

A 400V 50W DC-DC Inverter

Here is a DC — DC inverter with 400V DC output and capable of 50 watts. It may be used in place of the inverter described for the Capacitor Discharge Ignition system described in August, 1970. On the other hand, there are many applications for such an inverter and the output voltage may be varied by making suitable adjustments to the number of turns on the transformer secondary.

This design is attractive in that it is compact, economical and efficient. Perhaps the heart of the unit is a Philips ferrite toroid, type No. 4322 020 36570 and the turns

and the general design are specifically for this particular toroid.

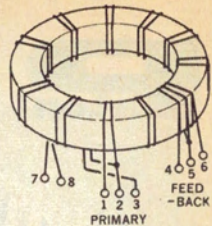
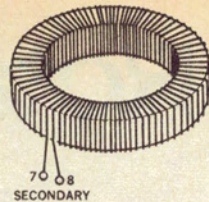
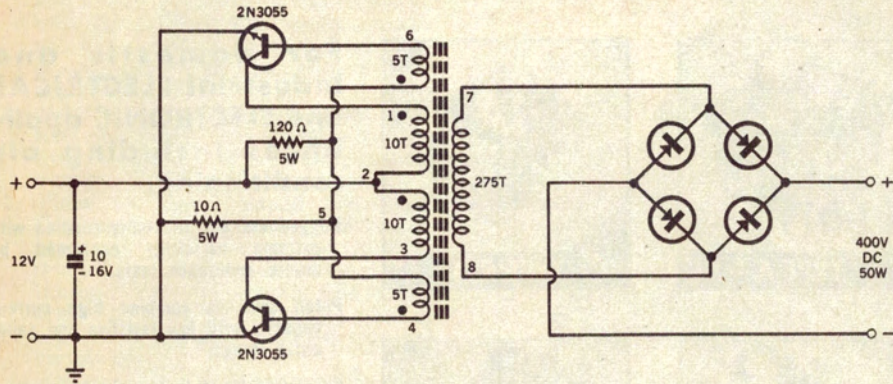
Before any winding is commenced, the toroid should be wrapped with a layer of mylar tape to prevent any possible break down to the core. The secondary is wound first and this consists of 275 turns of 26B&S enamel wire. This winding consists of about 16 yards of wire and this should first be wound on a 3in long pencil. Winding is then achieved by passing the pencil through the hole in the toroid. The secondary takes up about two layers on the core. Between each layer, place another layer of mylar tape,

together with another layer over the finished winding.

The primary winding is bifilar wound with two wires together of 16B&S enamel. Ten turns are wound with the windings spread around the full circumference of the toroid. The start of one winding is connected to the finish of the other and this becomes the centre tap, with ten turns on either side.

The feedback winding is wound in a similar manner to the primary, again with the start of one winding and the finish of the other, connected to become the centre tap. It is not necessary however, to spread the

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turns of this winding and they may be simply wound in one concentrated region. It would also be wise to add a layer of mylar tape between the primary and feedback windings. Finally, a layer of mylar tape is used to cover the finished windings and if facilities are available, the transformer may be vacuum impregnated.

Winding details are shown in the diagram.

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