

A MODIFIED HEATH CANTENNA

David Barneveld VK4BGB

PO Box 275, Booval, Qld 4304

This article is slightly different in that it has more to do with plumbing than electronics. If you have ever owned one of those Heathkit dummy loads, you will know that it gets slightly hot after extended test runs. The smell of boiling oil in the shack is rather off-putting, so this modification was done to cool things down a little.

For those not familiar with a cantenna dummy load, all it comprises is a 50 ohm carbon resistor mounted in an aluminium tube immersed in a four litre metal paint can filled with transformer oil. The tube forms a tunnel for the heated oil to travel through.

The modification simply consists of emptying the transformer oil into another container for the time being and forming a length of six millimetre copper water pipe into a series of coils which fit snugly to the inside of the can. It is a good idea to degrease the can with a solvent prior to doing this part of the modification.

The inlet connection is brought out at the bottom of the can, and the outlet at the top of the can. The two holes should only be drilled large enough to get the pipe through. The fit should be very tight. Leave approximately 25 millimetres protruding on the outside of the can and cut off with a pipe cutter or small hacksaw. Silver solder around the connections to prevent oil escaping. A tack of solder here and there on the inside will help keep the coils stay rigid.

Refill the can with transformer oil and reinsert the dummy load element. The garden hose is connected to the inlet manifold and only just cracked on so that a trickle of water comes out of the outlet pipe. A short length of plastic hose can be run from the outlet to anywhere it suits in the garden.

It was found that with the modification just described completed, that the overall temperature of the dummy load was running well below that of an unmodified version. The heat transfer characteristic increases sharply as the temperature of the oil rises, due to temperature differences between the oil and the coolant. A point worth noting here also is that care should be taken with the choice of transformer oil used in the dummy load. Whilst many types are available on the market, I personally use a grade made by Shell Oil Refinery known as Diala-B. By using the proper coolant one can rest assured that no problems will be encountered as could be the case if unknown oils are used that contain PCB materials.

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