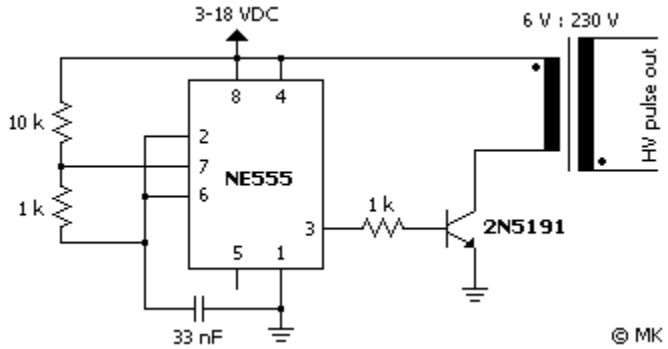
High Voltage pulse generator



Well... need I say more? The transformer is a simple 230 to 6 V line transformer thing, I used one rated for 1.5 VA and it was fine. Of course use it plugged in upside down. Since the transistor is triggered with many sharp pulses (BTW, if your transistor gets too hot, use something higher, maybe 5 k, for the 1 k resistor in the 555 timer circuit), it's not just 38 times more voltage - this is when you use it on an AC sine wave. I'm not sure how much this actually produces, but if you power it with a 12 V car battery, it's at least 2 kV (estimated on the spark length). Yes, that's right: hold the ends of two wires connected to the outputs close together (0.2" maybe), and you should see a small blue spark fly in between them. If you do that long enough and then sniff immediately where the spark was (of course without touching the output wires...!), you can smell a bit of ozone. It stinks like old laser printers or copiers.

Once more, don't touch the outputs, it can be quite painful. If you want to shock other people (or yourself), replace the 33 nF cap with 1 µF. Lower frequency, but still not very pleasant... :)

Oh yes, if you want to store the power that comes out in a self-made capacitor: you will need a really thick isolator. I tried a glass plate with aluminium foil for the electrodes, but the voltage was high enough to get through. See blue sparks go through a glass plate... :)

BTW, it's fun to connect a little flash tube as found in small cameras directly to the output. You will see dozens of very fine blueish lines dancing wildly in there... You can even connect a fluorescent lamp to the output, and when you figure out the best operation frequency it will run fairly bright. This is not very efficient, though, as the lamp would light even with a lower voltage.