

# Troubleshooting Section

## Dead Set Troubleshooting

**Symptom:** Nothing happens when power is pushed, set is dead.

**NOTE 1:** DP027 will short during over voltage, shutting down the power supply. IF DP027 is shorted, check FZP61. If FZP61 is open, check the +13V for excessive load. A loss of feedback will cause over voltage condition.

**NOTE 2: Disconnect Alert Guard CBA. A problem with alert guard can cause the set to appear dead!**

1. Check RAW B+, if not OK check the full wave bridge rectifier DP002/003/004/005 and it's associated components.
2. If RAW B+ OK, check the current sensing resistor RP020. If open, this indicates there has been a severe over current condition in the power supply and all active components on the primary side of LL003 should be checked and replaced (**See note 3 in step 6**).
3. Check DC voltage and waveform on the gate of TP020. This will indicate if the oscillator is running and the power supply is working.
4. If there is no waveform on the gate of TP020, unsolder the drain of TP020 and check for 7.9Vdc on the gate. 7.9Vdc on the gate of TP020 indicates start-up circuit is working go to step 6. If waveform present on the gate of TP020, the power supply is working, troubleshoot system control.
5. If DC on gate of TP020 is not 7.9Vdc, check TP025, DP027, DP023, RP006, and RP007 (start up circuit) and replace if suspect.
6. If no waveform on gate of TP20 (DC OK), check TP22, TP23 and their associated components. Replace all transistors if one has failed or is suspect.

**NOTE 3: If TP020 has failed more than likely the other transistors have been stressed and the circuit will self-destruct again when plugged into 120 AC unless all active components are replaced.**

7. If TP020 checks OK (with primary circuit pulsing), check IP01 (Ref Reg) and IP50 (Opto Coupler) and their associated components.



## Shutdown Troubleshooting

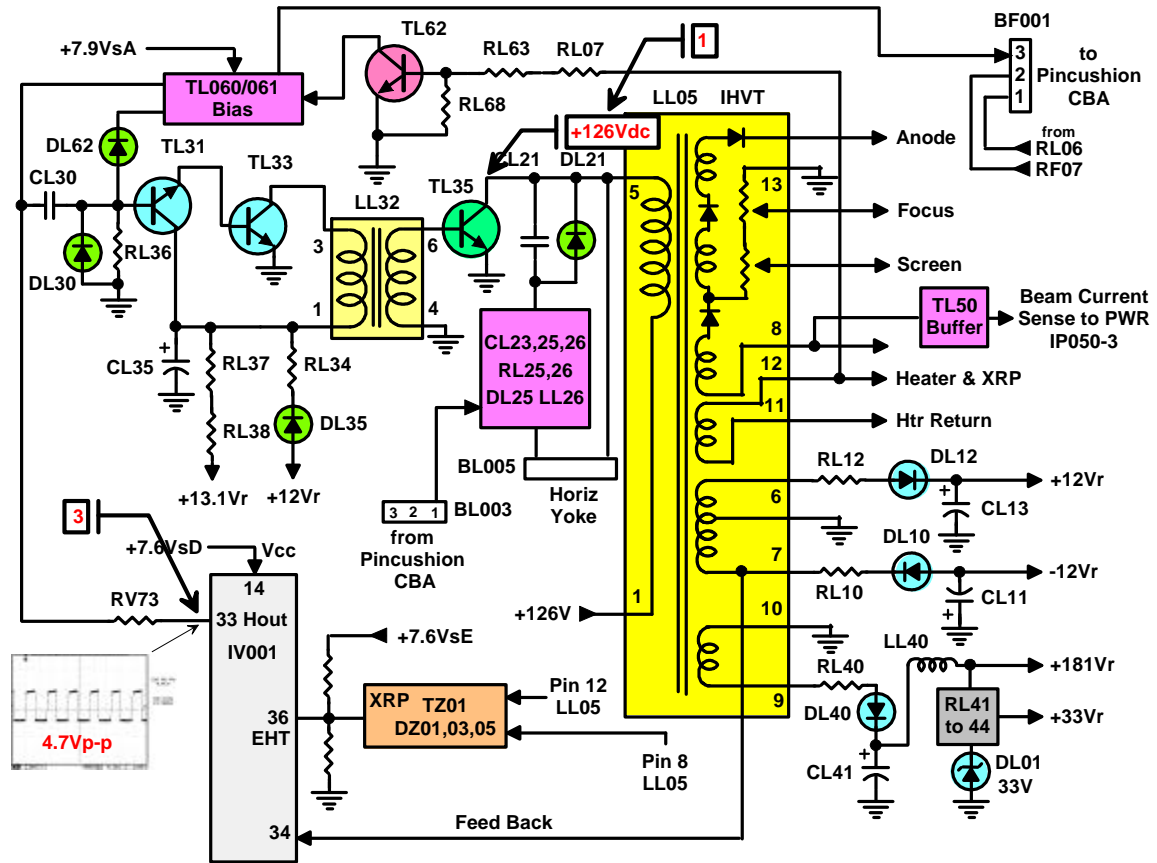
**Symptom:** Set is pulsing when power is pushed wont start.

**NOTE:** Using Chipper Check, check for error codes. This will indicate which device maybe causing the shutdown.

Remember to **ALWAYS** reset the error codes and allow the set to cycle again to obtain a current error code reading.

**Disconnect Alert Guard CBA. A problem with alert guard can cause the set to appear dead!**

1. With the set plugged into AC power check for +126Vdc on TL035-C horizontal output transistor. If missing see dead set troubleshooting, if present, power supply is working.
  2. Push the power switch, if set pulses then system control is working.
  3. With set pulsing, check for horizontal drive at pin 33 of IV001. If not present suspect IV001 and it's associated circuits.
  4. Waveform present at pin 33 of IV001 indicates IV001 and system control are working and problem is in the horizontal circuit. Troubleshoot horizontal circuit.
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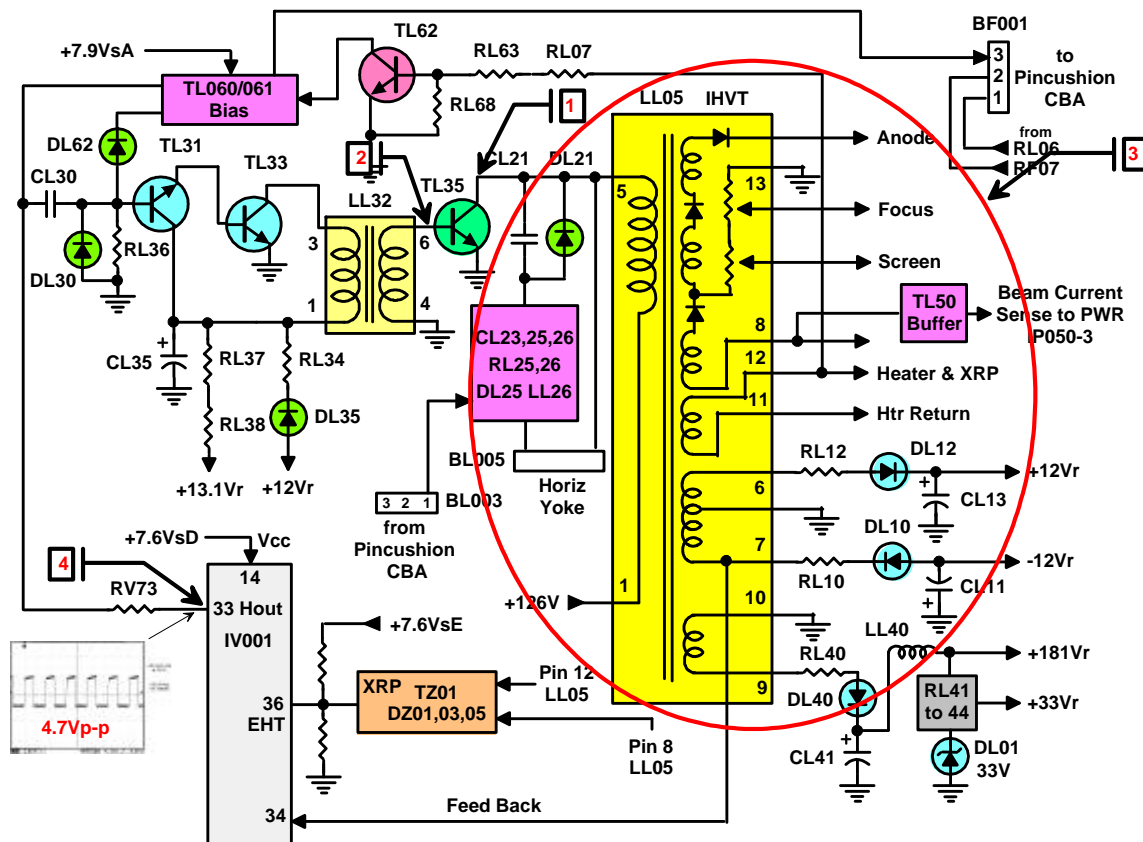


**Horizontal Block**

## Horizontal Troubleshooting

**Symptom:** No high voltage horizontal wont start

1. Unsolder collector of TL35 (HOT).
2. Monitor the base of TL35 and push the power switch. The set will cycle until power is pushed again and a horizontal pulse will be present at the base of TL35 while it is cycling.
3. If pulse is present on the base of TL35, IV001 and the driver circuit is working. The problem is off the collector of TL35. Suspect Yoke, Yoke return circuit, pincushion, LL05 and the secondary side of LL05.
4. If pulse is missing or set won't cycle suspect IV001, TL31, TL33, LL32 and their associated circuits.



**Horizontal Block**

# System Control Troubleshooting

*Before replacing IV001 these series of checks need to be performed.*

1. Check DC voltage on pins 2, 3 (4.5Vdc), 54, 56, 58, 59, 61(3.3Vdc) and 61 (0Vdc). These pins are used for system control function. If missing troubleshoot the appropriate circuit area.
2. Check pins 6, 7, and 64 for 3.3Vdc. These pins are user interface inputs. If missing or low troubleshoot the appropriate circuit area.
3. Check pins 12, 18, 30, 41, and 57 for ground. Improper ground to IV001 can cause erratic operation.

