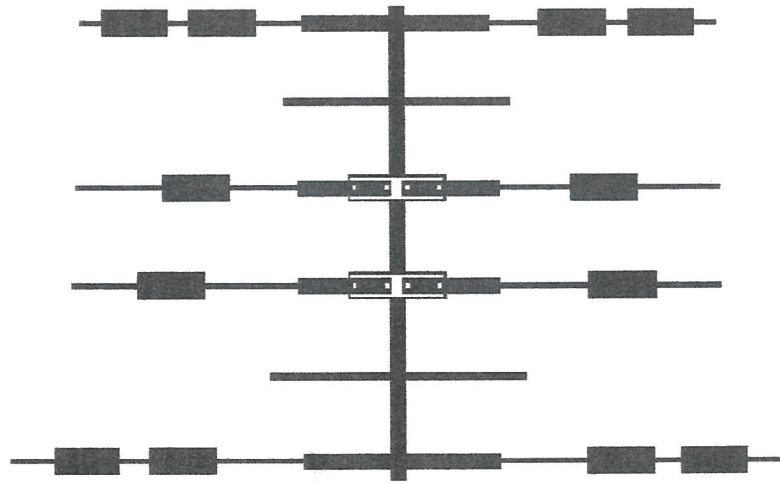


TA-63-N

6 Band Beam



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TA-63-N
Six Band Broadband Beam

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The high performance of your Mosley TA-63-N can only be achieved if this beam is assembled in accordance with the instructions in this manual. Substitutions of materials or modification of design will greatly lessen its performance. We recommend that you read through the assembly instructions and familiarize yourself with each step before assembling your antenna.

Item #	Part #	Quantity	Description
1	A1001	2	Element Support
2	A1002	8	Insulator Block
3	1003	16	10-32 x 1-1/4" Screw
4	1004	24	#10 Lock washer
5	1005	8	10-32 x 1-3/4" Screw
6	A1006	2	1"x.058x72" Coded Blue
7	A1007	2	7/8"x.058x36" Coded Blue
8	A1008	2	Trap Assembly, (12") Coded Blue
9	A1015	2	5/8"x.035x33" Coded Blue
10	1016	8	5/8" End Cap
11	1017	39	#8x1/2" SS Sheet Metal Screw
12	A1187	12	2" U Bolts, 5/16" SS
13	1188	24	5/16-18, Lock Washer
14	1189	24	5/16" SS Nut
15	1021	2	Solder Lugs
16	A3889A	1	1-1/4"x.058x72" Coded Brown
17	A3889B	2	1-1/8"x.058x72" Coded Brown
18	A3888C	2	1" x .058 x 36" Coded Brown
19	A1025	2	7/8"x.058x36" Coded Brown
20	A1025A	2	7/8"x.058x 10" Coded Brown
21	A1027	2	Trap Assembly, (11-1/2") Brn/Green
22	A1027A	2	Trap Assembly, (11-1/2") Brn/Green/Brn
23	A1029A	2	5/8"x.035x 28" Coded Brown
24	A1343A	1	1-1/8"x.058x72" Coded Black
25	A1343B	2	1"x.058x72" Coded Black
26	A1024	2	7/8"x.058x20" Coded Black
27	A1024A	2	7/8"x.058x 5-1/2" Coded Black
28	A1026	2	Trap Assembly, (11-1/2") Black/Green
29	A1026A	2	Trap Assembly, (11-1/2") Blk/Green/Blk
30	A1028A	2	5/8"x.035x 6-1/2" Coded Black
31	A1192	1	Mast Plate, 2" holes
32	A1031A	1	Boom Section, Coded
33	A1032A	1	Boom Section, Coded
34	A1033A	1	Boom Splice, 1.75"x.116x12"
35		2	Boom Caps, 2"
36	1036	4	Element Caps, 7/8" Inner
37		6	#48 Clamping Block
38	1191	6	#47 Clamping Block, Aluminum
39	1014	24	Installed 2" Trap Seal
40	A1123	2	Penatrox
41		24	Installed Individual Coil with Specified Number of Turns
42		24	Installed #8 Self Tapping Screw For Trap
43		2	8-32x1" Machine Screw
44		4	#8 Lock Washers

45	4	8-32 Hex Nuts
46	2	3/8".049x33" Phasing Lines
47	2	1"x.058x72"Coded Red
48	2	7/8"x.058x 54", CodedRed
49	2	Trap Assembly , (12") Coded Red
50	2	5/8"x.035x 21", Coded Red
51	2	1" x .058 x 18" Color (1 Orange 1 Yellow)
52	4	7/8" x .058 x 36" Color (2 Orange 2 Yellow)
53	2	3/4" x .058 x 18" Color Orange
54	2	3/4" x .058 x 40" Color Yellow
55	4	3/4" End Caps
59	1	Instruction Manual
60	1	Warranty Card
61	1	Deburring Notice
62	1	Warning Notice

ASSEMBLY

< > Start by grouping all element sections and traps according to color code.

DEBURRING

< > **MAKE SURE** that before attempting to sleeve ANY of the pieces of tubing together you check to see that all tubing pieces are **DEBURRED!**

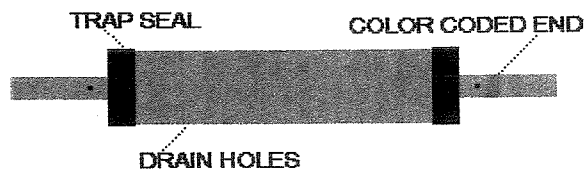
In building the antenna we have removed the majority of the burrs, however, due to the number of pieces of tubing, the cost of labor, the time consumption, some pieces may still have a few remaining burrs. Double check the pieces before trying to put them together!

The tubing Mosley uses is made for us and the telescoping tolerances are very close. If you would try and force a piece of tubing to sleeve, which is not deburred, it will **SEIZE**. If this would happen you aren't going to get them apart.

This is a beautiful beam, we have put a lot of time and pride into it, take a few minutes and check the pieces.
 NOTE: PENATROX, an anti-corrosion compound, **should be applied in a light layer** between coupled sections of tubing to prevent formation of high resistance and seizing of aluminum.

CAUTIONS

< > In an attempt to keep the weight of the antenna down to a minimum, we are using a .035 wall on the small, single end tips. In their area of use, they are as strong as a heavier-walled piece. However, **WHEN SECURING WITH THE #8 STAINLESS SHEET METAL SCREW, DON'T OVER TIGHTEN!** Seat the screw flush with the tubing and stop.



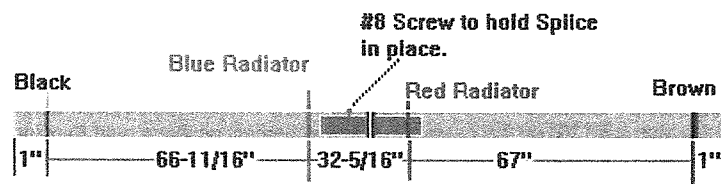
< > **CAUTION:** Trap Assemblies are color coded on one end of the trap tubing.

THIS COLOR-CODE MUST ALWAYS GO TOWARD THE BOOM. REVERSAL OF THE TRAPS WILL CAUSE HIGH S.W.R. AND OTHER MALFUNCTIONS.

- < > Mark the color-coded ends of the traps by placing masking tape on the metal trap cover and note the side and color on the trap. This will solve any problems if the color code comes off when sanding or placing the penatrox on the trap tubing. THE TRAPS CAN PHYSICALLY GO INTO THE 7/8" CONNECTING PIECE EITHER WAY, BUT WILL ONLY WORK PROPERLY WITH THE COLOR CODES TOWARD THE BOOM!
- < > The various pieces of tubing used on the antenna elements are also color coded on one end. This end always goes in toward the boom.
- < > Deburr tubing and use the enclosed PENATROX.
- < > Mount All elements on TOP SIDE of Boom!
- < > Review the drawings and READ the instructions before starting assembly.
- < > Follow all safety procedures in assembly and raising of this beam. When installing the antenna, make sure the tower, all other associated hardware, and components are rated correctly for this antenna!
- < > Avoid power lines and other electrical hazards!
- < > Make sure you and the people helping you use good judgement and follow all safety rules which would apply.

ASSEMBLY OF BOOM

- .< > Insert the drilled end of the boom splice (part 34) into one end of the boom section (part 32). Align the hole in the splice with the hole at one end of the center section of the Boom Coded BLACK/BLUE. Secure the splice to the boom section with a #8 Sheet Metal screw. This screw is used to keep the splice in place so the other half of the boom can be put in place. The remaining boom sections (part 33), can now be attached to the exposed end of splice.



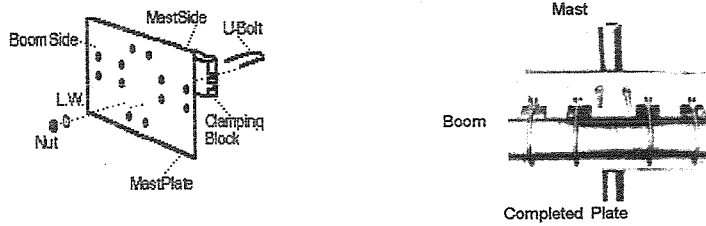
- < > Place caplug (part 35) on each end of boom.
- < > Check that all bolts are tight, and have lock washers in place.
- < > Also note that during shipping a splice might slide into the boom section and appear to be missing so carefully re-check the boom pieces since the booms are boxed as they are taken apart and it is very difficult to have one missing.

ASSEMBLY AND PLACEMENT OF MAST PLATE

- < > Place the mast plate on the boom (Part 31) between the RED COLOR CODE on the boom for the BDE, but between the BLUE COLOR CODE of the Front Driven Element, (FDE).
- < > Place 4 #47 clamping blocks (part 38) between the boom and the mast plate and secure with the four 2" U-bolts (part 12).

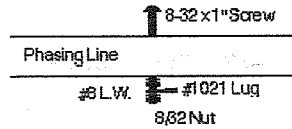
< > Secure the U-bolts with lock washers and nuts (parts 12, 13,14).

DO NOT TIGHTEN AT THIS TIME. ONCE ALL ELEMENTS ARE IN PLACE, THE MAST PLATE WILL NEED TO BE MOVED BETWEEN THE RADIATORS TO GET THE BEST BALANCE POINT.



ASSEMBLY OF PHASING LINES

< > These two lines (part 46) are used between the Front Driven Element and the Back Driven Element.. These lines connect the two driven elements together, putting them in phase with each other.

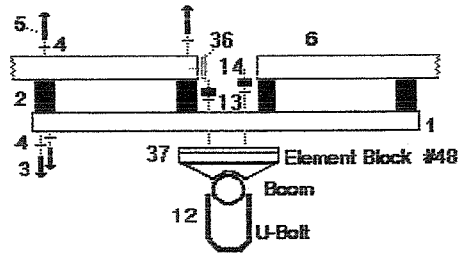


< > Place the 8/32 x 1" screw, lock washers, and nut to each side of the phasing lines. (Parts 43, 44, 45). Set aside until needed.

ASSEMBLY OF DRIVEN ELEMENTS

< > **FDE = Forward Driven Element, Color-Coded Blue.**

< > **Loosely** install 4 plastic insulators (part 2) on the rectangle support plate (part 1) with lock washers and screws (parts 3,4). Place plastic caps (part 36) on the inboard end of the element sections (part 6) color coded Blue. Place one element section into the "v" on the insulators (part 2) so that the screw hole on the outboard end is facing DOWN.. (This is necessary to assure proper position of trap assemblies which are provided with breather holes and should



always face DOWN).

< > Insert screw (part 5) through lock washer (part 4), the hole on the Blue coded end of the phasing line through the element (part 6) and into the insulator (part 2). **DO NOT OVER TIGHTEN SCREWS INTO INSULATOR**

BLOCKS...

- < > Place the other element section (part 6) color coded Blue over the opposite side insulators (part 2), insert screw (part 5) through lock washer (part 3), through the corresponding hole on the phasing line (part 46), the element (part 6) and into the insulator (part 2).
- < > Insert screw (part 5) through lock washer (part 3), element (part 6) and into the insulator (part 2). Tighten all screws in the element supports, BUT do not over tighten screws. Tighten enough to set lock washers.
- < > Continue assembly by inserting the Blue color coded end of the remaining sections and trap into the corresponding end of the next element coded blue. (Parts 7, 8, 9, 10,) Secure elements with screw (part 11).

ASSEMBLY OF RED BACK DRIVEN ELEMENT

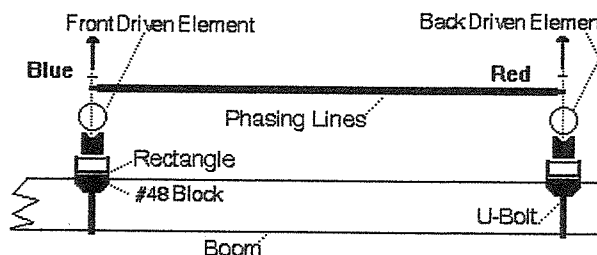
- < > Repeat the above procedure on the BACK RED DRIVEN ELEMENT, following the RED color code.

PLACING FDE/BDE ON BOOM

- < > Locate the Blue color code for the Front Driven Element on the boom. Place assembled FDE over color code and insert #48 clamping block (Part 37) on boom between FDE and boom. Place U-Bolt (Part 12) around boom, through clamping block and element support. (Part 1). Secure U-bolt with lock washers and nuts. (Parts 13, 14).
- < > Tighten down element to boom, but don't completely tighten until all elements are aligned and are parallel to each other on boom.
- < > Place Back Driven Element on the boom in the same manner as FDE.

PLACEMENT OF PHASING LINES ON DRIVEN ELEMENTS

- < > Note: The BEND IN THE PHASING LINES GO IN TOWARD EACH OTHER OVER THE BOOM. This will ensure



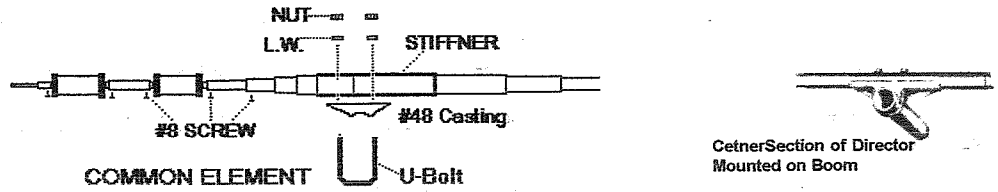
that the lines are clear of the mast, however the phasing line closest to the mast will run near the mast.

- < > Lift the screws on the inner insulator blocks first on the front driven element (Note the Blue color on the phasing lines) and place the color coded end of the phasing line on top of the Blue element and secure with the lock washer and 10/32 screw. Refer to drawing.
- < > Repeat this procedure to the opposite side of the FDE.
- < > Repeat this for the back driven element.

< > Connect phasing line to BDE as was done on FDE.

ASSEMBLY OF DIRECTORS

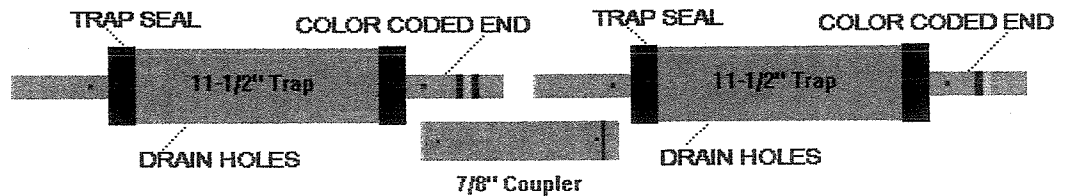
- < > Assemble the Director using the Black color code for the element sections and the Black/Green color codes for the traps.
- < > Insert the 1" Black coded element section (Part 25) into each end of the center section of (Part 24) and align the large holes, KEEPING end element holes for next section pointing down.
- < > Ready to use #48 clamping block and 2" U-bolt.
- < > Place #48 clamping block under center section of ELEMENT, and place U-bolt through #48 block and element center section making sure inner element sections are locked into position by U-bolt.
- < > Loosely place lock washer, and nuts on U-bolt to keep it from coming out of element.
- < > Continue inserting next size of tubing color coded Black onto the element. Secure with #8 Sheet metal screw. (Parts 26 through 30, 11)



- < > Place Black/Green color coded 11-1/2" trap onto element making sure color-coded end is pointing in (toward) the boom. Secure with #8 Sheet metal screw.
- < > Add the 7/8" x 5-1/2" coupler color coded Black.
- < > Place the Black/Green/Black color coded end of the trap into the coupler and secure with a #8 screw.
- < > Insert the 5/8" end tip into the Black/Green/Black trap, align the holes and secure with a #8 screw.
- < > Place 5/8" end caps on the end tip element. (Part 30).
- < > Complete opposite side of Black director element. Follow the same procedure.

ASSEMBLY OF REFLECTOR ELEMENT

< > Assembly of the reflector, color coded Brown/Green, and Brown/Green/Brown, Trap color code.



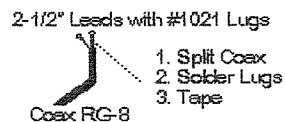
- < > Insert a Brown coded element section (Part 17) into each end of the center section of (Part 16) and align the large holes, KEEPING end element holes for next section pointing down.
- < > Ready to use #48 clamping block and 2" U-bolt.
- < > Place #48 clamping block under center section of ELEMENT, and place U-bolt through #48 block and element center section making sure inner element sections are locked into position by U-bolt.
- < > Loosely place lock washer, and nuts on U-bolt to keep it from coming out of element.
- < > Continue inserting next size of tubing color coded Brown onto element. Secure with #8 Sheet metal screw. (Parts 18 through 23, 11)
- < > Place Brown/Green color coded trap onto element making sure color-coded end is pointing in toward the boom. Secure with #8 Sheet metal screw.
- < > Place the 7/8" x 10" piece of tubing onto the exposed end of the Brown/Green trap and secure with a #8 sheet metal screw.
- < > Place the Brown/Green/Brown trap into the exposed 7/8" tube and secure with a #8 sheet metal screw.
- < > Place 5/8" end element into exposed end of trap. Place 5/8" end cap on element end tip. (Part 23)
- < > Place the element on the Brown color coded spot on the boom. Tighten down, but remember elements will need to be checked for alignment along boom.

This completes the physical assembly of the elements and boom

- < > Re-check all connections and phasing lines
- < > Make sure penetrox was used on all connecting pieces of tubing and traps.
- < > Make sure trap drain holes and element screws are pointing downward.
- < > Re-check and review all dimensions.

PREPARING COAX FOR PHASING LINE HOOK UP

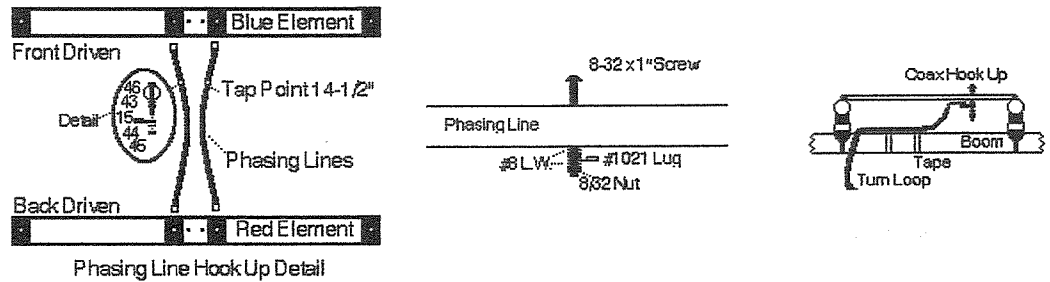
- < > Cut insulation on coax back 2-1/2" and form the braid of the coax into a leg of the line. NOTE: (Make sure the leads are 2-1/2" long including the #1021 solder lug! This length is critical.)
- < > Once the coax is in the form of a "Y", tape junction, (area where the coax stops and the two lines of the "Y" start), with a good 3-M type electrical tape. This will seal the coax from the weather.
- < > Cut the insulation on the "HOT" or center of the coax line, back 1/4" and solder one of the #1021 solder lugs to the exposed end of the center section of the coax.
- < > Before soldering the #1021 solder lug on the braided section, twist braid to ensure you have a good section of line.



- < > Solder #1021 solder lug onto the braided line. Be careful not to over heat the braid line to avoid the melting of the insulation covering the center section of the coax.

PLACEMENT OF COAX TO PHASING LINES

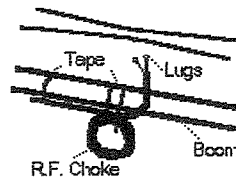
- < > Locate the pre-drilled hole in the phasing line to the opposite side of the mast plate. The hole is 14 1/2" back from the Blue front radiator. This side of the phasing line will receive the center or "HOT" section of the coax. This is important because it keeps the center of the coax the furthest from ground.



- < > Place the #1021 Solder Lug with the "Center of the Coax" on the bottom side of the phasing line. Secure it to the phasing line with the 8/32 x 1" screw, 3 lock washers and 8/32 nut.
- < > (Note: Place a lock washer on the screw first then put the screw through the phasing line. Place another #8 lock washer on the screw. Now place the #1021 solder lug with the "Center coax lead" onto the screw. Place the last lock washer and the 8/32 nut on the screw.). (Parts 43 through 46).
- < > Tighten down screw keeping #1021 solder lug and coax lead pointing in over and toward the center of the boom.
- < > Once the line is secure tape over the screw and down over the bottom side of the connection. This will protect the connection from the weather.
- < > Repeat the above procedure with the braided side of the coax.

USE OF AN RF CHOKE

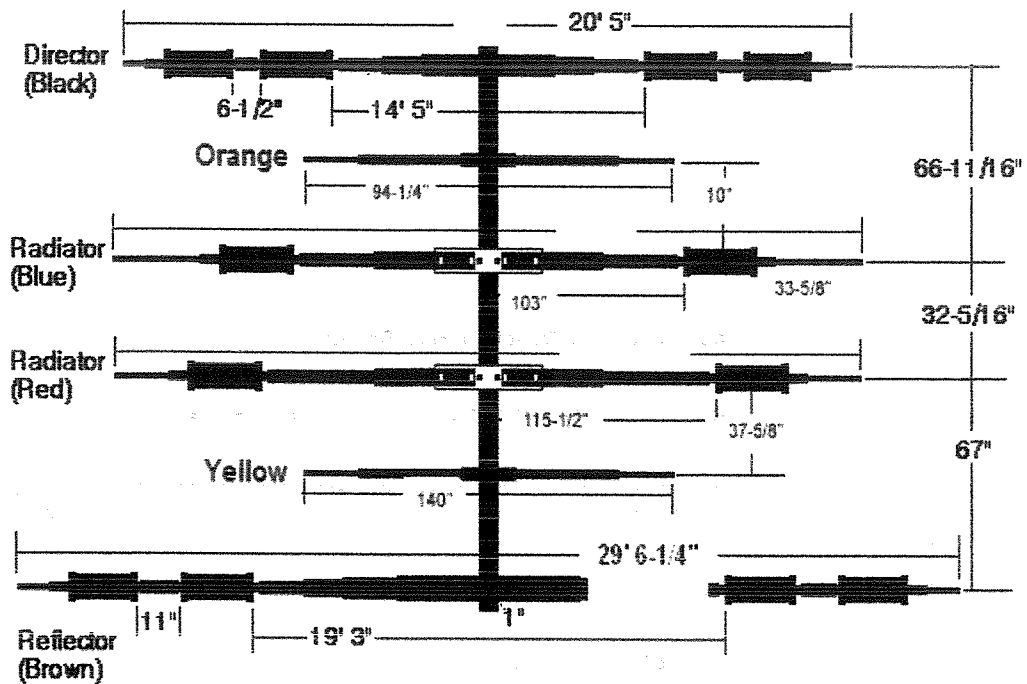
- < > You want to insert a R.F. Choke into the coax line to eliminate any RF on the coax line.
- < > To make the choke, coil the feed line (5 turns in a 6" inside diameter) right after the point where the coax attaches to the phasing lines. Make sure the coil starts within 3 to 4" from the attachment point. Tape the coil in three places to keep the coil in position and then tape the completed coil to the under side of the boom directly under the feed point on the phasing lines. Note: If you are adding the TA-40-KR, 40 meter kit, make



the coil out of 10 turns with a 10" diameter.

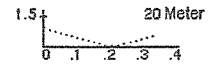
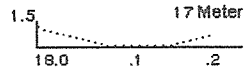
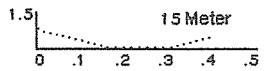
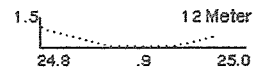
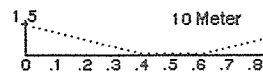
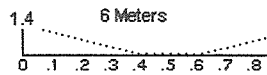
- < > Position coax so that it won't pull on phasing lines and will run toward the mast at the center of the tower. Don't forget to put in a turning loop of coax at the center of the tower so the beam can freely rotate without pulling on the coax as the beam turns.

Antenna Layout

**Re-check All Connections**

- < > Make sure all hardware is tight and all color codes were followed.
- < > Make sure the penetrox was used.
- < > Place any remaining end caps or boom caps.
- < > Check the coax attachment points.
- < > Review the drawings with end tip and inner dimensions.

Typical SWR Curves for the TA-63-N



Assembly of the (Yellow) 6 Meter Reflector

- < > Start with the 1" x 18" center section. This is the common center for both elements it has 2 holes in it for the 2" U-Bolt.
- < > Place the YELLOW 7/8" tube into the center section, one in each side, and make sure that the outer holes on each side of the 7/8" tube are point down. This will allow the screw holes to be toward the bottom side of the antenna.
- < > Insert the color coded end of the 3/4" tube and align the holes with the hole in the 7/8" tube and secure with a #8 sheet metal screw.
- < > Repeat this procedure for the **Orange Director** element.
- < > Follow the same procedure in mounting the element to the boom as before. Place the element on a #48 clamping block, insert a 2" U-Bolt around the boom at the correct color code, through the element center section and secure with the 5/16" lock washers and nuts.
- < > Make sure these 6 meter elements are level with the rest of the antenna elements.
- < > Add the 3/4" End caps to the end of the elements.
- < > This completes the 6 meter addition.

(One of our most popular antennas, the TA-53-M, made EVEN BETTER!)

*6, 10, 12, 15, 17 & 20 Meter
 6 Element Beam
 4 Elements on *10, 12, 15, 17 & 20, 3 on 6 Meters
 Good all-around performance
 No Measuring • Pre-Drilled • Color Coded.
 Stainless Steel Hardware
 2 Year Warranty

Specification and Performance Data

Forward Gain:

* 6 Meter	6.9 dbd.
10 Meter	7.9 dbd.
12 Meter	6.9 dbd.
15 Meter	7.9 dbd.
17 Meter	6.7 dbd.
20 Meter	6.5 dbd.

Front-to-Back Ratio:

* 6 Meter	20 db.
10 Meter	16 db.
12 Meter	9 db.
15 Meter	13 db.
17 Meter	12 db.
20 Meter	10 db.

Matching System:	"Q" match
Recommended coax: (RG-8-U/RG-213)	50/52 ohm
SWR at resonant frequency:	1.0/1 to 1.65/1
Boom Length:	2" x 14 ft.
Turning Radius:	16 ft. 4 in.
Recommended Mast Size:	2 in.
Maximum Element Length:	29 ft. 6 in.
Assembled Weight (approx.):	60 lbs.
Wind Surface Area (in sq. ft.):	7.3 ft. ²
Wind Load (EIA standard 80 MPH):	170 lbs.
Shipping Weight (approx.):	72 lbs.
Warranty:	2 Years



Six Physical Elements

4 Active Elements on 20, 17, 15, 12, 10, 3 on 6*

The TA-53-N can also have 40 or 30 meters added to its front Driven element. This kit can be added at any time. The kit is the TA-40-KR for 40 or the TA-30-KR for 30. TA-53 owners can also stretch the boom out to 21 feet and add a second director for more gain! Call for details. 1-800-325-4016.

SUGGESTIONS

Before hauling your antenna all the way up a tower, check it at least 10 to 12 feet off the ground. In checking the antenna, DO NOT put the reflector on the ground and point the antenna up in the air. Place the antenna on a ladder, temporary pole, or to the side of your tower in the horizontal plane. This will enable you to get an over view of the antenna. That is, if you're showing 2:1 everywhere, you have a problem. However, if you are seeing the antenna trying to dip, but not going completely flat and/or the frequency is 50 to 80 kHz. lower in the band; the antenna is correctly assembled. Remember at this low height you are coupling with ground. That can be both real ground and artificial ground.

Due to the high "Q" of the antenna it will couple with ground. Artificial or real. This type of check will allow you to see that the antenna is trying to dip and does possess a SWR curve. However, due to its nearness to ground or other resonant objects this curve will be shifted lower in frequency and not totally bottom out to 1:1.

A problem with the assembly of the antenna would be indicated if all bands are showing in excess of 2:1 with no dip of any kind. A coupling problem would be indicated when only one or two bands are unusual and the remainder are within specifications.

WATCH OUT FOR ARTIFICIAL GROUND

Artificial ground is presented to an antenna through various means. Guy wires up under the antenna, roof top, other resonant antennas near by are the most common.

This would cause a disruption of a few bands and also degrade the front to back ratio.

The TA-63-N is doing so much for one antenna, it needs to have a clear area in which to perform.

The antenna should be at least a 1/4 wave length from any artificial ground at the lowest operating frequency of the antenna. In the case of the TA-63-N the lowest operating frequency is 20 meters or 14 MHz. With this in mind the antenna should be at least 17 feet away from any artificial ground. Remember this is a minimum, in a commercial installation this minimum would be 1/2 wave length.

To break up guy wires use an insulator ever 4' for the first 16', (4 insulators per leg), or use non metallic guys. This will give a non resonant length under the antenna and will allow the 54 to perform as shown in our specifications. If these procedures are ignored the antenna will still work very well, however, there will be some trade off in bandwidth, resonance and front to back.

Due to the Q feed being above ground, avoid attaching the coax line coming in from the 54 to a common switch which has other antennas with the same frequencies as the 54 or a harmonic to the 54's frequencies.

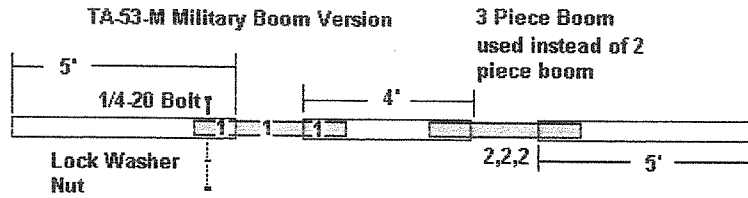
A high "Q" antenna needs to have a proper installation to get the most out of the system.

Doing these simple checks and following these basic rules concerning installation can save you and your crew a lot of frustration. If you think you have a problem, would like to discuss your installation or something is going on you don't understand, please call us, 1-636-583-8595 we will be glad to help. We want you to be as happy as we are you chose MOSLEY!

TA-63-N 8-9-06 Version 1.0 GAW

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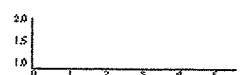
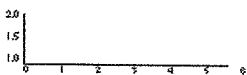
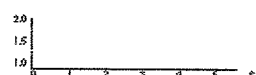
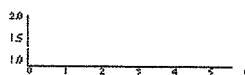
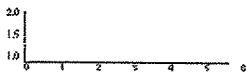
ADDENDUM FOR 3 SECTION BOOM (TA-63-NSP)



Insert a matching section of boom with a matching numbered splice, e.g. all 1,1,1. When all 3 numbers are correct they will read 1,1,1.

NOTES

These blank SWR charts are for your use and convenience.



M.E.I.

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U.S.A.**