

Service Bulletin No. 9

Service Data Measurements for Sparks Ensemble

In order that the results and indications from the following tests may be relied upon, it is important that the meters used be fairly accurate.

First, check the fuses in fuse block under cabinet.

TESTS ON TERMINAL BLOCK A.

Numbers from back of cabinet to front.

Between terminals 8 and 9 there should be line voltage. If this is not present, fuses or fuse block is at fault. However, a constant indication of the fuses is the light in the phonograph compartment. This is on whenever the door is open. The voltage adjuster should be placed on correct tap, depending on line voltage.

Between terminals 4 and 5 is the motor voltage and should be 115 volts. A variation of this value may be found depending upon the line voltage. It may be 110 or 120.

Terminals 1 and 2 are the connectors from the pickup.

TESTS ON TERMINAL BLOCK B1 AND B2.

Tests made with a 0-300 voltmeter D. C. (volume on full).

R. F. plate voltage.

This voltage is measured between strips B2 (2 and 5) and should be 130 volts.

Limits here are 90 to 140. A variation from this indicates a defective 7,000-ohm resistor in the power unit.

Detector plate.

Measured between B2 (1 and 5) should be 190 volts. Limits 150 to 250. More or less than this indicates a defective 20,000 ohm resistor.

Field excitation for speaker.

This voltage should be 190 to 230 volts and is between terminals B2 (8 and 9). A deviation from this shows R-7,000 or speaker coil at fault.

Filament voltage. 0-4 A. C. voltmeter.

Between terminals B2 (3 and 4) normal voltage is 2.97. However, the voltage here may be as low as will give satisfactory volume. The maximum allowable on this voltage is 3.1, a value which should never be exceeded. If the voltage is higher than normal, place voltage adjuster on next tap.

TESTS ON TERMINAL BLOCK C.

This is the left hand terminal block on the extra audio unit and the strips number from front to back. Test of record volume control rheostat may be made by turning volume to "OFF" and

removing wire from C-6. Volume should immediately go to "FULL".

TESTS ON TERMINAL BLOCK D.

Tests with 0-300 DC voltmeter.

Test No. 1. Detector plate voltage.

Detector plate voltage is measured between terminals D (1 and 2). Normal voltage is 188. The limits of variation are 150 to 250 and more or less than this indicates a defective plate circuit or possibly resistance R-20,000 and R-50,000 are open or R-10,000 in extra audio stage is out of order.

Test No. 2. R. F. plate voltage.

R. F. amplifier plate voltage.

Measured between terminals D (5 and 6) the plate voltage on the R. F. tubes should be 112 volts. The limits for this voltage are 90 to 135 and more or less than these values indicates trouble in the plate circuit, which may be caused by a defective resistance in power converter, namely resistance R-7,000.

Test No. 3. Detector Bias Voltage.

Measured between terminals D2 and D9 normal bias is —17 volts. Allowable limits are —14 and —20 volts. Above or below this value indicates a defective R-10,000 in extra audio unit.

Test No. 4. R. F. Bias.

Measured between D5 and D9 R. F. tube bias normally should be —4 volts. The limits in this case are —5 to —3. More or less than this results in a loss of volume and indicates a defective resistance R-110 or an abnormal plate current in the R. F. tubes. With the volume control turned to "OFF" a wide variation of voltages is obtained but is of no consequence.

Test Kit Measurements.

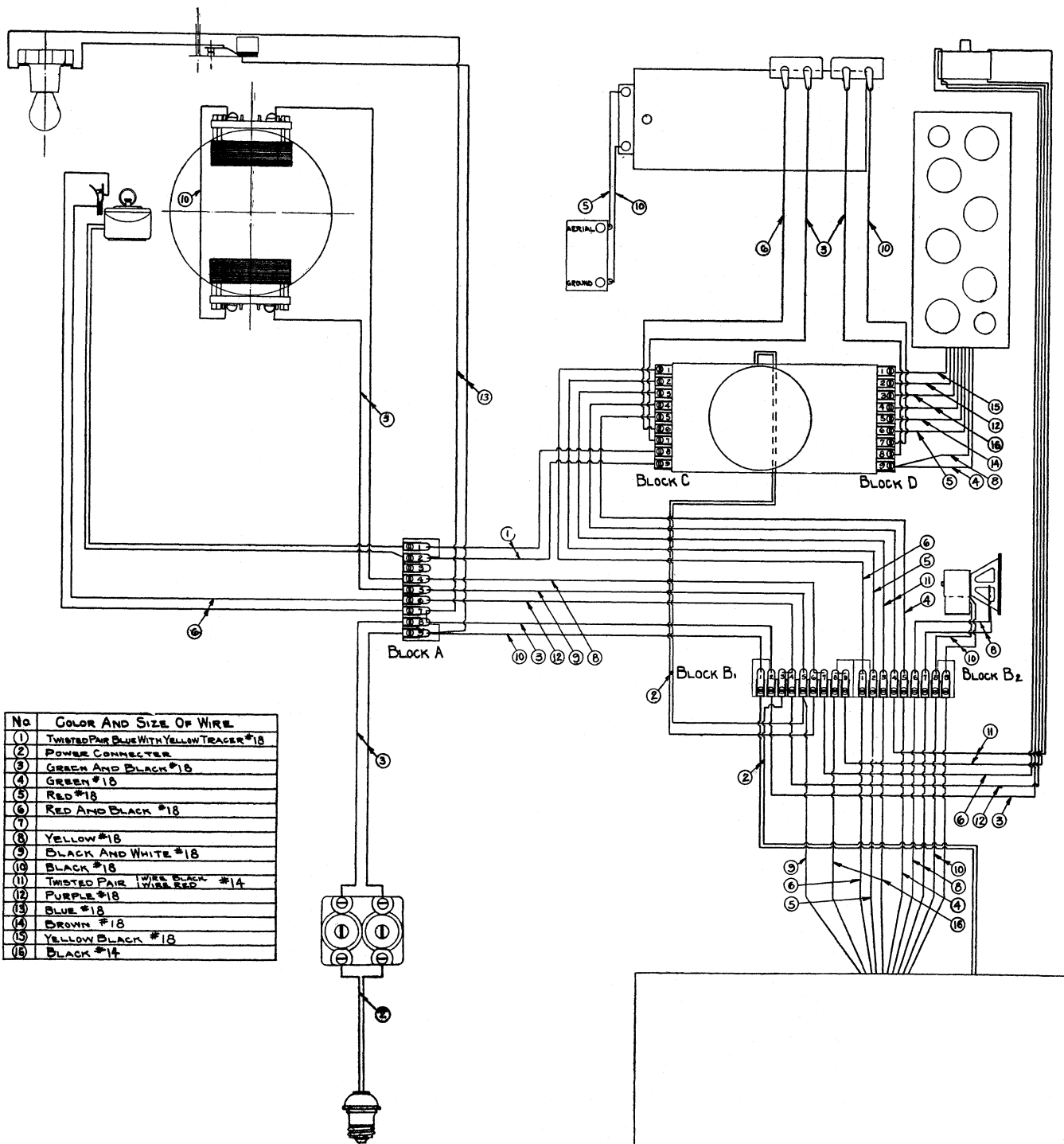
Remove one of the 585 tubes and place in test kit socket. Place test kit plug in tube socket.

A. Measure filament voltage by pressing 8.0 volt button. Normal is 7.2. Limits 6.7 to 7.5.

B. Measure grid bias by pressing "C" voltage button. Normal is —57.5. Limits —46 to —70 volts.

C. Readings greater or less than these show biasing resistance R-900 in power converter defective or there is an abnormal plate current.

C. Plate voltage is measured by pressing "B" 600 button. Normal is 300 volts. Limits 270 to 350 volts.



WIRING DIAGRAM - SPARKS ENSEMBLE

THE PHONOCRAFT CORPORATION

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