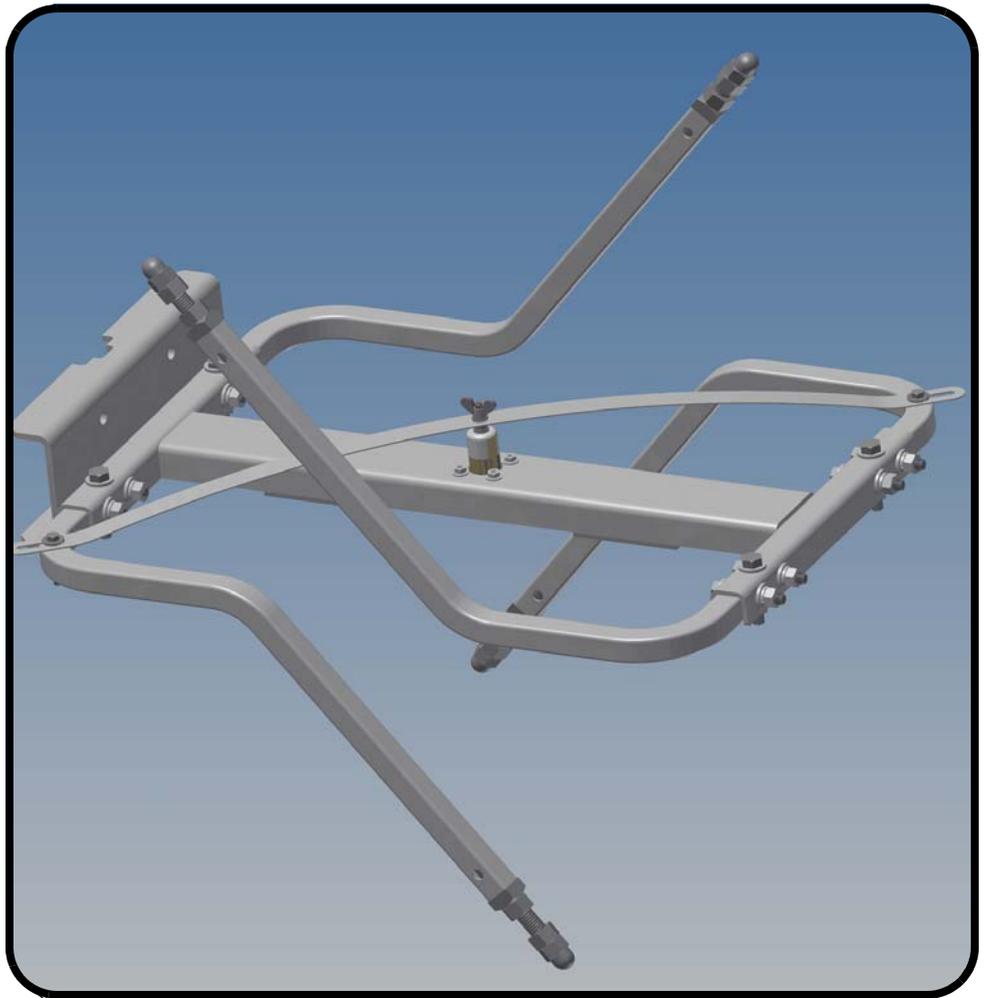


## Circularly Polarized FM Broadcast Antenna

Versa2une (SLV)  
2 to 12-bay, half-wave-spaced



Instruction Manual  
Installation, Operation, &  
Maintenance

---

## Congratulations!

Thank you for purchasing one of the finest FM broadcast antennas on the market today. The Shively Labs Versa2une is the top-of-the-line in its class for its simplicity, superior performance and durability.

Your purchase is backed by the best technical support in the industry. Shively is a leading manufacturer in the broadcast industry, providing an extensive range of antennas, transmission line and components. Our technical staff has a wealth of experience in the broadcast industry and is standing by to serve you in any way.

This manual is intended to give you a good basic understanding of your antenna: its proper and safe installation, startup, and operation, and troubleshooting and maintenance information to keep it working satisfactorily for years to come. *Please have everyone involved with the antenna read this manual carefully, and keep it handy for future reference.*

Meanwhile, please feel free to contact your sales representative at Shively Labs at any time if you need information or help. Call or write:

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Publication No. im-SLV\_hw (150915)

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**IMPORTANT**

**Please read this manual in its entirety before beginning installation of your antenna!**

**Failure to follow the installation and operation instructions in this manual could lead to failure of your equipment and might even void your warranty!**

**This manual applies only to two- to twelve-bay SLV antennas with half-wave bay spacing. For one- to four-bay full-wave-spaced antennas (SLV-1 to SLV-4) or six- to twelve-bay full-wave-spaced antennas (SLV-6 to SLV-12), refer to the appropriate manual on our Web site.**



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**Check the shipment.**

As soon as you receive your antenna, *BEFORE* signing for the shipment:

- a. Check to be sure all the material has arrived.
- b. Check for evident damage to any of the boxes.
- c. If any boxes are missing, or if any are obviously damaged, describe the problem in a WRITTEN note on the shipping papers BEFORE signing them. Then call Shively right away, and we'll do everything we can to correct the situation.

**Important!**

Never store the antenna system outdoors, boxed or otherwise. Take pains to keep the antenna components dry. You will need to purge moisture from the interior of the antenna components before applying transmitter power, and purging will be much more time-consuming if the components get wet.

**Torque specifications.****NOTE**

Use an anti-seize compound to minimize galling on stainless steel threads.

Table 1. Torque specifications

Hardware size	Torque (dry)	Torque (lubricated)
M5 stainless steel	3.75 lb-ft (0.52 kg-m)	3.4 lb-ft (0.47 kg-m)
M8 stainless	16 lb-in (2.2 kg-m)	14 lb-ft (1.9 kg-m)
M12 stainless	54 lb-ft (7.5 kg-m)	48 lb-ft (6.6 kg-m)
Antenna input fitting	18 - 22 lb-in (21 - 25 cm-kg)	n/a

**Check the parts.**

Check to be sure all the parts shown in [Parts](#) on page 45 have arrived in good condition:

- [Table 2](#) on page 45 lists parts provided "per bay assembly" (e.g.: bay arms, radomes);
- [Table 3](#) on page 47 lists parts provided "per antenna system" (e.g.: power dividers)

**NOTE**

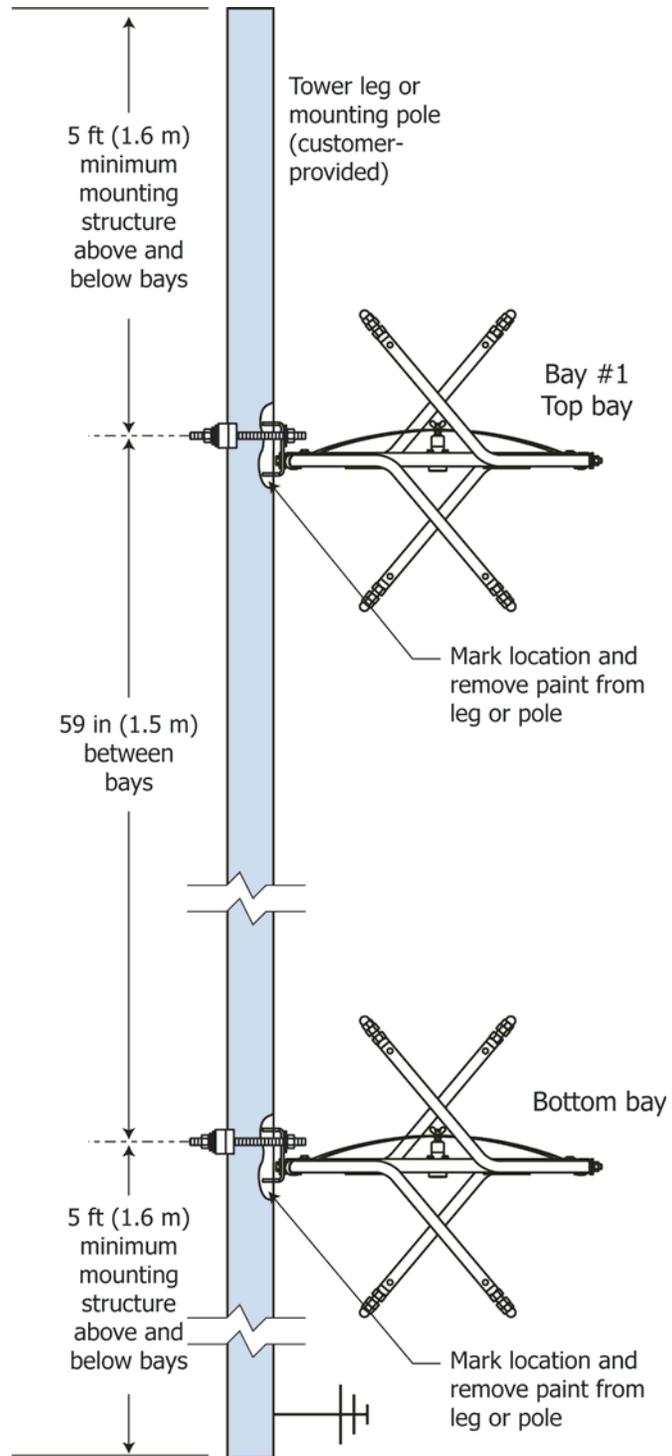
Item callouts are consistent across all the illustrations in this technical sheet.

## Prepare the mounting location.

Figure 1. Tower layout, two-bay antenna

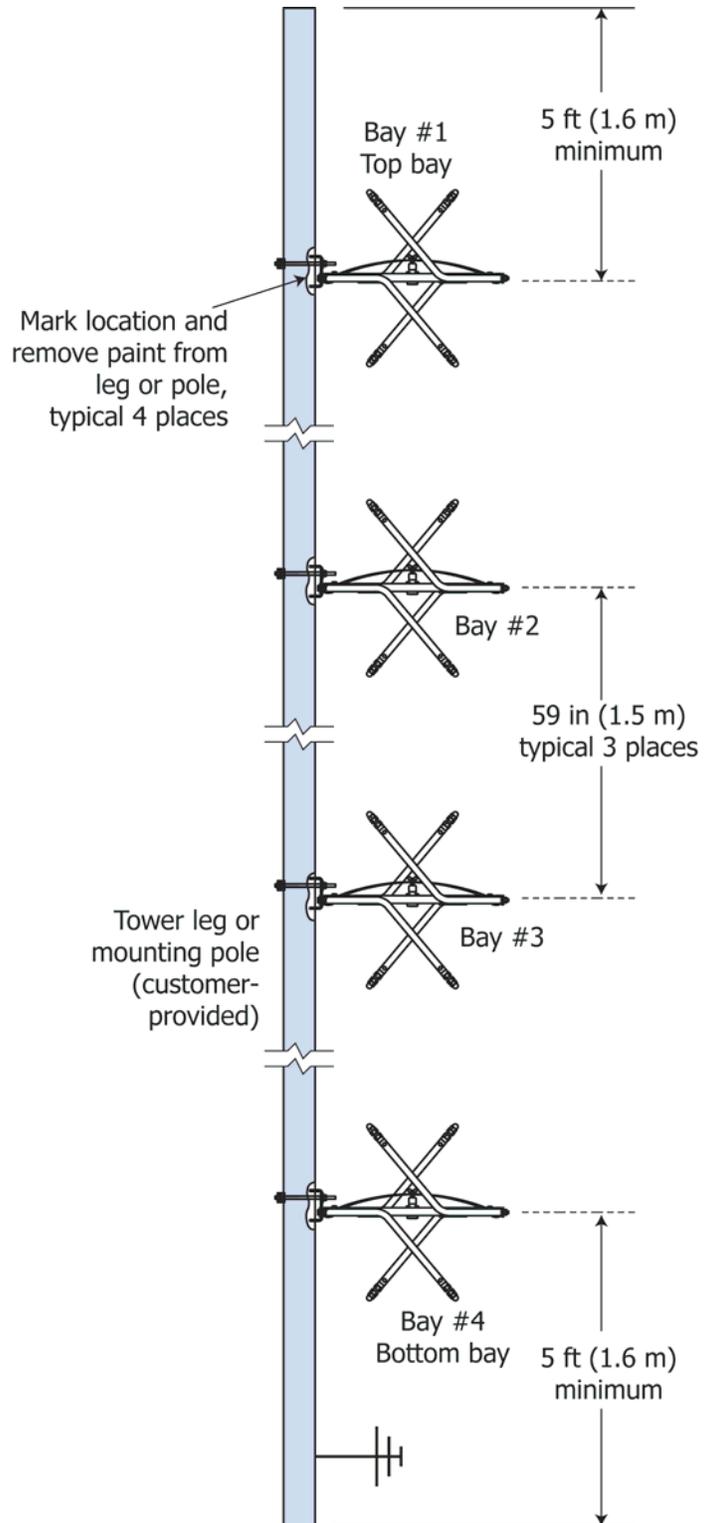
**Remember!**

*It is YOUR responsibility to ensure that your installation meets all applicable codes and the centerline-of-radiation requirements of your FCC construction permit.*



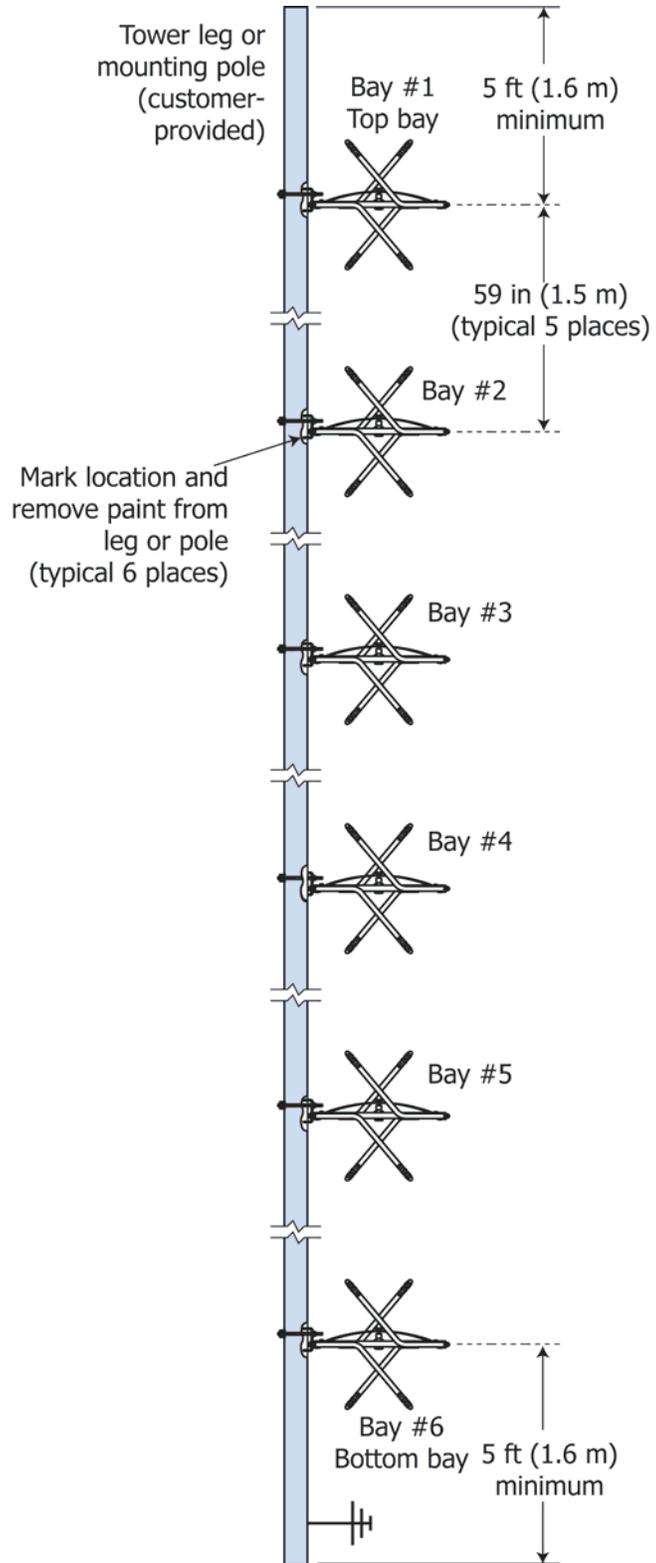
## Preparation

Figure 2. Tower layout, four-bay antenna



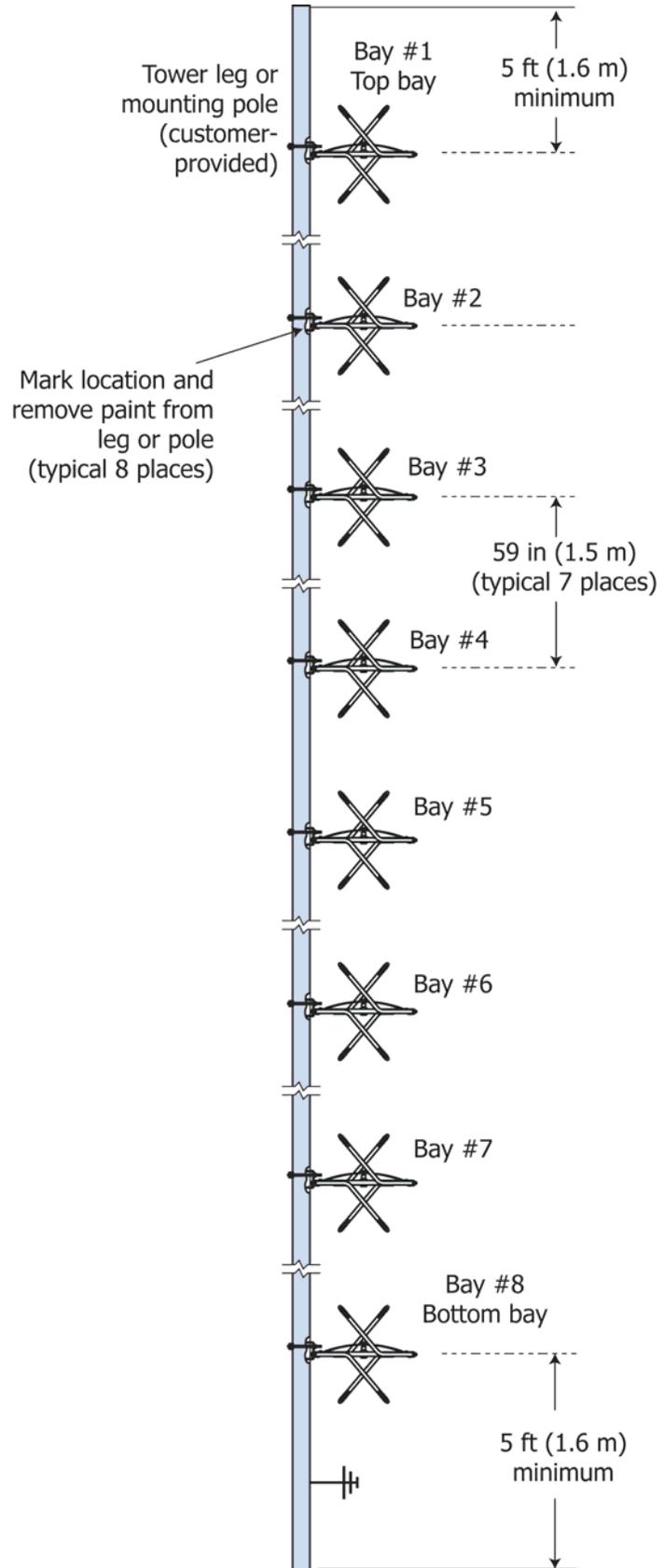
## Preparation

Figure 3. Tower layout, six-bay antenna



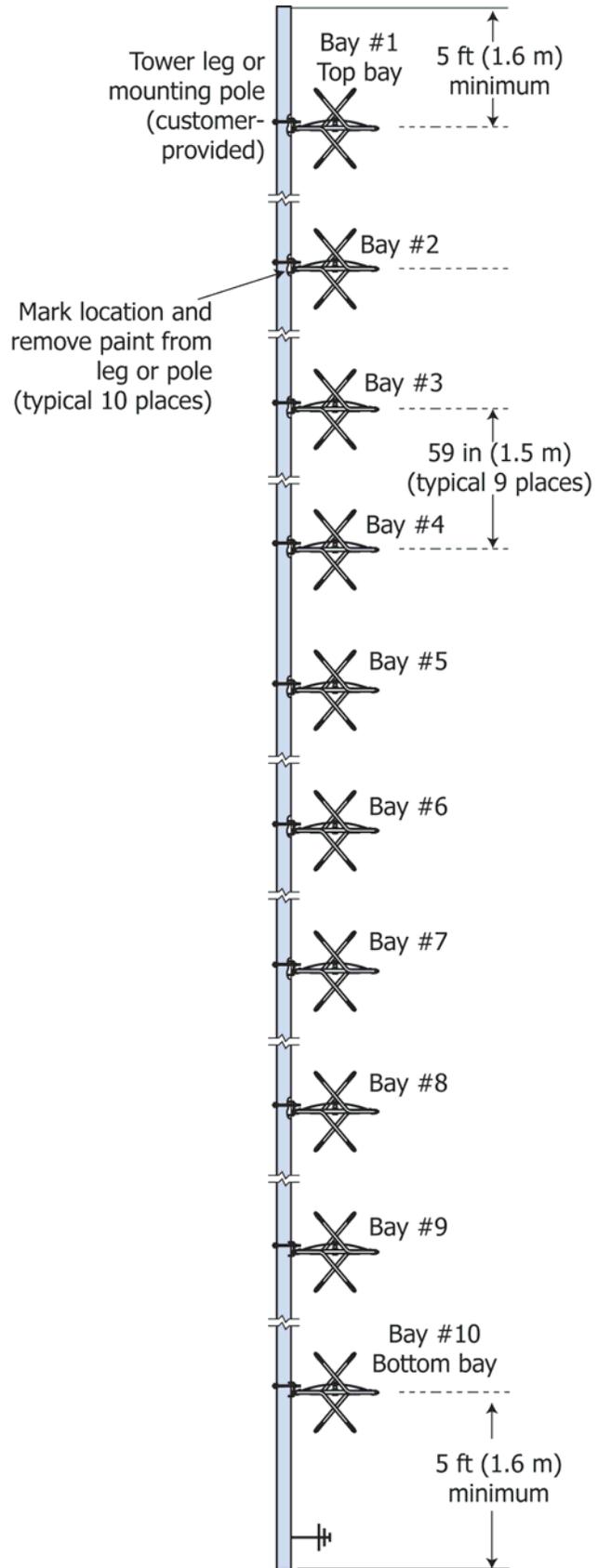
## Preparation

Figure 4. Tower layout, eight-bay antenna



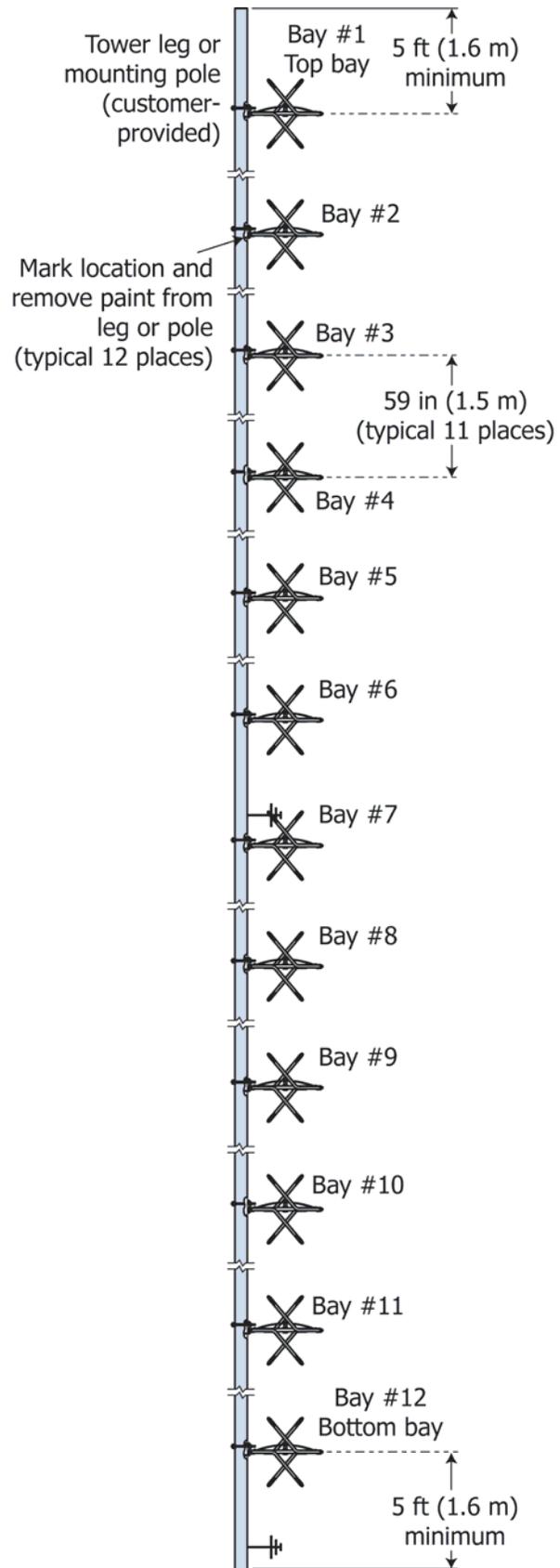
## Preparation

Figure 5. Tower layout, ten-bay antenna



## Preparation

Figure 6. Tower layout, twelve-bay antenna



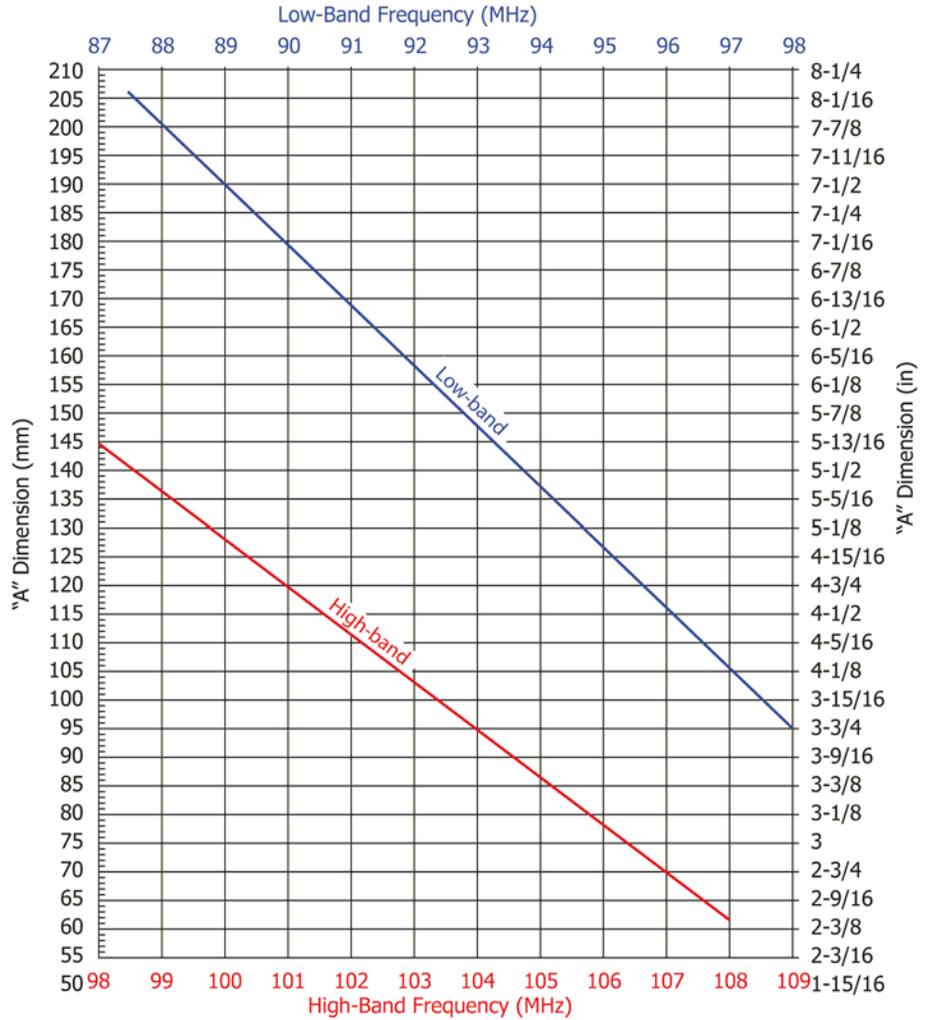
## Preparation

High-band or low-band?

87.5 - 98 MHz = Low-band  
98.1 - 108 MHz = High-band.

Determine "A" dimension.

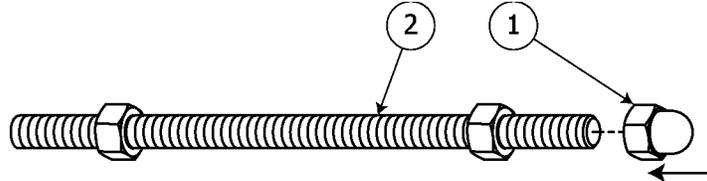
Figure 7. Low-band and high-band "A" dimension values



Assemble arms.

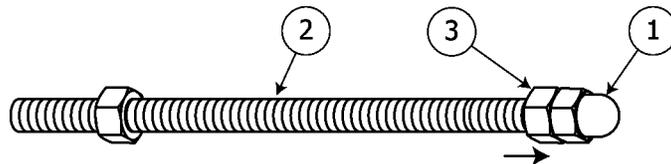
- a. Screw the acorn nut (Figure 8, 1) onto the 230 mm threaded rod (2) as far as it will go.

Figure 8. Arm assembly a



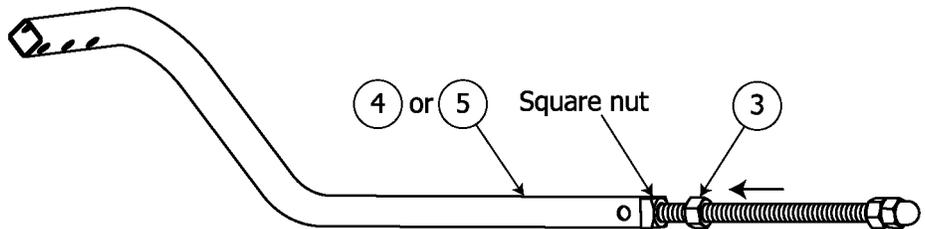
- b. Screw a M12 hex nut (Figure 9, 3) tightly against the acorn nut.

Figure 9. Arm assembly b



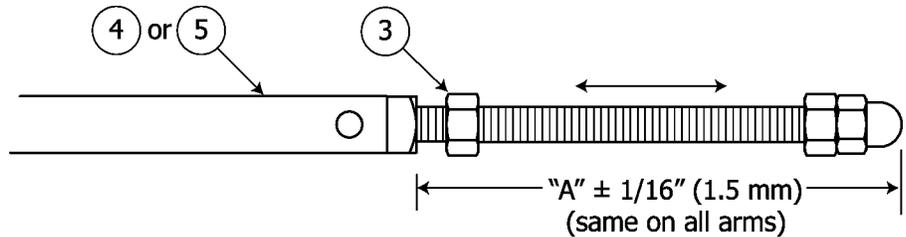
- c. Insert the threaded rod into the arm (Figure 10, 4 or 5).

Figure 10. Arm assembly c



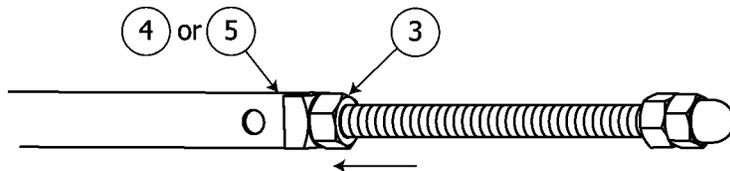
- d. (Figure 11) Set the "A" dimension (from Figure 7) to a tolerance of  $\pm 1/8"$  (3 mm).

Figure 11. Arm assembly d



- e. (Figure 12) Screw the hex nut against the square nut at the end of the arm to secure the threaded rod and the "A" dimension.

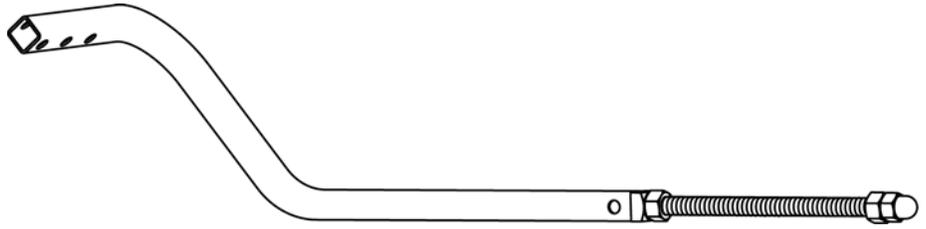
Figure 12. Arm assembly e



## Arm Assembly

Figure 13. Arm assembly - complete

f. (Figure 13) Repeat for the other 3 arms.



f. Repeat for the other antenna bays.

### 3

## Bay Assembly (without radomes)

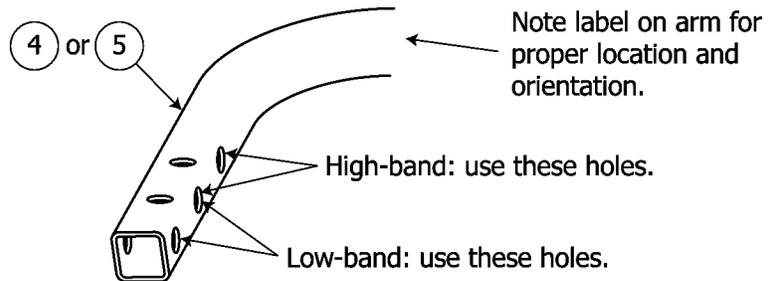
### Attach the arms to the radiator.

**NOTE**

This step may be made easier by clamping the radiator to a surface or mounting it temporarily on a vertical pole.

- a. (Figure 14) Identify the mounting holes to be used.

Figure 14. Arm hole selection

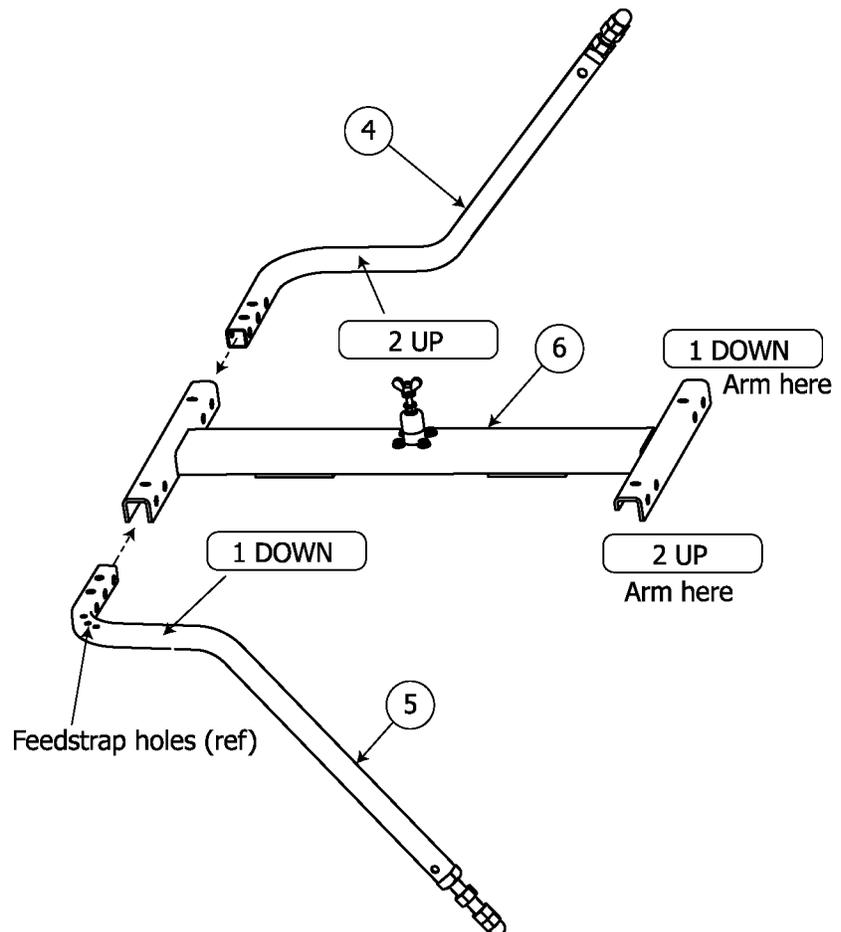


**CAUTION**

Parts 5, with the feedstrap mounting holes, must be mounted diagonally across from each other as shown.

- b. Position the first arms (Figure 15, 4 and 5) on the radiator (6).

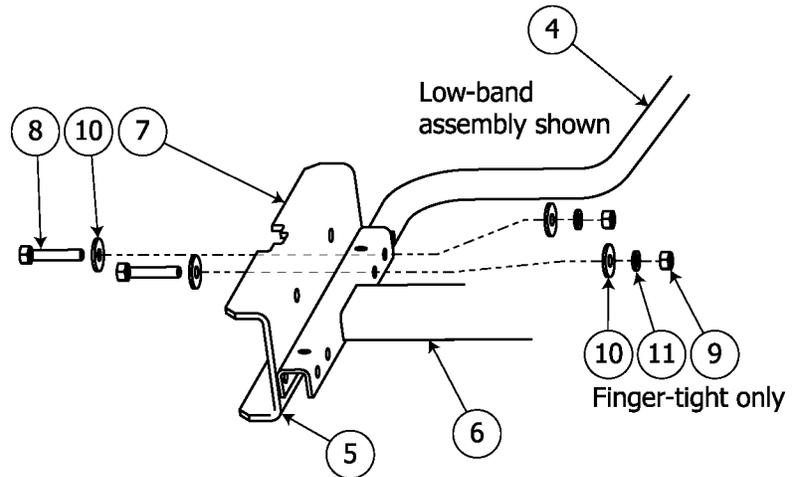
Figure 15. Position first arms



## Bay Assembly (without radomes)

- c. Attach the channel mount ([Figure 16, 7](#)) and arms, using M8 hardware ([8](#), [9](#), [10](#), and [11](#)), finger-tight only.

Figure 16. Channel attachment

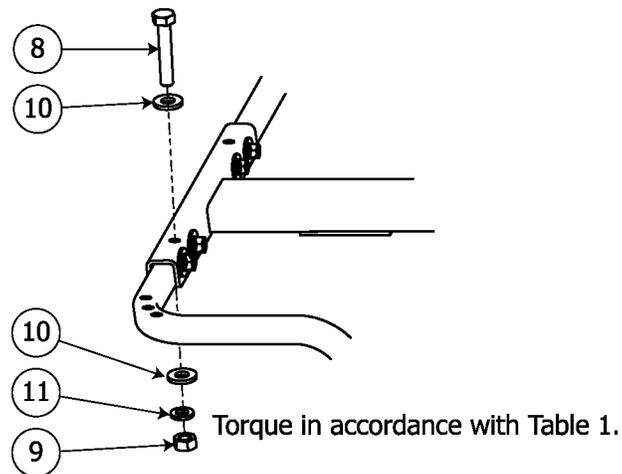


### CAUTION

To ensure proper arm alignment, always tighten the nuts on the vertical bolts before tightening the horizontal ones.

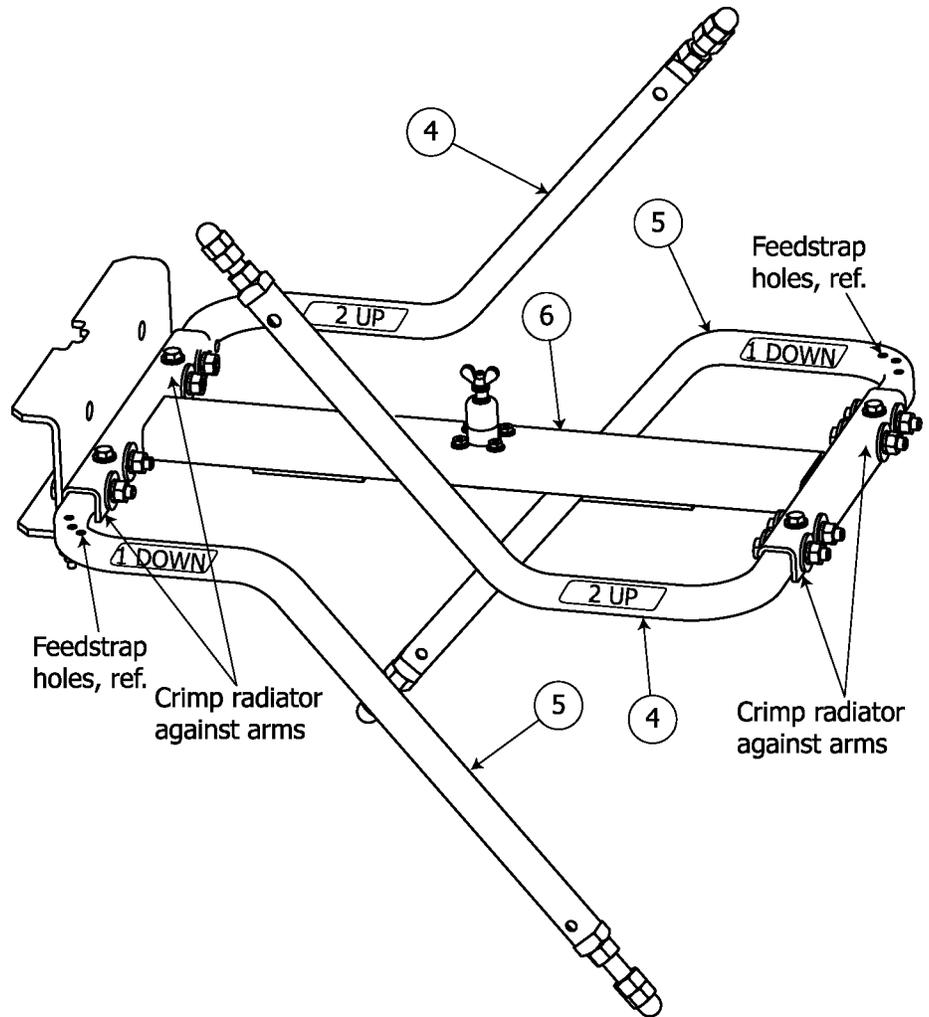
- d. Secure each arm with a vertical M8 bolt and hardware ([Figure 17, 8, 9, 10](#), and [11](#)). Torque in accordance with [Table 1](#) on page 1.

Figure 17. Vertical bolts



- e. Tighten the nuts on the horizontal bolts. Torque in accordance with [Table 1](#).
- f. Repeat to attach the other two arms in their correct positions ([Figure 18](#)).

Figure 18. Arm attachment - complete

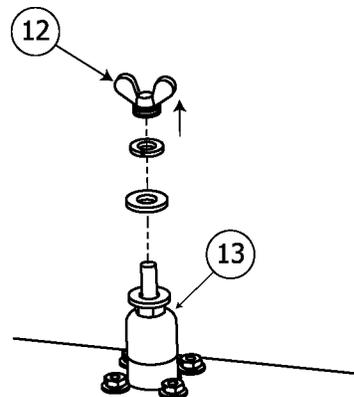


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### Install the feedstrap.

- a. Remove the wingnut (Figure 19, 12), the top lockwasher, and the topmost flat washer from the endseal (13). Leave the second flat washer in place.

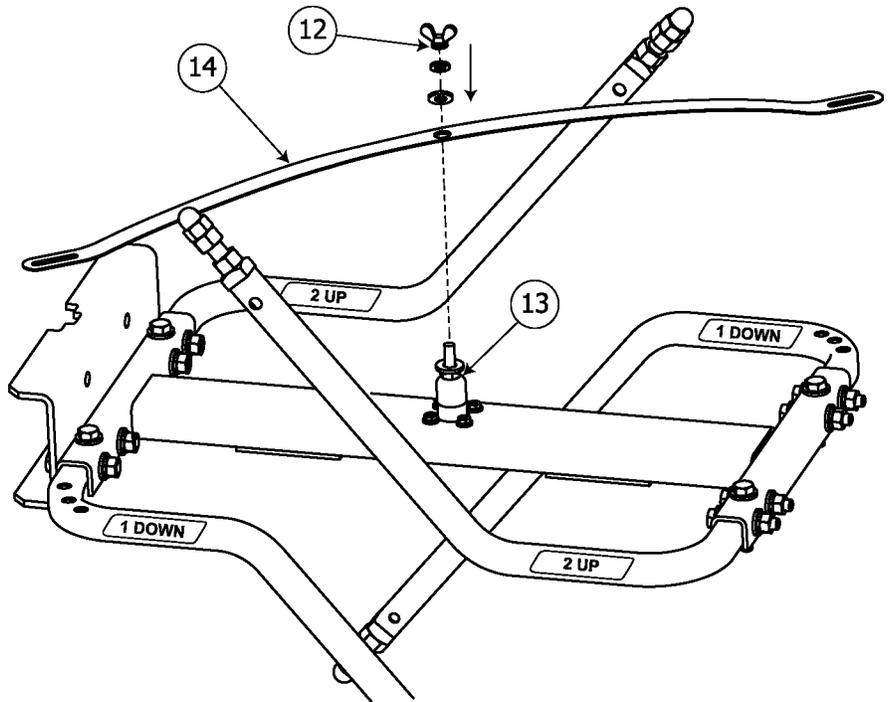
Figure 19. Remove wingnut



- b. Using the wingnut, secure the feedstrap (Figure 20, 14) to the endseal.

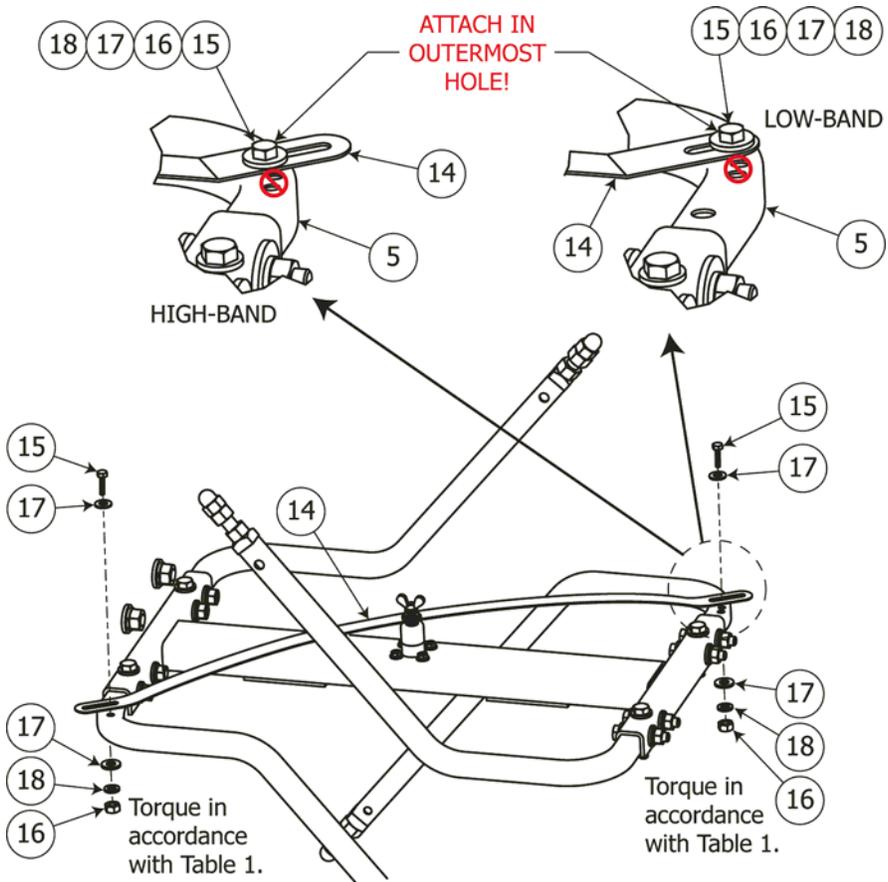
Bay Assembly (without radomes)

Figure 20. Feedstrap to endseal



- c. Using the M5 hardware ([Figure 21](#), [15](#), [16](#), [17](#), and [18](#)), secure the feedstrap to the outer holes in the arms.

Figure 21. Feedstrap to arms



## Connect the coax cable.

### CAUTION

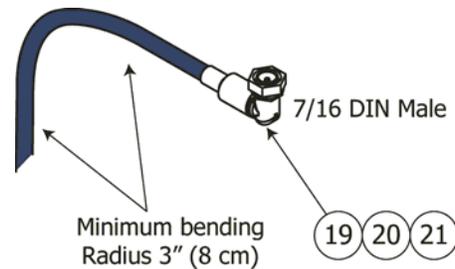
Stressing a coax connection after assembly can detune the system. Therefore, never make a connection and then bend or twist the cable, or use the connector to force the coax into shape. Form the cable first, then attach it to the connector.

### CAUTION

The minimum bending radius for 1/2" coax is 3" (8 cm). Do not bend it too tightly; you may damage it.

- a. Form the cable ([Figure 22](#), [19](#), [20](#), or [21](#)) to the desired shape.

Figure 22. Form coax cable

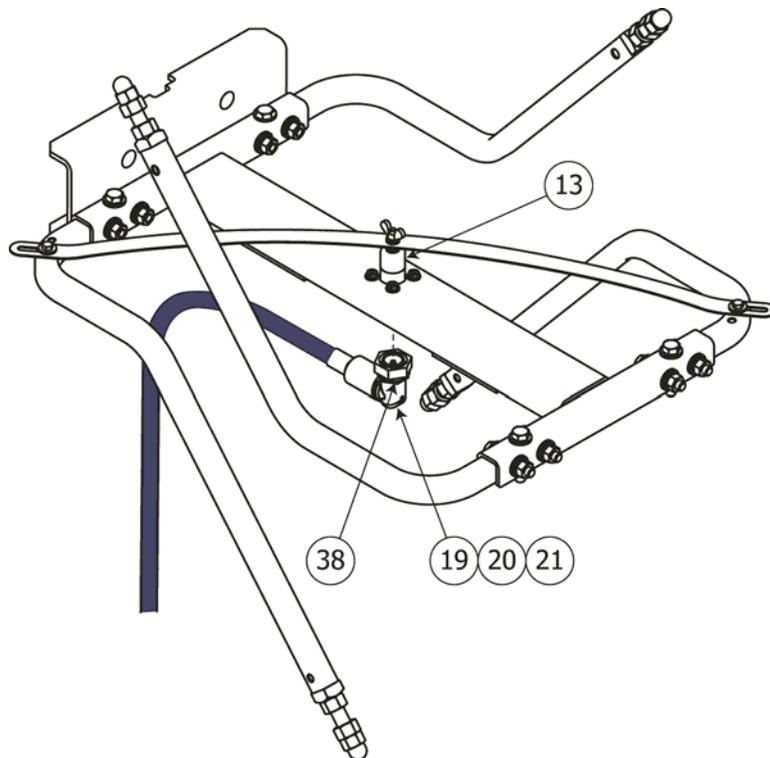


### CAUTION

Do not overtighten the connectors. Overtightening may damage them.

- b. ([Figure 23](#)) Attach the elbow on the cable to the antenna input. Torque to 18 - 22 lb-in (21 - 25 kg-cm).

Figure 23. Attach coax cable to antenna input

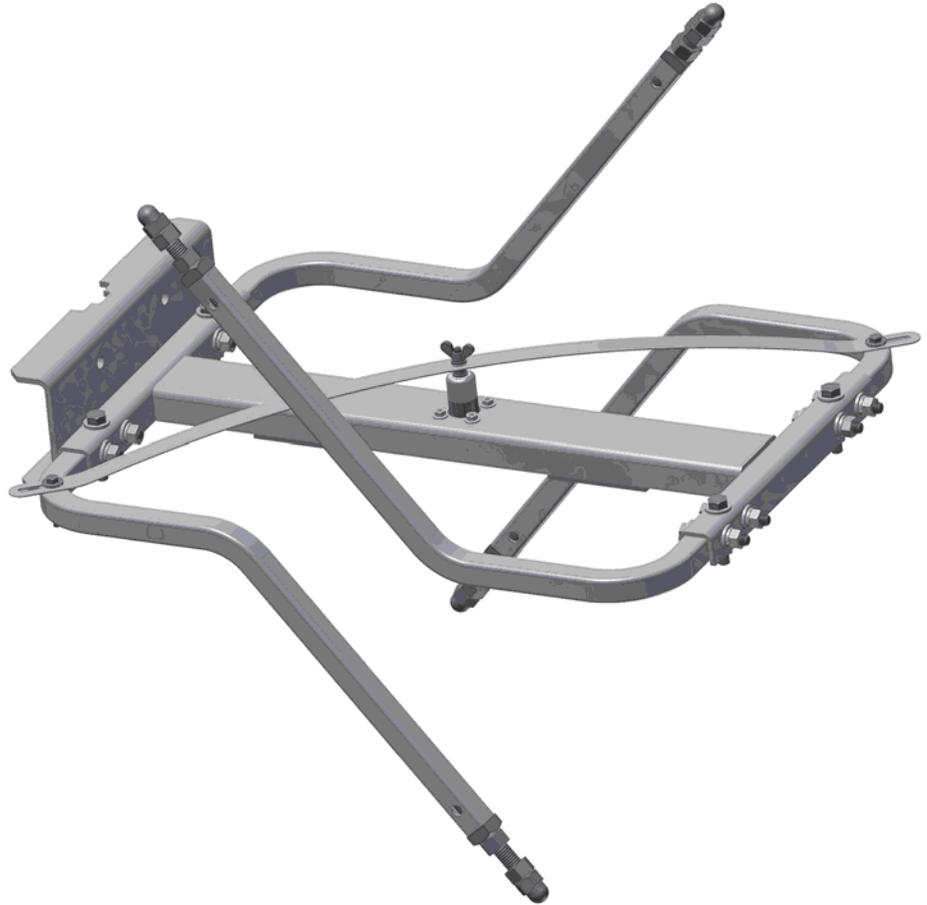


- c. Seal the joint thoroughly with splice tape ([31](#)).

## Bay Assembly (without radomes)

This completes assembly of your antenna bay without radomes ([Figure 24](#)).  
If your antenna has multiple bays, repeat this chapter for the remaining bays.  
Then please proceed to [Mounting the Antenna Bay\(s\)](#) on page 25.

Figure 24. Finished antenna bay assembly



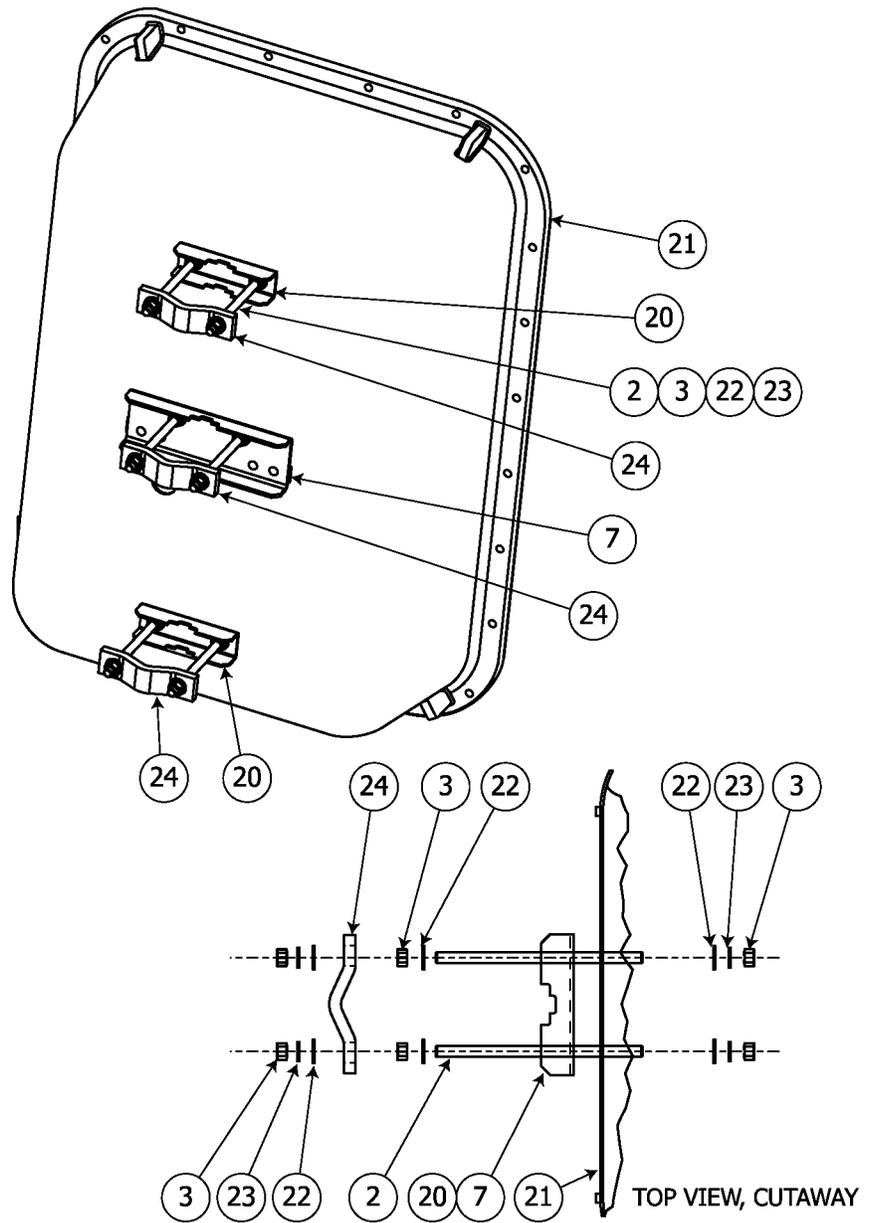
4

# Bay Assembly (with radomes)

## Attach the mount channels to the radome back half.

Figure 25. Mount channels and clamp halves to radome

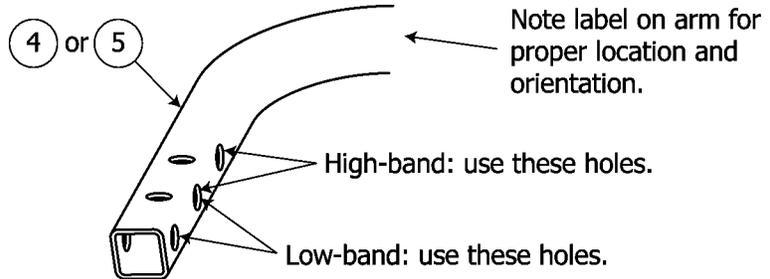
- a. Attach a center channel mount (Figure 25, 7) and two end channel mounts (22) to the radome back half (23), using the threaded rods (2) and M12 hardware (3, 24, 25) as shown.
- b. Loosely attach the clamp halves (26) to the threaded rods.



## Attach the arms to the radiator.

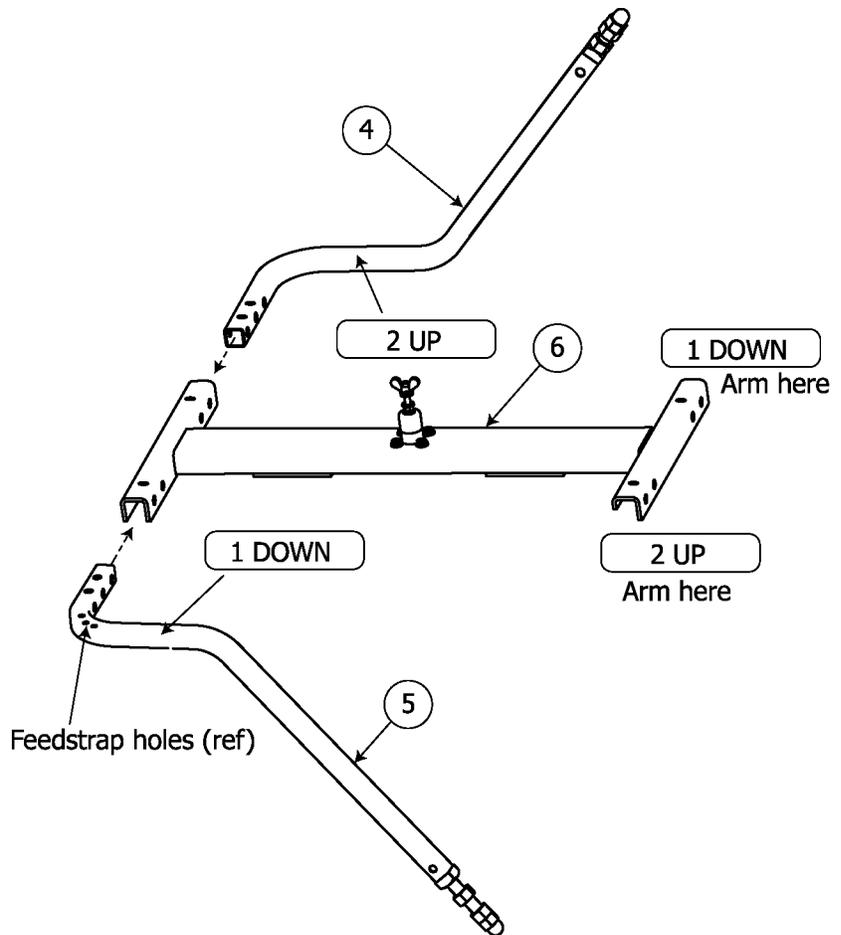
Figure 26. Arm hole selection

- NOTE**  
This step may be made easier by clamping the radiator to a surface or mounting it temporarily on a vertical pole.
- ([Figure 26](#)) Identify the mounting holes to be used.



- CAUTION**  
Parts [5](#), with the feedstrap mounting holes, must be mounted diagonally across from each other as shown.
- Position the inner arms ([Figure 27](#), [4](#) and [5](#)) on the radiator ([6](#)).

Figure 27. Position inner arms



## Bay Assembly (with radomes)

- c. Attach the radome assembly (assembled above) and the inner arms ([Figure 28](#), [4](#) and [5](#)) to the radiator ([6](#)), using M8 hardware ([8](#), [9](#), [10](#), and [11](#)), finger-tight only.

### NOTE

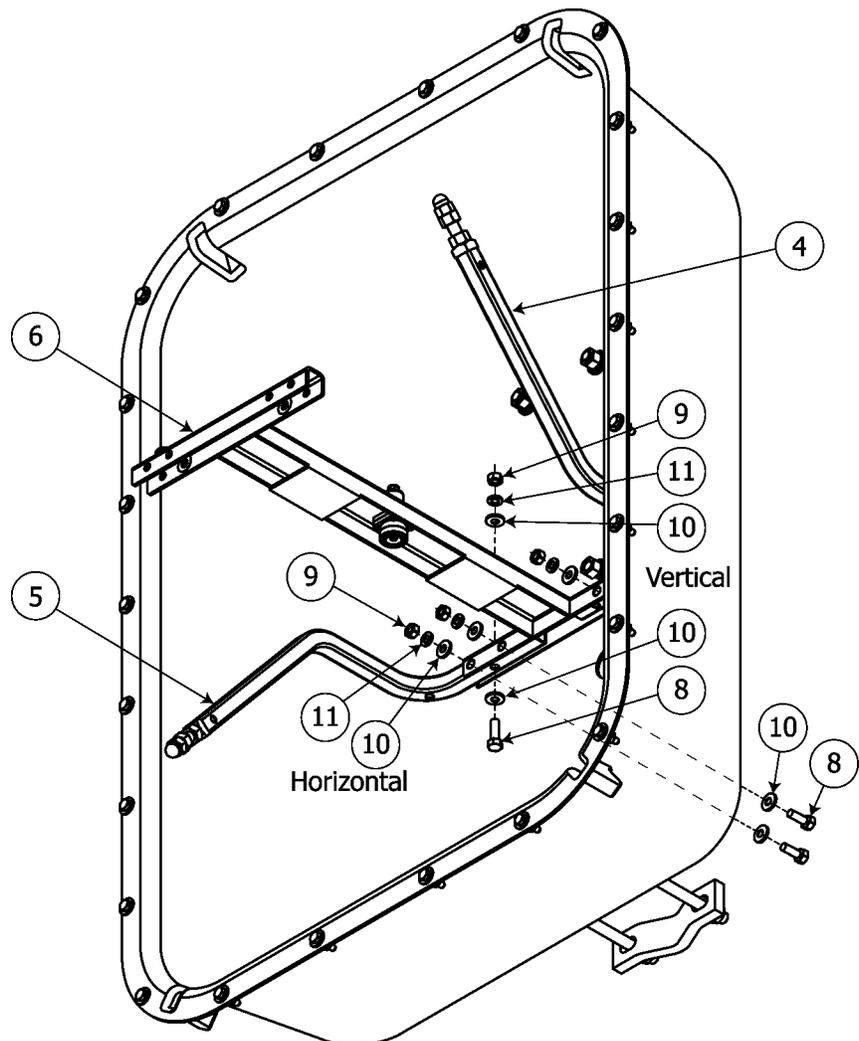
The channel of the radiator fits into the rectangular slot in the back of the radome half.

### CAUTION

To ensure proper arm alignment, always tighten the nuts on the vertical bolts before tightening the horizontal ones.

- d. Secure each arm with a vertical M8 bolt and hardware ([8](#), [9](#), [10](#), and [11](#)). Torque in accordance with [Table 1](#) on page 1.

Figure 28. Radome, inner arms to radiator

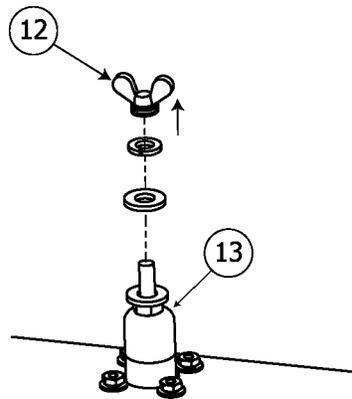


- e. Tighten the nuts on the horizontal bolts ([Figure 28](#)). Torque in accordance with [Table 1](#).
- f. Repeat to attach the other two arms in their correct positions.

## Install the feedstrap.

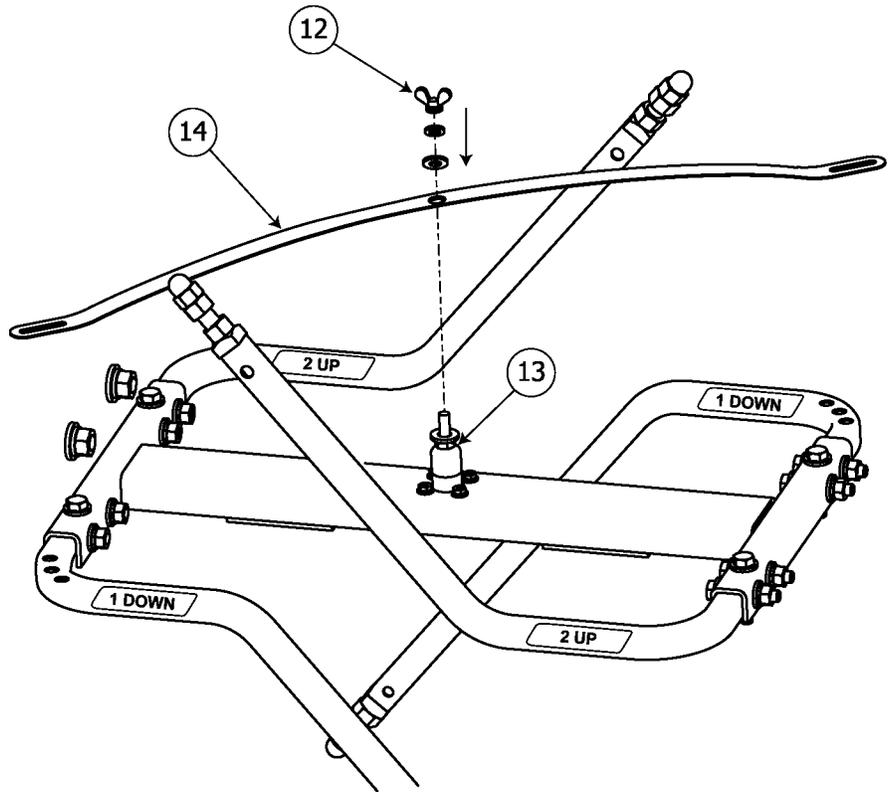
Figure 29. Remove wingnut

- a. Remove the wingnut (Figure 29, 12), the top lockwasher, and the topmost flat washer from the endseal (13). Leave the second flat washer in place.



- b. Using the wingnut, secure the feedstrap (Figure 30, 14) to the endseal.

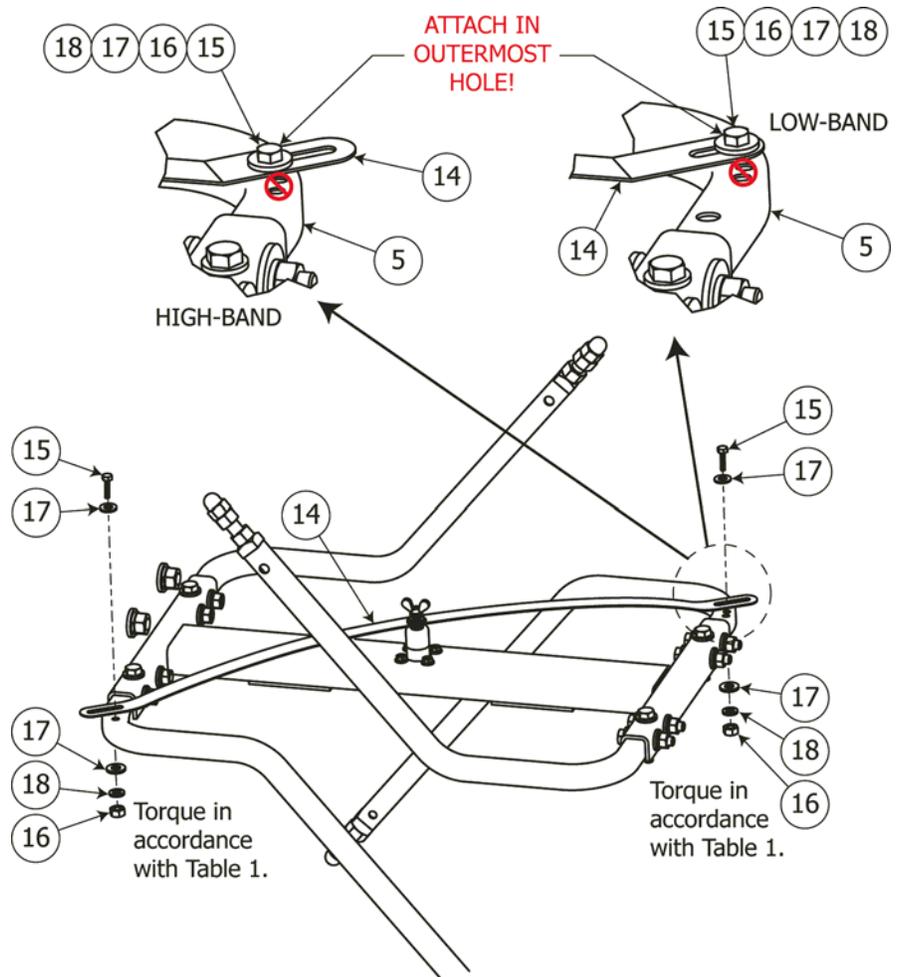
Figure 30. Feedstrap to endseal



- c. Using the M5 hardware (Figure 31, 15, 16, 17, and 18), secure the feedstrap to the outer holes in the arms.

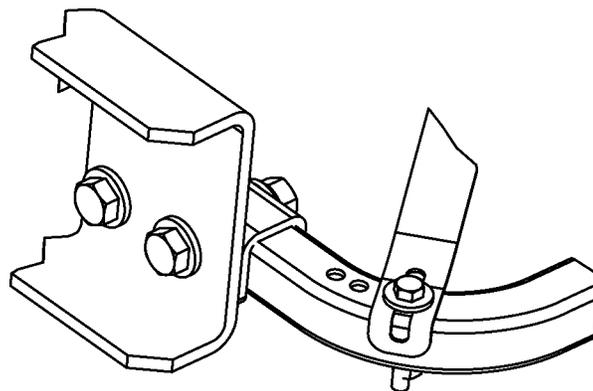
## Bay Assembly (with radomes)

Figure 31. Feedstrap to arms



- d. (High-band only) Bend the ends of the feedstrap down over the arms to allow clearance inside the radome ([Figure 32](#)).

Figure 32. Feedstrap ends bent down



Attach the coax cable.

**CAUTION**

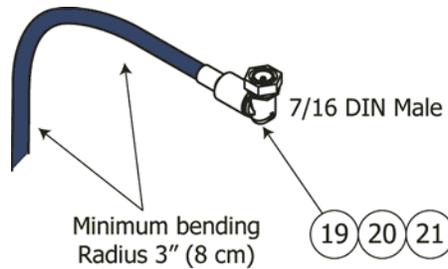
Stressing a coax connection after assembly can detune the system. Therefore, never make a connection and then bend or twist the cable, or use the connector to force the coax into shape. Form the cable first, then attach it to the connector.

**CAUTION**

The minimum bending radius for 1/2" coax is 3" (8 cm). Do not bend it too tightly; you may damage it.

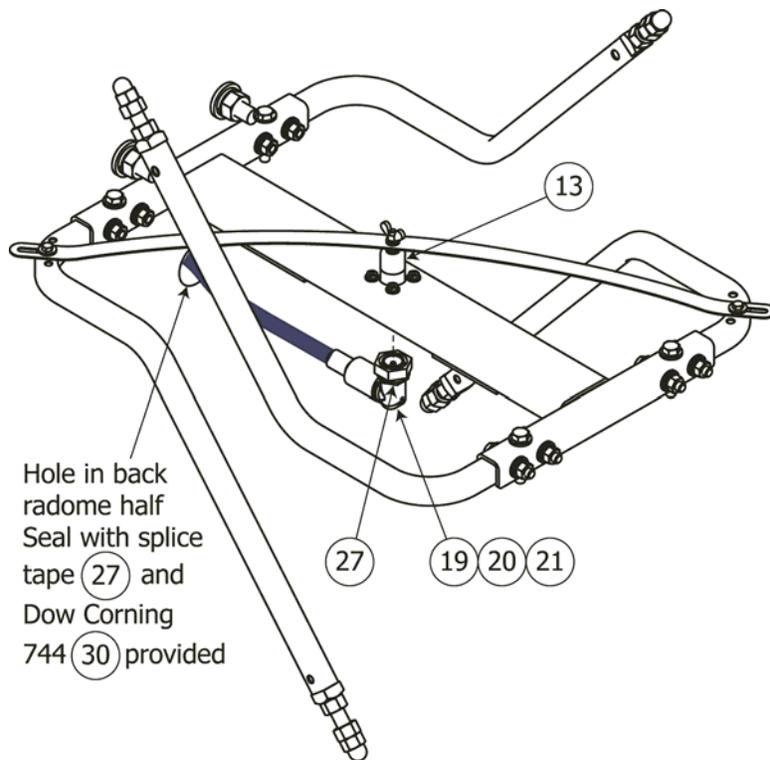
- a. Form the cable ([Figure 33](#), [19](#), [20](#), or [21](#)) to the desired shape.

Figure 33. Form coax cable



- b. Insert the elbow end of the coax feedline cable ([Figure 34](#), [19](#), [20](#), or [21](#)) in through the round hole in the back of the radome half ([23](#)), and connect it to the base of the endseal ([13](#)). Torque the cable fitting in accordance with [Table 1](#) on page 1.

Figure 34. Attach coax cable to antenna input.

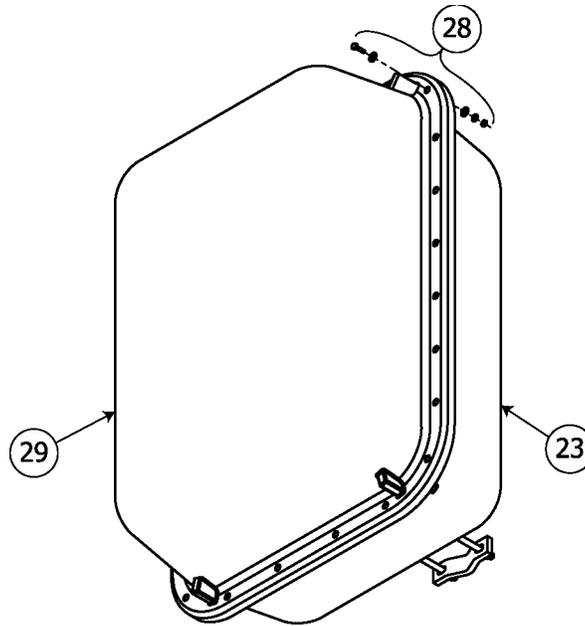


- c. Seal the joint thoroughly with splice tape ([27](#)).

## Install the radome front half.

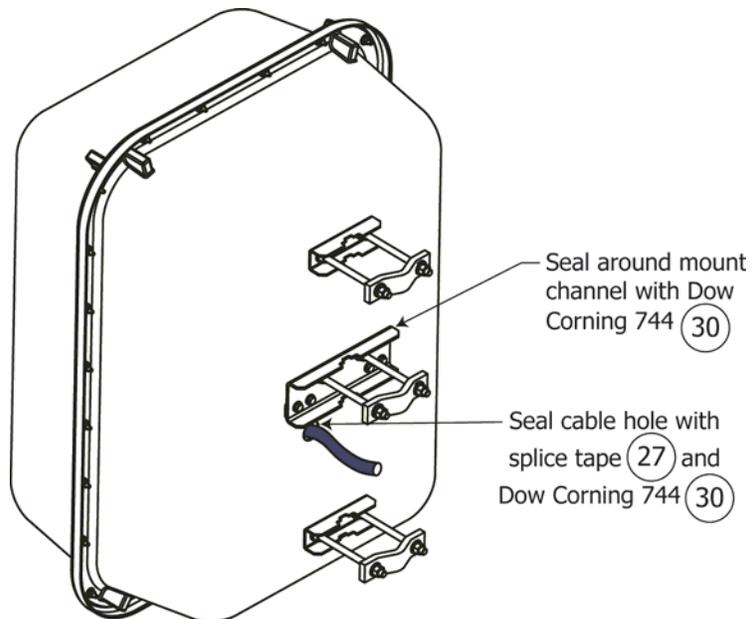
Figure 35. Radome front half installation

- a. Using the 1/4" hardware (Figure 35, 28), attach the radome front half (29) to the radome back half (23).



- b. Using splice tape (Figure 36, 27), provided with the antenna) and Dow Corning 744 adhesive-sealant (30), seal:
  - The perimeter of the center mount channel on the back of the radome, and
  - The hole in the radome back half around the coax cable.

Figure 36. Seal around radome openings.



## Bay Assembly (with radomes)

This completes assembly of your antenna bay with radomes ([Figure 37](#)).  
If your antenna has multiple bays, repeat this chapter for the remaining bays.  
Then please proceed to [Mounting the Antenna Bay\(s\)](#) on page 25.

Figure 37. Finished antenna bay assembly with radome, back view



# 5

## Mounting the Antenna Bay(s)

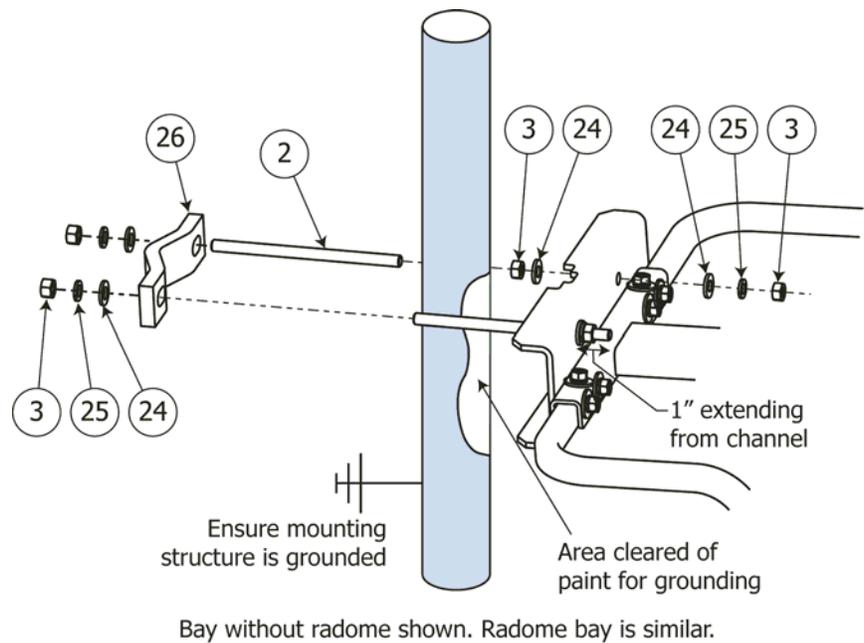
Mount the antenna bay on the tower leg or pole.

**NOTE**

If the supporting structure is non-metallic (for example, a chimney or a tree), run a ground cable (customer-supplied) from the antenna mount to a post driven into the ground.

- Using the M12 hardware (Figure 38, 3, 24, 25), secure the threaded rods (2) to the mount channel, with the end of the threaded rod extending approximately one inch beyond the surface of the channel, as shown.
- Then use the threaded rods with M12 hardware and clamp half (26) to clamp the antenna to the tower leg or pole at the location you marked and cleared of paint. Do not tighten fully at this time.

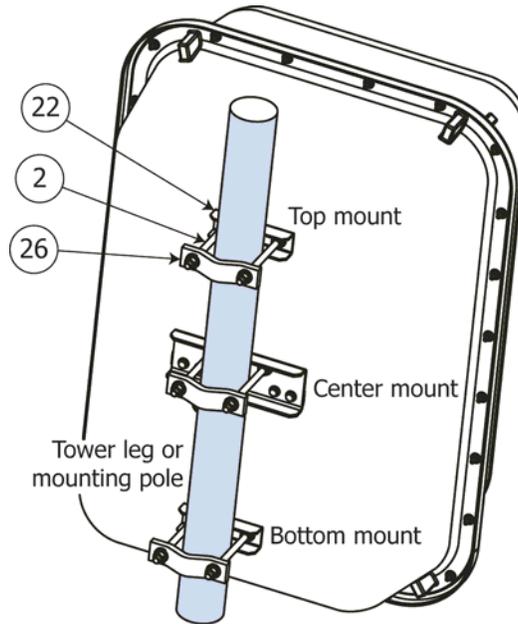
Figure 38. Mount the antenna bay(s).



## Mounting the Antenna Bay(s)

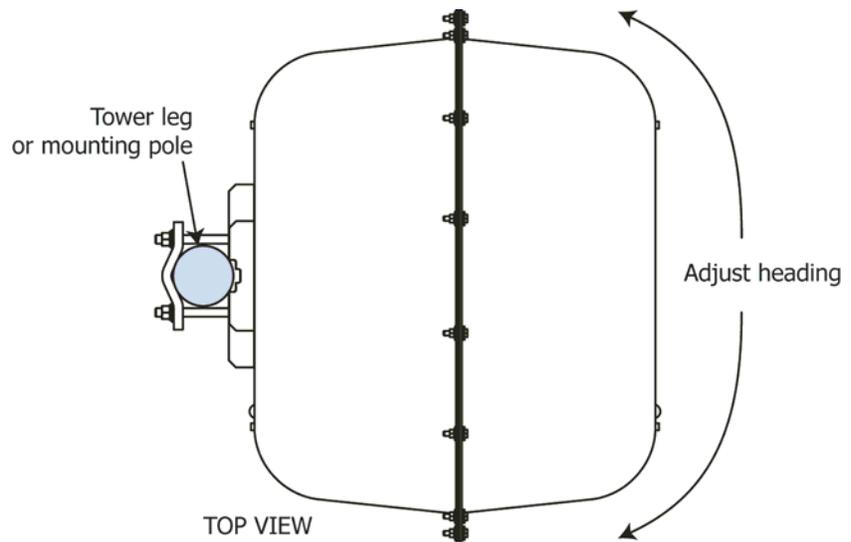
- c. (With radomes only) Similarly, clamp the upper and lower end mount channels (22) to the tower leg or pole (Figure 39). Do not tighten fully.

Figure 39. Mount the antenna bay(s) (with radomes)



- d. (Figure 40) Adjust the antenna heading.

Figure 40. Adjust the heading.

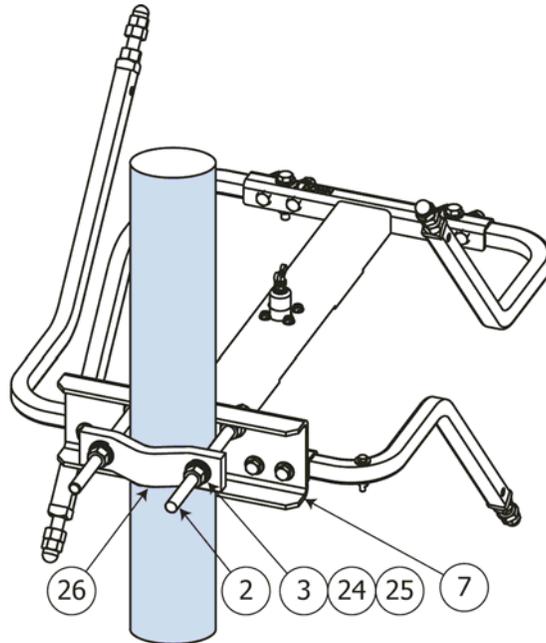


Bay with radome shown. Bay without radome is similar.

## Mounting the Antenna Bay(s)

- e. (Figure 41) Tighten the mounting hardware (Figure , 3, 24, 25) on the threaded rods (2). Torque in accordance with Table 1 on page 1.

Figure 41. Tighten mounting hardware.



Bay without radome shown. Radome bay is similar.

- f. Retouch the tower paint as necessary.
- g. (2-bay or 4-bay) Repeat this chapter for the remaining bays.



## 6

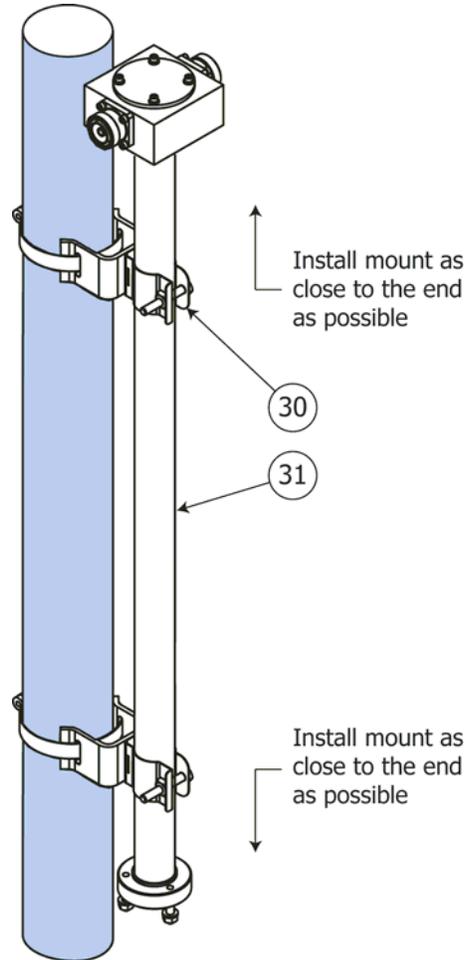
## Connecting the Antenna

Mount the power divider(s).

Two-bay antenna:

- a. Using two power divider mounting kits (Figure 42, 35), mount the power divider (36) to the mounting structure with its outlet ports roughly halfway between the antenna bays. Locate the mounts as close to the ends of the power divider as you can.

Figure 42. Power divider mounting (two-bay)

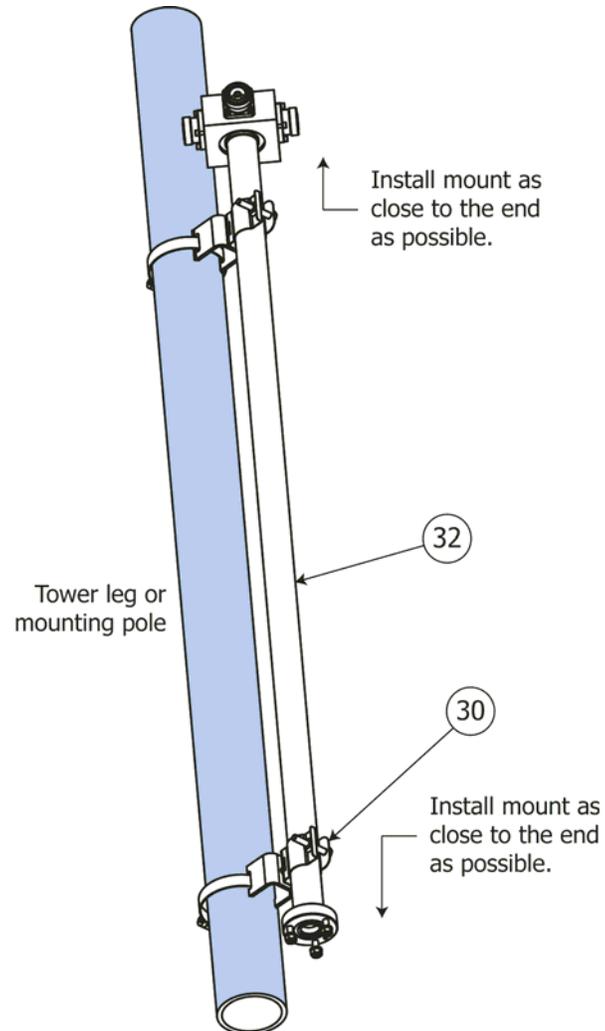


## Connecting the Antenna

### Four-bay antenna:

- a. Using two power divider mounting kits (Figure 43, 35), mount the power divider (37) to the mounting structure with its outlet ports roughly halfway between the antenna bays. Locate the mounts as close to the ends of the power divider as you can.

Figure 43. Power divider mounting (four-bay)

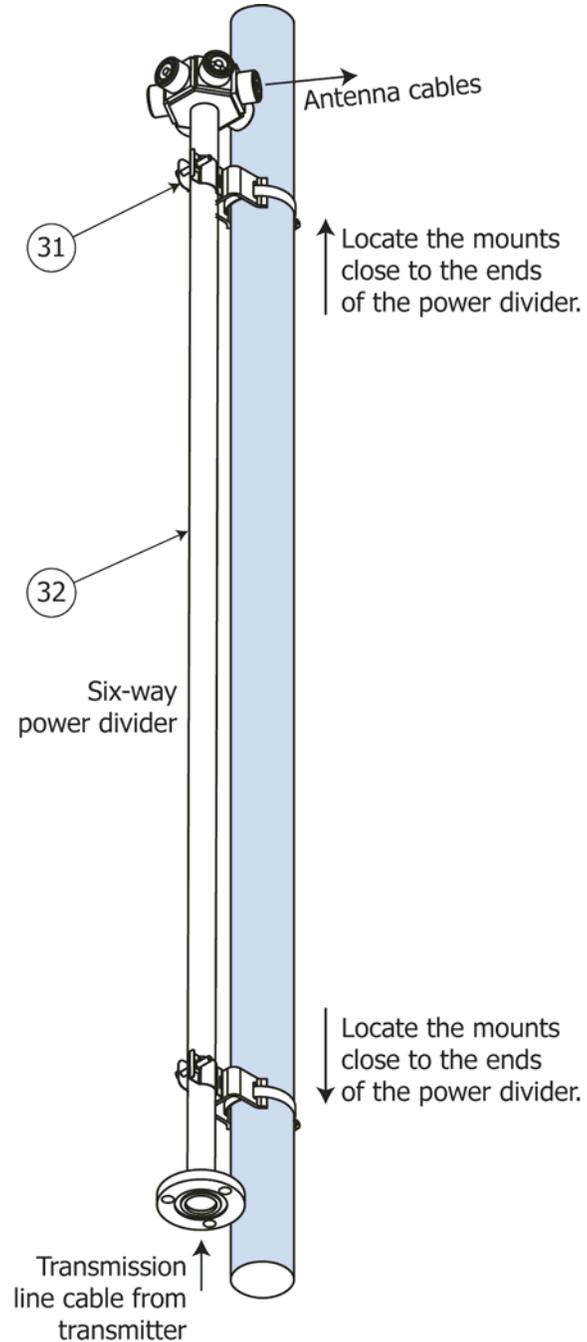


## Connecting the Antenna

### Six-bay antenna:

Using two power divider mounting kits ([Figure 44](#), [35](#)), mount the power divider ([38](#)) to the mounting structure with its outlet ports roughly halfway between antenna bays 3 and 4. Locate the mounts as close to the ends of the power divider as you can.

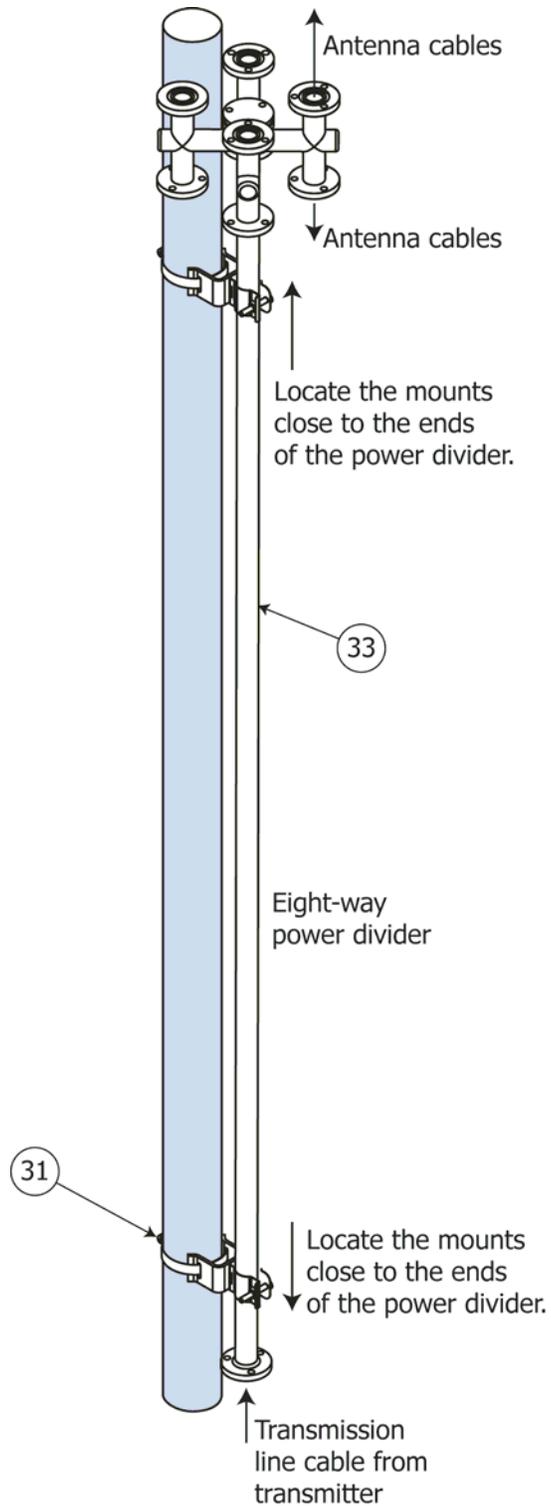
Figure 44. Power divider mounting (six-bay)



Eight-bay antenna:

Using two power divider mounting kits (Figure 45, 35), mount the power divider (39) to the mounting structure with its outlet ports roughly halfway between antenna bays 4 and 5. Locate the mounts as close to the ends of the power divider as you can.

Figure 45. Power divider mounting (eight-bay)

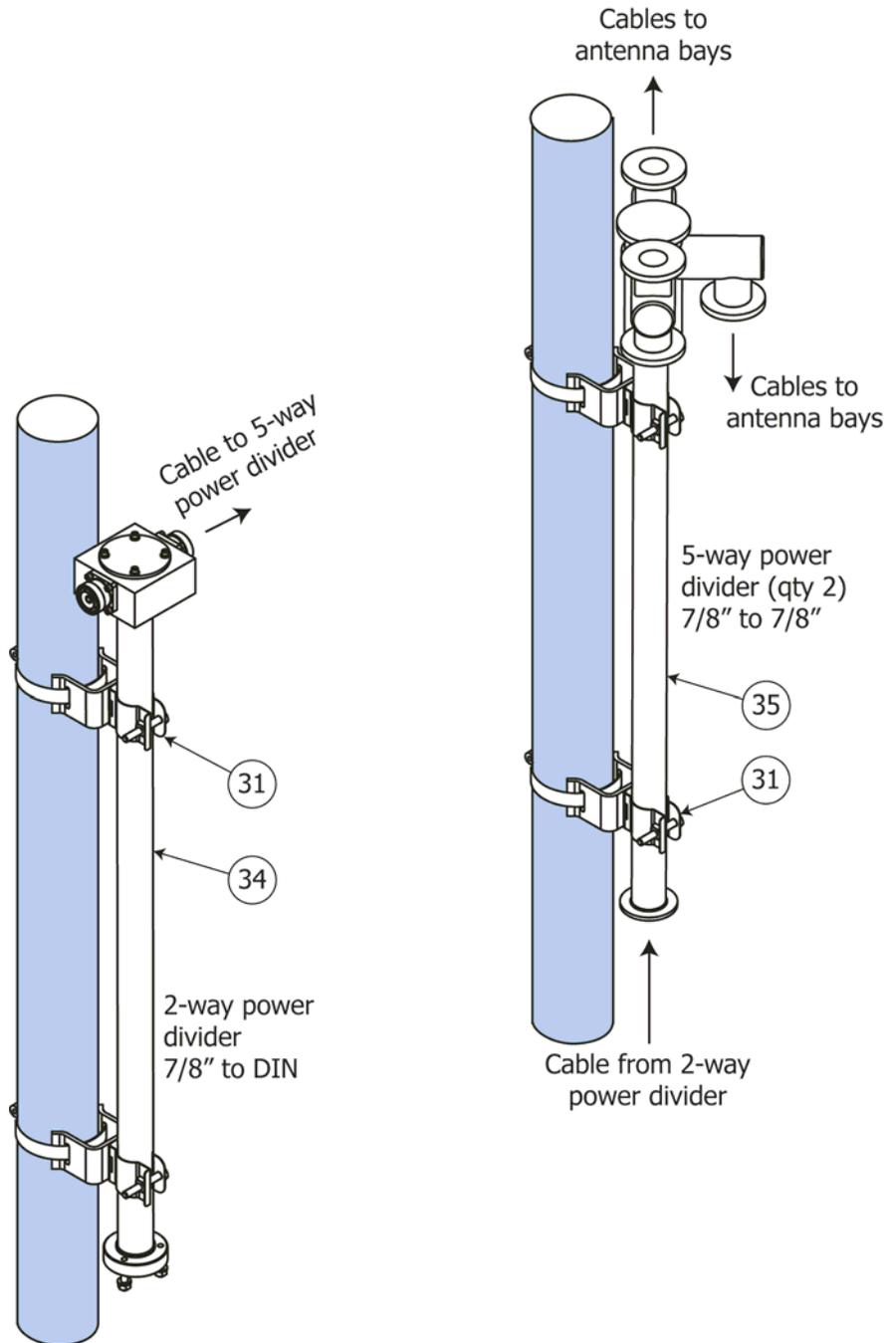


## Connecting the Antenna

### Ten-bay antenna:

- Using two power divider mounting kits (Figure 46, 35), mount the 2-way power divider (36) to the mounting structure with its outlet ports roughly halfway between antenna bays 5 and 6. Locate the mounts as close to the ends of the power divider as you can.
- Using two power divider mounting kits (35) on each power divider, mount the 5-way power dividers (40) to the mounting structure with their outlet ports roughly halfway between the 2-way power divider and the outermost antenna bays. Locate the mounts as close to the ends of the power divider as you can.

Figure 46. Power divider mounting (ten-bay)

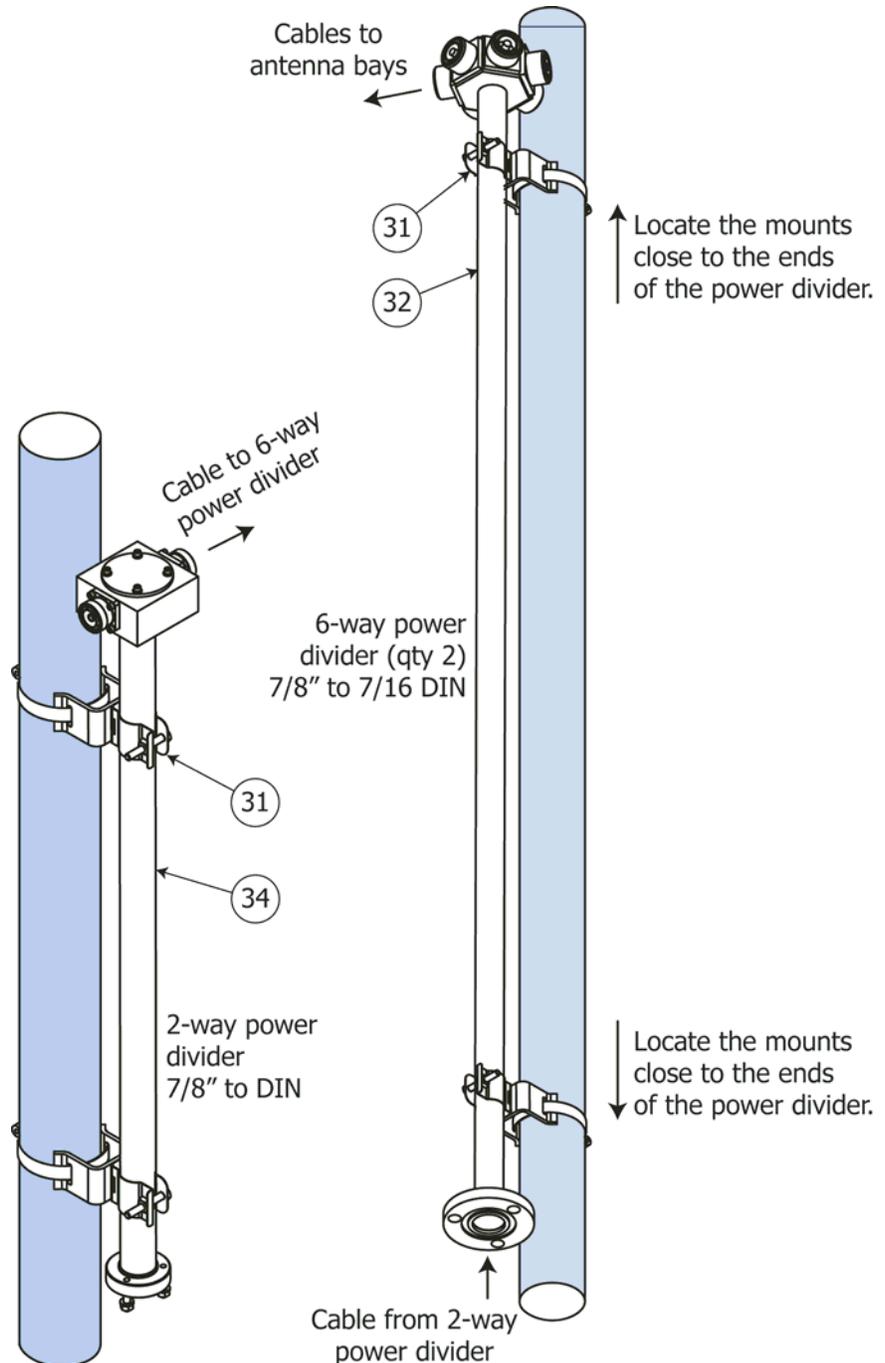


## Connecting the Antenna

### Twelve-bay antenna:

- Using two power divider mounting kits (Figure 47, 35), mount the 2-way power divider (36) to the mounting structure with its outlet ports roughly halfway between antenna bays 6 and 7. Locate the mounts as close to the ends of the power divider as you can.
- Using two power divider mounting kits (35) on each power divider, mount the 6-way power dividers (38) to the mounting structure with their outlet ports roughly halfway between the 2-way power divider and the outermost antenna bays. Locate the mounts as close to the ends of the power divider as you can.

Figure 47. Power divider mounting (twelve-bay)



Secure the coax feedline cables.

**CAUTION**

Stressing a coax connection after assembly can detune the system. Therefore, never make a connection and then bend or twist the cable, or use the connector to force the coax into shape. Form the cable first, then attach it to the connector.

**CAUTION**

The minimum bending radius for 1/2" coax is 3" (8 cm). Do not bend it too tightly; you may damage it.

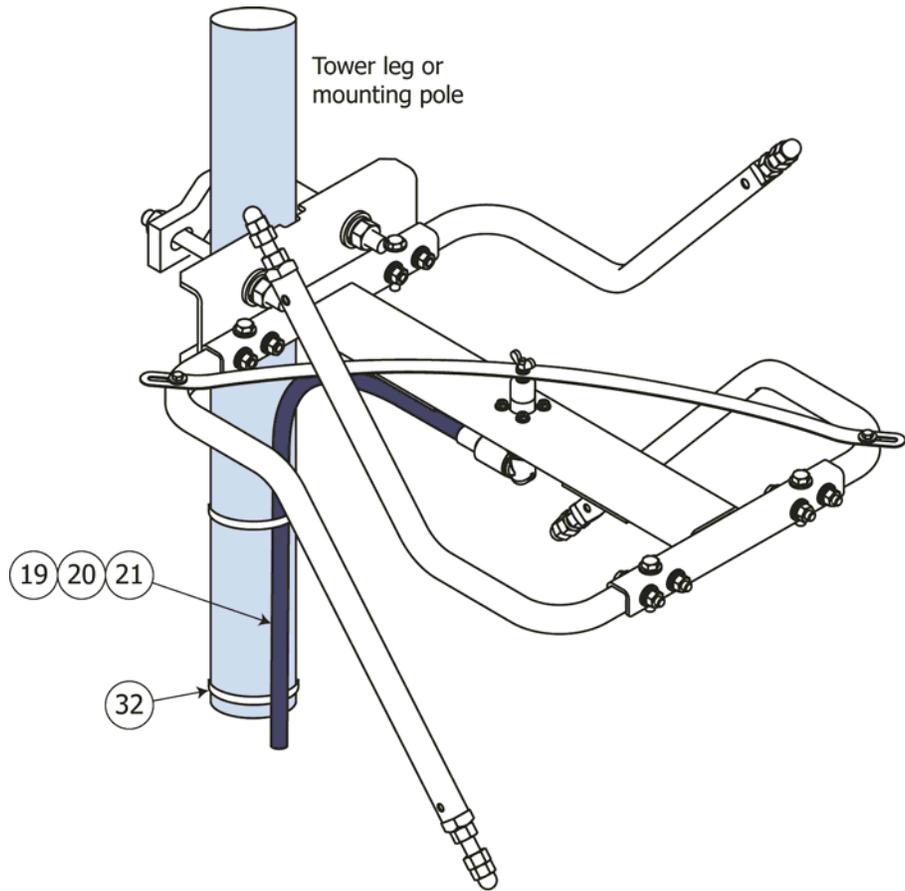
**CAUTION**

Do not overtighten the connectors. Overtightening may damage them.

Two-, four, six, or eight-bay antenna:

- a. Connect the input end of one antenna bay cable (Figure 48, 19, 20, or 21) to one of the power divider outputs. Torque in accordance with Table 1 on page 1. Seal with splice tape.
- b. Secure the cable to the mounting pole or tower leg, using the tie-wraps provided (Figure 48, 34) or customer-supplied cable clamps.

Figure 48. Secure the feedline cables



- c. Repeat for the other bay(s).

## Connecting the Antenna

### Ten-bay antenna:

- a. Connect the input ends of one antenna bay cable ([Figure 48, 21](#)) to one of the outputs of the nearest secondary (five-way) power divider ([Figure 46, 40](#)).
- b. Repeat for the remaining nine bays.
- c. Using the 15-foot cables ([32](#)), connect the outputs of the primary (2-way) power divider ([Figure 46, 36](#)) to the inputs of the secondary power dividers.
- d. Secure all the cables to the mounting pole or tower leg, using tie-wraps ([Figure 48, 34](#)) or customer-supplied cable clamps.

### Twelve-bay antenna:

- a. Connect the input ends of the antenna bay cables ([Figure 48, 19](#)) to one of the outputs of the nearest secondary (six-way) power divider ([Figure 47, 38](#)).
- b. Repeat for the remaining eleven bays.
- c. Using the remaining 30-foot cables ([19](#)), connect the outputs of the 2-way power divider ([Figure 47, 36](#)) to the inputs of the secondary power dividers.
- d. Secure all the cables to the mounting pole or tower leg, using tie-wraps ([Figure 48, 34](#)) or customer-supplied cable clamps.

---

### Connect the transmission line cable.

#### CAUTION

The antenna and power divider are non-pressurized. If you are using pressurized transmission line cable, you must provide and install a gas stop at the power divider input.

- a. Connect the transmission line cable from the transmitter to the input of the power divider ([Figure 49, 36, 37, 38, or 39](#)), with a gas stop termination and an adapter if necessary.
- b. Secure the transmission line cable to the mounting pole or tower leg, using customer-supplied cable clamps.

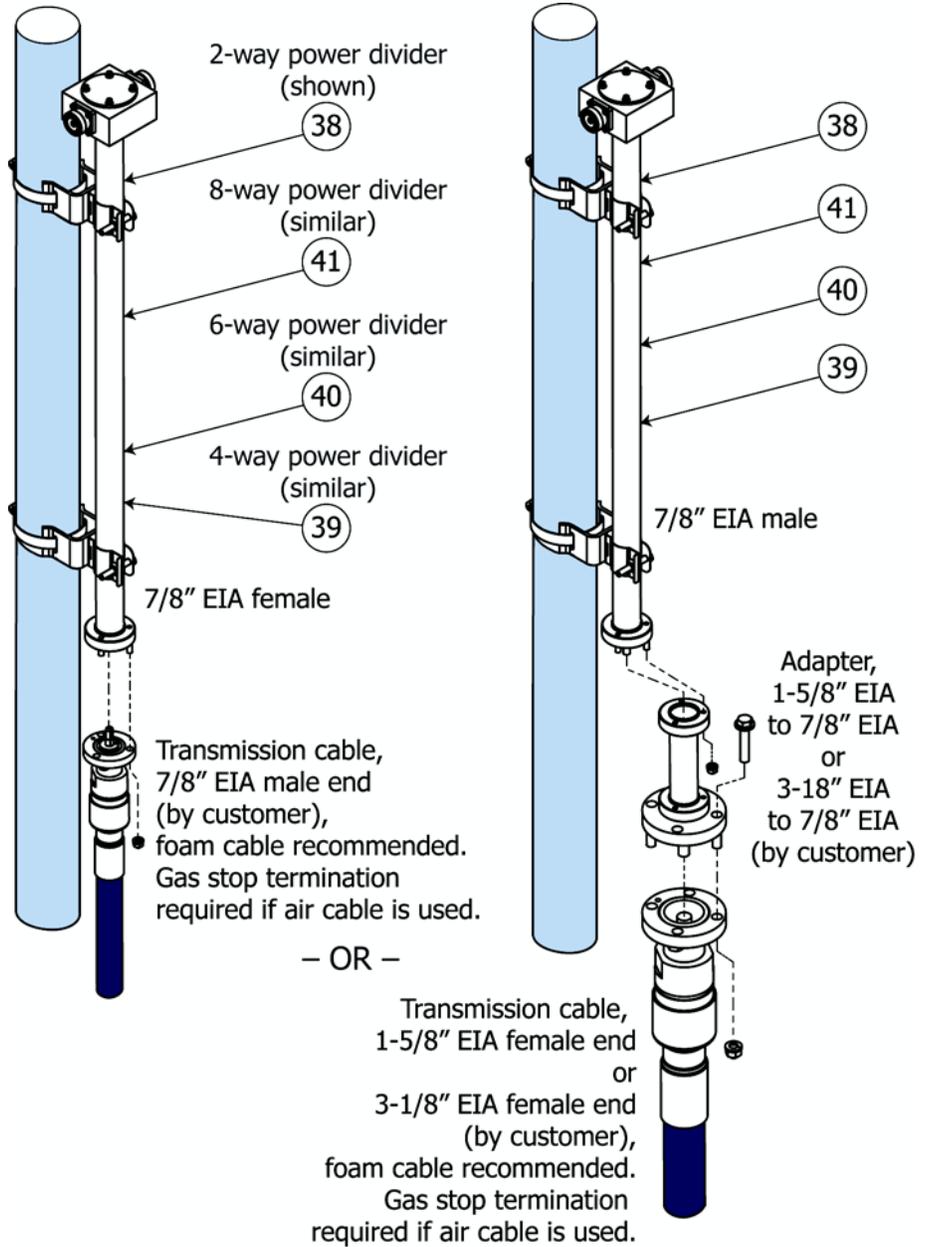
Installation of your Versa2une is complete. Please proceed to [Startup](#).

#### NOTE

If you have any problems with installation, call Shively and talk with a designer or Sales.

## Connecting the Antenna

Figure 49. Transmission line cable connection





**WARNING**

Whenever a rigger is on the tower in the area of the antenna, shut off the signal and lock it off so that it cannot be turned on accidentally. RF emissions at close range are hazardous.

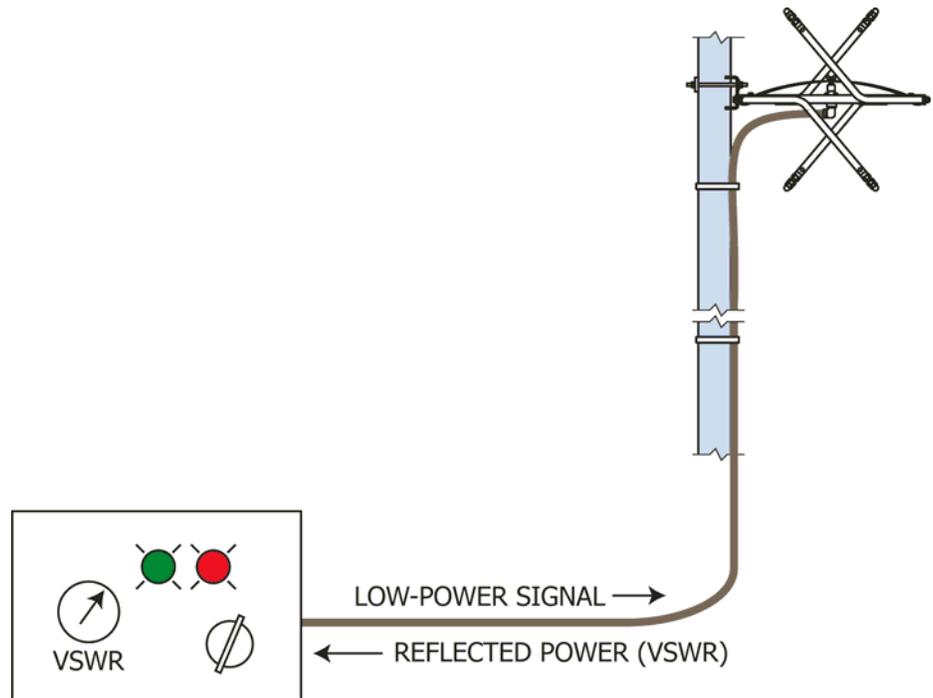
**NOTE**

The Versa2une does not require pressurization or purging.

**Optimize VSWR.**

(Figure 50) Apply a low-power signal to the antenna and read reflected power (VSWR). VSWR should be below 1.2:1.

Figure 50. Apply the signal



**Adjust to minimize reflected power if necessary.**

- Loosen one jam nut on one arm of one antenna element and lengthen that arm by 10 mm (3/8"). With personnel clear, check VSWR again.
- If the VSWR (reflected power) has increased, return that arm to its original setting. Then shorten ALL arms by 3 mm (1/8").
- If the VSWR has decreased, return that arm to its original setting. Then lengthen ALL arms by 3 mm (1/8").
- Repeat steps a - c until VSWR is below 1.2:1.
- Secure all the arms by tightening their jam nuts.

**Operate.**

Once the antenna has been installed and VSWR has been confirmed, simply apply the transmitter signal. Don't exceed the rated power of the antenna.



---

### Broad Spectrum RF Noise

This indicates that some component is not in good electrical contact with the tower. Make sure mounts are tight, that tower paint has been removed from under the mounts, and that components of other systems are likewise in good contact with the tower.

---

### High VSWR

This is caused by any factor that changes the impedance match between the antenna and the transmitter. Look for:

- Defective RF connector. Make sure connectors are in good shape, and that center pins are not bent over.
  - Damage to any antenna components.
  - Paint on radiators.
  - Ice buildup on radiators.
  - Interference from other tower components, especially components broken by wind or ice.
- 

### Change in Coverage

This may be caused by the same factors that can cause high VSWR. Look for VSWR changes as well.

Do recognize, however, that apparent changes in coverage may be due to subjective factors or faults of the receiving equipment. Before doing more than checking the VSWR, be sure that an actual coverage change has occurred.





**WARNING**

Whenever a rigger is on the tower in the area of the antenna, shut off the signal and lock it off so that it cannot be turned on accidentally. RF emissions at close range are hazardous.

---

**Log**

We recommend that you keep a log of VSWR readings and any other performance notes and maintenance history for your antenna. Such a record can be invaluable for troubleshooting.

---

**Inspection**

Whenever a rigger is on the tower for any reason, it is a good idea to have him check your antenna for general condition, looseness of connectors and mounts, and electrical damage.

---

**Paint**

The radiator should never be painted; this will affect the VSWR.

---

**Return Policy**

When returning any material to the factory, be sure to call your salesperson and obtain an returned materials authorization (RMA) number first. Material may be refused and sent back to you at your expense if you don't do this.

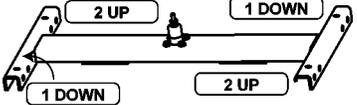


## Parts list.

**NOTE**

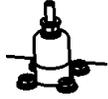
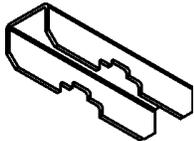
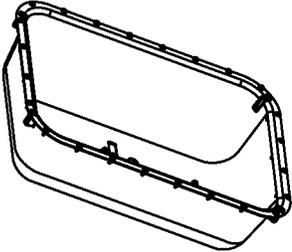
Item callouts are consistent across all the illustrations in this technical sheet.

Table 2. Parts List, per Bay Assembly

Description	without radomes	with radomes	Shively P/N	Appearance (not to scale)
1. "Acorn" nut, M12 x 1.75	4	4		
2. Threaded rod, M12 x 1.75 x 230 mm (9 in) long	6	10		
3. Hex nut, M12 x 1.75	15	26		
4. Arm without feedstrap hole (marked with 2 UP sticker)	2	2	99350-G505	 2 UP
5. Arm with feedstrap hole (marked with 1 DOWN sticker)	2	2	99350-G506	 1 DOWN
6. Radiator subassembly with end seal (number stickers indicate arm locations)	1	1	99350-G502	 2 UP 1 DOWN 1 DOWN 2 UP
7. Center mount channel	1	1	99351-01	
8. Hex bolt, M8 x 1.25 x 45 (in hardware kit)	13	13		
9. Hex nut, M8 x 1.25 (in hardware kit)	15	15		
10. Flat washer, M8 (in hardware kit)	27	27		
11. Lock washer, M8 (in hardware kit)	15	15		
12. Wing nut (shipped on endseal, item 13)	1	1		

## Parts

Table 2. Parts List, per Bay Assembly (continued)

Description	without radomes	with radomes	Shively P/N	Appearance (not to scale)
13. Endseal (part of radiator)	ref	ref		
14. Feedstrap	1	1	99350-04	
15. Hex bolt, M5 x 0.8 x 35 (in hardware kit)	3	3		
16. Hex nut, M5 x 0.8 (in hardware kit)	3	3		
17. Flat washer, M5 (in hardware kit)	6	6		
18. Lock washer, M5 (in hardware kit)	3	3		
19. Coax cable section, 30 ft (~10 m) long with 7/16 DIN 90° connector on each end	(six-bay) 1 (12-bay) 1	(six-bay) 1 (12-bay) 1	99349-G530	
20. Coax cable section, 40 ft (~12.2 m) long with 7/8" straight flange on input end and 7/16 DIN 90° connector on output end	(eight-bay) 1	(eight-bay) 1	99349-G515	
21. Coax cable section, 30 ft (~10 m) long with 7/8" straight flange on input end and 7/16 DIN 90° connector on output end	(ten-bay) 1	(ten-bay) 1	99349-G514	
22. End mount channel	n/a	2	99351-02	
23. Back radome half (cable hole & slot for radiator channel)	n/a	1	99348-01	
24. Flat washer, M12	6	18		
25. Lock washer, M12	4	16		

## Parts

Table 2. Parts List, per Bay Assembly (continued)

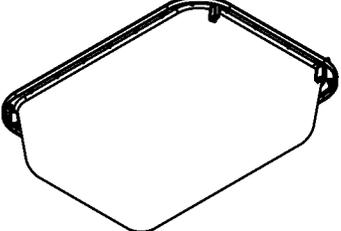
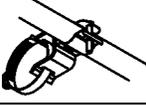
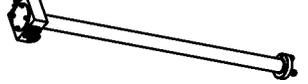
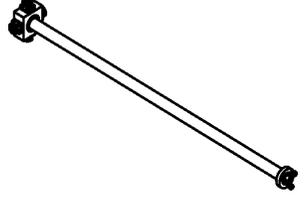
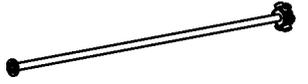
Description	without radomes	with radomes	Shively P/N	Appearance (not to scale)
26. Clamp half	1	3	SCP	
27. Splice tape	1	1	92042-01	
28. Radome flange bolt kit (contains 24 1/4-20 bolts, 24 nuts, 48 flat washers, 24 lock washers)	n/a	1	93585-G504	
29. Front radome half (overlapping flange)	n/a	1	99348-02	
30. Dow Corning 744 adhesive-sealant, cartridge	n/a	1	DO 88060	

Table 3. Parts List, per Antenna System

Description	2 bays	4 bays	6 bays	8 bays	10 bays	12 bays	Shively P/N	Appearance (not to scale)
31. Splice tape	1	1	1	1	1	1	92042-01	
32. Coax cable section, 15 ft (~4.6 m) long with straight 7/8" flange connector on output end and 90° 7/16 DIN male connector on input end	0	0	0	0	2	0	99349-G512	
33. Coax cable section, 30 ft (~10 m) long with straight 7/8" flange connector on output end and 90° 7/16 DIN male connector on input end	0	0	0	0	0	2	99349-G514	
34. Tie-wrap	72	144	36	72	144		TY529MX	

Parts

Table 3. Parts List, per Antenna System (continued)

Description	2 bays	4 bays	6 bays	8 bays	10 bays	12 bays	Shively P/N	Appearance (not to scale)
35. Power divider mounting kit	2	2	0	2	2			
36. Power divider, 2-way, 7/8" flange to 716 DIN	0	0	0	0	1	1	078F-716 x 2	
37. Power divider, 4-way, 7/8" flange to 716 DIN	0	1	0	0	1	0	99385-G501	
38. Power divider, 6-way, 7/8" flange to 716 DIN	0	0	1	0	0	2	078F-716D x 6	
39. Power divider, 8-way, 7/8" flange to 7/8" flange	0	0	0	1	0	0	078F-078F x 8	
40. Power divider, 5-way, 7/8" flange to 7/8" flange	0	0	0	0	2	0	078F-078F x 5	