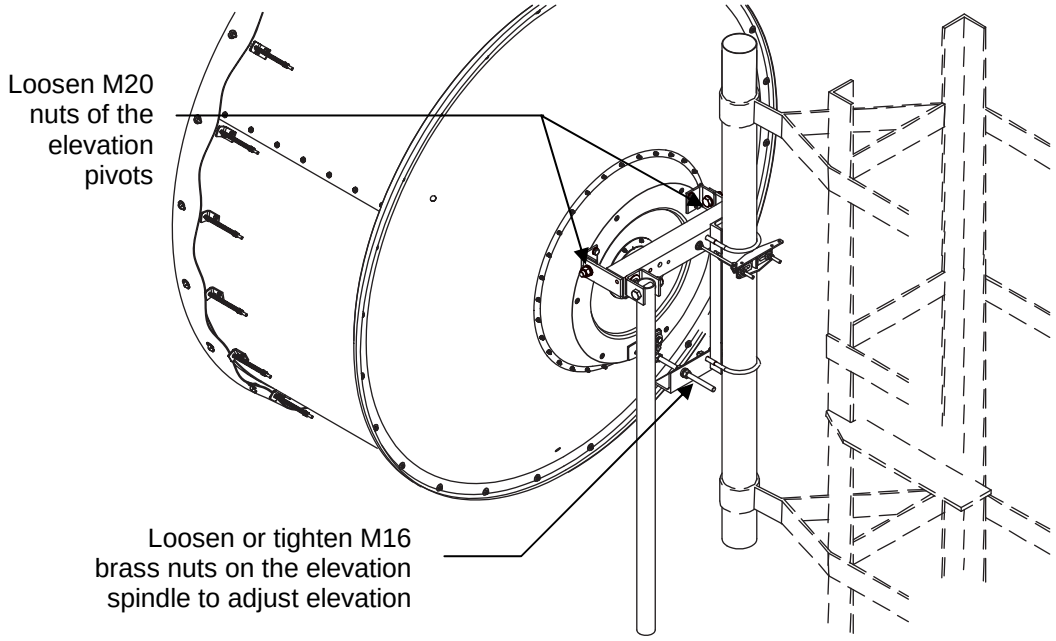
## 13. Antenna installation on pipe




## 14. Azimuth spindle installation



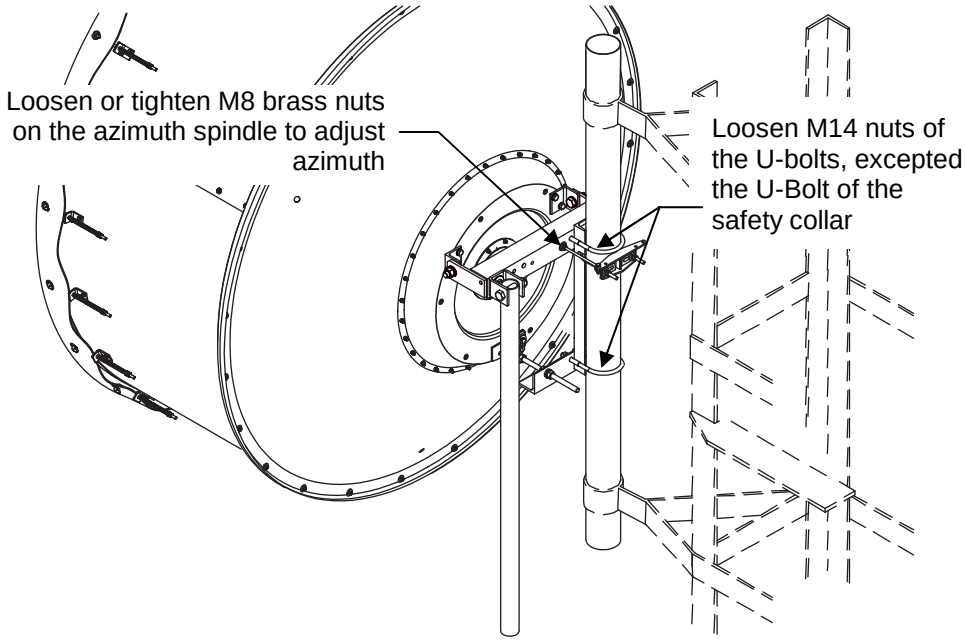
## 15. Elevation fine adjustment




After elevation adjustment, torque tighten the 2 M20 and 2 M16 nuts

## 16. Azimuth fine adjustment

If the M14 nuts of the U-Bolts are already torque tighten, loosen each nuts of 1 turn



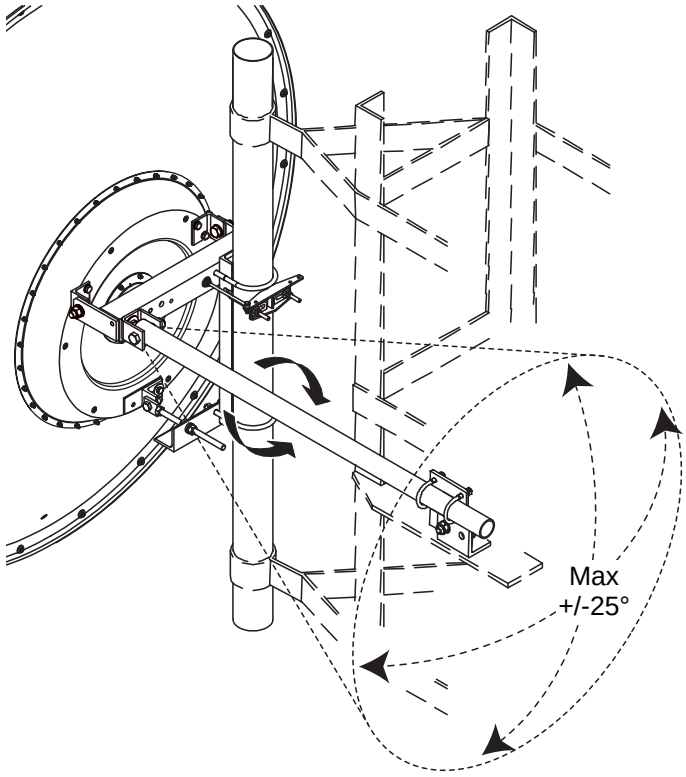

After azimuth adjustment, lock the first nut on the U-bolt with the torque value specified on the torque table (the U-bolt threads must have been greased before torque tightening), then fix the second nut against the first one. Do not use two wrenches to fix the second nut.

## 17. Sway bar positioning and attachment

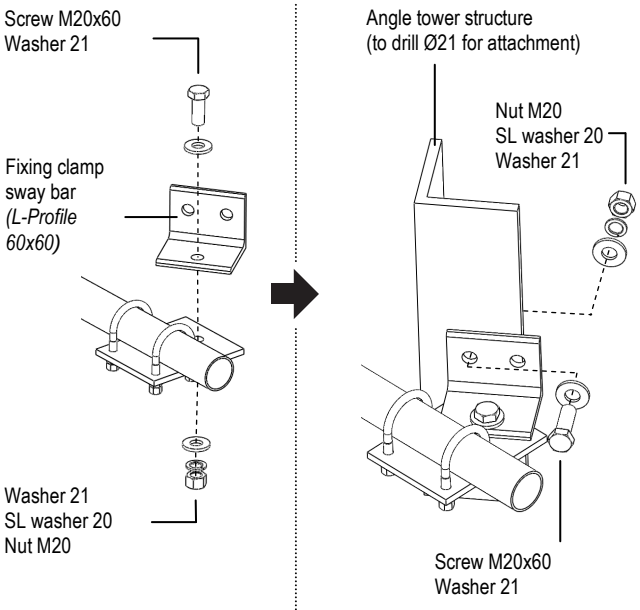
- After complete azimuth and elevation adjustment, angle the sway bar respecting the max angle indicated.

- Fix the sway bar fixing clamp on the tower structure (see figures below).

- Then torque tighten each bolted joints of the sway bar articulation to suppress residual gap.

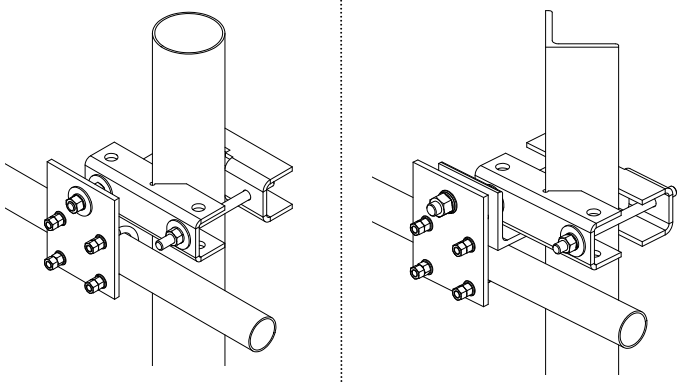



**Sway bar installation on tower <u>without</u> sway bar kit option**




**Sway bar installation on tower <u>with</u> sway bar kit option: SMA-SKO-UNIVERSAL-L**

**Refer to install. Instruction provided with this sway bar option kit**



**Pipe Ø 60 up to 114 mm** **or** **L-profile 60x60 up to 110x110 mm**

## 18. 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 torque tightly locked.