Installation Instructions
6 ft Antennas with E-Mount (250 km/h)

SB6-SBX6

NMT-10-0649-10 (e)

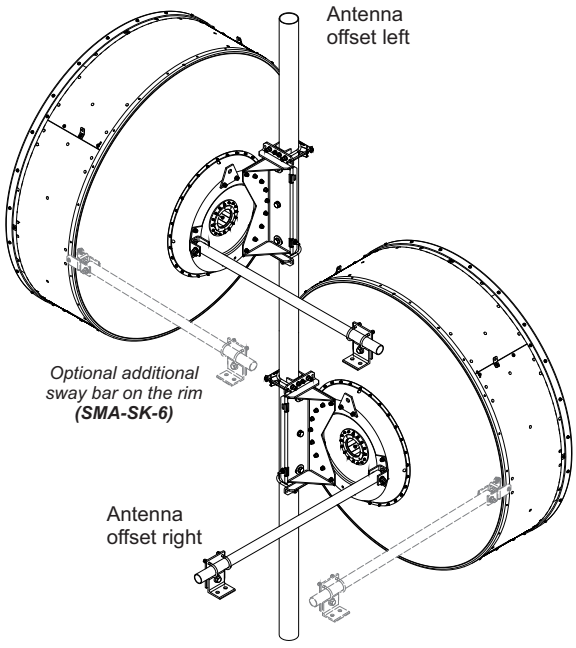
These installation instructions have been written for qualified, skilled personnel. The antenna shall be inspected once per year by qualified personnel to verify proper installation, maintenance, and condition of equipement. It is important to adhere precisely to all parts of the installation instructions. RFS disclaim any responsibility resulting from improper or unsafe installation. RFS reserves the right to alter at any time, especially with respect to technical improvements.

Warning list

- Don't use inappropriate tooling for the antenna unpacking
- Check before assembly the antenna part to there is no crack, bump during the transportation
- If you think some materials has been damaged during transportation, take a picture before removing the material from the crate
- Apply systematically grease when requested to avoid seizing
- Visual check at the end of the assembly / tightening
- Never place the antenna on the floor facing radome during assembly
- Carry and hoist the antenna with careffuly and never roll the antenna during handling

1 – Antenna specifications

- Reflector Ø 1.8m (6 ft)
- Single or dual polarization
- Installation on vertical pipe Ø114 mm (4.5 inch)
- Fine adjustment for elevation and azimuth (±5°)
- Reflector with shroud
- Shroud aperture covered by a rigid radome
- Sway bar Ø 60 mm x 1.9 m on the backring (installation mandatory)
- Antenna weight : approx. 90 kg

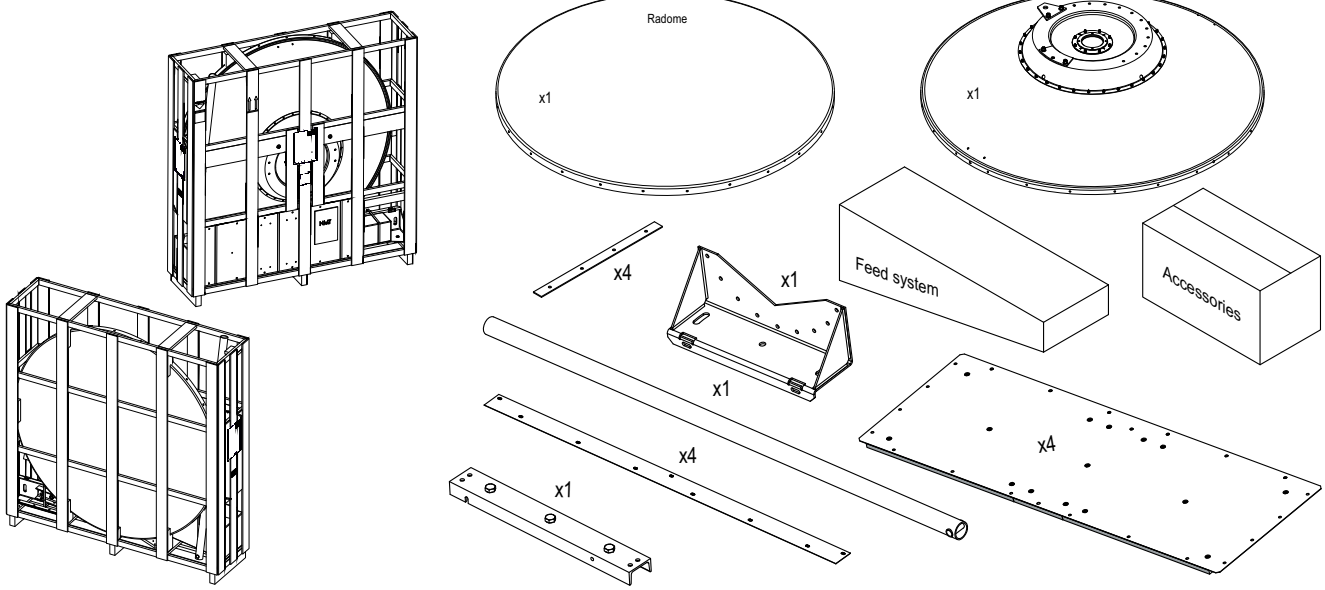


2 – Tools and equipment required for installation

- Combination wrenches for hexagonal bolts M6(10), M8(13) M10(16/17), M12(18/19), M14(21/22), M16(24), M20(30)
- Allen keys M3(2.5), M4(3)
- Torque wrench 1 to 240 Nm with hex open/ring endsadapters M6(10), M8(13) M10(16/17), M12(18/19), M14(21/22), M16(24), M20(30) and M3(2.5), M4(3) allen bit adaptors
- Square, flat screwdriver
- 2 strong ropes (x1.5 tower height), 1 strong rope (x2.5 tower height)
- 3 slings (lenghts 1.16m, 1.10m, 1.00m)
- Hoisting accessories, 2 shackles Ø8mm, 1 shackle Ø20mm, 2 shackles Ø24mm, rolling eye, pulleys, spring hooks, winch
- Personal protection equipment (for attachment on tower), gloves

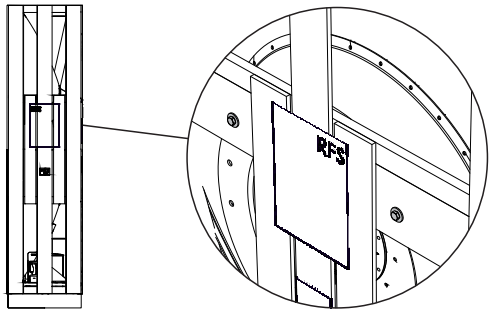
(values in brackets = openings of spanners)

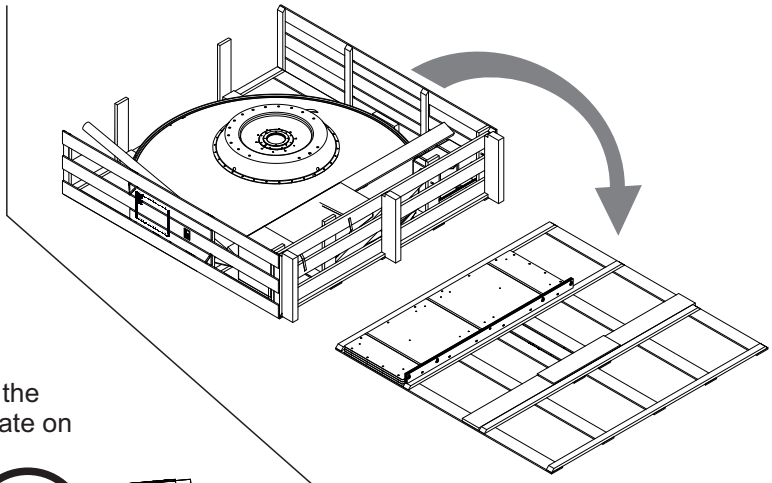
3 – Packing Overview and content



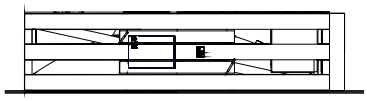
Sales department : Radio Frequency Systems
Kabelkamp 20, D-30179 Hannover (Germany) • Tel. +49-511 676-2520• Fax +49-511 676-2521
Plant : RFS France Trignac (France)• Tel +33 (0)2 40 45 95 45 • Fax +33 (0)2 40 90 41 43

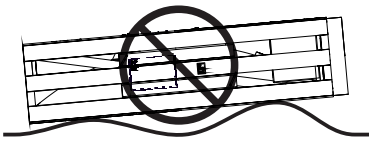
4 – Packing unboxing





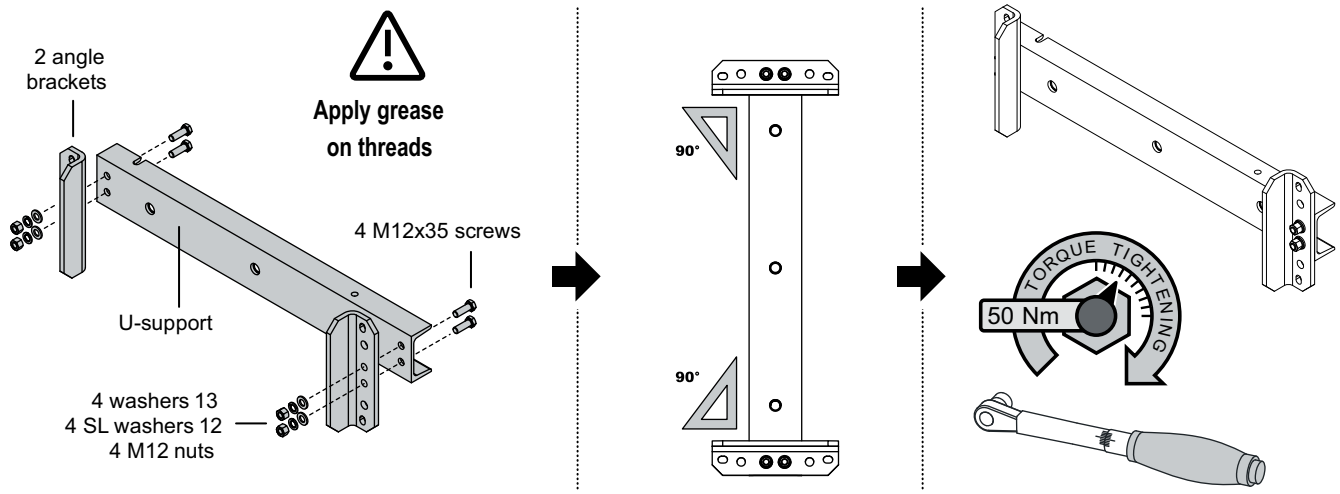
First, remove the two M8 bolts holding the back of the antenna to the wooden crate, then lay down the crate on the side of the back of the antenna



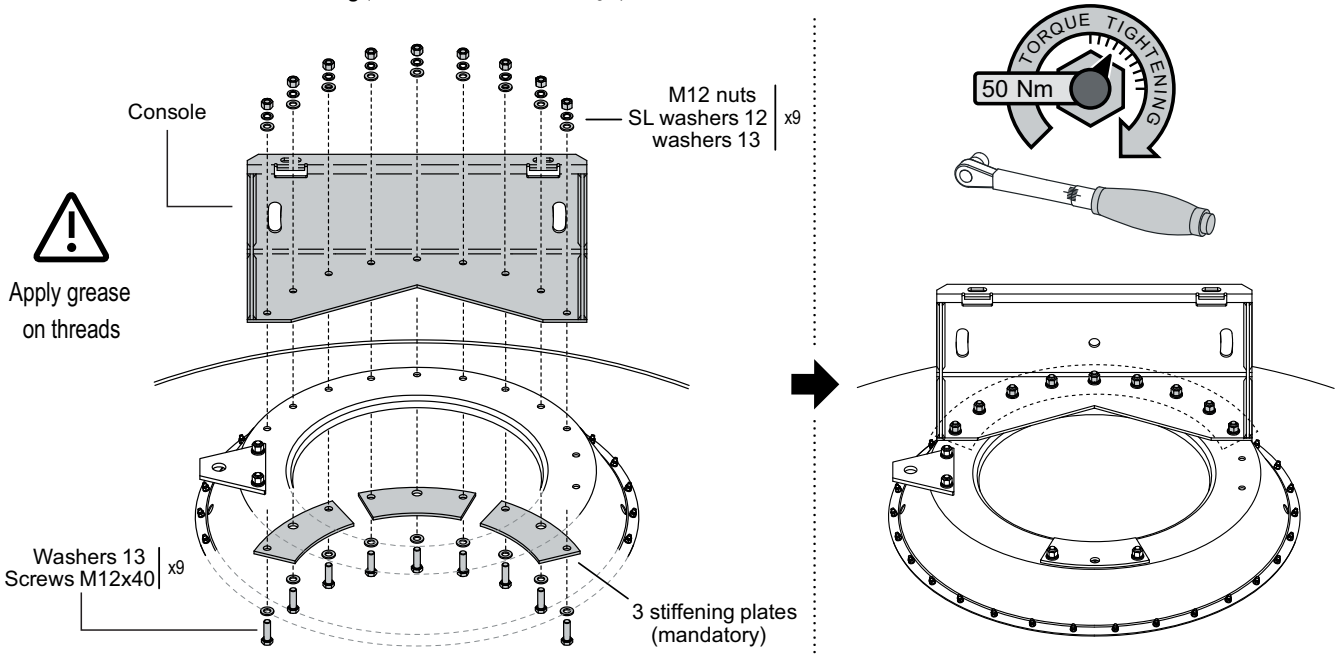


Finally, remove the crate door

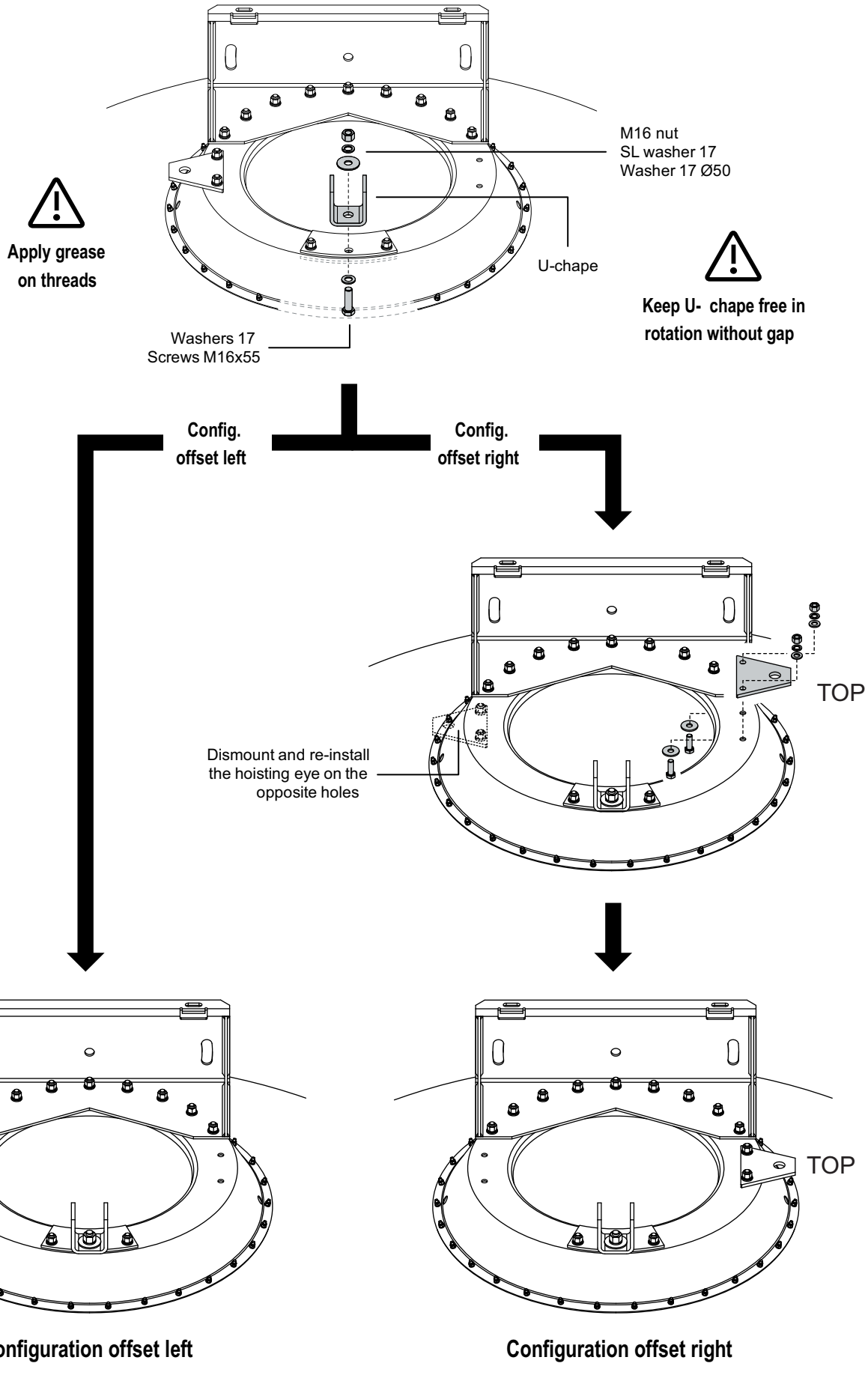
5 – Mount pre-assembly (for an antenna offset left or right)



6– Console installation on backring (for an antenna offset left or right)



7 – Sway bar U-chape pre-assembly and hoisting eye positioning (depending of the antenna offset left or right)

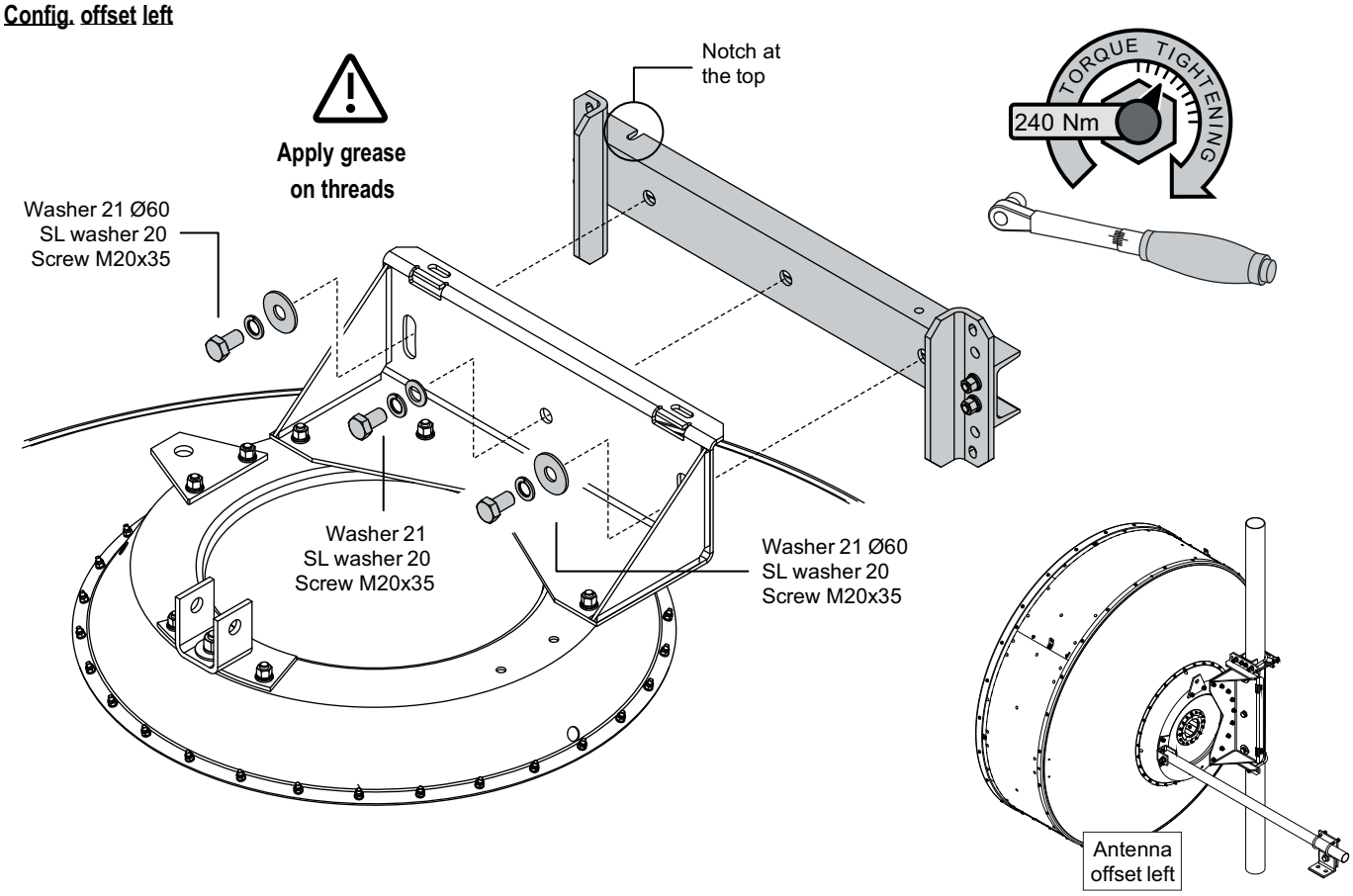


Configuration offset left

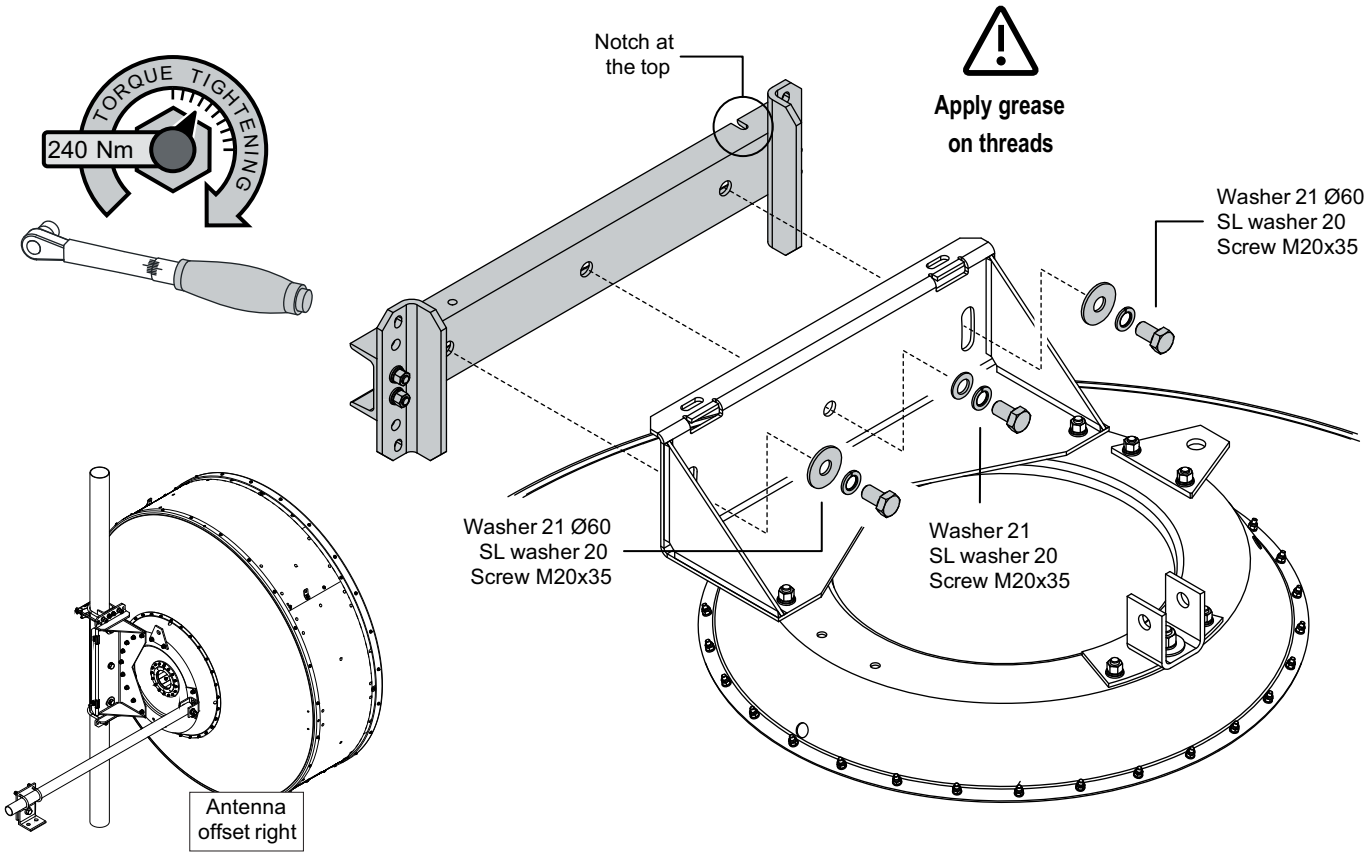
Configuration offset right

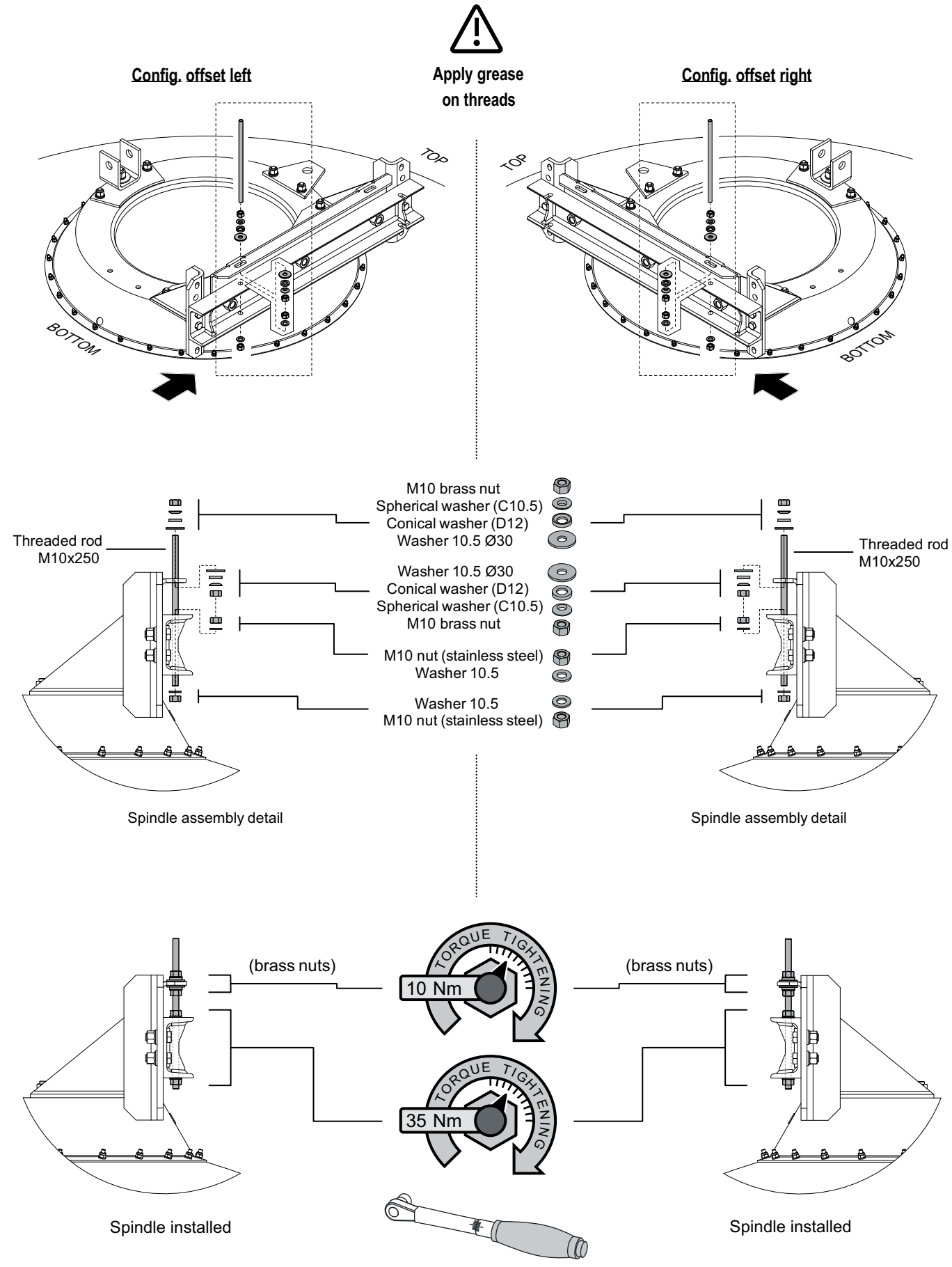
8 – U-support pre-assembly on console

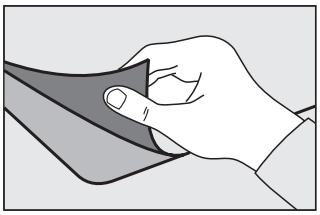
Config. offset left



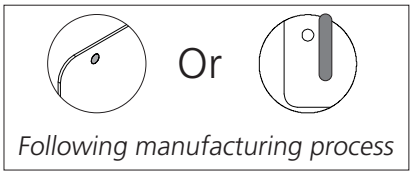
Config. offset right



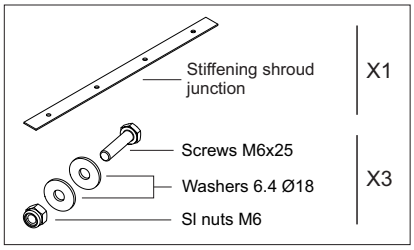

Config. offset left
Apply grease on threads
Config. offset right
TOP
BOTTOM
TOP
BOTTOM
M10 brass nut
Spherical washer (C10.5)
Conical washer (D12)
Washer 10.5 Ø30
Washer 10.5 Ø30
Conical washer (D12)
Spherical washer (C10.5)
M10 brass nut
M10 nut (stainless steel)
Washer 10.5
Washer 10.5
M10 nut (stainless steel)
Threaded rod M10x250
Threaded rod M10x250
Spindle assembly detail
Spindle assembly detail
(brass nuts)
(brass nuts)
TORQUE TIGHTENING
10 Nm
TORQUE TIGHTENING
35 Nm
Spindle installed
Spindle installed

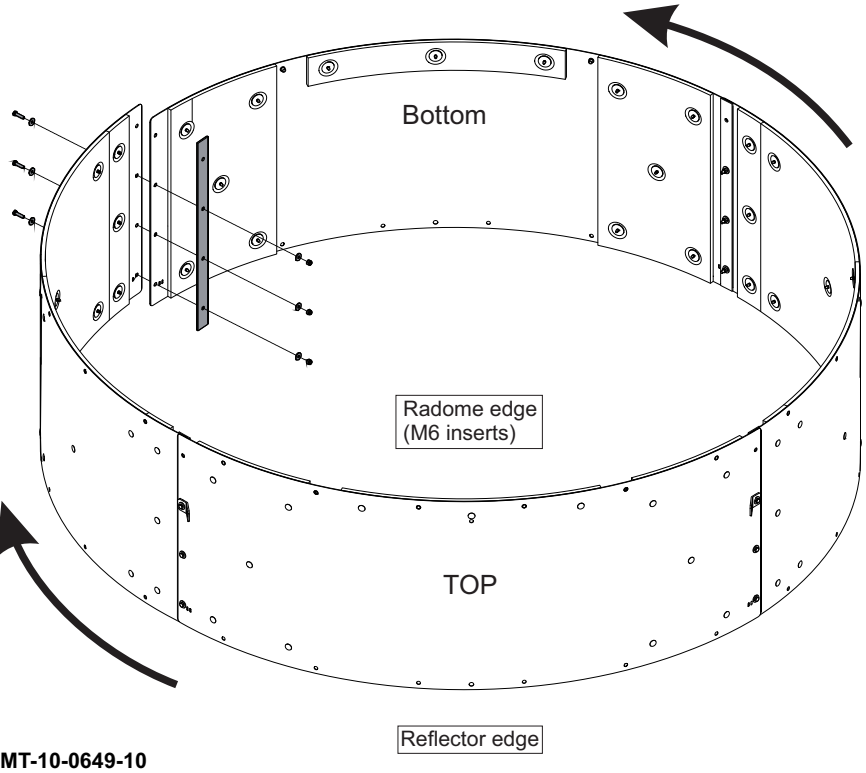


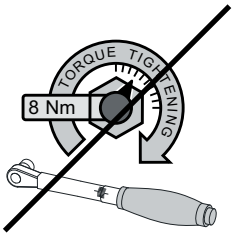
Before the assembly, take off the covering protective film



Don't use any tool
Please install by hand

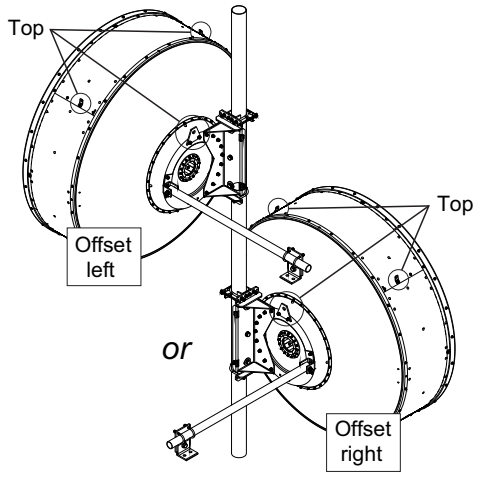


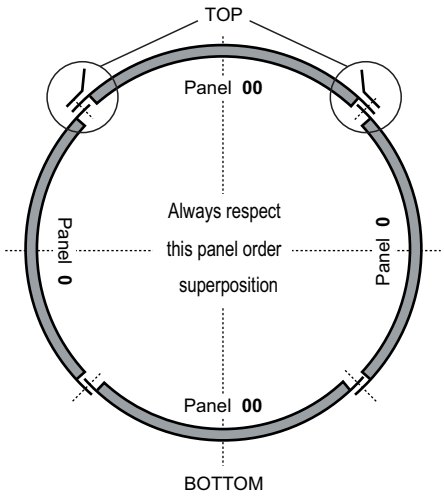




Don't use any tool
Please install by hand

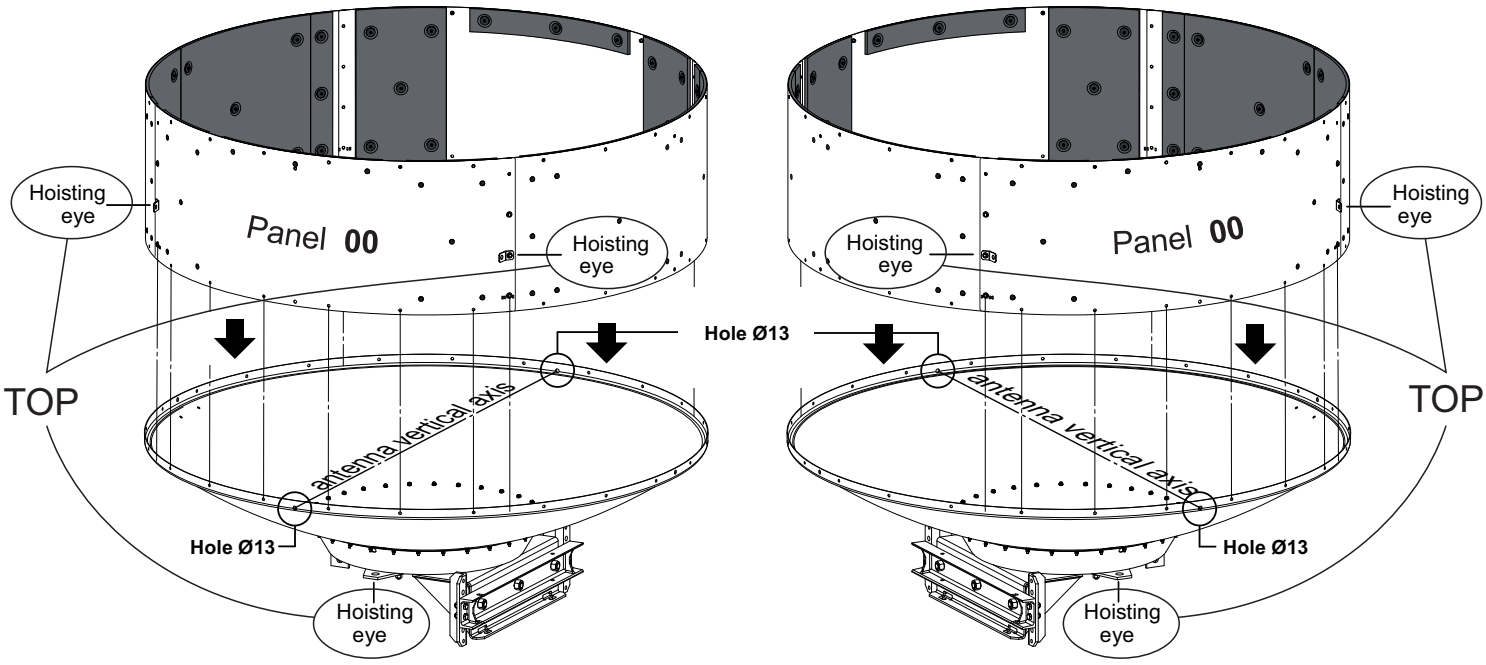
11 – Shroud positioning and orientation on reflector

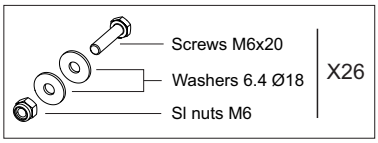


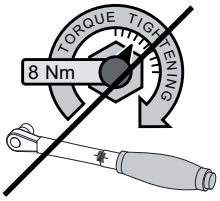


Config. offset left

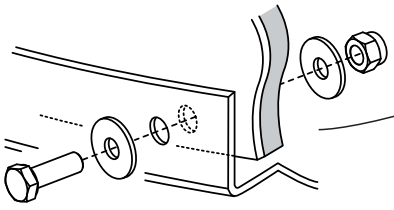
Config. offset right

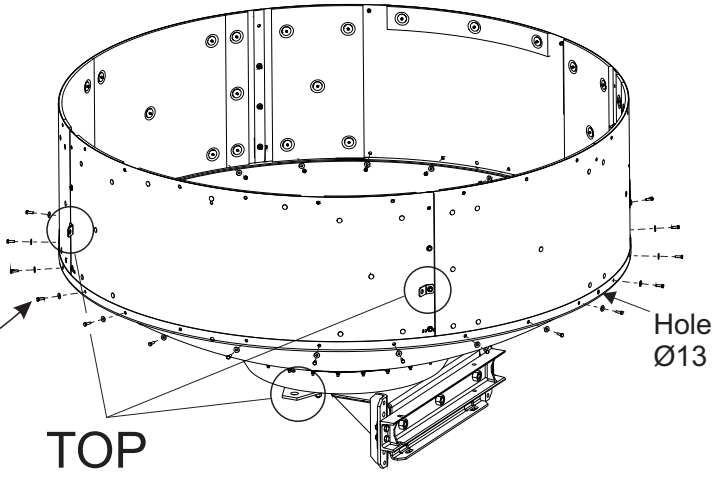






Don't use any tool
Please install by hand

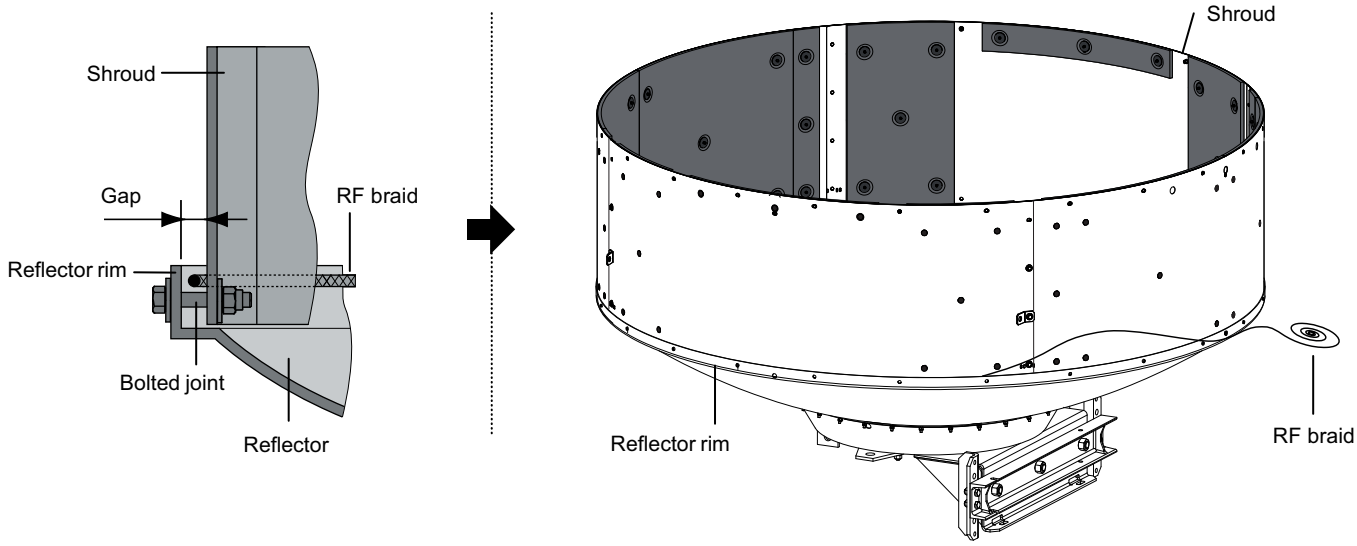




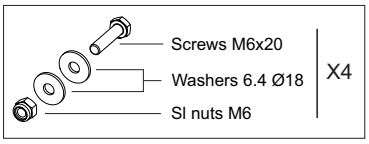
Install all M6 bolts in opposite diagonal mode without tightening

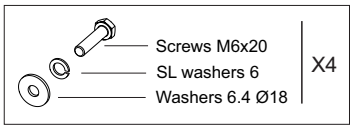
12 – RF Braid installation

Insert RF braid between shroud and reflector rim around the antenna
(you can help you with a flat screwdriver to push the braid)

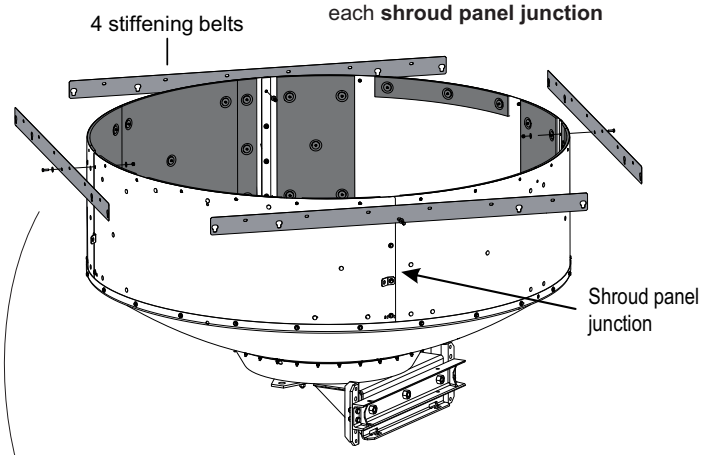


13 – Stiffening belt installation

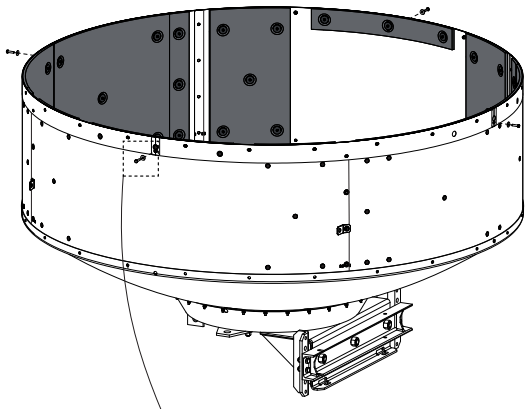


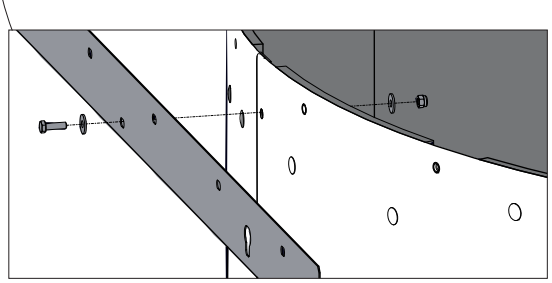


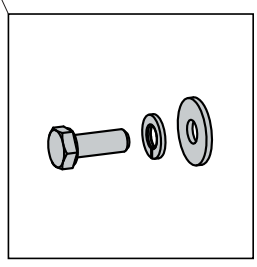
Install the 4 stiffening belts by their center hole at the last free hole at each **shroud panel junction**

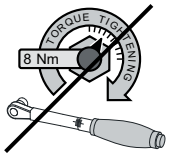


Bend the stiffening belts around the shroud, and attach them to the 4 M6 inserts around the shroud



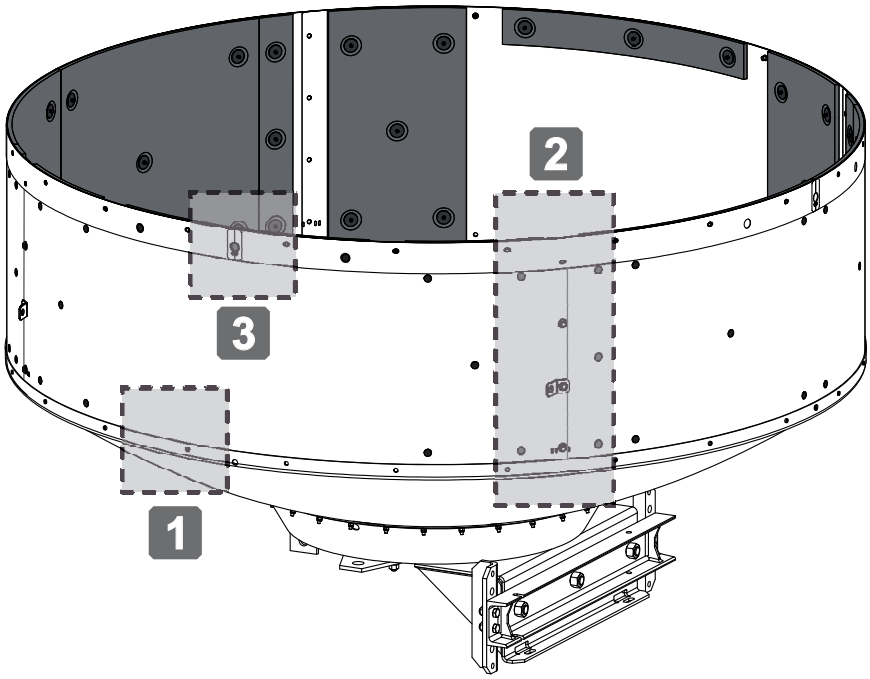




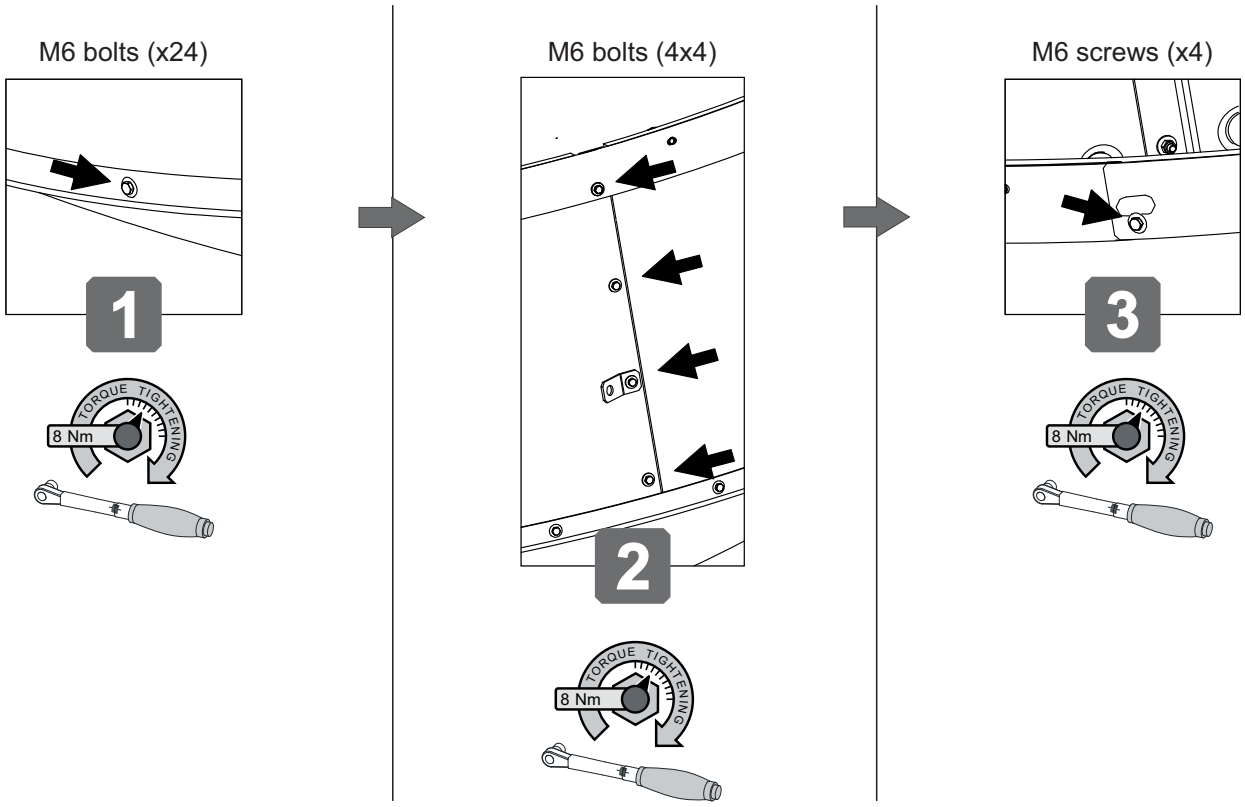


Don't use any tool, please install by hand

14 – Shroud bolt tightening



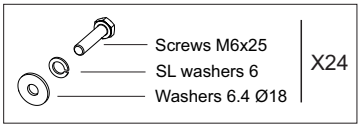
Please follow the following tightening sequency



15 – Optional additional sway bar kit :SMA-SK-6 (skip this step if you have only 1 sway bar provided with the antenna)

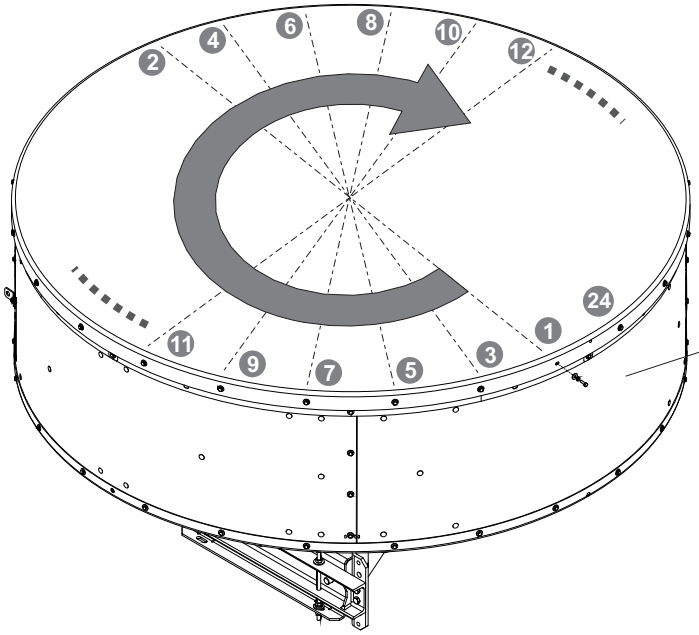
If you have oredered 1 (or 2) additional sway bar kits, you must install the sway bar clamp(s) provided in the kit(s) on the antenna relfector rim before
the radome installation, so please refer to the Addendum « Kit : SMA-SK-6, Additional Sway Bar Kit for SB6-SBX6" (NMT 738) joined with the kit.

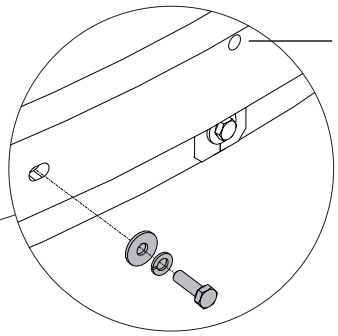
16 – Radome installation



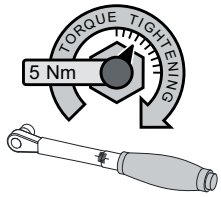
Respect the following order when tightening the radome bolts

1 → 2 → 3 → 4 ***...Until*** 24





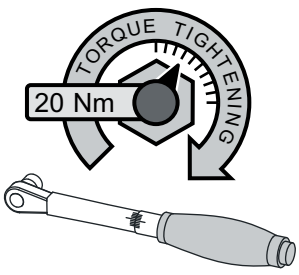
Apply grease on threads

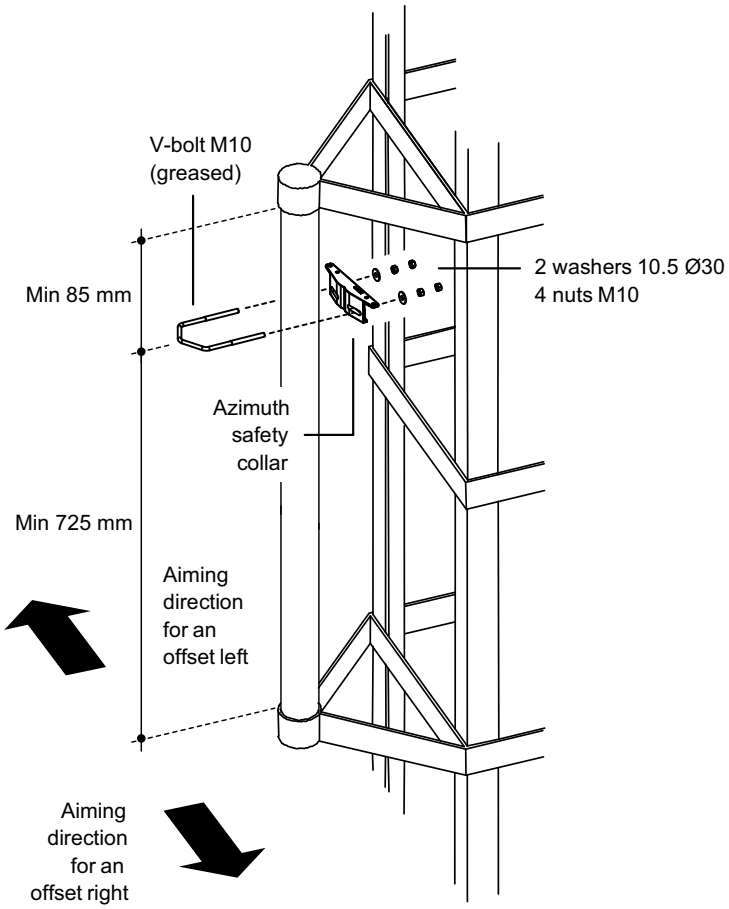


17 – Feed system installation (refer to feed system installation instructions joined)

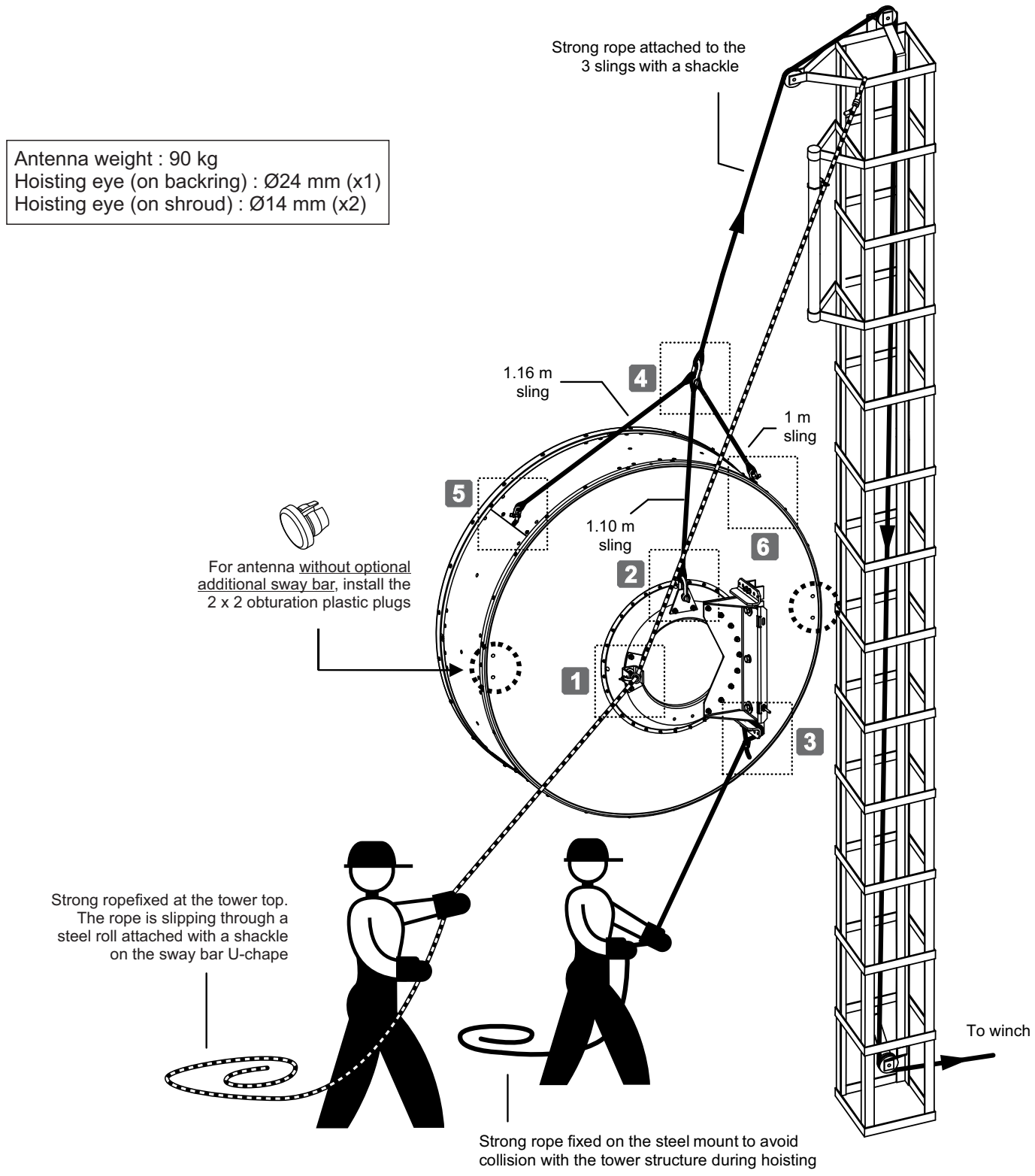
18 – Safety collar installation on tower pipe and antenna hoisting on the tower

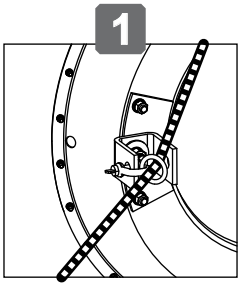
Apply grease on threads



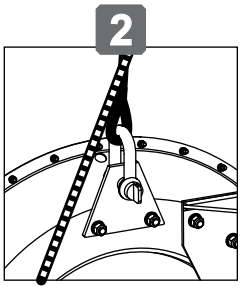


Antenna weight : 90 kg
Hoisting eye (on backring) : Ø24 mm (x1)
Hoisting eye (on shroud) : Ø14 mm (x2)

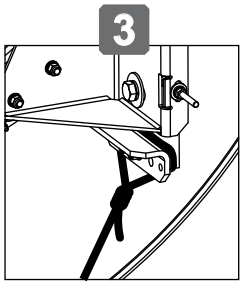




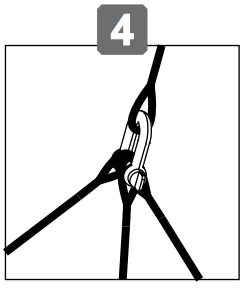
Shackle Ø 20mm + rolling eye



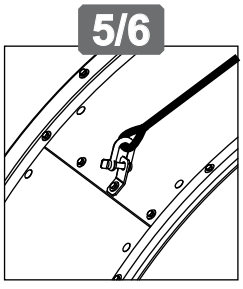
Shackle Ø 24mm



Rope around mount angle

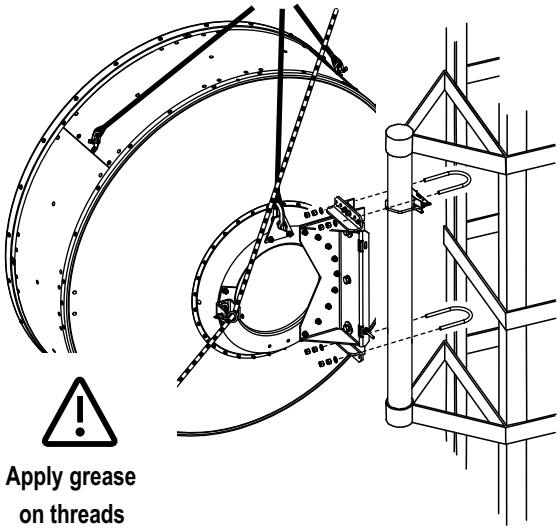


Shackle Ø 24mm

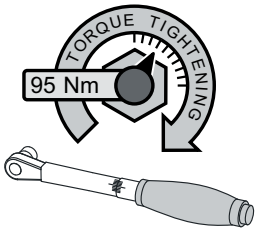


Shackle Ø 8mm (x2)

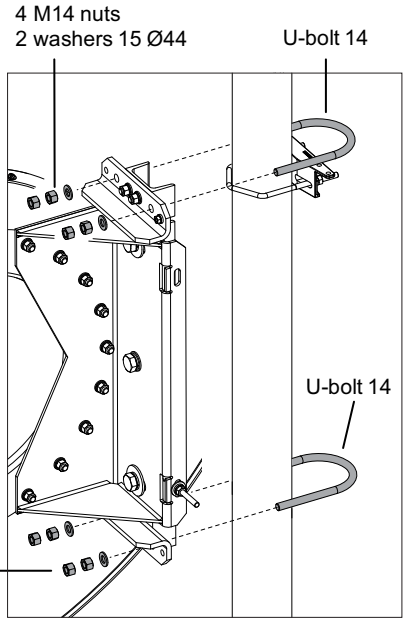
19 – Installation on pipe support (offset left principle)



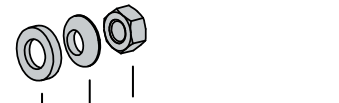
Apply grease on threads

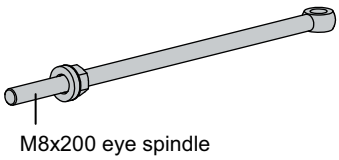


In opposite diagonal mode

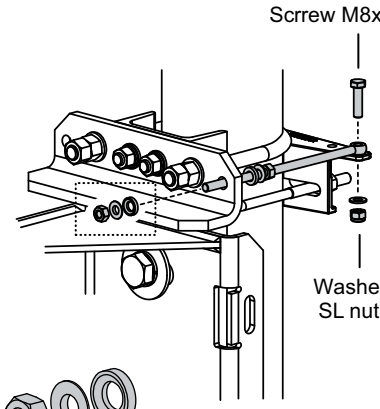


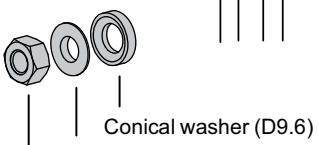
20 – Azimuth spindle installation (offset left principle)



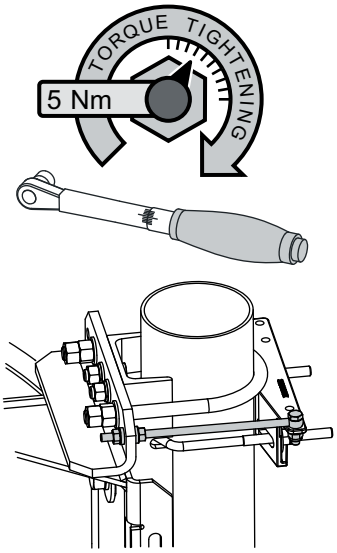


Azimuth spindle pre-assembled

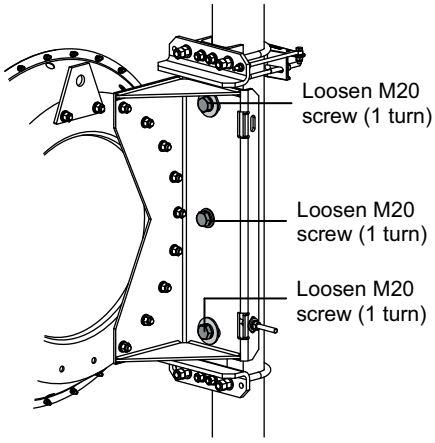


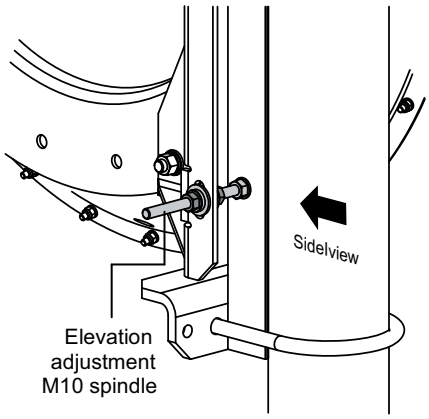


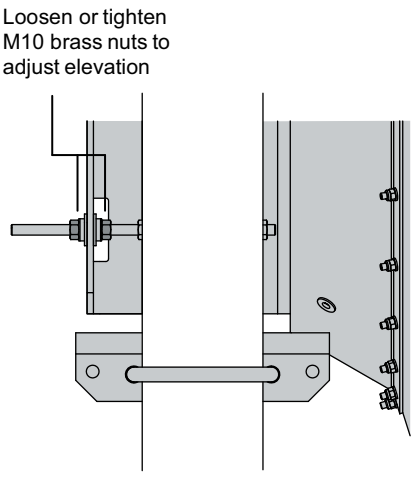
Apply grease on threads



21 – Elevation adjustment (offset left principle)

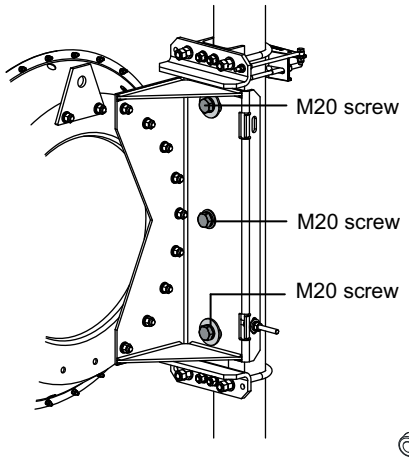


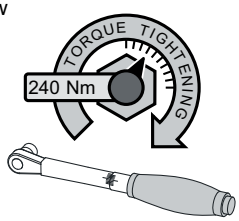


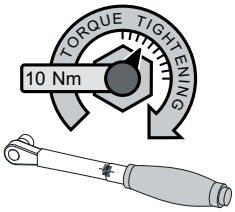


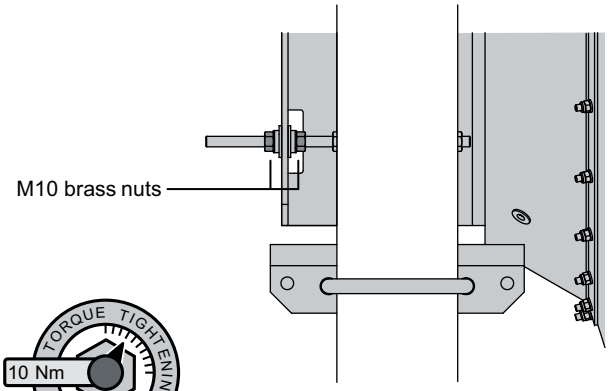
(Side view)

After complete adjustment









(Side view)

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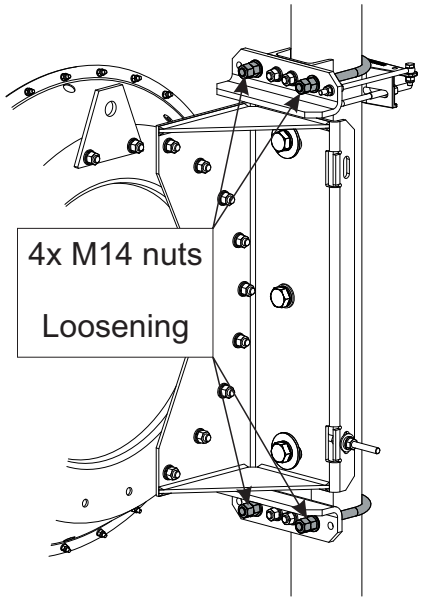
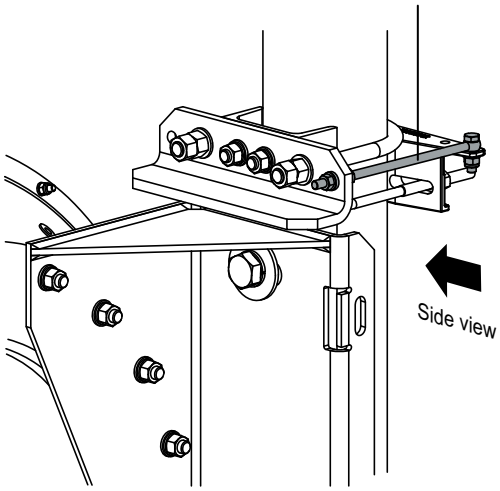
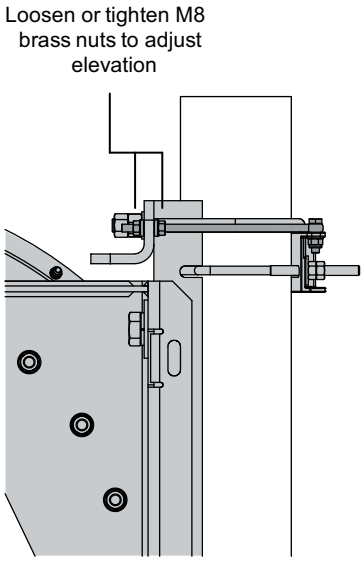
22 – Azimuth adjustment (offset left principle)

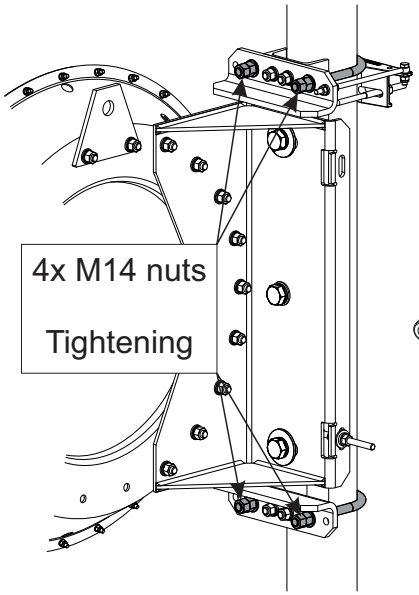


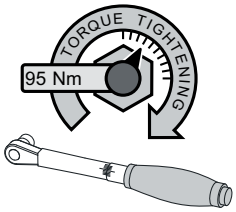




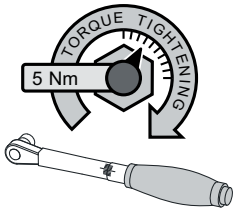
(Side view)

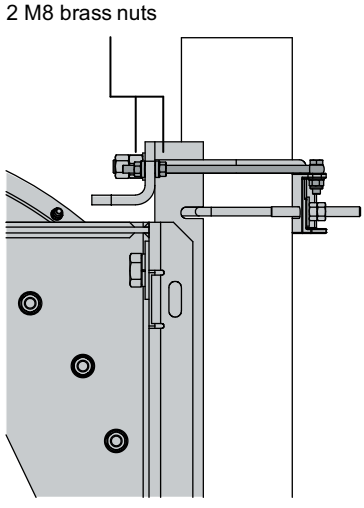
After complete adjustment





In opposite diagonal

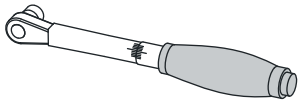




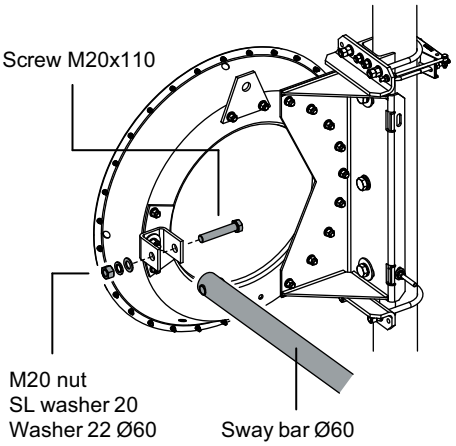
(Side view)

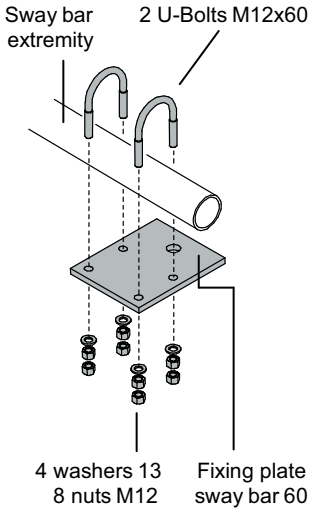
23 – Sway bar installation (offset left principle)

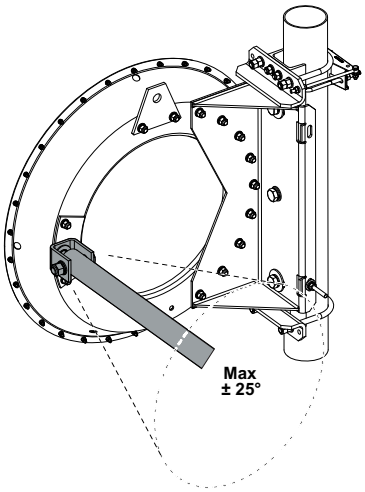
Apply grease on threads.
After sway bar positioning, torque tighten all articulation bolted joints



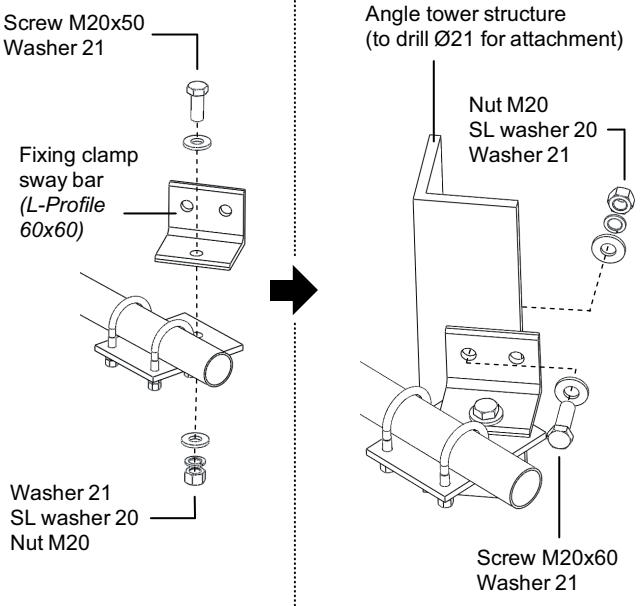
Torques to apply on GREASED hardware	
M12	M20
50 Nm	240 Nm





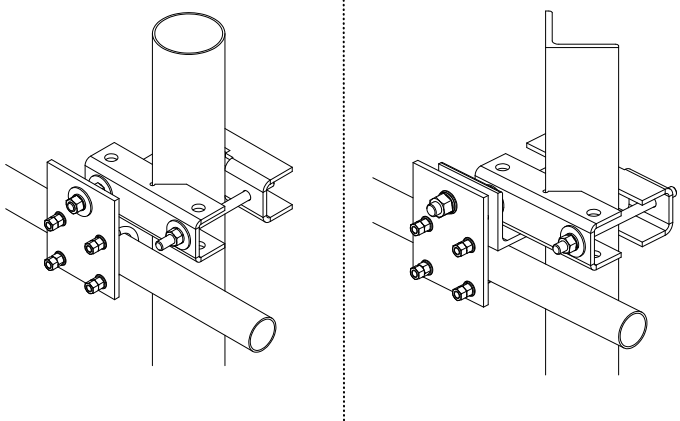


Sway bar installation on tower without sway bar kit option



Sway bar installation on tower with 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**

24 – Final check

When the installation of the antenna has been fully completed, it is necessary to make sure that the installation instructions have been followed in all aspects.
It is especially important to check that not any screws are missing, losing or seize. Please check also that there is not crack, bump or deep scratch on the radome and reflector.