

7AH "F" NiCad Battery Pack

By G8MNY

(Update Apr 07)

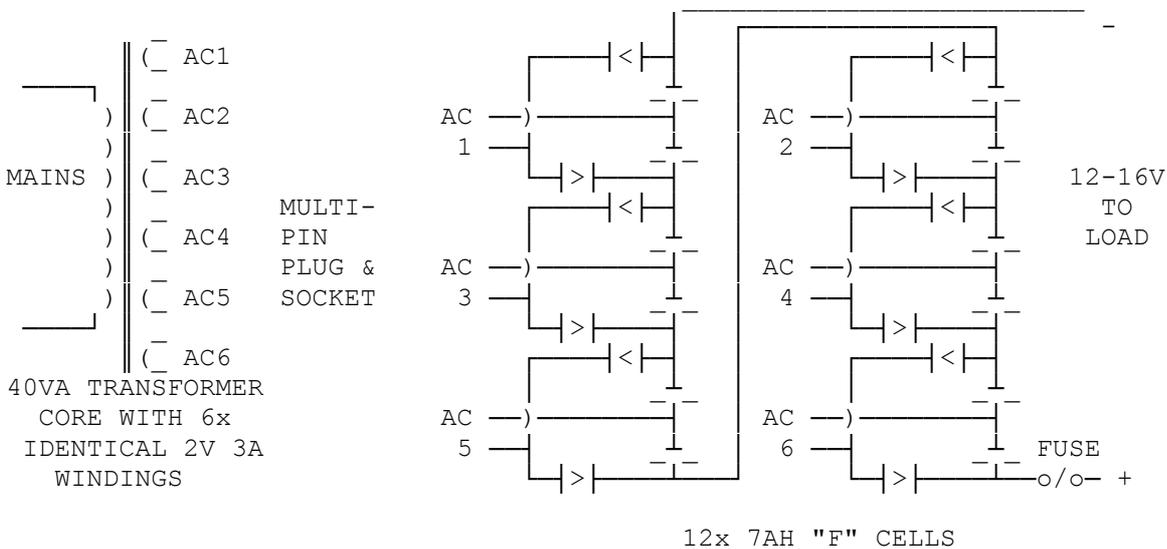
(8 Bit ASCII Graphics use code page 437 or 850)

Nicads batteries usually end up with several cells being short circuit, this means that trickle charging is no good & will not recover the shorted cells! What is needed is higher pulse current charging to remove crystal growth.

This circuit charges each cell independently, & I have used it on very old nicad pack of >15years. If a cell has shorted crystal growth across its plates, then 20W is available to blast it off.

Using 12 cells gives a better voltage for most /P kit but 10 cells can be used if the kit really can't stand 16V of a just charged battery!

The diodes are 3A (60A max) soldered to the tags of the battery stack. They will run quite hot on charging!



MODIFY A TRANSFORMER

- 1/ Rewind a suitable unvarnished transformer (12V @3A).
- 2/ Carefully take the laminations off.
- 3/ Remove the secondary,
- 4/ divide it up into 6 (will need a large garden for this).
- 5/ wind it all back on 6 wires together.
- 6/ Test the windings to make sure they are all separate.
- 7/ Replace the interleaved laminations (the odd one left over does not matter much!)
- 8/ Suitable transformer tags for terminating the windings are useful.
- 9/ Test with mains, it should not get hot!

CONNECTOR

With 3A multicore wire, wire up the battery to a female multi-pin socket & the transformer to a plug (e.g. 25 way RS232 with 2 pins per connection).

CHARGING

In use you must disconnect the battery pack after it runs hot (45°C). The time taken will depend on the exact secondary voltage available, as well as the state of charge of the cells. Cell lifetime has been at least 20 years for some of my cells, but some go open circuit eventually (hummy voltage across them on charge), none have gone short over that time!

If trickle charging is wanted as an option, add a switched 220 \hat{U} 20W in series with the mains circuit (e.g. Neutral).

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73 De John, G8MNY @ GB7CIP