

TAPE MEASURE YAGI ANTENNA

(2m)

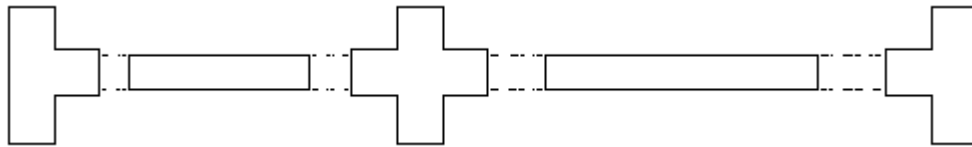
Material Needed	Tools Needed
2-feet of 1/2" PVC (Schedule 40) 2 – 1/2" PVC "T's" 1 – 1/2" PVC Cross 115" – Steel Tape measure (3/4" or 1" wide) 6 – 1-1/4" Stainless Steel Hose Clamps 5" of 14-18 gauge wire (solid or stranded) Electrical Tape Sandpaper Electrical solder 3' – Coax with PL-259 end	Tape measure (for measuring) Solder Iron Screwdriver (Nutdriver) Scissors, sheet metal shears, or side cutters PVC cutter or saw for cutting PVC tube Safety Glasses Gloves

SAFETY:

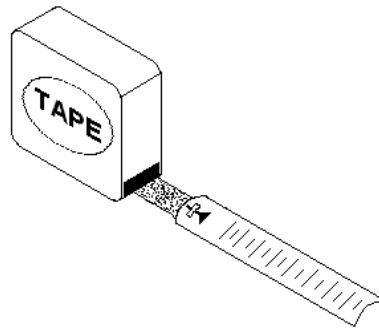
Care should be taken when working with sharp metal edges. Use gloves to prevent cuts and safety glasses to protect your eyes from flying debris. Care should also be used when cutting the metal tape as burrs created by the cuts could inflict injury.

STEP 1. Take the 24" PVC tube and cut one piece 11-1/2" long and another piece 7" long.

STEP 2. Assemble PVC tube pieces and PVC connectors ("T's" and Crosses) as shown below. (No glue is used so antenna may be broken down for storage).



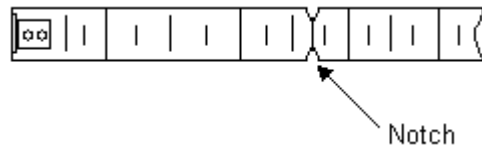
STEP 3. Remove the tape from the case. The easiest way to accomplish this is to pull the tape completely out until you see the metal return spring to which it is attached. Simply rotate the tape till the tab of the spring can be slid through the slot in the tape. The spring will recoil into the case and the tape will be ready for trimming.



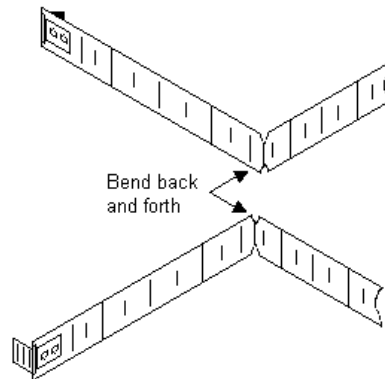
STEP 4. Measure and cut the four lengths you will need for this antenna (cutting chart below).

Part	Length
Reflective element	41-3/8"
Driven element (2 – pieces)	17-3/4" (each)
Director element	35-1/8"

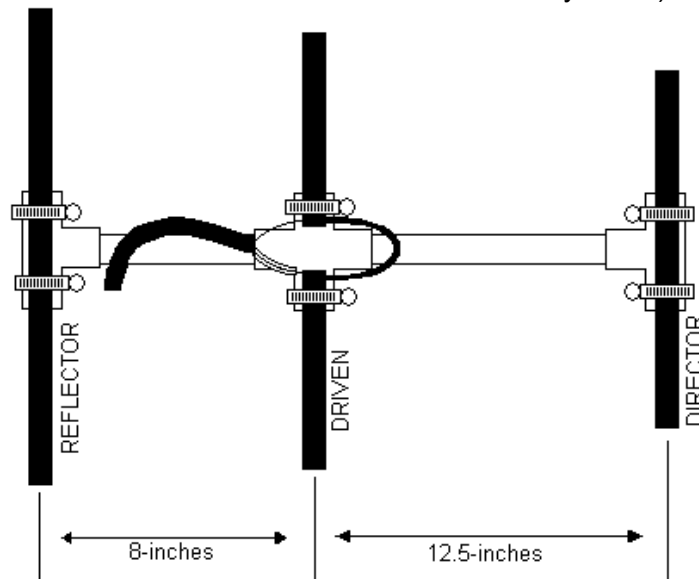
There are a couple of methods you can use for cutting the tape to the desired length. The first method is to use a pair of sharp household type shears. But, if your XYL has a problem with you using her best pair of sewing scissors, you can notch the tape on both sides of where you wish to have the cut using a pair of side cutters.



Then bend the tape back and forth until it breaks in two. This method should give you a clean cut.



- STEP 5. Sand smooth any burrs or sharp edges left from cutting the tape.
- STEP 6. Cover the exposed ends of the tape with plastic electrical tape.
Remember: one end of each of the driven element pieces does not get covered.
- STEP 7. On the untapped ends of the driven element, sand off the paint on the backside of the tape to expose bare metal. (This is necessary for soldering on the "Hairpin" match and coax conductors).
- STEP 8. Center and attach the reflector and director elements to their appropriate locations on the PVC boom (see diagram) using the hose clamps (or alternate method demonstrated in the assembly notes).



- STEP 9. Tin the ends of the driven element pieces with solder where you sanded the paint away. Then tin about $\frac{1}{4}$ " of each end of the 5" wire you'll be using for the "Hairpin" match. (You may have to strip the wire if it is jacketed). Also, tin the ends of the coax conductors at this time.
- STEP 10. Place the driven element pieces on the center cross piece of the PVC boom, securing them with the hose clamps. You should leave about $\frac{3}{4}$ - 1" spacing between the ends of the tape.
- STEP 11. Solder the coax center conductor to one driven element and the braid of the coax to the other driven element.
- STEP 12. Solder one end of the "Hairpin" match wire to one driven element and the other end of the wire to the other driven element.
- STEP 13. Secure the coax to the boom with electrical tape.

Now you're ready to check your SWR with an SWR meter or an antenna analyzer. SWR adjustment is achieved by moving the driven elements closer or further away from each other.

ASSEMBLY NOTE: You may use a sheet metal screw and rubber washers to attach the reflector and director elements. This may save you a little bit of money.

