

## Installing a Model 6842 FM Antenna

Installation of the Shively Labs Model 6842 antenna is quite simple. All you will need is your installation drawing and this instruction sheet. If you have any problems, call Shively and talk with a designer or Sales.

### Check shipment.

Before beginning, be sure to check your shipment to be sure all the parts are there. The parts are listed on the installation drawing.

### Installation.

#### 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.

- a. Mark the tower at the locations where the antenna bays will be mounted, in accordance with the installation drawing. The bay spacing is critical. Watch for tower components that might interfere with your installation.
- b. Assemble the antenna bays:



#### NOTE

All bays, whether single or multi-bay arrays, must have the arms installed in the same sets of holes, for proper antenna operation.

Using 1/4" hardware, attach the four antenna arms to the mounting stubs in accordance with the assembly drawing (See Figure 1 on page 3).

Remove the bolt and washer from the center of the end seal (the white plastic dome). Using this bolt and washer, attach the feed strap to the end seal. Attach the ends of the feed strap to the bolt holes in the arms.

#### CAUTION

Tighten the end seal bolt only until the lock washer flattens. Do not overtighten.

Tighten all the hardware before continuing.

- c. Set up the mounting pole:

#### CAUTION

Before attaching the pole mounts to the tower, scrape away tower paint to ensure good electrical contact. If you don't, the antenna may generate unwanted electrical signals, and performance may be degraded.

Set up a outrigged round pole or pipe, 3" to 5-1/4" in diameter, 15" from the tower face or leg. See the installation drawing for mounting pole length requirements.

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d. Mount the antenna bays:

## CAUTION

Do not attach the bays together with the RF cable before mounting them. NEVER try to support the bays from the cable.

Don't overtighten the DIN connectors. Overtightening them may damage them.

Mount the bays and the power divider on the mounting pole at the locations you marked (step a).

- e. Attach each cable to the antenna bay as shown in the installation drawing, and the other end to the power divider. Any cable can be attached to any power divider output port. Tighten the flange hardware.
- f. Attach the tower transmission cable to the power divider input. Be sure the connection is tight.
- g. Loop or drape any excess cable and tie-wrap it to the pole, to prevent wind damage to the cables.

Your Model 6842 installation is now complete. We hope you find the unit satisfactory in every way.

## NOTE

The Model 6842 does not require pressurization or purging.

## Startup

When all personnel are clear of the tower, apply a low-power signal to the antenna and read the VSWR. The VSWR should be below 1.3: 1. If it is not, call Shively and speak with a designer or Sales.

## Operation

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.

## Troubleshooting

**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, especially the feed strap on each antenna.
- Incorrect assembly. Is a radiator upside-down, or the bay spacing not as shown in the installation drawing?
- Paint 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.

## Maintenance

## 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 log 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.

**Radiator removal for repair:** Depending on your transmitter, it may be possible to remove one radiator to have it repaired. If this is done, power will have to be reduced proportionately and VSWR will rise.

**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.

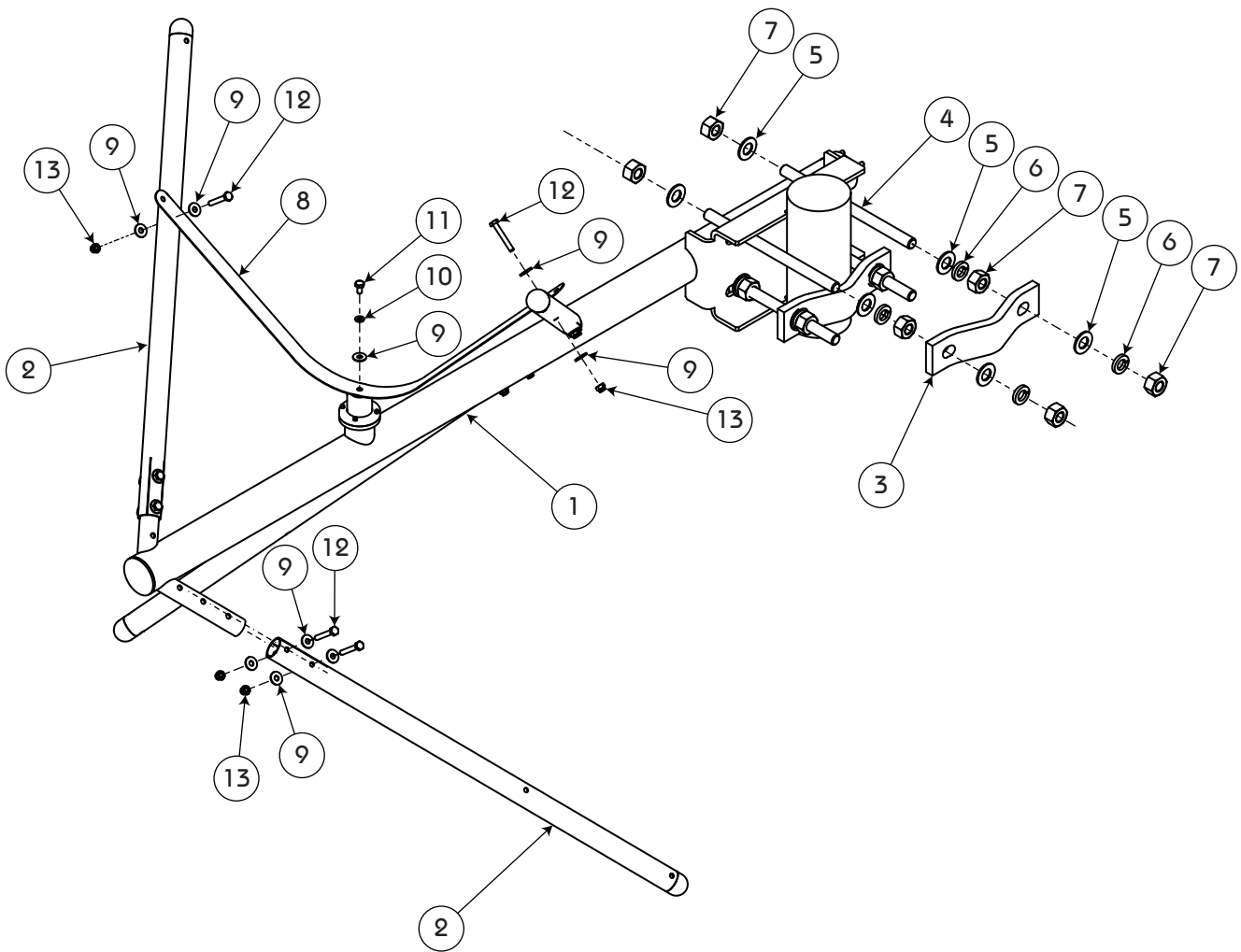


Figure 1. Model 6842 Assembly Drawing

PARTS LIST				
ITEM	PART NUMBER	DESCRIPTION	QTY.	NOTES
1	99717-G501	MAST ASSEMBLY, 6842 BAY	1	
2	99744-G501	ARM WELDMENT, 6842	4	
3	DCP	CLAMP HALF, 5.75" BOLT SPACING	2	INCLUDED IN HARDWARE KIT, 99718-G502
4	G58R-10	5/8-11 FULL THREADED ROD ,GALV.	4	INCLUDED IN HARDWARE KIT, 99718-G502
5	GR58FW	5/8 HEAVY FLAT WASHER, GALV.	12	INCLUDED IN HARDWARE KIT, 99718-G502
6	G58LW	5/8 LOCK WASHER, GALV.	8	INCLUDED IN HARDWARE KIT, 99718-G502
7	G58NUT	5/8-11 HEAVY HEX NUT, GALV.	12	INCLUDED IN HARDWARE KIT, 99718-G502
8	99745-01	FEED STRAP, 6842	1	INCLUDED IN HARDWARE KIT, 99718-G502
9	01/4SSF	1/4" FLAT WASHER REGULAR SS,18-8	25	INCLUDED IN HARDWARE KIT, 99718-G502
10	01/4SSS	1/4" SPLIT LOCK WASHER, 18-8 SS	3	INCLUDED IN HARDWARE KIT, 99718-G502
11	01/4-20SS008HM	1/4-20 x 1/2" HHCS,18-8 SS	1	INCLUDED IN HARDWARE KIT, 99718-G502
12	01/4-20SS028HM	1/4-20 x 1-3/4" HHCS,18-8 SS	12	INCLUDED IN HARDWARE KIT, 99718-G502
13	01/4-20MSN	1/4-20 NYLOK NUT,18-8 SS	12	INCLUDED IN HARDWARE KIT, 99718-G502
14	9068-215	O-RING, 7/8" FLANGE	1	
15	56752	7/8" FLANGE COVER	1	

NOTES:

1. Mount antenna with feed strap up, clear of all guylines and other obstructions.