TROUBLESHOOTING THE VOLTAGE REGULATOR MODEL 353X734BDG01

The following troubleshooting instructions have been provided to aid the User in the event of a malfunction of the device or the system.

COMPLETE REGULATOR BENCH TEST

1. Connect a 1000-ohm – 2-watt resistor between F+ and F– on the terminal board.

2. Remove plastic bottom from regulator and temporarily insert a 3300-ohm – 1/2-watt resistor from TP1 to A–. Rotate P2 and P3 fully COUNTER CLOCKWISE.

3. Connect a scope across the 1000-ohm resistor added in #1 above.

4. Apply 35-40 volts dc between + and A–. A square or rectangular wave 33 Volts – 80 to 120 Hertz is normal. Power supply can be batteries with 100 ma capacity.

5. Measure volts between A– and the emitter and the base of T–1. (T–1 is the red transistor near the fuse.) These voltages should both be between 14 and 17 volts.

6. Remove the temporary 3300-ohm resistor. Place a voltmeter (50 volts) across the 1000-ohm resistor. Rotate P2 fully CLOCKWISE and then rotate P3 CLOCKWISE. The voltmeter voltage should drop to near zero when P3 is almost fully CLOCKWISE (RIGHT).

7. Remove the 1000-ohm resistor and megger 500 volts between the base of the regulator and A+. The Resistance should be at least 1 megohm.

INTERPRETATION OF REGULATOR BENCH TESTS

If the regulator passed all of the above tests, the regulator is OK.

If the regulator failed Test #7, the insulation between the diode heat sink or T–8 and the base is bad.

If the regulator failed Test #6 but passed tests #4 and #5, the feedback zener, 16-volt zener diode ZD#1 Figure 3, is bad.

If the regulator failed Test #5, the transistor T–1 and mostly likely ZD2, Figure 3 is bad.

If the regulator failed Test #4 but passed Test #5, T–8 may be bad. Temporarily replace T–8 and repeat Test #4. If it fails again, the circuit board is bad. Replace it or follow Circuit Board Test Procedure.