

A997-0021 Revision T, May 2019

Mounting Kits For Multi/Single Band 300mm (11.8") & 370 mm (14.6") Profile Panel Antenna F-042-GL-E, T-095-GL-E, T-080-GL-E, T-045-GL-E, T-041-GL-E & T-029-GL-E

General

This instructions sheet contains all necessary information required to assist in the correct installation of the Single and Multiband Band 300mm (11.8") and 370mm (14.6") Profile Panel Antennas. These antennas can be supplied with either fixed beam downtilt, 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.

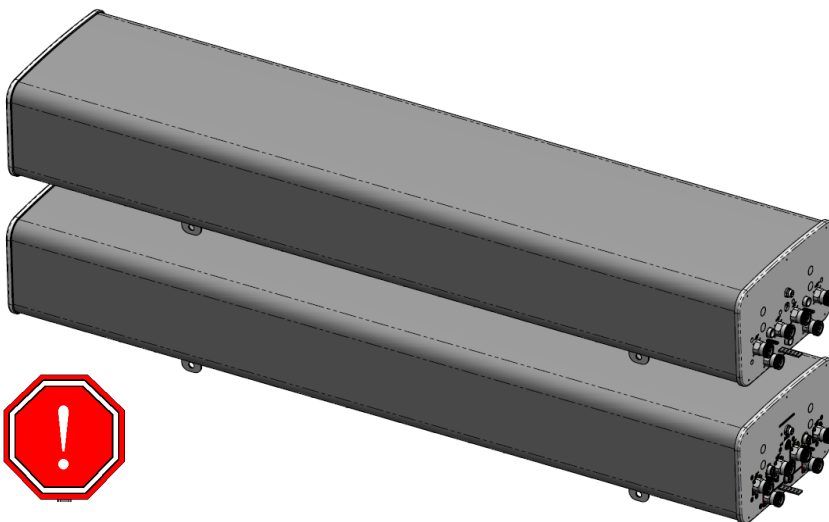
Unpacking

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

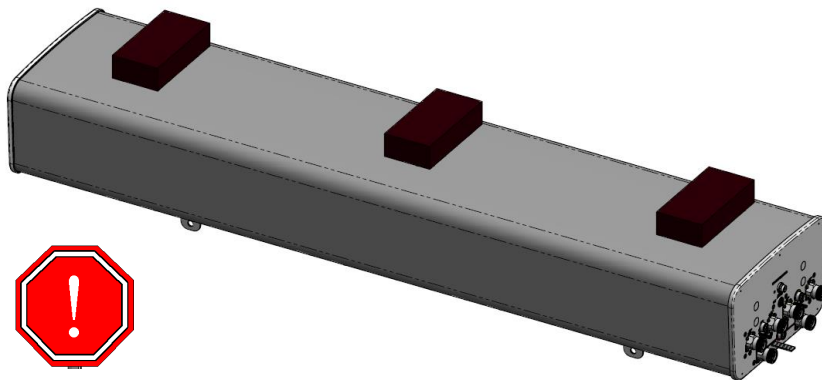
- Antenna
- Mounting kit (mounting kit components are given on mounting assembly drawing supplied).
- Hex Key 6mm AF (supplied with adjustable downtilt antennas only).

Mounting Kits	0 – 600mm (0 – 23.6") Antennas	600 – 850mm (23.6 – 33.5") Antennas	850 – 1200mm (33.5 – 43.3") Antennas	1200 – 1575mm (43.3 – 62") Antennas	1575 – 2700mm (62 – 106.3") Antennas
Fixed Downtilt	F-042-GL-E	F-042-GL-E	F-042-GL-E	F-042-GL-E	F-042-GL-E
Mechanical Downtilt	T-080-GL-E	T-095-GL-E	T-045-GL-E	T-041-GL-E	T-029-GL-E

Table 1: Mounting Kits Part Numbers for different Antennas



DO NOT STACK UNPACKED ANTENNAS

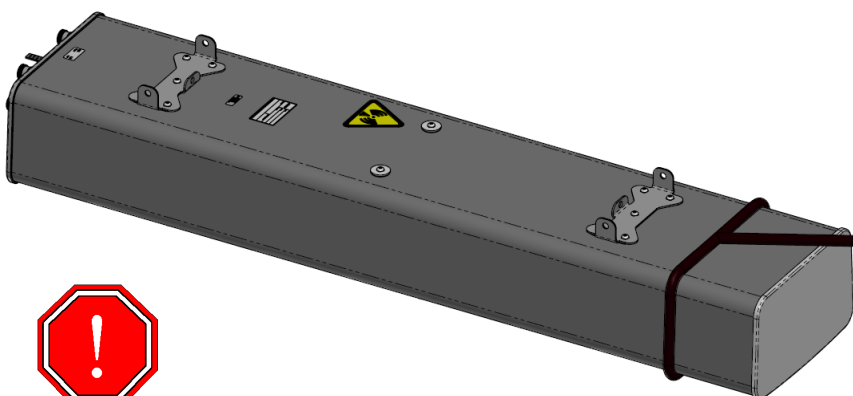



DO NOT PLACE
POINT LOADS ON
ANTENNA RADOME

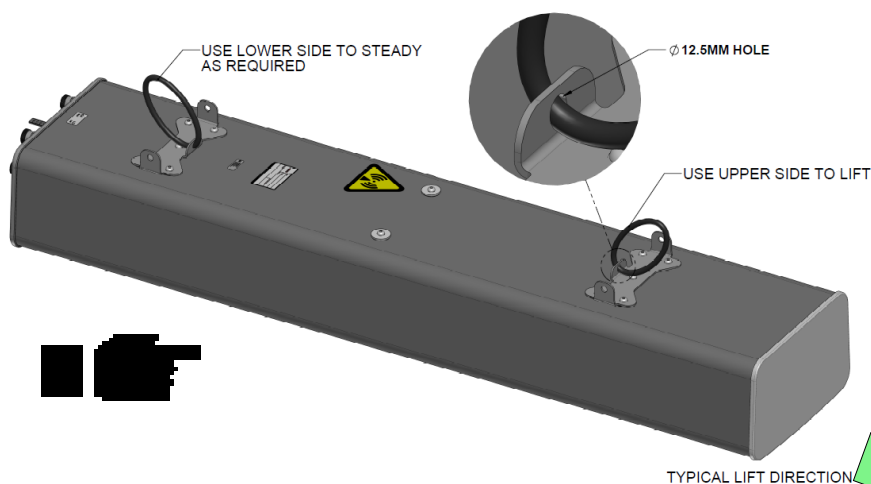
Installation Instructions



- 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




USE MOUNTING
BRACKETS FOR
LIFTING AS SHOWN



Do not install near 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 - Fixed Downtilt Mounting Kit for up to 2700mm (106.3") Antennas - (F-042-GL-E)

Assemble both mounting kits as per Figures 2 of this document



1. Attach the mounting kit assembly to the antenna, before clamping the brackets to the pole.



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

Figure 1: Correctly Assembled Mounting Bracket for Fixed Downtilt Antenna

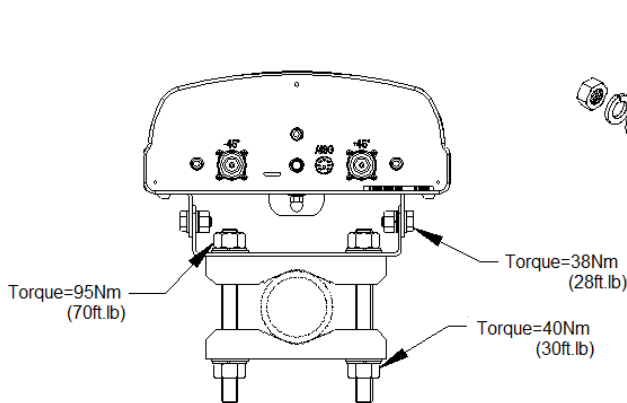


Figure 2. Fixed Downtilt Mounting Bracket Assembled to Antenna

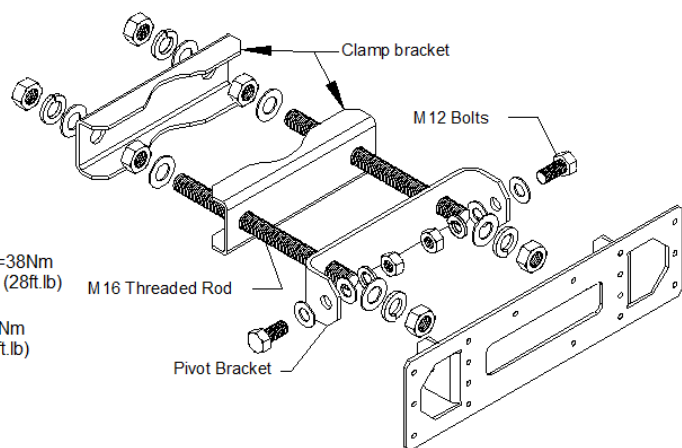


Figure 3. Fixed Downtilt Mounting Bracket Exploded Assembly

Installation Instructions – Mechanically Adjustable Downtilt Mounting Kit for 0 - 600mm (0 - 23.6") Antennas - (T-080-GL-E), Bracket Spacing 275mm (10.8").

Assemble both mounting kits as per Figures 4 and 5 of this document.



1. Attach the upper and lower mounting kit assemblies to the antenna, before clamping the brackets to the pole.
2. Downtilt angles of 0°, 5°, 10° and 15° may be obtained with the correct adjustment of the tilt arm bracket.
 - For 0° downtilt the tilt arm may be stowed as show in Figure 6.
 - 5°-15° 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 6. The first hole is for 5° downtilt, with each consecutive hole resulting in an increased inclination of 5°.



For typical installations the minimum recommended pipe diameter is 60mm (2.4").

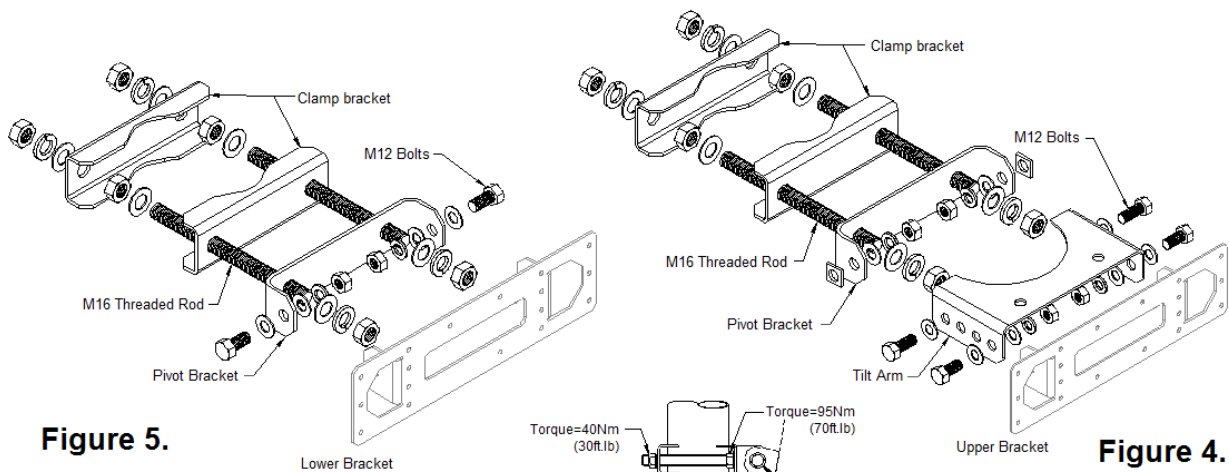


Figure 5.

Figure 4.

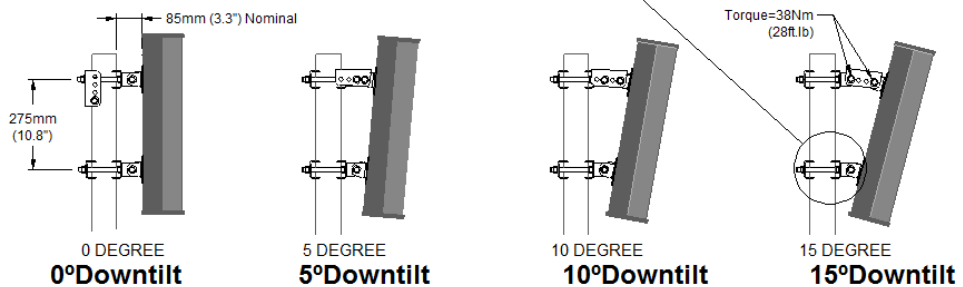


Figure 6.

- Figure 4. Mechanically Adjustable Downtilt Top Bracket Exploded View**
Figure 5. Mechanically Adjustable Downtilt Bottom Bracket Exploded View
Figure 6. Sample Antenna Positions Available With T-080-GL-E Kit

Installation Instructions – Mechanically Adjustable Downtilt Mounting Kit for 600 - 850mm (23.6 - 33.5") Antennas - (T-095-GL-E), Bracket Spacing 480mm (18.9")

Assemble both mounting kits as per Figures 7 and 8 of this document.



1. Attach the upper and lower mounting kit assemblies to the antenna, before clamping the brackets to the pole.
2. Downtilt angles of 0°, 3°, 6°, 9°, 12° and 15° may be obtained with the correct adjustment of the tilt arm bracket.
 - For 0° downtilt the tilt arm may be stowed as show in Figure 9.
 - 3°-15° 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 9. The first hole is for 3° downtilt, with each consecutive hole resulting in an increased inclination of 3°.



For typical installations the minimum recommended pipe diameter is 60mm (2.4").

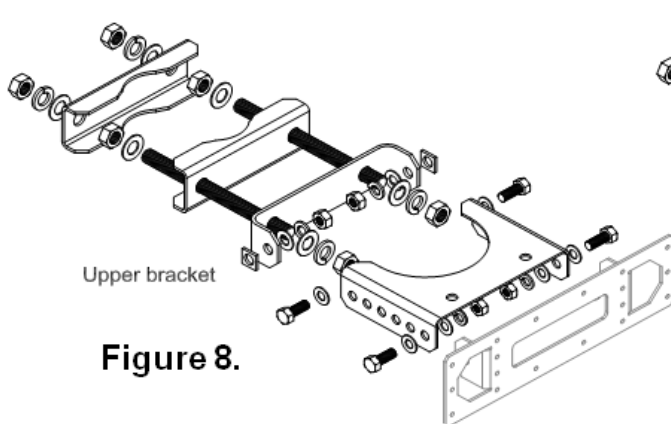


Figure 8.

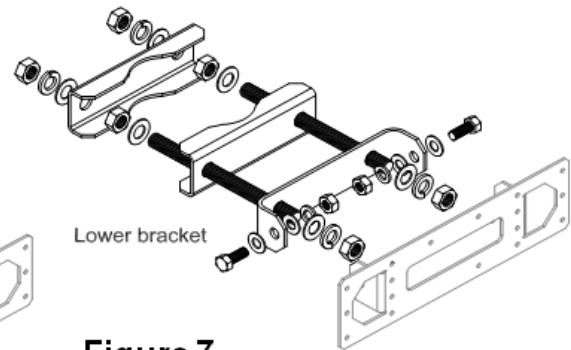


Figure 7.

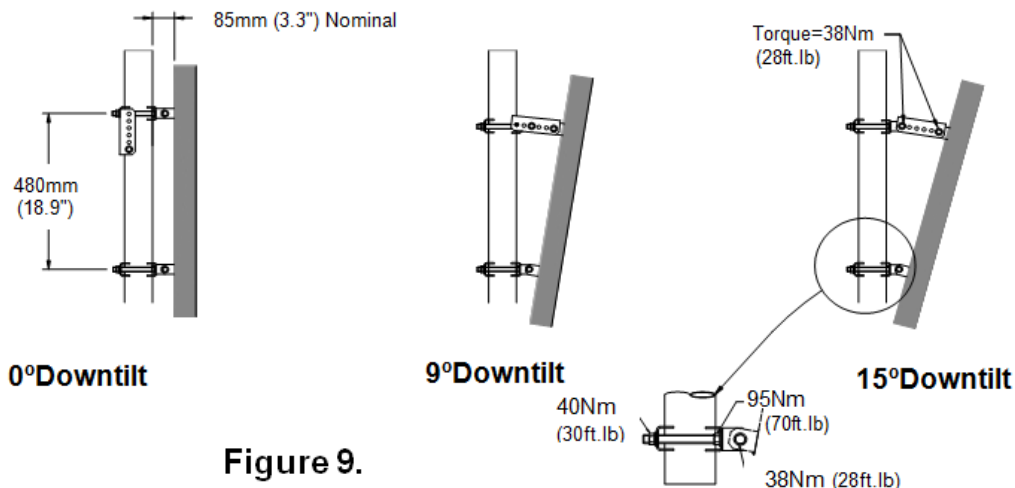


Figure 9.

- Figure 7. Mechanically Adjustable Downtilt Top Bracket Exploded View**
- Figure 8. Mechanically Adjustable Downtilt Bottom Bracket Exploded View**
- Figure 9. Sample Antenna Positions Available With T-095-GL-E Kit**

Installation Instructions - Mechanically Adjustable Downtilt Mounting Kits for 850 - 1200mm (33.5 - 43.3") Antenna's (T-045-GL-E), Bracket Spacing 716mm (28.2")

Assemble both mounting brackets as per Figures 10 and 11 of this document.



1. Attach the lower and upper mounting bracket assemblies to the antenna, before clamping the brackets to the pole.
2. Downtilt angles of 0° and 2° through to 10° in 1° increments can be obtained with the correct adjustment of the tilt arm bracket.
 - For 0° downtilt the tilt arm may be stowed as show in Figure 12.
 - 2°-10° 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 12. The first hole is for 2° downtilt, with each consecutive hole resulting in an increased inclination of 1°.



For typical installations the minimum recommended pipe diameter is 60mm (2.4").

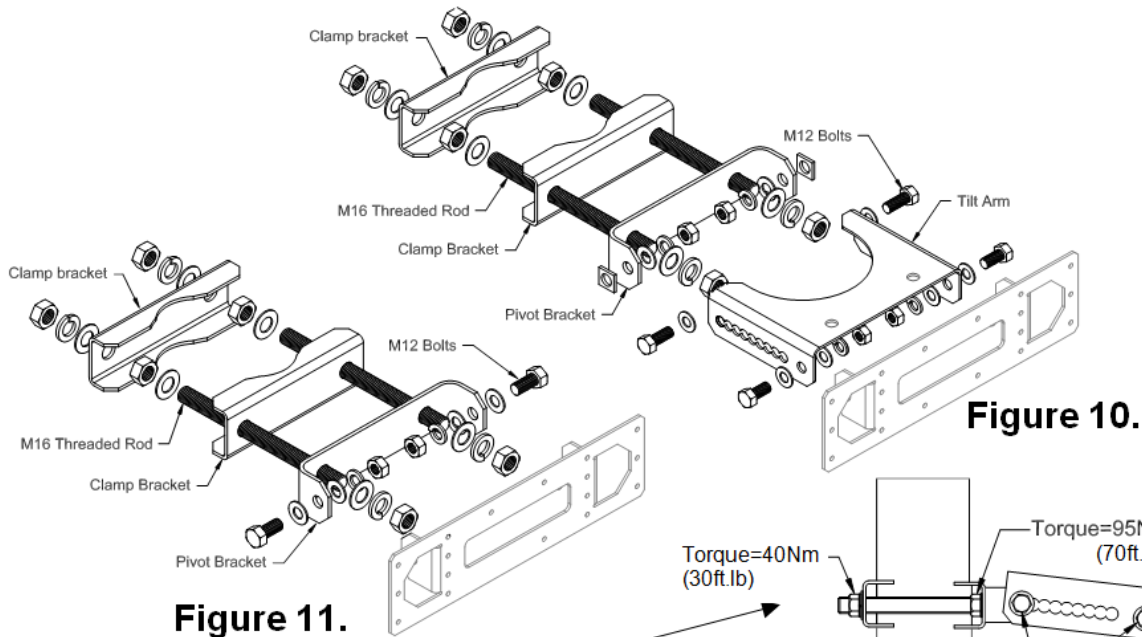


Figure 10.

Figure 11.

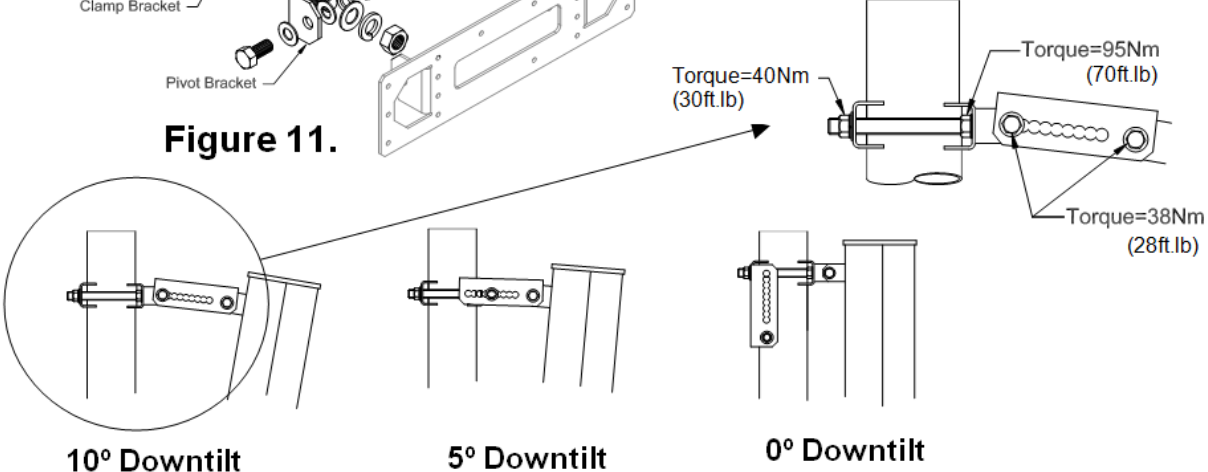


Figure 12.

**Figure 10: Upper Mounting Bracket Exploded Assembly
 Figure 11: Lower Mounting Bracket Exploded Assembly
 Figure 12: Upper Bracket Placement For Various Downtilts**

Installation Instructions- Mechanically Adjustable Downtilt Mounting Kits for 1200 - 1575mm (43.3 - 62") Antenna's (T-041-GL-E), Bracket Spacing 976mm (38.4")

Assemble mounting brackets as per Figure 13 and Figure 14 of this document



1. Attach the lower and upper mounting bracket assemblies to the antenna, before clamping the brackets to the pole.
2. Downtilt angles of 0° through to 12° in 2° increments can be obtained with the correct adjustment of the tilt arm bracket.
 - For 0° downtilt the tilt arm may be stowed as show in Figure 15.
 - 2°- 12° 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 15. The first hole is for 2° downtilt, with each consecutive hole resulting in an increased inclination of 2°.



For typical installations the minimum recommended pipe diameter is 60mm (2.4").

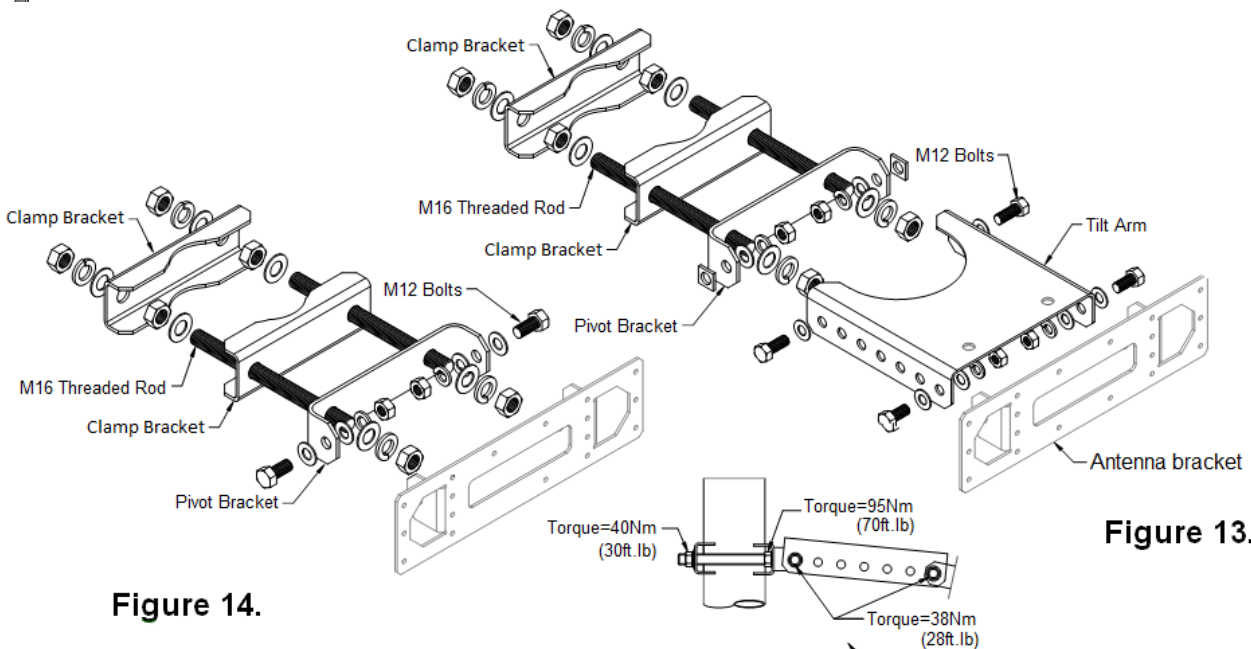


Figure 13.

Figure 14.

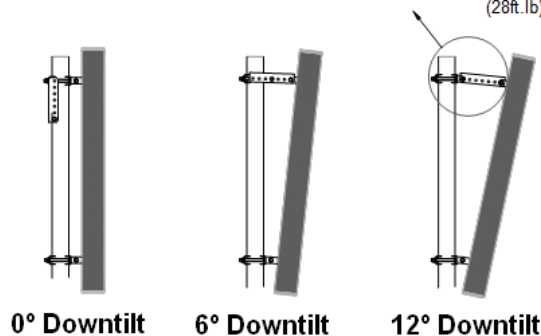


Figure 15.

**Figure 13. Upper Mounting Bracket Exploded Assembly.
 Figure 14. Lower Mounting Bracket Exploded Assembly.
 Figure 15. Upper Bracket Placement For Various Downtilts.**

Installation Instructions- Mechanically Adjustable Downtilt Mounting Kits for 1575 - 2700mm (62 - 106.3") Antenna's (T-029-GL-E), Bracket Spacing 1400mm (55.1")

Assemble mounting brackets as per Figure 17 and Figure 18 of this document



1. Attach the lower and upper mounting bracket assemblies to the antenna, before clamping the brackets to the pole.
2. Downtilt angles of 0° through to 8° in 1° increments can be obtained with the correct adjustment of the tilt arm bracket.
 - For 0° downtilt the tilt arm may be stowed as show in Figure 19.
 - 1°- 8° 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 19. The first hole is for 1° downtilt, with each consecutive hole resulting in an increased inclination of 1°.



For typical installations the minimum recommended pipe diameter is 75mm (3").

Figure 16: Correctly Assembled Mounting Bracket for Mechanically Adjustable Downtilt Antenna

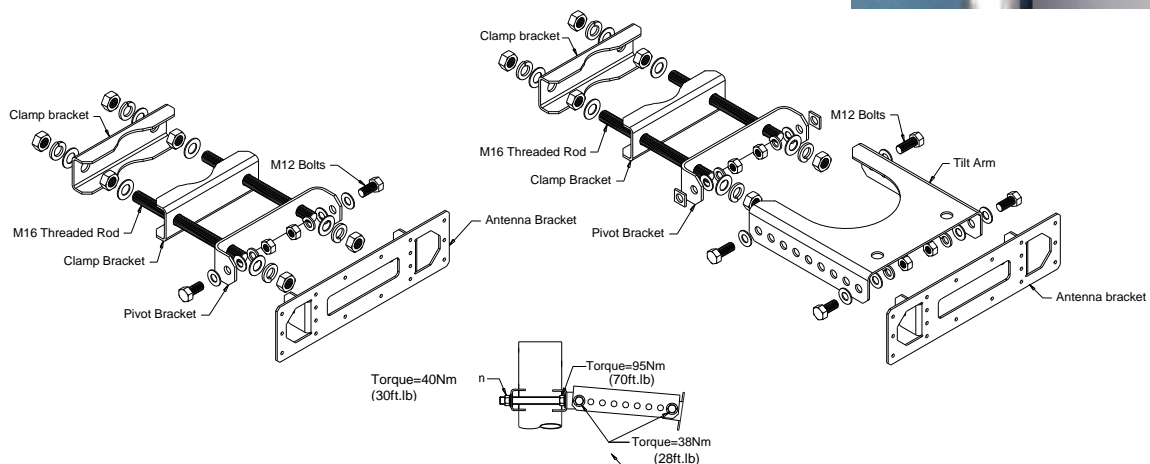


Figure 18.

Figure 17.

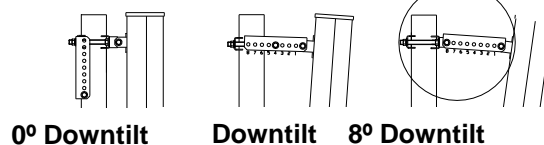


Figure 19.

**Figure 17: Upper Mounting Brackets Exploded Assembly
 Figure 18: Lower Mounting Brackets Exploded Assembly
 Figure 19: Upper Bracket Placement For Various Downtilts**

Operation of Antennas

Fixed Downtilt Antennas The beam downtilt is factory set.

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 (see Figure 20). 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 can be read off the scale at the base of the antenna.

AISG Compliant Adjustable Downtilt Antennas - Fitted with Remote Downtilt Adjustment

AISG Compliant antennas are compatible with AISG compliant control unit equipment. For operation of downtilt using AISG compliant controllers see the controller documentation.



WARNING: During downtilt adjustment ensure the hex socket is not turned past the nominated range for the antenna, minimum tilt or past the maximum tilt, 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.

Figure 20: Single Band, 7-16 Connector, slimline antenna with connections labelled

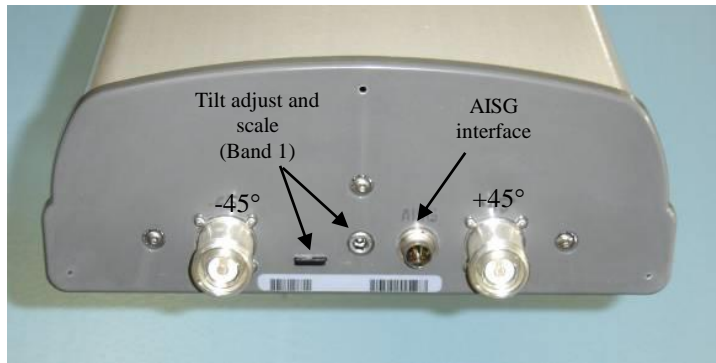
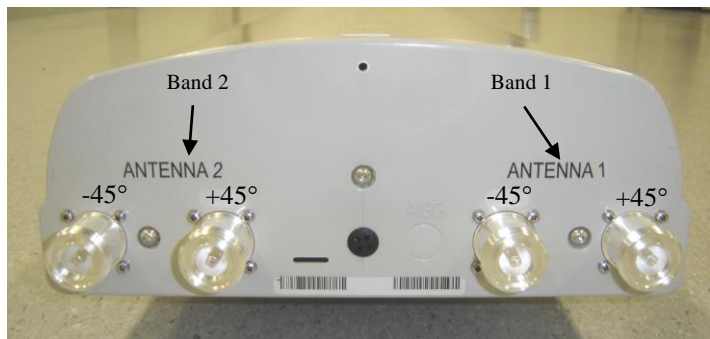


Figure 21: Dual Band, 7-16 connector, slimline antenna with connections labelled. (Fixed Tilt Antenna Pictured)



Note: The array of Band 2 is situated above that of Band 1.

Figure 22: Dual band, N-Type connector, slimline antenna with connections labelled.

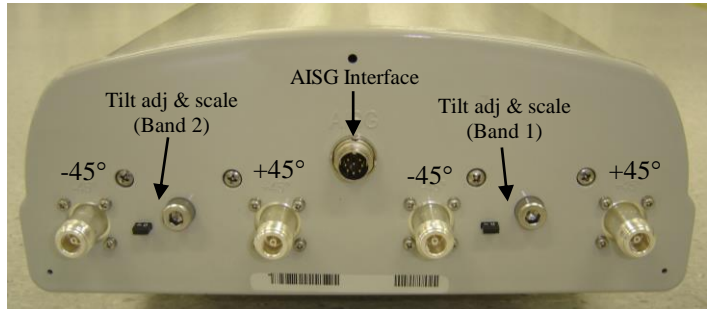


Figure 23: Dual band, 7-16 connector, antenna with connections labelled.

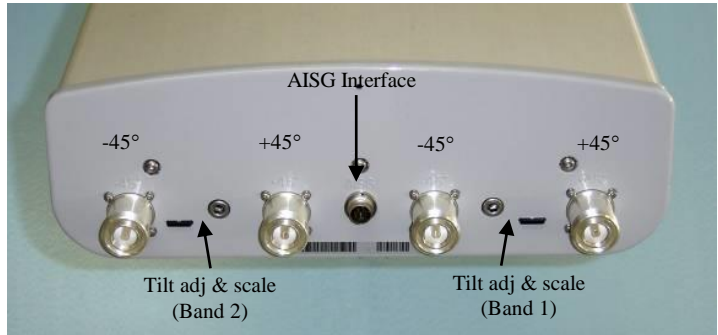


Figure 24: Diplexed dual band, 7-16 connector antenna with connections labelled.

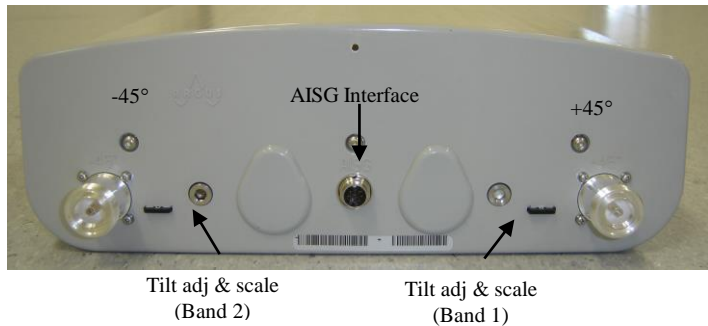


Figure 25: Tri band, 7-16 connector, antenna with connections labelled.

Note: The array of Band 2 is situated above that of Band 3.

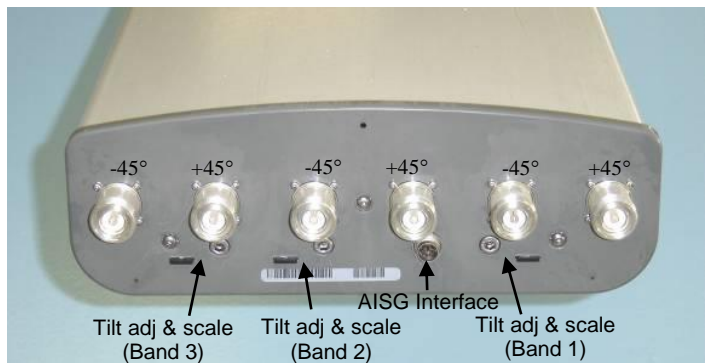
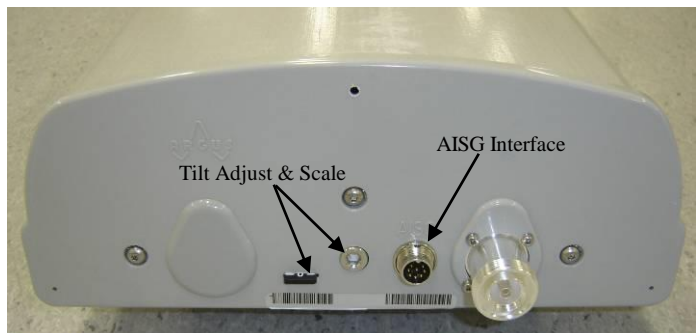


Figure 26: Single band, 7-16 connector, vertically polarized slimline antenna with connections labelled.



Figures 20, 21, 22, 23 and 24 show the configuration of the positive and negative slant polarization ports for single and multi band antennas. The tilt adjuster scale and port for remote interface is also highlighted.

Electrically Adjustable Downtilt Antennas – Indicator Scale

The downtilt angle in degrees below the horizon is read from the angle indicator scale. The downtilt scale is read from face of the antennas base plate at the point where the scale protrudes. As the downtilt is increased, the indicator scale protrudes further past the face, revealing further graduations of degrees.

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 to the correct torque setting. 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
F-042-GL-E, T-095-GL-E, T-080-GL-E, T-045-GL-E, T-041-GL-E & T-029-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.



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

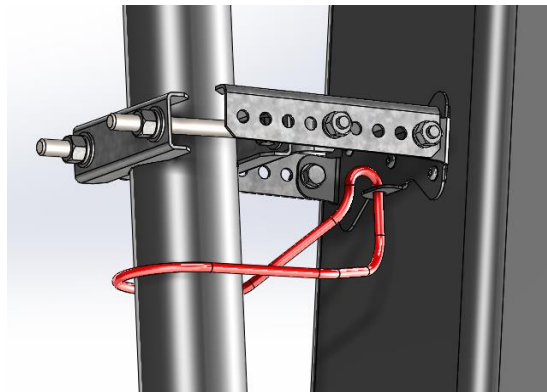


Figure 27: Upper Mounting Bracket Assembly

2. Loosen the fasteners holding the bottom antenna bracket to the bottom pivot bracket. Do not remove them.

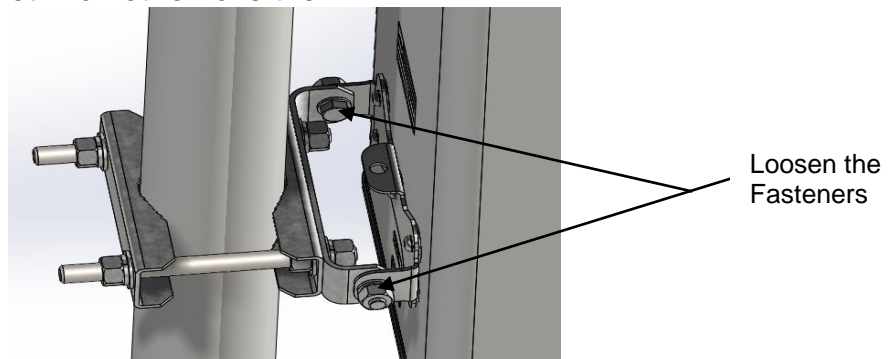


Figure 28: Lower Mounting Bracket Assembly

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.

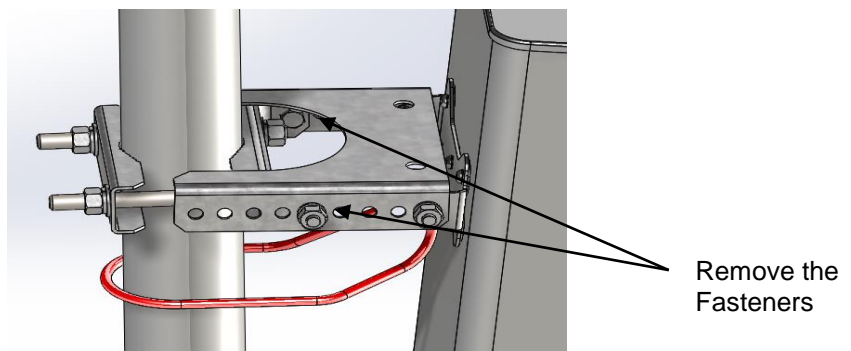


Figure 29: Upper Mounting Bracket Assembly

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 38Nm (28 ft.lb).
7. Remove the tether.