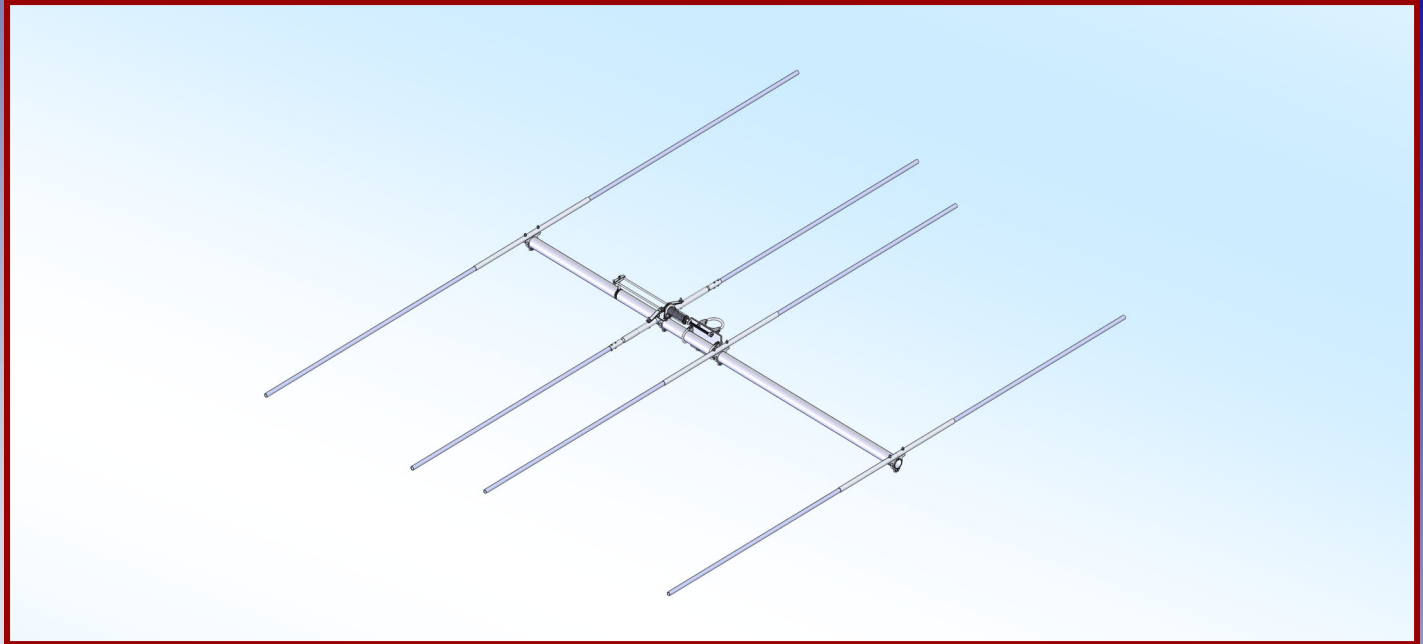




# M2 Antenna Systems, Inc. Model No: 36-4



## SPECIFICATIONS:

Model .....	36-4	Power Handling .....	1.5 kW
Frequency Range .....	35 to 37 MHz	Boom Length / Dia .....	13' 8" / 2"
Gain .....	9.37 dBi	Element Length / Dia .....	15' / 7/8"-1/2"
Front to back.....	13 dB Typical	Turning Radius: .....	Call
Feed type.....	Hairpin	Stacking Distance .....	Call
Feed Impedance.....	50 Ohms Unbalanced	Mast Size .....	2" to 3" Nom.
Maximum VSWR .....	1.5:1 Typical	Wind area / Survival .....	3.5 Sq. Ft. / 100 MPH
Input Connector .....	SO-239	Weight / Ship Wt. ....	65 Lbs. / 75 Lbs.

**\*Subtract 2.14 from dBi for dBd / FS = Free Space**

## FEATURES:

The 36-4 has been computer optimized from the ground up for gain and pattern covering 35.5-36 MHz. Originally designed for Meteor Scatter and monitoring systems. The custom 1:1 Fairite balun and low loss hairpin match help maintain high efficiency. Element ring clamps and other important components are CNC machined for maximum strength and electrical integrity. All antenna hardware is stainless steel and the U-bolts for mounting are Zinc plated.

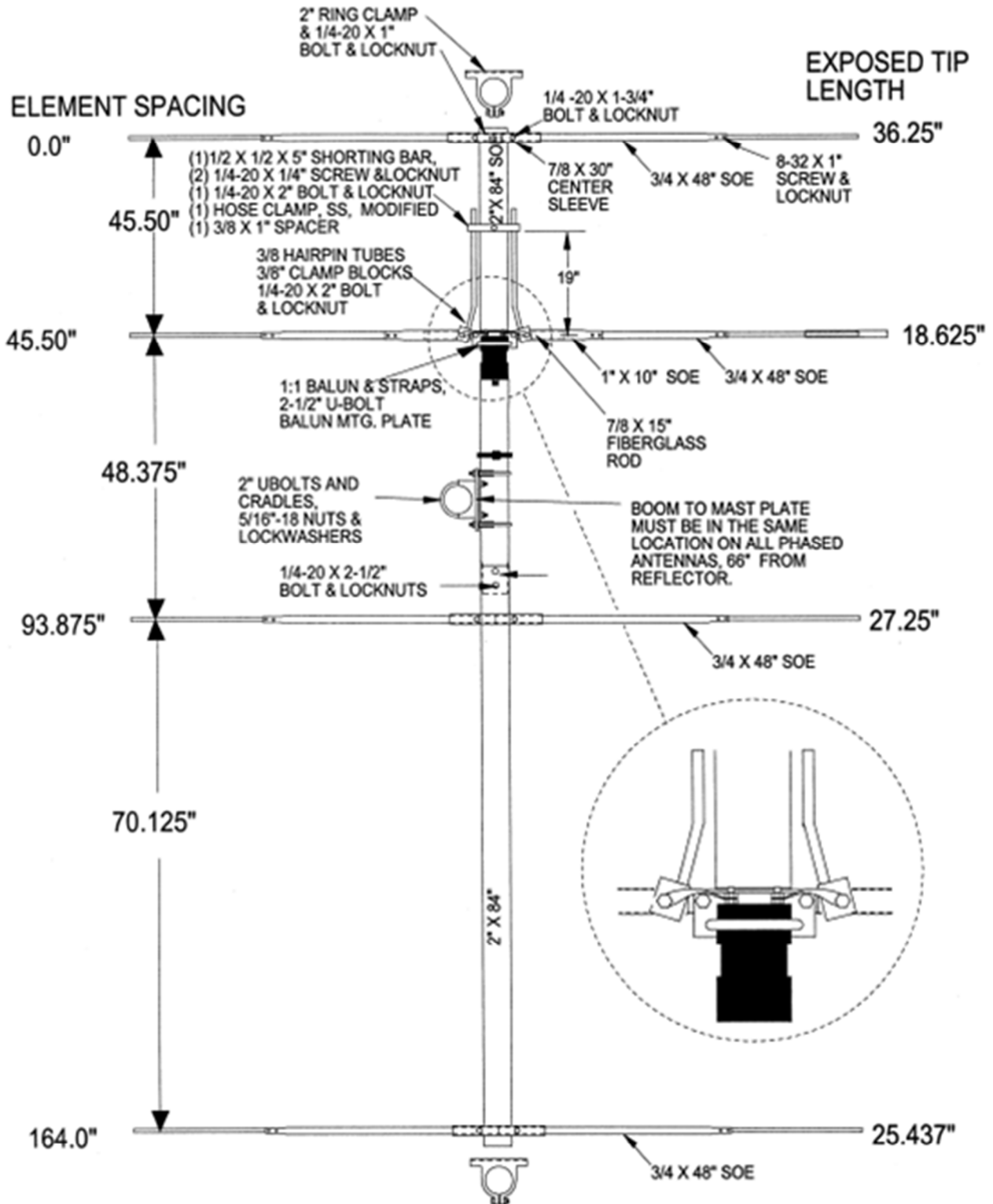
M2 Antenna Systems, Inc. has well over 35 designs for Meteor Scatter applications covering from 39 MHz to 50 MHz. If you have a specific requirement, please contact us for more details.

# 36-4 ASSEMBLY MANUAL

Note: A cup of zinc paste (PENETROX, NOALOX, or equivalent) has been provided to enhance the quality of all the electrical joints in this antenna. Just prior to each assembly step, apply a thin coat on screw and bolt threads and wherever two pieces of aluminum come in contact.

1. Refer to the Dimension Sheet. Note the different boom sections and the approximate position of each element. Slide the 2" RING CLAMPS into their approximate positions on the boom sections. Accuracy at this point is unnecessary as the boom must be assembled before exact element spacing is set. Spread the ring clamp fingers with a flat blade screwdriver if necessary to ease movement on boom. Loosely add a 1/4-20 x 1" bolt and locknut to fingers of all clamps.
2. Return to the rear boom section. Mount the 7/8" x 15" FIBERGLASS CENTER INSULATOR and balun mounting plate on the driven element 2" ring clamp using 1/4-20 x 1-3/4" bolts and locknuts. Reference the DIMENSION SHEET and set this DRIVEN ELEMENT RING CLAMP at the noted dimension from the rear element. Tighten the 1/4-20 x 1" bolt and locknut to hold the clamp in position.
3. Mount the balun on the plate using on 2-1/2" U-bolt, lockwashers and nuts. Do not over-tighten. Orient the balun so the aluminum feed straps extend to the sides. Install the two 1" x 10" element sections on the ends of the insulator. Run the 1/4-20 x 2" bolts up from the bottom, add 2 clamp blocks to each side. Place each balun straps over the studs and add the locknuts, loosely at this time.
4. Locate the modified stainless band clamp and insert a 1/4-20 x 2" from inside the clamp. Place the band clamp around the boom about 16" to the rear of the DRIVEN ELEMENT with the stud up. Put the 3/8" x 1" spacer tube over the stud and then place the 1/2" x 1/2" x 5" shorting bar over the stud and add the locknut. Install the two 1/4-20 x 1/4" set screws in the ends of the shorting bar.
5. Insert the two 3/8" x 20" Hairpin matching tubes in the clamp blocks on either side of the DRIVEN ELEMENT as shown on the DIMENSION SHEET. Slide the Shorting bar over the other ends of the tubes and set the correct distance between the element and the shorting bar. Align and tighten all hardware previously left loose.
6. Next assemble the 3/4" x 1/2" element tips in pairs. Use 8-32 x 1" screws and locknuts. Tighten securely until no movement occurs in the tips.
7. Assemble the REFLECTOR element by inserting the 3/4" tubes into the 7/8 x 30" center sleeves insert the 1/4-20 x 1-3/4" bolts down through the tube assembly and set the assembly onto the ring clamp at the REAR end of the boom. Add the locknuts and tighten securely.
8. Continue adding element tip pairs for the Driven Element and the 2 DIRECTORS as in step #7.
9. Now adjust **ELEMENT SPACING AND ALIGNMENT ACCURATELY** following the Dimension Sheet. Dimensions given are "center to center", but can also be used for edge to similar edge measurements. After setting the spacing, align elements parallel with EACH OTHER and tighten the 1/4-20 x 1" bolts in each ring clamp.
10. Mount the BOOM TO MAST PLATE as shown on the DIMENSION SHEET and secure with two 2" U-bolts, cradles, stainless lockwashers and nuts. Two 2" U-bolts and hardware are supplied for attaching the antenna to the mast.
11. This completes the ASSEMBLY. When the antenna is installed in position on the mast, the main feedline can be attached and sealed at that time. REMEMBER to support the feedline at the antenna.

# 36-4 DIMENSION SHEET



# 36-4 PARTS AND HARDWARE

DESCRIPTION	QTY
BOOM SECTION, 2" x .058 x 84" SOE .....	1
BOOM SECTION, 2" X .058 X 84" STR .....	1
ELEMENT SECTION, 1" X 10" SOE .....	2
ELEMENT SECTION, 3/4" X .049 X 48" SOE .....	8
ELEMENT TIP, 1/2" X .049 X SEE DIMENSION SHEET .....	8
ELEMENT SPLICE, 7/8" X .058 X 30" (FOR 2" RING CLAMP) .....	3
CENTER INSULATOR, 7/8" X 15" FIBERGLASS ROD .....	1
BOOM TO MAST PLATE, 3/16" X 4" X 6" .....	1
HAIRPIN TUBES, 3/8" X 20" MATCH ASSEMBLY .....	2
BALUN, 1:1 1kW .....	1
RING CLAMP, 2" .....	4
U-BOLT AND CRADLE, 2-1/2" .....	1
U-BOLT AND CRADLE, 2" .....	4
BAND CLAMP, 2-1/2" SS MODIFIED .....	1
ASSEMBLY INSTRUCTIONS .....	1

## IN HARDWARE BAG

BALUN MOUNTING PLATE, 1/8" X 2" X 4" .....	1
SHORTING BAR, 1/2" X 1/2" X 5" .....	2
CLAMP BLOCK, 3/8" (HAIRPIN TUBE) .....	4
NUT, 5/16-18 SS .....	10
LOCKWASHER, 5/16" SPLIT RING SS .....	10
BOLT, 1/4-20 X 2-1/2" SS .....	2
BOLT, 1/4-20 X 2" SS .....	3
BOLT, 1/4-20 X 1-3/4" SS .....	8
BOLT, 1/4-20 X 1" SS .....	4
NYLOCK NUT, 1/4-20 SS .....	17
SET SCREW, 1/4-20 X 1/4" SS .....	2
SCREW, 8-32 X 1-1/4" SS .....	4
SCREW, 8-32 X 1" SS .....	16
NYLOCK NUT, 8-32 SS .....	20
SPACER, 3/8" X 1" .....	1
NYLON TIE, 14" .....	3
ZINC PASTE, 1 OZ CUP .....	1
ALLEN WRENCH, 1/8" .....	1

### Carefully Manufactured by

M2 Antenna Systems, Inc.  
 4402 N. Selland Ave.  
 Fresno, CA 93722  
 (559) 432-8873 Fax (559) 432-3059  
[www.m2inc.com](http://www.m2inc.com) email: [sales@m2inc.com](mailto:sales@m2inc.com)