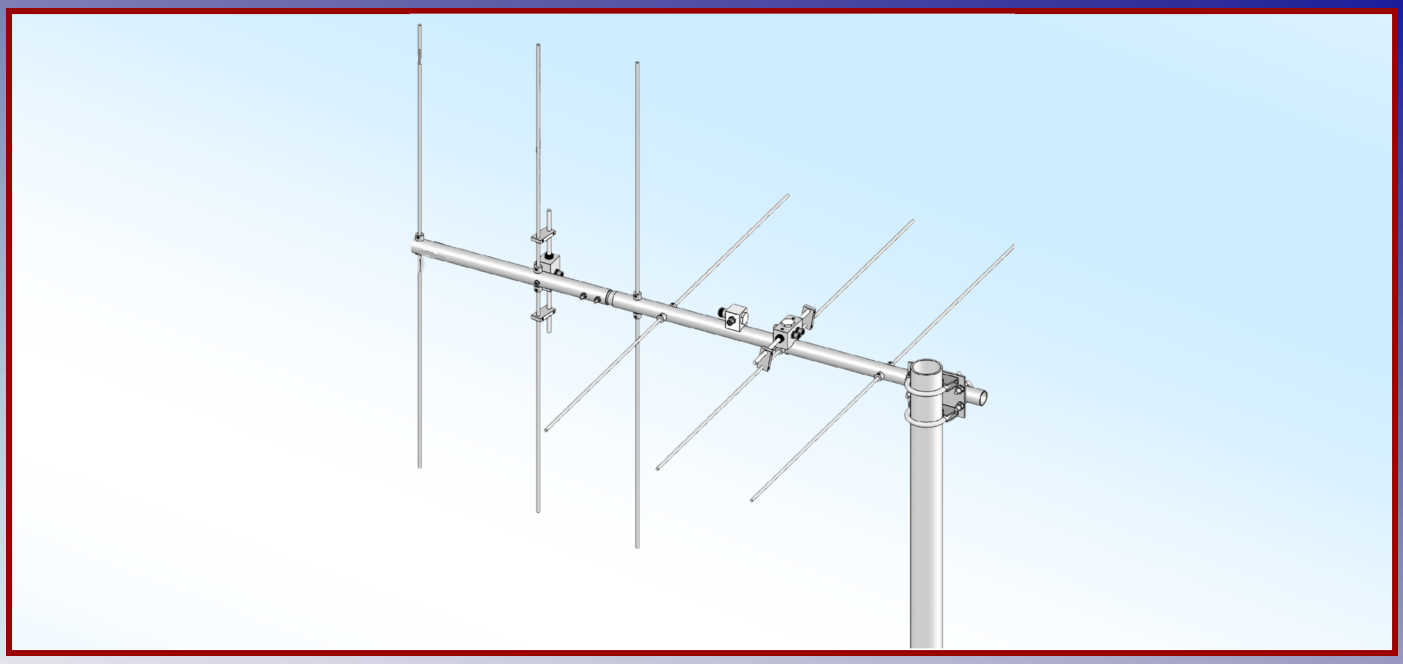
M2 Antenna Systems, Inc.
Model No: 295XP6



SPECIFICATIONS:

Model	295XP6
Frequency Range	292 To 298 MHz
*Gain	8.0 dBiC
Front to back	22 dB Typical
Beamwidth	E=96°
Feed type	"T" Match
Feed Impedance.	50 Ohms Unbalanced
Maximum VSWR	1.2:1 Typical
Input Connector	"N" Female

Power Handling	500 Watts
Boom Length / Dia	37" / 1"
Maximum Element Length	20"
Turning Radius:	24"
Stacking Distance	Call
Mast Size	1-1/2" to 2" Nom.
Wind area / Survival	0.5 Sq. Ft. / 100 MPH
Weight / Ship Wt.	2 Lbs. / 3 Lbs.

***Subtract 2.14 from dBi for dBd**

FEATURES:

The 295XP6 is a small sized, computer optimized, cross-polarized antenna. Depending on phasing between the vertical and horizontal element set, horizontal, vertical, right or left hand circular polarity is available. Electro-mechanical features include machined components and stainless steel hardware. The rod elements are centered in the boom on UV stabilized insulators and secured with stainless steel shaft retainer. All connectors are threaded and O-ring sealed to the feed block. The block's internal cavity and connections are encapsulated in a silicone gel that seals out moisture and provides a dielectric strength 3.7 times greater than air for improved power handling capability. Balun connectors are triple-sealed to the coax and nut-sealed at the block.

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Rev.02

295XP6 ASSEMBLY MANUAL

TOOLS REQUIRED FOR ASSEMBLY: 1/2” and 7/16” end wrenches or sockets, pliers, measuring tape.

HORIZONTAL ELEMENT ASSEMBLY

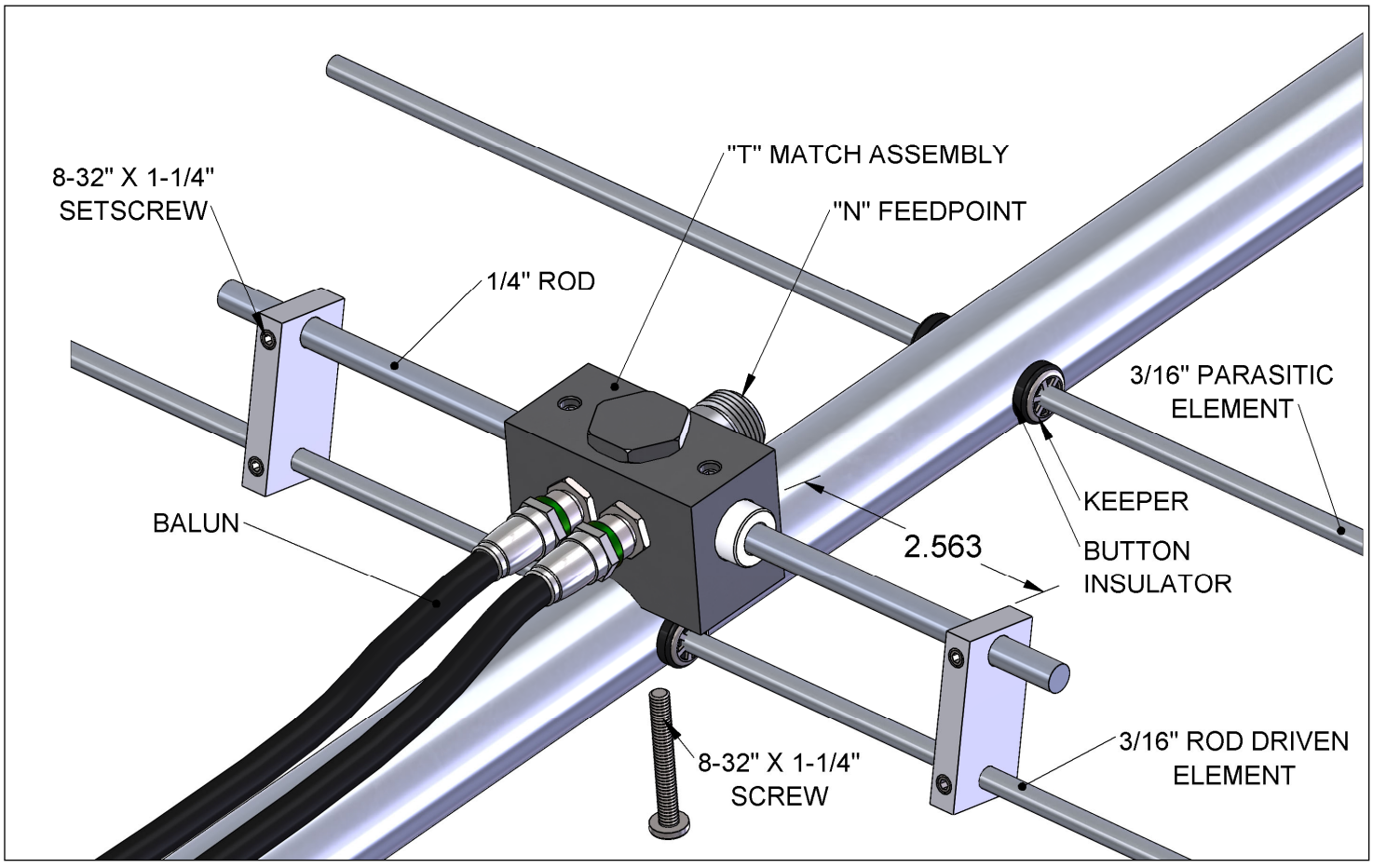
1. Separate the 3/16” ROD elements by length into two identical sets, “H” and “V”. Position the “H” element set along the boom by length and spacing as shown the DIMENSION sheet. Start with the REFLECTOR (longest) element. Balance it on your finger to roughly determine it’s center point and push on a black button insulator on one side of the rod to about 1” off of center. Next push the REFLECTOR element through the appropriate holes in the boom and allow to protrude about 1” on the opposite side. Now install the second button, snugging it up to the boom. DO NOT CENTER the element at this time and DO NOT INSTALL any of the stainless steel SHAFT RETAINERS yet. It is easier to do it after all the horizontal elements are installed in the boom.

2. Repeat (1) for the installation of the remaining two HORIZONTAL “H” SET of 3/16” ELEMENTS.

3. Now accurately center the elements using a tape measure. EQUALIZE the amount of rod sticking out on each side of the boom. Once you have all the elements centered, sight down the element tips from the rear comparing each side. Look for any obvious discrepancies and correct if found.

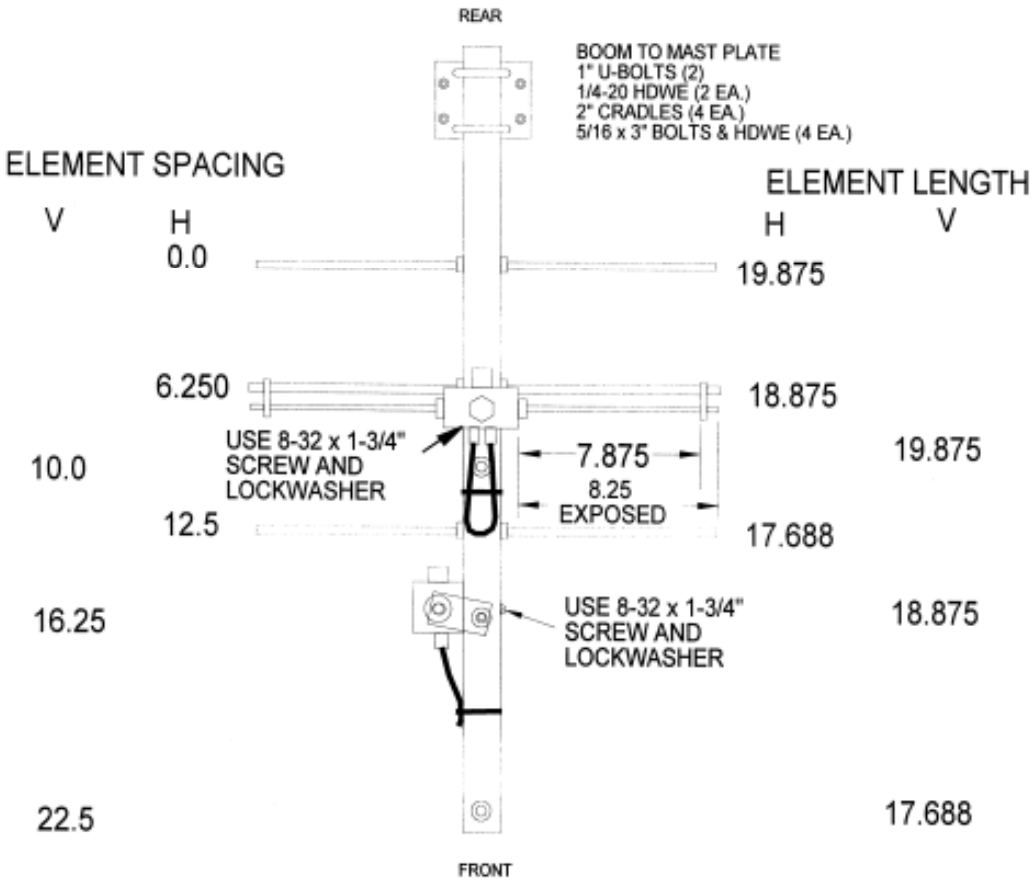
4. Begin installing the stainless SHAFT RETAINERS. Use thumb and index finger to hold a retainer over end of the 3/8” x 3” push tube (keeper dished into tube). Hold the element firmly and start the retainer onto the rod by applying pressure with the push tube. Push the retainer until up tight against the button insulator (Locking pliers, clamped up against opposite button insulator will help maintain center reference and keep you from pushing the first retainer too far, or, grab the opposite side of the element and pull it hard sideways to the boom to preload and increase the friction of the element on the button insulators while pushing the retainer). Repeat for the opposite side. Continue installing retainers until all elements are locked in place.

5. Mount the HORIZONTAL DRIVEN ELEMENT BLOCK / 1/4” ROD ASSEMBLY to the TOP of the boom as pictured on the DIMENSION SHEET using a 8-32 x 1-1/4” screw and lockwasher. Orient the block with the two balun connectors facing towards the FRONT of the antenna and the feed connector towards the REAR.



295XP6 DIMENSION SHEET

295CP6 DIMENSION SHEET



295CP6DM
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295XP6 ASSEMBLY MANUAL

6. Install the 8-32 x 1/4” set screws (internal Allen head - tool supplied) into the SHORTING BARS. Slide the bars on the 1/4” Driven Element Block Rods and the 3/8” driven element rods. Position the shorting bars to the specified dimension on the ***DIMENSION SEET, measured BETWEEN THE OUTER FACE OF THE DRIVEN ELEMENT BLOCK AND THE INNER FACE OF THE SHORTING BAR.*** Now tighten the set screws.

VERTICAL ELEMENT ASSEMBLY

1. Repeat steps #1 through #6 for the Vertical elements, using the DIMENSION SHEET as your guide to the lengths and spacings. Mount the VERTICAL driven element block to the LEFT side of the boom (as viewed from the rear) with the two balun connectors facing forward (see Dimension Sheet).

COMPLETING ANTENNA ASSEMBLY

1. Before installing the Baluns, thread 3/8” seal nuts fully onto all “F” connectors on both the horizontal and vertical driven element blocks, with the black Neoprene face of the nuts facing out. Attach Baluns to the Blocks as shown on the figure on the last page. Tighten the connectors gently using a 7/16” end wrench. Once the connectors are tight, back the seal nuts out and finger-tighten firmly up against the face of the connectors (or tighten gently with 1/2” end wrench). A lot of torque is unnecessary. Form baluns close to the boom and secure with a nylon cable tie. Also secure feed coax with cable ties. Ties should be snug but not crushing or kinking the coax.

2. Attach the 3 x 4 x .125” BOOM TO MAST PLATE about 1” from the rear of the antenna with two 1” U-Bolts. On the opposite side of the plate loosely install the two sets of 2” cradles with 5/16-18 x 3” bolts, lock washer and locknuts.

3. Attach feedlines and fasten to the boom with cable ties. To provide stress relief use a nylon tie to secure feed coax near connector on each block. Route feedlines to rear of boom and secure again.

THIS COMPLETES THE ANTENNA ASSEMBLY

Carefully manufactured by:
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295XP6 PARTS & HARDWARE

DESCRIPTION	QTY
BOOM SECTION, 1” X .058 X 37”	1
SLEEVE, 7/8” X .058 X 14”	1
ELEMENTS, 3/16” ROD x DIM SHEET	6
DRIVEN ELEMENT ASSEMBLY	2
BALUN, RG-6 1/2 λ	2
PHASE LINE, RG-6 1/4 λ	2
JUNCTION BLOCK ASSEMBLY	1
BOOM-TO-MAST PLATE, 3 X 4 X .125"	1
SHORTING BAR, VHF, 1/4” X 3/4”	4
U-BOLT & CRADLE, 2”	2
U-BOLT, 1”	2
ASSEMBLY MANUAL	1

HARDWARE:

BUTTON INSULATOR	12
SHAFT RETAINER, SS	12
NUT, 5/16-18 SS	4
LOCKWASHER, 5/16 SS	4
NUT, 1/4-20 SS	4
LOCKWASHERS, 1/4 SS	4
SCREW, 8-32 X 1-1/4 SS	2
LOCKNUT, 8-32 SS	2
SETSCREW, 8-32 X 1/4, SS	8
CABLE TIE, NYLON	6
SEAL NUTS, 3/8-32	4
ALLEN HEAD WRENCH, 5/64”	1
PUSH TUBE, 3/8 X 3”	1

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