

Ugly Balun VK3AMN designs.

(Freq Range 3.5-30MHz) Jim McNabb 2007



Material

- 1 off 100mm water Pipe (PVC) 125mm long. (Referred to as the Balun)
- 2 off 25X103X10mm PVC strips. (Known as top plate and bottom plate)
- RG-58 Coax cable 10 ft (3150mm) + what you need to get to your shack.
- 4 off 150mm long wires. (To hold the top and bottom plate in place)

How you go about making the Ugly Balun?

Drill a hole to fit the RG-58 in the 100mm water pipe (Balun) 25mm down from top.(Refer picture 1)



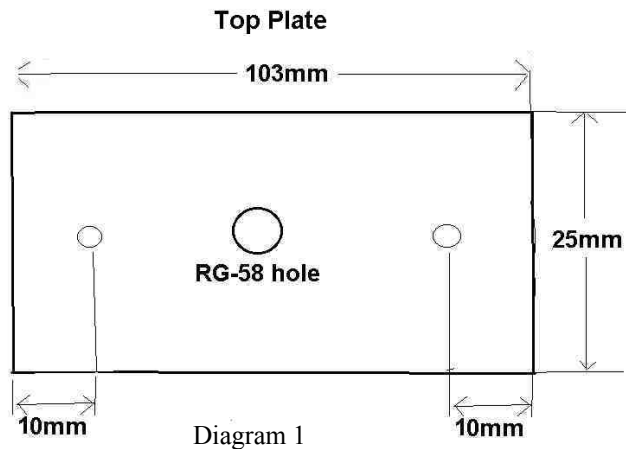
Picture 1

At 90° Drill 4, 5mm holes 2 each side (at 15mm centres) for the dipole wires to join and fix the top plate. Refer Picture 3 (The top plate will support the Dipole and the Balun)

On the 25x103x10mm top plate drill one hole in the centre to fit the RG-58 coax cable and one 5mm hole at each end 10mm in for the dipole wire. (Refer Diagram 1)

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Place the top plate picture 3 in the centre of Balun, secure the top plate using two pieces of 150mm wire. (Refer Picture 3)

Note excess wire is used to secure dipole wire

Measure 3150mm (10ft) along the coaxial cable (RG-58) and put a white tape marker around the coax cable.

Note DO NOT CUT COAX allow enough length to reach radio shack

Make a pig tail the easy way. At one end of the coax cable, strip 100mm of the outer jacket. Prick a hole in the outer braid, The inner conductor is now fished through the hole, the completed pig-tail lead ready for use.



Picture 2

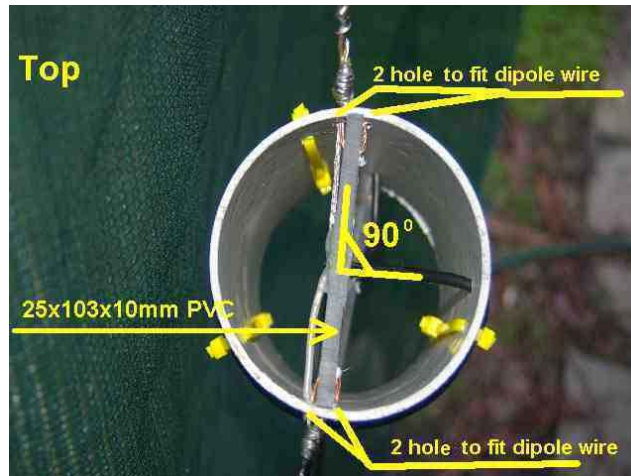
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Place the end of the coax cable into the single hole in the Balun (100x125mm PVC pipe) (25mm down from the top) Picture 1

Pull the coax cable through till the 100mm strip part is in line with the top plate as shown in Picture 3



Picture 3

Wind the cable around the balun (PVC pipe) till you get to the marker on the coax cable (approx 14 turns, not extremely critical)

Drill a hole (to fit the RG-58) in the pipe Balun as close as possible to the bottom end of the coil, then thread the cable through and pull tight.

Next put the bottom plate of 25x103x10mm strip (the same as the top bit but the hole for the cable is at 45° and pointing down) Picture 4

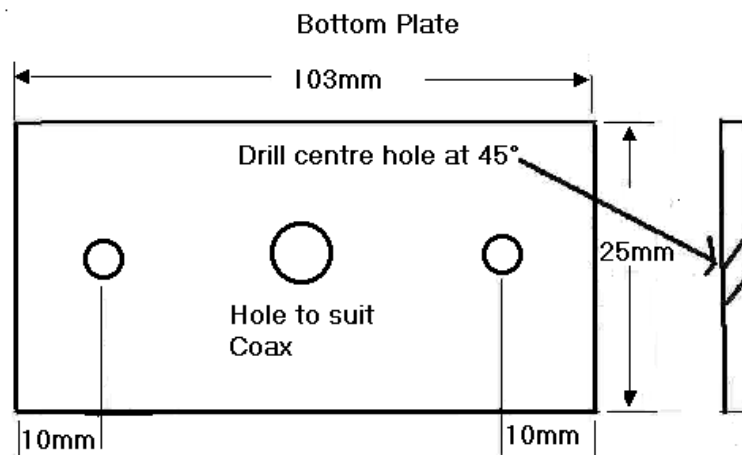


Diagram 2

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Making two small holes (5mm) 15mm apart and 15mm up from the bottom edge of the Balun on each side of the pipe where the coax cable re-enters the Pipe Balun Picture 4

Fix the bottom plate with 2 of 150mm wire and feed the coax cable through the hole in the bottom plate. (The bottom plate takes the weight of the coax cable keeping it in the centre)

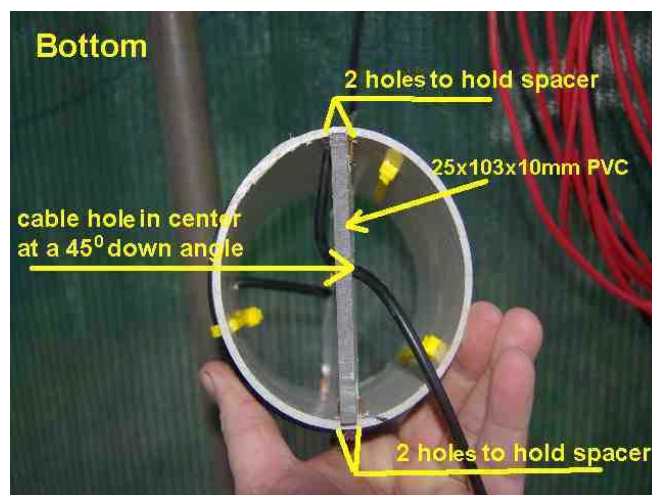
Drill two holes next to the coil to put the cable ties as shown in Picture 1 and Picture 4, there are 3 cable ties required to hold the coax cable coil.

Next join the wire ends of the dipole to the Balun Picture 1

RG-58 coax cable in the top plate, join the centre to one side and the braid to the other side feed through the Balun pipe and solder to the wire outside of the Balun fixing the Dipole wire at the same time. Picture 1 "Don't forget to solder the bottom plate wires."

Use hot glue to seal the end of the RG-58 coax cable, and to hold it in place on the top plate and Balun Picture 1. Also glue the coax cable in place in the bottom plate as shown in Picture 4.

Next you measure each side of the dipole from the centre of the Balun, (not from the out side of the Balun) (for 3.600MHz 19.750metres each side), fitting you insulator at each end of the wire (just bend the wire back on it self for now.) You will find that you will have change the length when tuning. Picture 5



Picture 4

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Picture 5

The Dipole wires will stretch with time and you will have to retune the dipole in a few months, so don't solder the insulators so you can change the lengths if and when required.