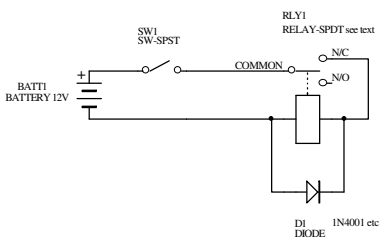

LINDERMAN CAPILLARY TUBE LOADER

The relay used was a "Single Pole Change Over Contact" type (i.e. SPDT) with contact ratings of 16 A at 220 Vac and a 12 Vdc coil. The actual relay used in the prototype as a "PASI" brand model "KH/U 2C 12 V 16/220 AC1". This type of relay is intend for "vertical" mounting on a PCB. It has a clear plastic cover over the relay which is easily removed. The relay looks similar to a Farnell order code 103-069,or a RS 347-832. Almost any relay will do providing it has large contacts and an easily removable cover.

The relay is wired as per the circuit diagram. This circuit will result in the relay vibrating or chattering. The diode is optional - it stops the back emf generated by the coil from sparking at the contacts and also stops a nasty tingling sensation should you come in contact with the coil. In our case the battery was replaced with a variable DC power supply.

The cover of the relay should be removed (and discarded) to gain access to the metal flap that is hinged above the pole piece. i.e. the flap that moves when the relay is operated. On to the flap a suitable holder for the Linderman capillary tube was attached. I used part of a "bail" (or spring latch) clip locking kit as commonly used with Centronics printer connectors, Farnell order code 140-891 or RS 462-420 (i.e. the spring clips that are used to "lock" a PC printer cable on to the printer). I used the part with the spring and discarded the spring. This plate was solder to the flap on the relay. In to the holes where the spring sat, a piece of PVC insulation (stripped off a piece of wire) was inserted. Some experimentation is required with the PVC to find a piece so the the thin part of the capillery tube will fit snuggly into the PVC. A suitable mount for the relay needs to be constructed to hold the relay. I mounted the relay so that its largest flat surface was horizontal (and the flap of the relay in a vertical plane, and vibrating about a vertial axis). The plate from the "lock" clip was soldered in so that the tube will be mounted in a vertical axis. The mount for the relay needs to the high enough so the the end of the tube clears the bench top (or what ever it will sit on).

Chris Phyland
CSIRO Division of Mineral Products
Port Melbourne, Australia
chris@dmp.csiro.au

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