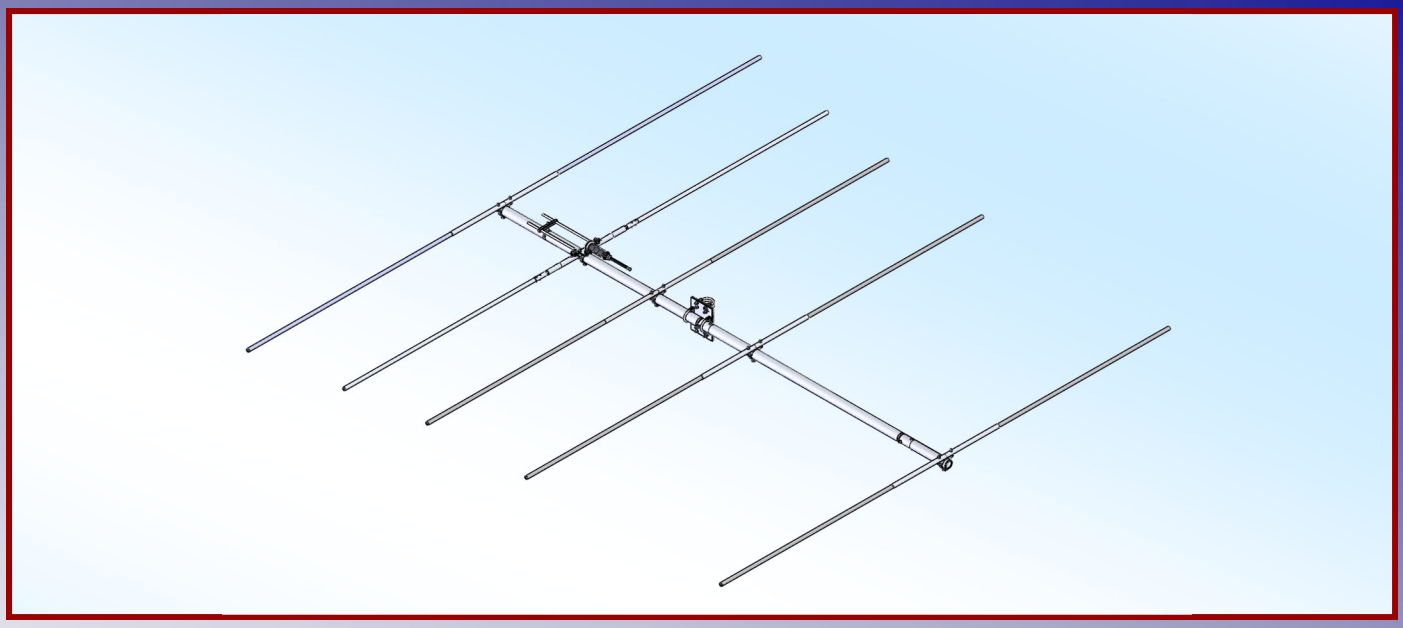
M2 Antenna Systems, Inc.
Model No: 45.6-5



SPECIFICATIONS:

Model	45.6-5
Frequency Range	44.2 to 45.6 MHz
*Gain	10.1 dBi
Front to back	21 dB Typical
Feed type	“T” Match
Feed Impedance.	50 Ohms Unbalanced
Maximum VSWR	1.5:1 Max
Input Connector	“N” Female
Power Handling	1.5 kW

Boom Length / Dia	17’ 3” / 2”
Maximum Element Length	290” / 7/8”-3/4”
Turning Radius:	Call
Stacking Distance	Call
Mast Size	2” Nom.
Wind area / Survival	3.2 Sq. Ft. / 100 MPH
Weight / Ship Wt.	55 Lbs. / 65 Lbs.

***Subtract 2.14 from dBi for dBd**

FEATURES:

The 45.6-5 has been computer optimized from the ground up for gain and pattern covering 44.2-45.6 MHz. The original design was for Meteor Scatter, but can be used for 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 30 designs for Meteor Scatter applications covering from 39 MHz to 50 MHz. If you have a specific requirement, please contact us for more details.

M2 Antenna Systems, Inc. 4402 N. Selland Ave. Fresno, CA 93722
Tel: (559) 432-8873 Fax: (559) 432-3059 Web: www.m2inc.com

09/06/22
Rev.00

45.6-5 ASSEMBLY MANUAL

Note: A cup of zince past (PENETROX, NOALOX, or equivalent) has been provided to enhance the quality of all the electrical joints in this antenna. Apply a thin coat wherever two pieces of aluminum come in contact.

1. Begin by laying out the boom sections in order according to the DIMENSION SHEET. Note the dimensions next to each joint in the boom. These are reference dimensions used to position the ELEMENT RING CLAMPS, prior to assembling the boom.

2. Locate the rear boom section and install the three, 2 inch ring clamps on that section according to the dimension sheet. The powder paint has been omitted where each ring clamp is to be mounted. Apply a light coat of zinc paste at each bare spot. USE A FLAT BLADE SCREWDRIVER slipped in the slot of the ring clamp to spread it slightly allowing it to slide along the boom. Remove the screwdriver when the clamp is at the proper dimension.

3. Continue installing ring clamps on the individual boom sections, applying zinc paste and positioning them according to the dimension sheet.

4. Now assemble the boom using the 1/4-20 x 2-1/2” bolts and locknuts. Tighten securely.

5. Next mount the “T” match section using the SINGLE 1/4-20 x 2-1/4” bolt. The two small connectors for the balun should face the middle of the boom. The ring clamp for the DRIVEN ELEMENT should now be right against the access cap on the “T” match block. Rotate the ring clamp os the grooved side is on the opposite side of the boom from the “T” block.

6. Align the rest of the ring clamps with the driven element ring and “T” match section.

7. Layout the element pairs according to length, longest (REFLECTOR) to the shortest (FRONT DIRECTOR).

8. Starting with the DRIVEN ELEMENT apply a light coat of zinc paste to the bare parts of the elements and slide the “T” match shorting bars on from the butt end of the element, and position it over the 3/4” wide bare section out about 18” on each element half. Then slide each element half into a 7/8” x 30” sleeve, align the holes and push through two 1/4-20 x 1-3/4” bolts to hold the assembly together. Position this element over the ring clamp at the “T” match tubes and slide the shorting bars over the “T” match tubes to the bare spots. Install the 8-32 x 1-1/4” screw and locknut on each side, align the shorting bars with each other and tighten in position. Add the two 8 -32 x 1/4” set screws to each side and tighten with the 5/64” Allen wrench provided.

9. Continue with the element assembly. Apply a light coat of zinc paste to the bare part of the element and insert it into a 7/8” x 30” sleeve, align the holes and drop a1/4-20 x 7/8” x 30” sleeve, align the holes and drop a 1/4-20 x 1-3/4” bolt through to hold it in position. Apply zinc paste to the second element half and insert it into the other side of the sleeve and insert the second bolt.

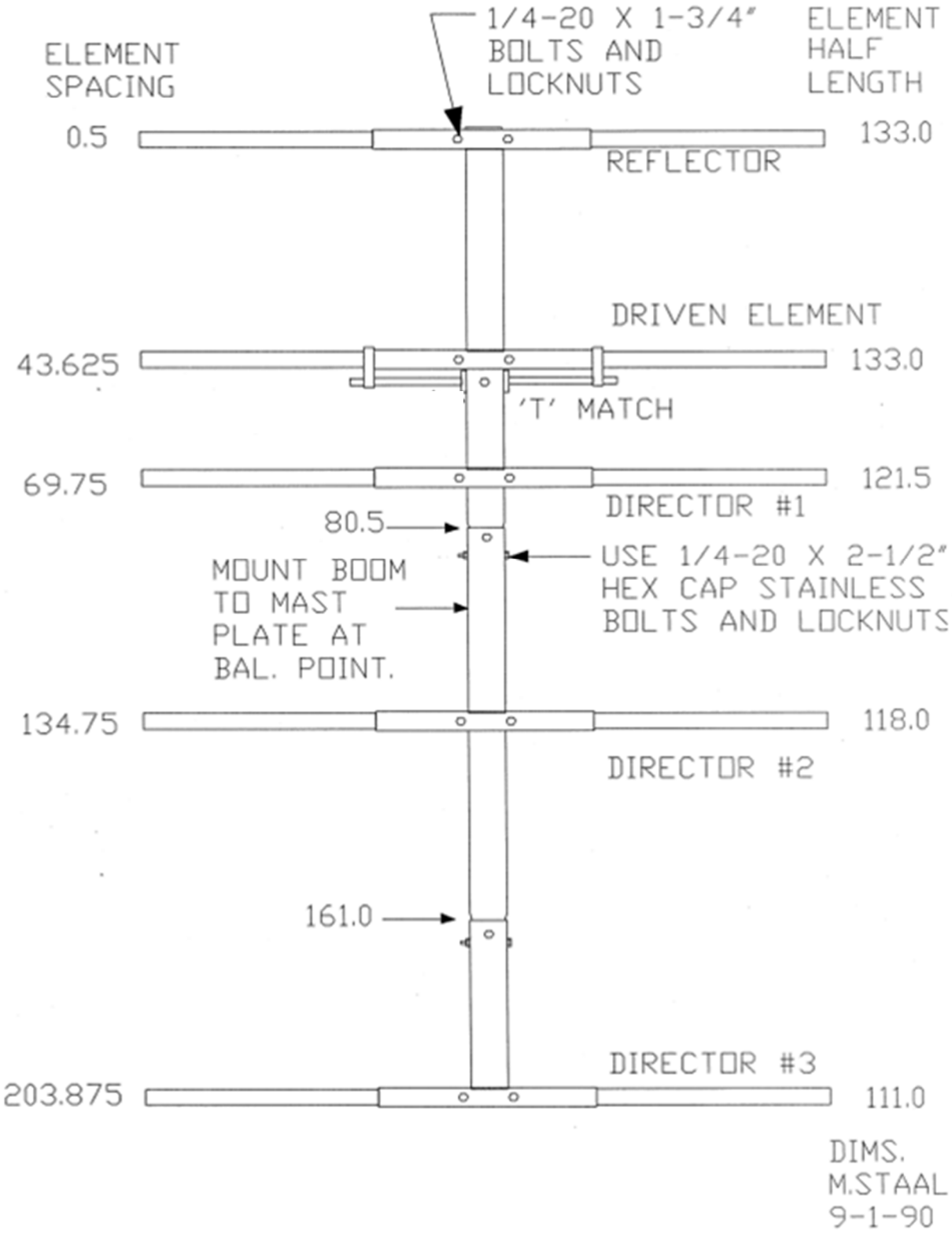
10. Now place the assembly over each ring clamp on the boom, add two 1/4-20 locknuts and tighten securely.

11. Now carefully align the elements with the DRIVEN ELEMENT, add a 1/4-20 x 1” bolt and locknut to each clamp and tighten each clamp in place.

12. Pick up the antenna and find the balance point. Mount the BOOM TO MAST TILT MECHANISM at or near this point keeping the antenna just slightly FRONT HEAVY to offset the feedline weight (added later).

13. Install the balun on the “T” match block. When tightening the connectors, hold the body of each connector with pliers or 7/16” while tightening the connectors GENTLY with a 7/16” end wrench. The connectors have face and rear seals. Use of weatherizing with COAX-SEAL or equivalent is OPTIONAL. Add the main feedline providing a 6” to 8” drip loop before fastening the feedline to the boom with the large cable ties provided. NOTE: For extended cable tie life, cover the cable tie with several wraps of black electricians tape.

45.6-5 DIMENSION SHEET



45.6-5 PARTS & HARDWARE

DESCRIPTION	QTY
BOOM SECTION, 2” X .058 X 84” SOE	1
BOOM SECTION, 2” X .058 X 84” SOE	1
BOOM SECTION, 2” X .058 X 49” STR	1
ELEMENT HALF, 3/4” X .049 X SEE DIMENSION SHEET	10
CENTER SLEEVE, 7/8” X .058 X 30”	5
BOOM TO MAST TILT BRACKET	1
BOOM TO MAST PLATE	1
DRIVEN ELEMENT ASSEMBLY	1
BALUN, RG-6	1
IN HARDWARE BAG	
SHORTING BARS	2
RING CLAMPS, 2”	5
U-BOLT, 2-1/2” SS	2
NUT, 5/16-18 SS	4
LOCKWASHER, 5/16 SPLIT RING SS	4
U-BOLT, 2” SS	4
BOLT, 1/4-20 X 2-1/2” SS	4
BOLT, 1/4-20 X 2-1/4” SS	1
BOLT, 1/4-20 X 2” SS	10
BOLT, 1/4-20 X 1” SS	5
NYLOCK NUT, 1/4-20 SS	27
SCREW, 8-32 X 1-1/4” SS	2
SET SCREW, 8-32 X 1/4” SS	4
NYLOCK NUT, 8-32 SS	2
NYLON TIE, 14”	4
PENETROX PASTE, 1 OZ	1

Carefully Manufactured By
M2 Antenna Systems, Inc.
4402 N. Selland Ave.
Fresno, CA 93722
(559) 432-8873 FAX: (559) 432-3059
www.m2inc.com Email: sales@m2inc.com