

USER ASSEMBLY MANUAL
2M-6WL ULTRA PERFORMANCE HEAVY DUTY YAGI

9-27-89

TOOLS REQUIRED: pliers, 7/16" and 1/2" end-wrench and socket.

1. Assemble the boom, REFERENCING the 2M-6WL DIMENSIONS sketch. Use the 1/4-20 x 2-1/2 inch bolts and locknuts for the 2" boom joints and 3" bolts for the center joint. Tighten lightly now as some minor alignment might be necessary once the elements are installed.

2. Install the 6 x 8 x 3/16 inch boom to mast plate on the boom TEMPORARILY at the balance center of the boom. Clamp the plate in a vise or small work table about waist high. Alternately drive a 1-1/2 to 2 inch diameter pipe in the ground and mount the boom on it at a comfortable level for inserting the elements.

NOTE: THE BLACK BUTTON INSULATORS MAY BE VERY TIGHT ON THE 3/8 INCH ELEMENT CENTER SECTION. SLIGHT SHRINKAGE OCCURS WITH TIME. IT MAY BE HELPFUL TO HAND TWIST A 3/8" DRILL BIT THROUGH EACH INSULATOR HOLE PRIOR TO INSTALLING IT ON THE ELEMENT.

3. THE ELEMENTS TAPER IN LENGTH so start with the longest first, (REFLECTOR) inserting it into the first hole at the rear of the boom. Find the approximate center of the element by balancing the element on your finger. Slide on a black polyethelene button insulator to about 1 inch off center. Stick the element through the boom and add the second insulator. DON'T PUT THE KEEPERS ON YET. Final centering and keeper installation on all the elements should be done later when you only have to hold the ruler!

4. Add the DRIVEN ELEMENT top part per the SKETCH using a single 2-1/4 inch bolt with a 1/4" split ring lockwasher under the head.. The 39.25" rod mounts through the boom just below and slightly to the rear of the top section connector block. Add the button insulators and center beneath the top section.

5. Install DIRECTOR #1 through 18 using the same technique as the reflector element. Now use a ruler or tape measure and compare one element half with the other and just MATCH what is coming out each side. CENTER ALL THE ELEMENTS THIS WAY BEFORE ADDING THE KEEPERS. When centering is complete, sight down the element tips on each side and look for any irregularities. Correct if found. Next, slide on one keeper using the 1/2 x 3 inch gray push tube. Hold the element so it can't move while you're doing this or you may have to push it all the way off and start again. When you have one keeper on properly, add the second one and push it up tight. Continue with the rest, including the driven element rod.

REFER TO THE "STANDARD DRIVEN ELEMENT" SKETCH

6. Locate the two shorting bars and add the 8-23 x 3/16" set screws. Install the shorting bars to the driven element. Position them so they are 1/4 inch in from the ends of the element tips. Align the bars with each other and tighten up the set screws with the 5/64 allen wrench provided.

7. Install the balun and tighten the connectors gently with a 7/16 wrench. Hold the back shell of the connector with pliers to prevent the cable from twisting. Form the cable close to the boom back toward the reflector and use a black cable tie to hold it in place. Leave a 2 inch diameter loop in the balun lead to prevent cable damage.

NOTE: THE DRIVEN ELEMENT CONNECTOR BLOCK HALF CAN BE LOCATED EITHER ABOVE OR BELOW THE BOOM. WHEN INSTALLING TWO OR MORE ANTENNAS, POSITION THE ANTENNAS ALL THE SAME...NOT MIRROR IMAGE OR YOU WILL BE PHASED 180 DEGREES OUT AND HAVE A PATTERN NULL WHERE YOU SHOULD HAVE A PEAK!

8. Install a temporary mast/ riser to the boom to mast plate using two 2 inch U-bolts and cradles and add lockwashers and nuts. Mount the turnbuckle plate on the mast with another 2" U-bolt and position it JUST ABOVE THE BOOM. Add the turnbuckles to the plate and open the turnbuckles until just onethread shows inside the body at each end.

9. Now install one of your phasing lines or your main feed line on the boom as it will be when finally installed. Pick up the antenna and find the NEW balance point. Center the boom to mast assembly over the balance point, typically 230" from rear. Rotate the riser perpendicular to the elements and tighten the U-bolts around the boom. If you are placing this antenna in an array of two or more 2M-6WLs, each antenna in the array must have the MAST PLATE in the EXACT same spot to maintain equal phasing.

10. Locate the two eyebolts and install them on the boom in the holes provided about 6 to 7 feet from the ends of the boom. Secure with 5/16-18 nuts and lockwashers.

11. Position the antenna boom between two supports so the middle is 4 to 6 inches lower than the ends. Attach one end of the black Dacron cord to the rear eyebolt by taking two wraps through the eye and finishing with two half hitches or a square knot. Leave about 2 TO 4 inches of cord after the knot. Run the cord up past the rear turnbuckle about 10 to 12 inches and cut the cord. To prevent fraying, the cord ends should be melted slightly with a cigarette lighter or equivalent.. Make two wraps around the turnbuckle eye, pull the cord as tight as possible and add the half hitches or square knot. Tape The excess cord at each end to the taught line. Install the front guy line the same way.

12. Now support the antenna at the balance point. Loosen the U-bolt on the turnbuckle plate and slide the turnbuckle assembly up the mast until the boom is bowed up just slightly. Adjust the turnbuckles to balance the bow front and back. If possible allow the cords in the support system to take a set under tension overnight. During final installation, reset turnbuckle plate and re-adjust turnbuckles so the boom is straight.

13. Sight down the boom now and note any boom section with elements not aligned with the others. Correct if found and THEN TIGHTEN THE BOOM SECTION BOLTS UNTIL THE BOOM DEFORMS VERY SLIGHTLY UNDER THE BOLTS. This completes the assembly.

2M-6WL
PART LIST

9-27-89

DESCRIPTION	QTY
Boom Section, 2 x .058 x 117" PLAIN	1
Boom Section, 2-1/2 x .065 x 120" SOE	1
Boom Section, 2-1/2 x .065 x 120" SBE	1
Boom Section, 2 x .058 x 120" SOE	1
Boom section, 2 x .058 x 34" PLAIN	1
Reflector .188 x 40.25 6061-T6 alum. rod	1
Directors, .188 x see ant. dim. sheet 6061-T6 alum. rod	18
Driven element section 39.25" alum. rod	1
Driven element assembly *	1
Boom to mast plate 6"x 8" x 3/16" alum	1
U-bolts and cradles, 2-1/2"	2
U-bolts and cradles, 2"	3
Turnbuckles, 3/8"	2
Turnbuckle plate 2" x 5" x 3/16" alum.	1
Dacron support cable, 5/16 x 36'	1
Black nylon ties	10
Balun RG-6U x 1/2 wavelength	1
Assembly Instructions	1
*DRIVEN ELEMENT ASSEMBLY (Pre-assembled)	
Driven element section 1/4" x 19.25 alum. rod	2
Tab .160 x .75 x .028 copper	2
Center support block 1 x 1-1/4 x 2 alum. bar, mach.	1
Support insulator machined	2
"N" connector, female w/'O'ring	1
'F' connectors female w/'O'ring	2
8-32 x 3/16 internal hex set screws, ss	2
Access button w/'O'ring	1
PARTS IN KIT BAG	
Shorting bars, 3/4 x 1/4 x 2.125 alum. bar, mach.	2
8-32 x 3/16 set screws, internal hex, ss	4
Eyebolts, 5/16 x 4"	2
Parasitic element insulators, 3/8 black polyethylene	42
Element keepers (shaft retainers) 3/8, ss	42
5/16-18 nuts, ss	12
5/16 lockwashers, ss	12
Bolt 1/4-20 x 2-1/4" hex cap ss	1
Bolt 1/4-20 x 2-1/2 hex cap ss	6
Bolt, 1/4-20 x 3" hex cap, ss	2
Nut 1/4-20 nylock ss	8
Lockwasher 1/4" split ring ss	1
Push tube 5/8 x 3" gray PVC	1
Allen wrench 5/64	1

Carefully manufactured by:

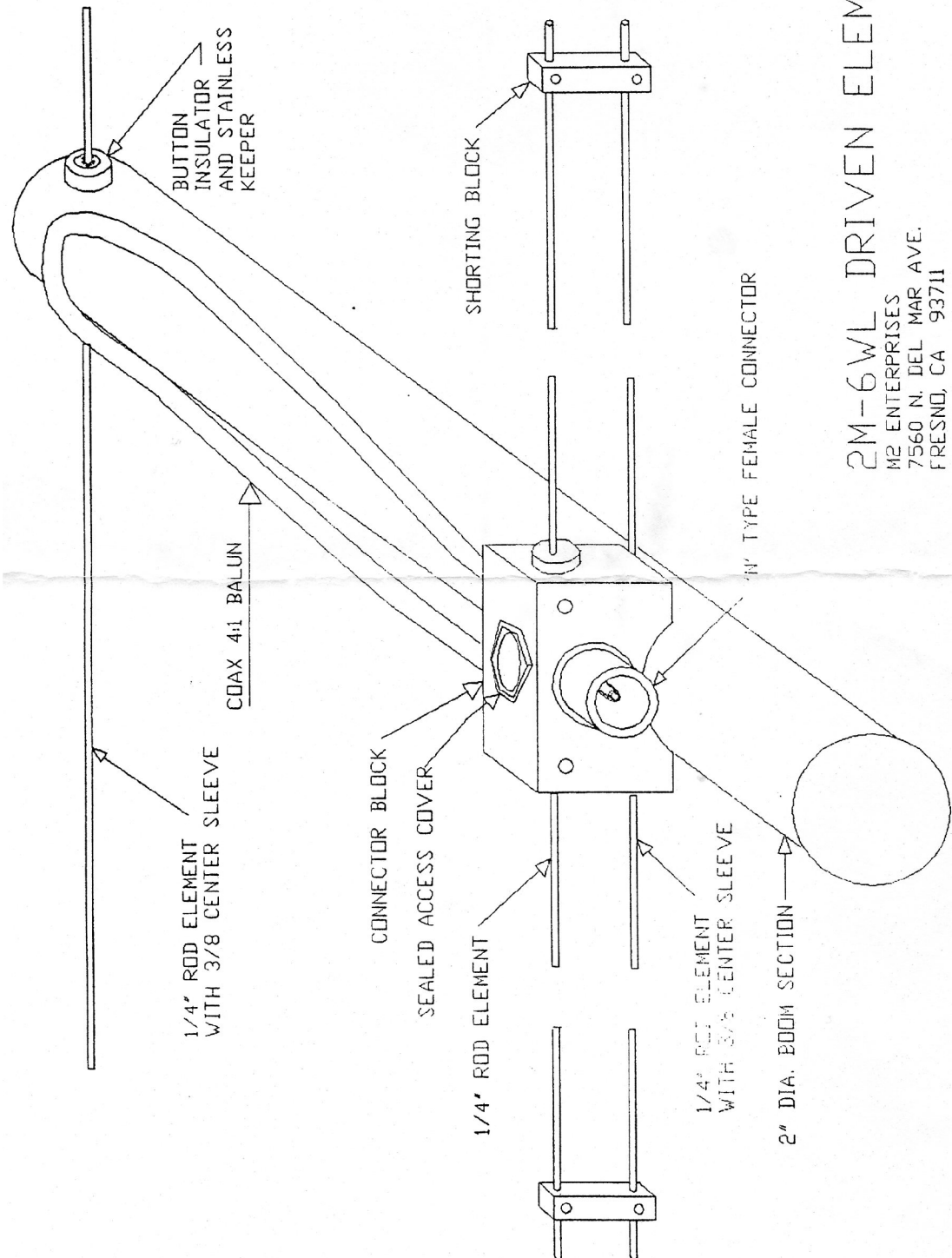
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2M-6WL-HD DIMENSIONS

ELEMENT
SPACING

ELEMENT
LENGTH

1.0		40.25	1,022.35
16.75		39.25	996.95
17.25		39.25	996.95
28.062		37.25	946.15
39.0		36.813	935.05
56.625		36.437	925.50
77.125		36.0	914.40
99.875		35.75	908.05
124.437		35.625	904.88
150.562		35.375	898.52
178.0		35.125	892.18
206.562		35.0	889.00
236.75	Boom to Mast Plt.	34.75	882.65
266.875		34.625	879.48
298.313		34.5	876.30
330.625		34.375	873.12
363.625		34.125	866.78
396.625		34.0	863.60
429.688		33.875	860.43
462.688		33.75	857.25
495.688		33.75	857.25



2M-6WL DRIVEN ELEMENT

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