

MIRAGE /KLM

COMMUNICATIONS EQUIPMENT, INC.

TOD OLSON
9/25/88

12655-2170

KT34XA

12655

KT-34XA

The KT-34XA is the latest in KLM's new series of tribanders. Innovative in concept, practical in design, the KT-34XA outperforms all commercially available tribanders and many monoband systems, too.

The world famous, performance proven KT-34 is the heart of the "X". But, by doubling the boom length, adding one optimally placed full size 10 meter element, and one more tri-resonant element, gain jumps by 4 dB on 10 meters and 2-2½ dB on 20 and 15.

Gain is virtually flat across 20 and 15 meters. On 10 meters, the "X" is optimized for the DX'er, 28 to 29 MHz.

While achieving performance equal to, or exceeding, a stacked monoband array, the modest size of the KT-34XA means smaller tower and rotator requirements and a lower overall windload.

Power handling capability is excellent and efficiency is high. Normal operation over the rated bandwidths require no adjustments other than assembly to the original instruction dimensions.

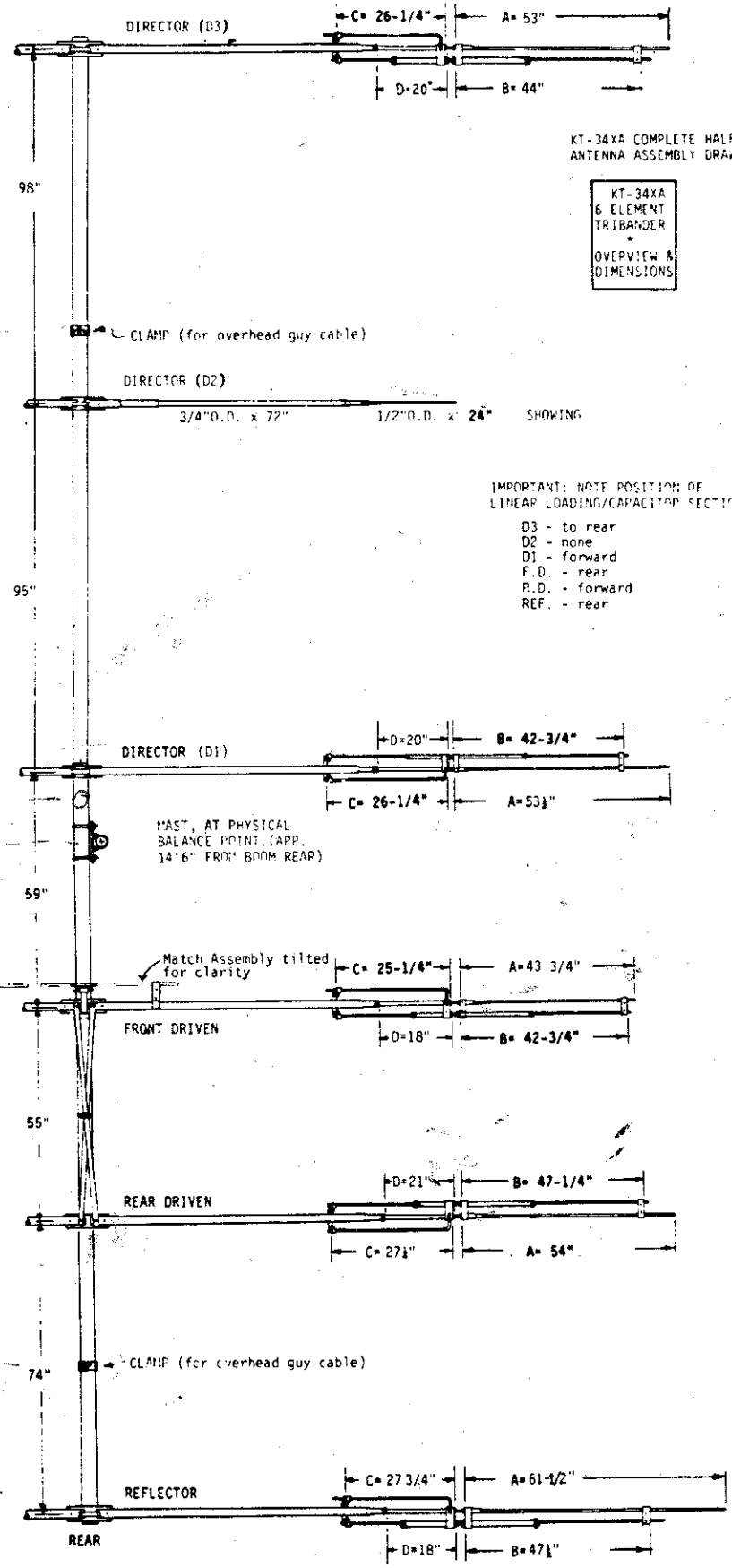
SPECIFICATIONS

Frequency of Operation:	Active Elements:
20M: 14.0-14.350 MHz	20M = 5
15M: 21.0-21.450 MHz	15M = 5
10M: 28-29 MHz	10M = 6
Gain:	Boom Length: 32'
20M: 8.5-9 dBd	Element Length: 25'8" Maximum
15M: 9-9.5 dBd	Turning Radius: 21'6"
10M: 11-11.3 dBd	Wind Area: app. 9 sq ft
F/B: 20 dB	Wind Survival: 100 MPH
F/S: 40 dB	Mounting: 2" O.D. mast
Feed Impedance: 50 ohms unbalanced (with 4:1 balun supplied)	Boom Support: Overhead Guy Cables
Power Rating: 4 KW PEP	Weight: 68 lbs.

Suitable Rotors: TR-44, Ham M type, HD-73 Alliance
KR-400, etc.

Said it really was a 1:1 balun & the T-match slipped up.

REVISED: 06/19/85



KT-34XA COMPLETE HALF ANTENNA ASSEMBLY DRAWING

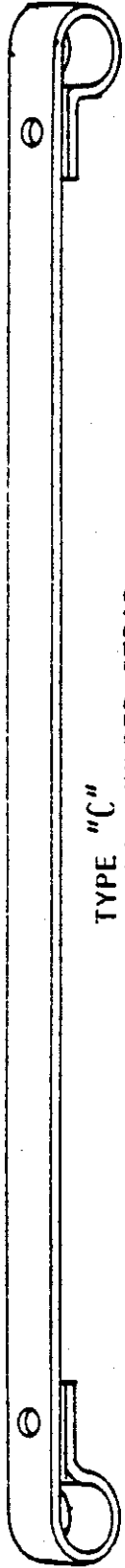
KT-34XA
6 ELEMENT
TRIBANDER
OVERVIEW &
DIMENSIONS

IMPORTANT: NOTE POSITION OF LINEAR LOADING/CAPACITOR SECTIONS:

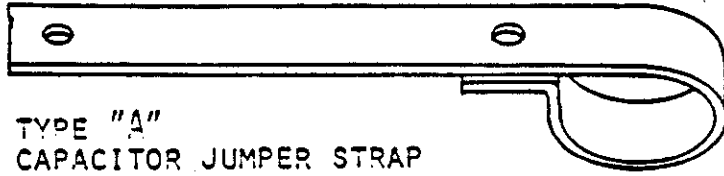
- D3 - to rear
- D2 - none
- D1 - forward
- F.D. - rear
- R.D. - forward
- REF. - rear

130.43'

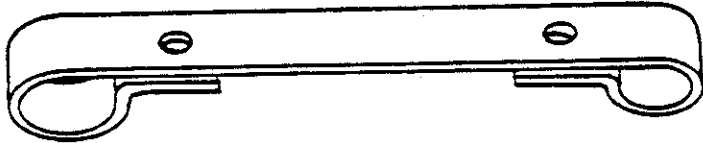
134.15'



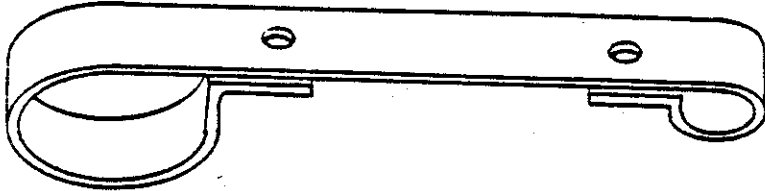
TYPE "C"
LINEAR JUMPER STRAP



TYPE "A"
CAPACITOR JUMPER STRAP

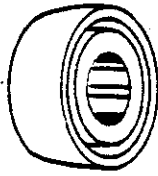


TYPE "B"
15 METER SHORTING STRAP

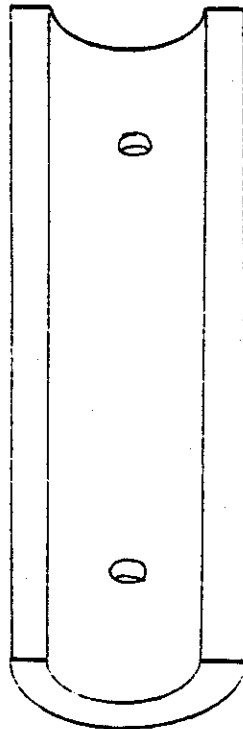
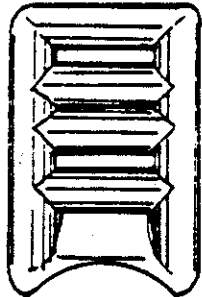


TYPE "D"
MATCH STRAP

CAPACITOR
CAPS



PHASING STRAP
STANDOFF

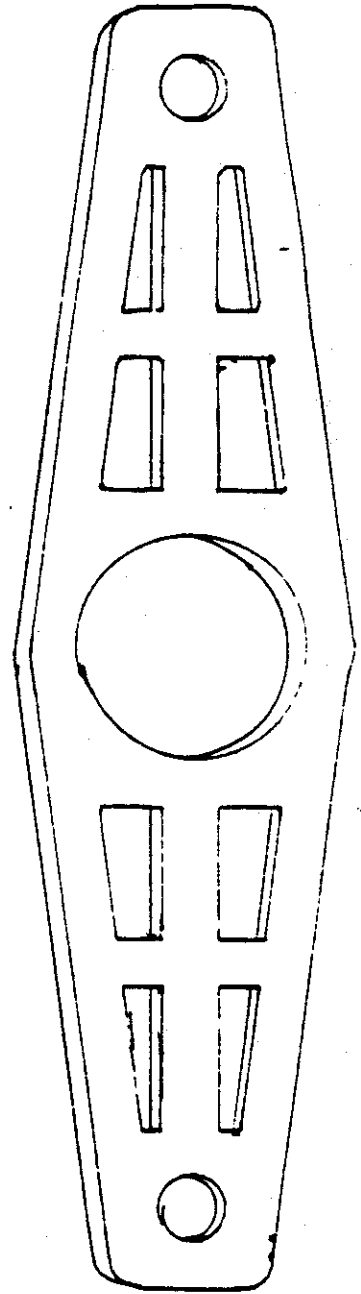


INSULATOR
REDUCTION
SECTION



LINEAR
REINFORCING
INSERT "PEANUT"

LINEAR
INSULATOR



I. BEFORE YOU BEGIN.....

- 1. Select an area large enough to accomodate boom and element lengths. A long workbench is helpful for assembling the element halves. Two sawhorses or large box are useful for holding the boom at a comfortable working height. A shallow box is handy for holding and sorting the small hardware. You will need a tape measure, screwdriver, spintites & socket or end wrenches. Common nut sizes used are:

11/32"..... 8-32 hdwe 7/16"..... 1/2-20/28 hdwe 9/16.....3/8-16 hdwe
 3/8"..... 10-32" 1/2"..... 5/16-18 hdwe

Please remember, most small nuts and screws can be considered tightened securely when moderately hand tightened with screwdriver or spintites. When using tools with additional leverage on any hardware large or small, care must be taken not to overtighten and damage components.

- 2. A conductive zinc or copper paste is supplied with this antenna kit. Apply it lightly between all aluminum-to-aluminum and aluminum-to-copper joints. This includes element overlaps, straps, balun leads, etc. The paste should be used under each nut & lockwasher where they touch any part of the aluminum elements. Use of this paste ensures long lasting electrical connections and ease in mechanical assembly.
- 3. Thoroughly unpack the shipping box and check all hardware and components against the parts list. In the event a difference is apparent, please check for a "Factory Update/Change" sheet accompanying these instructions prior to contacting your dealer or the KLM factory.
- 4. It is helpful to separate and group the larger components so that they are convenient to locate during the assembly process.
- 5. Correct assembly and dimensional adjustments are very important to successful operation of the KLM Tribander. A number of illustrations are provided to acquaint you with specific parts and assembly procedures. We suggest you read through the assembly instructions and familiarize yourself with the hardware before you actually begin construction.

II. BOOM ASSEMBLY

- 1. Lay out the 3"O.D. boom sections as shown in the sketch below. Insert the swaged (necked down) ends into the adjacent straight sections. If your boom has only one swaged section, install the insert couplings. Align bolt holes and secure each joint with two 1/2-20 x 3 1/2" bolts, lockwashers, and nuts.



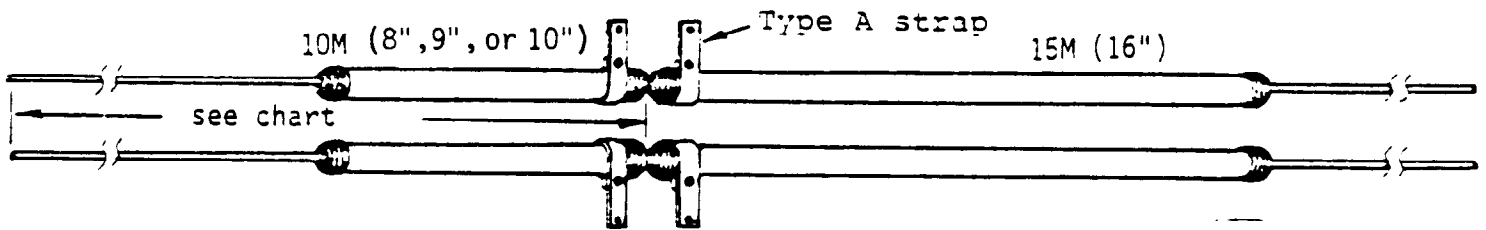
- 2. Slide a 3" I.D. aluminum boom clamp 3 1/2' onto rear of boom and another 6 1/2' onto front of boom. Exact placement is not necessary at this time.

III. CAPACITY BANK ASSEMBLY

NOTE: A short block of wood with a 7/16 to 1/2" hole, clamped in a bench vice is handy for use during installation of the plastic (polyethylene) capacitor caps.

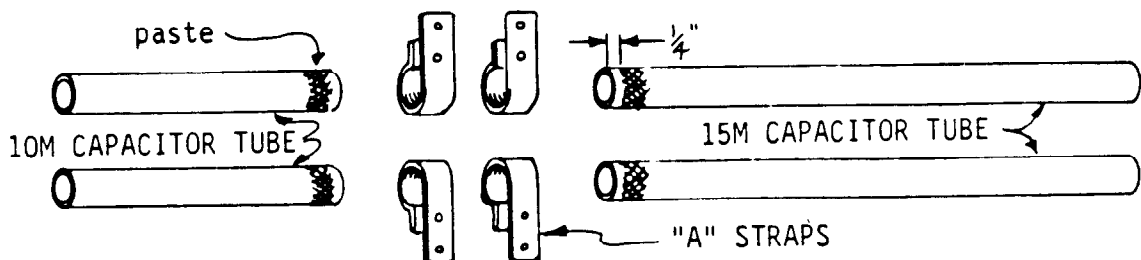
The instructions make a special effort to show how to keep the position and orientation of element components consistent and symmetrical (among elements and element halves) during assembly. It is also helpful to refer often to the pictorials and the "Overview". You should identify various element sections with a felt pen as they are completed. This will speed assembly later.

The sketch below shows a typical pair of 3/8" O.D. linear loading sections with 3/4" O.D. capacitor tubes in place. Note the type "A" straps are installed on one section to form a mirror image of the other. This assures proper orientation when the complete element is assembled.

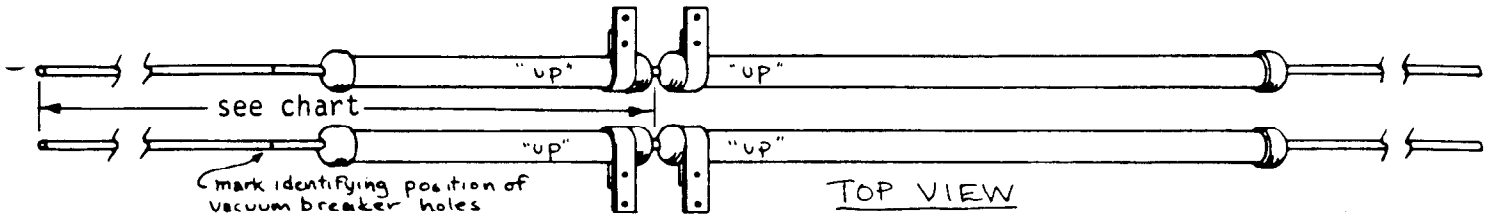


ELEMENT	3/8" O.D.	10M CAPACITOR	CENTER CAPS @	15M CAPACITOR
D3 Director	2 ea. 72"	8"	27"	16"
D1 Director	2 ea. 72"	8"	27-3/4"	16"
FD Front Driven	2 ea. 72"	8"	28"	16"
RD Rear Driven	2 ea. 77"	9"	28 1/2"	16"
R Reflector	2 ea. 77"	10"	28-3/4"	16"

- Each 3/8" x 72" and 77" tube has two vacuum-breaker holes drilled at 25" and 35" from one end. From this end, slide on two capacitor caps, back to back. Center the caps on the tubes according to the chart above. Lightly rounding tubing ends with fine sandpaper may help initial installation. Deburr vacuum breaker holes. For later assembly reference, make a mark away from the capacitor area to show the side of the tubing with the breaker holes (oriented "UP" later).
- Prepare the 3/4" O.D. capacitor tubes for installation. Push a wad of cloth or foam through the inside of all tubes to remove aluminum chips, dust, moisture, etc. Capacitor sections: 3/4" O.D. x 8", 9", 10", and 16".
- Apply penetrox paste to all the capacitor tubes in the area shown in the sketch below. Then slide on the type "A" jumper straps until they are 1/4" from the end. Maintain mirror image positioning of straps in capacitor tube pairs. Install the 8-32 x 1/2" screw, lockwasher, and nut but do not tighten at this time.



BUILD CAPACITOR ASSEMBLY PAIRS TO FORM MIRROR IMAGE



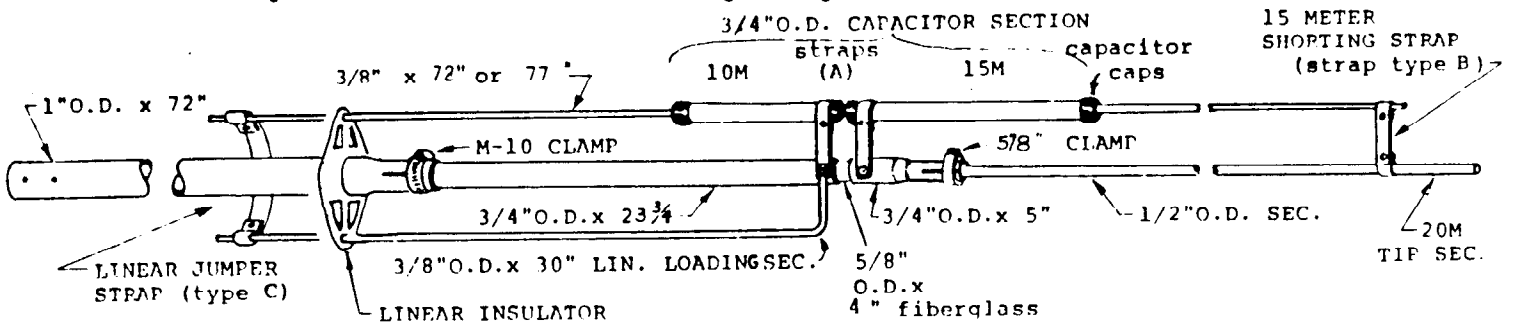
4. Slide a 3/4" x 16" capacitor tube onto the longer half of all the 3/8" x 72" and 77" sections and work the tubes solidly into the capacitor caps. Push another capacitor cap onto the opposite end of the 3/4 x 16" tube.

The shorter half of all 72" sections receive an 8" capacitor tube.
 The remaining pair of 77" sections receive 9" or 10" capacitor tubes.
 See chart

5. After each capacitor tube is installed, push on the second capacitor cap and work it solidly into the tube.
 Find the marks identifying the "up" side of the 3/8" tubing.
 Orient the type "A" straps per sketch with the long tab coming off the 'up' or top side.
 DO NOT TIGHTEN YET.
6. Identify each capacitor assembly as it is completed (with felt pen or marker) according to element function (Director D3, D1, etc).

IV. ELEMENT TIP ASSEMBLY (Reflector, Rear Driven, Front Driven, D1 & D3)

Study the sketch below before beginning.

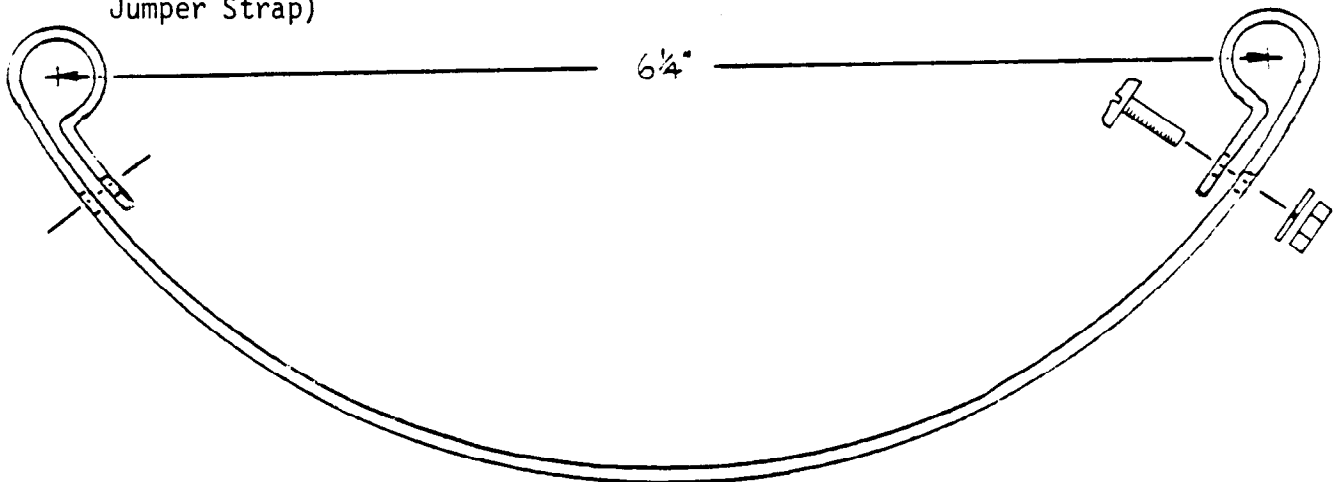


NOTE: A bench vice is handy for holding the 3/4 x 23-3/4 main part during this assembly.

1. Assemble the 3/4"O.D. x 23-3/4" (straight) and 5" (swaged) sections to opposite ends of the 5/8"O.D. x 4" fiberglass rods. Align holes and secure with 8-32 x 1 3/4" screws, nuts, and lockwashers. Tighten until the tubing flattens onto the rod and the assembly becomes rigid.

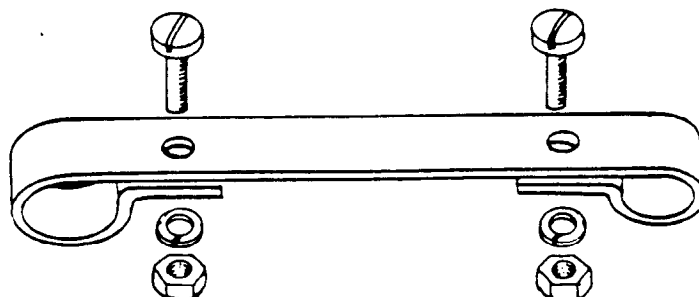
Repeat for all ten sections.

2. Bend all ten linear jumper straps to the arc drawn below. (Type "C" Jumper Strap)



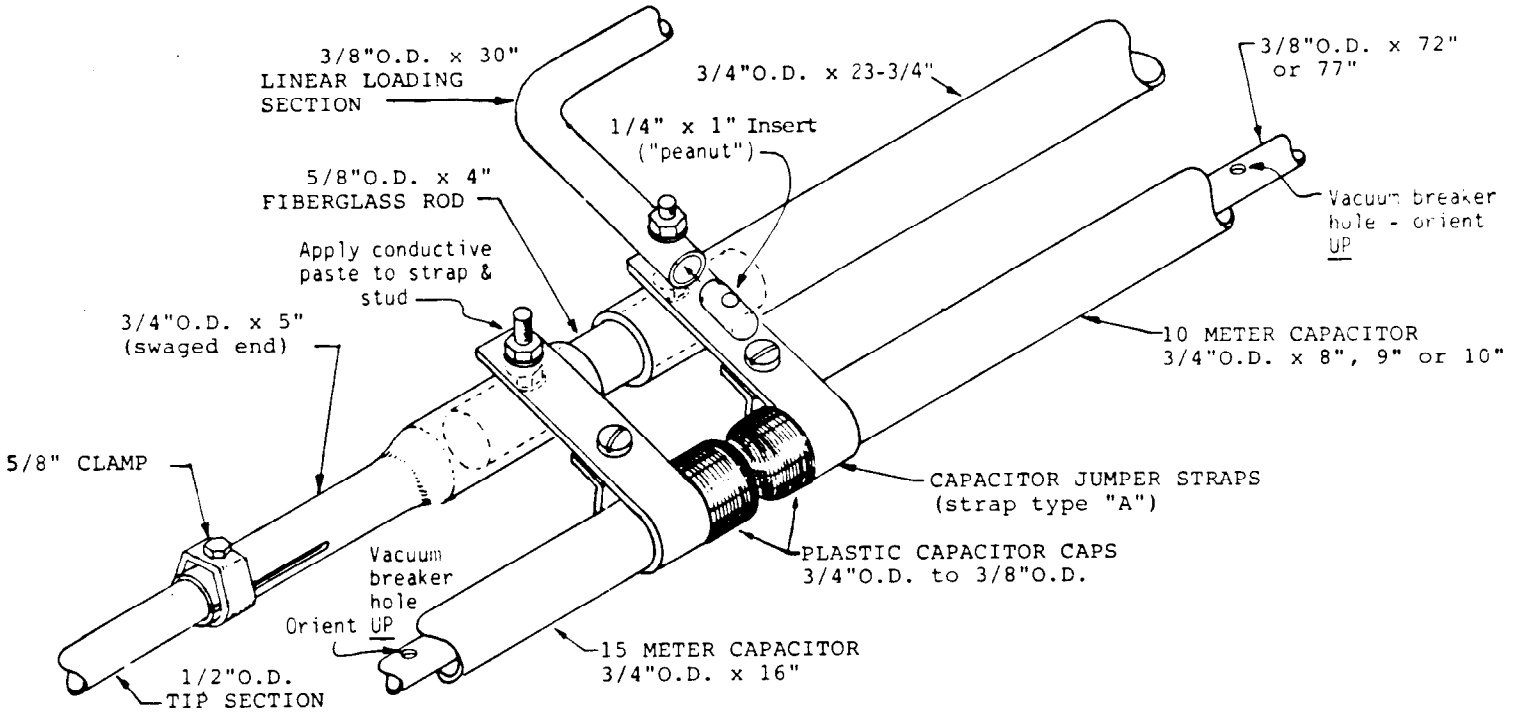
Add the 8-32 x 1/2" screws, nuts, & lockwashers. Finger tighten only at this time.

3. Prepare the type "B" shorting strap by adding the 8-32 x 1/2" screws, nuts, and lockwashers. Finger tighten only at this time.

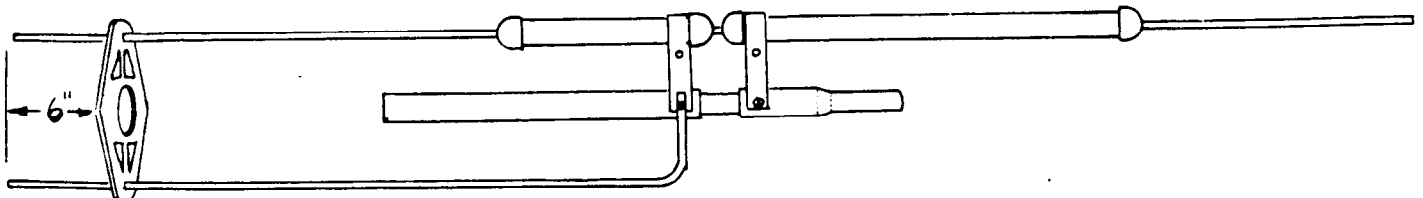


4. Attach the capacitor assemblies to the 3/4"O.D. central element assemblies (page 8, step 1), starting with the front element, Director D3. Refer to drawing below:
5. Apply paste around the holes on the type A strap fingers and to the studs on the 3/4"O.D. assembly. Place the A strap fingers onto the studs, 10M capacitor next to the 3/4"O.D. x 23-3/4" tube and 15M capacitor next to the 3/4"O.D. x 5" tube.
 The 10M and 15M capacitors may be separated slightly to allow the straps to run square to the stud (the caps between the straps may be separated up to 1/8").
 Secure the 15M strap with an 8-32 lockwasher and nut.

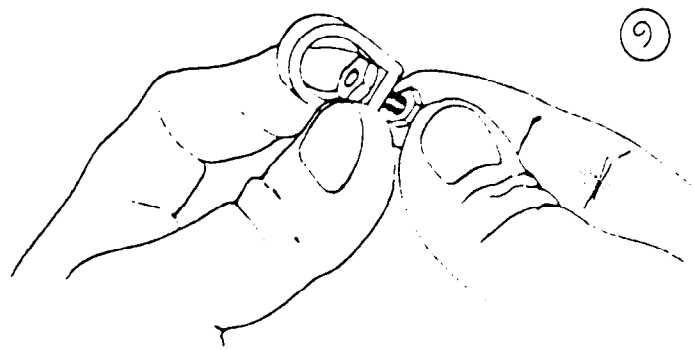
TYPICAL ELEMENT-HALF & DETAIL



6. Place a "peanut" insert into the bent and drilled end of the "L" shaped 3/8"O.D. x 30" linear loading section, aligning the holes. Place the drilled end onto the screw stud over the 10M capacitor strap. Secure with 8-32 lockwasher and nut.
7. The screw studs and A strap fingers are on the "top" side of the element. The vacuum breaker holes in the 3/8" capacitor assemblies must now be oriented to the top. Find the identifying mark on the 3/8" tubing (reference: page 5, step 1) and rotate capacitor assembly until mark is on top. Then, tighten the 8-32 x 1/2" A strap screws.
8. Repeat steps 4 through 7 for the other half of the Director D3 element, making it a mirror image of the first.
9. Repeat steps 4 through 8 for the remaining elements (D1, FD, RD, R).
10. Slide a diamond shaped linear loading insulator about 6" onto ends of each set of 3/8" O.D. linear loading tubing. See sketch below. Repeat for all elements.



11. Prepare ten 5/8" I.D. compression clamps as shown in sketch at right. Dab a bit of paste on the threads of the 10-32 x 3/8" hex-head screw. Position nut inside clamp channel and assemble.



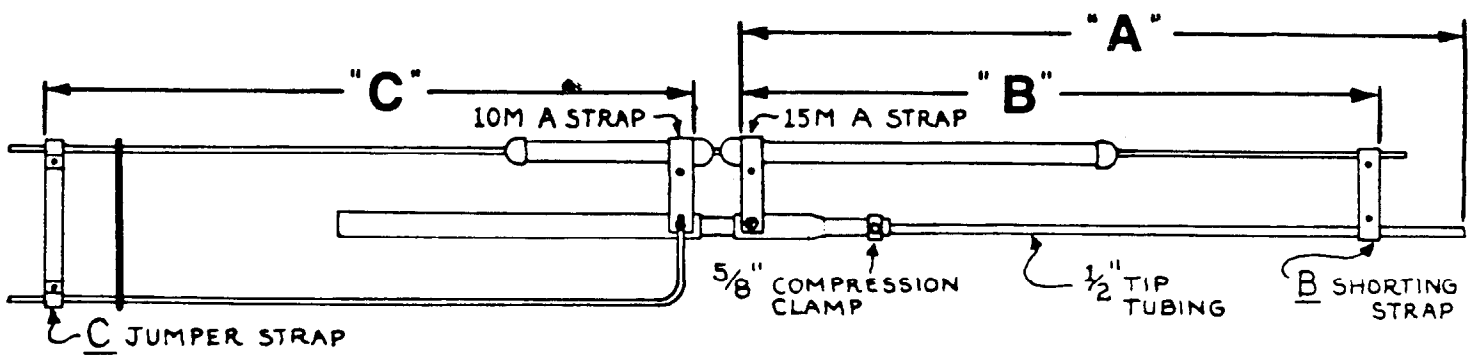
12. Install the 1/2" O.D. element tip tubing to the central elements, starting with Director D3 element half.

Select the correct length from the chart below. Apply paste on the area to be inserted (about 3").

Place a 5/8" compression clamp on the swaged end of the 3/4" O.D. x 5" tube and insert the 1/2" tubing. Adjust for "A" dimension shown on chart below. To set, hook tape measure on the inside edge of the 15M A strap and measure to the outermost tip of the 1/2" tube (see sketch below). Tighten 5/8" compression clamp.

13. Repeat step 12 for the other D3 element half and the remaining elements D1, FD, RD, and R.

	LENGTH OF 1/2" TUBING	DIMENSION		
		"A"	"B"	"C"
D3 Director	50" (2)	53"	44"	26-1/4"
D1 Director	50-1/2" (2)	53-1/2"	42-3/4"	26-1/4"
FD Front Driven	40-3/4" (2)	43-3/4"	42-3/4"	25-1/4"
RD Rear Driven	51" (2)	54"	47-1/4"	27-1/4"
R Reflector	58-1/2" (2)	61-1/2"	47-1/2"	27-3/4"



14. Using a small swab, apply paste to the interior surface of all type B Shorting Strap and type C Jumper strap clamps (reference: page 8).

15. Install the type B and Type C straps to the element assemblies, starting with Director D3 element.

16. Install type B Shorting Strap between 1/2" tip tube and 3/8" linear loading tube and adjust for "B" dimension shown on chart above. To set, hook tape measure on the inside edge of the 15M A strap and measure to the outermost edge of the type B strap. Tighten strap screws.

17. Install type C Jumper Strap to butt ends of 3/8" linear loading tubing. Orient so strap will hang under central element. Adjust for "C" dimension shown on chart above. To set, hook tape measure on 10M A strap and measure to outermost edge of type C strap. Tighten strap screws.

18. Repeat steps 15 and 16 for other D3 element half, and for remaining elements D1, FD, RD, and R. Please note that tip caps are not supplied or recommended as they can capture water within elements

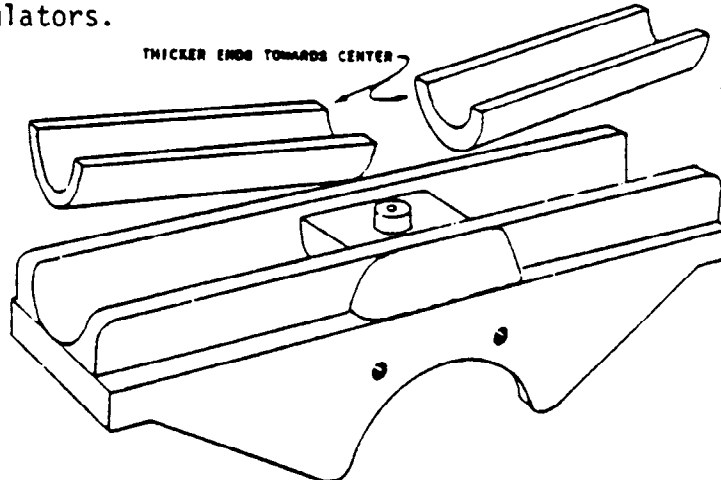
V. ASSEMBLING THE D2 ELEMENT

(10)

1. Prepare two 5/8" compression clamps as shown on Page 9 and place on the swaged (neck down) tips of the mounted 3/4" x 72" element sections. Apply paste to each 1/2" O.D. x 25 1/2" tip sections and insert into swaged. Adjust until 24" is showing. Tighten clamp until tubing cannot be rotated or pulled out.

VI. MOUNTING ELEMENT SECTIONS TO INSULATORS

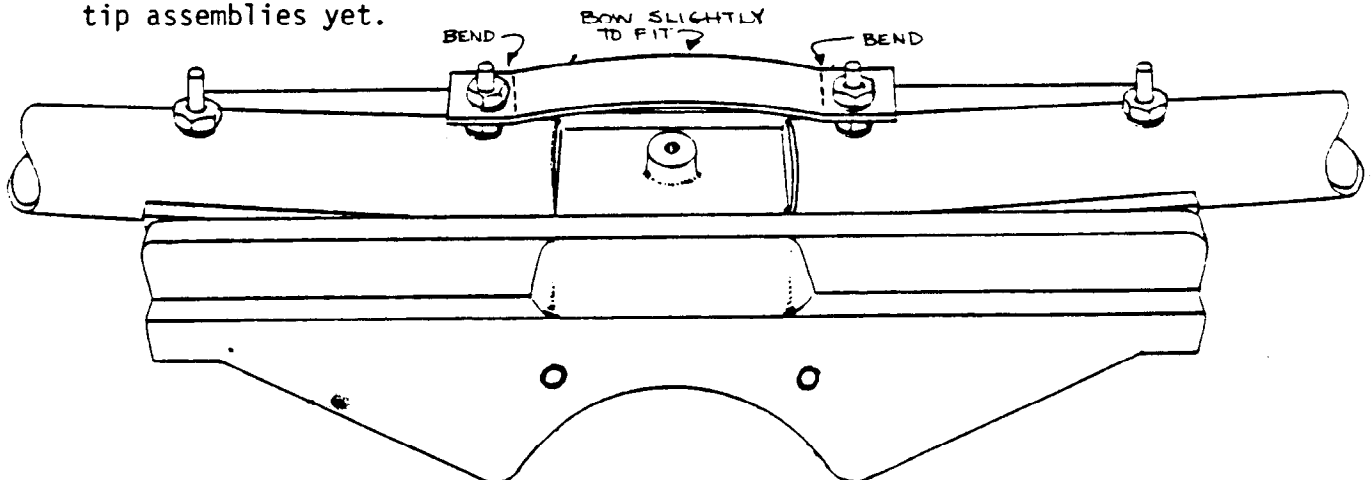
1. The KLM Lexan insulator has been designed to accommodate up to 1 1/2" O.D. elements. Antennas using smaller O.D. elements are supplied with half-round reduction sections. These are placed in the two element channels on top of the insulator with the thicker ends toward center as shown in the drawing below. Prepare all insulators.



2. Mount the 3/4" O.D. x 72" D2 element sections (with 1" and 7/8" O.D. butt sleeves) to an insulator.

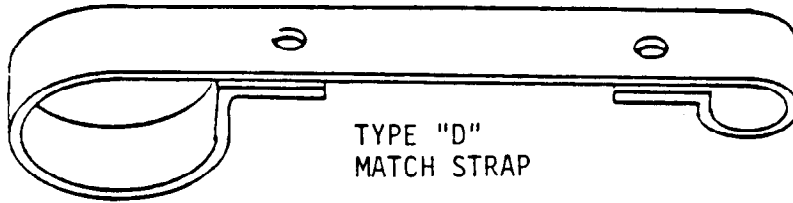
NOTE: The element butt holes are drilled at a slight angle to compensate for the upward camber of the insulator cradle. Element should be rotated 180 degrees until the mounting screws pass easily through the insulator and element. The 10-32 x 2 1/2" screws are inserted from the bottom of the insulator and secured with lockwashers and nuts above the element butt (the studs formed by the two inside screws are used later for strap connections). Tighten the nuts securely to be sure the element sections are well seated in the insulator. Note that upon installation, the sections tilt up slightly to compensate for element droop.

3. Mount the 1" O.D. x 72" element half pairs to the remaining insulators (check that the 7/8" O.D. butt reinforcing inserts are in place with holes aligned).
4. Apply paste and place a 1/2" x 3 3/4" jumper strap across the inner element studs for the Reflector, D1, D2, and D3 and secure with additional 10-32 nuts and lockwashers. For convenience, DO NOT install the completed element tip assemblies yet.

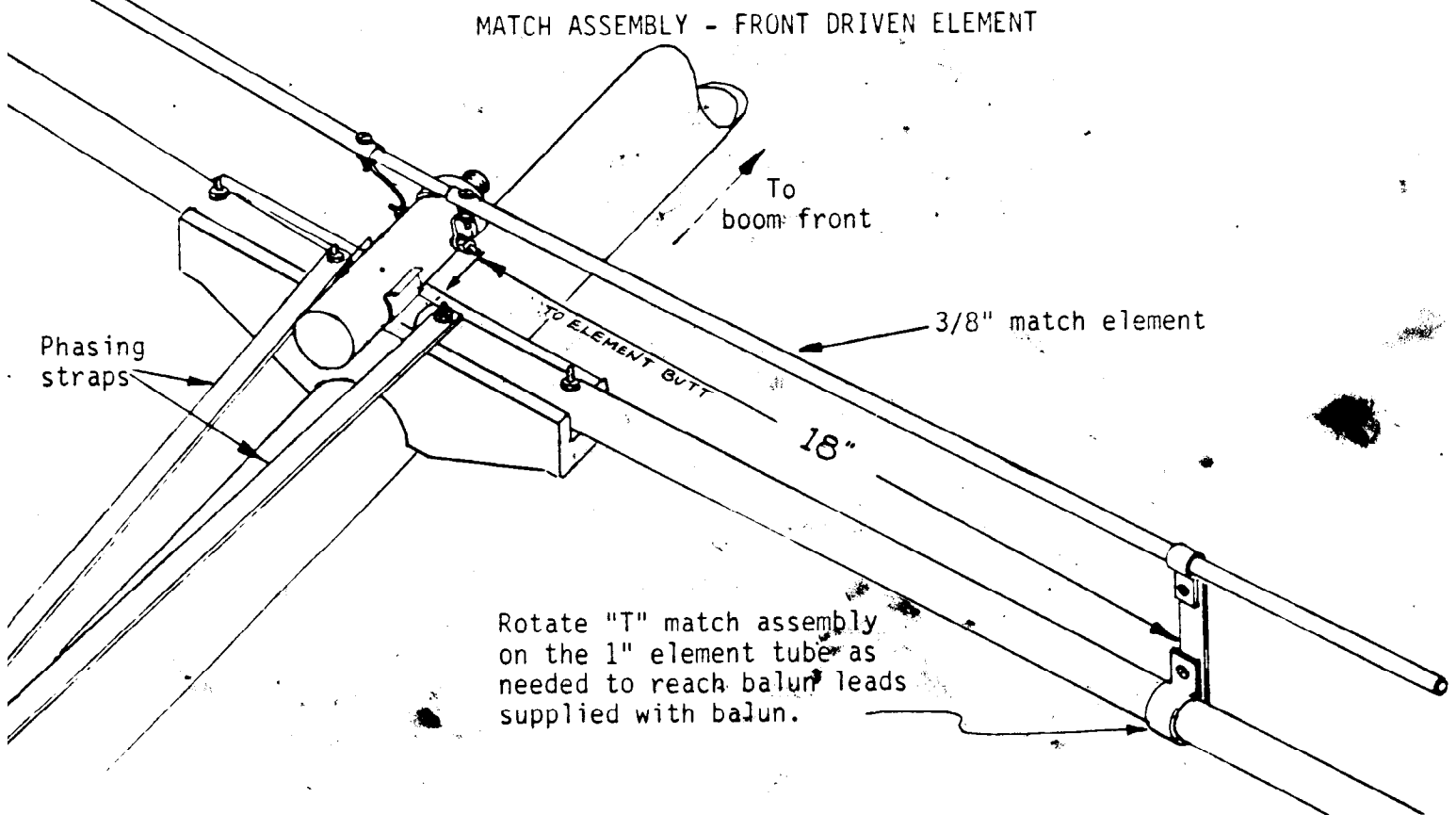


VII. FRONT DRIVEN ELEMENT "T" MATCH ASSEMBLY

1. Locate the two type "D" match straps and install the 1/2" x 8-32 screws, lockwashers, and nuts loosely.



2. Select one of two remaining elements without center jumpers and slide a type "D" on each side locating them 18" each side of the element butts (apply paste under the straps).

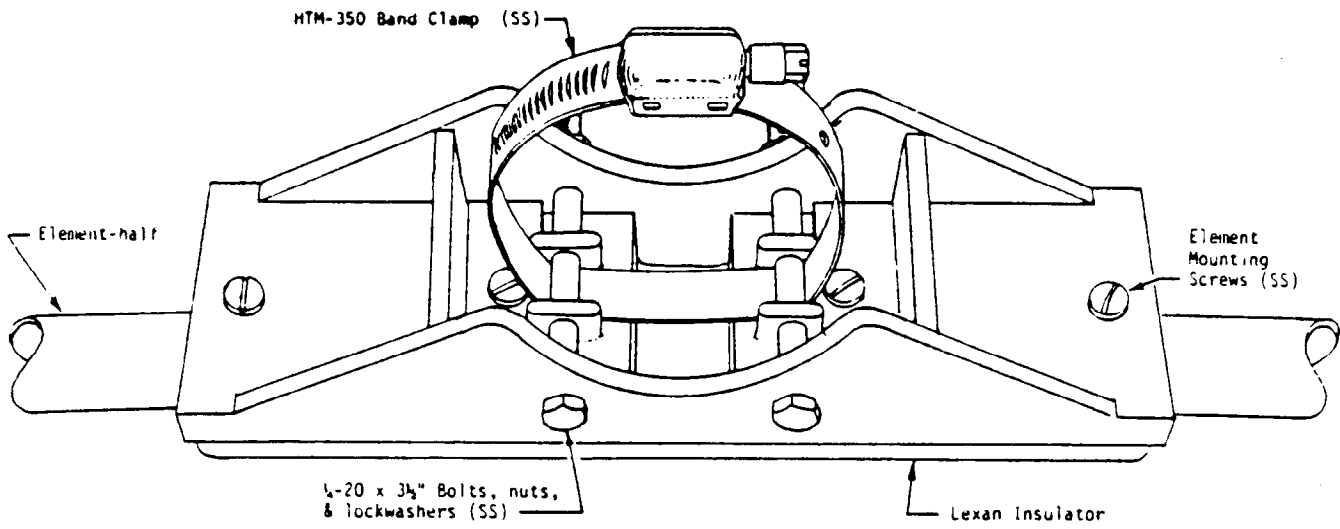


3. Now slide the preassembled 3/8" O.D. match assembly tubing first into one side; then into the other. Apply paste to the appropriate areas under the strap. Center the assembly over the element insulator and tighten the type "D" strap screws.
4. Insert a #6 sheet metal screw through the end hole in the balun clip and mount the balun clip to the circular boss in the center of the element insulator.
5. Snap the 3-60-4:1 4KW balun into place. Apply paste and attach the #12 AWG copper leads between the balun and the "T" match using #8 flatwashers, lockwashers, and nuts on the "T" match studs. Rotate "T" match ass'y off of vertical to make lead connections. DO NOT SUBSTITUTE LONGER LEADS.

NOTE: The only thing critical about this assembly is that paste is applied to all joints as this assembly carries the full power of your transmitter.

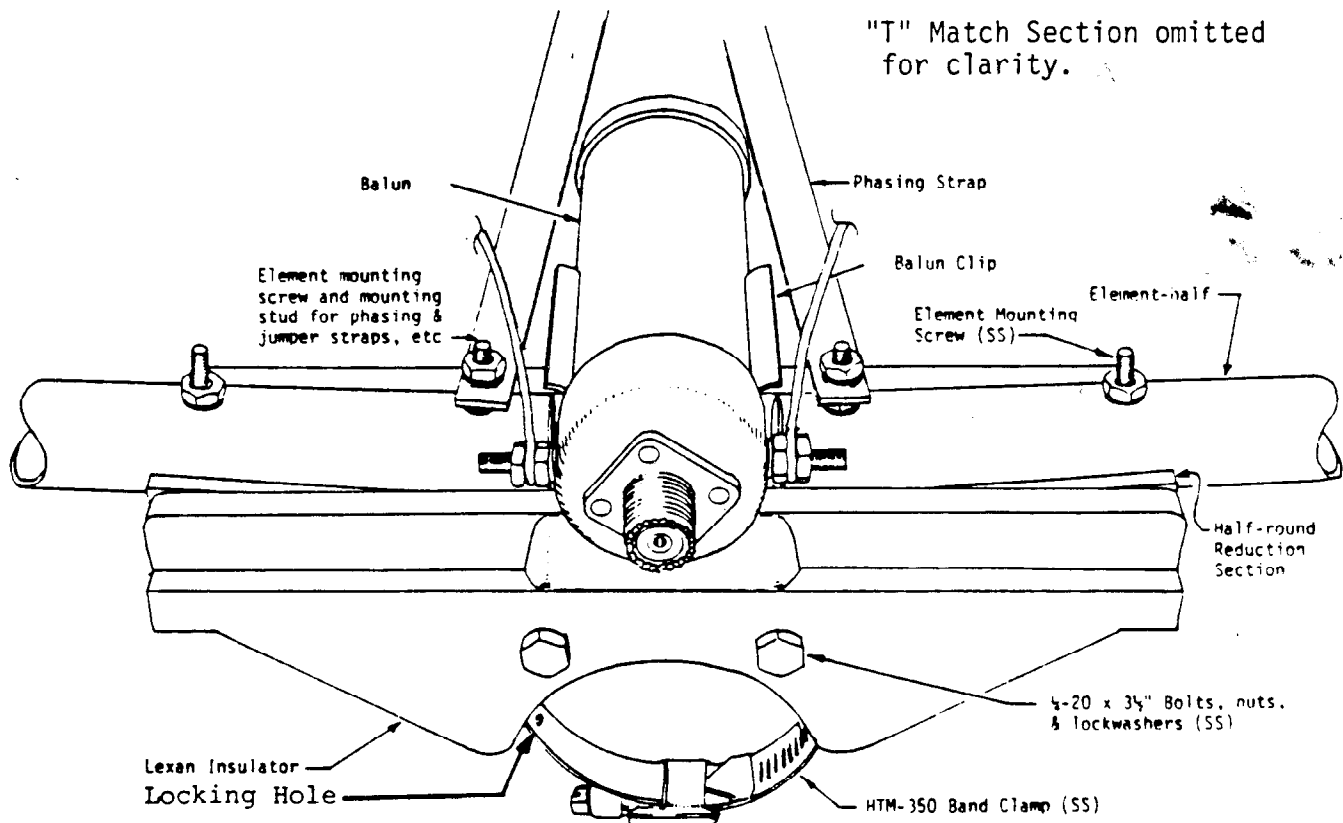
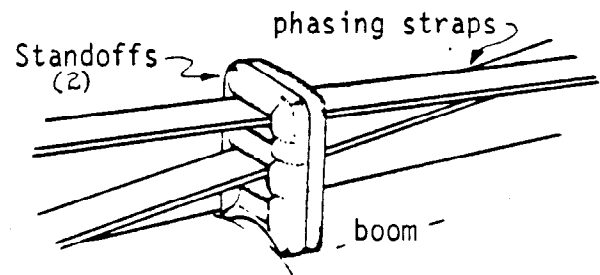
VIII. INSTALLATION OF ELEMENT MOUNTING CLAMPS

1. The large HTM-350 band clamps are bolted into the underside of the Lexan insulators with $\frac{1}{4}$ -20 x $3\frac{1}{2}$ " bolts, lockwashers, and nuts (stainless steel), as shown in the sketch below. Install one clamp in each insulator. Avoid overtightening the $\frac{1}{4}$ -20 nuts (8 ft/lbs maximum torque).



NOTE: The completed element tips are NOT installed as yet.

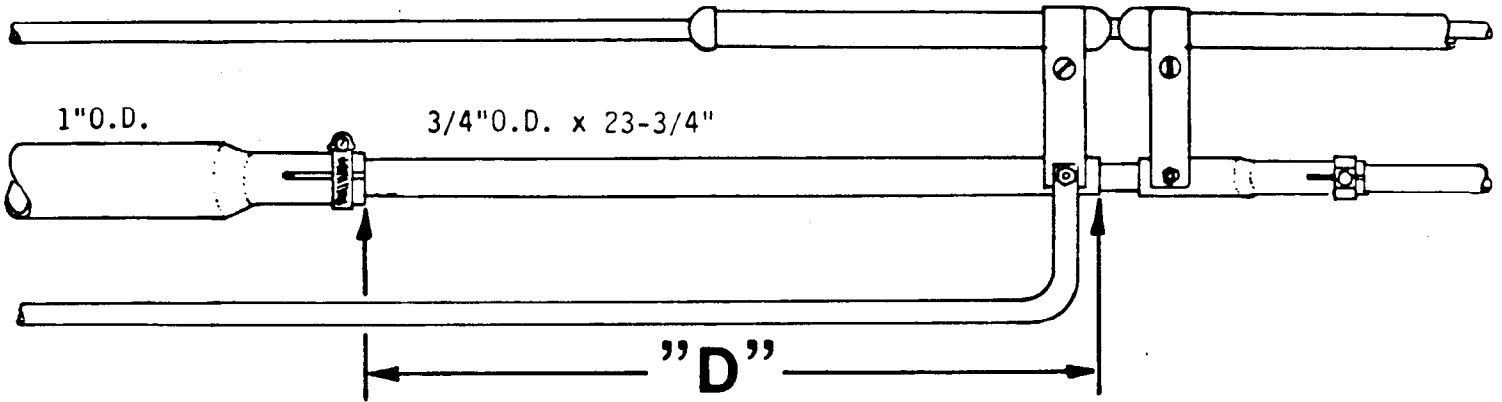
1. Center element #1 (Reflector) insulator at 3" from the end of the boom and tighten the band-clamp.
2. Mount element #2 (Rear Driven) 74" from #1 (center-to-center). Align element with reflector and tighten clamp.
3. Loosely mount element #3 (Front Driven) 55" forward of #2 (Rear Driven).
4. Slide 55½" phasing straps through two standoffs until they are centered. Apply paste around the strap holes and install straps between elements #2 and #3. Place ends onto inner set of element mounting screw studs (over existing nuts). Slide element #3 forward to fit straps. Be sure straps cross at center and connect to element halves on opposite side of the boom. Secure with #10 lockwashers & nuts.
5. Tension the phasing straps by tapping element #3 away from #2 until straps are taut. (Hold boom straight for this operation.) Align #3 element sections with the others and tighten clamp.



6. Place Director D1 59" forward of the Front Driven Element. Align and secure.
7. Place Director D2 95" forward of D1. Align and secure.
8. Place Director D3 98" forward of D2. Align and secure.
9. Once elements are all correctly aligned, the HTM-350 clamps may be additionally secured. Drill a small hole into boom (#38 drill) through existing hole in HTM-350 band clamp. Tighten a #6x3/8" sheetmetal screw into hole. This operation is recommended especially if you live in an area with extreme weather conditions or if it is likely that the elements will snag on guy wires, trees, or other obstacles during installation of the antenna.

X. ELEMENT TIP MOUNTING

At this point, the size of your assembly area may dictate whether the element tips can be mounted now or the remainder of the assembly should be completed first. With some installations, the boom and partial elements may even be mounted to the tower before installing the element tip assemblies.



	"D" DIMENSION
DIRECTOR D3	20" showing
DIRECTOR D1	20" showing
FRONT DRIVEN	18" showing
REAR DRIVEN	21" showing
REFLECTOR	18" showing

1. Select the D3 tip assemblies. Refer to the "Antenna Overview" page for correct orientation of the capacitor sections. Also note that the capacitor straps/studs are "UP" and the vent holes (in the 3/8" tubing) are "UP".

Apply paste to about 3" of the butt of the 3/4" x 23-3/4" tubing. Place an M-8/M-10 clamp onto the swaged end of the 1" x 72" tubing. Insert the 3/4" tube into the swage until the correct "D" dimension is achieved (see chart at left). Tighten the band clamp.

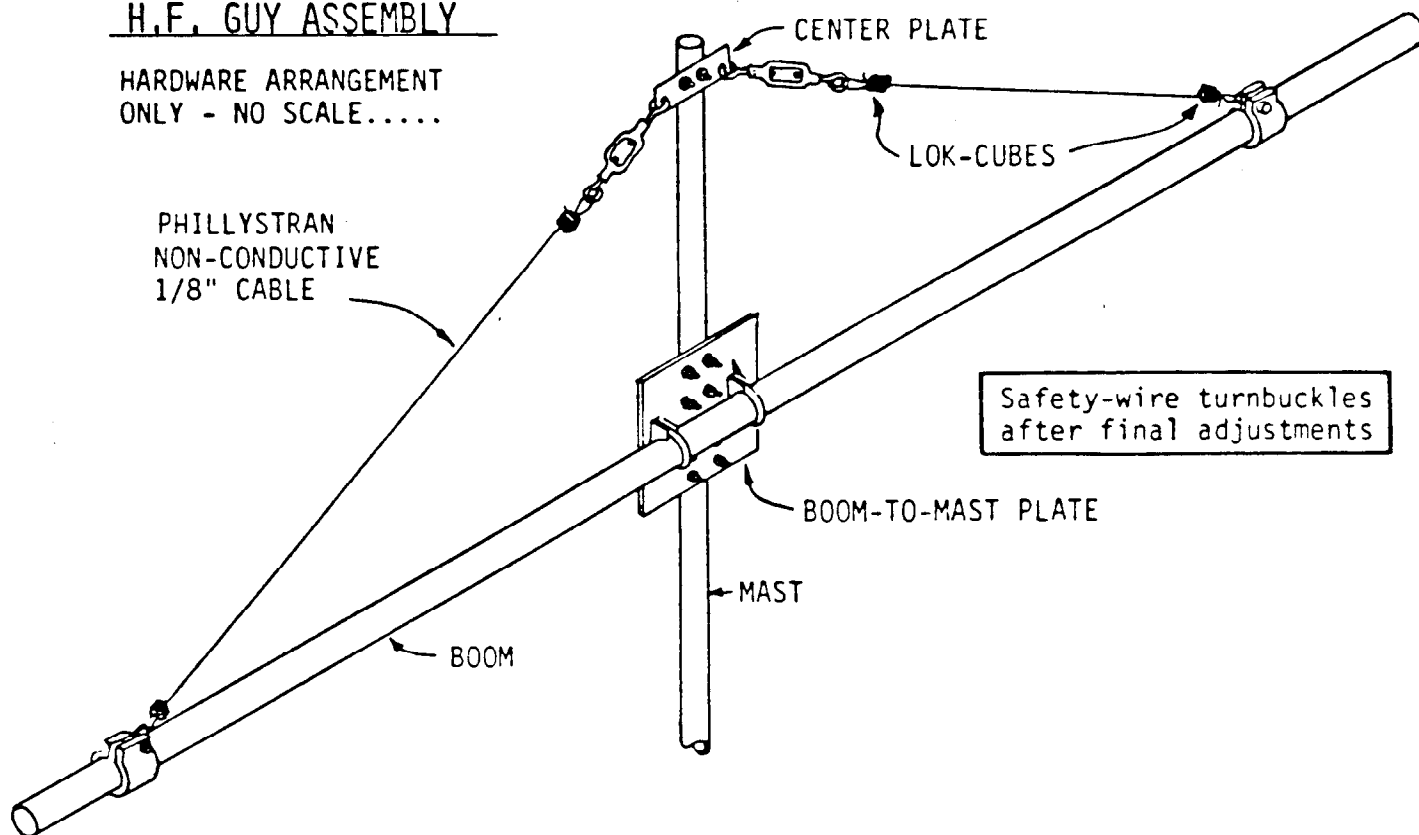
Repeat for the other D3 tip assembly.

2. Repeat step 1 for D1, Front driven, Rear driven, and reflector elements. Use the "D" dimensions supplied on chart. Make sure the capacitor sections, straps, and studs are correctly oriented. Check marks on 3/8" tubing to be sure vent/vacuum-breaker holes are also oriented "up".

The antenna is attached to the mast via a 8" x 9" x $\frac{3}{16}$ " plate located at the physical balance point. The boom is supported front and rear by an adjustable overhead guy harness. The cables, made of superstrong Phillystran (TM), are non-conductive to prevent any possible interaction with other nearby antennas. The cables tie to cast aluminum ring clamps near each end of the boom and to a pair of turnbuckles mounted on the mast above the antenna.

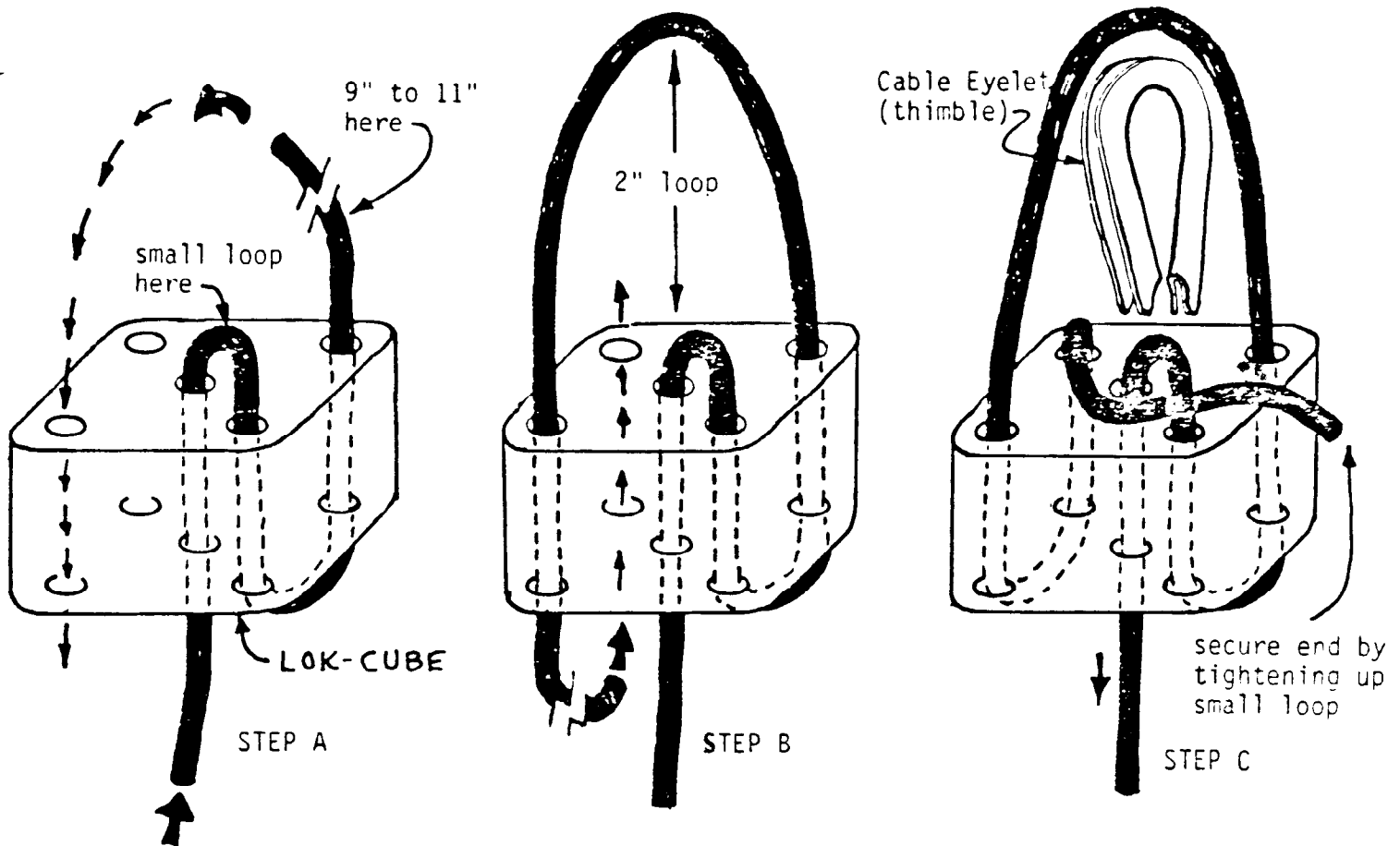
H.F. GUY ASSEMBLY

HARDWARE ARRANGEMENT
ONLY - NO SCALE.....



1. Center the boom-to-mast plate at the physical balance point of the antenna with the feedline attached. Loosely secure with two 3" U-bolts.
2. Mount a temporary 3 or 4 foot mast (not supplied) to the mounting plate, the main length extending above the boom. Secure with two 2" U-bolts.
3. Using the temporary mast as a guide, sight down the boom from either end and rotate mounting plate until mast is perpendicular to the elements. Then tighten the 3" U-bolts.
4. Adjust the turnbuckles on the harness center plate until no threads show on the inside. Attach the center plate to the boom side of the mast about 3 to 4 feet up the mast. Secure with 2" U-bolt.
5. Place supports under the boom at regular intervals so that it lays as straight as possible. This will aid in rigging an accurate and balanced guy harness.

6. Prepare one end of each cable with a 2" loop using the KLM Lok-cubes as shown in the sketch below:



7. Place a cable eyelet (thimble) into each loop and snug up cables onto eyelets. Then install loop/eyelet into splits in each ring clamp. Secure with 3/8-16 x 2" bolts, lockwashers, and nuts.
8. Prepare the other end of each cable with Lok-cubes as far as step A only. Pull each cable taut and adjust until lok-cubes are about 2" to 3" from the turnbuckle eyebolts. Then thread the cable ends through the eyebolt and around the eyelets. Complete rigging as shown in steps B and C, snugging up cables on the eyelets. Balance tension on mast so it is not pulled to front or rear., but remains vertical.
9. Make further rough boom straightening adjustments by moving the ring clamps on the boom. When finished, disconnect harness center plate and remove temporary mast. Secure loose cables to boom so they do not interfere during installation.
10. After the antenna is installed on permanent mast, reattach center plate with 2" U-bolt, raising or lowering as needed to keep boom straight. The guy rigging usually stretches very slightly as it takes it's "set" and you may want to compensate for that, particularly if the antenna is not easily accessible. Otherwise, minor straightening and tension balancing adjustments are accomplished with the two turnbuckles. Block eyebolts during adjustment so cables are not twisted. When finished, safety wire the turnbuckles so they cannot unwind.

XII. INSPECTION

1. Upon completion of assembly, have another individual recheck antenna against critical dimensions "A", "B", "C", and "D" on Completed Half Antenna Assembly drawing.
2. If possible, allow antenna to temp. cycle overnight. Then check and re-tighten all connections. This will insure long-lasting mechanical and electrical integrity.
3. Check once again to make sure all the capacitor caps are pressed firmly onto the 3/4"O.D. capacitor sections and that the vent/vacuum breaker holes in the 3/8" tubing are "up".

XIII. PRE-INSTALLATION CHECK-OUT

1. Since the permanent installation of any antenna requires a great deal of time and effort, we would like to suggest the following tests be made on the KT-34XA prior to final installation.
2. Attach your good quality 50 ohm feedline to the balun and place the KT-34XA on a temporary support 10 to 25 feet above ground. Use a non-metal roof, tall ladder, short tower, etc.
3. Using your exciter and a good quality SWR bridge, take SWR readings every 100 KHz on each band. Start and end at or beyond the band edges. Naturally some SWR will be present and the general shift, because of the low height, will indicate the antenna is resonant slightly low in frequency. For the most accurate SWR readings, keep the system simple, i.e., exciter - SWR bridge - antenna. Eliminate scopes, antenna switches, filters, etc., for your initial readings. This simple system should be used for your post-installation SWR check also.

Gross problems such as 50-100% power reflected on all portions of each band indicate a problem in the feedline or balun. Disconnect the feedline at both ends and check for center pin-to-pin continuity and connecto shell-to-shell continuity. There should be no continuity between center pin and shell. The balun should show continuity from center pin-to-shell and to each of the balanced terminals.

4. Another rough check of general performance even with the antenna at the low temporary height is to listen to the signals on 10, 15, and 20. If possible, compare it with another antenna on those bands. Signals on 10 and 15 meters particularly should sound lively. Twenty meters may be subdued somewhat by the temporary test height conditions. Again, you're looking for anything grossly different than what you would expect.

If any gross problem appears to be present, a continuity check of each element should be made. Check for continuity across each joint. This continuity check will almost invariably expose the problem and we consider it a most valuable time spent to insure long trouble-free operation.

1. When installing antenna, remember to allow about 2½ feet of mast above the boom for mounting the guy harness center plate.
2. After antenna is installed, reconnect center plate and slide it up mast until the boom is straight. Final adjustments and balancing of tension are accomplished adjusting turnbuckles. Block the eyebolts to prevent twisting of cables during adjustment. When boom is straight, safety-wire the turnbuckles.
3. See Page 18 for typical SWR curves for each band. Your curves may vary somewhat due to instrument accuracy, height above ground, surrounding objects, etc. But, you should be able to recognize key corner points and ripple.

INSTALLATION HINTS AND KINKS

1. Good quality coax feedline of the proper impedance is a major factor in achieving good VSWR across each ham band. KLM recommends the following cable.

1. RG-213 AU
2. Times FM-8 Foam Coax
3. Belden 8214 Foam Coax

Other brands of foam "RG-8 type" coax are typically not 50 ohm (more like 60-70 ohm) and should be avoided.

2. Large objects and other antennas, 40 or 80 meter dipoles for instance, can also affect the VSWR of a tribander. To check for detrimental effects, temporarily lower or remove the dipole or at least rotate it 90° out of line with the tribander elements. If the VSWR is reduced, one of the antennas should be relocated to avoid adversely affecting the performance of the Tribander.

The KLM 40 meter dipole (7.2-1) can be used with the Tribander and will work well. But, the dipole must be mounted above or below the Tribander and in line with its boom (90° out from elements).

3. Mounting height: Generally, the comment "the higher - the better" is true. Excellent performance can be realized, however, from 30 feet on up. Ten (10) meters will be affected least by increased heights over 30 feet and 20 meters will be improved the most.

Overall, antenna efficiency is reduced at low heights because surrounding objects (building, trees, metal fences, etc.) absorb RF from the antenna before that energy can become a sky-wave. Whenever possible, mount the antenna high and in the clear.