



**Voltage Table, as measured and per specification, by socket pin.**

**Note 1: The specification voltages are from a BC-221-AJ model and this unit is an N model. The specified voltages are assumed to be the same for both (true ?).**

**Note 2: Voltage & ohm measurements made with a cheap Chinese VOM which seems rather accurate.**

**Note 3: Voltage & ohm measurements made with crystal oscillator running.**

**Note 4: Power supply lacks a voltage regulator which will be added later (see Audio Amp notes, below).**

**6K8 Crystal Oscillator/Mixer (the Bendix crystal now starts reliably):**

Pin Measured Voltage Specified Voltage
1 0 (grounded) 0
2 0 (filament-grounded) 0
3 126 (heptode plate) 125
4 **125 (grids 2 & 4) with Cardwell xtal**  100
5 0v, 1.1megohms to ground 0v, 1 megohms to ground
6 125 (triode plate, xtal osc) 125
7 6.3 vac (filament) 6.3 vac
8 1 (crystal on) 1

**6K8 Notes:**
1) Pin 4 voltage, (grids 2 & 4) is high when the Cardwell xtal is running and low when the Bendix xtal is installed. Resistor R16 (10K), has full supply voltage (125v) to it and supplies the voltage to the two grids. It was replaced as was the grid-to-cathode capacitor C13 (0.001 mfd). This made the Bendix xtal start reliably and re-soldering the Cardwell’s pins made it start reliably.2) Crystal trimmer cap C37 (8 mmf) will not pull the crystal oscillator down to exactly 1000kc (only to 1000.6) and does not seem to have much effect on frequency. I wonder about C5 (8.5 mmf) which parallels the crystal.

**6SJ7 VFO Oscillator:**

Pin Measured Voltage Specified Voltage
1 0 0
2 0 0
3 0 0
4 135K ohms 135K ohms
5 8 not specified,
6 120 135
7 6.3vac 6.3vac
8 71 110

**6SJ7 VFO Oscillator Notes:**

1) VFO operates very well and is on frequency, requiring less than ½ of one correction unit at any frequency.
2) The low band VFO components have acquired more capacitance than originally installed, due to moisture, age, warping, etc., so alignment was not possible. Therefore, fixed capacitor C4-a (10 mmf) was removed from the low band section, which then allowed excellent alignment to take place. The high band components aligned well as they were.

**6SJ7 Audio Amplifier**

Pin Measured Voltage Specified Voltage
1 0 0
2 0 0
3 Grid 3, 80 to 59\* 130
4 135K ohms 135K ohms
5 2 4
6 Grid 2, 80 to 59\* 130
7 6.3vac 6.3vac
8 Plate, 80 to 59\* 130

**6SJ7 Audio Amp notes:**
1. Amp seems to work OK. Volume is good in 8 ohm phones, even though the voltages are low.
2. \* voltage varies as R26 (0.5 megohms), audio gain control, is varied.
3. As the gain control is rotated, the vfo frequency changes a tiny bit due to lack
of voltage regulation. ReplacingR17 (15000 ohms) which feeds voltage to the plate & grids 3 & 4, with a lower value made no difference in volume, so it was left alone. It measures 16,400 ohms in-circuit.