

HICKOK 539B & 539C
DIGITAL
TUBE TESTER OPERATION

1. The instruction manuals give adequate information, but not in a logical testing sequence.
2. **POWER ON** and give the internal tubes a few minutes to warm up, but it's not necessary with the Solid State option installed.
3. **POWER ADJUST** to indicate **100VAC** on the **AC Meter**.
4. **POWER ADJUST** will need to be adjusted for every test as tube loading may change it.
5. **CATH ACT** switch set to **NORMAL**.
6. **TUBE SETUP** using either the **Roll Chart** or **Chart from a Manual**.
7. **FILAMENT SWITCH** set to to the **VOLTAGE** shown on the Chart.
8. **SELECTOR SWITCHES** set from left to right as shown on the Chart.
9. **BIAS VOLTS** – **VR Switch** in the down position.
10. **BIAS ADJUST** for **BIAS METER** reading as shown on the Chart.
11. **FUNCTION** set as shown on the chart.
12. Install the tube in the appropriate socket

NOTE: The tube must be tested for shorts. It may be normal for a tube to short in some positions so check the **NOTATIONS** on the Chart.

13. **SHORTS TEST** Rotate the switch through the 5 numbered positions while observing the neon SHORT lamp. **A steady glow on the lamp indicates a short and unless listed as normal in the NOTATIONS it should be DISCARDED.** Return the switch to the Test Position
14. **PRESS** the button indicated on the chart to initiate the test. If **P4** is called for always press **P4 UNLOCK** first to make sure everything looks normal. You can then press **P4 LOCK** it to complete the tests. **NOTE:** The FUSE LAMP may glow when checking power tubes and this is normal unless it gets very bright.
15. **RESET** AC to 100 volts and Bias to the chart value before computing the Gm value. **A very common mistake is made here by not resetting these meters with the tube under testing conditions.**

16. **P4 MAIN METER** will be indicating a percentage times the range selected by the **FUNCTION SWITCH**. Example for a 6L6 the meter may indicate 40.1% x 15000 the function range. Gm in micromohs = .401 x 15000 giving a value of 6015 micromohs. Instructions are given on the Main Meter face.

17. **MIN MUT COND** is the value at which **Hickok recommends** discarding the tube also referred to as the **RP reject point**. Of course in some circuits it may work fine, so depending on the tubes value it may be worth keeping as long as it's working.

18. **LIFE TEST** switch the **CATH ACT** to the **TEST** position and that the **Gm** reading does not fall more than **20%**.

19. **GAS TEST** follow instructions on the main meter face, but turn up Bias first.

20. **P1, P2 OR P3 MAIN METER** will be indicating plate current and instructions are given on the Main Meter face. Refer to the manual for additional information. The **GAS TEST** and **LIFE TEST** are not used for diodes and rectifiers.

21. Refer to the manual for additional information regarding these tests.

22. **VR TEST** is seldom used, but instructions appear on the Main Meter face or refer to the manual for the testing procedures.