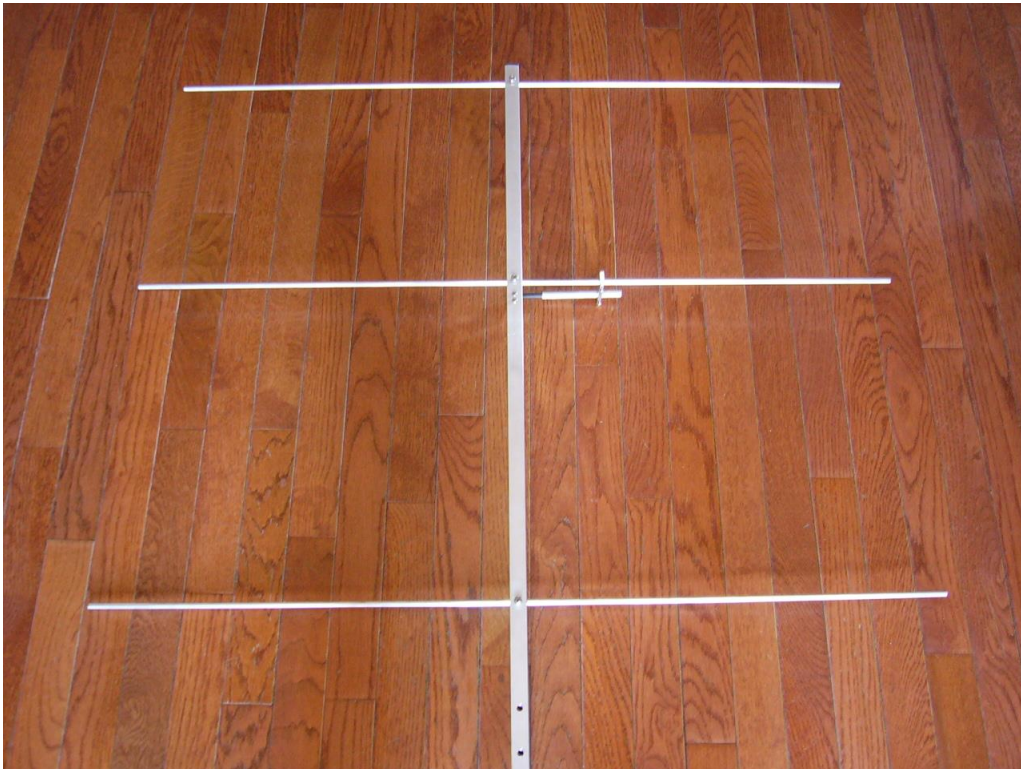


3 Element Yagi Antenna Assembly Instructions

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The following items are included with your antenna.

- 1 $\frac{3}{4}$ inch square boom
- 1 reflector element (longest)
- 1 driven element (mid size)
- 1 director element (shortest)
- 1 antenna feed assembly
- 1 gamma stub
- 1 gamma tube
- 2 4-40x3/8 machine screws
- 2 6-32x1 machine screws
- 2 6-32 lock nuts
- 3 10-32x3/8 machine screws
- 1 U-bolt with lock nuts
- 6 end caps for the elements
- 1 end cap for the gamma tub

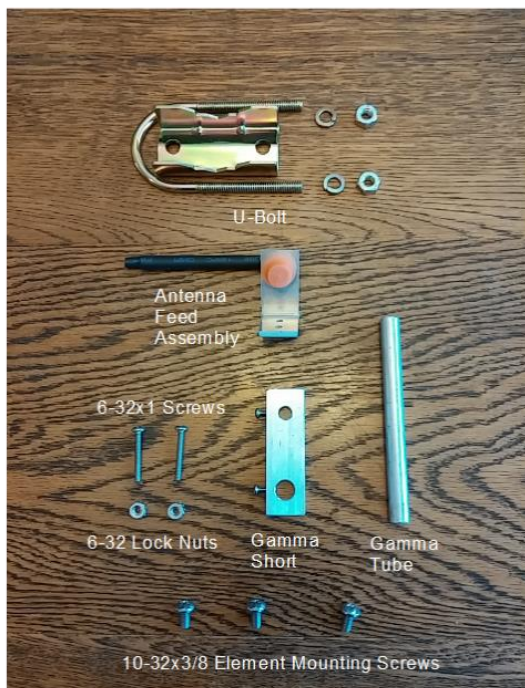


Illustration 1: Parts Included with Antenna

Step 1 – Insert Elements

Insert all three elements into the boom. The longest one is located just in front of the U-bolt mounting holes and the smallest one is at the opposite end. The mid length element is placed in the middle.



Illustration 2: Element Inserted in Boom

When finished the antenna should look like this:



Illustration 3: Antenna with Elements Installed

Step 2 – Centre and Secure Elements

Thread the 10-32x3/8 machine screws into the boom. Making sure the element is centered, carefully tighten the screw against the element. Be careful not to over tighten and break the element. (You can use a measuring tape or yard/metre stick to check each side is equal in length.)

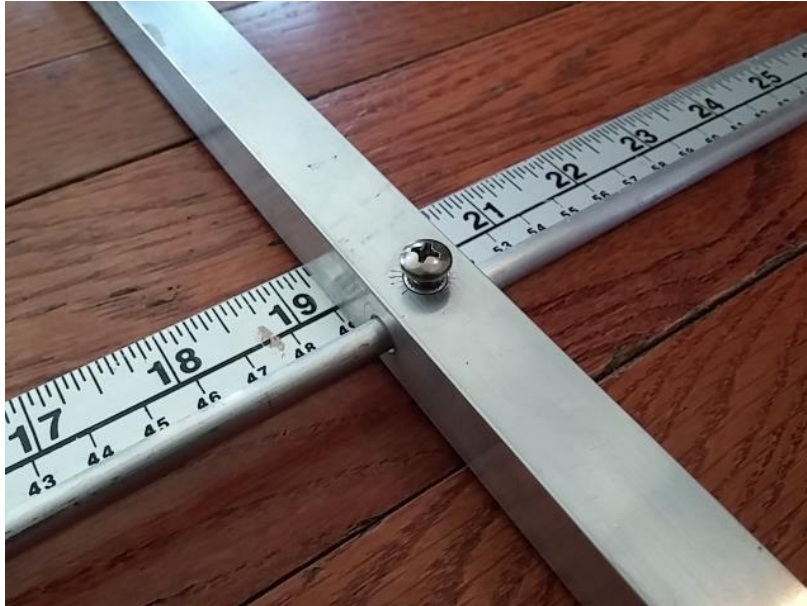


Illustration 4: 10-32x3/8 machine screw holding element in place

Step 3 – Prepare Shorting Stub

Thread two 4-40x3/8 machine screws into the shorting stub as shown



Illustration 5: Gamma Shorting Stub

Step 4 – Install Feed Assembly

Flip the antenna over. Install the Antenna Feed Assembly onto the boom with two 6-32x1 machine screws inserted up from the side with the element screws and secured with 6-32 locking nuts.

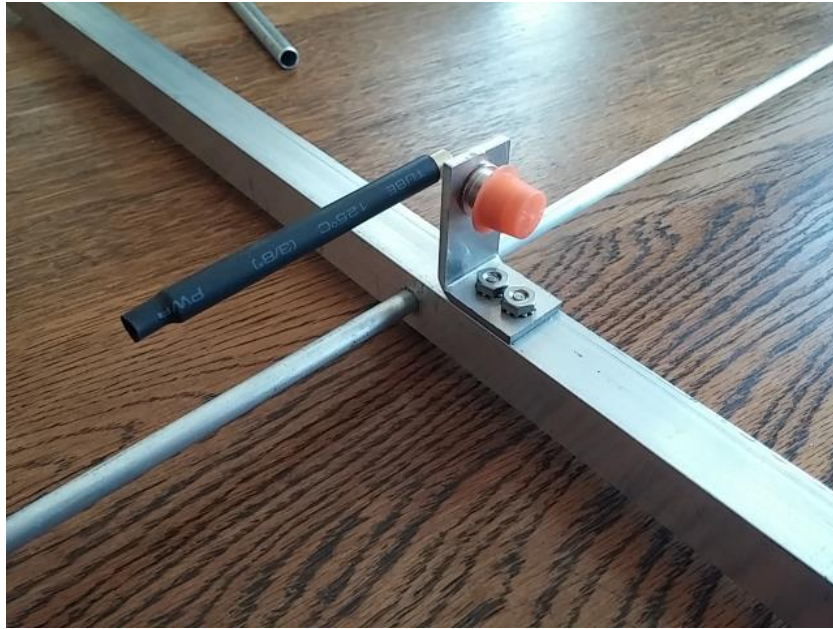


Illustration 6: Mounted Feed Assembly

Step 5 – Install Gamma Match

Carefully feed the brass center conductor into the gamma tube as you position the gamma tube and shorting stub in place.

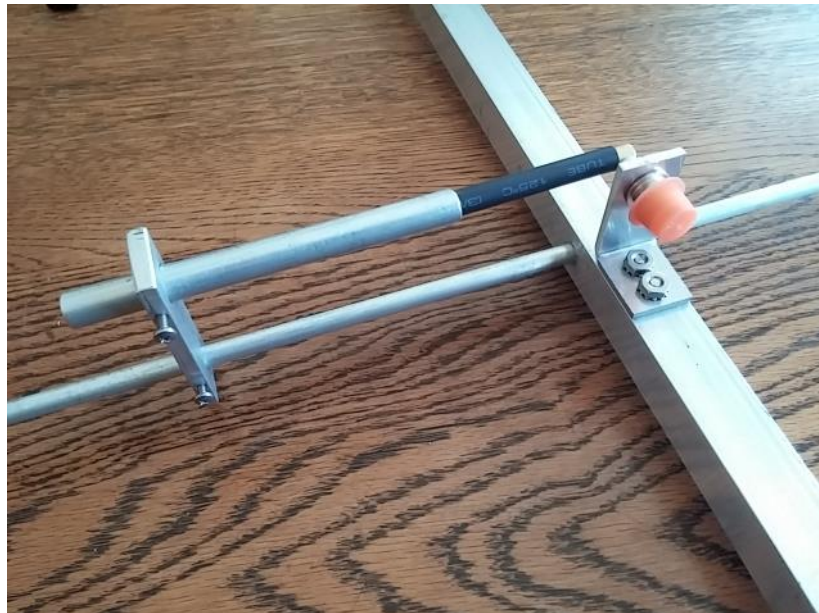


Illustration 7: Gamma shorting stub and tube in place on driven element

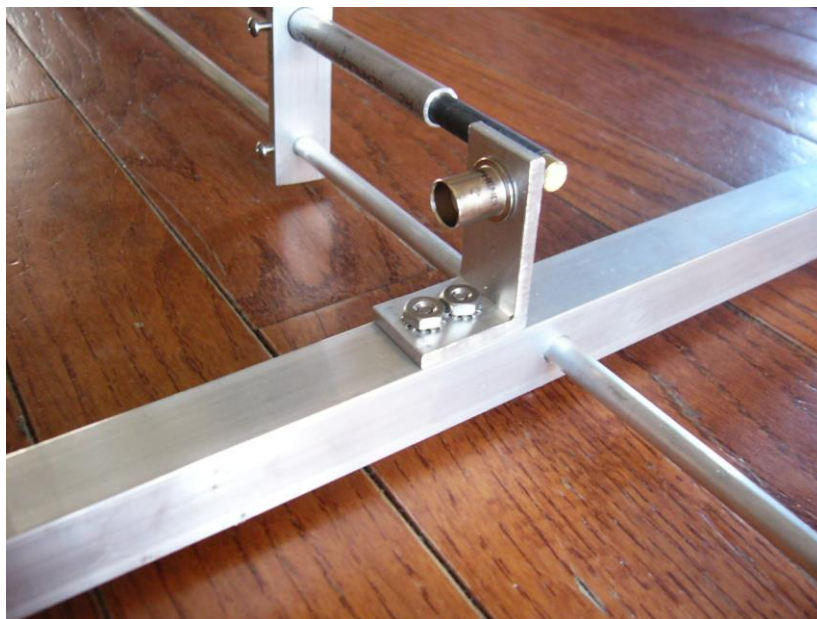


Illustration 8: Installed Antenna Feed Assembly

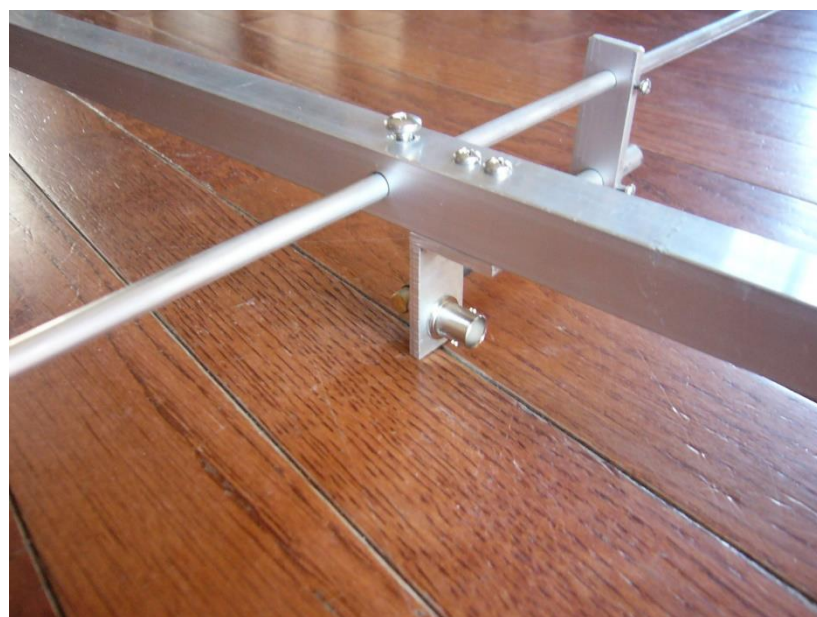


Illustration 9: Installed Antenna Feed Assembly

Step 6 – Install U-Bolt

Install the U bolt in the mounting holes at the end of the boom in the orientation required for mounting the antenna.



Illustration 10: U-Bolt Installed

Step 7 – Install End Caps

Install the end caps on the elements and the gamma tube.



Illustration 11: Element End Cap Installed

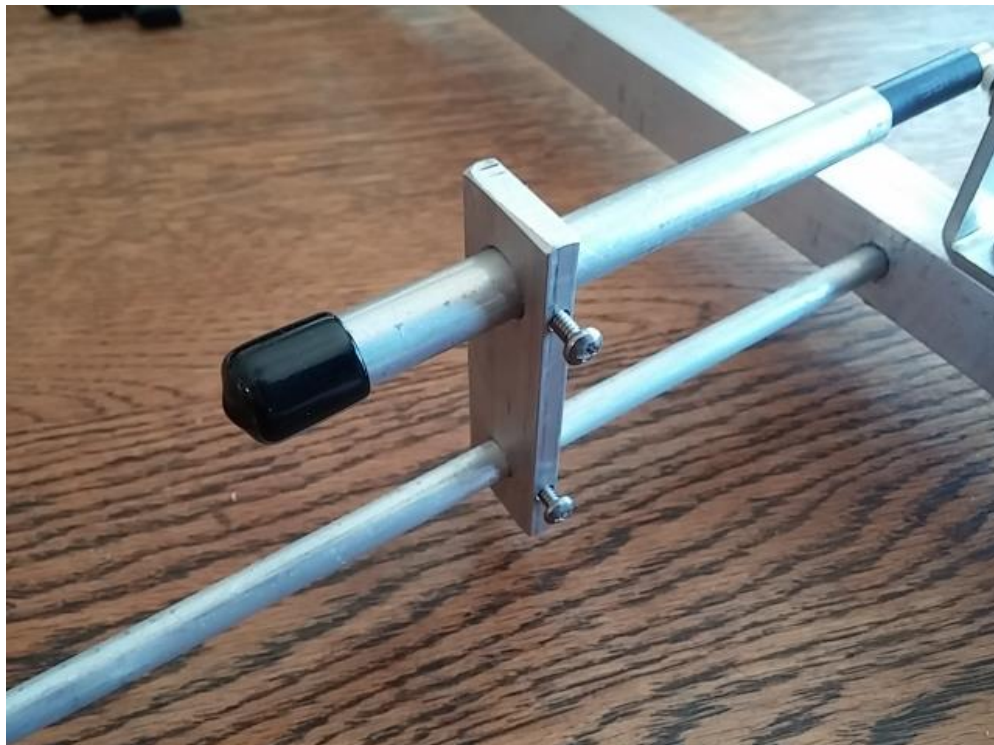


Illustration 12: Gamma Tube End Cap Installed

Step 8 – Adjust Gamma Match

For approximate tuning, adjust the gamma tube and gamma stub to the following dimensions and tighten the set screws. Adjust dimension A and tighten the element screw before moving onto dimension B. For best performance use an Antenna Analyzer to optimize the tuning.

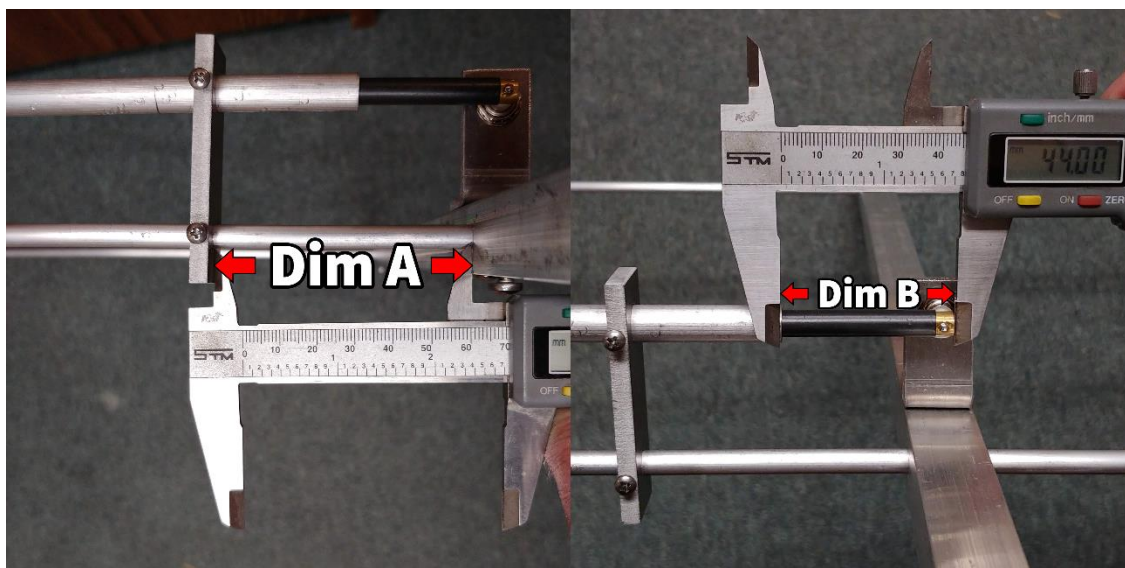


Illustration 13: Gamma Match Dimensions

Antenna Type	Dim A	Dim B
147-149MHz	76mm	55mm
149-151 MHz	68mm	44mm
151-152 MHz	89mm	15mm
164-166 MHz	66mm	45mm

Note: 150MHz, 165MHz and 173MHz antennas have different element element lengths and one cannot be tuned into the other frequency range.

Your antenna assembly is now complete. For best performance, mount your antenna clear of all metal objects to a distance of at least $\frac{1}{2}$ metre. The supporting mast through the U-bolt may be metal.

When mounting the antenna vertically, we recommend that the antenna is mounted so that the gamma tube is up. This will prevent water from accumulating in the gamma tube.

As previously mentioned, for most accuracy and best performance, we recommend purchasing an antenna analyzer like the AA-520 so you can measure and fine tune your gamma match for the lowest SWR (see www.rigexpert.com).



Illustration 14: RigExpert Antenna Analyzer