

539C CALIBRATION PROCEDURE

The calibration procedure is to apply a known AC current to the plate circuit to see whether the meter agrees. The first step is to find the normal grid-signal voltage. Set up your tester as if you were running a 6L6 (dial settings are H-S-5-3-4-8-1 for many Hickoks), but don't plug in a 6L6. Set the bias dial to zero, push the Gm test button, and measure the AC voltage between pins 5 (grid) and 8 (cathode) of the octal socket. Fro the 3,000 Gm range, it will be either 5 or 2 1/2 volts (for late models).

Now connect a 120-volt isolation transformer or a step-down transformer with a secondary rating of at least 50 volts RMS in series with a known resistor between pins 3 (plate) and 8 (cathode) of the octal socket, as shown in Figure 3. [Figure 3 shows a Variac feeding a 120 volt isolation transformer. The secondary of the isolation transformer has a 10K ohm 1/4 Watt resistor in series. The output voltage is noted as "50V, RMS". -steve] This transformer should be run from a Variac to give exactly 50 volts, and the resistor should be 10 K ohms, producing 5 mA, but other combinations will do; the factory test for one Hickok model called for 30 volts and 6 K ohms. This transformer/resistor circuit substitutes a current source for the tube under test.

Assuming you have exactly 5 mA, your Gm meter should be reading 1,000, for a grid signal of 5 volts (if your meter reads backward, reverse the transformer phasing). If it doesn't read 1,000, you're in trouble, but it probably will be pretty close. Don't forget to set the line voltage to the red mark, as this will affect the grid signal. Small adjustments in meter sensitivity can be made by shifting the position of the meter's curved steel plate, which functions as a magnetic shunt.