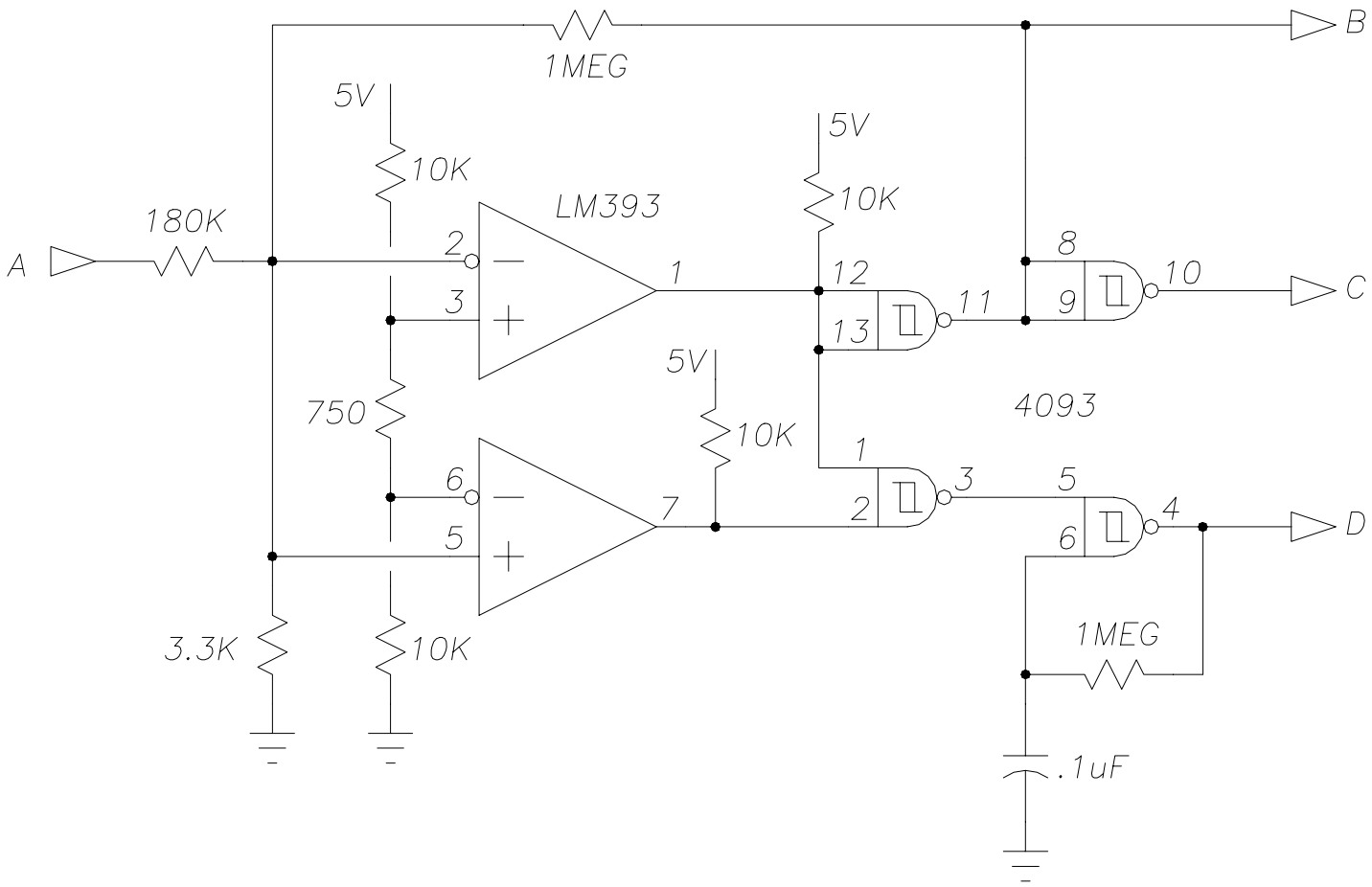


WINDOW COMPARATOR



This circuit senses a voltage on point "A". If it is above 145VDC or below 135VDC then step pulses are output on point "D". If the voltage on "A" is above 145VDC then point "B" is +5VDC, otherwise it is 0VDC. Point "C" does the opposite of "B". Either "B" or "C" may be used as direction outputs.

The 750 ohm resistor sets the dead-band (no step output). Making it 0 ohms will make the dead-band zero. The 10K resistor above the 750 ohm sets the center voltage to 145VDC. Making it larger drops the center voltage, making it bigger raises the center voltage.

The nand gate 4,5,6 forms an oscillator for generating step pulses. The frequency will be around 10Hz. To increase the frequency, decrease the 1 Meg resistor or the .1uF cap.

The 1 Meg resistor at the top adds .5 volt hysteresis to the circuit so it doesn't chatter. Remove it if you don't need it.

This circuit runs on +5VDC. Buffer the direction and step outputs for loads of more than 1 mA.