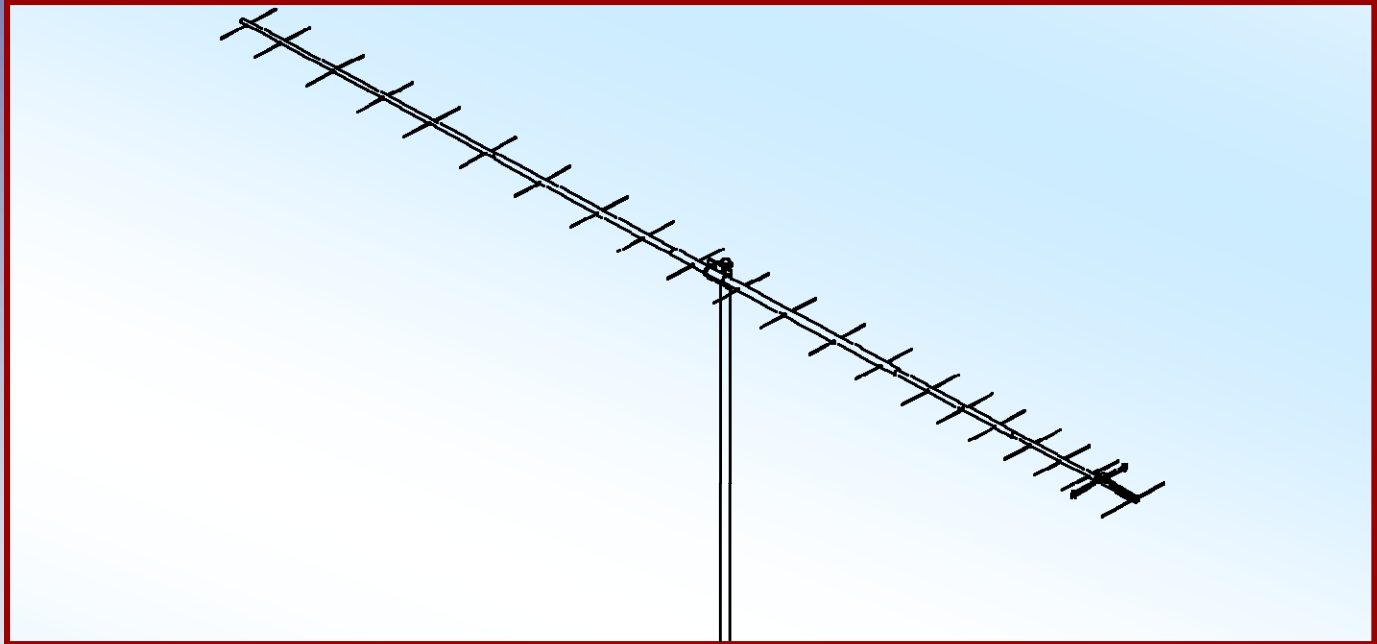




M2 Antenna Systems, Inc. Model No: 610-21A



SPECIFICATIONS:

Model	610-21A	Power Handling	1.5 kW
Frequency Range.....	607-620 MHz	Boom Length / Dia.....	147" / 1"
*Gain	17.8 dBi	Stacking Distance.....	*Call
Front to back	20 dB Typical	Mounting.....	1-1/2" to 2" Nom.
Beamwidth	E=27°	Wind area / Survival	0.9 Sq. Ft. / 100 MPH
Feed type	"T" Match	Weight / Ship Wt.....	10 Lbs. / 13 Lbs.
Feed Impedance.....	50 Ohms Unbalanced		
Maximum VSWR.....	1.5:1		
Input Connector.....	"N" Female		

***Subtract 2.14 from dBi for dBd**

FEATURES:

The 610-21A is a high gain Yagi, computer optimized for use in the 607-620 MHz band. The 610-21A can be used for transmit or receive functions. Mechanically, the 3/16" rod elements are mounted through the boom, insulated and locked in place with stainless keepers.

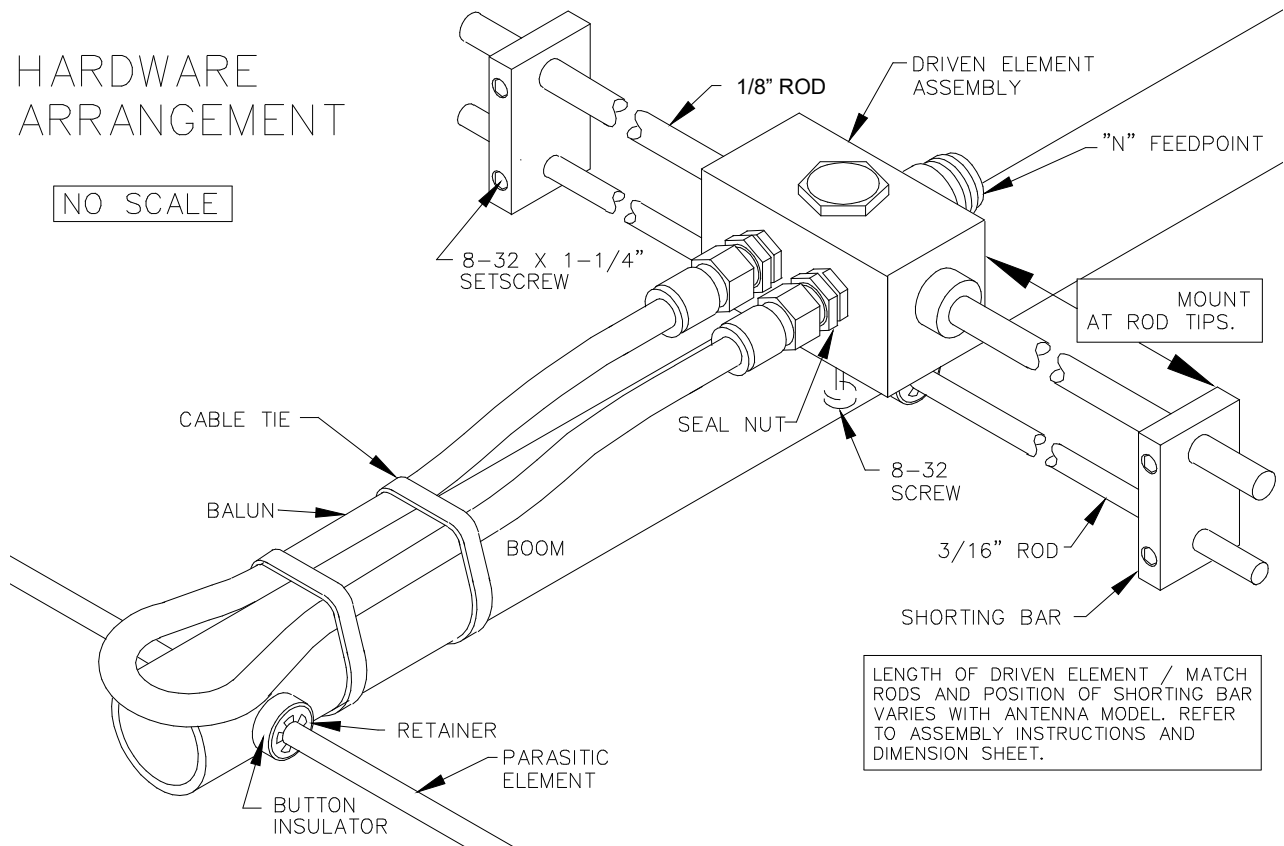
The heart of the 610-21A is a unique Driven Element Module with superior weather resistance and power handling abilities. All connectors are O-ring sealed to the CNC machined block and internal connections are sealed in a space-age silicone gel with a dielectric strength nearly 4 times greater than air. The balun coaxial connectors are triple O-ring sealed. Other key mechanical and electrical parts are CNC machined from 6061-T6 aluminum and all hardware except U-bolts are stainless steel.

The 610-21A offers uncompromising performance, enduring mechanical construction and long term electrical integrity.

610-21A DRIVEN ELEMENT DETAIL

HARDWARE
ARRANGEMENT

NO SCALE

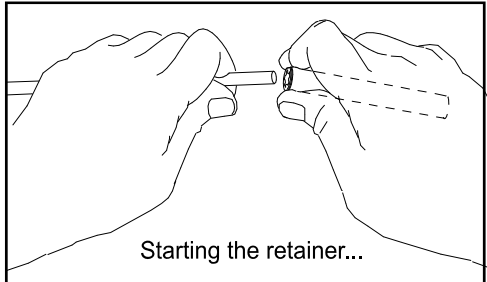


610-21A ASSEMBLY MANUAL

TYPICAL TOOLS REQUIRED: measuring tape, Phillips screwdriver, 11/32, 7/16, and 1/2 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.
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: Use a pocket knife to chamfer the inner diameter of on end of the push tube for keeper clearance.

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.
- 
- Starting the retainer...
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 long loop. Rear mounted baluns may be coiled once if length extends beyond boom. Attach balun 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 1/4" 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 sets crews.

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610-21A PARTS LIST

PARTS LIST: 610-21A

7-10-03

DESCRIPTION	QTY
BOOM SECTION #1, 1 X .058 X 19.75"	1
BOOM SECTION #2, 1 X .058 X 60" SOE	1
BOOM SECTION #3, 1 X .058 X 60" SOE	1
DRIVEN ELEMENT BLOCK ASS'Y, UHF	1
BALUN, 1/2 WAVE RG-6U CABLE	1
ASSEMBLY MANUAL.....	1

IN HARDWARE BAG:

BUTTON INSULATORS	42
SHAFT RETAINER, SS	42
SCREW, 8-32 X 1-1/4", SS.....	5
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
SPACER, WASHERS, BRASS.....	2
ALLEN HEAD WRENCH, 5/64"	1
PUSH TUBE, 3/8 X 3"	1

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