

Construction Plans for the Model J146/440

Dual Band (2 Meter/70 cm) Solid Aluminum J-Pole

Parts Needed

- Radio Shack # 21-961 3/8"-24/SO239 Mount (Mobile CB Antenna)
- Radio Shack # 15-826 TV Mast U-Bolt Clamp Assembly
- About 85 inches of 3/8" diameter Solid Aluminum Rod.
- 5 1/2 inch piece of strut angle Aluminum 1 1/2" X 1 1/2" X 3/16"
- 4 Stainless Jam Nuts 3/8-24 thread (or 3/8-16)

Tools Needed

- Drill Press with drill Bits up to 1/2".
- Tap & Die for 3/8-24 thread.
- Sander or file to de-burr the cut edges.
- 9/16 wrenches & a 3/4 wrench.
- Vice-grips
- Saw

Procedure

Make sure the piece of angle Aluminum is exactly 5 1/2 inches long. Drill two 1/4" holes on one side, centered to fit the U-Bolt for mounting. On the other surface of the angle, measure in 1/2", 1 7/8" and 5" in from left side and drill 1/4" pilot holes. Enlarge the first of the pilot holes to 1/2" for the antenna mount. Enlarge the second and third of the pilot holes to 11/32" then tap the holes with a 3/8-24 tap or 3/8-16.

Finish as required.

Cut a piece of the 3/8" Aluminum rod to about 20". Attach a vice-grip to one end. Using a 3/8-24 die cut in about 8 threads in the other end. Screw on the Coupling Nut that came with the SO239 Mount. Tighten as much as you can. Measure the rod & coupling nut & cut to exactly 19 1/4".

Cut a piece of the 3/8" Aluminum rod to about 60". Attach a vice-grip to one end. Using a 3/8-24 die cut in about 14 threads in the other end. If you don't have jam nuts, cut enough threads for 2 nuts & the thickness of the angle bracket. Screw on one of the jam nuts & tighten as much as you can. Measure from the bottom of the nut and cut the rod to exactly 57 1/2". Remember the nut must be included in the measurement. Repeat for the 6 1/4" long 440 element. Put a small amount of grease on the threads. Screw the element into the threaded hole and tighten. Screw on the other nut and

tighten it. Attach the 19 1/4" element in the 1/2" hole using the rest of the SO239 Mount.

Testing

Mount & test your new antenna. SWR should be < 1.2-1 at 146 MHz and <1.4-1 at 144 &148 MHz. SWR should be < 1.2-1 from 440 - 450 MHz.

Redundant Test

Remove the 57 1/2" element, there should be no change of 440 performance.

SWR on two meters will be high. Reinstall, then remove the 6 1/4" element. No change of the two meter performance should occur. SWR on 440 will not change much but the performance will.

-

Alternative Method

If all this sounds like too much work, this antenna can be bought for a very reasonable price from Allen at **Arrow Antenna**.

73 Allen Lowe NØIMW Arrow146@aol.com

Arrow Antenna

Does **NOT** require a ground plane.
 Ideal for mounting in an attic,
 On a roof vent pipe, (up to 1 1/2")
 On a wooden or Fiberglass pole,
 On Fiberglass or Plastic Vehicles,
 (Motorhomes, Trucks, **Boats**)
 Mount it just about anywhere.

This is a very Heavy Duty Antenna.
 The Elements are made from 3/8" Solid Round
 Aluminum with a Heavy Duty Angle Mounting Bracket.

Low SWR - Wide Bandwidth

Dual Band 1/2 wave Antenna

Covers 220 - 225 MHz.
 With an VSWR of less than 1.5 - 1

Covers 143 - 149 MHz. VHF
 Covers 437 - 450 MHz. UHF
 With an VSWR of less than 1.5 - 1

Has Gain over a 1/4 wave .

Omni-Directional.

Simply the Best

Single SO239 Feed Connector

