

TOOLS REQUIRED: A 7/16" and 1/2" wrench or socket, tape measure. For best results please review instructions before assembly.

1. Assemble the boom starting with the rear 2" x 119" section, The end with a 5/8" hole located in 1" is the REAR of the boom. Mate the other end to the swaged end of the 2-1/2" x 120" section (the other end is straight). Align the holes, insert the 1/4-20 x 2-1/2" bolts and locknuts and tighten. The next section in line is the 2-1/2 x 120" pieces with both ends swaged. The larger diameter swage slides inside the first 2-1/2" section. Secure with 1/4-20 x 3" bolts and locknuts.

2. Next mate the front 2" x 120" section to the swaged end of the 2-1/2" section and secure with 1/4-20 x 2-1/2" bolts and locknuts. Then add the short 2" x 33" tip section securing with 1/4-20 x 2-1/2" bolts and locknuts.

3. It may be convenient to add the boom to mast plate at this time. The 6 x 8 x 3/16" plate mounts approximately 218" (18' 2") from the REAR of the boom (just behind the middle boom joint). Use two 2-1/2 inch U-bolts and cradles and the 5/16" stainless steel lockwashers and nuts. **TEMPORARILY** position the plate under the boom and parallel with the element holes. This way the boom can be laid across a bench or bucks and the plate will keep the boom from rotating while installing the elements.

4. (This can be done later in step 9.). Locate the short DRIVEN ELEMENT 'T' MATCH BLOCK ASSEMBLY. Secure it to the boom through the hole at 17.25" from the end of the boom using a 1/4-20 x 2-1/4" bolt. The full 3/8" diameter tube element will mount throughout the boom just below the 'T' match assembly.

NOTE: TO MAKE BUTTON INSULATOR INSTALLATION EASIER, CHAMFER EACH 5/8" HOLE USING A POCKET KNIFE OR OTHER HOLE DEBURRING TOOL.

5. Lay out the elements in the order they install in the boom. The longest is the reflector (41.25") and it mounts at the rear end of the boom section in the 5/8" hole one inch from the end. First balance the element across your finger to find approximate center. Now slide on one black button insulator to about 1 inch off center using the 5/8 x 3" PVC PUSHER TUBE. *The insulators can be a tight fit. Place them in hot water for a few moments to expand or run a 3/8" drill through the center hole to ease installation.* Insert the element through the boom while sliding the second button insulator on as the element tip is passing through the boom. Fit the first insulator into the boom hole and push the second insulators up tight against the boom. Don't bother to center accurately at this point. It is quicker to do when all the elements are in place.

6. REFER TO THE "DIMENSION SHEET" and continue installing the elements in the boom. **NOTE: THE ELEMENT LENGTHS DO NOT NECESSARILY TAPER. COMPUTER OPTIMIZATION DOES THIS TO OPTIMIZE THE PATTERN AND GAIN.**

7. Now begin centering the elements using a tape measure. You may find it easiest to just equalize the length sticking out each side. For example, 18.0 on one side and 18.5" on the other. Just shove the 18.5" side in a 1/4 inch and they should be equal and centered. It goes quick once you get the hang of it. Accuracy of +/- 1/32" is fine. Double check your centering by looking down the element tips looking for obvious offsets.

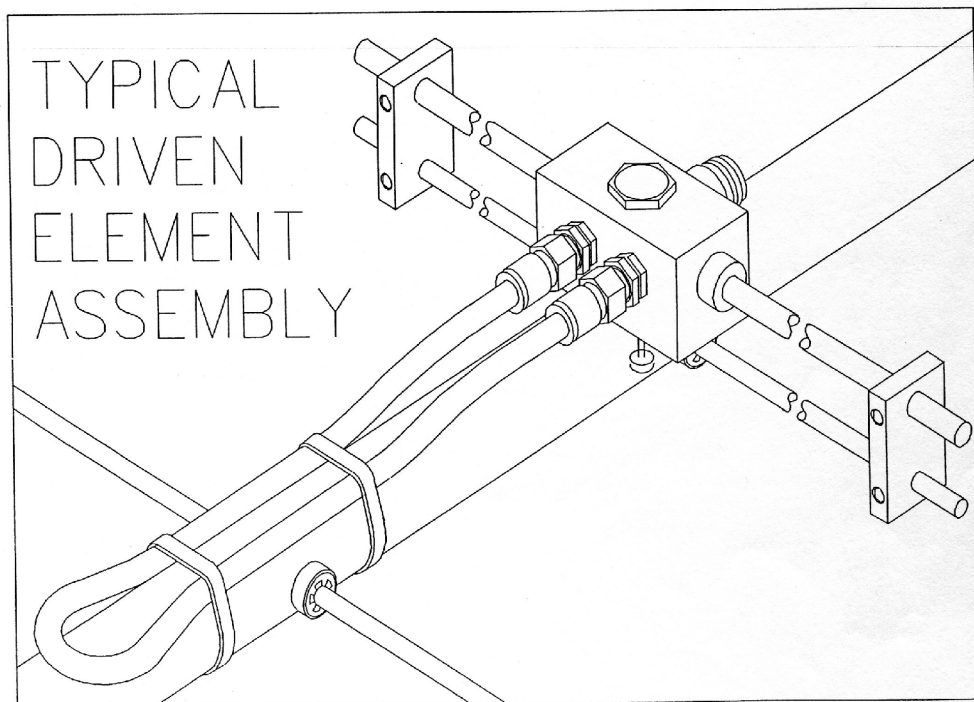
8. Install the stainless SHAFT RETAINERS. Place the PUSH TUBE in your hand with the end between your thumb and forefinger. Now place a retainer on the end of the push tube (dished into tube) and hold it in place with the same thumb and forefinger. Slide this setup over the 1/4" rod and up to the 3/8" outer sleeve section. Using the PUSH TUBE, slide the retainer down the 3/8 section and up against the button insulator. During this operation **DON'T LET THE ELEMENT SLIDE THROUGH THE INSULATORS!** (Locking pliers, *lightly* clamped up against opposite button insulator will help maintain center reference and keep you from pushing the first retainer too far, or, grab the

9. Install the 'T' match block to the bottom of the boom at the 1/4" hole 17.25" from the rear. Secure with a 1/4-20 x 2-1/4" bolt with a split ring lock washer under the bolt head. Orient the two balun connectors to face the rear of the boom. The single female 'N' connector faces forward (see the hardware assembly sketch).

10. Loosely install an 8-32 x 1/4" stainless steel set screw into the two SHORTING BARS. Then slide bars over the 3/8" element ends and onto the 1/4 inch 'T' match rods. Position inner edge of bars at 1-3/4" from the outer end of the match block. Align the elements and tubes parallel and tighten the bar hardware. NO SWR adjustment should be necessary for a nearly perfect match at the low end of 144 MHz but adjusting these bars should allow you some optimization. Your VSWR curve should look similar to the curve on the DIMENSION SHEET.

11. Install the two gold 1/2-32 SEAL NUTS on the 'T' match block balun connectors with the black neoprene face out. Locate the 1/2 wavelength balun cable assembly and form into a 2-1/2" wide "U" shaped loop. Attach connectors to the 'T' match block. Tighten up the 7/16" balun connector nuts **gently** with a 7/16" end wrench first. Then run the seal nuts up against the face of the connectors with your fingers and then tighten about **1/2 turn more** with a 1/2" end wrench. Do not overtighten as the seal may be damaged and require replacement if it ever has to be loosened.

12. Form the balun cable loop backward along the boom (see sketch below) and secure with one large black cable tie. If possible, install a feedline section back to the boom-to-mast plate. Secure the feedline as shown on the DIMENSION SHEET using the large black Nylon cable ties. Tighten the ties just enough to secure but not crush or kink cables.



13. Install the two 5/16 x 4 inch EYEBOLTS to the boom in the holes at 66" (Rear) and 93" (Front) from the ends of the boom. Use 5/16 stainless nuts and lockwashers to secure.

14. Adjust the boom-to-mast plate to vertical. If you've attached the feedline or a short pigtail running from the 'T' match to near the plate, move the plate to the center of balance and tighten U-bolts. Otherwise, secure in its original position. 2" U-bolts are supplied for securing to your mast. Other sizes available on request. To prepare the overhead guy system, begin by *temporarily* installing a 2" U-bolt through the TURNBUCKLE PLATE and into the top set of 2" U-bolt holes on the boom to mast plate (from the boom side). Add a couple of 5/16" nuts to hold in place. Unscrew turnbuckle eyes / hooks evenly until only a thread or two shows inside the turnbuckle body and hook to turnbuckle plate.

15. Uncoil DACRON CORD. Secure one end to rear eyebolt, taking two turns through the eyebolt, then adding three TIGHT half-hitches or equivalent type knot. Pull hard on cord to set the knots. Repeat for the front eyebolt. Seal cord ends with heat (lighter, propane torch, etc.) and tape to main length.

16. Equalize cord length at turnbuckle plate and cut. Put two turns through rear turnbuckle eye, pull the rope tight as possible, and add three TIGHT half-hitches. Repeat for front cord section. Seal and tape cord ends.

17. Both cords should now be fairly taut and parallel with boom. Disconnect the 2" U-bolt holding the turnbuckle plate and lift the turnbuckle plate up until the boom bows up slightly. This is approximately how high the plate will need to be mounted on the mast when the antenna is installed.

18. During final installation on the tower / mast, secure the turnbuckle plate at the appropriate height with the 2" U-bolt. Then lean or pull on the cords to increase the tension and tighten the knots. Make sure the knots are not slipping. The Dacron cord does not stretch, but its weave will take a "set" under load. If possible, allow the guy system to take its set overnight. Then, loosen the 2" U-bolt and readjust turnbuckle plate height until boom is straight and level. Finer adjustments can be made with the turnbuckles at any time, if necessary. Safety wire the turnbuckles to maintain settings.

19. This completes the ASSEMBLY. When the antenna is installed in position on the mast, the main feedline can be connected to the pigtail and sealed at that time. REMEMBER to support the feedline at the antenna boom and on the mast. Leave an adequate feedline loop for rotation around the tower. Mount horizontally polarized VHF and UHF antennas at least 40" above or below this antenna to minimize interaction.

20. The 2M6WLA is a large antenna. Use caution when installing. Crank down or lock up your tower before climbing. Watch out for high tension lines! Be sure to use a safety belt. Enjoy your new, BIG, signal on 2!

Carefully designed and manufactured by:

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2M6WLA DIMENSIONS

ELEMENT
SPACING

(VIEW FROM BOTTOM)

ELEMENT
LENGTH

