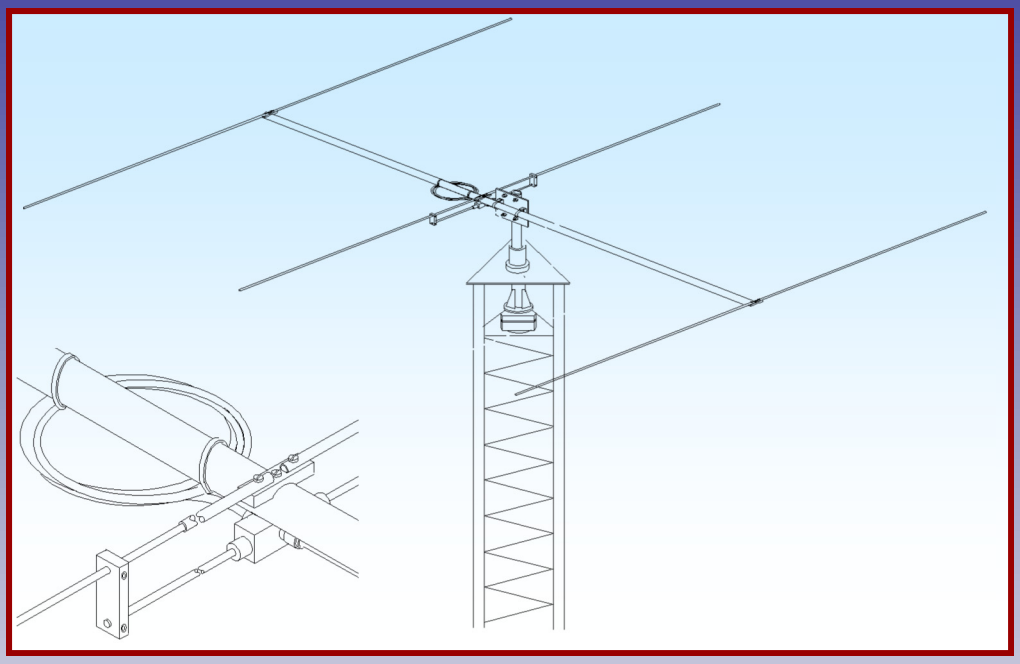
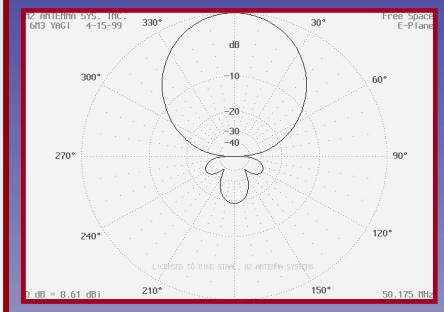
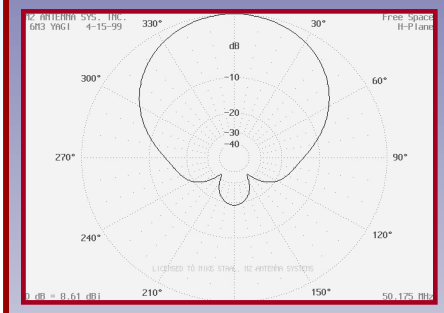
M2 Antenna Systems, Inc.
Model No: 6M3







SPECIFICATIONS:

Model	6M3	Input Connector	SO-239
Frequency Range	50.0 To 50.6 MHz	Power Handling	3 kW
Frequency Range	51.0 To 54.0 MHz	Boom Length / Dia	6’ 9” / 1-1/2”
*Gain	8.2 dBi	Maximum Element Length	9’ 8”
Front to back	20 dB Typical	Turning Radius:	6’ 3”
Beamwidth	E=64° H=90°	Stacking Distance	14’ High & 18’ Wide
Feed type	“T” Match	Mast Size	1-1/2” to 2” Nom.
Feed Impedance.	50 Ohms Unbalanced	Wind area / Survival	1.2 Sq. Ft. / 100 MPH
Maximum VSWR	1:1 @ 50.75 mHz	Weight / Ship Wt.	6 Lbs. / 8 Lbs.

***Subtract 2.14 from dBi for dBd**

FEATURES:

The 6M3 is a light but rugged computer optimized Yagi offering low wind load and great performance for its size. It will compliment the rest of your antennas and tower system. Quick and easy to assemble, it is also great for mountain topping, grid expeditions and DXpeditions. The 6M3 features the same machined aluminum mounting blocks and sealed ‘T’ match block that its big brothers use. The 6M3 is perfect for the ham trying 6 meters for the first time or the seasoned vet who may stack them for improved gain. For the serious 6 meter enthusiast, it provides and effective, inexpensive building block for vertical stacks and MOONBOUNCE arrays. A tuning chart is included for the FM band

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3/2/17
Rev.03

6M3 ASSEMBLY MANUAL

TOOLS REQUIRED: Screwdriver, 11/32 wrench, socket or spintite, a 7/16" and 1/2" wrench or socket, tape measure.

1. Layout the boom sections as shown on Dimension Sheet and assemble with 8-32 x 1-3/4" screws, lock washers and nuts. Tighten the nuts securely.

2. Use the Dimension Sheet as reference for installing the ELEMENT HALVES on to the ELEMENT MOUNTING BLOCKS. Use the 8-32 x 1" screws and locknuts.

3. Mount the longest element (REFLECTOR - 57-7/8” element halves) to the hole at the rear end of the boom using a 8-32 x 2" screw and locknut. Tighten securely.

4. Mount the DRIVEN ELEMENT next, threading the 2” screw into the 'T' MATCH BLOCK held to the underside of the boom. Orient the match block with the “N” feed connector pointed to the front. Mount the remaining DIRECTOR ELEMENTS. Carefully note lengths on Dimension Sheet:

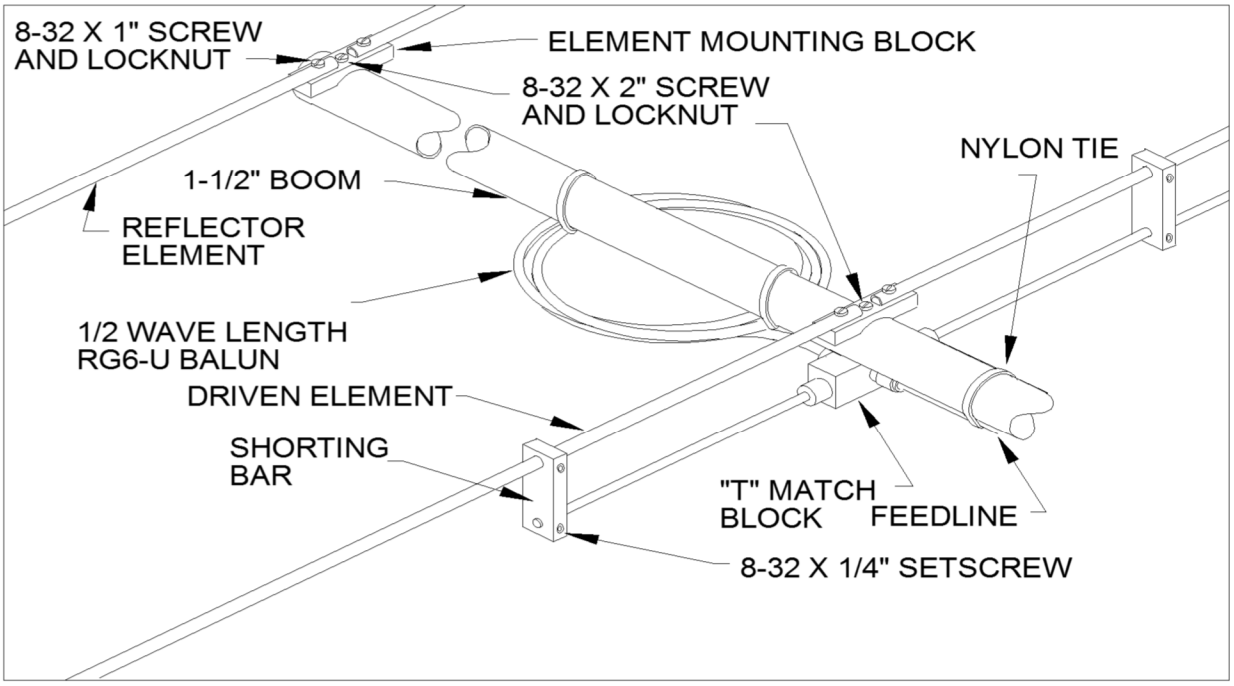
5. Connect the balun connectors and tighten them **GENTLY** with a 7/16" end wrench. Secure coiled balun to boom with two nylon ties.

6. Install two 8-32 x 1/4” set screws into each SHORTING BAR. Then slide a SHORTING BAR onto each DRIVEN ELEMENT HALF and position per the DIMENSION SHEET on the “T” match rods. Align rods and element halves parallel and tighten the set screws with the 5/64" Allen wrench.

7. Install the feedline, tightening the Male connector carefully, and route the cable forward to the balance point, securing it with the cable ties provided.

8. Mount the BOOM TO MAST PLATE perpendicular to elements at the physical balance point of the antenna. Secure with the 1-1/2" U-bolts, 5/16” stainless steel lock washers and nuts. Do not over-tighten as severe boom distortion and subsequent weakening can occur. 2” U-bolts are supplied for attaching plate to your mast.

TYPICAL HARDWARE ARRANGEMENT



9. 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 boom and on the mast. Leave an adequate feedline loop for rotation around the tower. When stacking this antenna with other HF models, maintain a minimum 5' of separation; more if practical. Mount horizontally polarized VHF and UHF antennas at least 40" above or below this antenna to minimize interaction.

10. **INSTALLATION AND STACKING INFORMATION**

A. A mast or cross boom that is mounted to this antenna ***in the element plane*** must be non conductive (fiberglass, etc).

B. To protect your investment in this high performance antenna, always use high quality coax and connectors. Old, corroded, or poor quality materials are common sources of ***serious*** performance losses.

C. If possible, test the antenna, connectors and feedline BEFORE installing to your mast or tower. Set antenna on a tall wooden or fiberglass ladder or temporary mast. Check for continuity and match across the bandwidth. It should be similar to rated specifications and plots.

D. STACKING REMINDERS:

1. All driven element blocks MUST be oriented to the same side of boom.
2. All boom-to-mast plates MUST be mounted at the same point on the boom.
3. Feed / phasing lines MUST be of equal electrical length or multiples of 1 wavelength in order to maintain equal phasing in the array. Improper phasing can severely deteriorate performance.

If you are unsure about stacking multiple antennas, please call **M²** and let us help you DO IT RIGHT.

THIS COMPLETES THE ANTENNA ASSEMBLY.

Carefully manufactured by:

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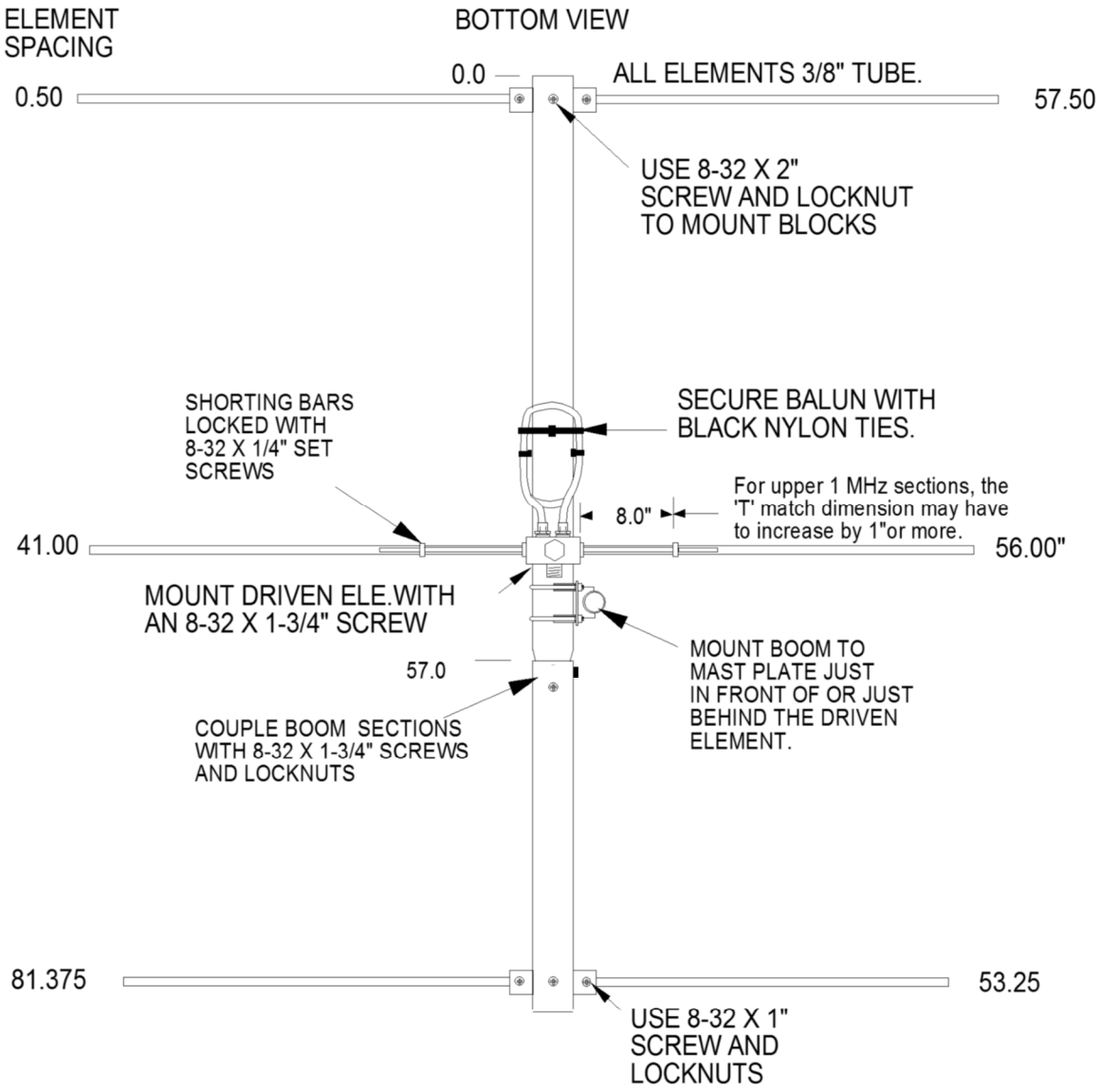
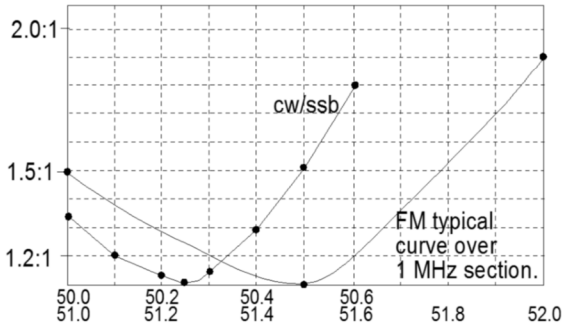
6M3 DIMENSION SHEET



TYPICAL VSWR CURVES ABOVE 10' IN HEIGHT.



To optimize the 6M3 from 51 to 52 MHz trim reflector to 56.125"
" driven el. to 54.625"
" director to 51.00"

To optimize the 6M3 from 52 to 53 MHz trim reflector to 55.375"
" driven el to 53.875"
" director to 50.375"

To optimize the 6M3 from 53 to 54 MHz trim reflector to 54.25"
" driven el to 52.75"
" director to 49.25"

6M3 PARTS & HARDWARE

DESCRIPTION	QTY
Boom Section #1, 1-1/2” x .065 x 60" S.O.E. Alum.	1
Boom Section #2, 1-1/2” x .065 x 25" Alum.	1
Boom Plate 4 x 6 x 3/16 Alum.	1
Element 57.5 x 3/8” tube	2
Element 56.00 x 3/8” tube	2
Element 53.25 x tube	2
Driven `T' Match Assembly with SO-239 conn.	1
Balun, 4:1, 50 MHz, RG-6	1
Assembly Instructions	1

BAG #1

U-Bolt 2"	2
U-Bolt 1 1/2"	2

HARDWARE BAG

Shorting Bars 3/4” x 1/4” x 2-7/8" machined alum.	2
Element Mounting Blocks 3/4” x 3/8” x 3" alum. for 1-1/2” boom	3
Screw 8-32 X 2" panhead ss	3
Screw 8-32 x 1 3/4" panhead ss	2
Screw 8-32 x 1" panhead ss	6
Locknut 8-32 ss	10
Nuts 5/16-18 ss	8
Lockwashers 5/16” Split Ring	8
Cable Ties 8" Black	4
Screw Internal Hex Set 8-32 x 1/4” ss	4
Allen Wrench 5/64”	1

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