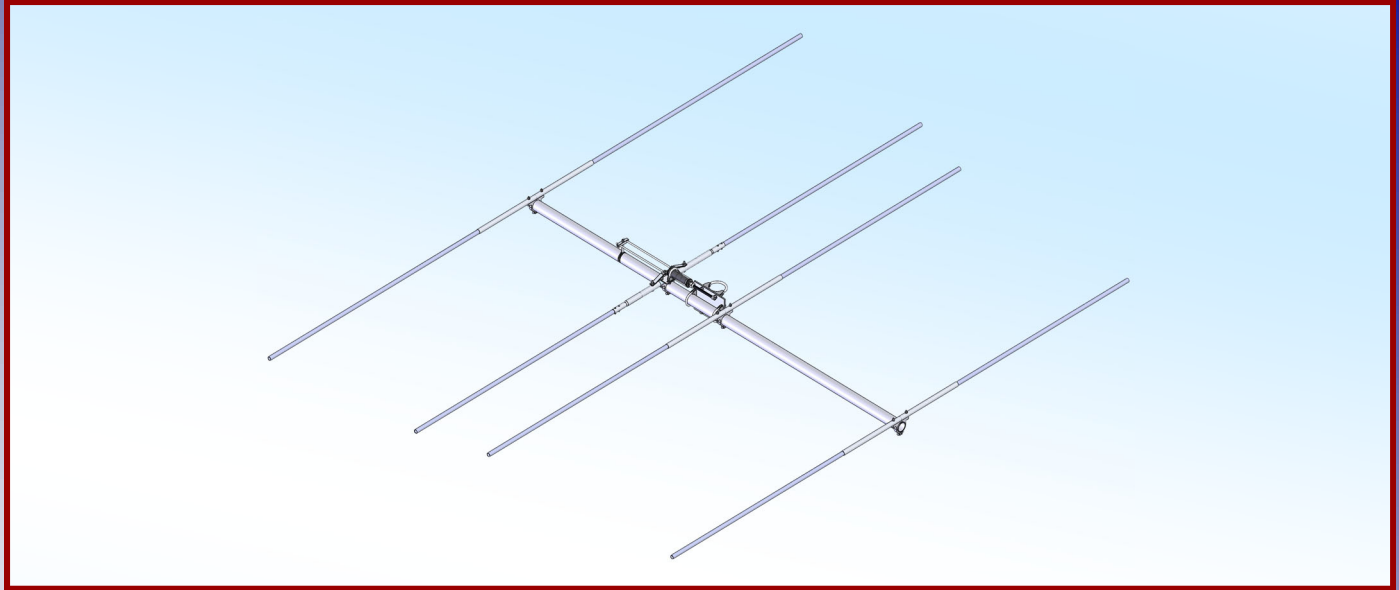




# M2 Antenna Systems, Inc.

## Model No: 41.5-4



### SPECIFICATIONS:

Model .....	41.5-4	Power Handling .....	1.5 kW
Frequency Range.....	41.1 to 41.8 MHz	Boom Length / Dia.....	12' / 2"
Gain .....	12.58 dBi	Element Length / Dia.....	13' 8" / 7/8"-3/4"
Front to back .....	21 dB Typical	Turning Radius: .....	Call
Feed type .....	"T" Match	Stacking Distance .....	Call
Feed Impedance.....	50 Ohms Unbalanced	Mast Size .....	2" to 3" Nom.
Maximum VSWR.....	1.5:1 Typical	Wind area / Survival .....	3.0 Sq. Ft. / 100 MPH
Input Connector.....	"N" Connector	Weight / Ship Wt.....	30 Lbs. / 35 Lbs.

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

### FEATURES:

The 41.5-4 has been computer optimized from the ground up for gain and pattern covering 41.1-41.8 MHz. Originally designed for Meteor Scatter and monitoring systems. The custom 4:1 balun and low loss "T" 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.

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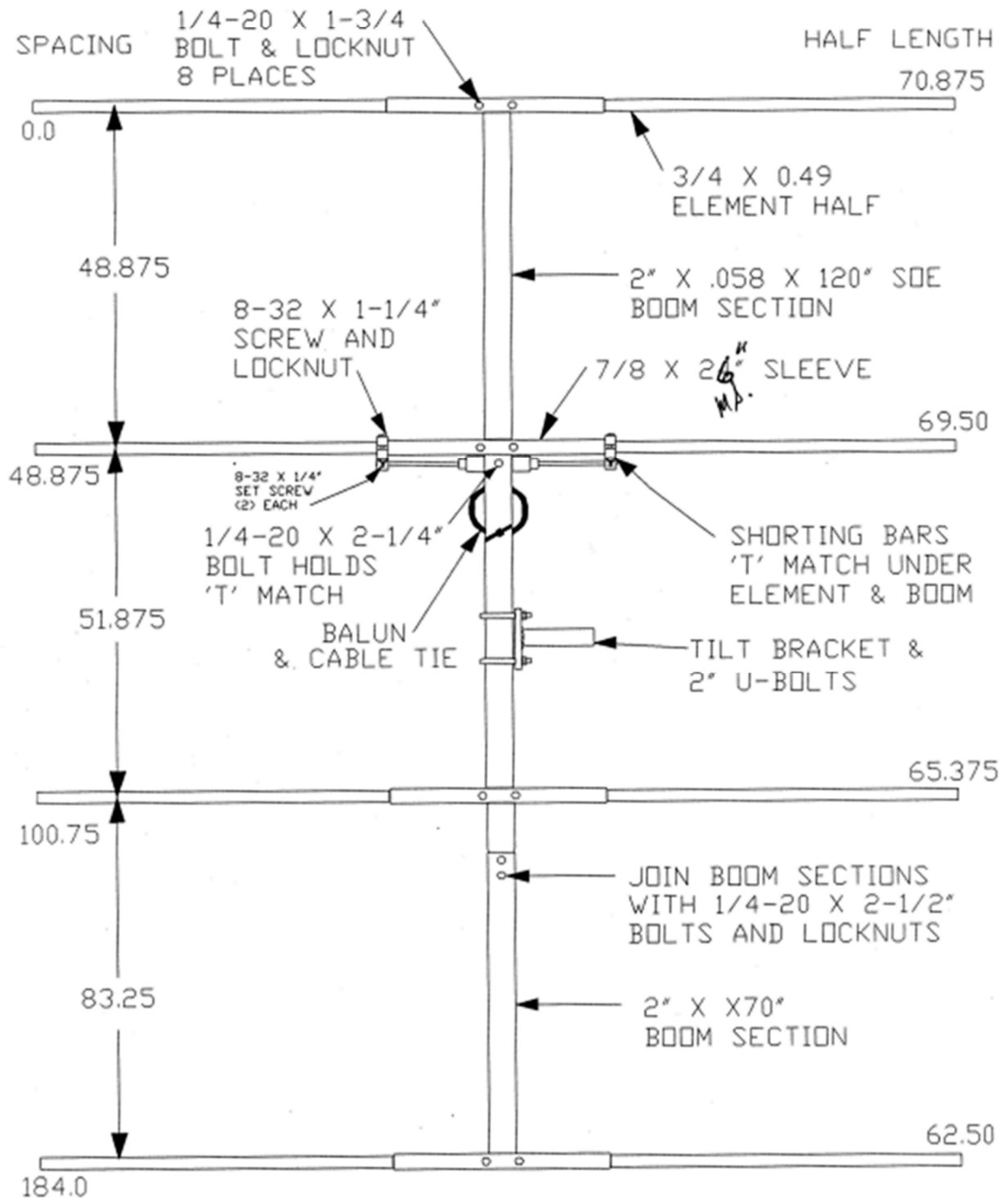
# 41.5-4 ASSEMBLY MANUAL

1. First install ring clamps on each boom section by pushing a flat blade screwdriver into the slit in the ring clamp to spread it. Slide the ring clamp onto the unpainted ring areas on each boom section. Now couple the boom sections together and secure with two 1/4-20 x 2-1/2" bolts and locknuts.
2. Mount the "T" match to the boom with one 1/4-20 x 2-1/4" bolt and tighten in place. THIS "T" MATCH SETS THE ALIGNMENT OF ALL THE ELEMENTS.
3. Rotate the ring clamp next to the "T" match so its long flat side is opposite the "T" match. Install a 1/4-20 x 1" bolt and locknut finger tight at this time.
4. Locate the DRIVEN ELEMENT halves (69.5" each) and slide on the two 4.375" long shorting bars to the unpainted ring on each element half. Install the 8-32 x 1/4" set screws and the 8-32 x 1-1/4" screw and locknut in each shorting bar but do not tighten yet.
5. Slide each element half into the 7/8" x 26" sleeve section. Align the holes and drop two 1/4-20 x 1-3/4" bolts through the holes to hold the elements in position while sliding the shorting bars on to the "T" match tubes one at a time. Now set the assembly on the ring clamp. Add the locknuts and tighten until the inner 3/4" in tubes no longer move inside the 7/8" sleeve. Also tighten the ring clamp around the boom. Also tighten the SHORTING BAR hardware. A 5/64" allen wrench is provided for the set screws.
6. Align the other ring clamps with the driven element. Now slide each element pair into a 7/8" sleeve section. Add the 1/4-20 x 1-3/4" bolts and attach to the appropriate ring clamp. CHECK THE DIMENSION SHEET FOR PROPER ELEMENT LOCATION. Tighten the element mounting bolts. Then align each element with the driven element and tighten the ring clamp bolts around the boom.
7. Add the SEAL NUTS (seal side out) to the two small balun connectors on the "T" match block and attach the RG-6 balun coil to the connectors. Tighten Gently with a 7/16" end wrench and hold the connector while gently tightening the SEAL NUT against the face of each connector with another wrench. Attach the balun to the boom with cable ties.
8. Add the Coaxial Cable 50 ohm feedline (122 inches long approximately) to the SO-239 connector and route the cable toward the middle of the boom. Locate the BALANCE POINT and attach the TILT PLATE with 2" U-bolts. Align the tube of the tilt plate in parallel with the elements and tighten the U-bolts. NOTE THE DISTANCE FROM THE DRIVEN ELEMENT TO THE TILT PLATE AND REPEAT THIS EXACT DIMENSIONS ON THE SECOND ANTENNA OF EACH SET. Add the 6 x 8 inch mast plate to the TILT BRACKET TUBE with two 1-7/8" U-bolts and tighten. Install the 3" U-bolts loosely at this time.

This completes the YAGI ANTENNA assembly. Repeat for the second antenna.

# 41.5-4 DIMENSION SHEET

## DIMENSION SHEET



DIMS  
M. STAAL  
7-24-91

# 41.5-4 PARTS & HARDWARE

DESCRIPTION	QTY
BOOM SECTION, 2" X .058 X 120" SOE.....	1
BOOM SECTION, 2" X .058 X 70" STR.....	1
SLEEVE, 7/8 X .058 X 26" .....	4
ELEMENT HALVES, .75" X .049 X SEE DIMENSION SHEET .....	8
RING CLAMPS, 5/8" X 2.5" X 4" .....	4
DRIVEN ELEMENT ASSEMBLY .....	1
TILT PLATE, .250 X 4" X 6" .....	1
BALUN, RG-6.....	1
ASSEMBLY MANUAL.....	1
 <b>IN HARDWARE BAG #1</b>	
U-BOLT AND CRADLE, 2".....	2
U-BOLT AND CRADLE, 1-7/8".....	2
 <b>IN HARDWARE BAG #2</b>	
SHORTING BARS, 1/2" X 1" X 4.375" .....	2
NUT, 5/16-18 SS.....	8
LOCKWASHER, 5/16 SPLIT RING SS .....	8
BOLT, 1/4-20 X 2-1/2" SS .....	2
BOLT, 1/4-20 X 2-1/4" SS .....	1
BOLT, 1/4-20 X 1-3/4" SS .....	8
BOLT, 1/4-20 X 1" SS .....	4
NYLOCK NUT, 1/4-20 SS.....	14
SCREW, 8-32 X 1-1/4" SS .....	2
SET SCREW, 8-32 X 1/4" SS .....	4
ALLEN WRENCH, 5/64".....	1
CABLE TIE, 8".....	4
CABLE TIE, 13".....	8

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