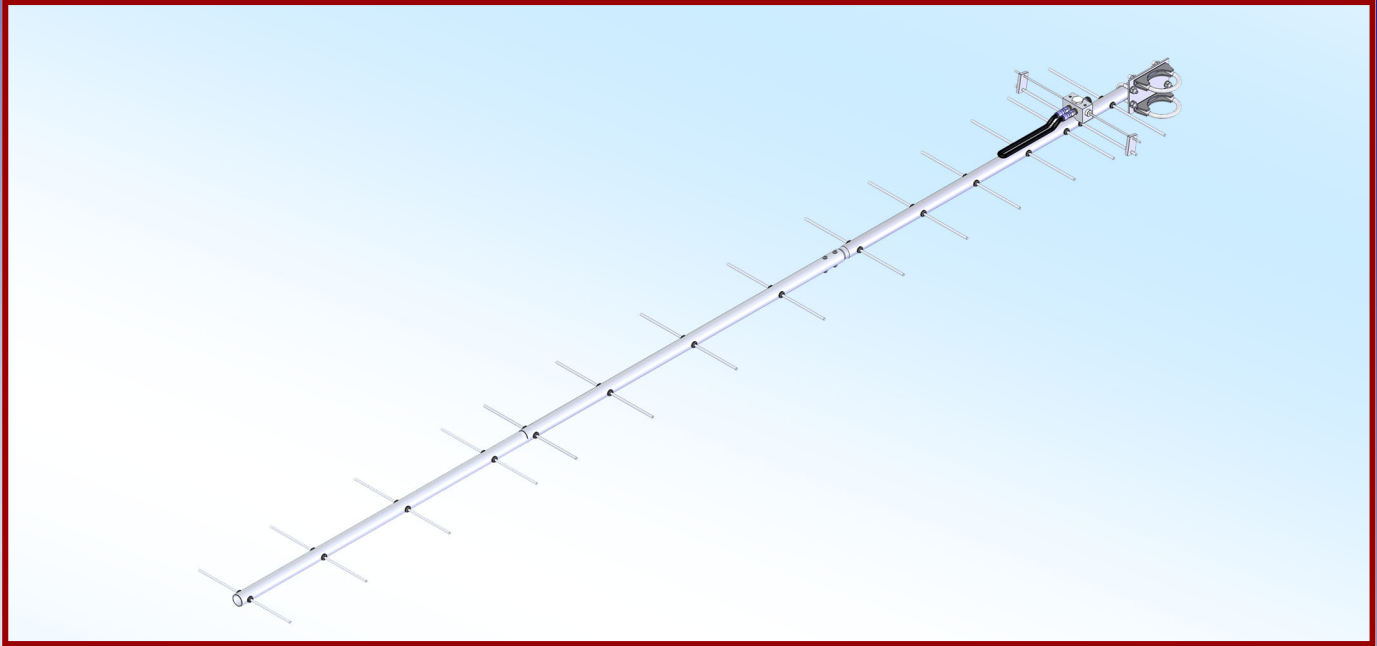




# M2 Antenna Systems, Inc. Model No: 404-15



## SPECIFICATIONS:

Model .....	404-15	Power Handling .....	1.0 Kw (Higher Optional)
Frequency Range.....	398-410 MHz	Boom Length / Dia.....	133" / 1-1/4" to 1"
*Gain .....	16 dBi	Element Length / Dia.....	15" Max / 3/16"
Front to back .....	20 dB Typical	Turning Radius:.....	85"
Beamwidth .....	E=26° H=29°	Stacking Distance.....	60" H / 60" W
Feed type .....	"T" Match	Mast Size.....	2" Nom.
Feed Impedance.....	50 Ohms Unbalanced	Wind area / Survival .....	1.15 Sq. Ft. / 100 MPH
Maximum VSWR.....	1.2:1 Typical	Weight / Ship Wt.....	4.5 Lbs. / 6 Lbs.
Input Connector.....	"N" Female		

**\*Subtract 2.14 from dBi for dBd**

## FEATURES:

The 404-15 is a computer optimized medium performance Yagi designed for low cost and light weight but strong construction. It features a machined block driven element assembly that is sealed to weather and potted with a high dielectric strength silicon gel, guarantying long and efficient performance lifetime. All hardware is stainless steel.

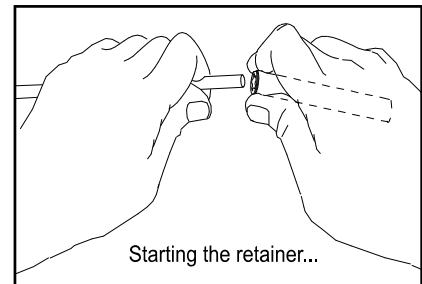
# 404-15 ASSEMBLY MANUAL

**TYPICAL TOOLS REQUIRED:** Measuring tape, Phillips screwdriver, 11/32, 7/16, and 1/2 nut drivers (spin-tite), end wrenches and / or sockets. Heavy duty models may require larger sizes.

1. Lay out the boom sections and assemble using the DIMENSION sheet as a guide for position and hardware. Use 8-32 x 1-1/2" screws and locknuts and tighten till no joint movement is present.
2. Lay out the elements by length and position as shown the DIMENSION sheet. Find rough center of the reflector (longest) element by balancing it across finger. Push on a black button insulator to about 1/2" from center. Insert the element through the holes at the rear of the boom and install the second button. Install the 3/16" rod DRIVEN ELEMENT as you did the reflector. Then continue with the installation of the DIRECTORS. **Note that the Director Elements may not consistently diminish in length from rear to front, so pay close attention to length and position.**
3. Now begin centering the elements. Use a tape measure to EQUALIZE the amount the element sticking out on each side of the boom. Once all are centered, sight down the antenna from the rear and compare tip symmetry. Look for any obvious discrepancies and correct if found.
4. Stainless steel SHAFT RETAINERS are used for securing the elements and insulators. Always use for permanent and long term antenna installations. For most portable or temporary use, the button insulators are satisfactory and the retainers may be left off.

HINT: Chamfer the inner lip of the push tube to add clearance for the keeper fingers.

5. Use thumb and index finger to hold a Shaft Retainer over end of the 3/8 x 3" push tube (internal fingers dished into tube). Hold the element firmly and start the keeper onto the rod by applying pressure with the push tube. Push the Shaft Retainer down element until tight against the button insulator (Locking pliers, **lightly** clamped up against opposite button insulator will help maintain center reference and keep you from pushing the first Shaft Retainer too far). Repeat for the opposite side. Continue installing Shaft Retainers until all elements are locked in place.



6. Mount the DRIVEN ELEMENT FEED BLOCK to the boom using a single 8-32 screw 1/4" longer than the boom diameter. Orient with feed and balun connectors oriented as shown on the Dimension Sheet.
7. Thread a 3/8" SEAL-NUT fully onto each balun connector on the feed block, with black Neoprene side facing out. Generally the balun is installed in one loop. Rear mounted baluns may be coiled once if length extends beyond boom. Attach balun **AND THE TWO SPACER WASHERS** to the block connectors and tighten **gently** using a 7/16" end wrench. Then back the Seal Nuts out and finger-tighten firmly up against the face of the connectors (or tighten **gently** with 1/2" end wrench). Form the balun coax close to the boom and secure with cable ties (snug but not crushing or kinking the coax).
8. Install the 8-32 x 1/4" set screws (internal Allen head - tool supplied) into the SHORTING BARS. Slide the bars onto the 3/16" rod driven element tips and the 1/8" Feed Block Rods. Position the Shorting Bars as specified on the DIMENSION SHEET: the distance given is between the outer face of the Feed Block and the inner face of the Shorting Bar. Align the bars and rods with each other and tighten the set screws. **THIS COMPLETES THE ANTENNA ASSEMBLY.**

# 404-15 PARTS & HARDWARE

## PARTS LIST: 404-15

8-16-22

DESCRIPTION .....	QTY
BOOM SECTION, 1" X .058 X 45" .....	1
BOOM SECTION, 1" X .058 X 53" .....	1
BOOM SECTION, 1-1/4" X .058 X 60" SBE .....	1
DRIVEN ELEMENT BLOCK ASS'Y .....	1
BALUN, RG-6U, HALF WAVE .....	1
ASSEMBLY MANUAL .....	1

### IN HARDWARE BAG:

BUTTON INSULATORS .....	30
SHAFT RETAINER, SS .....	30
SCREW, 8-32 X 1-1/2, SS .....	4
SCREW, 8-32 X 1-1/4, SS .....	1
LOCKNUT, 8-32 SS .....	4
SHORTING BAR, 1/8" AND 3/16 HOLES .....	2
SET SCREW, 8-32 X 1/4, SS .....	4
CABLE TIE, NYLON .....	3
SEAL NUTS, 3/8-32 .....	2
ALLEN HEAD WRENCH, 5/64" .....	1
PUSH TUBE, 3/8 X 3" .....	1

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