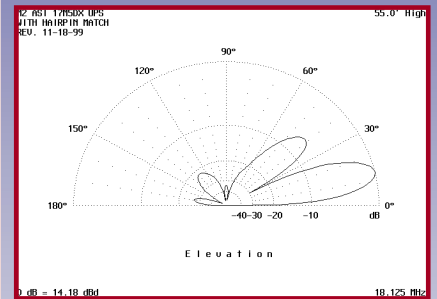
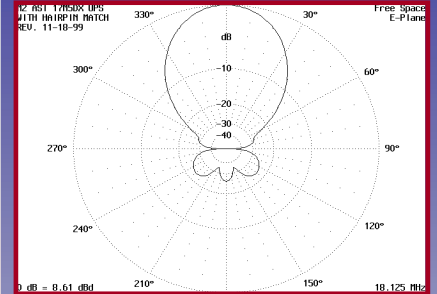
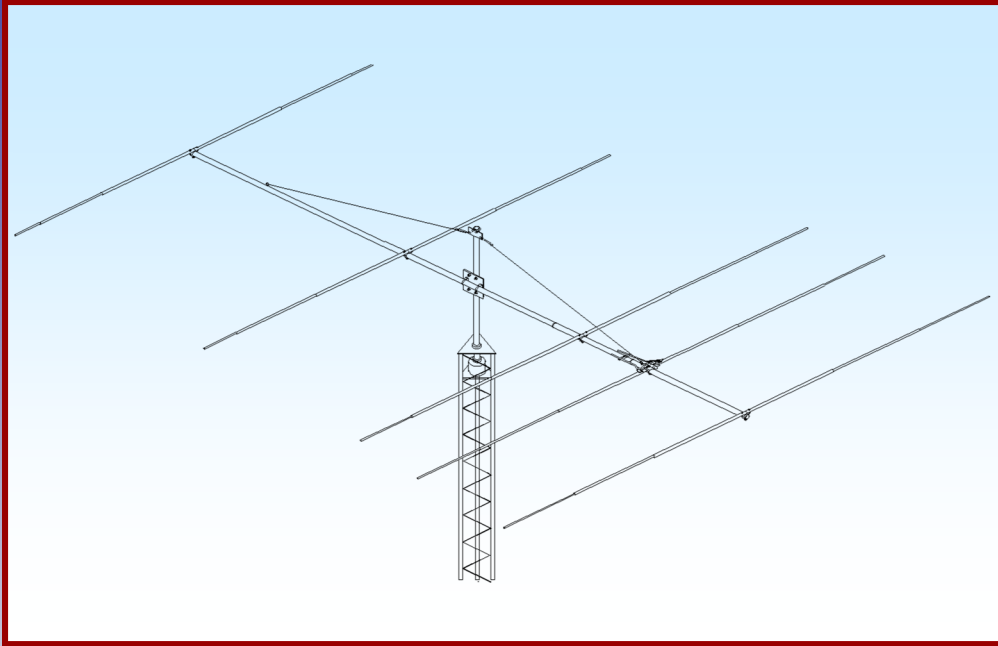




M2 Antenna Systems, Inc.

Model No: 17M5DX



SPECIFICATIONS:

| | | | |
|------------------------------|-------------------------|----------------------------|-----------------------|
| Model | 17M5DX | Power Handling | 3 kW, Higher avl. |
| Frequency Range | 18.080 To 18.18 MHz | Boom Length / Dia | 36' / 2-1/2" To 2" |
| *Gain, (FS) / Over gnd | 10.79dBi / 16.3dBi @55' | Element Length / Dia | 27' 11" / 1" To 1/2" |
| Front to back | 24 dB Typical | Turning Radius: | 24' 5" |
| Beamwidth | E=50° / H=64° | Stacking Distance | 43' To 54' |
| Feed type | Hair pin match | Mast Size | 2" to 3" Nom. |
| Feed Impedance | 50 Ohms Unbalanced | Wind area / Survival | 7.25 Sq. Ft. / 85 MPH |
| Maximum VSWR | 1.2:1 | Weight / Ship Wt. | 38 Lbs. / 61 Lbs. |
| Input Connector | SO-239, Others avl. | | |

***Subtract 2.14 from dBi for dBd / FS = Free Space**

FEATURES:

The 17M5DX is a great performer for its size. It was designed for low wind area but rugged and lightweight and it will save you a bundle on shipping. IT'S UPSABLE! like all our "DX" series. The computer optimized design allows full band coverage with good gain and front to back. Performance is excellent on both the CW and phone! Mechanically, CNC machined aluminum (6061-T6) ring clamps ground the elements to the boom and make assembly a snap. The central boom sections are 2-1/2" O.D. x .058" wall 6063-T832 aluminum tubing with 2" O.D. tips. An overhead guy system is supplied. A hairpin type match couples the 3 kW 1: balun to the feed line.

The antenna is completely DC grounded. The 17M5DX is also great for stacking, providing 3 dB increased gain not to mention the lower angle of radiation. The 17M5DX is a perfect stacking partner for our other "DX series Yagis like the 20M4DX, 12M4DX, and 10M4DX. Put the 17M5DX to the test in any conditions and see what good design can do for you!

17M5DX ASSEMBLY MANUAL

Note: A small cup of zinc paste (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. BOOM LAYOUT

Begin with laying out all five of the boom sections as they would be assembled, in order to familiarize yourself with the front, middle, and rear portions of the antenna. The front section of the antenna will be the 2 x 91" boom piece with a 11/32" hole about 60" from the undrilled end. Do not assemble the boom just yet.

2. REFLECTOR AND DIRECTOR ASSEMBLIES

Mount each of the 1 x 60" element section pairs and 7/8" aluminum inner sleeves onto the 2" (outer boom sections) and 2-1/2" (middle boom sections) ring clamps as shown on the 17M5 DIMENSION SHEET for the Reflector and Director Elements. Note that two of the 7/8" x 30" aluminum inner sleeves are drilled to match the upper holes in the larger 2-1/2" clamps. Secure the Reflector and Director elements with the 1/4-20 x 1-3/4" bolts and 1/4-20 locknuts. Also add each of the 1/4-20 x 1" bolts and locknuts to all the ring clamps. Note that there will be about a 1/2" gap between the 1 x 60" sections for the elements on the 2.5" boom sections.

3. DRIVEN ELEMENT ASSEMBLY

Refer to the 17M5 DIMENSION SHEET for the driven element assembly. Note that the balun mounting plate and 4 hole 7/8 x 15" fiberglass rod mount to the ring clamp using 1/4-20 x 2" bolts and locknuts. Clamp the HF balun to the balun plate with the 2-1/2" U-Bolt, saddle, 516" lockwashers and nuts. Do not overtighten as doing so might crack the balun cover. Slide the POLYETHYLENE RINGS into place. Now slide on the 1 x 60" element section halves onto the driven element fiberglass rod. Align holes and insert two 1/4-20 x 2" bolts as shown on the 17M5 DIMENSION SHEET. Place two Clamp Blocks on both bolts as shown. Place the leads of the Balun on top of the Clamp Blocks and secure the entire assembly with 1/4-20 locknuts. Tighten loosely for now.

4. BOOM ASSEMBLY AND ELEMENT ATTACHMENT

At this time it may be helpful to use three sawhorses (or the equivalent) to aid in the assembly of the antenna. Connect the three 2-1/2" boom sections together, and secure the sections with the 1/4-20 x 2-3/4" hardware. From either end slide the first and second director assemblies to their approximate position. Now slide the front and rear 2" boom sections into their proper side. Secure with the 1/4-20 x 2-1/4" hardware. From the rear end slide on the driven element first and then the reflector element. Position the reflector element 1" from the undrilled end. From the front end install the 3rd Director assembly. Loosely tighten the 1/4-20 x 1" hardware on each of the clamps in order to keep them from sliding around. Now install the 5/16" x 4" Eyebolts into the front and rear boom sections.

5. HAIRPIN MATCH ASSEMBLY

Assemble the hairpin shorting bar arrangement as shown on the 17M5 DIMENSION SHEET. Insert a 1/4 - 20 x 2" bolt up through the 2-1/2" band clamp, and place the 3/8 x 1" spacer over the bolt. Next place the 1/2 x 1/2 x 5" shorting bar on top of the spacer and secure the assembly with a 1/4-20 locknut. Open the band clamp of the assembly all the way and place it onto the boom towards the first director. Close the clamp, so that the assembly is temporarily secured to the boom.

6. Slide the straight end of the two 3/8 x 24" hairpin tubes into the shorting bar as shown on the 17M5 DIMENSION SHEET. With the supplied 1/8" Allen wrench, insert the two 1/4-20 x 1/4" hex head set screws into the sides of the shorting bar. Now slide the tubes up towards the driven element and into the clamp blocks. Flush and align the tubes in the clamp blocks, and tighten the two 1/4-20 lock nuts. Move the bar to the location shown on the 17M5 DIMENSION SHEET and tighten the set screws securely. Final tighten the ground hose clamp.

17M5DX ASSEMBLY MANUAL

7. Now adjust the ELEMENT SPACINGS exactly, following the 17M5 DIMENSION SHEET. Since the REFLECTOR Element is fixed at 1", use it as the primary measurement reference. Dimensions given are "center to center" but can also be used "edge to edge" with a tape measure. Position the DRIVEN element as shown on the 17M5 DIMENSION SHEET, at 56" in front of the the REFLECTOR ELEMENT, align it with the REFLECTOR element and tighten the 1/4-20 x 1" bolt. Position the 1st DIRECTOR at 41-3/8" from the DRIVEN ELEMENT, 2nd DIRECTOR at 164-5/8" from the 1st, and 3rd DIRECTOR at 167-3/8" from the 2nd. After setting the spacing, make sure the elements aren't crooked and align all elements with one another and tighten the 1/4-20 x 1" bolts.

8. 3/4 AND 1/2" ELEMENT TIP ASSEMBLIES

Install each of the 3/4" element sections into each of the 1" pieces already on the boom. Secure with 8-32 x 1-1/4" hardware. Next, pair up the 1/2" tip sections by length. Install each pair into their appropriate locations and secure with 8-32 x 1" screws and locknuts. REFER TO THE DIMENSION SHEET TO GET THE TIP SECTIONS IN THE CORRECT LOCATIONS.

9. BOOM TO MAST PLATE ATTACHMENT

Pick up the boom and mark the balance point. Center the BOOM TO MAST PLATE here and secure with a single set of 2-1/2" U-bolts holding the boom. 2" U-bolts are also supplied to mount the antenna to the mast.

10. OVERHEAD GUY SYSTEM

To prepare the overhead guy system, begin by *temporarily* installing a 2" U-bolt through the TURNBUCKLE PLATE and into the top set of 2" U-bolt holes on the boom to mast plate. Add a couple of 5/16" nuts to hold in place. Unscrew turnbuckle eyes / hooks until only a thread or two shows inside the turnbuckle body and hook to turnbuckle plate. Uncoil DACRON ROPE. Route one end to rear eyebolt and one to front. Do not cut yet. About 18" of rope is available for securing to eyebolt. Start by taking two turns through the eyebolt. Then add three TIGHT half-hitches. Pull hard on long piece of rope to set the knots. Repeat for the other eyebolt. Seal rope ends with heat (lighter, propane torch, etc). Tape or tie rope ends to main length.

Equalize rope length at turnbuckle plate and cut. Put two turns trough rear turnbuckle eye, pull slack out of rope, and add three TIGHT half-hitches as in step

Repeat for front rope section. Seal and tape rope ends.

Both ropes should now be fairly taut and parallel with boom. Disconnect the 2" U-bolt securing the turnbuckle plate and lift the turnbuckle plate up until the boom bows up slightly. This is approximately how high the plate will need to be mounted on the mast when the antenna is installed.

During final installation on the tower / mast, secure the turnbuckle plate at the appropriate height with the 2" U-bolt. Then lean or pull on the ropes to increase the tension and help the knots take their final "set." Make sure the knots are not slipping. When the guy system has taken a "set", loosen the 2" U-bolt and adjust turnbuckle plate height until boom is straight and level. Finer adjustments can be made with the turnbuckles, if necessary.

17M5DX ASSEMBLY MANUAL

11. GENERAL MOUNTING CONSIDERATIONS

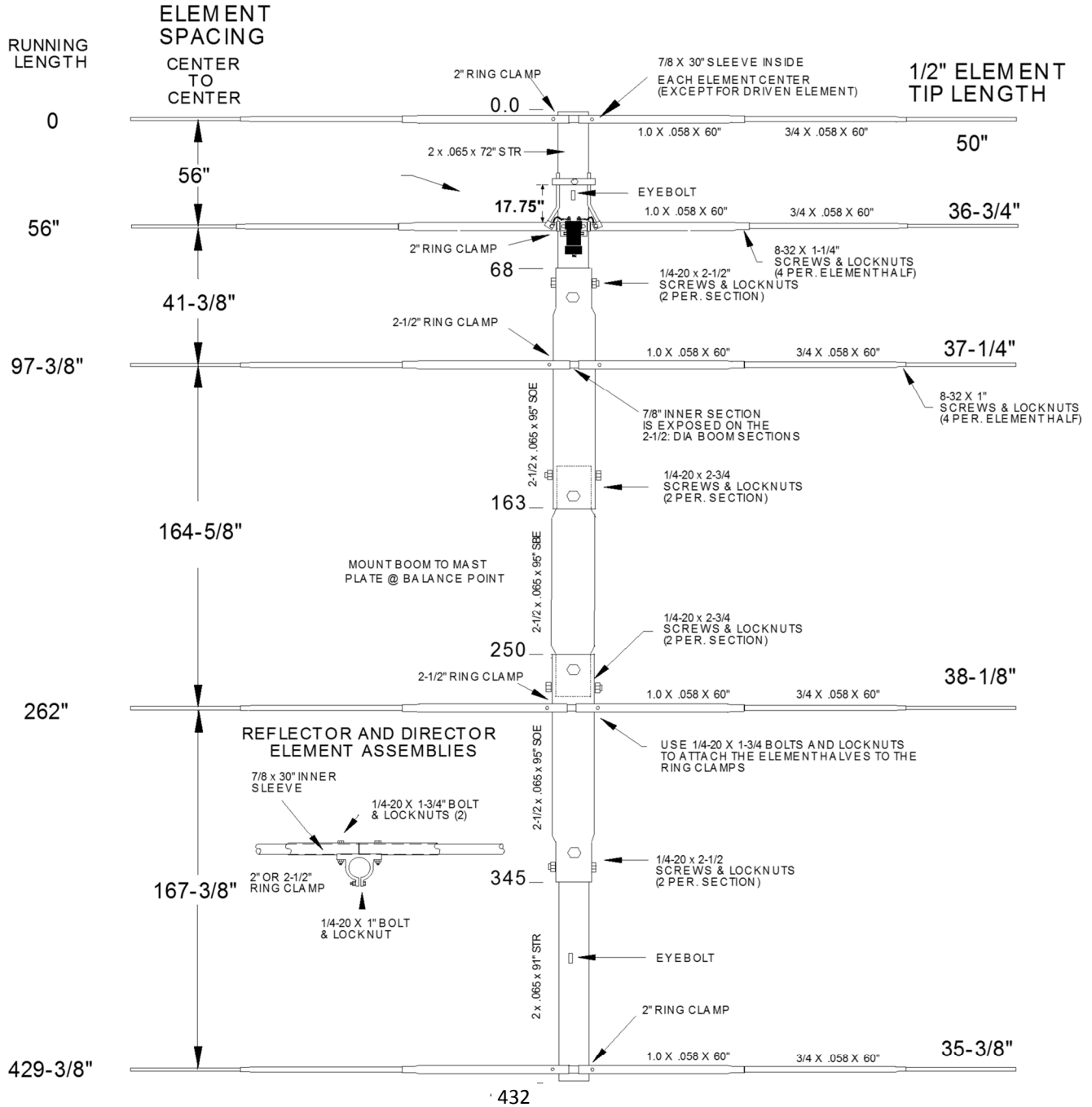
This completes the ASSEMBLY. When the antenna is installed in position on the mast, the main feed line can be attached and sealed at that time. REMEMBER to support the feed line at the antenna boom and on the mast. Leave an adequate feed line loop for rotation around the tower.

When stacking this antenna with other HF antennas try to maintain at least an eight foot separation. Because no obvious harmonic relationship exists between this frequency and other Amateur bands, very little interaction should be expected. Mount horizontally polarized VHF and UHF antennas 40 inches or more above or below the 17M5 to minimize interaction.

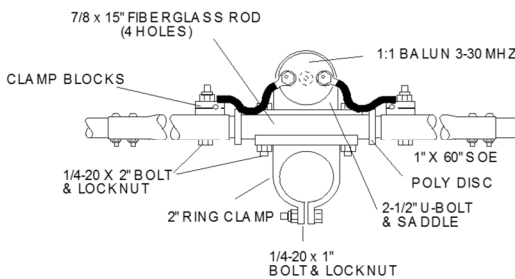
Carefully designed and manufactured by:

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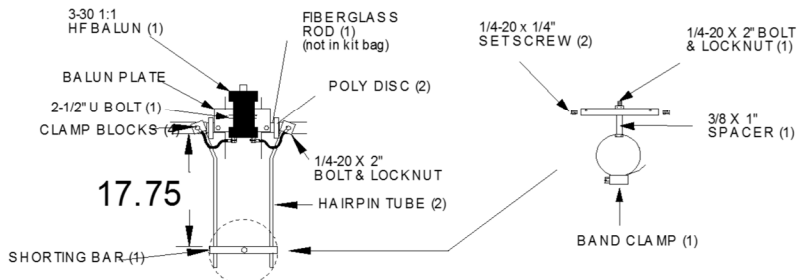
17M5DX DIMENSION SHEET



DRIVEN ELEMENT ASSEMBLY



DRIVEN ELEMENT ASSEMBLY TOP VIEW



17M5DX PARTS & HARDWARE

| DESCRIPTION | Qty |
|--|------------|
| Boom section, 2" x .058 x 72" | 1 |
| Boom section, 2" x .058 x 91" | 1 |
| Boom section, 2-1/2" x .065 x 95" swaged both ends | 1 |
| Boom section, 2-1/2" x .065 x 95" swaged one end | 2 |
| Element section, 1 x .058 x 60" SOE | 10 |
| Element section, 3/4 x .049 x 60" SOE | 10 |
| Element section, tip 1/2 x .049 x 53" | 2 |
| Element section, tip 1/2 x .049 x 39.75" | 2 |
| Element section, tip 1/2 x .049 x 40.25" | 2 |
| Element section, tip 1/2 x .049 x 41.125" | 2 |
| Element section, tip 1/2 x .049 x 38.375" | 2 |
| Hair Pin Tube, 24" | 2 |
| Ring clamp, 2" | 3 |
| Ring clamp, 2-1/2" | 2 |
| 7/8 x 30" sleeve for 2" Ring Clamp | 2 |
| 7/8 x 30" sleeve for 2.5" Ring Clamp | 2 |
| Fiberglass Rod for Driven Element..... | 1 |
| Boom to mast plate, 6" x 8" x 1/4" | 1 |
| Dacron rope, 5/16", 43' | 1 |
| Eyebolts, 5/16" x 4" | 2 |
| Turnbuckles, 5/16" | 2 |
| Turnbuckle Plate, 2" x 5" | 1 |
| Balun, 1:1, 3-30MHz | 1 |
| Assembly Instructions | 1 |
| HAIRPIN KIT BAG | Qty |
| Shorting Bar, 1/2 x 1/2 x 5" | 1 |
| Band Clamp, to fit a 2" boom, modified with hole | 1 |
| Clamp Block for 3/8 tubing, 1.0 x 1.25" | 4 |
| Balun Mounting Plate, 2 x 4 x 1/8" | 1 |
| Poly Disk, 2" OD, 7/8" hole | 2 |
| U-bolt, 2-1/2", for balun mtg..... | 1 |
| Nut, 5/16" ss | 2 |
| Lockwasher, 5/16" split ring, ss | 2 |
| Spacer, 3/8 x 1.0", Al | 1 |
| Set Screw, 1/4-20 x 1/4" ss | 2 |
| Allen Wrench, 1/8" | 1 |
| IN HARDWARE BAG | Qty |
| U-bolt and cradle, 2 inch..... | 3 |
| U-bolt and cradle, 2-1/2" | 2 |
| Nut, 5/16-18 ss | 12 |
| Lockwasher, split ring 5/16" | 12 |
| Bolt, 1/4-20 x 2-3/4" ss | 4 |
| Bolt, 1/4-20 x 2-1/2" ss | 4 |
| Bolt, 1/4-20 x 2" ss..... | 5 |
| Bolt, 1/4-20 x 1-3/4" ss | 8 |
| Bolt, 1/4-20 x 1" ss..... | 5 |
| Screw, 8-32 x 1-1/4" ss..... | 20 |
| Screw, 8-32 x 1" ss..... | 20 |
| Locknut, 1/4-20, ss | 26 |
| Locknut, 8-32, ss | 40 |
| Nylon tie, large black, 11" | 6 |
| Zinc paste, 1 oz. cup | 1 |

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