



FILE
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Television Service Data

GENERAL INFORMATION

CONTAINS ADDITIONAL SERVICE DATA
INFORMATION.

This publication contains General Information. File
at the front of the appropriate Service Data binder.

RCA Corporation
Consumer Electronics
Technical Publications

600 N Sherman Dr | Indianapolis, Indiana 46201

Date: August 21, 1981

Subject: IHVT Quick-Check — CTC 111

Related Publications

RCA Service Data

- "F" Line CTC 111 - File 1981 C-3
- Goldenrod 1978 C-7 Service Information No. 6 — Servicing "Shutdown/No Start Symptoms"

RCA Technical Training

- May 1981 Television Product Technical Manual
- Television Workshop 20
- Television Workshop 22

For replacement parts, consult the appropriate Service Data (including Addendums and Supplements) covering the specific model/chassis being serviced.

If, after performing first level servicing techniques a defective Integrated High Voltage Transformer (IHVT) is suspected, the Quick-Check procedure in this Goldenrod will aid in quickly determining the condition of the entire output circuitry. This Quick-Check procedure allows dynamic troubleshooting of the output circuitry while reducing the possibility of overstressing the horizontal output transistor and other components.

The IHVT should not be suspected when instrument operation is normal except "15,750 Hz" singing noise is louder than nominal. To correct "IHVT singing," locate IHVT-to-chassis bracket twist tab. With chassis operating slightly tighten the twist tab — until singing is reduced.

IHVT Quick-Check Procedure

Use isolation transformer, disconnect line cord during all static checks, and use insulated tools or clipleads for dynamic checks. Observe all Safety and Servicing Precautions outlined in Service Data.

To check the horizontal output stage for overvoltage and/or overcurrent:

- a. Defeat the regulator circuit by shorting across C113 (TP 101 to TP 102). Disable SCR 100 by removing it, or connect a jumper between gate and cathode.
- b. Apply reduced AC voltage through a variable transformer to supply a "regulated" B+ voltage (measured at TP 102) of approximately 60 volts.

Remote Control Models: Remote control circuits may not function at reduced AC input. To operate the chassis during this procedure: Unplug P1MCR — remote amplifier to main chassis interconnect, then connect a jumper between pins 1 and 2 of J1MCR (on the main chassis).

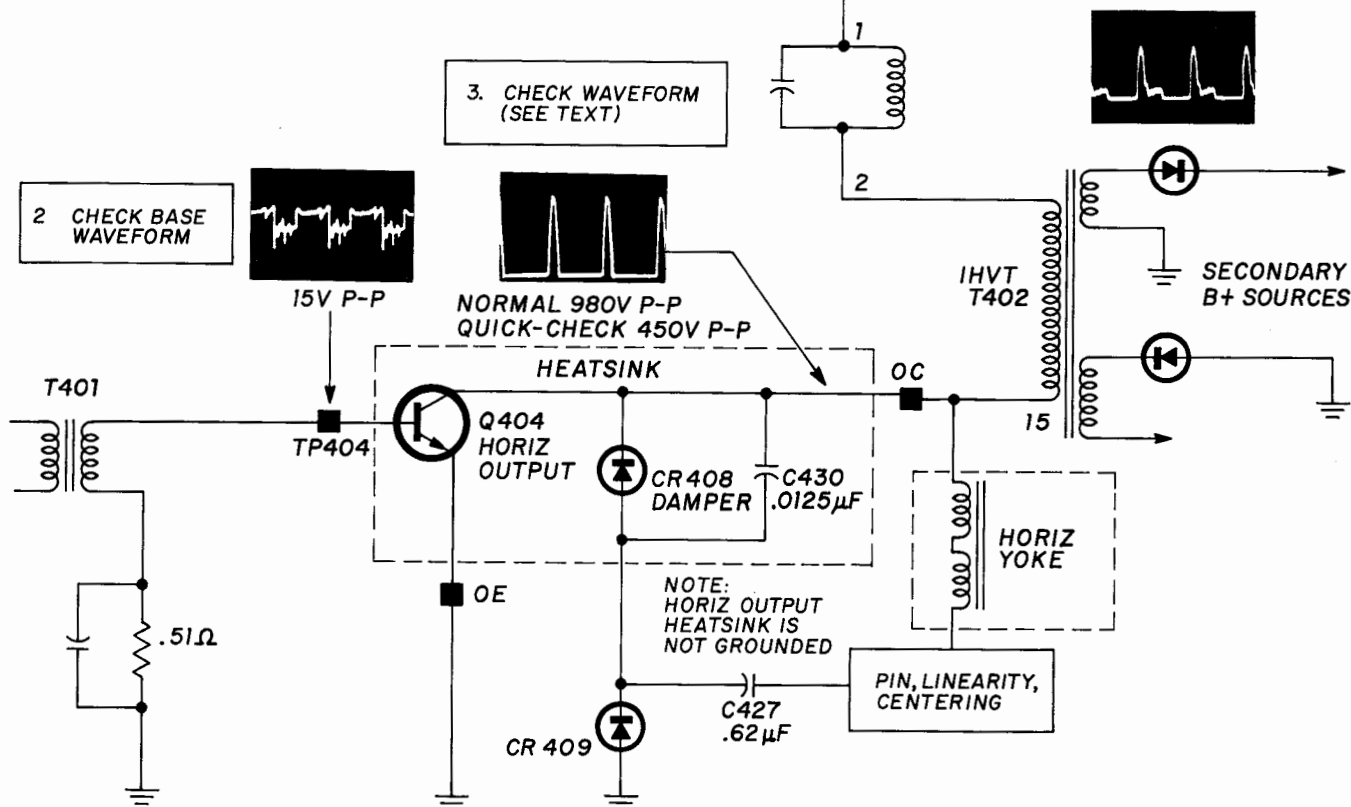
(OVER)

1. DEFEAT REG CIRCUIT
 - a. SHORT C113 (TP101-TP102)
 - b. VARIAC \approx 60V DC AT CATHODE SCR 100

REG B+
(CATHODE
SCR 100 - TP102)
NORMAL +130V DC
QUICK-CHECK +60V DC

3. CHECK WAVEFORM
(SEE TEXT)

2 CHECK BASE
WAVEFORM



2. Check the horizontal output transistor base waveform to confirm horizontal oscillator operation.
3. Check the horizontal output transistor collector waveform at testpoint OC. Peak-to-peak amplitude should track regulated B+. The 60VDC "regulated" B+ is about 46% of normal 130V, hence amplitude will be approximately 450V p-p.

This waveform can be very helpful in diagnosing overvoltage and overcurrent problems.

Overvoltage: Carefully inspect the trace portion of the output transistor collector (case) waveform while slowly increasing the regulated DC voltage (using variable AC input transformer). This waveform must be "clean." Any ringing indicates possible shorted IHVT turns (**T402**). Defective HV diodes (**part of IHVT**) can cause noise spikes. Distortion in the retrace spike denotes mistuning (probably a **cracked IHVT core**).

The derived B+ supplies should track regulated B+, i.e., if regulated B+ input is 46% of normal (59.8V), derived B+ sources should be 46% of normal — 210V source should measure near 97VDC; 24V source should measure about 11VDC, etc.

If the horizontal output waveform remains "clean" and measures approximately 980V p-p at normal regulated B+ (130V), and if derived B+ sources track regulated B+, output stages (**including the IHVT**) are probably okay.

Overcurrent: The waveform shown above the IHVT indicates the appearance of the horizontal output transistor collector waveform if a fault condition exists which may be overstressing the horizontal output transistor or other components. Suspect shorted secondary B+ diodes (**CR 106, CR 107, CR 109, CR 110, CR 112**) or a defective **IHVT**. Do not overlook yoke, pincushion, centering circuits.

Use replacement stock number 148909 for the CTC 111 IHVT (T402). The anode connector and lead assembly is included.