June 13, 1961

CALIBRATION DATA FOR MODEL 533 & 533A TUBE TESTER

This procedure assumes tester is in normal operating condition. In testing voltages, make sure that reading for type of meter used agrees with reading stated for that type of meter. Do not use a vacuum tube voltmeter to make measurements.

I. With the cathode and supressor switches in the same position (example 1-1-3-3) through the range of positions, and with the exception of position 2-2, the short test indicator lamp should show short when the short selector switch is placed on positions 2 and 3.

II. With the short test switch in tube test position, set selector switches to JR-53472, which is the setting for a 6L6 tube, FOR ALL THE FOLLOWING TESTS.

III. With meter on AC range and leads attached to pins 2 and 7 of octal socket turn filament switch through range and check filament voltages. With no load, voltages will be slightly above those indicated on tester.

IV. Push P-7 and adjust line voltage through use of line adjust knob so that meter needle is on line test position. With voltmeter on D.C. 250V range, place negative lead of meter in pin 8 of octal socket and positive lead in pin 3. Upon pushing P-4 meter should read

a. 150 ±2V on 1000 ohms/volt meter
b. 190 ±2V on 20,0000 ohms/volt meter

if it does not, adjust magnetic shunt on meter for small variations or vary R-24 resistor for larger differences so that D. C. meter reads correct voltage when tester meter is on line test mark.

V. Check bias and english dials for indexing at zero.

VI. With bias dial at zero place the leads of a 5,000 ohms/volt AC meter on pins 5 and 8 of the octal socket. The meter should read 2.8V, which is the signal voltage of a 533A tester. A 1000 ohms/voltmeter will read app. 2.5V. 533 signal voltage reads 5.4V on 20,000/volt & 5V on 1000 ohms/volt

VII. Set bias dial to 100 with meter on 50V, D.C. range. Place positive lead in pin 8 and negative lead in pin 5 of octal socket. Meter should read,

a. 43V ±2V on 20,000 ohm per volt meter
b. 40V ±2V on 1,000 ohm per volt meter

now set bias dial to 22. The meter should read on 5 or 10V range,

a. 3.3V ± .1V on 20,000 ohm per volt meter
b. 3V ± .1V on 1,000 ohm per volt meter

if not, bend pot arm to obtain desired voltage. The 40V reading can be adjusted

by moving sliding tap on left side of adjustable resistor mounted on panel near transformer. Use care in bending arm so wiper will not damage resistance strip.

VIII. With meter on 250V D. C. range, press P-4. Meter should read

135V ±2V on 20,000 ohms per volt meter
130V ±2V on 1,000 per volt tester
which is the high screen voltage.

Now, press P-1 and P-4 simultaneously on a 533A tester. Meter should read on 120V D. C. range

60V ±2V on 20,000 ohm/volt meter
56V ±2V on 1,000 ohms/volt meter

which is the low screen voltage. There is no low screen voltage in the 533 tester.

If correct high screen voltages are not obtained adjustment is made by removing turns from the resistor spool mounted on the side of the push button switch assembly. Of the two spools found there, the one marked with a higher resistance controls the screen voltage on the 533A tester. The low screen voltage (56V ±2V) can be adjusted by moving sliding tap on the right side of the adjustable resistor located on the panel near the transformer.

IX. To calibrate English potentiometer, set tester up for 6L6 tube, and plug calibrated tube in. Lock English dial in place with a piece of cardboard inserted under the dial. When tube is warm, make line test. Now: press P-4 and turn bottom half of pot until meter registers correctly the English value of the tube, then solder the pots together.

X. In calibrating micromho ranges 3000, 6000, and 15,000, set switch on 6000 position and pressP-4. Meter reading should be equal to the mutual conductance rating of the tube. Now adjust bias dial so that meter reads 3000 mhos. Switch to 3000 and 15,000 mho Range. Meter should read 3000 on each range. If not, the resistance spool for each range must be adjusted so that range reads correctly. These spools are located on the bottom of the bottom of the selector switch.

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