

A997-0083 Revision N, May 2019

Instruction Manual, 353 mm (13.9") Profile Panel Antennas

**General**

This instruction manual contains all necessary information required to assist in the correct installation of the Panel Antennas of 353 mm (13.9") width. These antennas can be supplied with either, manually adjustable electrical downtilt or AISG-compatible remotely controlled electrical downtilt. Mechanical downtilt is also available if required, depending on the type of mounting kit selected.

Following symbols can be found next to text outlining important information.



Please follow the procedure marked with this symbol precisely. Non-compliance may lead to damage of the product.



Handy tips when installing product.

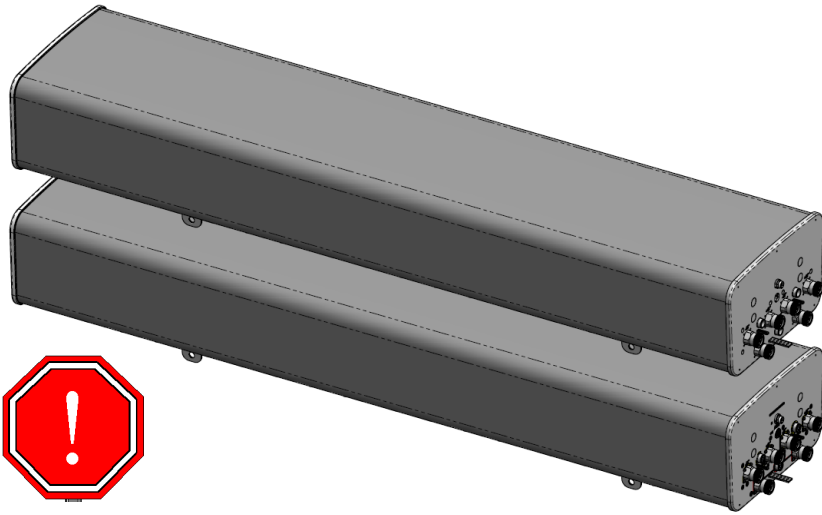
**Unpacking**

**Make sure that the antenna and the accessory items listed below are provided and have not been damaged during transport.**

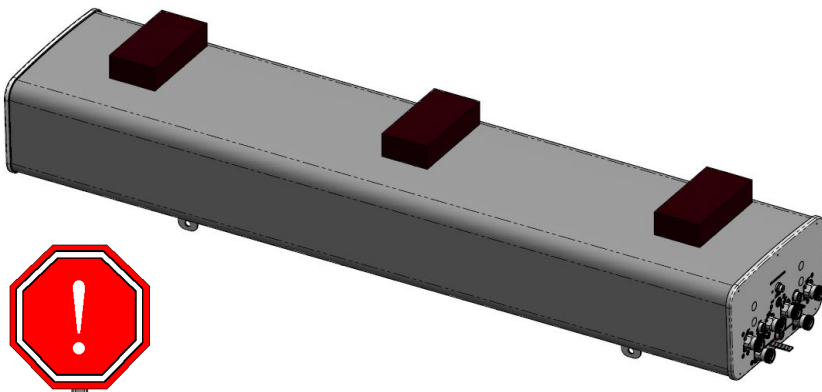
- Antenna
- Mounting kit (mounting kit components for each configuration are shown in Figures 2 and 3).
- Hex key 6mm AF (supplied with adjustable downtilt antennas only).

Mounting Kit Type	600 mm – 870 mm (23.6" – 34.3") Antennas	870 mm – 1200 mm (34.3" – 43.3") Antennas	1200 mm – 1575 mm (43.3" – 62") Antennas	1575 mm – 2700 mm (62" – 106.3") Antennas
Fixed Downtilt	F-042-GL-E	F-042-GL-E	F-042-GL-E	F-042-GL-E
Mechanical Downtilt	T-095-GL-E	T-045-GL-E	T-041-GL-E	T-029-GL-E
Tilt range	0° -15° in 3° steps	0°, 2° -10° in 1° steps	0° - 12° in 1° steps	0° - 8° in 1° steps
Mounting Bracket Spacing Dim A (Fig 4)	480 mm (18.9")	716 mm (28.2")	976 mm (38.4")	1400mm (55.1")

**Table 1: Mounting Kit Part Numbers for Different Antennas**



  
DO NOT STACK  
UNPACKED ANTENNAS



  
DO NOT PLACE POINT  
LOADS ON ANTENNA  
RADOME

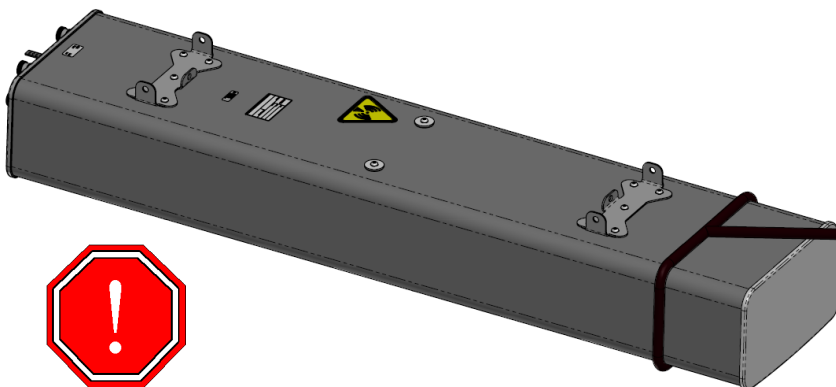
## Installation Instructions



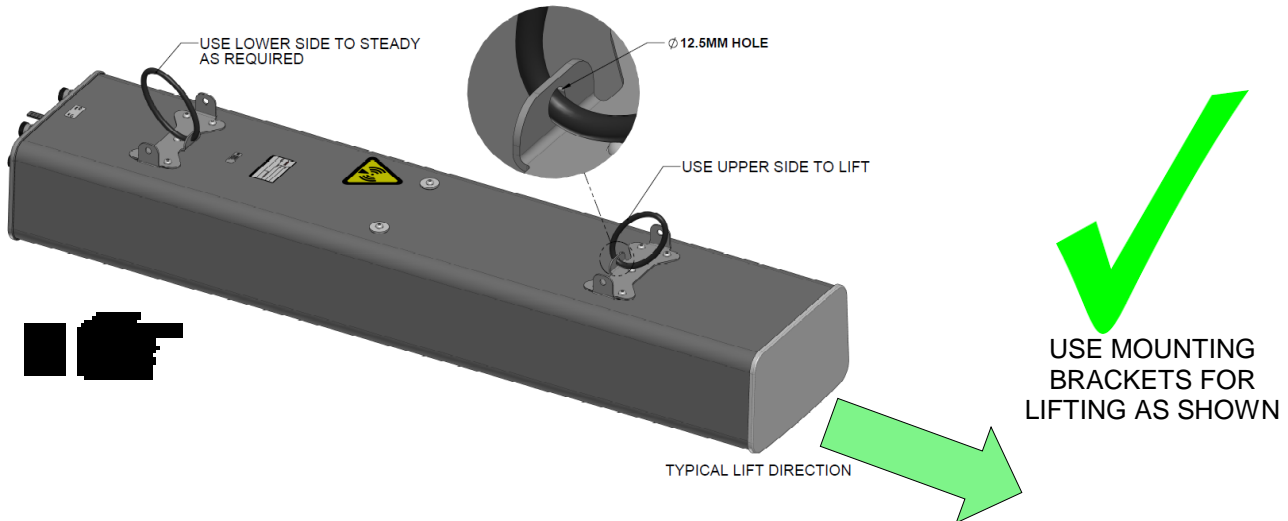
Ensure a torque spanner is used when tightening fasteners, see the mounting kit diagrams on the following pages for the correct torque recommendations.



Ensure antenna is installed with the connectors at the bottom.



  
DO NOT USE ROPE OR  
CHAIN OR SLING  
ATTACHMENT AROUND  
ANTENNA FOR LIFTING



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.

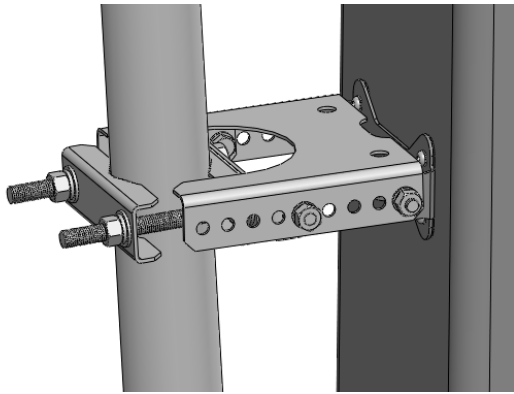
## Installation Instructions – Adjustable Downtilt Mounting Kit T-029-GL-E, T-041-GL-E, T-045-GL-E, T-095-GL-E

Assemble mounting kits as per Figure 2 and 3 of this document.

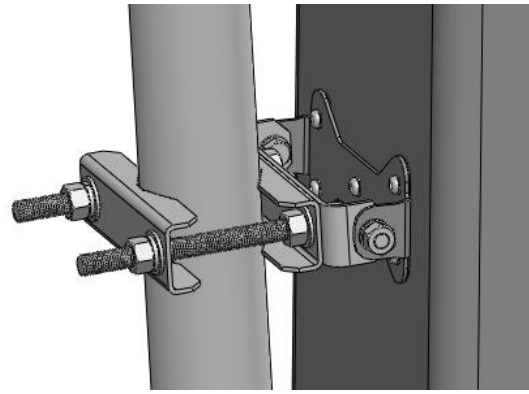
1. Attach the mounting kit assembly to the antenna, before trying to clamp the brackets to the pole.
2. Downtilt angles in 1° increments can be obtained with the correct adjustment of the tilt arm bracket.
  - Downtilt can be achieved by aligning the corresponding hole in the tilt arm to the pivot bracket which mates against the mounting pole, as shown in Figure 4. The first hole is for 1° downtilt\*, with each consecutive hole resulting in an increased inclination of 1°.
  - (\*Note for the T-045-GL-E kit the tilt is 0° then 2° - 10° in 1° steps. For the T-095-GL-E kit the tilt starts at 0° and increments in 3° steps)
  - For finer downtilt angle adjustments the distance in between the top and bottom mounting bracket on the pole can be adjusted.
  - For 0° downtilt the tilt arm may be stowed as show in Figure 4.
  - An inclinometer or other angular measuring device should be used to verify downtilt angle as required.



For typical installations of antennas up to 1575 mm (62") long the minimum recommended pipe diameter is 60 mm (2.4"). For antennas over 1575 mm (62") long the minimum recommended pipe diameter is 75 mm (3").

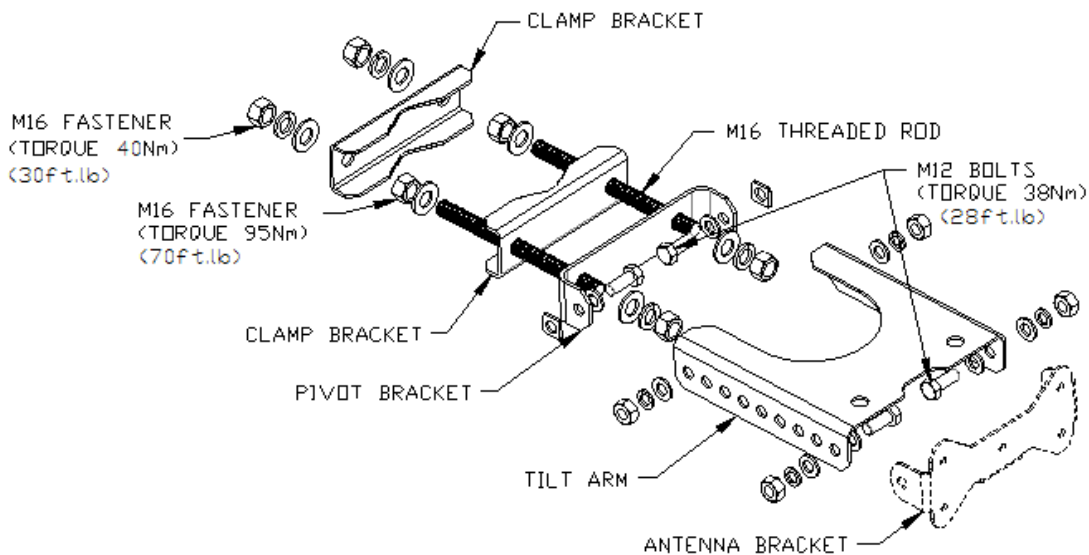


Upper Mounting Bracket Assembly  
( To Suit Pipes OD 75-115 mm)

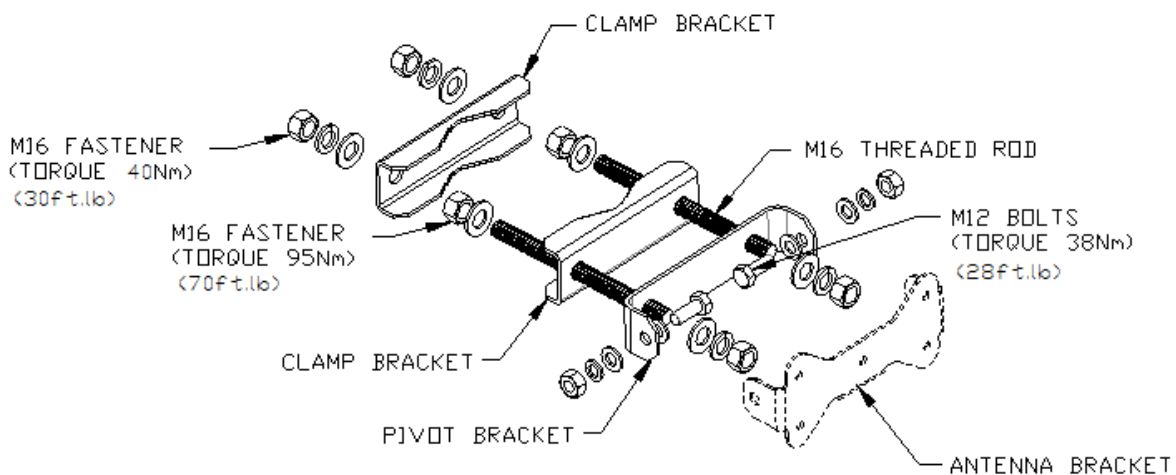


Lower Mounting Bracket Assembly  
(To Suit Pipes OD 75-115 mm)

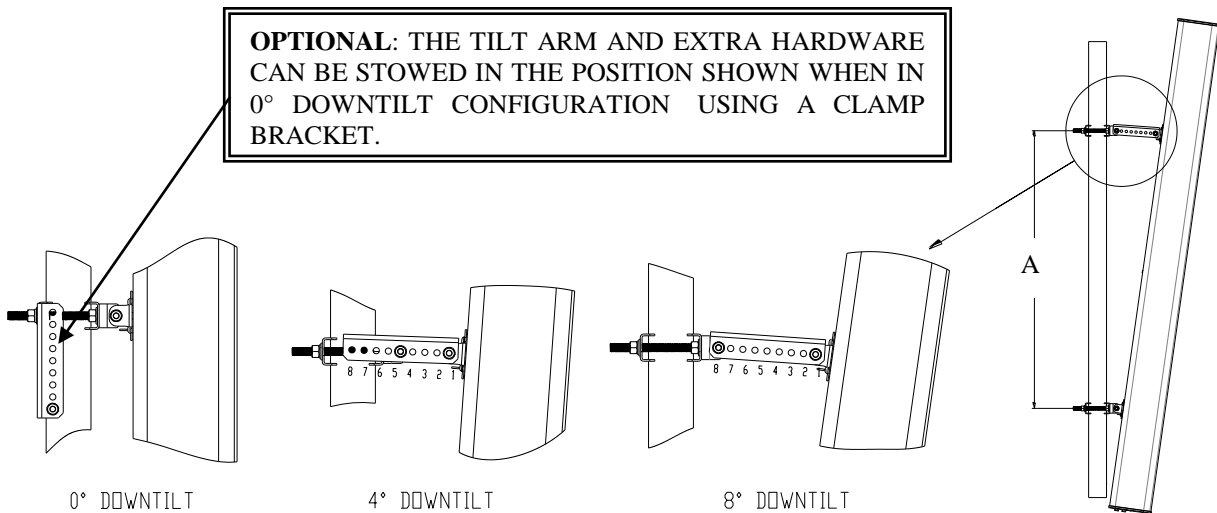
**Figure 1: Correctly Assembled Mounting Kit Using Clamp Bracket for Mechanically Adjustable Downtilt Antenna**



**Figure 2: Typical Exploded Assembly for Upper Mounting Bracket using Clamp Bracket**



**Figure 3: Exploded Assembly for Lower Mounting Bracket using Clamp Bracket**  
(This configuration should also be used for the upper Mounting Bracket when 0° tilt is required)



**Figure 4: Typical Example of Upper Bracket Placement for Various Downtilts**

## Operation of Antennas

**Manual  
Electrically  
Adjustable  
Downtilt  
Antennas**

The beam downtilt below the horizon is adjusted by rotating the hex socket located at the bottom of the antenna). Turning the hex socket in a clockwise direction increases the beam downtilt below the horizon. Turning the hex socket in an anti-clockwise direction decreases the beam downtilt below the horizon. Beam downtilt setting in degrees below boresight can be read off the scale at the base of the antenna. The downtilt setting is read from the face of the antenna bottom end cap at the point where the scale protrudes.

**AISG  
Compliant RET  
Antennas**

AISG Compliant antennas are compatible with AISG compliant control unit equipment. For operation of downtilt using AISG compliant controllers see the controller documentation. Where manual override of RET control is provided at the antenna bottom end cap, operation is identical to that described above for MET antennas.



**WARNING:** During downtilt adjustment ensure the hex socket is not turned past the minimum and maximum positions as shown on the downtilt indicator scale. Forcing the hex adjustment beyond this point may lead to damage of the downtilt mechanism. **Using power drills and electric screwdrivers to adjust downtilt may also lead to damage of the downtilt mechanism.**

## Port and Band Identification

Each RF and/or AISG port on the antenna is numbered and identified in accordance with AISG Standard “AISG Antenna Port Color Coding”.

## Remote Electrical Tilt Connection

The AISG connector fitted to the antenna is designed to accept any AISG compliant cable assembly. After ensuring both connectors are dry, push in the mating connector, then tighten.



Using excessive torque may damage the AISG connection in the antenna.

## RF Cable Connection



The RF connectors fitted to the antenna are designed to fit jumper cables with a corresponding male connector. After ensuring both mating connectors are dry push the male connector in and tighten the connector coupling to the correct torque.

If needed or as required by local procedures a weatherproofing kit may then be fitted to the connection.

If the RF connectors are tightened beyond the recommend torque the RF connection to the antenna may be damaged.

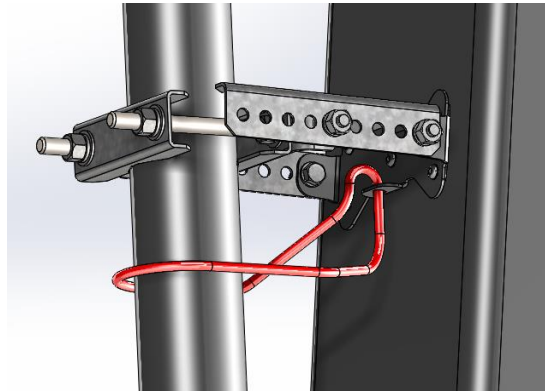
## ADJUSTING MECHANICAL DOWN TILT AFTER INSTALLATION T-029-GL-E, T-041-GL-E, T-045-GL-E, T-095-GL-E



1. Use a tether to secure the antenna’s hoisting eye to the mounting structure. The tether can be a rope, wire rope, chain, or similar material. The tether should be short enough to prevent the antenna from tilting beyond its maximum downtilt range. This will prevent the antenna from tilting away from the mounting structure when the adjusting bolts are removed, See Figure 5.

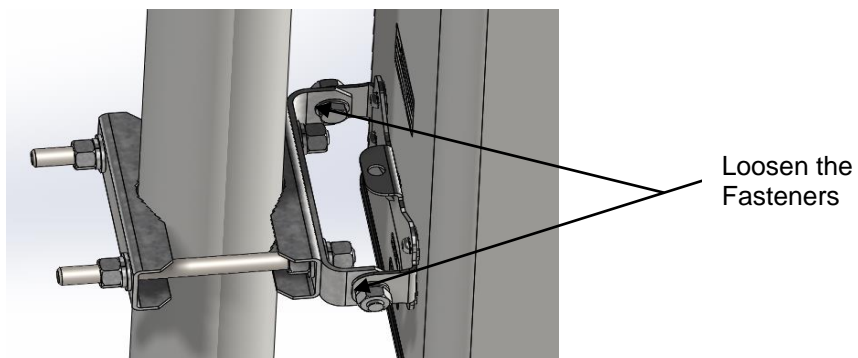


Installed cables or the antenna may be damaged if they are allowed to strike the mounting structure when the antenna mechanical downtilt is changed.



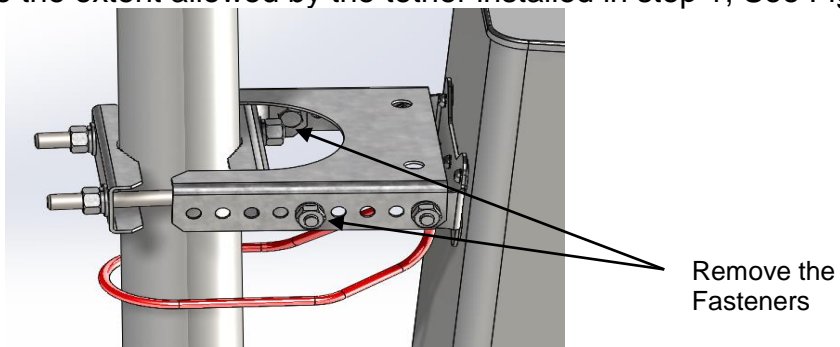
**Figure 5: Upper Mounting Bracket Assembly**

2. Loosen the fasteners holding the bottom antenna bracket to the bottom pivot bracket. Do not remove them, See Figure 6.



**Figure 6: Lower Mounting Bracket Assembly**

3. Remove the M12 bolts, washers, and nuts from the pivot bracket. The antenna may tilt down to the extent allowed by the tether installed in step 1, See Figure 7.



**Figure 7: Upper Mounting Bracket Assembly**

4. The desired downtilt angle may be obtained with the correct adjustment of the tilt arm bracket. See the installation instructions above for detailed information.
5. Adjust the antenna downtilt to the desired angle and reinstall the M12 bolts, washers, and nuts between the upper pivot bracket and the tilt arm.
6. Tighten all four M12 nuts to 38 Nm (28 ft.lb).
7. Remove the tether.