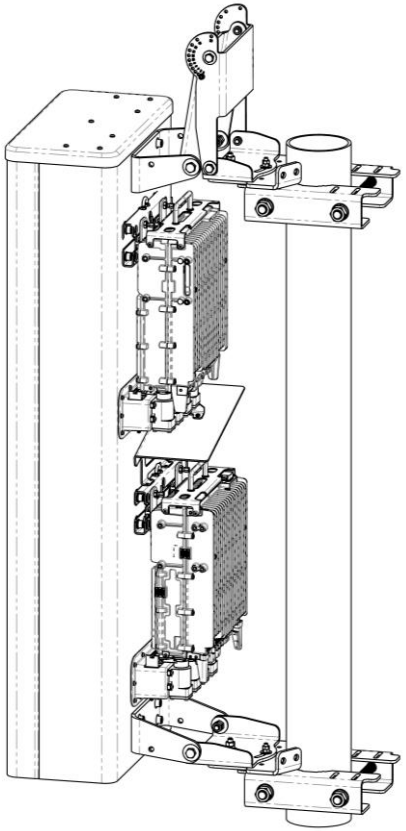
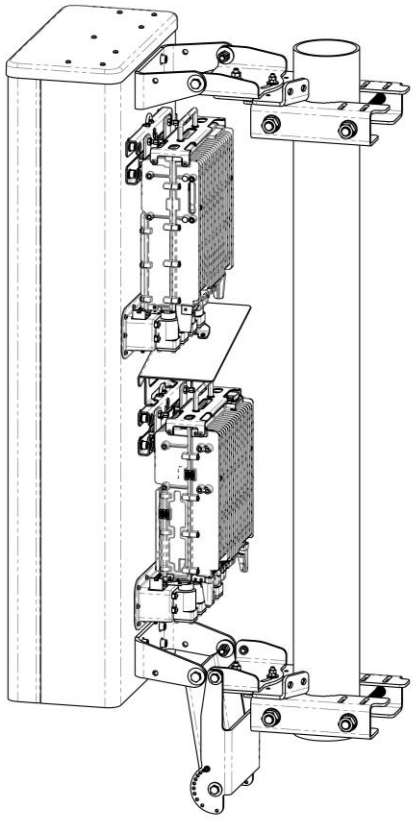
Mounting Kit Installation Guide (MBK-48)



DOWNTILT INSTALLATION



UPTILT INSTALLATION

DISCLAIMER:

The installation, maintenance, or removal of an antenna requires qualified, experienced personnel. You must refer to the appropriate local safety codes and ensure proper electrical and electromagnetic compatibility before proceeding with the installation. All local codes shall take precedence over information in this document. Antenna systems should be inspected once a year by qualified personnel to verify proper installation, maintenance, and condition of equipment. Communication Components Antennas Inc. disclaims any liability or responsibility for the results of improper or unsafe installation.

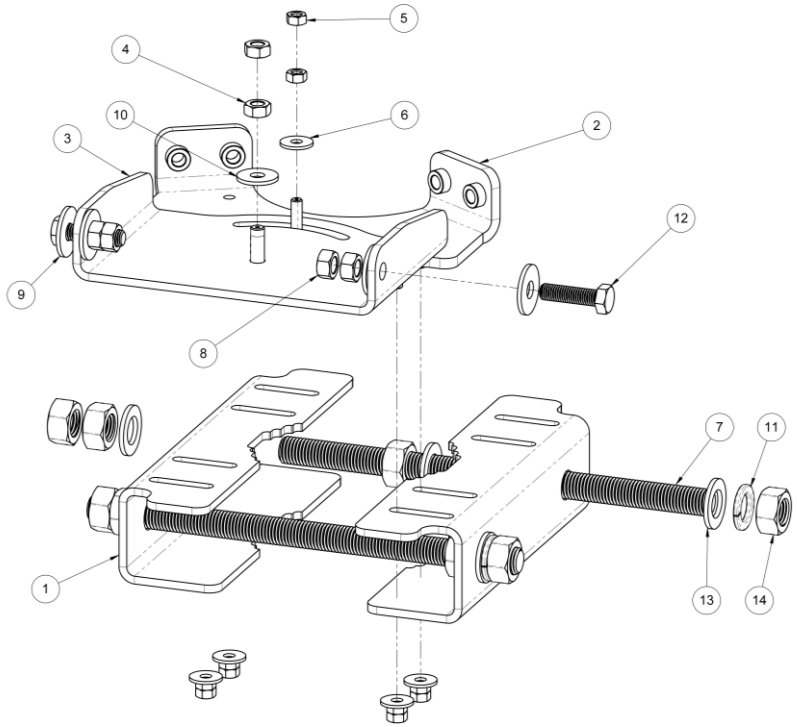


Figure 1: Single Swiveling Mechanical Tilt (MT) Fixed Bracket BOM

ITEM	QTY	DESCRIPTION	ITEM	QTY	DESCRIPTION
1	2	MAST CLAMP, MBK-49	8	4	NUT, HEX, M12X1.75, DIN 934, SS A4-70, 19MM HEX
2	1	SWIVEL BRACKET, FIXED, 1 SECTOR, MBK-49	9	4	WASHER, FLAT, M12, 37 OD, MIN 2.3 THK, DIN 9021, SS A2-70
3	1	SWIVEL PLATE, FIXED BRACKET, MBK-49	10	1	WASHER, FLAT, M10, 30 OD, MIN 2.3 THK, DIN 9021, SS A2-70
4	2	NUT, HEX, M10X1.5, DIN 934, 18-8 SS, 17MM HEX	11	2	WASHER, SPLIT LOCK, M20, A2-70, DIN 127B/ISO 7090
5	10	NUT, HEX, M8-1.25, SS, DIN 934, 13MM HEX	12	2	SCREW, HEX, CAP, M12X1.75, 45L, DIN 933, ISO 4017, 18-8 SS
6	5	WASHER, FL, M8, ISO 7093, A2 SS, OVERSIZE	13	6	WASHER, FLAT, M20, 37 OD, MIN 3.3 THK, DIN 9021/ISO 7093, A270
7	2	THREADED ROD, M20X2.5 X 332L, A2-70, DIN 976/ISO 7412	14	8	NUT, HEX, M20X2.5, A4-70, DIN 934/ISO 4032

Note:

The Single Sector Mounting Kit is intended for antennas with a pitch of 1300 mm between hinge brackets, and mast sizes from 89mm to 140mm (3.5 inches to 5.5 inches). It will provide up or down mechanical tilt capability of 0°-20°, and azimuth swiveling of ±30°. The Fixed Bracket (Figure 1) only provides swiveling, while the Adjustable Bracket (Figure 2) provides tilt and swiveling. The Brackets will arrive assembled for the Downtilt Setup, but the hardware will not be torqued.

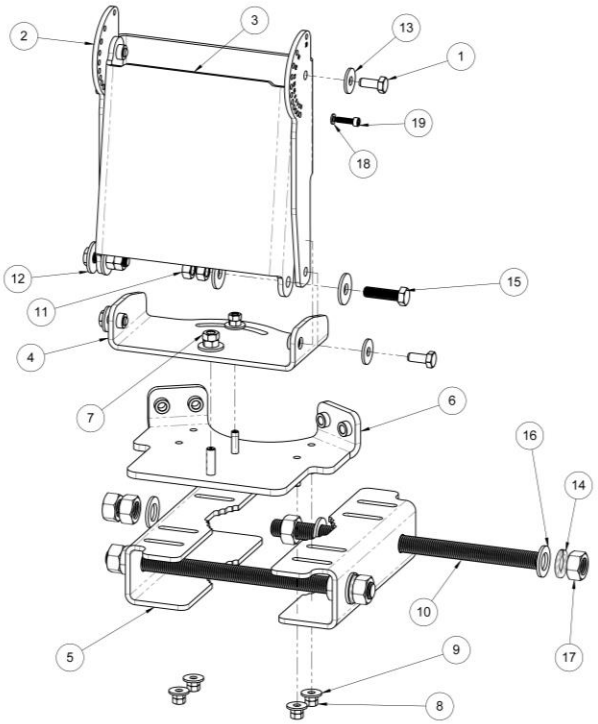
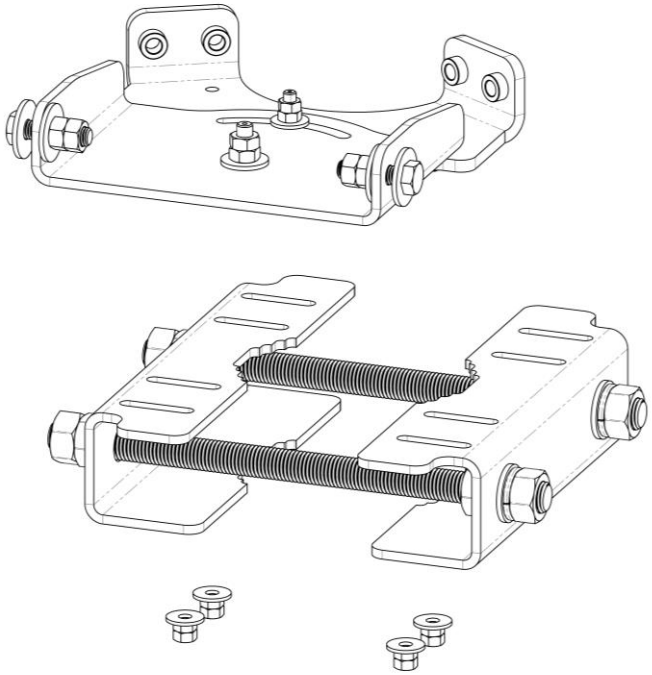


Figure 2: Single Swiveling Mechanical Tilt (MT) Adjustable Bracket BOM

ITEM	QTY	DESCRIPTION	ITEM	QTY	DESCRIPTION
1	4	SCREW, HEX, CAP, M10X1.5, 25L, ISO 4017, SS A4-70, NYLON PATCH	11	4	NUT, HEX, M12X1.75, DIN 934, SS A4-70, 19MM HEX
2	1	TILT BRACKET, ADJUSTABLE, REAR, MBK-49	12	4	WASHER, FLAT, M12, 37 OD, MIN 2.3 THK, DIN 9021, SS A2-70
3	1	TILT BRACKET, ADJUSTABLE, FRONT, MBK-49	13	5	WASHER, FLAT, M10, 30 OD, MIN 2.3 THK, DIN 9021, SS A2-70
4	1	SWIVEL PLATE, ADJUSTABLE BRACKET, MBK-49	14	2	WASHER, SPLIT LOCK, M20, A2-70, DIN 127B/ISO 7090
5	2	MAST CLAMP, MBK-49	15	2	SCREW, HEX, CAP, M12X1.75, 45L, DIN 933, ISO 4017, 18-8 SS
6	1	SWIVEL BRACKET, FIXED, 1 SECTOR, MBK-49	16	6	WASHER, FLAT, M20, 37 OD, MIN 3.3 THK, DIN 9021/ISO 7093, A270
7	2	NUT, HEX, M10X1.5, DIN 934, 18-8 SS, 17MM HEX	17	8	NUT, HEX, M20X2.5, A4-70, DIN 934/ISO 4032
8	10	NUT, HEX, M8-1.25, SS, DIN 934, 13MM HEX	18	2	WASHER, FL, M6, A2 SS, ISO 7089
9	5	WASHER, FL, M8, ISO 7093, A2 SS, OVERSIZE	19	2	SCREW, HEX SOCKET, M6X1.0 X 22L, DIN 912, ISO 4762, 18-8 SS
10	2	THREADED ROD, M20X2.5 X 332L, A2-70, DIN 976/ISO 7412			

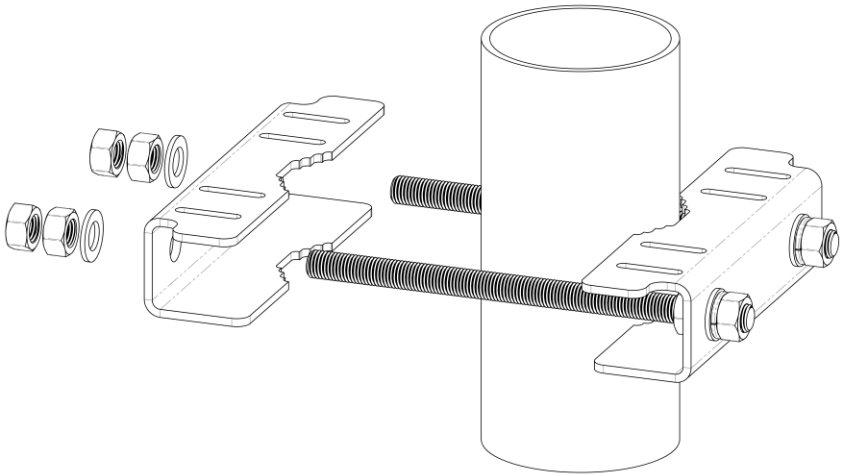
DOWNTILT INSTALLATION

Figure 3



Step	Task
1	Refer to Figure 3. Separate the clamps from the rest of the Fixed Bracket assembly as shown. Proceed to Step 2.

Figure 4



Step	Task
2	Refer to Figure 4. Separate the double M20 nuts and washers to remove one clamp. Apply an anti-seize lubricant conforming to MIL-A-907E to the M20 threaded rods. Install the clamps around the mast as shown, at the correct vertical position and azimuth direction as required. Reinstall the M20 washers and nuts. Adjust the M20 threaded rods to balance the protrusion of threads on either side, applying the anti-seize lubricant when moving the nuts. Tighten the M20 nuts to a torque of 175±5.0 Nm (129±3.5 ft-lbs.). Proceed to Step 3.

Figure 5

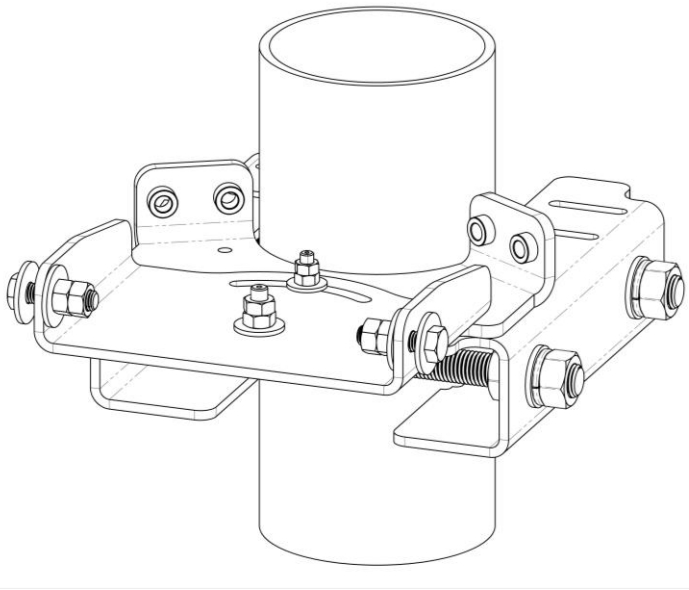
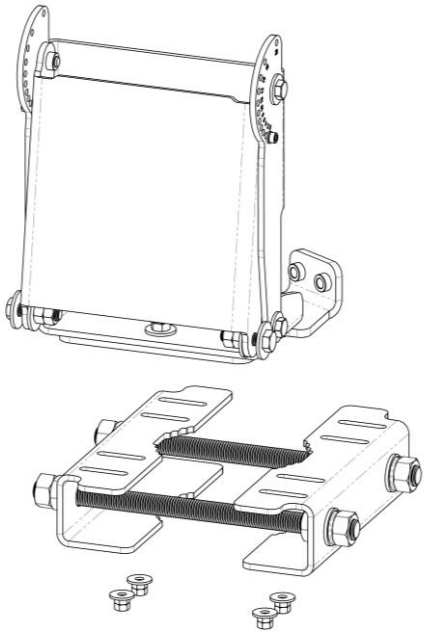


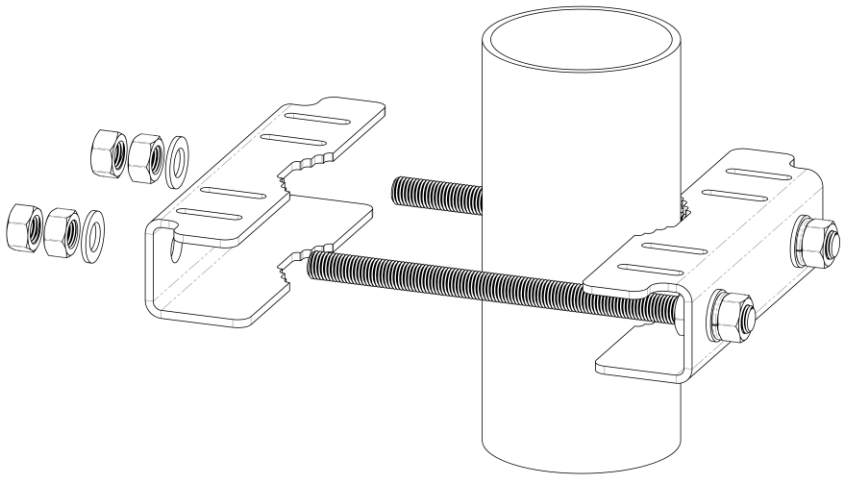
Figure 6



Step	Task
3	Refer to Figure 5. Reinstall the parts for the Fixed Bracket assembly that were removed at Step 1. Leave the M8 nuts loose for future alignment. Proceed to Step 4.

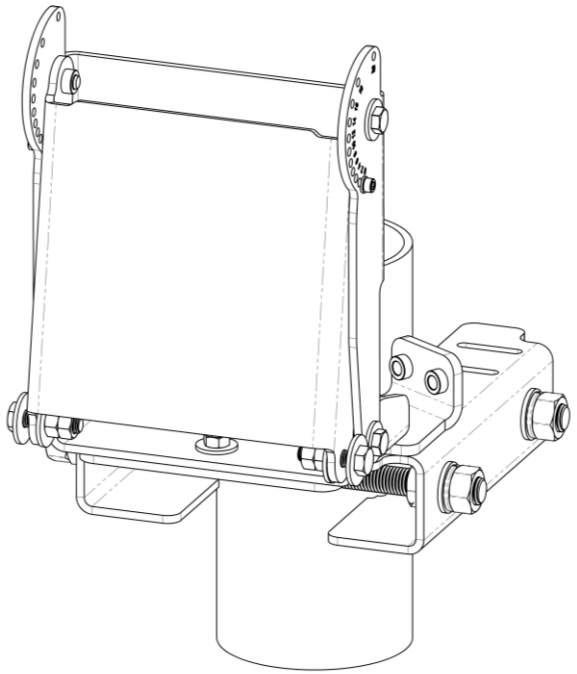
Step	Task
4	Refer to Figure 6. Separate the clamps from the rest of the Tilting Bracket assembly as shown. Proceed to Step 5.

Figure 7



Step	Task
5	Refer to Figure 7. Separate the double M20 nuts and washers to remove one clamp. Apply an anti-seize lubricant conforming to MIL-A-907E to the M20 threaded rods. Install the clamps around the mast as shown, at the correct vertical position and azimuth direction as required. Reinstall the M20 washers and nuts. Adjust the M20 threaded rods to balance the protrusion of threads on either side, applying the anti-seize lubricant when moving the nuts. Tighten the M20 nuts to a torque of 175±5.0 Nm (129±3.5 ft-lbs.). Ensure that these clamps are spaced above the first set of clamps by 1300mm, and that the sets of clamps are parallel to each other. Refer to Figure 9. Proceed to Step 6.

Figure 8



Step	Task
6	Refer to Figure 8. Reinstall the parts for the Tilting Bracket assembly that were removed at Step 4. Leave the M8 nuts loose for future alignment. Refer to Figure 10. Proceed to Step 7.

Figure 9

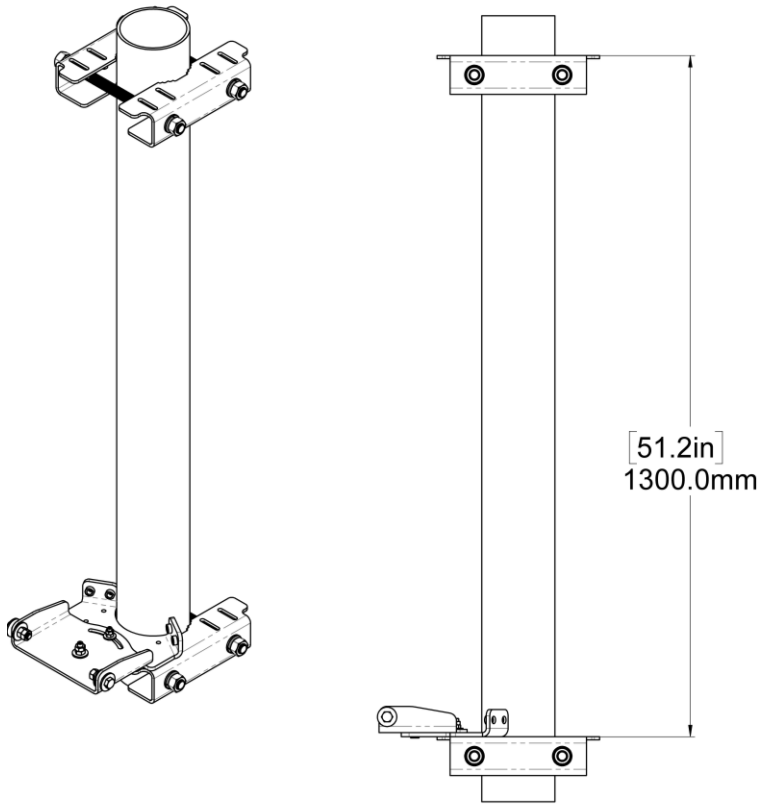


Figure 10

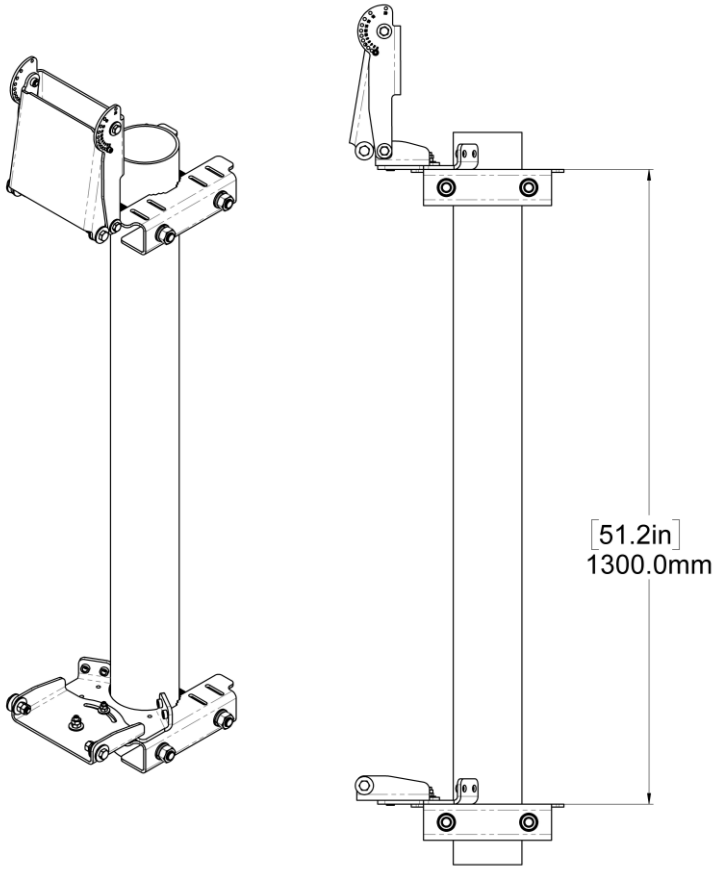


Figure 11

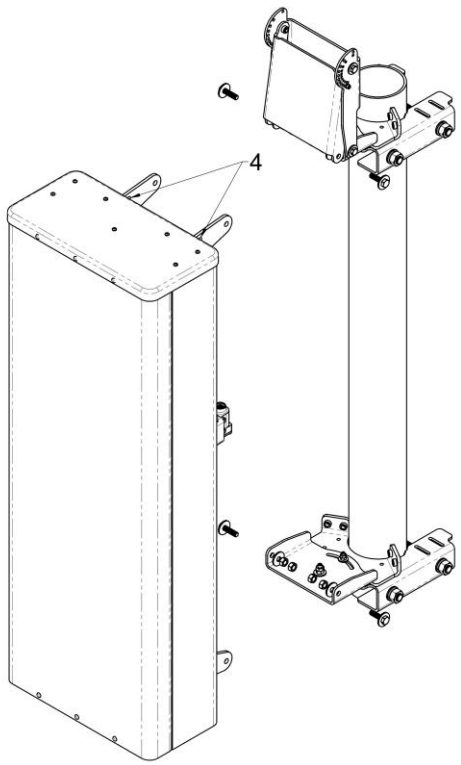
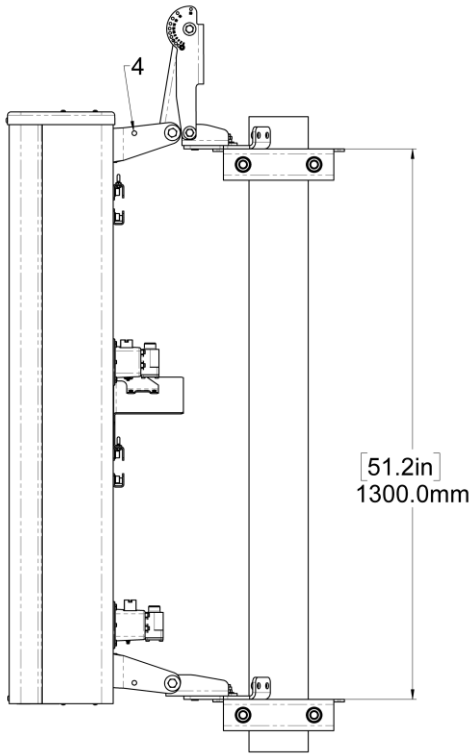


Figure 12

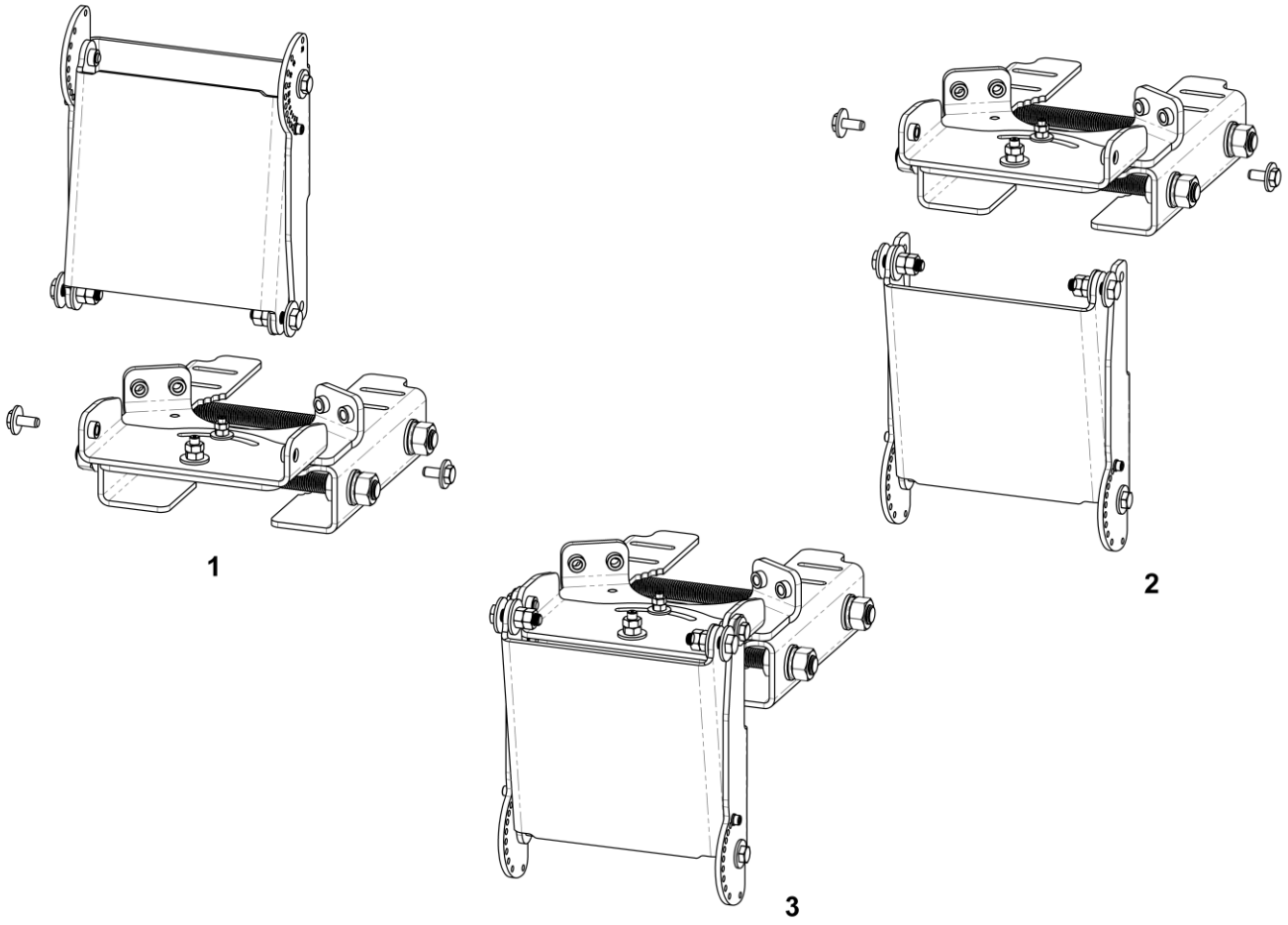


Step	Task
7	Refer to Figures 11 and 12. Install the antenna on to both Brackets using the M12 hardware provided for each Bracket as shown in Figure 11. Torque M12 hardware to 54±2.5 Nm (40±2 ft-lbs.). To assist with lifting, there are two Ø11 mm holes (4) in each hinge bracket on the antenna. Proceed to Step 8.

Step	Task
8	Refer to Figure 12. Ensure that the antenna is facing the correct direction. Tighten all M10 bolts and nuts to a torque of 25.0±1.5 Nm (18.5±1.5 ft-lbs.). Tighten the M8 nuts to a torque of 9.5±0.5 Nm (7.0±0.5 ft-lbs.). Tighten the M6 socket screws to a torque of 3.0±0.2 Nm (2.2±0.3 ft-lbs.). Proceed to Step 9.
9	Completed installation with 0° Mechanical Tilt should appear as shown in Figure 12. Proceed to Step 10.
10	Radios can now be installed following separate Radio installation guides.

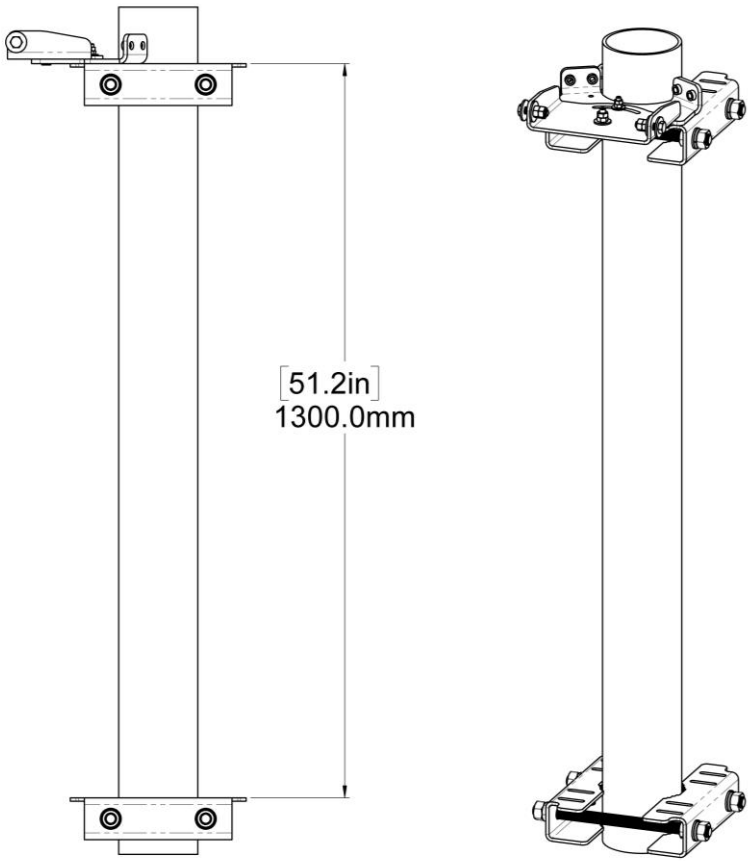
UPTILT INSTALLATION

Figure 13



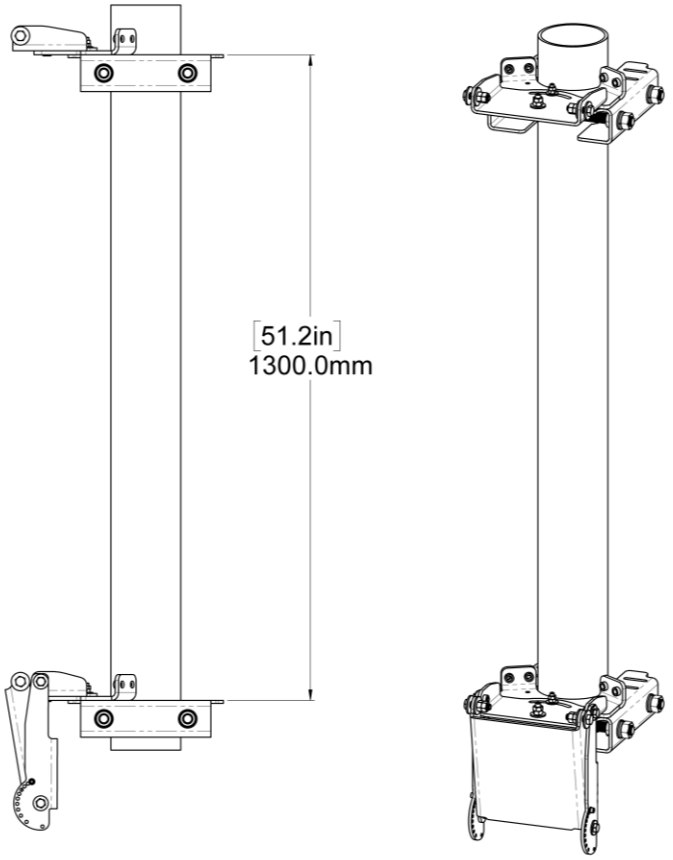
Step	Task
11	Refer to Figure 13. To convert the Tilting Bracket assembly for Uptilt installation, remove the M10 screws holding the scissor parts in place (1). Invert the scissor parts (2). Install the M10 screws to secure the scissor parts (3). Proceed to Step 12.

Figure 14



Step	Task
12	Refer to Figure 14. For Uptilt installation, the Tilting Bracket assembly is mounted below the Fixed Bracket assembly. Apply Steps 1-5 to continue the installation. Proceed to Step 13.

Figure 15



Step	Task
13	Refer to Figure 15. After installing any parts that were removed in prior steps, the mounting brackets for Uptilt Installation should appear as in the figure. Leave the M8 nuts loose for future alignment. Proceed to Step 14.

Figure 16

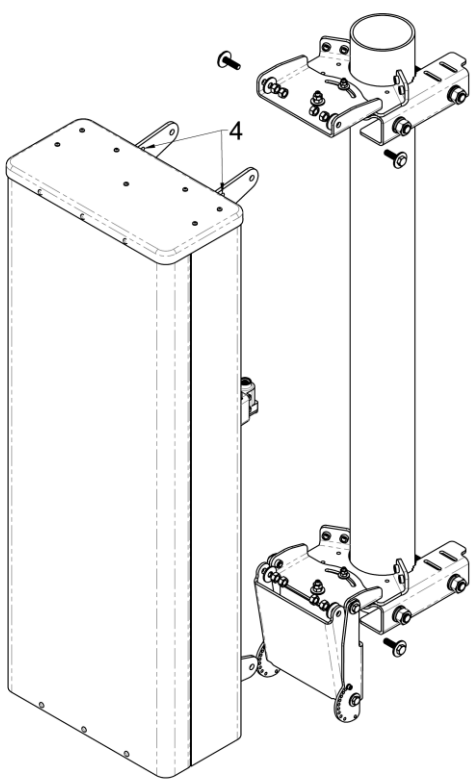
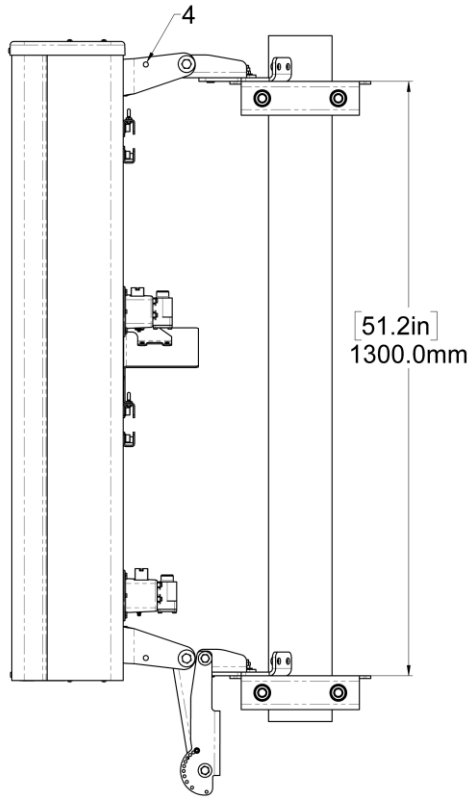


Figure 17

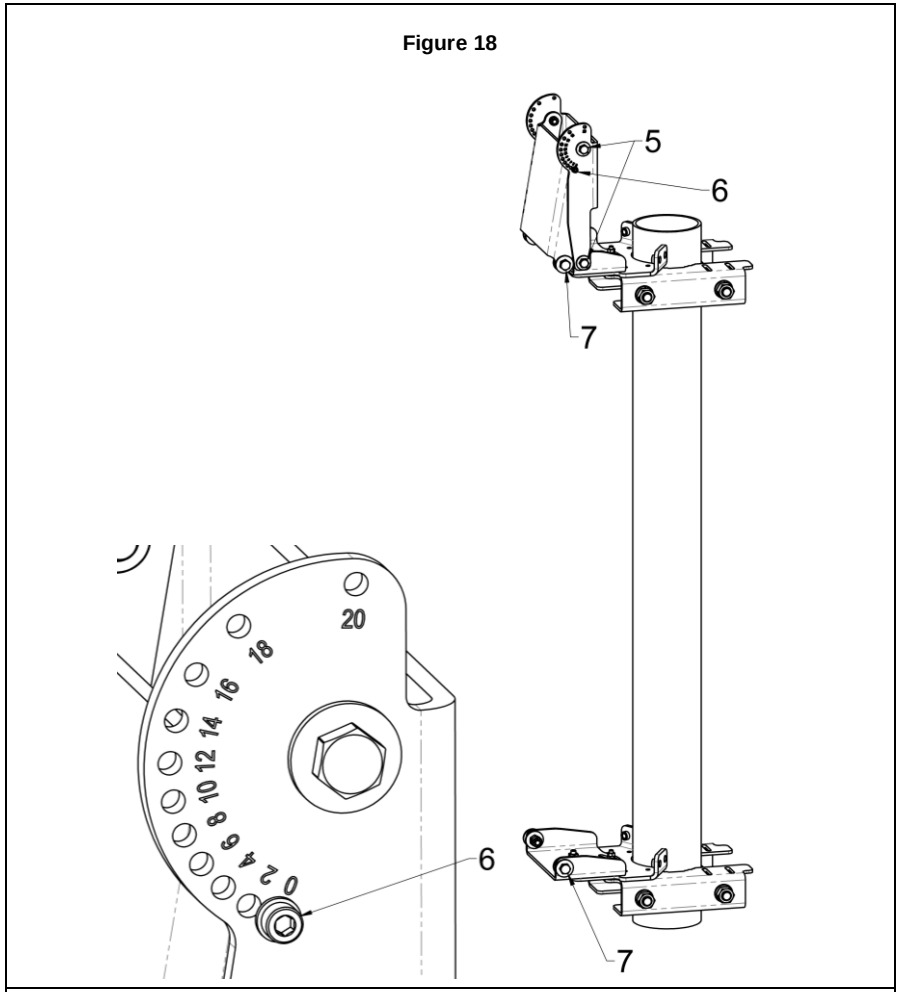


Step	Task
14	Refer to Figures 16 and 17. Install the antenna on to both Brackets using the M12 hardware provided for each Bracket as shown. Torque M12 hardware to 54±2.5 NM (40±2 ft-lbs.). To assist with lifting, there are two Ø11 mm holes (4) in each hinge bracket on the antenna. Proceed to Step 15.

Step	Task
15	Refer to Figure 17. Ensure that the antenna is facing the correct direction. Tighten all M10 bolts and nuts to a torque of 25.0±1.5 Nm (18.5±1.5 ft-lbs.). Tighten the M8 nuts to a torque of 9.5±0.5 Nm (7.0±0.5 ft-lbs.). Tighten the M6 socket screws to a torque of 3.0±0.2 Nm (2.2±0.3 ft-lbs.). Proceed to Step 16.
16	Completed installation with 0° Mechanical Tilt should appear as shown in Figure 17. Proceed to Step 17.
17	Radios can now be installed following separate Radio installation guides.

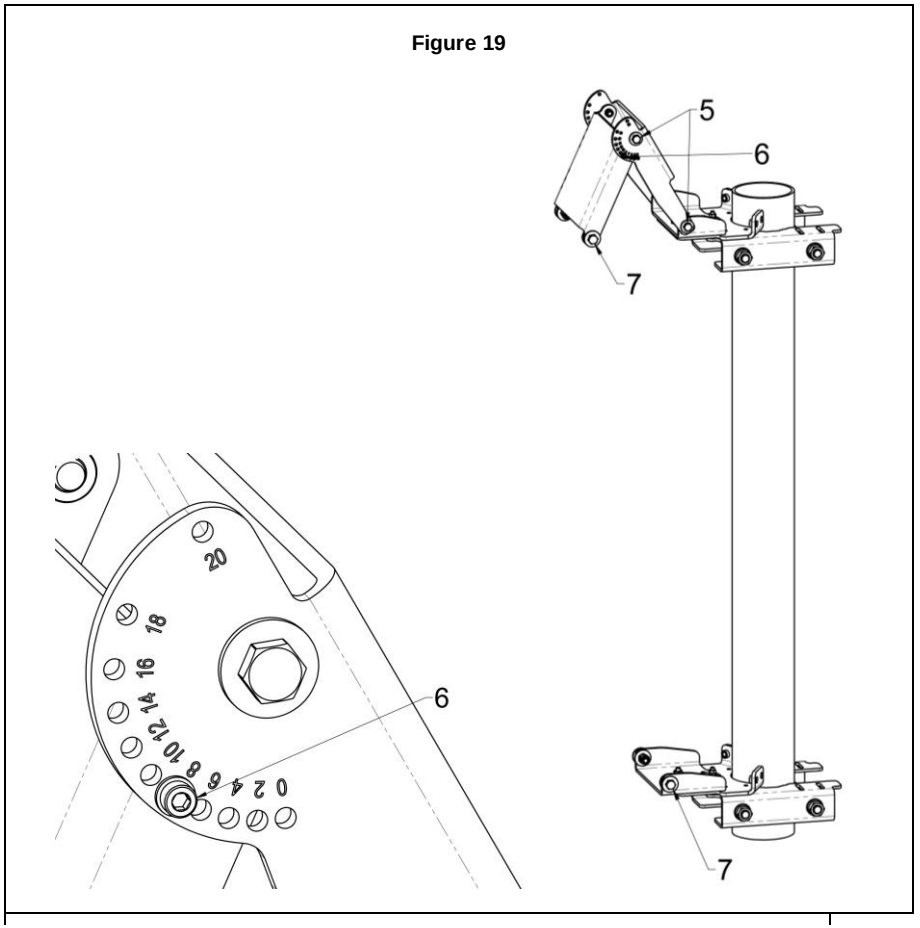
EXAMPLE OF ADJUSTING THE DOWNTILT FROM 0° TO 8°

Figure 18



Step	Task
18	Refer to Figure 18. CAUTION! Properly support and control the antenna before making any adjustments. Antenna is not shown for clarity. Assuming 0° of tilt initially, loosen all screws (5 and 7) on both sides. Remove the screw and washer (6) from both sides. Proceed to Step 19.

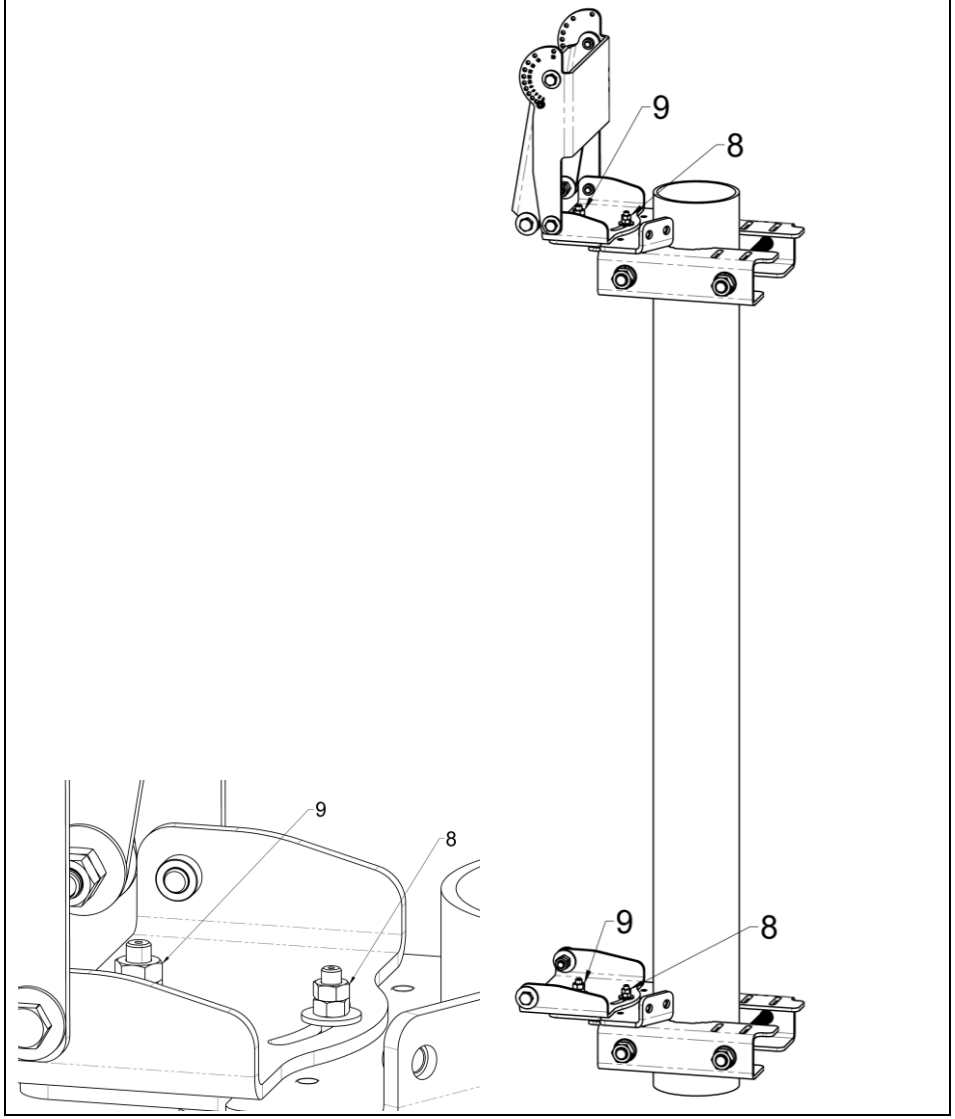
Figure 19



Step	Task
19	Refer to Figure 19. Allow the antenna to lean forward until the target tilt is reached. Assuming 8° of desired tilt, install the screw and washer (6) on both sides at the 8° position. Tighten to a torque of 3.0±0.2 Nm (2.2±0.3 ft-lbs.). Proceed to Step 20.
20	Refer to Figure 19. Tighten all screws (5) on both sides to a torque of 25.0±1.5 Nm (18.5±1.5 ft-lbs.). Tighten all screws (7) on both sides to a torque of 54±2.5 Nm (40±2 ft-lbs.).

EXAMPLE OF ADJUSTING THE AZIMUTH SWIVEL POSITION

Figure 20



Step	Task
21	Refer to Figure 20. To adjust the azimuth direction, loosen all nuts (8 and 9). Simply rotate the antenna to the desired azimuth position. Tighten all nuts (8) to a torque of 9.5±0.5 Nm (7.0±0.5 ft-lbs.). Tighten all nuts (9) to a torque of 25.0±1.5 Nm (18.5±1.5 ft-lbs.).