MODEL 260
SOLID STATE STEREO AMPLIFIER

Tape Output
Rated Voltage Output to Tape Recorder
Minimum Recommended Load Resistance

Pre-Amplifier
Input:
Tape Head - Input Impedance
Signal for Rated Output
S/N Ratio
Phono - Input Impedance (All Switch Positions)
Signal for Rated Output (Adjustable by Switch)
S/N Ratio
High Level Inputs - Input Impedance
Signal for Rated Output
S/N Ratio
Frequency Response in Flat Position
Treble Controls Measured at 10,000 cps, Boost and Cut
Bass Controls Measured at 30 cps, Boost and Cut
Scratch Filter
Rumble Filter
Loudness Compensation (maximum)
Loudness Compensation

Amplifiers
*Music Power (IHF)
*Steady State (rms)
Total Harmonic Distortion
Frequency Response
Power band width at rated distortion (IHF Method)
Damping Factor
Range of Line Voltage and Frequency
Power Consumption - 117 v at 60 cps (stand-by)

0.5v
200K ohms
47K ohms
2 mV
52 db
47K ohms
3, 5, 9 mV
55 db
50K ohms
.5 V
75 db
20-20 KC ± 1.0 db
10 db ± 2 db
12 db ± 2 db
-4 db/octave: -3 db @ 5K cps
-10 db @ 50 cps ± 2 db
+9 db @ 50 cps
+2.5 db @ 10K cps
40 w each channel
30 w each channel
0.8%
20-20,000 cps ± 1 db
20-20,000 cps
20
105-120 v, 50-60 cps
25 w

*Specification for 8 ohm load.

TEST PROCEDURE
Measure resistance to chassis in the following locations: Collector of both top and bottom output transistors.

Collector (Top) - Approximately 3000 ohms
Collector (Bottom) - Approximately 1500 ohms
Across Speaker Taps - Approximately 500 ohms
Measure resistance across each SR 1-5 diode on RXI scale - 4.5 to 8 ohms

1. Balance Adjustment
With no signal input and 8 ohm loads connected, measure voltage on case of output transistors Q10-Q110. Should measure between 68-72 volts. Set voltage at collector of bottom output

D-260-2
transistors, Q11 left channel and Q111 right channel, for one-half supply voltage, approximately 35 volts, using A3-R6 (left channel) and A103-R6 (right channel) balance pots.

2. **Bias Adjustment**

   Using Triplett VOM, measure across R-15 and R-115 .82 ohm emitter resistors of Q11-Q111 with VOM set to 12 ma scale. Set .8 ma by adjusting A3-R11 (left channel) and A103-R11 (right channel) bias pots, on F.C. boards. Recheck Step No. 1 of Test Procedure (balance adjustment).

**TRANSISTOR PRECAUTIONS**

**Electrical and Mechanical Precautions**

1. Check heat sinks for burrs, chips, etc., under the mounting surface of the transistor.

2. All cracked printed circuit boards should be replaced.

3. Only 60 watt or smaller soldering irons are to be used because larger ones emit too much heat and will cause the circuit boards to de-laminate or possibly crack. Use as little heat as possible to obtain good solder connection.

4. Boards should be handled only by the edges. Do not put fingers across the boards.

5. Be exceptionally careful to install the correct transistor in the correct socket; and correctly installed into the socket.

**Test Precautions**

1. Mica insulators and silicon grease shall be used when installing power transistors. Make a good solid contact with insulator, but be careful not to puncture it because it is just a little thicker than a human hair. Be very observant of metal filings, chips and solder because they are attracted to the silicon grease.

2. The cases of some of the transistors we are using are "hot" (have voltage on them) so be very careful not to short them.

3. Be sure the right transistor is in the right socket.

4. Do not short the output or the fuses will blow.

5. All clip leads, scope probes, and meter leads should be insulated so that only the tip of the lead will be bare. This is to prevent accidental shorting.

6. Never check any voltage by sparking against chassis.

7. When checking transistors for shorts, use only X1,000 scale on meter because X1 and X10 may provide too much current for the transistor to take. Only power transistors can be tested on X100,000 or X1 range. There is 350 ma on the XL range and 30v on the X100,000 range (Triplett 630 VOM).

8. All test gear will be grounded to the unit and also will be isolated from each other (load box, etc.)

9. Always turn all power off when changing transistors and wait 30 sec. for capacitors to discharge.

10. Check all transistors in unit for heat dissipation. If it is uncomfortable to the touch then it is no good. Shut power off immediately.

11. Hum can be induced by having hands on or near the chassis.
Some Transistor Characteristics

1. QA-10 Collector tied to case.
   Q2M2926
   QA-9 Nothing tied to case.
   Q2M508A
   Q2M2613

   QP-8 Collector tied to case.
   QP-8-1

2. A tube can withstand prolonged overload whereas a transistor cannot, so when testing, start with a low input signal and increase slowly until desired output is reached. After measurements have been made, reduce input signal.

3. NPN pos. voltage on collector with respect to the emitter. PNP neg. voltage on collector with respect to the emitter for proper operation.

4. Arrow on the emitter indicates the direction of current flow.

5. PNP

6. Output transistors should be matched by color code located on case of transistor. Matched pairs should be used in each channel.

Installation Precautions

The transistor sockets are of a type which will allow the use of several different styles of pin breakout. It is, therefore, most important that both the transistor and the socket breakout be known so that no installation problems arise.

To aid in properly orienting the transistors in their sockets, the chassis and/or applicable layout diagrams will have the letter "C" beside the COLLECTOR pin contact.

The XQ-4R socket is designed to accept QA transistors using the three outside pin connections. The pin connection inboard of the Emitter pin connection is externally connected to the base pin connection so that transistors having an "inline" pin breakout may be substituted. When installing non "inline" QA type transistors, be sure that the inboard connection is not used.

The XQ-3 and XQ-3-1 sockets are designed to accept QP type transistors. These sockets are polarized so that the transistor may be screwed into place only if properly installed.
Z-PC-D4 Parts List

- C1: CETM-50/25, CET-25/25
- C3, C5, C4: CC-33 NPO, CETM-250/3
- R1: RC21-2.7K
- R7, R2: RC21-15K
- R3: RC21-18K
- R4, R16: RC21-3.3K
- R5: RC21-27K
- R6: RCV-10K-PC
- R13, R8: RC21-270
- R9: RC21-220
- R10, R15: RC21-47
- R11: RCV-1K-PC
- R12: RC21-4.7K
- R14: RC21-1.5K
- R17: RC21-1K
- R19, R18: RC21-390
- D1: SR1-5

NOTE
1. All measurements made with Triplet Model 630 V.O.M. on RX1000 scale.
2. Negative side of V.O.M. battery to ground.

Preamp Ckt. Board

Input Selector - "Phono"
Phono Sensitivity - "C"

Tone Control Ckt. Board

- Loudness: Min.
- Input Selector: "Extra"
- Stereo: "Stereo"
- Balance: "0"
- Tone Controls: "0" Flat
- Rumble Filter: "Out"
- Scratch: "Out"
- Tape Monitor: "Out"

Driver Ckt. Board

- R6 Balance: Max CW
- R11 Bias: Max CCW
- Speaker Impedance: 8-16 ohms
## 260 Parts List

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<th>Number</th>
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<td>CEC 1000/75</td>
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