Installation Instructions

ANDREW®
A CommScope Company

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Downtilt Mounting Kit for Panel Antennas
649163-1

Andrew Institute offers installation training.

PERFORMANCE

649163-1 downtilt mounting kit provides 150 mph windload rating for antenna installations that use mounting pipes with a 2.5–4.5 inch (64–115 mm) diameter.

REQUIRED TOOLS

Description	Quantity
Adjustable wrench	2

PRE-INSTALLATION INSTRUCTIONS

- Examine antenna and hardware to ensure that all parts are enclosed and that there is no physical damage.
- Check to ensure that the antenna feed connector mates with the jumper cable.
- Verify that the frequency range shown on the label on the back of the antenna matches the frequency range of the station equipment.
- Position the antenna with its “up” arrow label pointing upward before installation. This orientation allows the drain holes to be on the bottom of the antenna.

PARTS LIST

Item	Part No.	Qty	Description	
1	623911-1	2	Bracket, Pipe Mounting	
2	623912-1	1	Bracket, Short	
3	623913-1	1	Bracket, Long	
4	007028-316	4	1/2”–13 x 7–1/2” Hex Head Bolt	
5	EWSH150003 or 007022-010	16	1/2” Split Washer	
6	ENUT150001 or 007020-014	12	1/2” Hex Nut	
7	EBLT140002 or 007028-261	8	1/2” x 1” Hex Head Bolt	
8	E601736-1	1	Bracket, Downtilt, Pole	
9	E601735-1	1	Bracket, Downtilt, Antenna	
10	EWSH150006	2	5/16” Split Washer	
11	EBLT140004	2	5/16” Hex Head Bolt	

NOTICE

The installation, maintenance, or removal of an antenna requires qualified, experienced personnel. Andrew Solutions 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.

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

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.

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PRE-ASSEMBLY

1. Refer to the parts list and verify that all mounting hardware has been received.
2. Pre-assemble the 7–1/2 inch hex head bolts (Item 4) and the short and long brackets (Items 2 and 3), as shown in Figures 1 and 2. Tighten hex nuts on the lower and upper bracket assemblies to 43 lb-ft (58.3 N-m).
3. Fasten downtilt brackets (Items 8 and 9) to upper antenna mounting bracket using 1/2 inch hardware (Figure 3).
4. Fasten the upper and lower bracket assemblies to the antenna as shown in Figure 4.

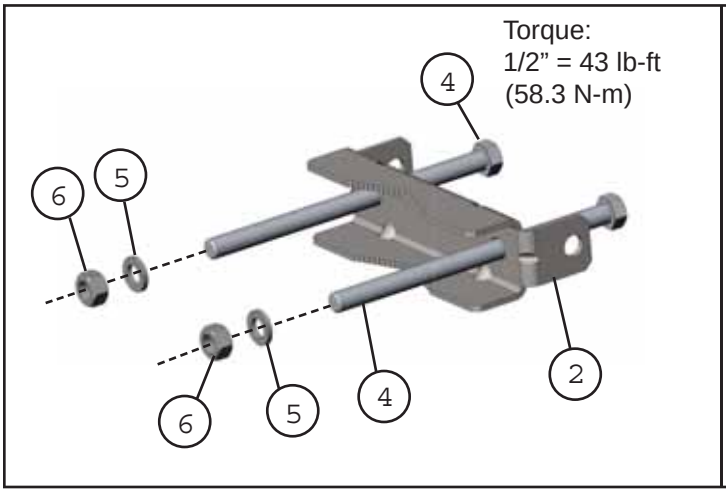

Figure 1. Upper Bracket Assembly.

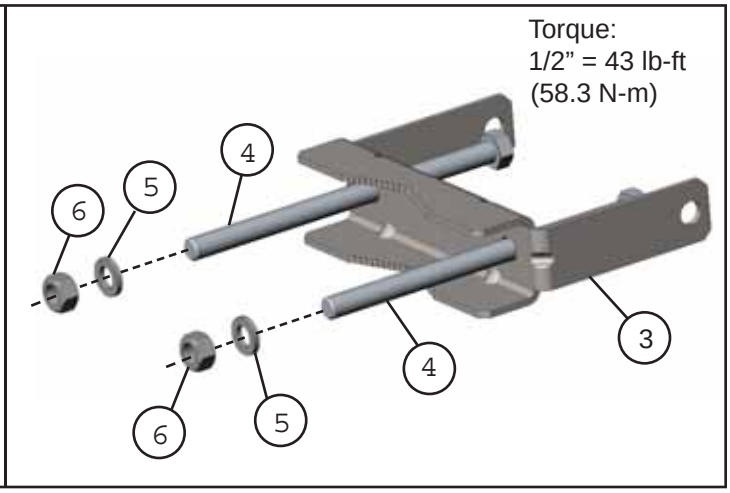

Figure 2. Lower Bracket Assembly.

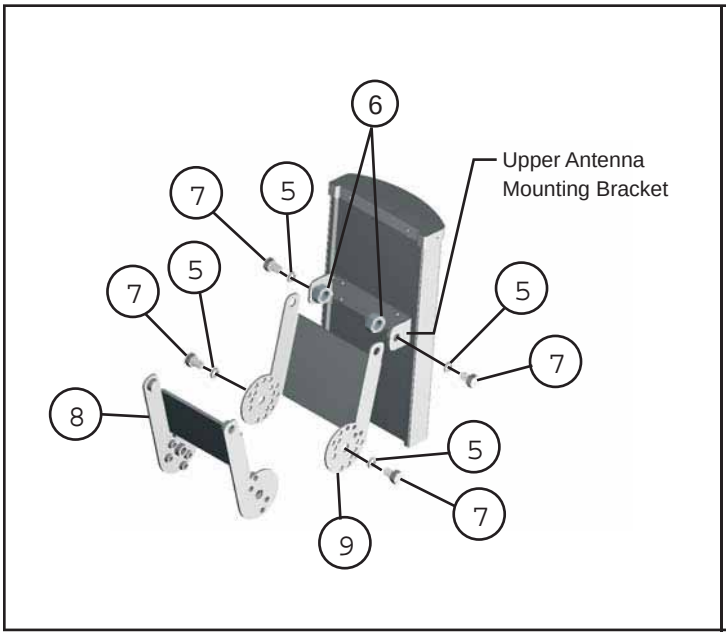

Figure 3. Fastening Downtilt Bracket Assembly to Upper Antenna Mounting Bracket.

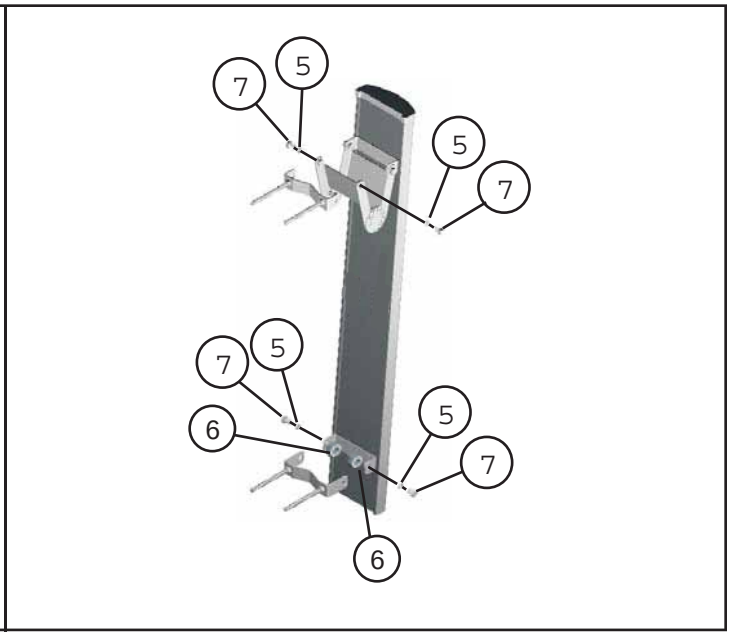

Figure 4. Fastening Upper and Lower Bracket Assemblies to Antenna.

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HOISTING ANTENNA UP A TOWER

- Pre-assemble as much of the mounting hardware as possible before lifting the antenna up to the top of the tower.
- Attach a rope to the top mounting bracket on the back of the antenna. Keep the antenna vertical when hoisting the antenna. For safety, an additional rope can be attached to the bottom antenna mounting bracket and used as a guide by someone else on the ground.
- Bring the antenna into position on the tower and secure it using the hardware provided.
- Align antenna to vertical, as shown in Figure 5.

To avoid twisting the antenna, ensure that all the mounting clamps are aligned with each other.

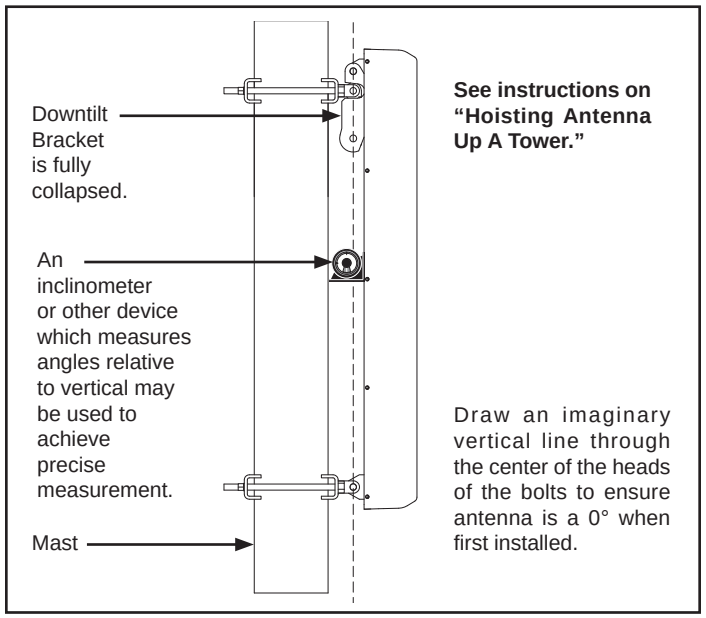

Figure 5. Ensure Antenna is Fully Collapsed at 0° When Attaching the Antenna to the Tower.

POLE ASSEMBLY

1. Using the pipe mounting brackets (Item 1) and 1/2 inch hardware, properly orient the antenna and mount to a 2.5–4.5 inch (64–115 mm) OD pole (Figure 6).
2. Tighten the 1/2 inch hex nuts (Item 6). Torque to 43 lb-ft (58.3 N-m), so that the brackets firmly hold the antenna to the pipe as shown in Figure 6.
3. Adjust the top end of the antenna until the downtilt bracket holes are aligned for desired degree of downtilt.
4. Torque all 1/2 inch hardware used in Figure 6 to 43 lb-ft (58.3 N-m).
5. Use the 5/16 inch hardware as shown in Figure 7 to secure the downtilt positioning. Tighten hex head bolts (Item 11) to 11 lb-ft (14.9 N-m).

Notes:

- Maximum achievable downtilt angle will vary, depending on overall length of the antenna.
- Account for any degree of tower lean when measuring downtilt angle.
- Use an inclinometer or other device which measures angles relative to vertical for achieving precise downtilt measurements (Figure 5).

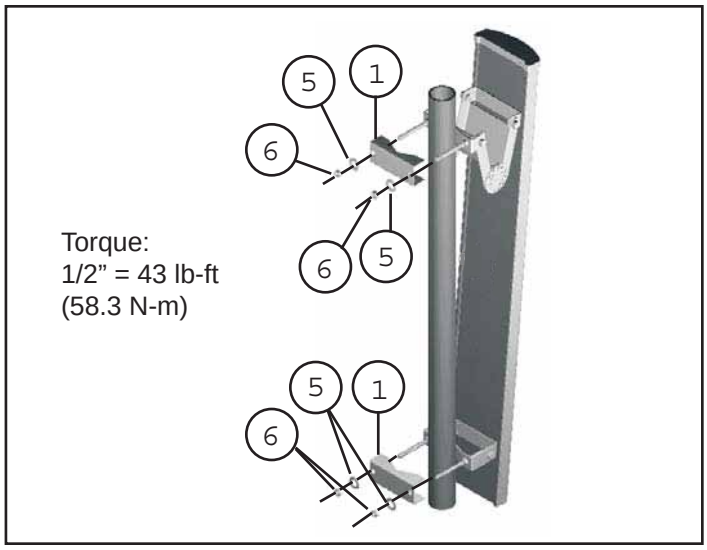

Figure 6. Fastening Pipe Bracket to Pole.

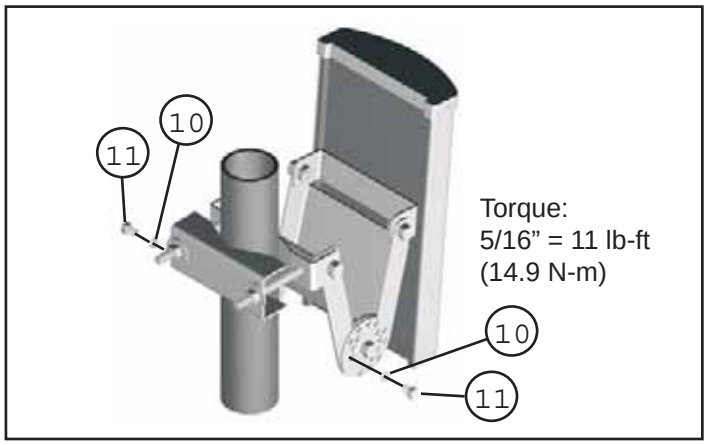

Figure 7. Securing the Downtilt Positioning Bracket.

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POST INSTALLATION INSTRUCTIONS

- Connect the station transmission line (not supplied) to the antenna. Make the connection snug, but do not apply heavy force with pliers.
- Carefully weatherproof all connections, covering all cracks and the outer jacket of the transmission line. Failure to waterproof the connection could result in improper operation of the antenna.
- Secure the transmission line to the tower in the best position to avoid physical damage to the cable.
- After the antenna and transmission line have been installed, a careful visual check should be made to ensure that:
  - All mechanical connections have been made and the antenna is mounted with sufficient physical clearance.
  - The “up” arrow is pointing upward and the drain holes in the end cap are oriented downward.
  - All connections have been carefully wrapped to prevent moisture problems.
  - The antenna is in the desired mechanical tilt position.

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