

639855 Revision E, NOV 2020

AEKT-N1 and AEKT-430-N1 Antenna Enclosure Kit - For Nokia MAA (m-MIMO) Active Antennas

## INTRODUCTION AND GENERAL INFORMATION

This document explains how to install a CommScope AEKT-N1 or AEKT-430-N1 Antenna Enclosure Kit on a vertical 60-115mm diameter cylindrical mounting pole suitable for antenna installations. The AEKT-N1 and AEKT-430-N1 Enclosure are compatible with various specific models of Nokia n78 m-MIMO Active Antennas (MAA). For a list of supported Nokia MAA products, please contact your Nokia representative.

These Antenna Enclosure modules are specifically compatible with certain CommScope passive antenna types up to 2.1m long which feature a 498 x 197 mm (WxD) radome housing (AEKT-E1 only) and 430 x 197 mm (WxD) radome housing (AEKT-430-N1 only). The passive antenna should be located directly below (in close proximity) to the Antenna Enclosure as indicated in these Instructions.

**NOTE:** A special Mount Kit for the passive antenna must be purchased separately and installed prior to the installation of the Antenna Enclosure module - order part number BSAMNT-AEKT (Qty 1 Kit required per passive antenna) . This will require the de-installation of the passive antenna if already installed with different brackets. When the passive antenna is re-installed with this Mount Kit, the Antenna Enclosure may then be installed (along with the Nokia MAA if applicable).

### Installation Scenario #1 - Nokia MAA unit to be installed at a later date (Enclosure empty).

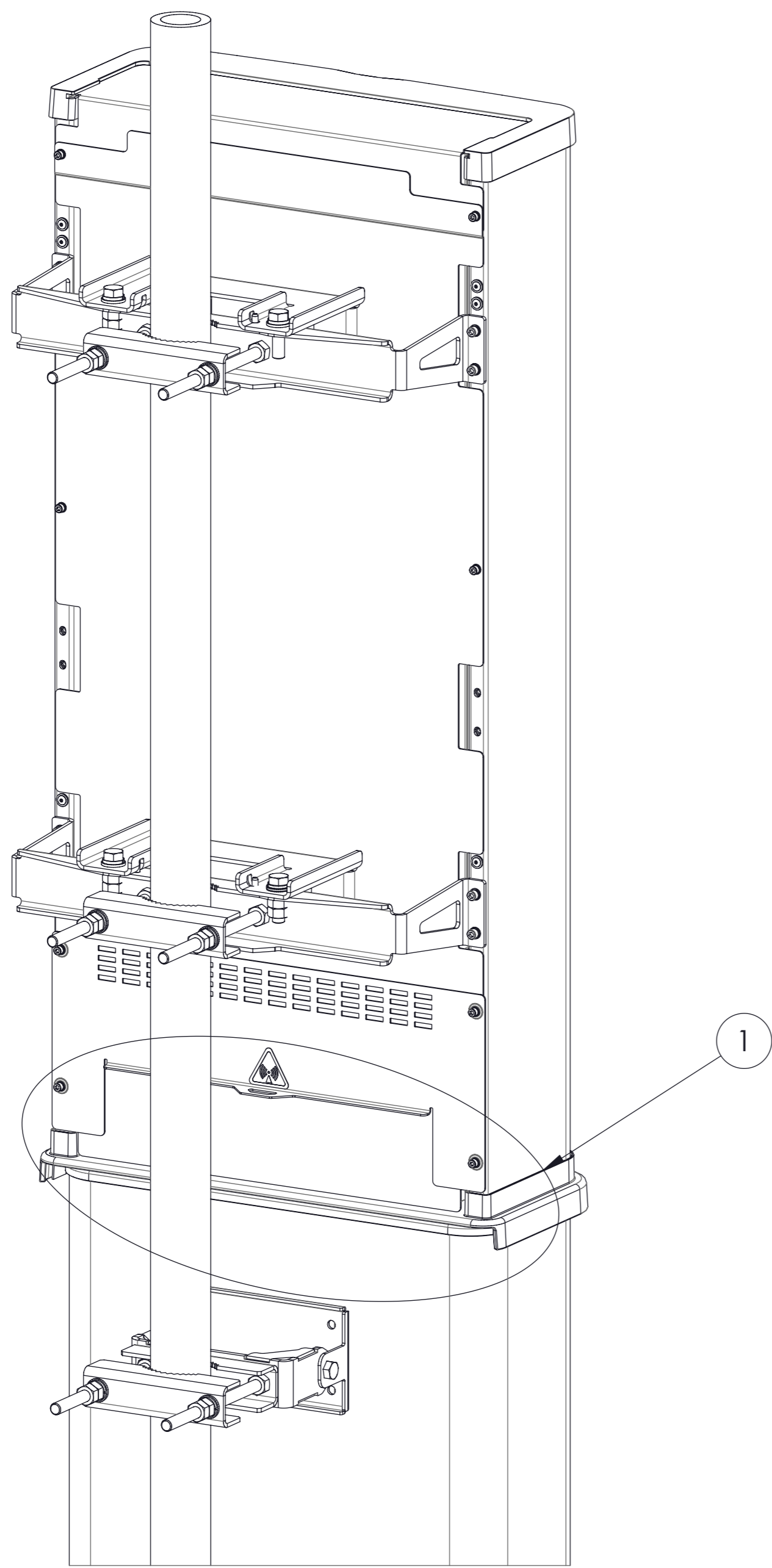
The Antenna Enclosure can be installed if the Nokia MAA unit is to be installed at a later date (Enclosure empty). To protect the Enclosure, three Wind Shields are fitted to the rear of the unit at the top, middle and bottom positions. These should always remain installed whilst the Enclosure is empty. The mounting brackets and hardware for the Nokia MAA are contained in Kit type AEKTMNT-N1 which is included with AEKT-N1 & AEKT-430-N1. These brackets and associated hardware will need to be safely stored until required.

### Installation Scenario #2 - Nokia MAA unit to be installed in the Antenna Enclosure.

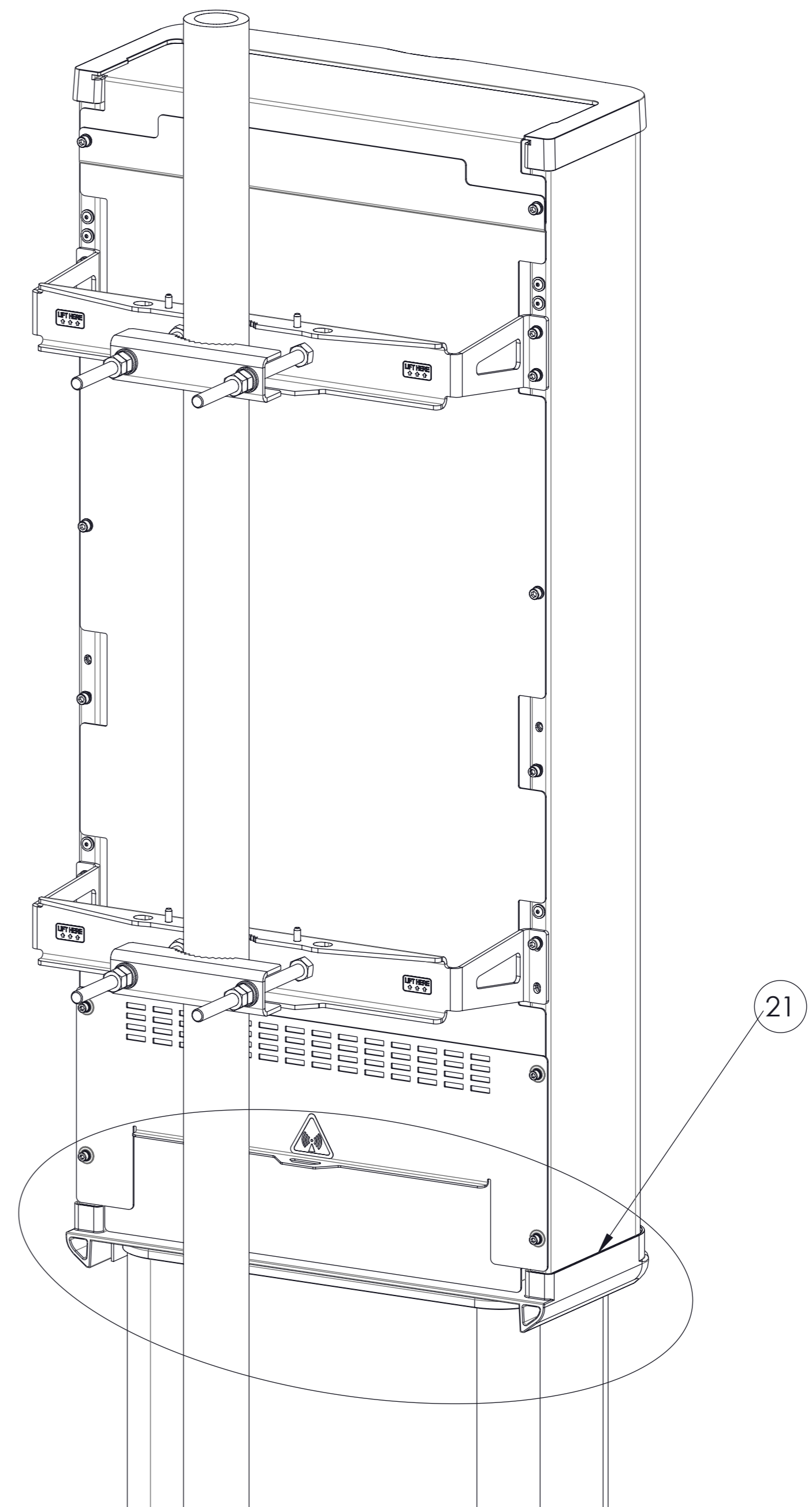
When the Nokia MAA unit is to be installed, the entire Antenna Enclosure will need to be removed from the mounting pole if already installed. The MAA mounting brackets and associated hardware (for installation of the MAA inside the Enclosure) should be retrieved if previously stored. The installation of the MAA in the Antenna Enclosure will require the removal of the top and middle windshields. These should be safely retained as they may be required at a later date. In some cases the bottom windshield will have to be temporarily removed to facilitate MAA installation, but is to be re-installed along with the "Maintenance Wire" (retains the windshield during maintenance) when completing installation.

**NOTE:** The mounting brackets for the MAA (contained in Kit AEKTMNT-N1) feature a series of numbered holes which enable the MAA unit to be located at its correct position inside the Antenna Enclosure. It is important that the correct hole is selected - this will set the distance between the front face of the MAA relative to the inside face of the Enclosure. Contact your Nokia representative to confirm the correct setting for the MAA unit being installed.

| ITEM NO. | DESCRIPTION                        | AEKTMNT-N1<br>QUANTITY | AEKT-N1<br>QUANTITY | AEKT-430-N1<br>QUANTITY | IMAGE   |
|----------|------------------------------------|------------------------|---------------------|-------------------------|---|
| 1        | RADOME ASSEMBLY                    | -                      | 1                   | -                       |    |
| 2        | WIND SHIELD,MIDDLE                 | -                      | 1                   | 1                       |    |
| 3        | WIND SHIELD,BOT                    | -                      | 1                   | 1                       |    |
| 4        | WIND SHIELD, TOP                   | -                      | 1                   | 1                       |    |
| 5        | SCREW ASSY M5 X 16,SS316           | -                      | 8                   | 8                       |   |
| 6        | SPACER,PLASTIC,ANTI-FALL           | -                      | 4                   | 4                       |  |
| 7        | PIPECLAMP BRACKET NO FLANGE,AEKT   | 2                      | -                   | -                       |  |
| 8        | SCR,HEX,FLANGE,M8-1.25,20,SST,PASS | 8                      | -                   | -                       |  |
| 9        | MOUNTING BRACKET                   | 2                      | -                   | -                       |  |
| 10       | PIPECLAMP BRACKET,W/ PIN           | 2                      | -                   | -                       |  |
| 11       | BOLT,CARRIAGE,M12X200,STL,GALV     | 4                      | -                   | -                       |  |
| 12       | SCR,W/ WSHR,M6X20,SS316            | 8                      | -                   | -                       |  |
| 13       | NUT,HEX,M12,STL,GALV               | 20                     | -                   | -                       |  |
| 14       | WSHR,FLT,M12,13X24X2.5,STL,GALV    | 8                      | -                   | -                       |  |
| 15       | SCR,HCS,HEX,M12X40,STL,GALV        | 4                      | -                   | -                       |  |
| 16       | WSHR,LK,SPLT,M12,STL,GALV          | 8                      | -                   | -                       |  |
| 17       | MAINTENANCE WIRE                   | 1                      | -                   | -                       |  |
| 18       | RADOME ASSY,AEKT-430               | -                      | -                   | 1                       |  |



AEKT-N1 Antenna Enclosure Kit



AEKT-430-N1 Antenna Enclosure Kit

The installation procedures for the AEKT-N1 and AEKT-430-N1 are essentially the same (as described in the following pages).

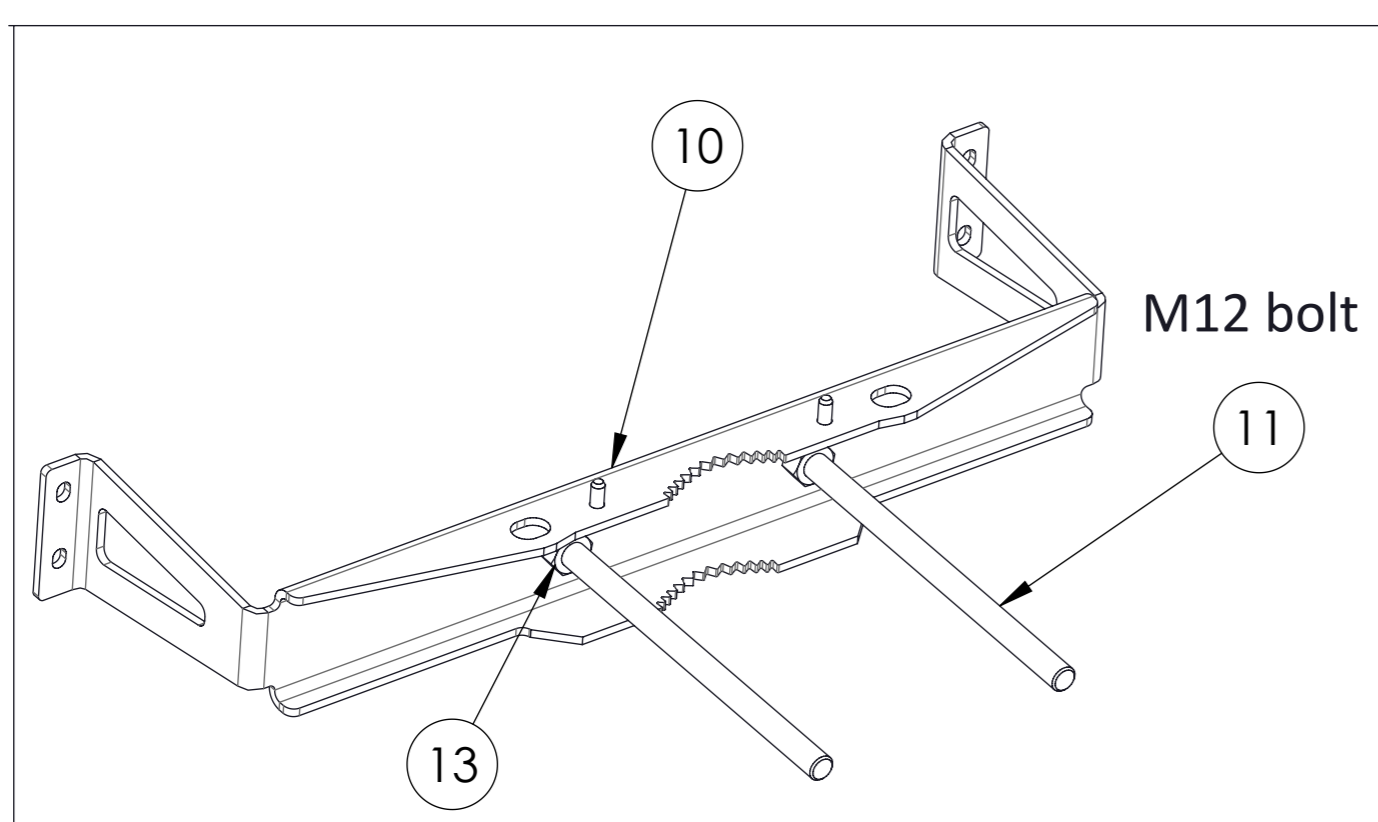
The only significant difference between these products is the bottom endcap (as indicated in the above diagrams).

The AEKT-430-N1 endcap incorporates an extended tapered feature to improve aesthetics when a 430 mm wide CommScope passive antenna is to be located below the Antenna Enclosure.

**Installation Scenario #1 - Nokia MAA unit to be installed at a later date (Enclosure empty).**

**TORQUE SETTINGS FOR HARDWARE**

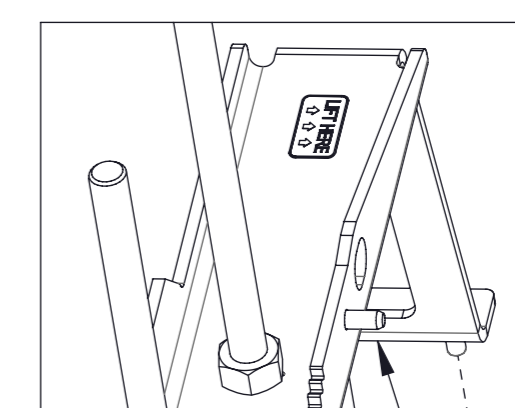
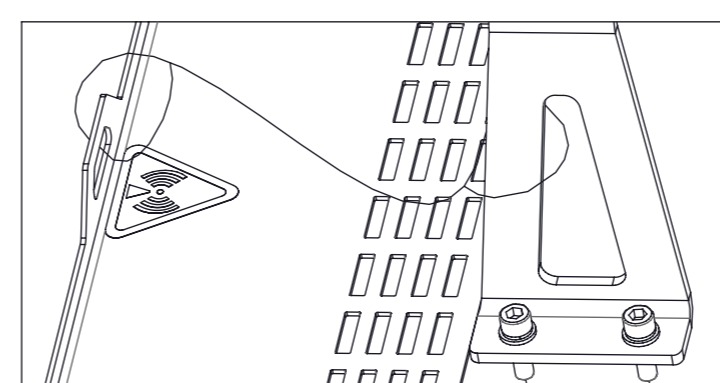
| MAXIMUM TORQUE |                  |
|----------------|------------------|
| M6             | 8.0N.m (6ft.lbs) |
| M12            | 58N.m (43ft.lbs) |



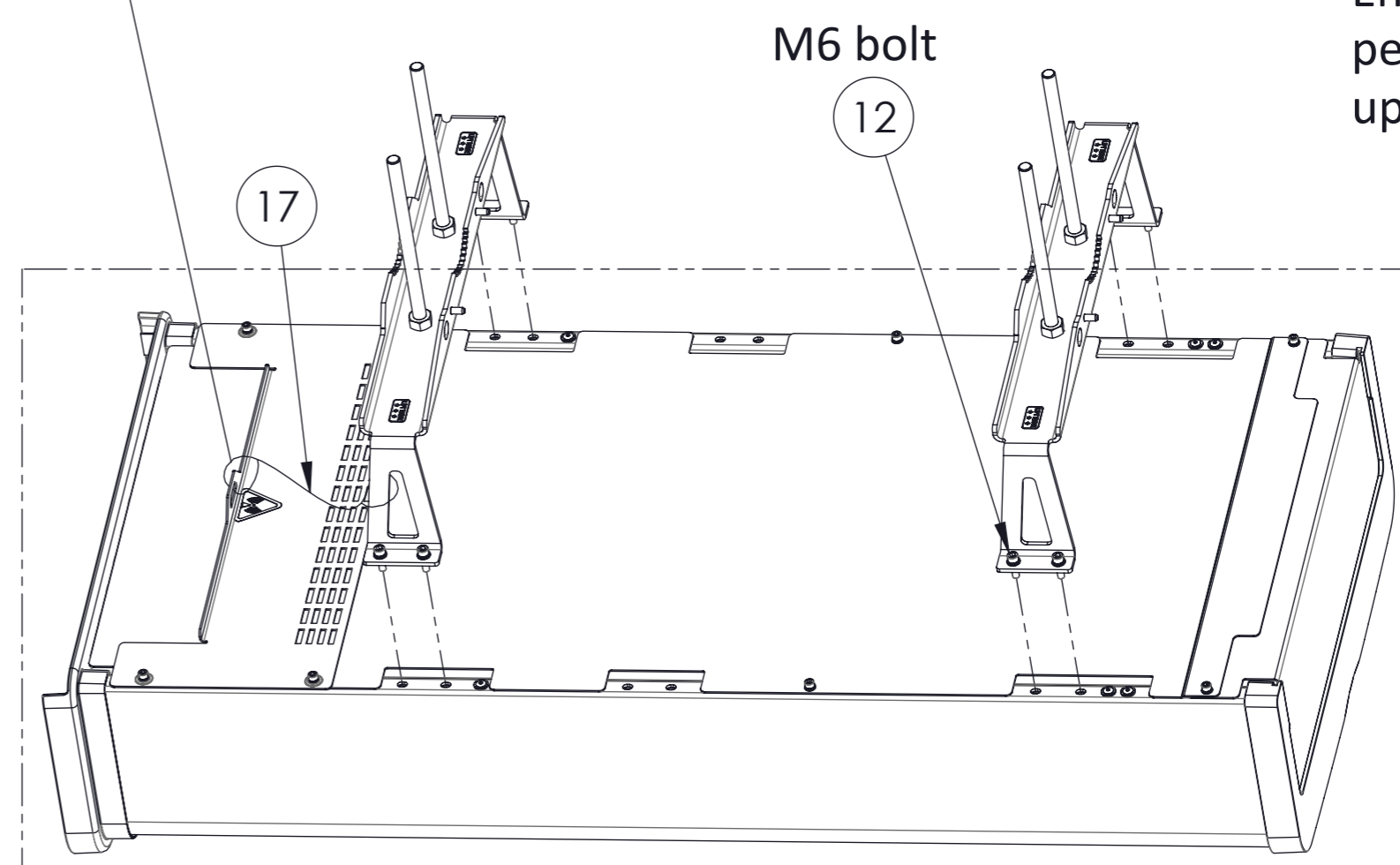
**STEP 1:** Assemble Pipe Mounting Bracket (Qty 2)

**STEP 2:** CAREFULLY place the Enclosure front face down on a clean, flat surface taking steps to protect the unit (use a suitable cushioning material). Install the Pipe Mounting Brackets to Enclosure and Maintenance Wire.

Install Maintenance Wire between tab on bottom windshield and leg of pipe mounting brackets



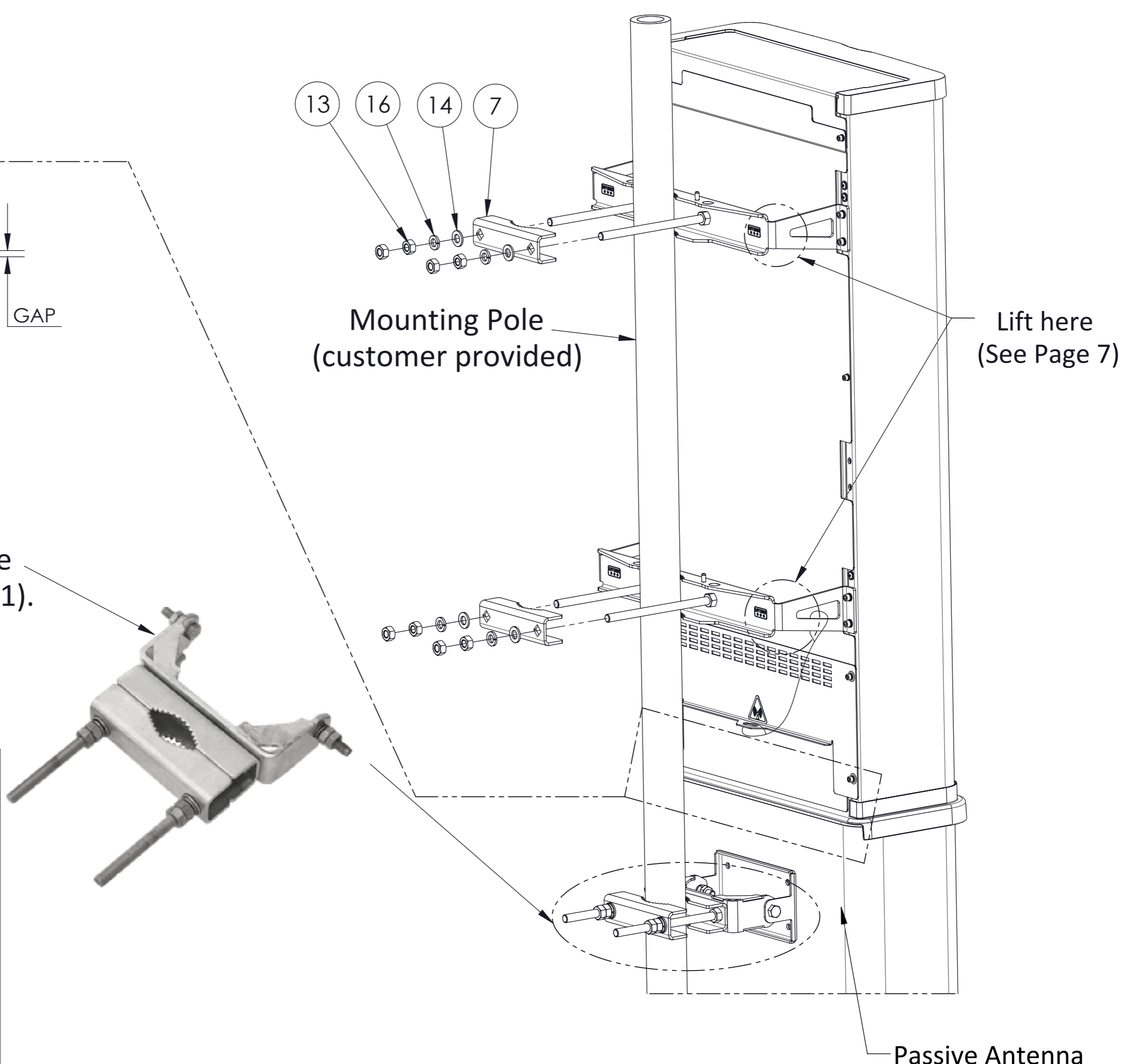
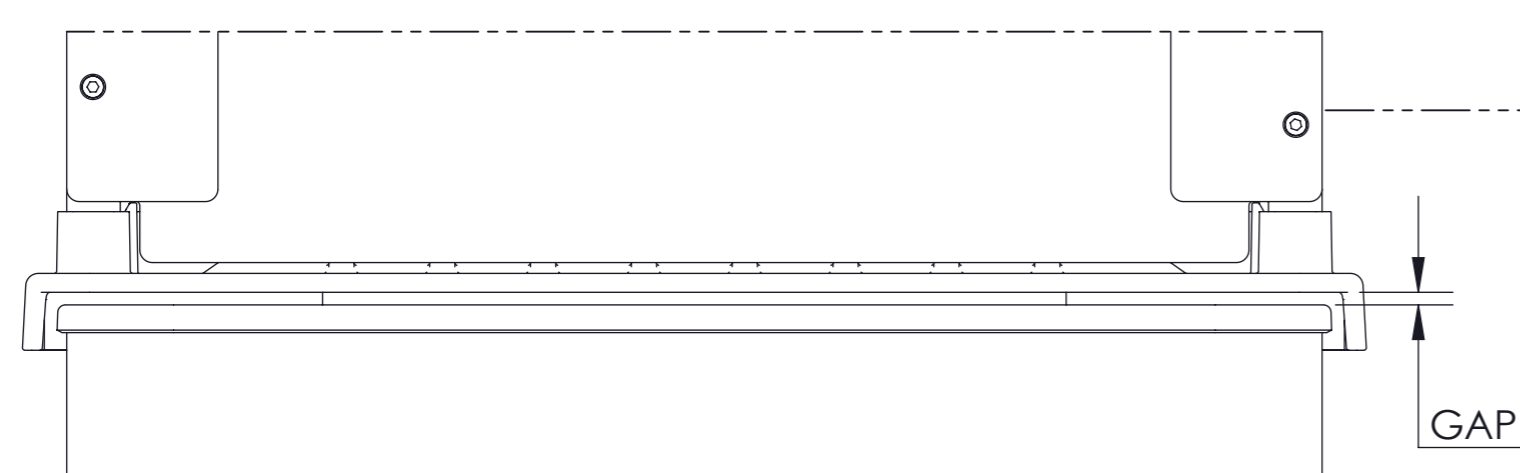
Ensure pegs face upwards



Empty Enclosure

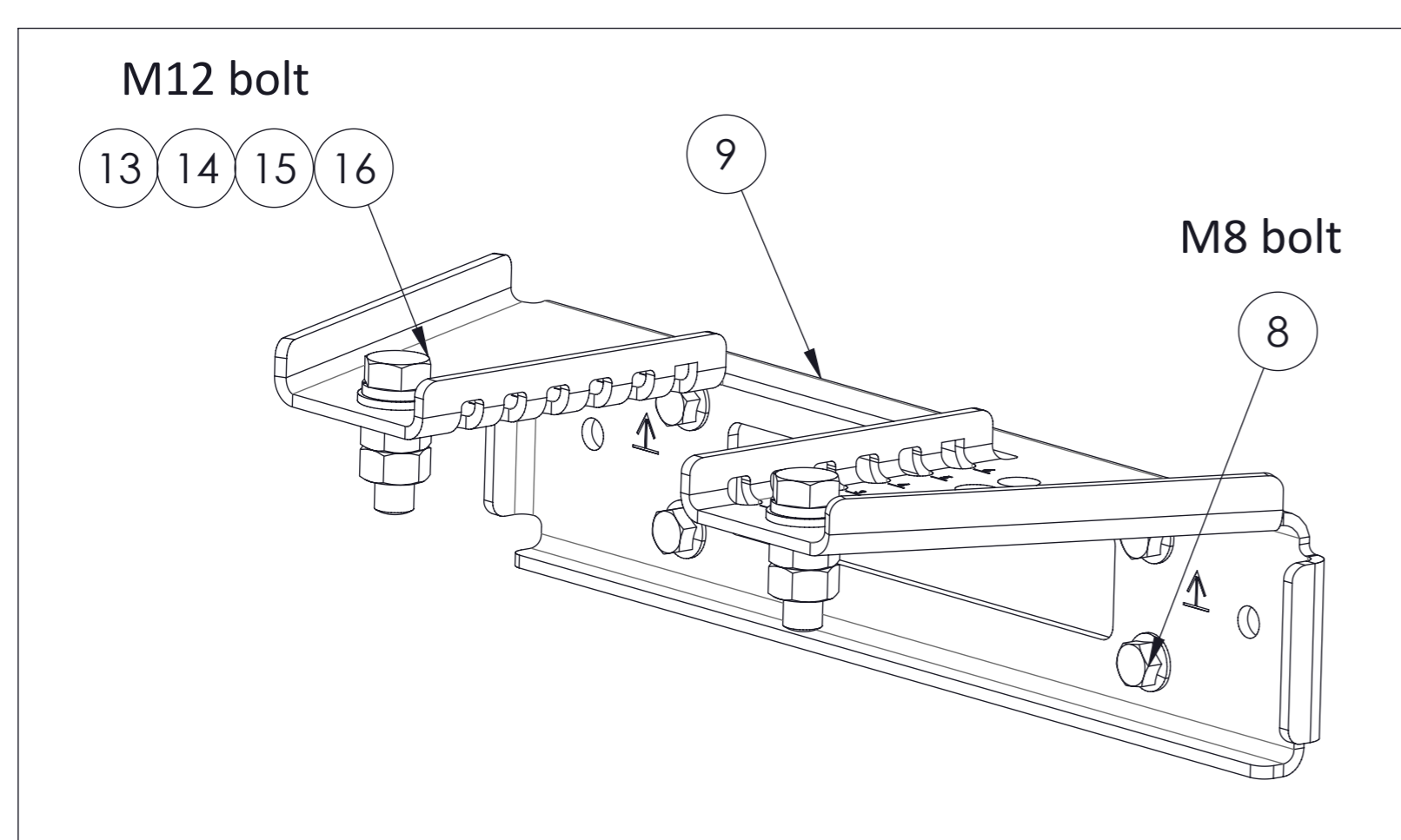
**STEP 3:** Install the Antenna Enclosure on the Mounting Pole (customer provided).

**NOTE:** The Passive Antenna should be installed first before installing the Enclosure.



Take care to avoid excessive contact between Antenna Enclosure and Passive Antenna. Leave a 5mm gap between endcaps

Ensure Passive Antenna has required Mounting Brackets Installed (Type BSAMNT-AEKT — purchase separately, not included on AEKT-N1 / AEKT-430-N1). No mechanical tilting of the Antenna Enclosure / Passive Antenna is possible



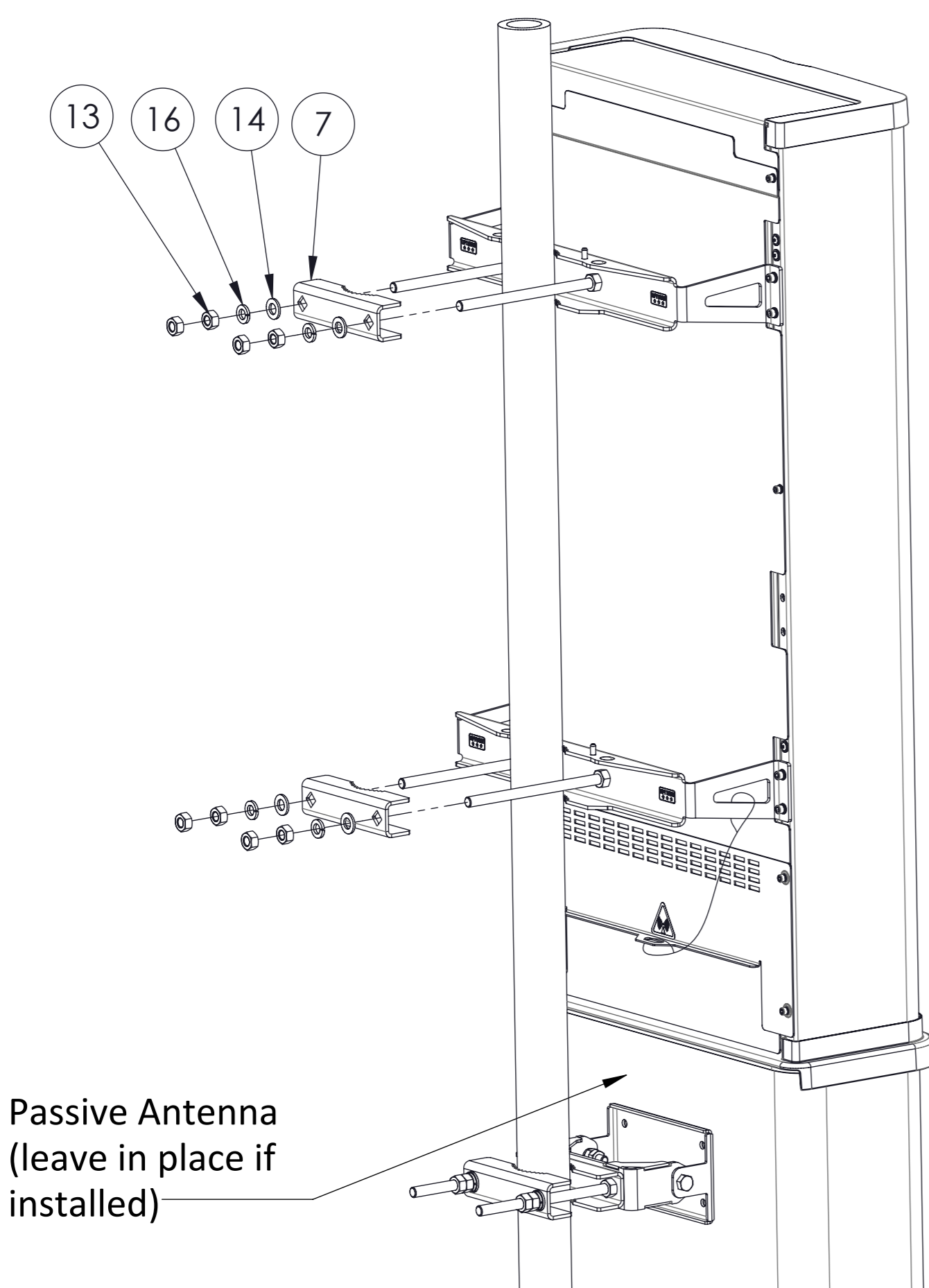
**STEP 4:** Safely store the MAA Mounting Brackets and Hardware until required

## Installation Scenario #2: Nokia MAA unit to be installed in the Antenna Enclosure.

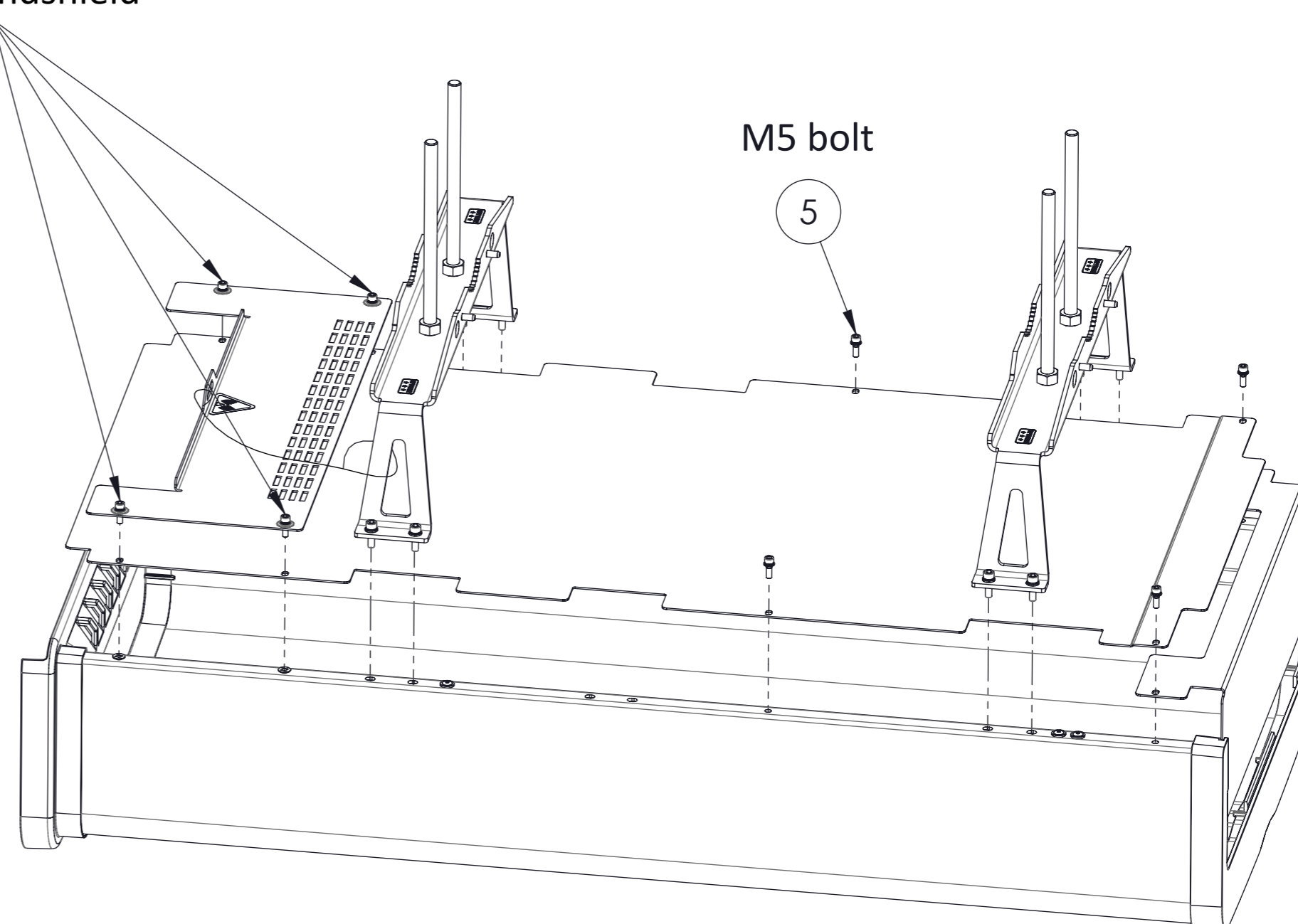
### TORQUE SETTINGS FOR HARDWARE

| MAXIMUM TORQUE |                    |
|----------------|--------------------|
| M5             | 4.6N.m (3ft.lbs)   |
| M6             | 8.0N.m (6ft.lbs)   |
| M8             | 20.0N.m (14ft.lbs) |
| M12            | 58N.m (43ft.lbs)   |

**STEP 1:** If an Antenna Enclosure is already installed, remove it from the pole. Use the lifting points shown on Page 7. If not installed go straight to STEP 2.

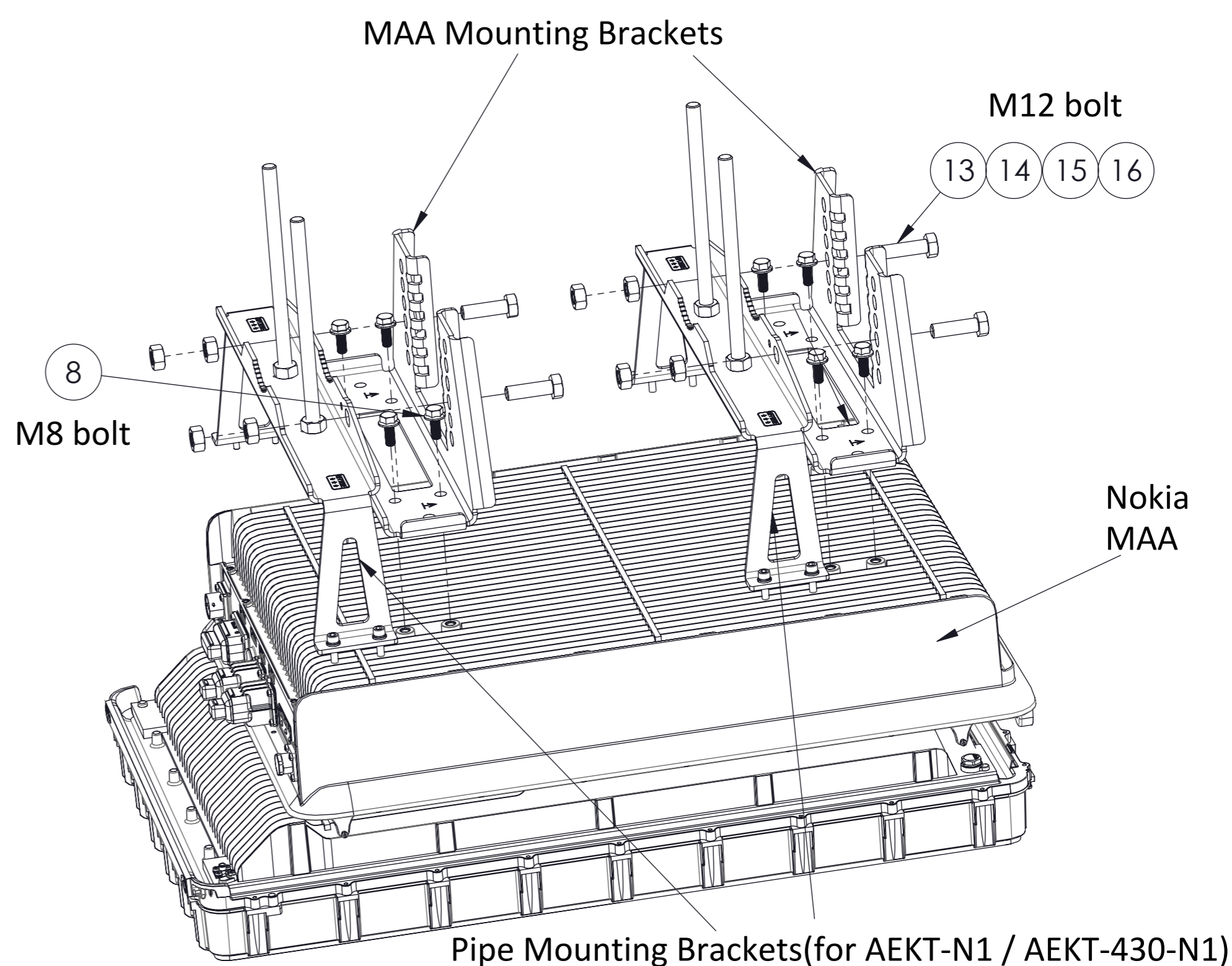
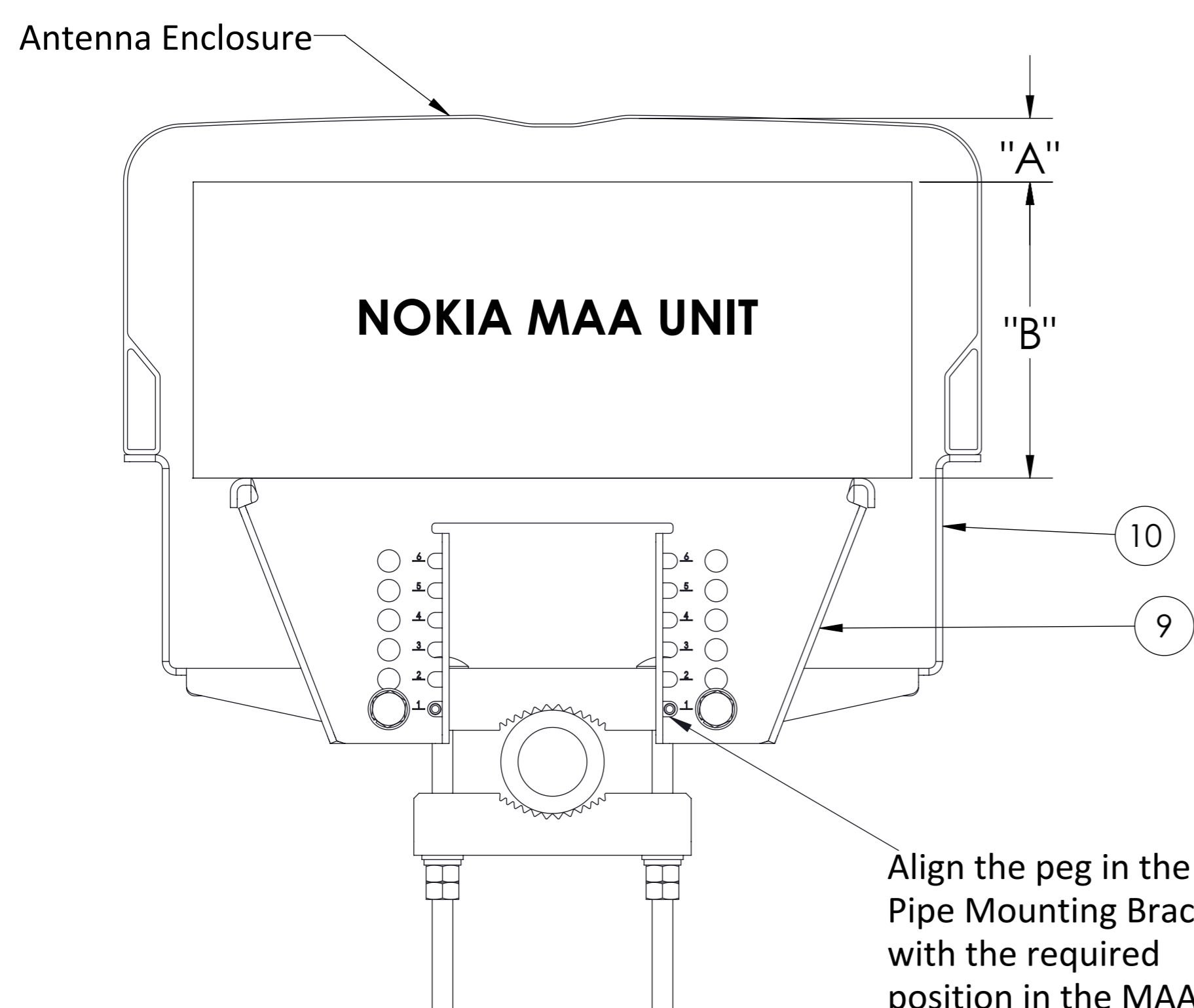


Do not remove the 4 screws and plastic retaining washers from bottom windshield



**STEP 2:** CAREFULLY place the empty Enclosure front face down on a clean, flat surface taking steps to protect the unit (use a suitable cushioning material). Remove all 3 Windshields and both Pipe Mounting Brackets (if fitted) and retain all hardware.

**STEP 3:** CAREFULLY place the Nokia MAA unit front face down on a clean, flat surface taking steps to protect the unit (use a suitable cushioning material). Install the two MAA mounting brackets to the MAA unit with the M8 hardware provided. Install the two Pipe Mounting Brackets to the MAA Mounting Brackets with the M12 hardware provided.



**NOTE:** The Pipe Mounting Brackets must be installed in the correct location on the MAA brackets to ensure that the MAA unit is located at the correct position inside the Antenna Enclosure. There are 6 positions which control the distance ("A") from the front face of the MAA to the inside surface of the Enclosure. The correct setting is important for correct operation of the MAA. Contact Nokia for the correct setting. The table below can be used as a reference where "B" is the depth of the MAA unit.

| Position | 1   | 2     | 3     | 4     | 5     | 6   |
|----------|-----|-------|-------|-------|-------|-----|
| A+B(mm)  | 208 | 225.2 | 242.4 | 259.6 | 276.8 | 294 |



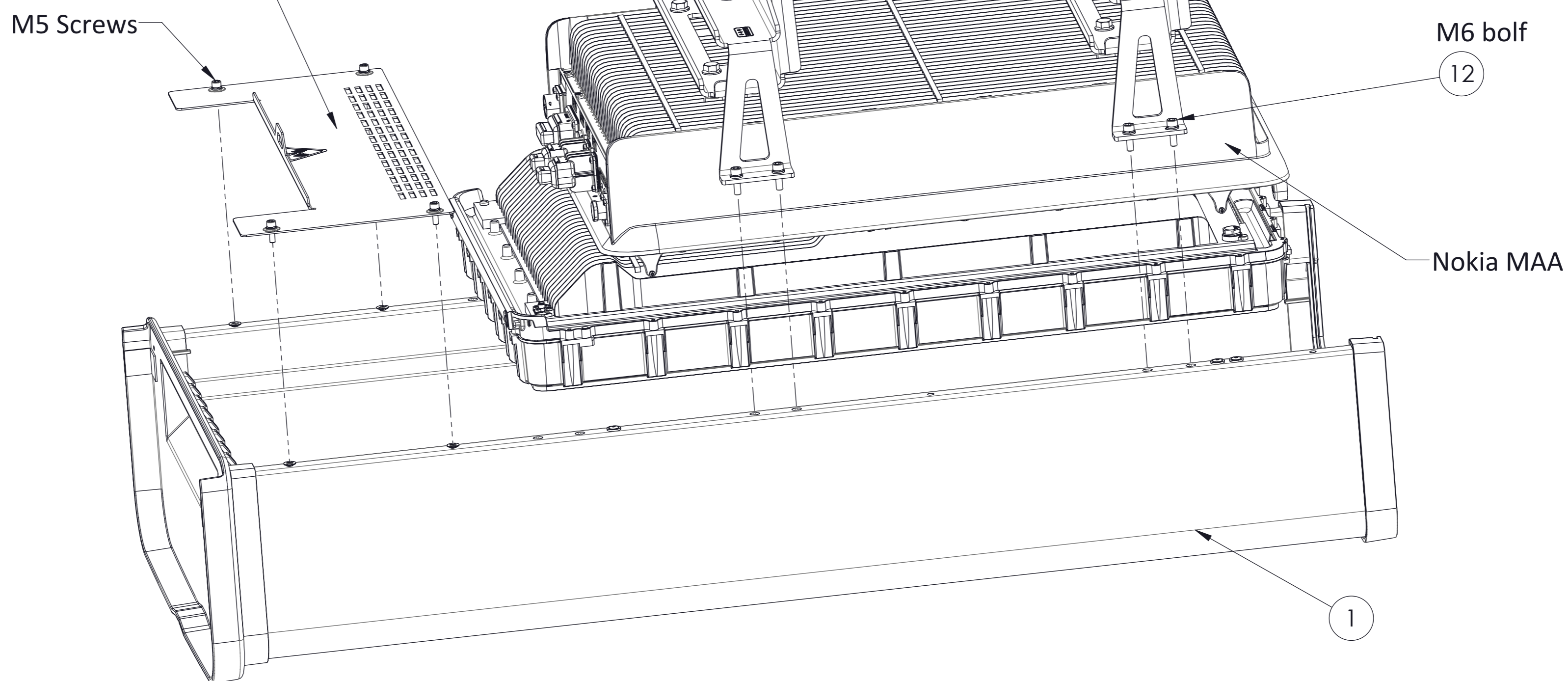
**NOTICE:** MAX RADIO WEIGHT IS 46 KG

**Installation Scenario #2 (Cont.): Nokia MAA unit to be installed in the Antenna Enclosure.**

**TORQUE SETTINGS FOR HARDWARE**

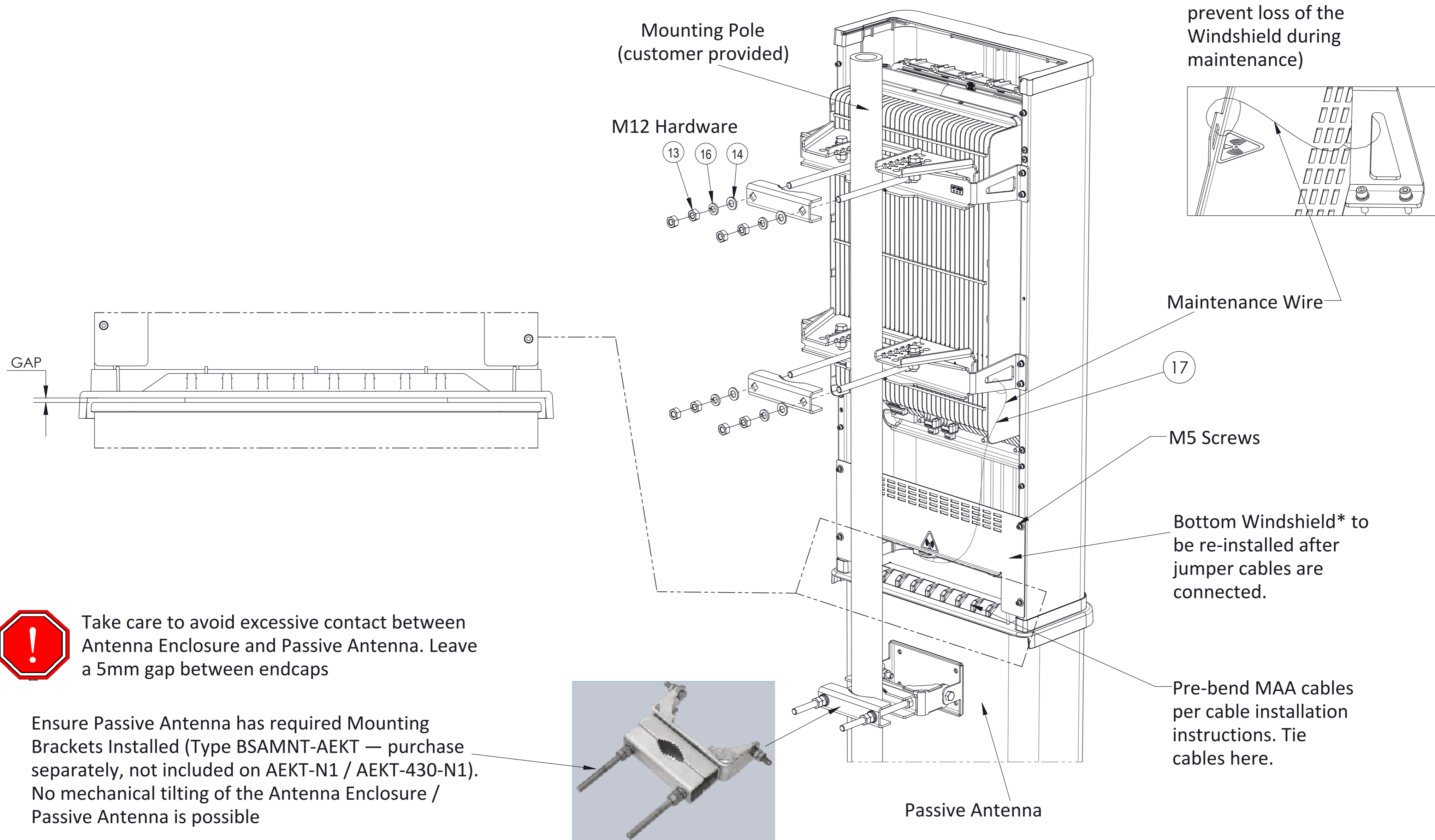
| MAXIMUM TORQUE |                   |
|----------------|-------------------|
| M5             | 4.6N.m(3ft.lbs)   |
| M6             | 8.0N.m (6ft.lbs)  |
| M8             | 20.0N.m(14ft.lbs) |
| M12            | 58N.m (43ft.lbs)  |

**\* NOTE:** The Bottom Windshield may be omitted if it interferes with the installed MAA unit or associated cables



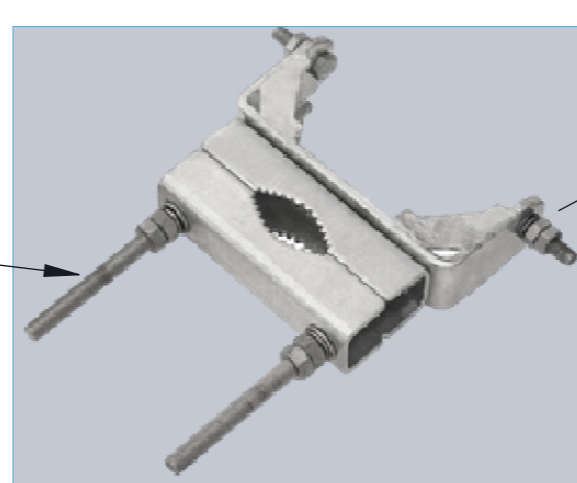
**STEP 4:** Carefully lift the MAA unit and mounting bracket assembly and lower it into position on the enclosure. Install the 8 x M6 hardware. Install the bottom windshield\*.

Install Maintenance Wire between tab on bottom windshield and leg of pipe mounting brackets (to prevent loss of the Windshield during maintenance)

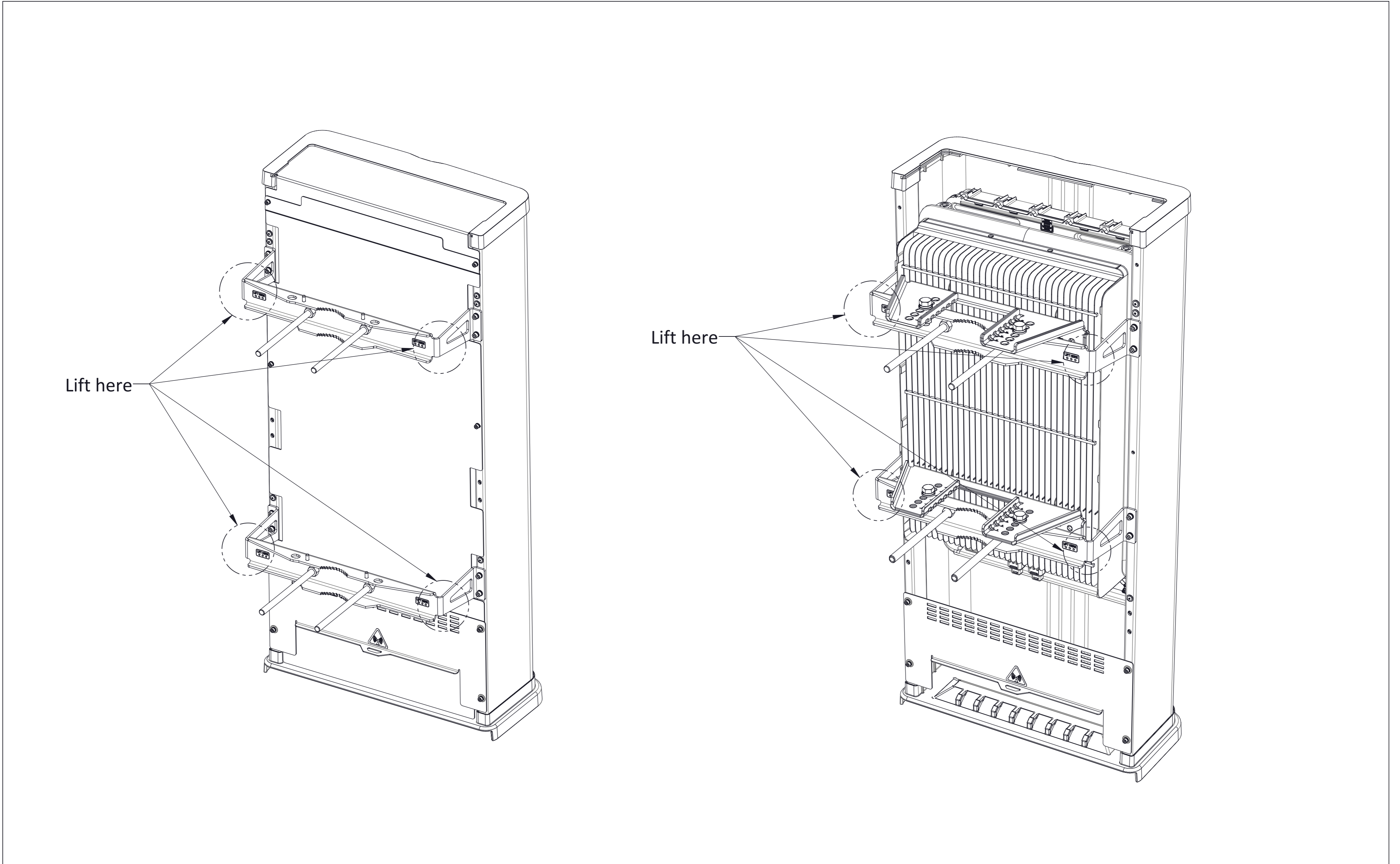


Take care to avoid excessive contact between Antenna Enclosure and Passive Antenna. Leave a 5mm gap between endcaps

Ensure Passive Antenna has required Mounting Brackets Installed (Type BSAMNT-AEKT — purchase separately, not included on AEKT-N1 / AEKT-430-N1). No mechanical tilting of the Antenna Enclosure / Passive Antenna is possible



**STEP 5:** Carefully lift the Antenna Enclosure / MAA assembly (refer to the lifting points on Page 7) and install on the Mounting Pole (customer provided). Tighten all hardware. Install Maintenance Wire. After jumper cable installation re-install Bottom Windshield\*. NOTE: The Passive Antenna should be installed first before installing the Enclosure.



**Location of Lifting Points**

**SAFETY NOTICE**

The installation, maintenance, or removal of an antenna requires qualified, experienced personnel. CommScope installation instructions are written for such installation personnel. Antenna systems should be inspected once a year by qualified personnel to verify proper installation, maintenance, and condition of equipment.

CommScope disclaims any liability or responsibility for the results of improper or unsafe installation practices.

It is recommended that transmit power be turned off when the field installation is performed. Follow all applicable safety precautions as shown on this page.



Do not install near power lines. Power lines, telephone lines, and guy wires look the same. Assume any wire or line can electrocute you.



Do not install on a wet or windy day or when lightning or thunder is in the area. Do not use metal ladder.



Wear shoes with rubber soles and heels. Wear protective clothing including a long-sleeved shirt and rubber gloves.