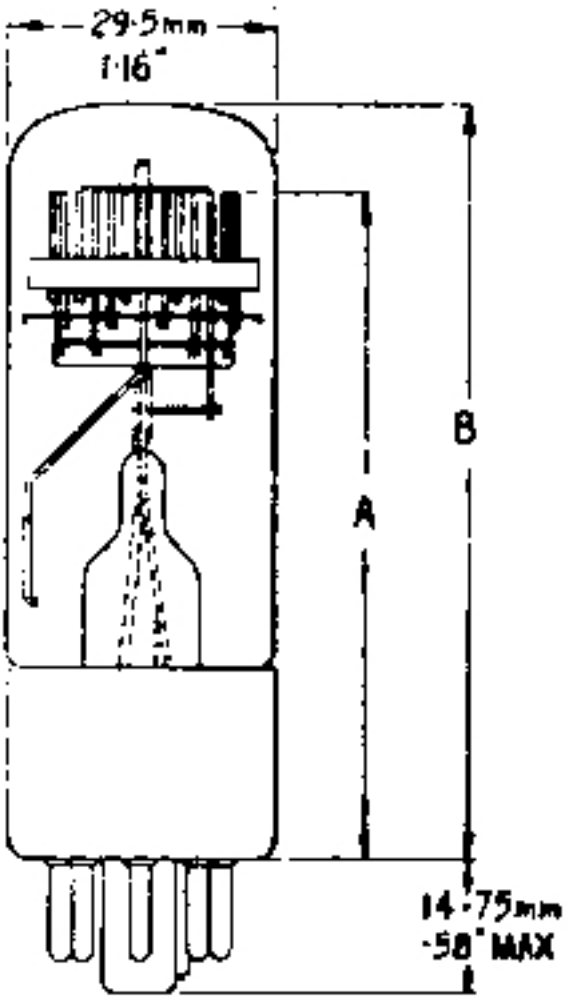


Dekatrons were used during the valve era for dividing by 10. The GC10B dekatron I have is capable of running at up to 4KHz. They work using a neon discharge between a pair of 30 electrodes. Every third electrode is connected such that using these three control signals it is somehow possible to move the glow around the circle. Other people have explained it far better than I ever could (or could be bothered to). Here's some references for further info:

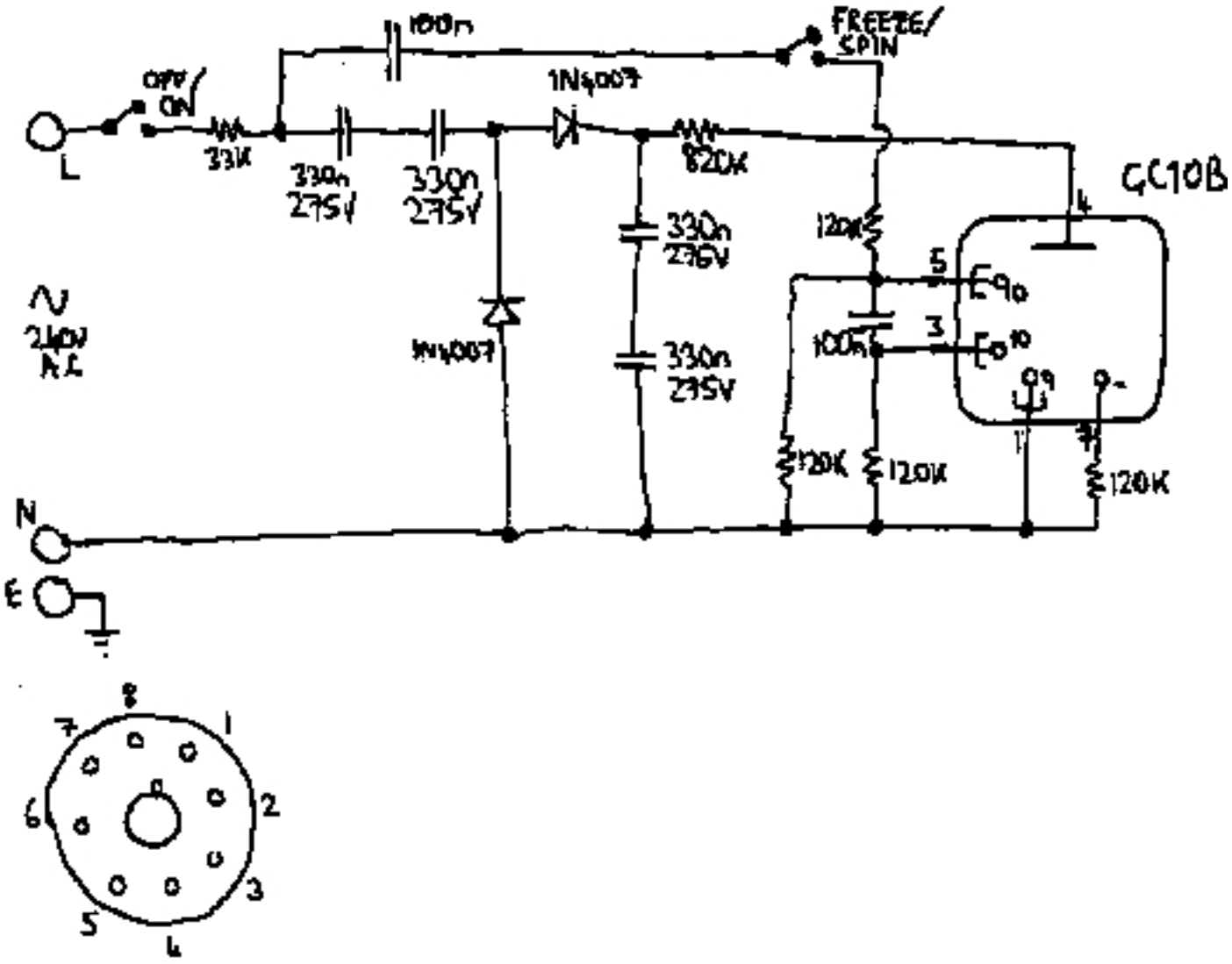
Datasheet (Frank Fhilipse home page)
Virtual valve museum
Mike's Electric stuff: this animation belongs to Mike and it is his spinner design that I built.

A very simple circuit can be used to connect the Dekatron directly to the 240V UK mains supply and cause the neon glow to spin around the circle of electrodes. I got this design from Mike's Electric stuff
website. Because it is connected directly to the mains, safety is paramount, which is why I warn

you:

LETHAL VOLTAGES ARE PRESENT - GREAT CARE REQUIRED!!

The circuit diagram is almost the same as Mike's . I added an ON/OFF switch and an additional toggle switch to stop the spin. The resistors are standard types (according to Mike I should've used higher power ones to ensure adequate voltage rating); the capacitors need to have sufficient voltage rating. I didn't have anything rated 400V so I used two 330nF capacitors in series in two places.



I built my spinner into a small aluminium box, which MUST BE EARTHED! The small transformer that is visible in the inside view (left) has no purpose except to provide some weight in the box in order to counteract the weight of the dekatron and keep the box balanced. The front view (centre) shows the two switches - ON/OFF on the left and Spin/Freeze on the right - with antique octal valve socket. I also took a picture of the base (right) in order to show of my patent not pending cabinet feet. These are purchased in a small bag from the local hardware store - and known as screw covers! They are perfect as cabinet feet, just screw them to the base using self-tapping screws, then snap the screw cover lid shut. I have left the lid of the

lower left "foot" in the picture open, in order to demontrate the principle. I have used this type of foot now in several projects: they are much cheaper than official "feet", and much more reliable than the cheap "stick-on feet" which invariably seem to unstick themselves almost immediately.

Dekatron photo gallery:

{gallery}dekatron/photos{/gallery}