

273



SERVICE  
MANUAL **1180 DC**



**marantz**

model 1180DC

*Stereo Console Amplifier*

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## AMPLIFIER ADJUSTMENT

### Offset Adjustment

VTVM to JN01 and JN05 (or ground) and adjust meter R739 until the meter indication reaches 0 mV. Similarly, connect VTVM to JN04 and JN06 (or ground) and adjust right channel R740 until the meter indication reaches 0 mV ( $\pm 5$  mV).

## 2. TEST EQUIPMENT REQUIRED FOR SERVICING

Table 1 lists the test equipment required for servicing the Model 1180DC Stereo Console Amplifier. The wattmeter, AC voltmeter, and variable autotransformer may be assembled as a test fixture as shown schematically in Figure 1. The load resistors and AC ammeter may be assembled into a second test fixture as shown in Figure 2.

Table 1. Test Equipment Required for Servicing

| Item   | Manufacturer and Model No. (or equivalent)   | Use  |
|--|--|--|
| Distortion Analyzer and Audio Oscillator             | Sound Technology, Model 1700B (NOTE: Less than 0.002 percent residual distortion is required.) | Measures distortion, voltage of amplifier output and sine wave source                      |
| Oscilloscope   | Tektronix, Model 503 Data, Model 555   | Waveform analysis and troubleshooting.   |
| VTVM   | RCA Senior Volt-Ohmyst, Model WV-98C   | Voltage and resistance measurements.   |
| AC Wattmeter   | Simpson, Model 390   | Monitors primary power consumption of amplifier.   |
| AC Ammeter (0 to 10 amps)                            | Commercial Grade   | Monitors amplifier output under short circuit condition.                                   |
| Line Voltmeter (0 to 150V AC)                        | Commercial Grade   | Monitors potential of primary power to amplifier.  |
| Variable Autotransformer (0 to 140 V AC, 10 amps)    | Powerstat, Model 116B  | Adjusts level of primary power to amplifier.   |
| Shorting Plug  | Use phono plug with 600 ohms across center pin and shell.                                      | Shorts amplifier input to eliminate noise pickup.  |
| Power Supply Bleeder Resistor (10 ohms at 1 W)       | Commercial Grade   | Discharges power supply filter capacitors prior to disassembly or resistance measurements. |
| Output Load Resistor (8 $\Omega$ $\pm 0.5\%$ , 250W) | Commercial Grade   | Provides 8-ohm load for amplifier output termination.                                      |
| Output Load Resistor (4 $\Omega$ $\pm 0.5\%$ , 250W) | Commercial Grade   | Provides 4-ohm load for amplifier output termination.                                      |
| Output Load Capacitor (0.5 mfd)                      | Mylar  | Provides capacitive load for instability checks.   |
| AC Power Control Box                                 | Optional Item. Fabricate in accordance with Figure 1.  | Monitors and controls primary power for amplifier.   |
| Amplifier Output Load Box                            | Optional Item. Fabricate in accordance with Figure 2.  | Provides various amplifier loads and can monitor shorted output.                           |

Figure 1. AC Power Control Box Simplified Schematic

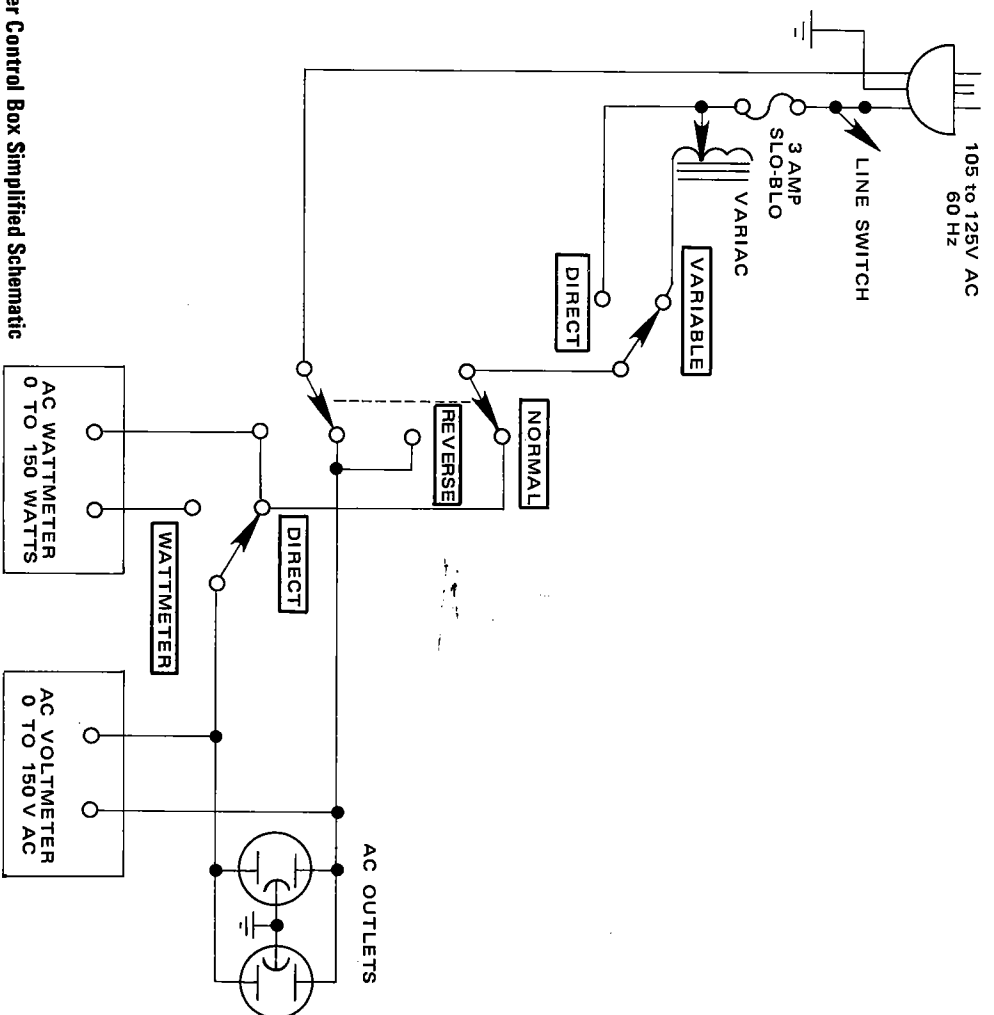
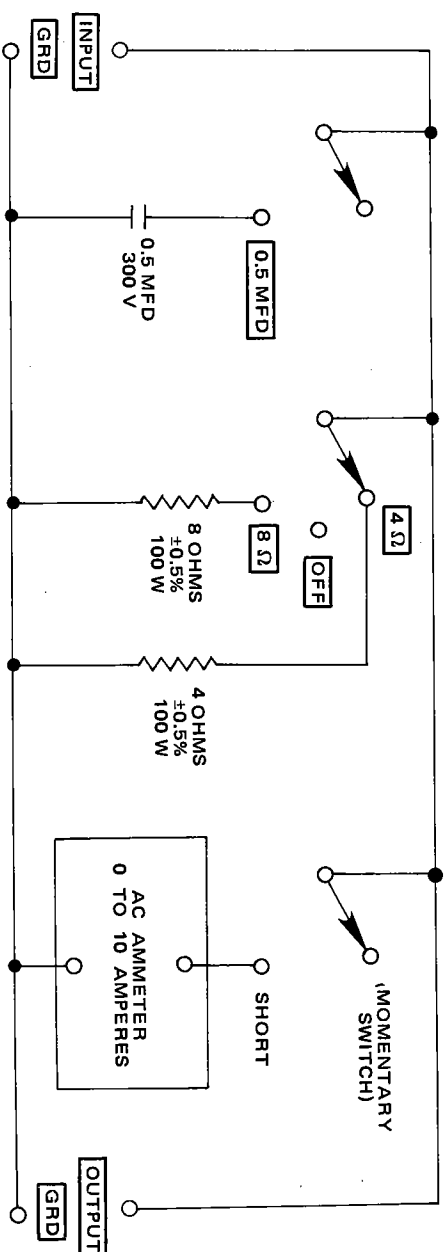


Figure 2. Amplifier Output Load Box Simplified Schematic



**3. VOLTAGE CONVERSION**

**● EUROPEAN MODEL ONLY**

This Model is equipped with a universal power transformer to permit operation at 110, 120, 220 and 240 V AC 50/60 Hz.  
To convert the unit to the required voltage, set the plug as illustrated so that you can adjust the voltage as required.

**CAUTION**  
DISCONNECT POWER SUPPLY CORD FROM AC OUT-LET BEFORE CONVERTING VOLTAGE.

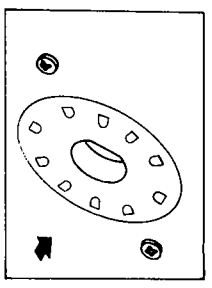
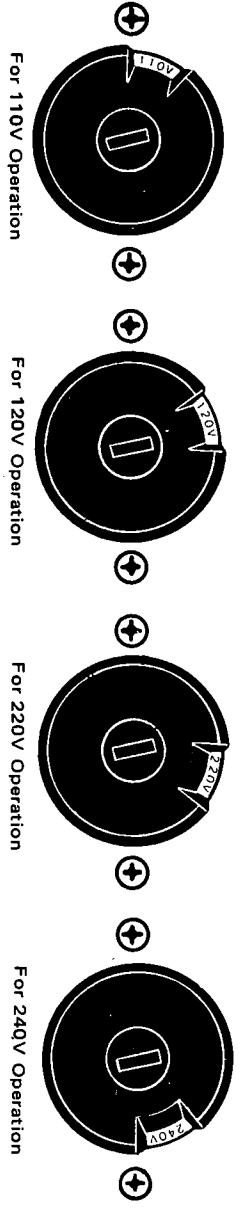
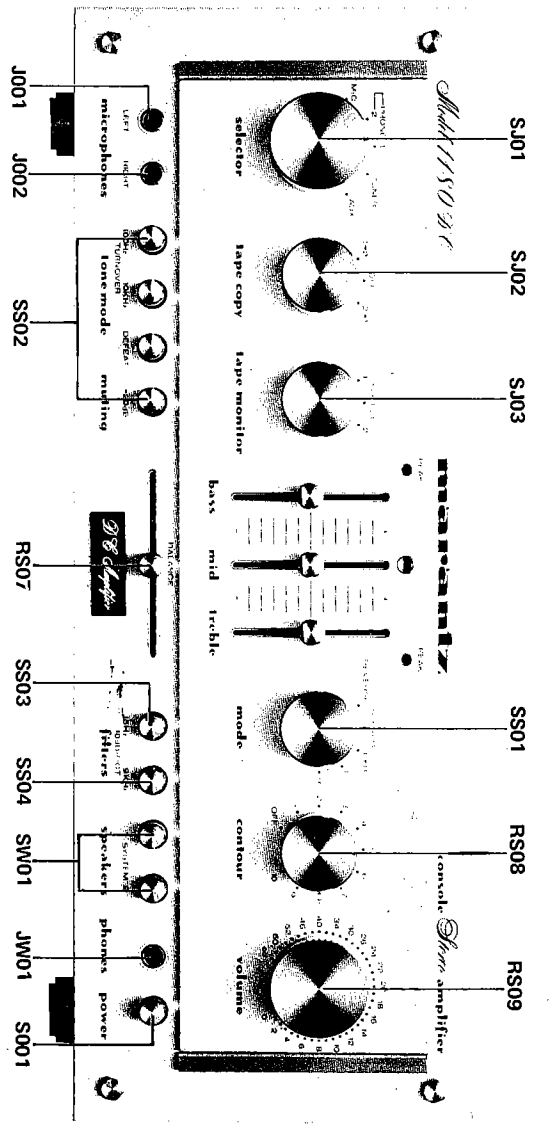


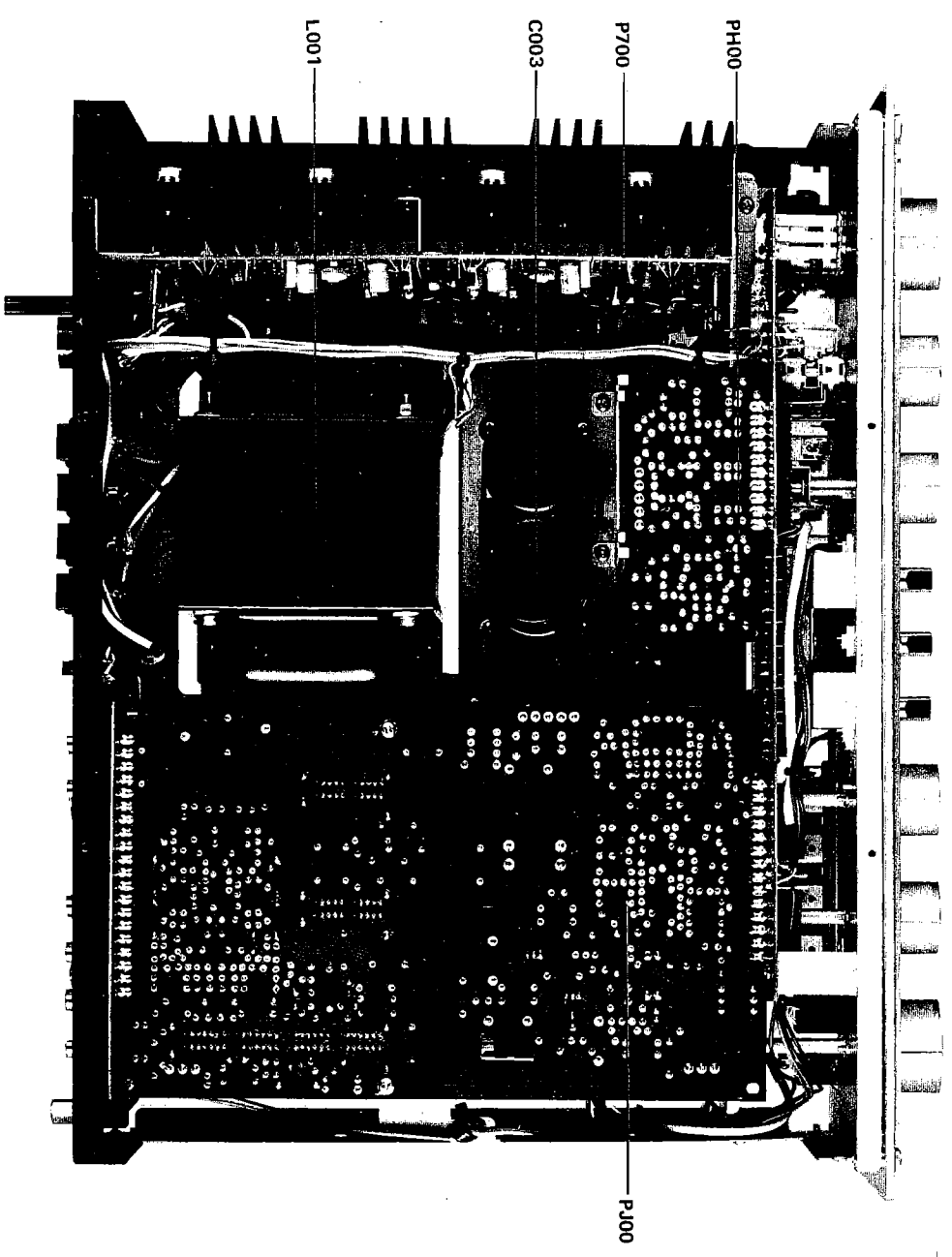
Figure 3. Voltage Conversion Chart



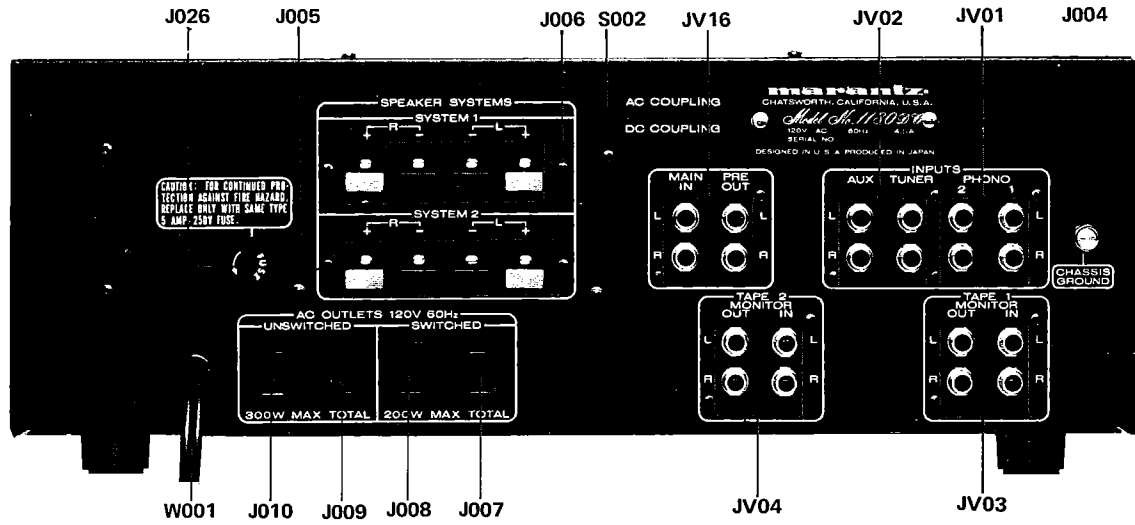
**4. MAJOR COMPONENT LOCATIONS**  
**4.1 Front Panel Adjustment and Component Locations**



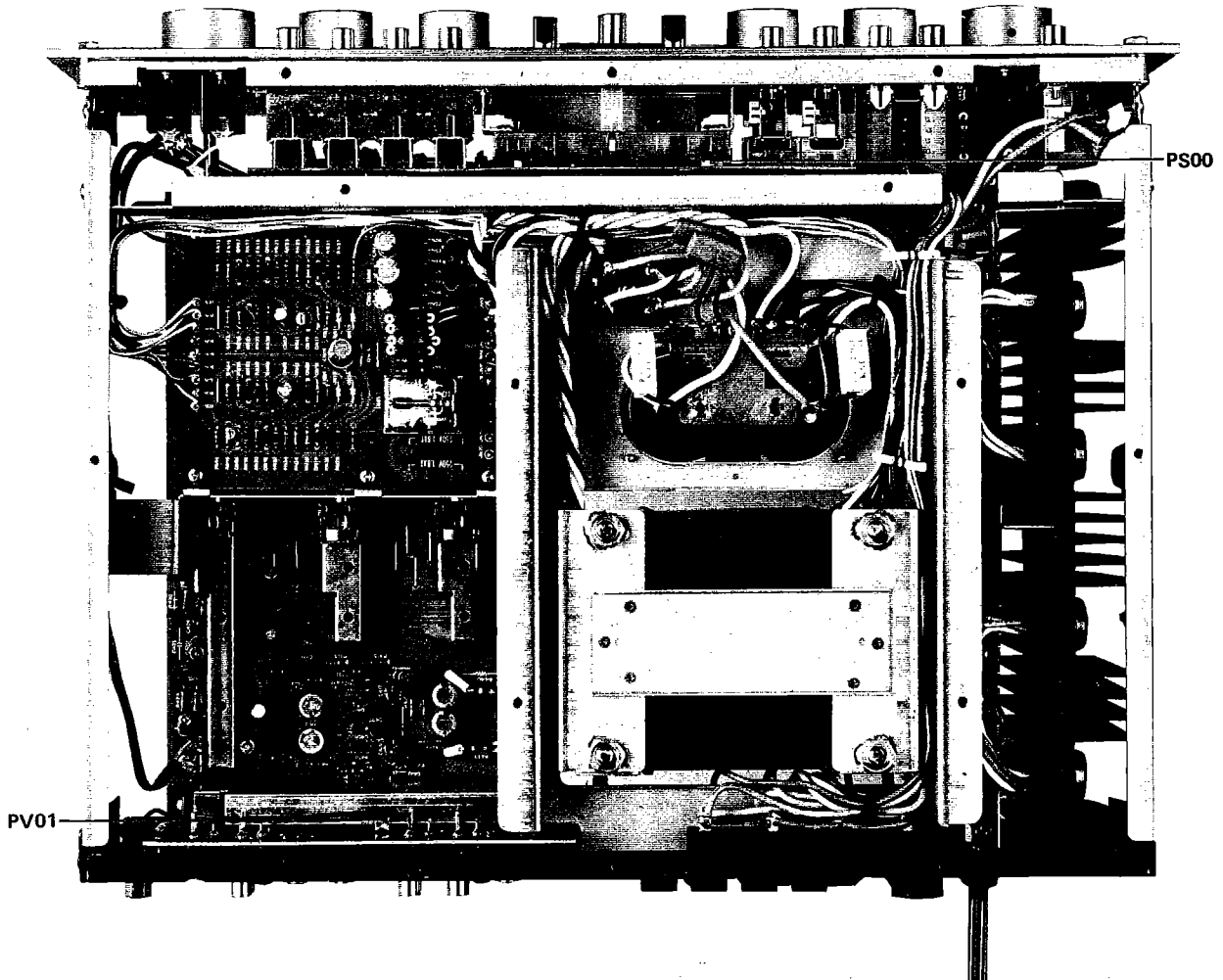
**4.2 Main Chassis Component Locations (Top View)**



### 4.3 Rear Panel Adjustment and Component Locations

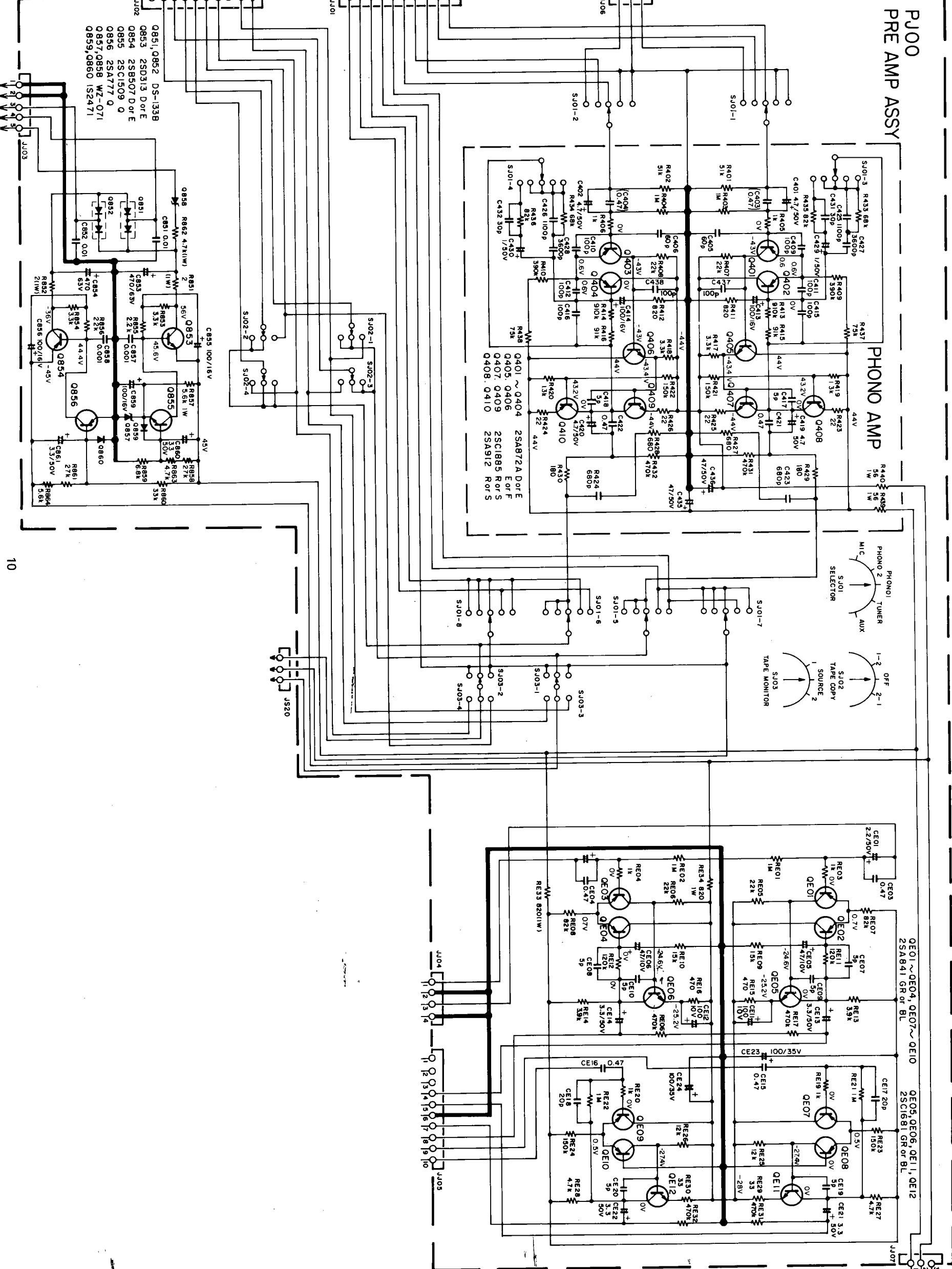


### 4.4 Main Chassis Component Locations (Bottom View)



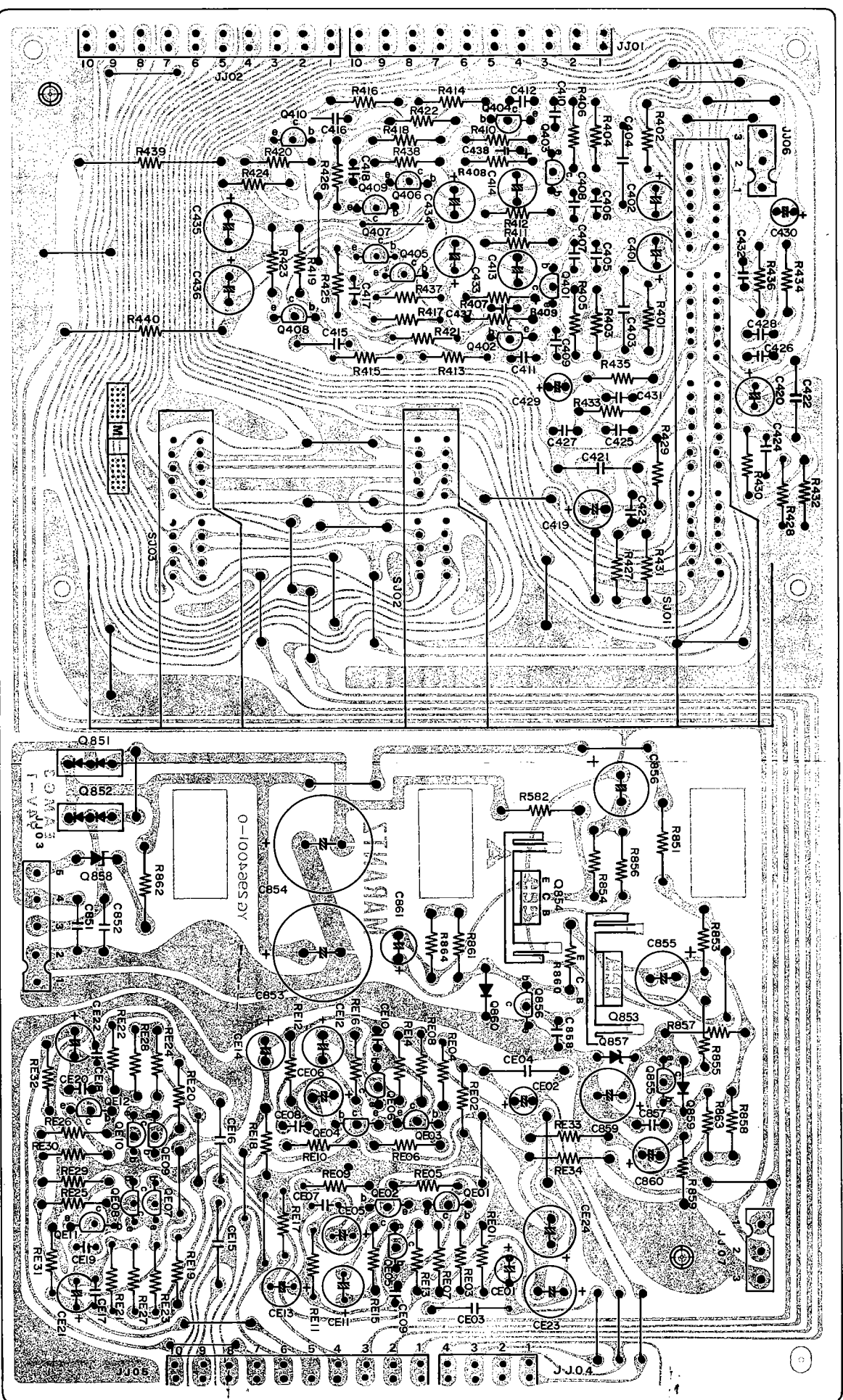




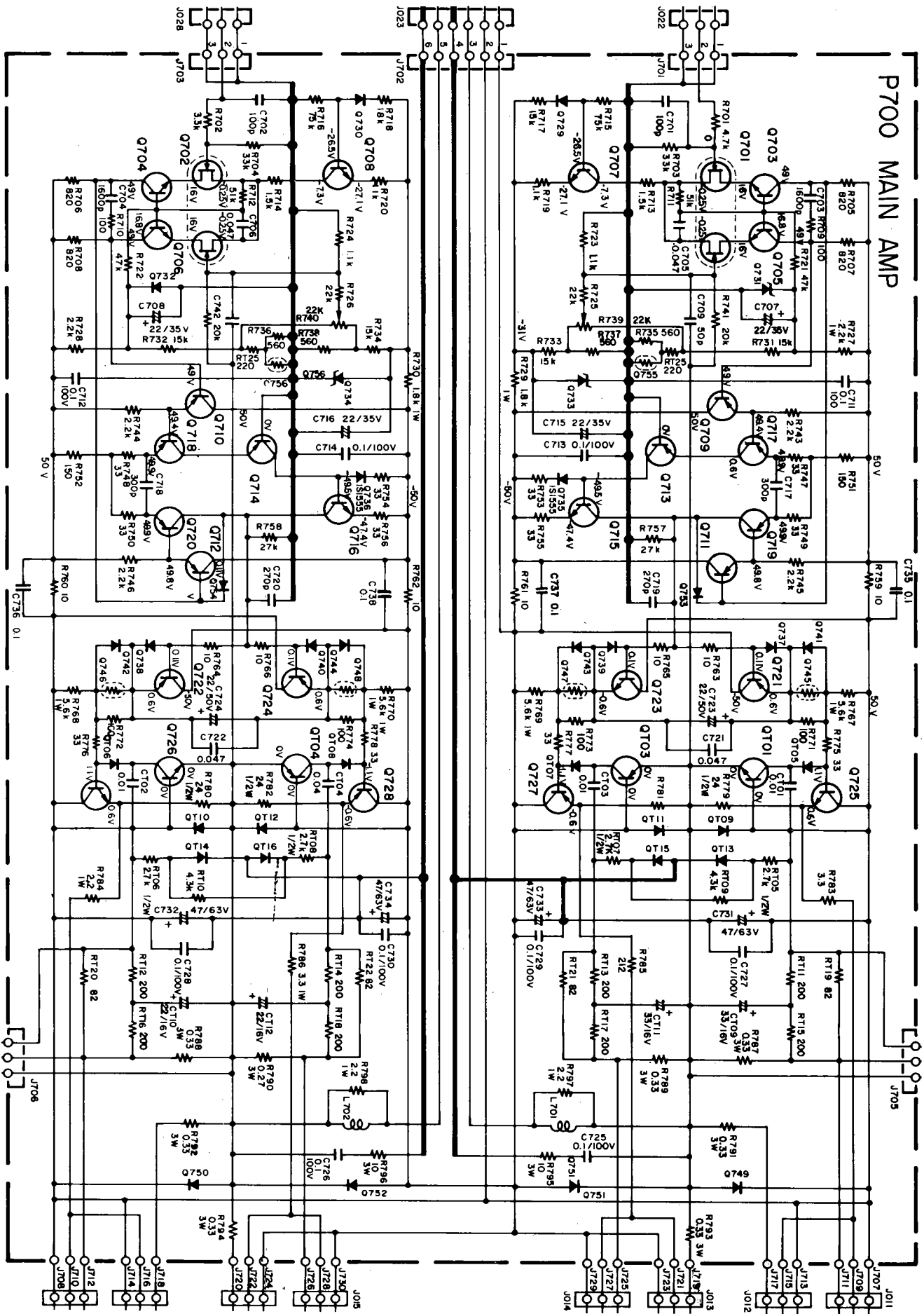




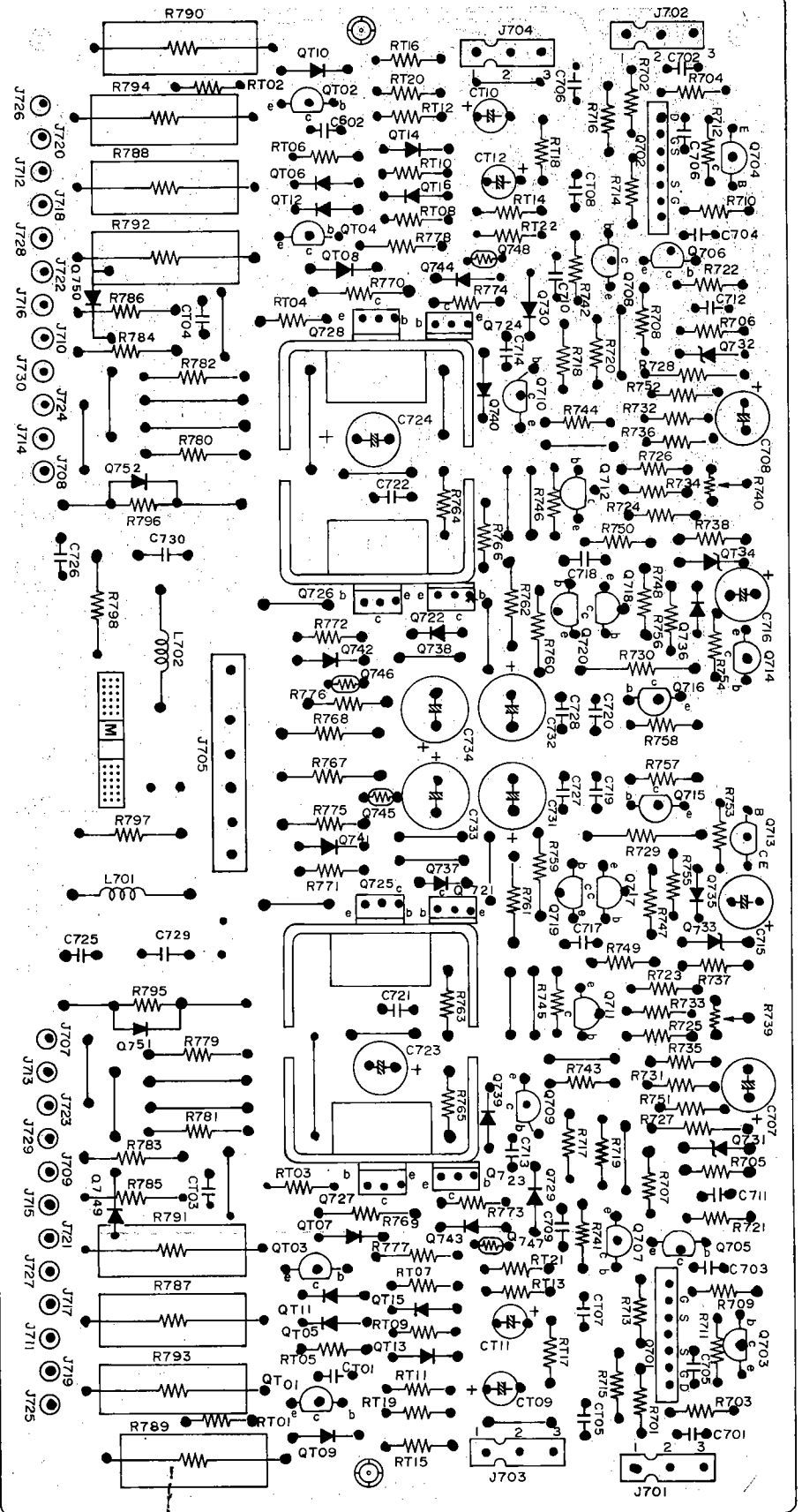
• Pre Amp. Assembly (P100) Component Locations



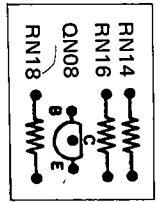
5.5 Main Amp. Assembly (P700) Schematic Diagram



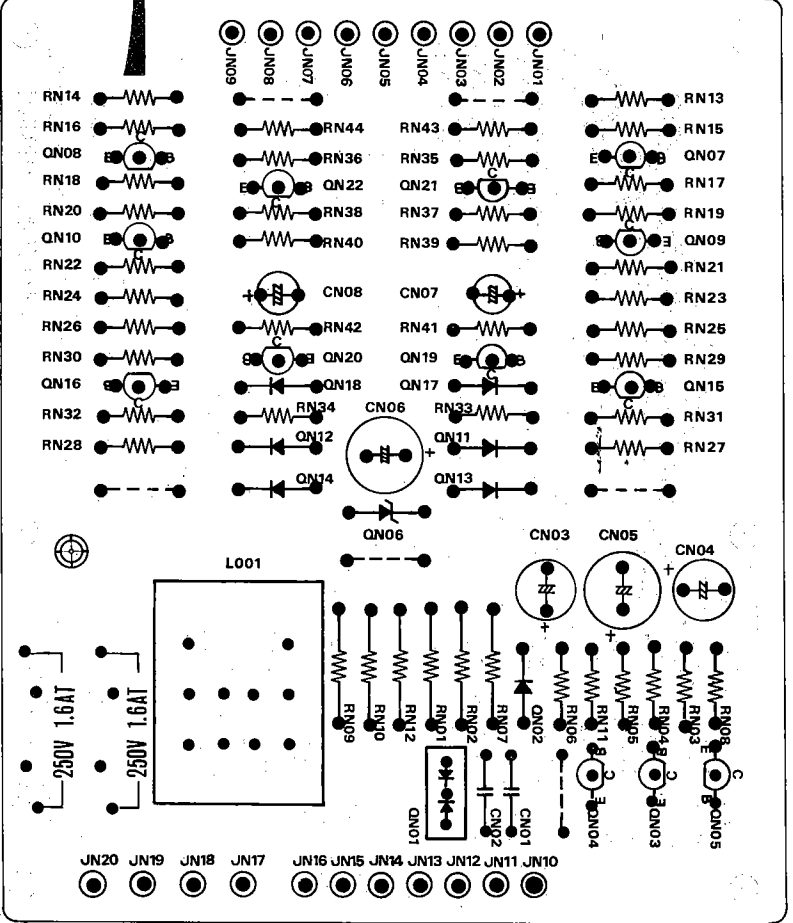
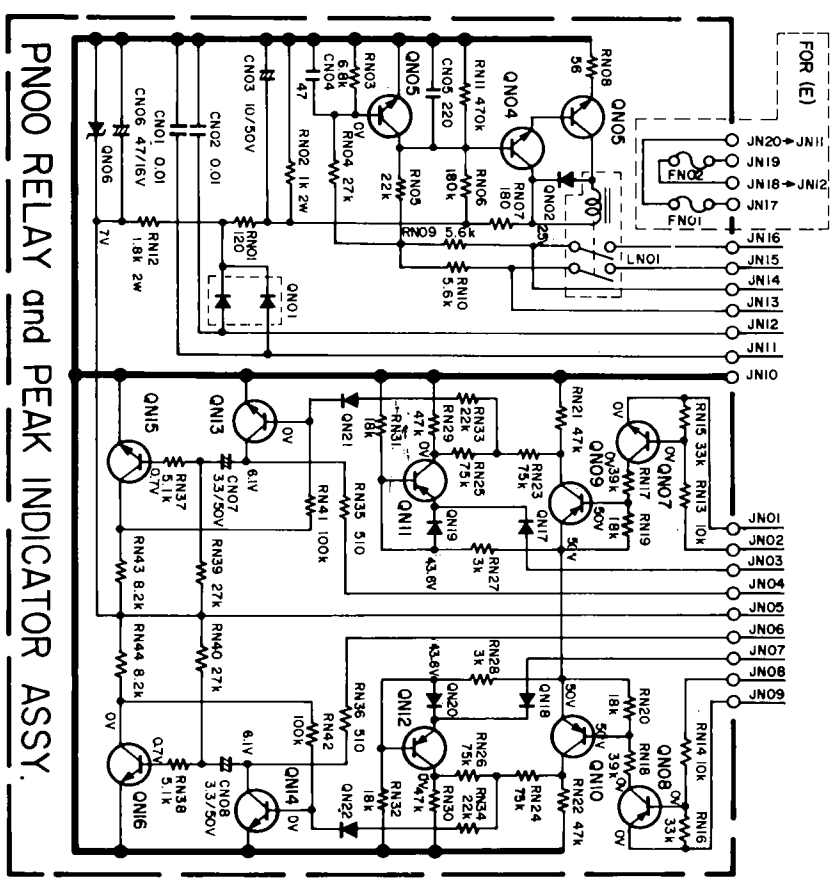
Main Amp. Assembly (P700) Component Locations



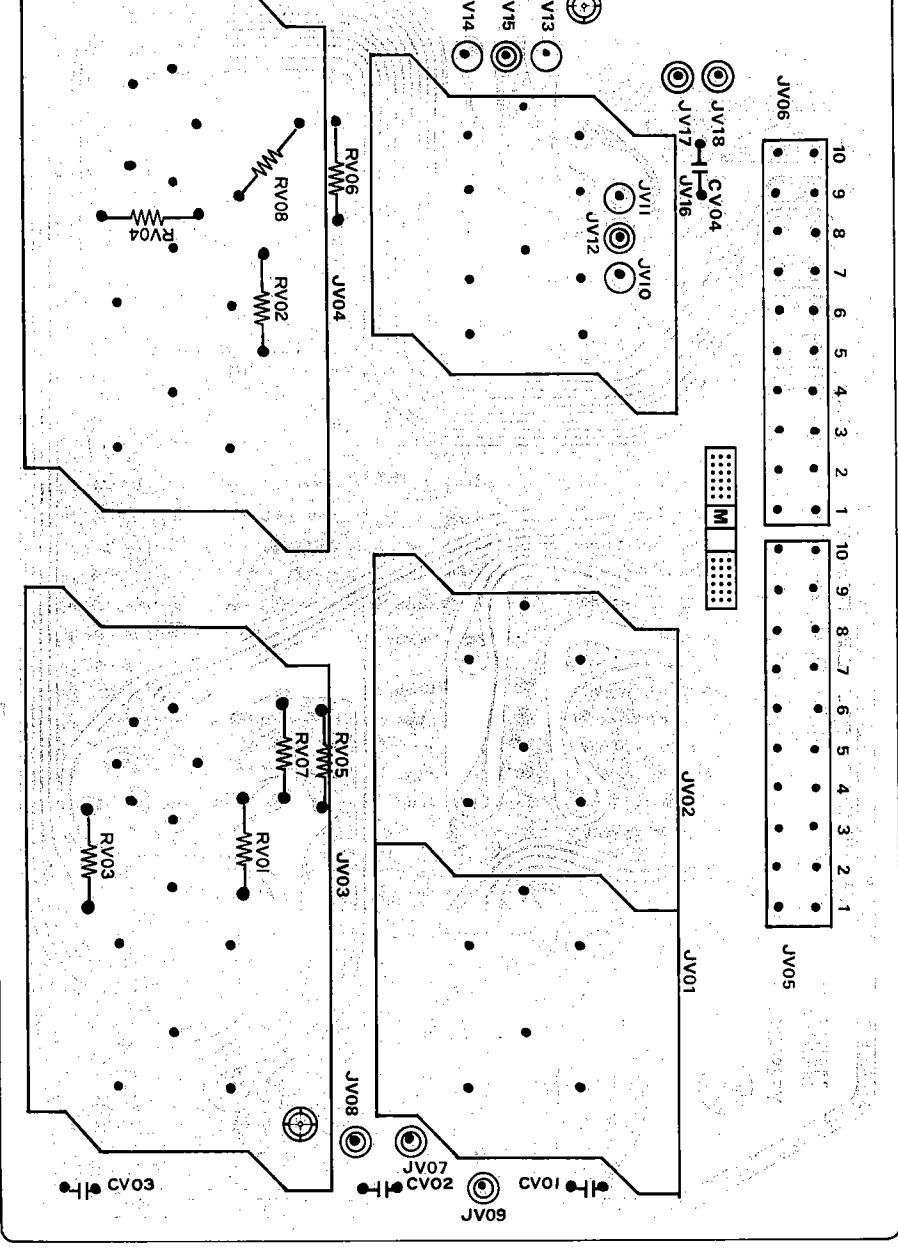
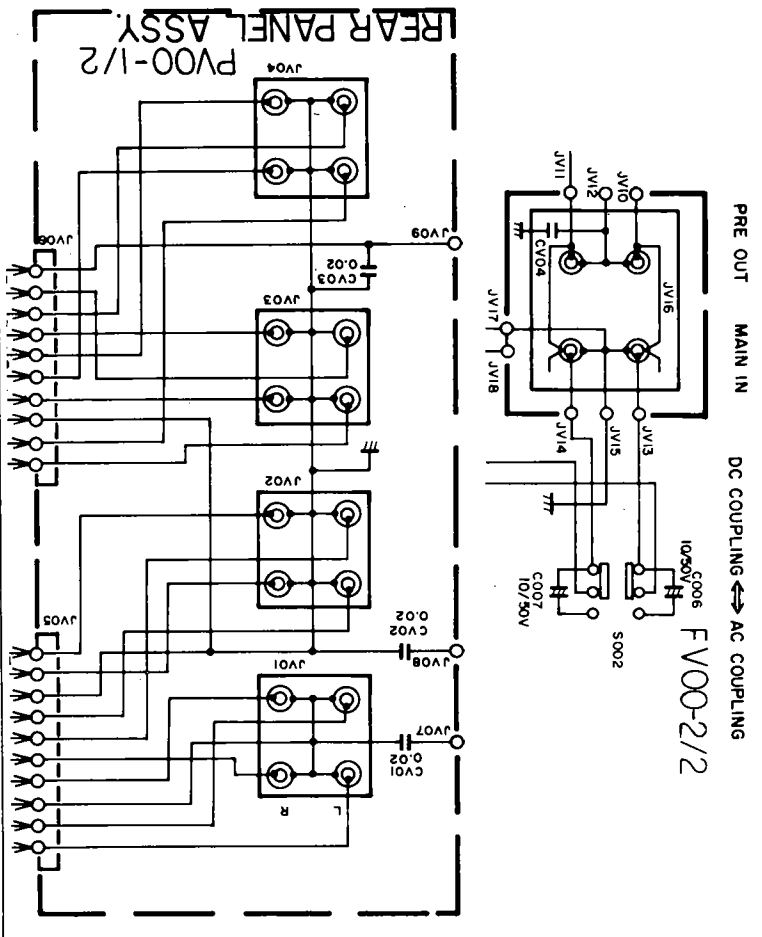
**NOTE**  
 Products running from serial numbers U010001 to U020150 and E010001 to E030100 have polarity indication failure of QN08 on the PND0 P.W. Board.  
 Correct polarity is shown in the following diagram.



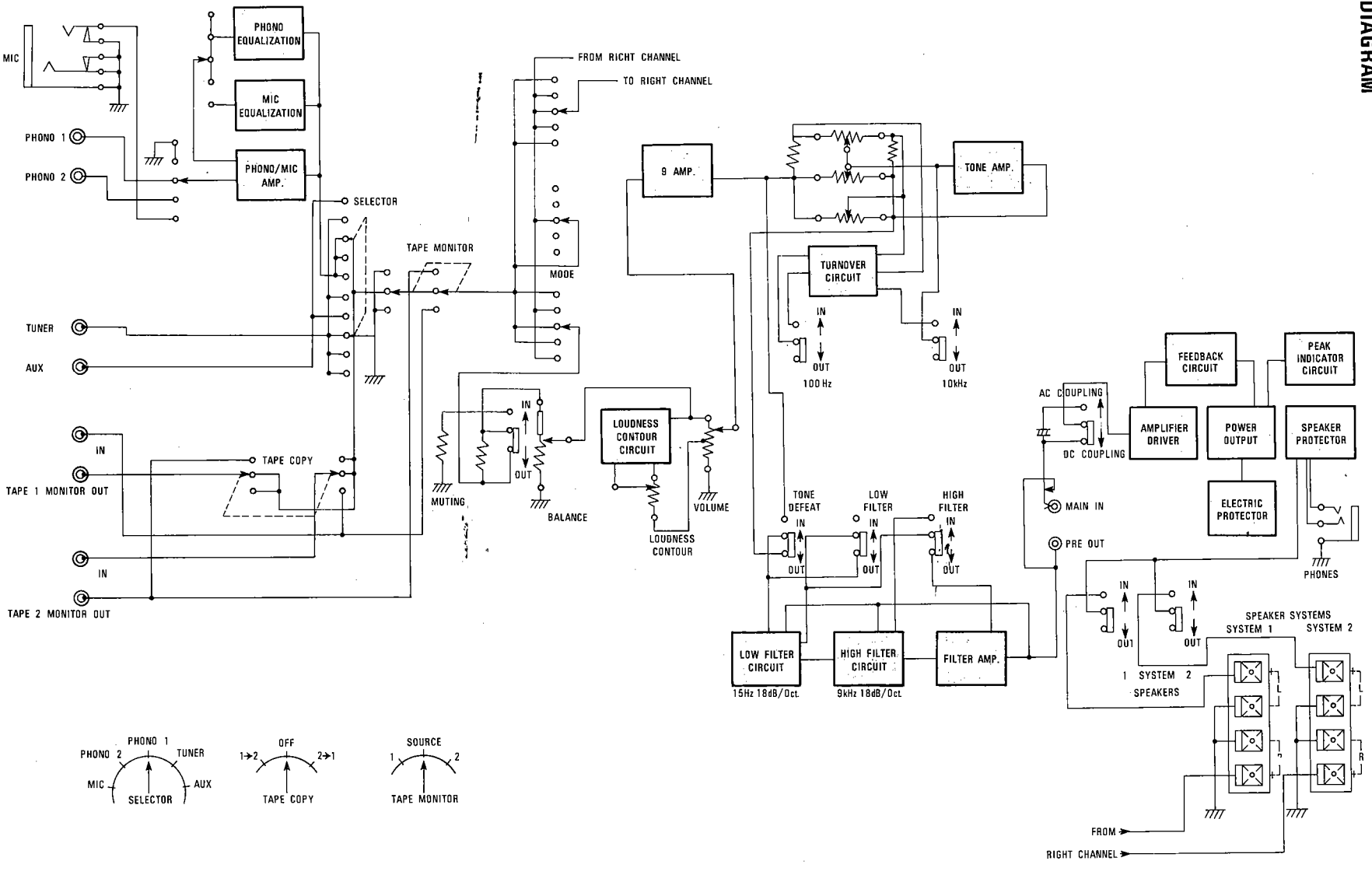
5.6 Relay Assembly (PND0) Schematic Diagram and Component Locations



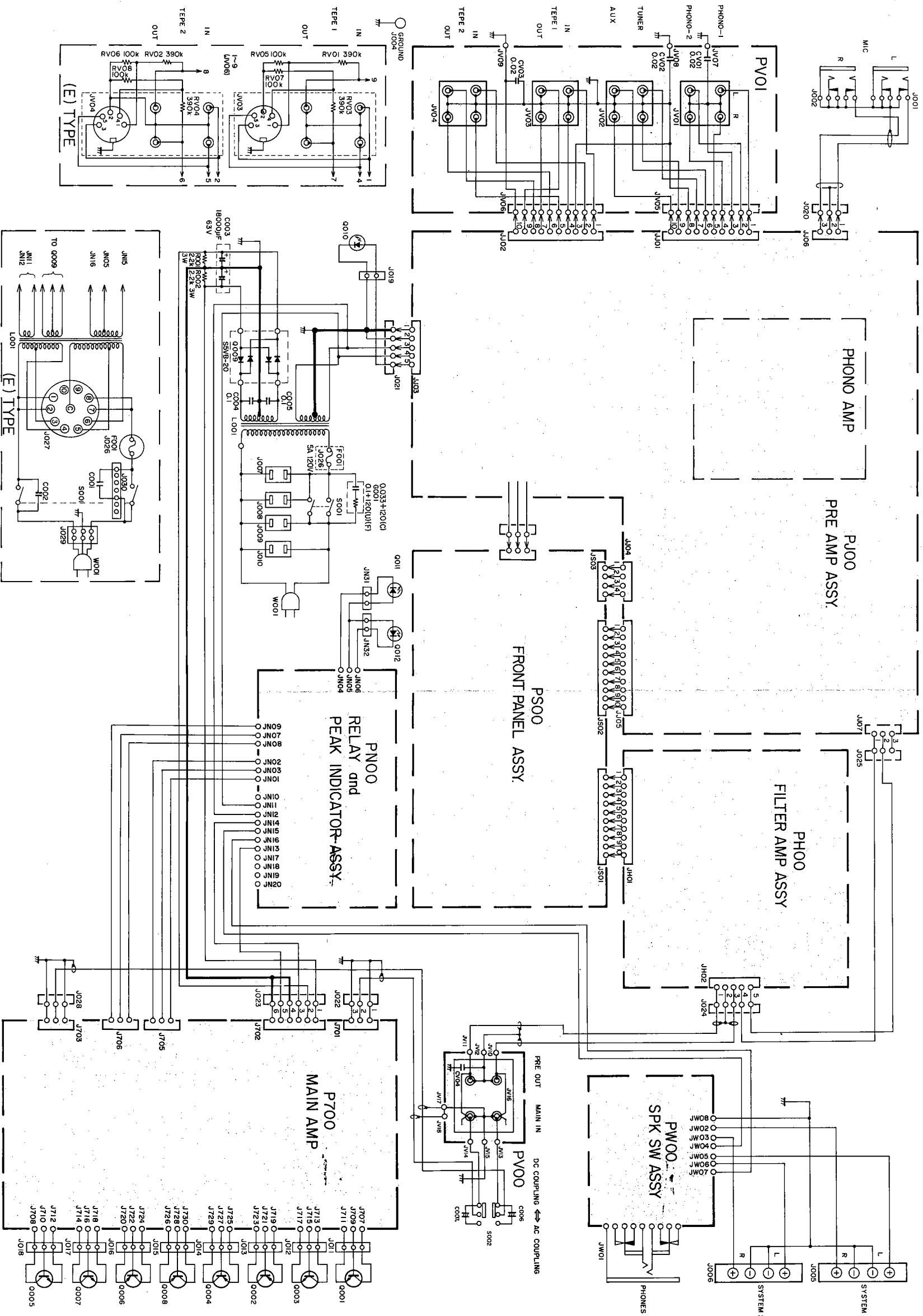
REAR PANEL ASSEMBLY (PV00) Schematic Diagram and Component Locations



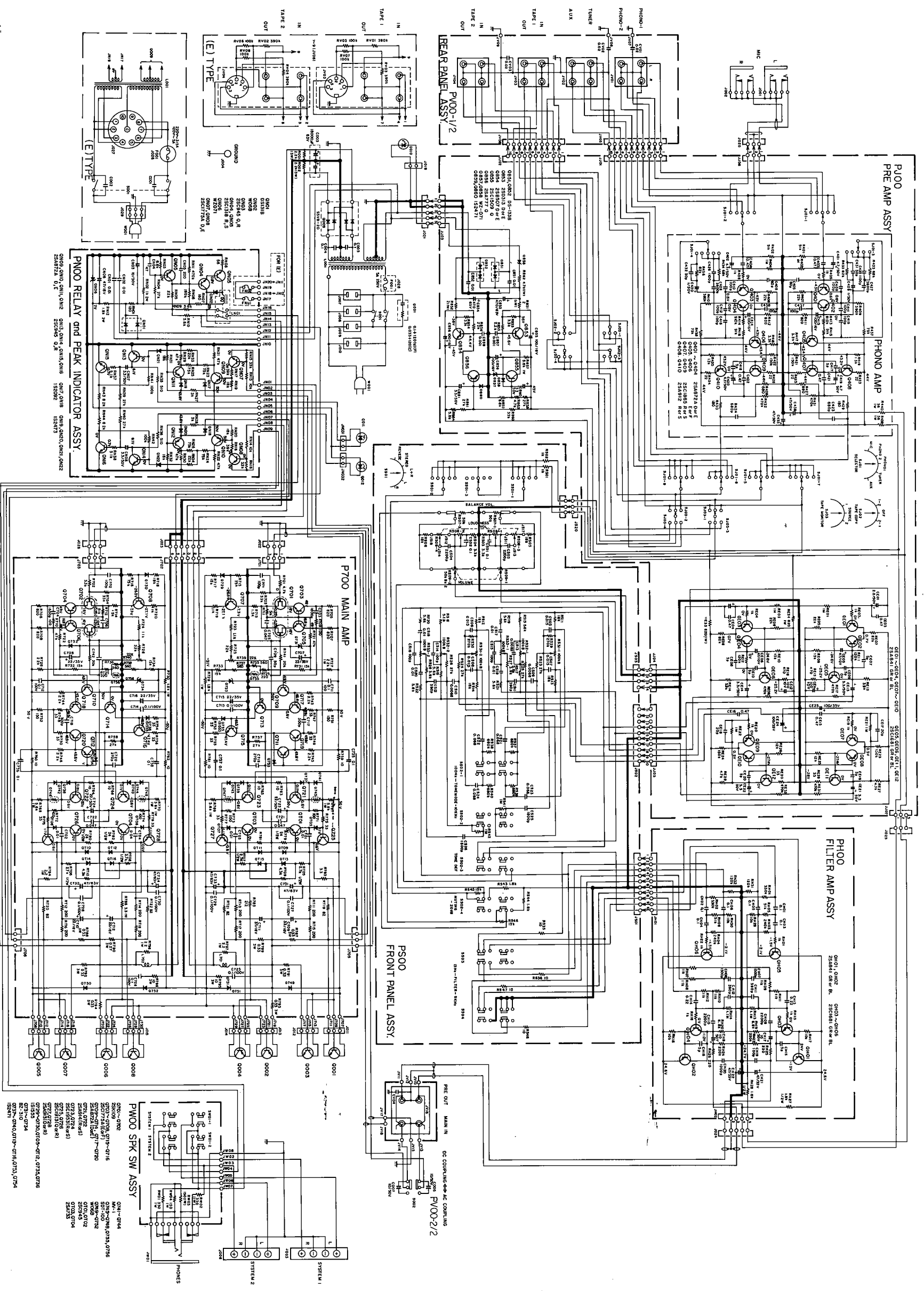
6. BLOCK DIAGRAM



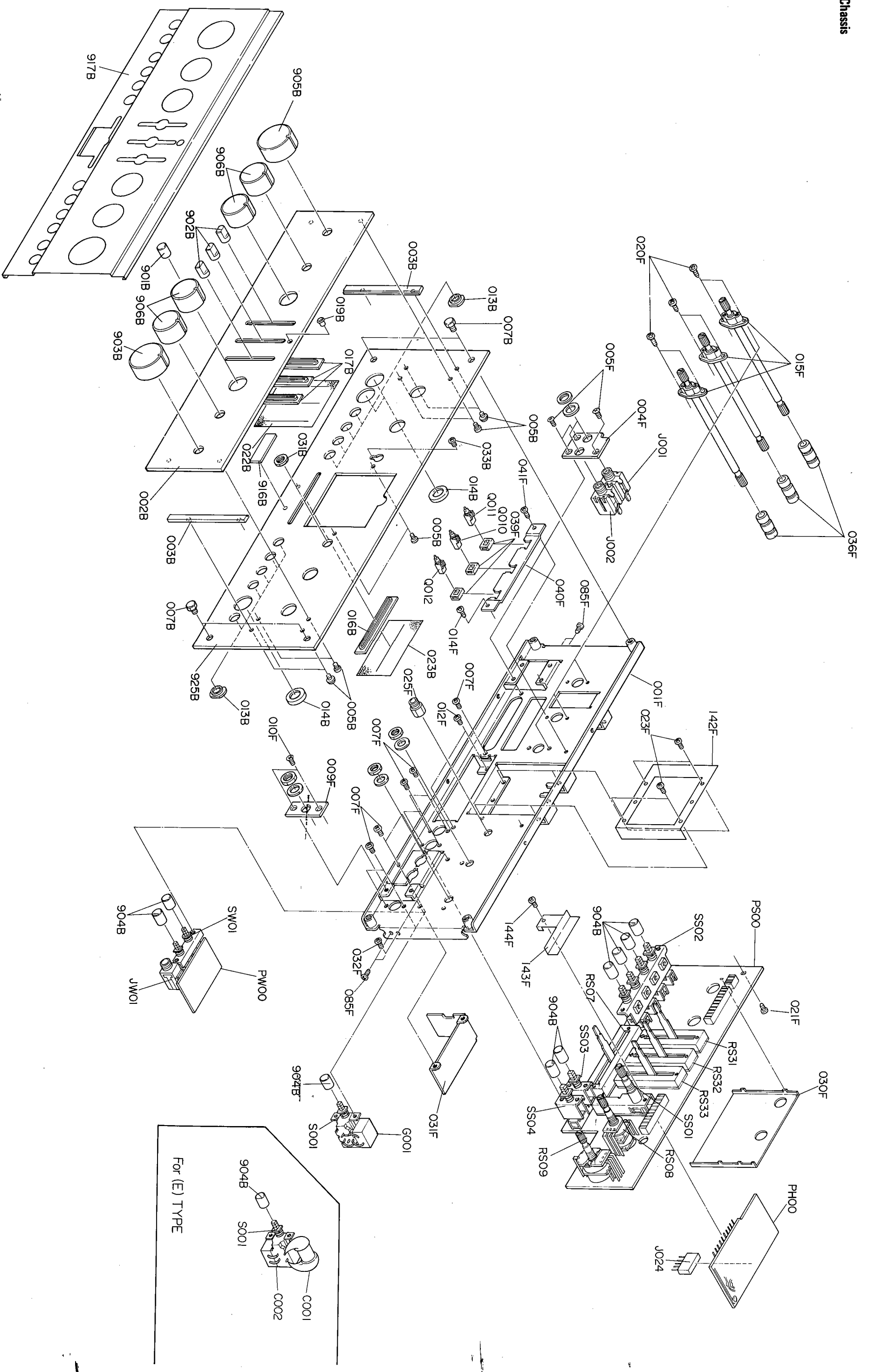
INJECTION DIAGRAM



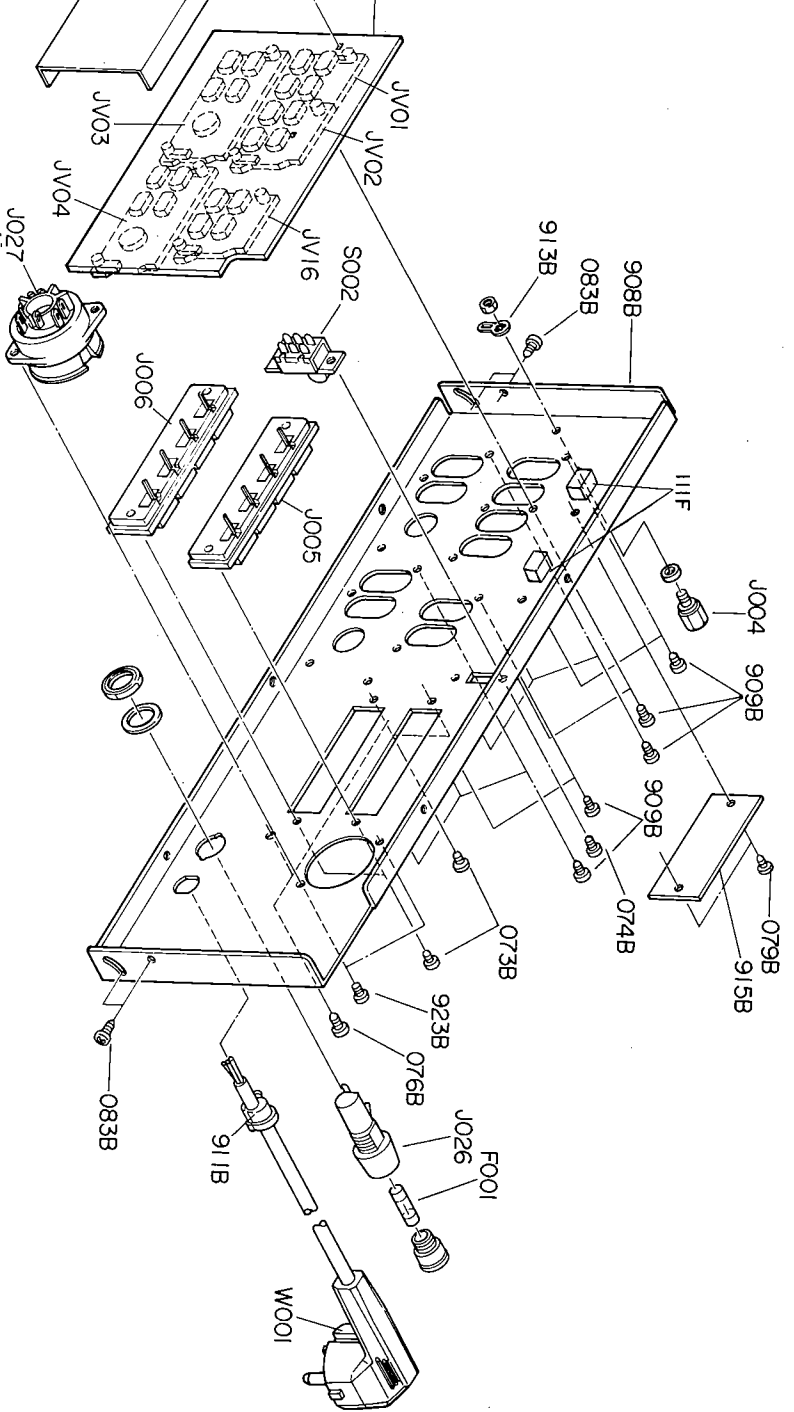
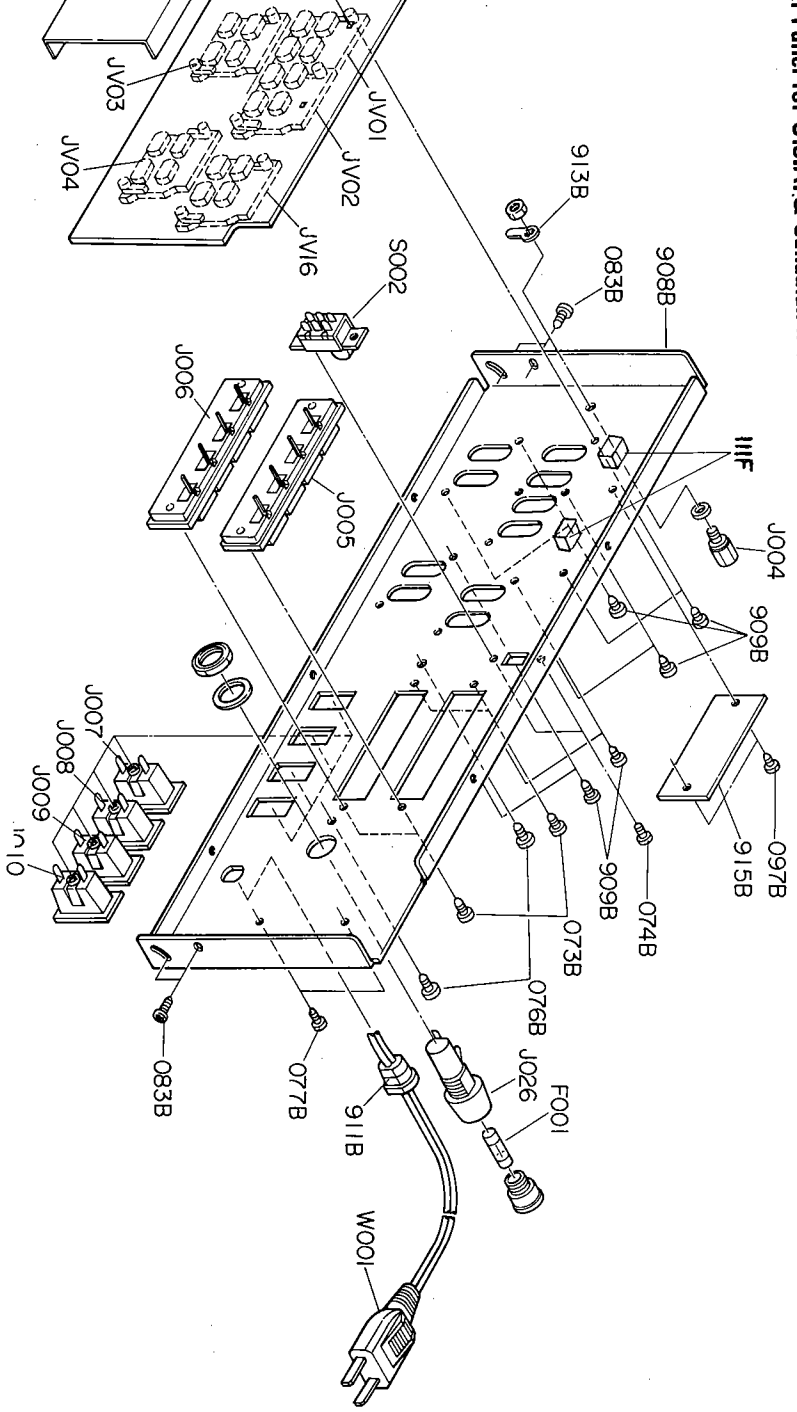




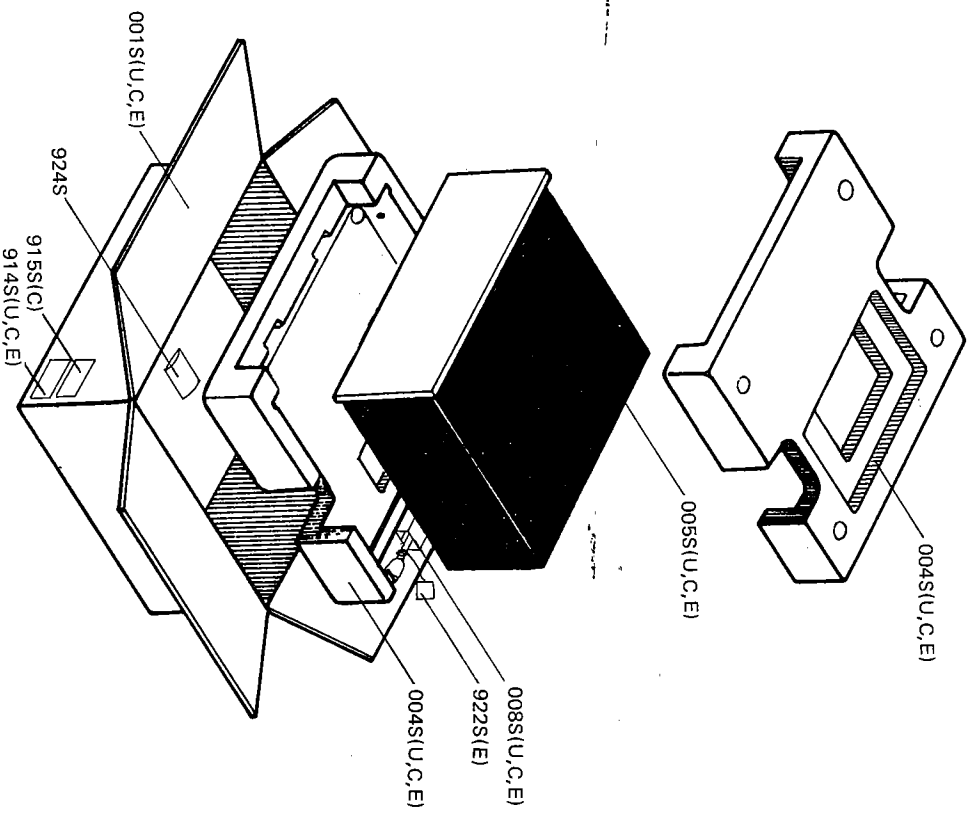
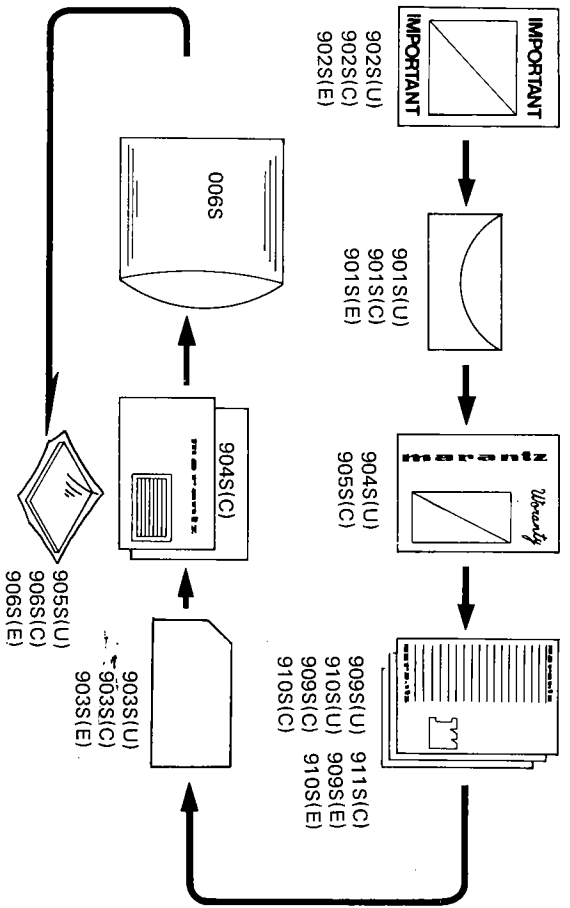








10. PACKING MATERIAL EXPLODED VIEW



• (U) for U.S.A.  
• (C) for Canada  
• (E) for Europe

• (U) for U.S.A  
 • (C) for Canada  
 • (E) for Europe

• (U) for U.S.A  
 • (C) for Canada  
 • (E) for Europe

| QTY | PART NO.   | DESCRIPTION            | REF. DESIG. | QTY |   |   | PART NO.   | DESCRIPTION                |
|-----|------------|------------------------|-------------|-----|---|---|------------|----------------------------|
|     |            |                        |             | U   | C | E |            |                            |
| 1   | 2976063400 | Front Panel Assembly   | 039F        | 3   |   |   | 2978259060 | Bushing                    |
| 1   | 2976063020 | Escutcheon             | 040B        | 6   |   |   | 2979259030 | Bushing                    |
| 1   | 2965063050 | Escutcheon             | 040F        | 1   |   |   | 2976160020 | Bracket                    |
| 2   | 51480306A9 | F.Washer Screw, F3 x 6 | 041B        | 2   |   |   | 51280306U0 | B.H. Tapped Screw, B3 x 6  |
| 9   | 2978259012 | Bushing                | 041B        | 2   |   |   | 51280306B0 | B.H. Tapped Screw, B3 x 6  |
| 3   | 2978259020 | Bushing                | 042B        | 2   |   |   | 51280306U0 | B.H. Tapped Screw, B3 x 6  |
| 1   | 2926259040 | Bushing                | 044B        | 4   |   |   | 51480406S9 | F.Washer Screw, F4 x 6     |
| 3   | 2970259010 | Bushing                | 048B        | 1   |   |   | 2964257013 | Lid                        |
| 1   | 2979259022 | Bushing                | 050B        | 1   |   |   | 2932057010 | Leg                        |
| 1   | 2970303010 | Mask                   | 051B        | 4   |   |   | 51570410S0 | P. Tapped Screw, P4 x 10   |
| 1   | 2926303020 | Mask                   | 061B        | 3   |   |   | 51280410U0 | B.H. Tapped Screw, B4 x 10 |
| 1   | 2979251040 | Badge                  | 061F        | 1   |   |   | 2976105016 | Chassis                    |
| 1   | 2964053012 | Cover                  | 062B        | 3   |   |   | 51280410U0 | B.H. Tapped Screw, B4 x 10 |
| 1   | 2976063012 | Escutcheon             | 062F        | 2   |   |   | 2886005030 | Clamper                    |
| 1   |            |                        | 063B        | 2   |   |   | 51280410U0 | B.H. Tapped Screw, B4 x 10 |
| 1   |            |                        | 063F        | 4   |   |   | 51490612A9 | L.Washer Screw, L6 x 12    |
| 1   |            |                        | 065B        | 2   |   |   | 51280410U0 | B.H. Tapped Screw, B4 x 10 |
| 1   |            |                        | 066B        | 4   |   |   | 51280410U0 | B.H. Tapped Screw, B4 x 10 |
| 1   |            |                        | 067F        | 4   |   |   | 51280306B0 | B.H. Tapped Screw, B3 x 6  |
| 1   |            |                        | 068F        | 1   |   |   | 51280312B0 | B.H. Tapped Screw, B3 x 12 |
| 1   | 2926303020 | Mask                   | 070F        | 1   |   |   | 2964160020 | Bracket                    |
| 1   | 2979251040 | Badge                  | 072F        | 2   |   |   | 51280306B0 | B.H. Tapped Screw, B3 x 6  |
| 1   | 2964053012 | Cover                  | 073B        | 4   |   |   | 51280308U0 | B.H. Tapped Screw, B3 x 8  |
| 1   |            |                        | 074B        | 2   |   |   | 51100306S9 | B.H.M. Screw, B3 x 6       |
| 1   |            |                        | 074F        | 1   |   |   | 2964126010 | Stay                       |
| 1   |            |                        | 075F        | 2   |   |   | 51280408U0 | B.H. Tapped Screw, B4 x 8  |
| 1   |            |                        | 076F        | 2   |   |   | 51280306B0 | B.H. Tapped Screw, B3 x 6  |
| 1   |            |                        | 077F        | 2   |   |   | 51280308U0 | B.H. Tapped Screw, B3 x 8  |
| 1   |            |                        | 078F        | 1   |   |   | 2964105020 | Chassis                    |
| 1   |            |                        | 079B        | 1   |   |   | 51760306B0 | OS Tapped Screw, O3 x 6    |
| 1   |            |                        | 080F        | 1   |   |   | 2964160010 | Bracket                    |
| 1   |            |                        | 081F        | 1   |   |   | 1382005030 | Clamper                    |
| 1   |            |                        | 082F        | 1   |   |   | 51280306B0 | B.H. Tapped Screw, B3 x 6  |
| 1   |            |                        | 083B        | 4   |   |   | 51280306U0 | B.H. Tapped Screw, B3 x 6  |
| 1   |            |                        | 083F        | 1   |   |   | 51280306B0 | B.H. Tapped Screw, B3 x 6  |
| 1   |            |                        | 084B        | 4   |   |   | 51280306B0 | B.H. Tapped Screw, B3 x 6  |
| 1   |            |                        | 084F        | 2   |   |   | 51280306B0 | B.H. Tapped Screw, B3 x 6  |
| 1   |            |                        | 085B        | 4   |   |   | 51280306B0 | B.H. Tapped Screw, B3 x 6  |
| 1   |            |                        | 085F        | 2   |   |   | 51280306B0 | B.H. Tapped Screw, B3 x 6  |
| 1   |            |                        | 086F        | 1   |   |   | 51280306B0 | B.H. Tapped Screw, B3 x 6  |
| 1   |            |                        | 087F        | 1   |   |   | 1382005030 | Clamper                    |
| 1   |            |                        | 088F        | 1   |   |   | 62030049W0 | Lug                        |
| 1   |            |                        | 089F        | 1   |   |   | 2886005030 | Clamper                    |
| 1   |            |                        | 091F        | 1   |   |   | 2976267010 | Heatsink                   |
| 1   |            |                        | 093F        | 1   |   |   | 2964160070 | Bracket                    |
| 1   |            |                        | 094F        | 2   |   |   | 51280306B0 | B.H. Tapped Screw, B3 x 6  |
| 1   |            |                        | 095F        | 2   |   |   | 51280306B0 | B.H. Tapped Screw, B3 x 6  |
| 1   |            |                        | 096F        | 1   |   |   | 51280306B0 | B.H. Tapped Screw, B3 x 6  |
| 1   |            |                        | 097F        | 2   |   |   | 51280306U0 | B.H. Tapped Screw, B3 x 6  |
| 1   |            |                        | 099F        | 1   |   |   | 2964160080 | Bracket                    |
| 1   |            |                        | 100F        | 2   |   |   | 51280306B0 | B.H. Tapped Screw, B3 x 6  |
| 1   |            |                        | 101F        | 2   |   |   | 51280306U0 | B.H. Tapped Screw, B3 x 6  |
| 1   |            |                        | 102F        | 1   |   |   | 1382005030 | Clamper                    |
| 1   |            |                        | 103F        | 1   |   |   | 2964160040 | Bracket                    |
| 1   |            |                        | 104F        | 2   |   |   | 51280306B0 | B.H. Tapped Screw, B3 x 6  |

| REF. DESIG. | QTY |   |   | PART NO.   | DESCRIPTION               | REF. DESIG. | QTY |   |   | PART NO.   | DESCRIPTION                       |
|-------------|-----|---|---|------------|---------------------------|-------------|-----|---|---|------------|-----------------------------------|
|             | U   | C | E |            |                           |             | U   | C | E |            |                                   |
| 105F        | 2   |   |   | 51280306U0 | B.H. Tapped Screw, B3 x 6 | 918B        | 1   |   |   | 2578861010 | Label                             |
| 107F        | 16  |   |   | 51100316B9 | B.H.M. Screw, B3 x 16     | 918B        | 1   |   |   | 2911861110 | Label                             |
| 108F        | 16  |   |   | 54040302N0 | Spring Washer             | 919B        | 1   |   |   | 2911861143 | Label                             |
| 111F        | 2   |   |   | 2964118010 | Spacer                    | 919B        | 1   |   |   | 2932861012 | Label                             |
| 121F        | 4   |   |   | 2212267020 | Heatsink                  | 920B        | 1   |   |   | 9510911010 | Label                             |
| 122F        | 4   |   |   | 51100306S9 | B.H.M. Screw, B3 x 5      | 920B        | 1   |   |   | 9510911020 | Label                             |
| 123F        | 4   |   |   | 51280306U0 | B.H. Tapped Screw, B3 x 5 | 920F        | 1   |   |   | 3953120030 | Insulator                         |
| 124F        | 4   |   |   | 51280308U0 | B.H. Tapped Screw, B3 x 8 | 921B        | 1   |   |   | 2932861012 | Label                             |
| 130F        | 2   |   |   | 2963267020 | Heatsink                  | 921B        | 1   |   |   | 9511101010 | Label                             |
| 131F        | 2   |   |   | 51280308B0 | B.H. Tapped Screw, B3 x 8 | 921F        | 1   |   |   | 2970005010 | Clamper                           |
| 134F        | 1   |   |   | 2964109020 | Shield                    | 922B        | 1   |   |   | 2911861240 | Label                             |
| 135F        | 1   |   |   | 2964123010 | Contactor                 | 922F        | 1   |   |   | 51100314S9 | B.H.M. Screw, B3 x 14             |
| 136F        | 1   |   |   | 51290308B0 | Tapped Screw, 3 x 8       | 922S        | 1   |   |   | 9560000042 | Hang Tag                          |
| 139F        | 1   |   |   | 51600306B0 | Washer Screw, 3 x 6       | 923B        | 1   |   |   | 2911861190 | Label                             |
| 142F        | 1   |   |   | 2964109030 | Shield                    | 923B        | 1   |   |   | 51100308S9 | B.H.M. Screw, B3 x 8              |
| 143F        | 1   |   |   | 2964109040 | Shield                    | 924S        | 1   |   |   | 2731821010 | Silicagel                         |
| 144F        | 1   |   |   | 51280306U0 | B.H. Tapped Screw, B3 x 6 | 925F        | 2   |   |   | 51280306U0 | B.H. Tapped Screw, B3 x 6         |
| 148F        | 1   |   |   | 2218259020 | Bushing                   | 930B        | 2   |   |   | 2970120030 | Insulator                         |
| 901B        | 1   |   |   | 2970154010 | Knob                      | 930F        | 2   |   |   | 2970120030 | Insulator                         |
| 901S        | 1   |   |   | 2577813010 | Envelope                  | 931B        | 2   |   |   | 2970120030 | Insulator                         |
|             |     |   |   | 2818813010 | Envelope                  | 931F        | 1   |   |   | 2219120010 | Insulator                         |
| 901S        | 1   |   |   | 2918813010 | Envelope                  | 931F        | 1   |   |   | 2219120010 | Insulator                         |
| 901S        | 1   |   |   | 2970154020 | Knob                      | 935F        | 1   |   |   | 2882861020 | Label                             |
| 902S        | 1   |   |   | 2577861020 | Instructions              | CE01        | 1   |   |   | EE22505040 | Electrolytic Cap., 2.2uF ±20% 50V |
| 902S        | 1   |   |   | 2818851120 | Instructions              | CE02        | 1   |   |   | EE22505040 | Electrolytic Cap., 2.2uF ±20% 50V |
| 902S        | 1   |   |   | 2963154040 | Knob                      | CE05        | 1   |   |   | EE47601040 | Electrolytic Cap., 47uF 10V       |
| 903B        | 1   |   |   | 2577854040 | Knob                      | CE06        | 1   |   |   | EE47601040 | Electrolytic Cap., 47uF 10V       |
| 903B        | 1   |   |   | 2963154040 | Guarantee Card            | CE07        | 1   |   |   | DD11050010 | Ceramic Cap., 5pF 50V             |
| 903S        | 1   |   |   | 9630000180 | Guarantee Card            | CE08        | 1   |   |   | DD11050010 | Ceramic Cap., 5pF 50V             |
| 904B        | 9   |   |   | 2963154030 | Knob                      | CE09        | 1   |   |   | DD11050010 | Ceramic Cap., 5pF 50V             |
| 904F        | 1   |   |   | 9510221010 | Label                     | CE10        | 1   |   |   | DD11050010 | Ceramic Cap., 5pF 50V             |
| 904S        | 1   |   |   | 2818854020 | Guarantee Card            | CE11        | 1   |   |   | EA10701090 | Electrolytic Cap., 100uF 10V      |
| 904S        | 1   |   |   | 2818854020 | Guarantee Card            | CE12        | 1   |   |   | EA10701090 | Electrolytic Cap., 100uF 10V      |
| 904S        | 1   |   |   | 9650000052 | S. Station Card           | CE13        | 1   |   |   | EE33505040 | Electrolytic Cap., 3.3uF ±20% 50V |
| 905B        | 1   |   |   | 2963154010 | Knob                      | CE14        | 1   |   |   | EE33505040 | Electrolytic Cap., 3.3uF ±20% 50V |
| 905F        | 1   |   |   | 9512601100 | Label                     | CE15        | 1   |   |   | DF16474510 | Film Cap., 0.47uF ±10% 100V       |
| 905S        | 1   |   |   | 2818851040 | Instructions              | CE16        | 1   |   |   | DD16474510 | Film Cap., 0.47uF ±10% 100V       |
| 905S        | 1   |   |   | 2818854040 | Guarantee Card            | CE17        | 1   |   |   | DD15200010 | Ceramic Cap., 20pF ±5% 50V        |
| 906B        | 4   |   |   | 2970154050 | Knob                      | CE18        | 1   |   |   | DD15200010 | Ceramic Cap., 20pF ±5% 50V        |
| 906S        | 4   |   |   | 2818851140 | Instructions              | CE19        | 1   |   |   | DD11050010 | Ceramic Cap., 5pF 50V             |
| 907B        | 2   |   |   | 5169030609 | Socket Screw, HP          | CE20        | 1   |   |   | DD11050010 | Ceramic Cap., 5pF 50V             |
| 908B        | 1   |   |   | 2976160210 | Bracket                   | CE21        | 1   |   |   | EE33505040 | Electrolytic Cap., 3.3uF ±20% 50V |
| 908B        | 1   |   |   | 2976160222 | Bracket                   | CE22        | 1   |   |   | EE33505040 | Electrolytic Cap., 3.3uF ±20% 50V |
| 909B        | 10  |   |   | 51280308U0 | B.H. Tapped Screw, B3 x 8 | CE23        | 1   |   |   | EA10703350 | Electrolytic Cap., 100uF 35V      |
| 909S        | 1   |   |   | 2976851010 | Instructions              | CE24        | 1   |   |   | EA10703350 | Electrolytic Cap., 100uF 35V      |
| 909S        | 1   |   |   | 2976851310 | Instructions              | OE01        | 1   |   |   | HT108412A0 | Transistor, 2S4841 (GR or BL)     |
| 910S        | 1   |   |   | 2976851020 | Instructions              | OE02        | 1   |   |   | HT108412A0 | Transistor, 2S4841 (GR or BL)     |
| 910S        | 1   |   |   | 2976851030 | Instructions              | OE03        | 1   |   |   | HT108412A0 | Transistor, 2S4841 (GR or BL)     |
| 910S        | 1   |   |   | 2976851050 | Instructions              | OE04        | 1   |   |   | HT108412A0 | Transistor, 2S4841 (GR or BL)     |
| 911B        | 1   |   |   | 1455259040 | Bushing                   | OE05        | 1   |   |   | HT316812A0 | Transistor, 2SC1681 (GR or BL)    |
| 911B        | 1   |   |   | 1455259070 | Bushing                   | OE06        | 1   |   |   | HT316812A0 | Transistor, 2SC1681 (GR or BL)    |
| 911S        | 1   |   |   | 2886851100 | Instructions              | OE07        | 1   |   |   | HT108412A0 | Transistor, 2S4841 (GR or BL)     |
| 913B        | 1   |   |   | 62040029W0 | Lug                       | OE08        | 1   |   |   | HT108412A0 | Transistor, 2S4841 (GR or BL)     |
| 914S        | 4   |   |   | 9522815010 | Serial No. Card           | OE09        | 1   |   |   | HT108412A0 | Transistor, 2S4841 (GR or BL)     |
| 914S        | 4   |   |   | 9523015110 | Serial No. Card           | OE10        | 1   |   |   | HT108412A0 | Transistor, 2S4841 (GR or BL)     |
| 914S        | 4   |   |   | 9523015120 | Serial No. Card           | OE11        | 1   |   |   | HT316812A0 | Transistor, 2SC1681 (GR or BL)    |
| 915B        | 1   |   |   | 2976265010 | Indicator                 | OE12        | 1   |   |   | HT316812A0 | Transistor, 2SC1681 (GR or BL)    |
| 915B        | 1   |   |   | 2976265020 | Indicator                 |             |     |   |   |            |                                   |
| 915B        | 1   |   |   | 2976265030 | Indicator                 |             |     |   |   |            |                                   |
| 915S        | 2   |   |   | 9510901020 | Label                     |             |     |   |   |            |                                   |

- (U) for U.S.A
- (C) for Canada
- (E) for Europe

| REF. DESIG. | Q'TY |   |   | PART NO.   | DESCRIPTION                                      |
|-------------|------|---|---|------------|--|
|             | U    | C | E |            |  |
| RE01        | 1    | 1 | 1 | RT05105140 | Resistor, 1M $\Omega$ $\pm$ 5% $\frac{1}{4}$ W   |
| RE02        | 1    | 1 | 1 | RT05105140 | Resistor, 1M $\Omega$ $\pm$ 5% $\frac{1}{4}$ W   |
| RE03        | 1    | 1 | 1 | RT05102140 | Resistor, 1k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W   |
| RE04        | 1    | 1 | 1 | RT05102140 | Resistor, 1k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W   |
| RE05        | 1    | 1 | 1 | RT05223140 | Resistor, 22k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RE06        | 1    | 1 | 1 | RT05223140 | Resistor, 22k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RE07        | 1    | 1 | 1 | RT05823140 | Resistor, 82k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RE08        | 1    | 1 | 1 | RT05823140 | Resistor, 82k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RE09        | 1    | 1 | 1 | RT05153140 | Resistor, 15k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RE10        | 1    | 1 | 1 | RT05153140 | Resistor, 15k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RE11        | 1    | 1 | 1 | RT05124140 | Resistor, 120k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RE12        | 1    | 1 | 1 | RT05124140 | Resistor, 120k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RE13        | 1    | 1 | 1 | RT05392140 | Resistor, 3.9k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RE14        | 1    | 1 | 1 | RT05392140 | Resistor, 3.9k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RE15        | 1    | 1 | 1 | RT05471140 | Resistor, 470 $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RE16        | 1    | 1 | 1 | RT05471140 | Resistor, 470 $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RE17        | 1    | 1 | 1 | RT05474140 | Resistor, 470k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RE18        | 1    | 1 | 1 | RT05474140 | Resistor, 470k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RE19        | 1    | 1 | 1 | RT05102140 | Resistor, 1k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W   |
| RE20        | 1    | 1 | 1 | RT05102140 | Resistor, 1k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W   |
| RE21        | 1    | 1 | 1 | RT05105140 | Resistor, 1M $\Omega$ $\pm$ 5% $\frac{1}{4}$ W   |
| RE22        | 1    | 1 | 1 | RT05105140 | Resistor, 1M $\Omega$ $\pm$ 5% $\frac{1}{4}$ W   |
| RE23        | 1    | 1 | 1 | RT05154140 | Resistor, 150k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RE24        | 1    | 1 | 1 | RT05154140 | Resistor, 150k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RE25        | 1    | 1 | 1 | RT05123140 | Resistor, 12k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RE26        | 1    | 1 | 1 | RT05123140 | Resistor, 12k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RE27        | 1    | 1 | 1 | RT05472140 | Resistor, 4.7k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RE28        | 1    | 1 | 1 | RT05472140 | Resistor, 4.7k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RE29        | 1    | 1 | 1 | RT05330140 | Resistor, 33 $\Omega$ $\pm$ 5% $\frac{1}{4}$ W   |
| RE30        | 1    | 1 | 1 | RT05330140 | Resistor, 33 $\Omega$ $\pm$ 5% $\frac{1}{4}$ W   |
| RE31        | 1    | 1 | 1 | RT05474140 | Resistor, 470k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RE32        | 1    | 1 | 1 | RT05474140 | Resistor, 470k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RE33        | 1    | 1 | 1 | GJ05821010 | Resistor, 820 $\Omega$ $\pm$ 5% 1W               |
| RE34        | 1    | 1 | 1 | GJ05821010 | Resistor, 820 $\Omega$ $\pm$ 5% 1W               |
| CH01        | 1    | 1 | 1 | DF15104010 | Film Cap., 0.1 $\mu$ F $\pm$ 5% 50V              |
| CH02        | 1    | 1 | 1 | DF15104010 | Film Cap., 0.1 $\mu$ F $\pm$ 5% 50V              |
| CH03        | 1    | 1 | 1 | DF15104010 | Film Cap., 0.1 $\mu$ F $\pm$ 5% 50V              |
| CH04        | 1    | 1 | 1 | DF15104010 | Film Cap., 0.1 $\mu$ F $\pm$ 5% 50V              |
| CH05        | 1    | 1 | 1 | DF15104010 | Film Cap., 0.1 $\mu$ F $\pm$ 5% 50V              |
| CH06        | 1    | 1 | 1 | DF15104010 | Film Cap., 0.1 $\mu$ F $\pm$ 5% 50V              |
| CH07        | 1    | 1 | 1 | DF15152010 | Film Cap., 1500pF $\pm$ 5% 50V                   |
| CH08        | 1    | 1 | 1 | DF15152010 | Film Cap., 1500pF $\pm$ 5% 50V                   |
| CH09        | 1    | 1 | 1 | DF15222010 | Film Cap., 2200pF $\pm$ 5% 50V                   |
| CH10        | 1    | 1 | 1 | DF15222010 | Film Cap., 2200pF $\pm$ 5% 50V                   |
| CH11        | 1    | 1 | 1 | DF65391010 | Film Cap., 390pF $\pm$ 5% 50V                    |
| CH12        | 1    | 1 | 1 | DF65391010 | Film Cap., 390pF $\pm$ 5% 50V                    |
| CH13        | 1    | 1 | 1 | DF17224010 | Film Cap., 0.22 $\mu$ F $\pm$ 20% 50V            |
| CH14        | 1    | 1 | 1 | DF17224010 | Film Cap., 0.22 $\mu$ F $\pm$ 20% 50V            |
| CH15        | 1    | 1 | 1 | DD11050010 | Ceramic Cap., 5pF $\pm$ 0.5pF 50V                |
| CH16        | 1    | 1 | 1 | DD11050010 | Ceramic Cap., 5pF $\pm$ 0.5pF 50V                |
| CH17        | 1    | 1 | 1 | EE10605040 | Electrolytic Cap., 10 $\mu$ F 50V                |
| CH18        | 1    | 1 | 1 | EE10605040 | Electrolytic Cap., 10 $\mu$ F 50V                |
| CH19        | 1    | 1 | 1 | DD15101020 | Ceramic Cap., 100pF $\pm$ 5% 50V                 |
| CH20        | 1    | 1 | 1 | DD15101020 | Ceramic Cap., 100pF $\pm$ 5% 50V                 |
| CH21        | 1    | 1 | 1 | EA47603590 | Electrolytic Cap., 47 $\mu$ F 35V                |
| CH22        | 1    | 1 | 1 | EA47603590 | Electrolytic Cap., 47 $\mu$ F 35V                |
| JH01        | 1    | 1 | 1 | YP06000400 | Plug, 10P, AMP                                   |
| JH02        | 1    | 1 | 1 | YP06001050 | Plug, 5P   |
| PH00        | 1    | 1 | 1 | YK29640310 | P.W. Board                                       |
|             | 1    | 1 | 1 | ZZ29640310 | P.W. Board Assembly                              |
| QH01        | 1    | 1 | 1 | HT108412A0 | Transistor, 2SA841 (GR or BL)                    |
| QH02        | 1    | 1 | 1 | HT108412A0 | Transistor, 2SA841 (GR or BL)                    |
| QH03        | 1    | 1 | 1 | HT316812A0 | Transistor, 2SC1681 (GR or BL)                   |
| QH04        | 1    | 1 | 1 | HT316812A0 | Transistor, 2SC1681 (GR or BL)                   |
| QH05        | 1    | 1 | 1 | HT316812A0 | Transistor, 2SC1681 (GR or BL)                   |
| QH06        | 1    | 1 | 1 | HT316812A0 | Transistor, 2SC1681 (GR or BL)                   |
| RH01        | 1    | 1 | 1 | RT05334140 | Resistor, 330k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RH02        | 1    | 1 | 1 | RT05334140 | Resistor, 330k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RH03        | 1    | 1 | 1 | RT05244140 | Resistor, 240k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RH04        | 1    | 1 | 1 | RT05244140 | Resistor, 240k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RH05        | 1    | 1 | 1 | RT05513140 | Resistor, 51k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RH06        | 1    | 1 | 1 | RT05513140 | Resistor, 51k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RH07        | 1    | 1 | 1 | RT05113140 | Resistor, 11k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RH08        | 1    | 1 | 1 | RT05113140 | Resistor, 11k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RH09        | 1    | 1 | 1 | RT05113140 | Resistor, 11k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RH10        | 1    | 1 | 1 | RT05113140 | Resistor, 11k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RH11        | 1    | 1 | 1 | RT05113140 | Resistor, 11k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RH12        | 1    | 1 | 1 | RT05113140 | Resistor, 11k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RH13        | 1    | 1 | 1 | RT05115140 | Resistor, 1.1M $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RH14        | 1    | 1 | 1 | RT05115140 | Resistor, 1.1M $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RH15        | 1    | 1 | 1 | RT05102140 | Resistor, 1k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W   |
| RH16        | 1    | 1 | 1 | RT05102140 | Resistor, 1k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W   |
| RH17        | 1    | 1 | 1 | RT05103140 | Resistor, 10k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RH18        | 1    | 1 | 1 | RT05103140 | Resistor, 10k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RH19        | 1    | 1 | 1 | RT05682140 | Resistor, 6.8k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RH20        | 1    | 1 | 1 | RT05682140 | Resistor, 6.8k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RH21        | 1    | 1 | 1 | RT05102140 | Resistor, 1k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W   |
| RH22        | 1    | 1 | 1 | RT05102140 | Resistor, 1k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W   |
| RH23        | 1    | 1 | 1 | RT05224140 | Resistor, 220k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RH24        | 1    | 1 | 1 | RT05224140 | Resistor, 220k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RH25        | 1    | 1 | 1 | RT05221140 | Resistor, 220 $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RH26        | 1    | 1 | 1 | RT05221140 | Resistor, 220 $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RH27        | 1    | 1 | 1 | GF05182120 | Resistor, 1.8k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RH28        | 1    | 1 | 1 | GF05182120 | Resistor, 1.8k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RH29        | 1    | 1 | 1 | RT05103140 | Resistor, 10k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RH30        | 1    | 1 | 1 | RT05103140 | Resistor, 10k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W  |
| RH31        | 1    | 1 | 1 | RT05124140 | Resistor, 120k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| RH32        | 1    | 1 | 1 | RT05124140 | Resistor, 120k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W |
| JJ01        | 1    | 1 | 1 | YP06000400 | Plug, 10P, AMP                                   |
| JJ02        | 1    | 1 | 1 | YP06000400 | Plug, 10P, AMP                                   |
| JJ03        | 1    | 1 | 1 | YP06001050 | Plug, 5P   |
| JJ04        | 1    | 1 | 1 | YP06000340 | Plug, 4P, AMP                                    |
| JJ05        | 1    | 1 | 1 | YP06000400 | Plug, 10P, AMP                                   |
| JJ06        | 1    | 1 | 1 | YP06001040 | Plug, 3P   |
| JJ07        | 1    | 1 | 1 | YP06001040 | Plug, 3P   |
| PJ00        | 1    | 1 | 1 | YG29640012 | P.W. Board                                       |
|             | 1    | 1 | 1 | ZZ29640010 | P.W. Board Assembly                              |
| SJ01        | 1    | 1 | 1 | SR08050360 | Rotary Switch, Selector                          |
| SJ02        | 1    | 1 | 1 | SR04030160 | Rotary Switch, Tape Copy                         |

• (U) for U.S.A  
 • (C) for Canada  
 • (E) for Europe

| REF. DESIG.             | Q'TY |    |    | PART NO.   | DESCRIPTION                  |      |
|-------------------------|------|----|----|------------|------------------------------|------|
|                         | U    | C  | E  |            |                              |      |
| SJ03                    | 1    | 1  | 1  | SR04030160 | Rotary Switch, Tape Monitor  |      |
| CN01                    | 1    | 1  | 1  | DK18103510 | Ceramic Cap., 0.01μF 500V    |      |
| CN02                    | 1    | 1  | 1  | DK18103510 | Ceramic Cap., 0.01μF 500V    |      |
| CN03                    | 1    | 1  | 1  | EA10605090 | Electrolytic Cap., 10μF 50V  |      |
| CN04                    | 1    | 1  | 1  | EA47601690 | Electrolytic Cap., 47μF 16V  |      |
| CN05                    | 1    | 1  | 1  | EA22701690 | Electrolytic Cap., 220μF 16V |      |
| CN06                    | 1    | 1  | 1  | EA47601690 | Electrolytic Cap., 47μF 16V  |      |
| CN07                    | 1    | 1  | 1  | EA33505090 | Electrolytic Cap., 3.3μF 50V |      |
| CN08                    | 1    | 1  | 1  | EA33505090 | Electrolytic Cap., 3.3μF 50V |      |
| JN01                    | ?    | 20 | 20 | 20         | YP10001130                   | Plug |
| JN20                    |      |    |    |            |                              |      |
| LN01                    | 1    | 1  | 1  | LY40240050 | Relay                        |      |
| <b>PN00 RELAY BOARD</b> |      |    |    |            |                              |      |
| PN00                    | 1    | 1  | 1  | YK29760210 | P.W. Board                   |      |
|                         | 1    | 1  | 1  | ZZ29760210 | P.W. Board assembly          |      |
| QN01                    | 1    | 1  | 1  | HD20011030 | Diode, DS131B                |      |
| QN02                    | 1    | 1  | 1  | HD20005010 | Diode, W06B                  |      |
| QN03                    | 1    | 1  | 1  | HT309452A0 | Transistor, 2SC945 Q, R      |      |
| QN04                    | 1    | 1  | 1  | HT313182R0 | Transistor, 2SC1318 R, S     |      |
| QN05                    | 1    | 1  | 1  | HT313182R0 | Transistor, 2SC1318 R, S     |      |
| QN06                    | 1    | 1  | 1  | HD30023090 | Zener Diode, WZ071 7V        |      |
| QN07                    | 1    | 1  | 1  | HT317752D0 | Transistor, 2SC1775A D, E    |      |
| QN08                    | 1    | 1  | 1  | HT317752D0 | Transistor, 2SC1775A D, E    |      |
| QN09                    | 1    | 1  | 1  | HT108722D0 | Transistor, 2SA872A D, E     |      |
| QN10                    | 1    | 1  | 1  | HT108722D0 | Transistor, 2SA872A D, E     |      |
| QN11                    | 1    | 1  | 1  | HT108722D0 | Transistor, 2SA872A D, E     |      |
| QN12                    | 1    | 1  | 1  | HT108722D0 | Transistor, 2SA872A D, E     |      |
| QN13                    | 1    | 1  | 1  | HT309452A0 | Transistor, 2SC945 Q, R      |      |
| QN14                    | 1    | 1  | 1  | HT309452A0 | Transistor, 2SC945 Q, R      |      |
| QN15                    | 1    | 1  | 1  | HT309452A0 | Transistor, 2SC945 Q, R      |      |
| QN16                    | 1    | 1  | 1  | HT309452A0 | Transistor, 2SC945 Q, R      |      |
| QN17                    | 1    | 1  | 1  | HD20018050 | Diode, 1S2092                |      |
| QN18                    | 1    | 1  | 1  | HD20018050 | Diode, 1S2092                |      |
| QN19                    | 1    | 1  | 1  | HD20001210 | Diode, 1S2473                |      |
| QN20                    | 1    | 1  | 1  | HD20001210 | Diode, 1S2473                |      |
| QN21                    | 1    | 1  | 1  | HD20001210 | Diode, 1S2473                |      |
| QN22                    | 1    | 1  | 1  | HD20001210 | Diode, 1S2473                |      |
| RN01                    | 1    | 1  | 1  | GJ05121010 | Resistor, 120Ω ±5% 1W        |      |
| RN02                    | 1    | 1  | 1  | GJ05102020 | Resistor, 1kΩ ±5% 2W         |      |
| RN03                    | 1    | 1  | 1  | GD05682140 | Resistor, 6.8kΩ ±5% ¼W       |      |
| RN04                    | 1    | 1  | 1  | GD05273140 | Resistor, 27kΩ ±5% ¼W        |      |
| RN05                    | 1    | 1  | 1  | GD05223140 | Resistor, 22kΩ ±5% ¼W        |      |
| RN06                    | 1    | 1  | 1  | GD05164140 | Resistor, 160kΩ ±5% ¼W       |      |
| RN07                    | 1    | 1  | 1  | GJ05181010 | Resistor, 180Ω ±5% 1W        |      |
| RN08                    | 1    | 1  | 1  | GD05560140 | Resistor, 56Ω ±5% ¼W         |      |
| RN09                    | 1    | 1  | 1  | GU05562120 | Resistor, 5.6kΩ ±5% ½W       |      |
| RN10                    | 1    | 1  | 1  | GU05562120 | Resistor, 5.6kΩ ±5% ½W       |      |
| RN11                    | 1    | 1  | 1  | GD05474140 | Resistor, 470kΩ ±5% ¼W       |      |
| RN12                    | 1    | 1  | 1  | GJ05182010 | Resistor, 1.8kΩ ±5% 1W       |      |
| RN13                    | 1    | 1  | 1  | GD05103140 | Resistor, 10kΩ ±5% ¼W        |      |
| RN14                    | 1    | 1  | 1  | GD05103140 | Resistor, 10kΩ ±5% ¼W        |      |
| RN15                    | 1    | 1  | 1  | GD05333140 | Resistor, 33kΩ ±5% ¼W        |      |
| RN16                    | 1    | 1  | 1  | GD05333140 | Resistor, 33kΩ ±5% ¼W        |      |
| RN17                    | 1    | 1  | 1  | GD05393140 | Resistor, 39kΩ ±5% ¼W        |      |
| RN18                    | 1    | 1  | 1  | GD05393140 | Resistor, 39kΩ ±5% ¼W        |      |

| REF. DESIG. | Q'TY |   |   | PART NO.   | DESCRIPTION                 |
|-------------|------|---|---|------------|-----------------------------|
|             | U    | C | E |            |                             |
| RN19        | 1    | 1 | 1 | GD05183140 | Resistor, 18kΩ ±5% ¼W       |
| RN20        | 1    | 1 | 1 | GD05183140 | Resistor, 18kΩ ±5% ¼W       |
| RN21        | 1    | 1 | 1 | GD05473140 | Resistor, 47kΩ ±5% ¼W       |
| RN22        | 1    | 1 | 1 | GD05473140 | Resistor, 47kΩ ±5% ¼W       |
| RN23        | 1    | 1 | 1 | GD05353140 | Resistor, 35kΩ ±5% ¼W       |
| RN24        | 1    | 1 | 1 | GD05353140 | Resistor, 35kΩ ±5% ¼W       |
| RN25        | 1    | 1 | 1 | GD05353140 | Resistor, 35kΩ ±5% ¼W       |
| RN26        | 1    | 1 | 1 | GD05353140 | Resistor, 35kΩ ±5% ¼W       |
| RN27        | 1    | 1 | 1 | GD05302140 | Resistor, 3kΩ ±5% ¼W        |
| RN28        | 1    | 1 | 1 | GD05302140 | Resistor, 3kΩ ±5% ¼W        |
| RN29        | 1    | 1 | 1 | GD05473140 | Resistor, 47kΩ ±5% ¼W       |
| RN30        | 1    | 1 | 1 | GD05473140 | Resistor, 47kΩ ±5% ¼W       |
| RN31        | 1    | 1 | 1 | GD05183140 | Resistor, 18kΩ ±5% ¼W       |
| RN32        | 1    | 1 | 1 | GD05183140 | Resistor, 18kΩ ±5% ¼W       |
| RN33        | 1    | 1 | 1 | GD05223140 | Resistor, 22kΩ ±5% ¼W       |
| RN34        | 1    | 1 | 1 | GD05223140 | Resistor, 22kΩ ±5% ¼W       |
| RN35        | 1    | 1 | 1 | GD05511140 | Resistor, 510Ω ±5% ¼W       |
| RN36        | 1    | 1 | 1 | GD05511140 | Resistor, 510Ω ±5% ¼W       |
| RN37        | 1    | 1 | 1 | GD05512140 | Resistor, 5.1kΩ ±5% ¼W      |
| RN38        | 1    | 1 | 1 | GD05512140 | Resistor, 5.1kΩ ±5% ¼W      |
| RN39        | 1    | 1 | 1 | GD05273140 | Resistor, 27kΩ ±5% ¼W       |
| RN40        | 1    | 1 | 1 | GD05273140 | Resistor, 27kΩ ±5% ¼W       |
| RN41        | 1    | 1 | 1 | GD05104140 | Resistor, 100kΩ ±5% ¼W      |
| RN42        | 1    | 1 | 1 | GD05104140 | Resistor, 100kΩ ±5% ¼W      |
| RN43        | 1    | 1 | 1 | GD05822140 | Resistor, 8.2kΩ ±5% ¼W      |
| RN44        | 1    | 1 | 1 | GD05822140 | Resistor, 8.2kΩ ±5% ¼W      |
| FP01        |      |   |   | FS10160800 | Fuse, SEMKO 1.6A            |
| FP02        |      |   |   | FS10160800 | Fuse, SEMKO 1.6A            |
| JP01        |      |   |   | YJ08000200 | Jack, Fuse Holder, PWB Type |
| JP02        |      |   |   | YJ08000200 | Jack, Fuse Holder, PWB Type |
| JP03        |      |   |   | YJ08000200 | Jack, Fuse Holder, PWB Type |
| JP04        |      |   |   | YJ08000200 | Jack, Fuse Holder, PWB Type |
| CS01        | 1    | 1 | 1 | DF15104010 | Film Cap., 0.1μF ±5% 50V    |
| CS02        | 1    | 1 | 1 | DF15104010 | Film Cap., 0.1μF ±5% 50V    |
| CS03        | 1    | 1 | 1 | DF15222010 | Film Cap., 2200pF ±5% 50V   |
| CS04        | 1    | 1 | 1 | DF15222010 | Film Cap., 2200pF ±5% 50V   |
| CS05        | 1    | 1 | 1 | DF15153010 | Film Cap., 0.015μF ±5% 50V  |
| CS06        | 1    | 1 | 1 | DF15153010 | Film Cap., 0.015μF ±5% 50V  |
| CS07        | 1    | 1 | 1 | DF15153010 | Film Cap., 0.015μF ±5% 50V  |
| CS08        | 1    | 1 | 1 | DF15153010 | Film Cap., 0.015μF ±5% 50V  |
| CS09        | 1    | 1 | 1 | DF15682010 | Film Cap., 6800pF ±5% 50V   |
| CS10        | 1    | 1 | 1 | DF15682010 | Film Cap., 6800pF ±5% 50V   |
| CS11        | 1    | 1 | 1 | DF65391010 | Film Cap., 390pF ±5% 50V    |
| CS12        | 1    | 1 | 1 | DF65391010 | Film Cap., 390pF ±5% 50V    |
| CS13        | 1    | 1 | 1 | DF15822010 | Film Cap., 8200pF ±5% 50V   |
| CS14        | 1    | 1 | 1 | DF15822010 | Film Cap., 8200pF ±5% 50V   |
| CS15        | 1    | 1 | 1 | DD15101020 | Ceramic Cap., 100pF ±5% 50V |
| CS16        | 1    | 1 | 1 | DD15101020 | Ceramic Cap., 100pF ±5% 50V |
| CS17        | 1    | 1 | 1 | DF15103010 | Film Cap., 0.01μF ±5% 50V   |
| CS18        | 1    | 1 | 1 | DF15103010 | Film Cap., 0.01μF ±5% 50V   |
| CS19        | 1    | 1 | 1 | DF15103010 | Film Cap., 0.01μF ±5% 50V   |
| CS20        | 1    | 1 | 1 | DF15103010 | Film Cap., 0.01μF ±5% 50V   |
| CS21        | 1    | 1 | 1 | DF15683010 | Film Cap., 0.068μF ±5% 50V  |
| CS22        | 1    | 1 | 1 | DF15683010 | Film Cap., 0.068μF ±5% 50V  |
| CS23        | 1    | 1 | 1 | DF15683010 | Film Cap., 0.068μF ±5% 50V  |
| CS24        | 1    | 1 | 1 | DF15683010 | Film Cap., 0.068μF ±5% 50V  |
| CS25        | 1    | 1 | 1 | DF15182010 | Film Cap., 1800pF ±5% 50V   |

- (U) for U.S.A
- (C) for Canada
- (E) for Europe

| REF. DESIG. | Q'TY |    |    | PART NO.   | DESCRIPTION                 | REF. DESIG. | Q'TY |   |   | PART NO.   | DESCRIPTION                         |
|-------------|------|----|----|------------|-----------------------------|-------------|------|---|---|------------|-------------------------------------|
|             | U    | C  | E  |            |                             |             | U    | C | E |            |                                     |
| CS26        | 1    | 1  | 1  | DF15182010 | Film Cap., 1800pF ±5% 50V   | SS01        | 1    | 1 | 1 | SR04050100 | Rotary Switch, 4 Circuit 5 Position |
| JS01        | 1    | 1  | 1  | YJ06000400 | Jack, 10P Connector (AMP)   | SS02        | 1    | 1 | 1 | SP04040170 | Push Switch, 4 Circuit 4 Button     |
| JS02        | 1    | 1  | 1  | YJ06000400 | Jack, 10P Connector (AMP)   | SS03        | 1    | 1 | 1 | SP04010210 | Push Switch, 4 Circuit 1 Button     |
| JS03        | 1    | 1  | 1  | YJ06000340 | Jack, 4P Connector (AMP)    | SS04        | 1    | 1 | 1 | SP04010210 | Push Switch, 4 Circuit 1 Button     |
| JS05        |      |    |    |            |                             | CT01        | 1    | 1 | 1 | DF16103010 | Film Cap., 0.01μF ±10% 50V          |
| ?           | 14   | 14 | 14 | YP10001130 | Plug                        | CT02        | 1    | 1 | 1 | DF16103010 | Film Cap., 0.01μF ±10% 50V          |
| JS18        |      |    |    |            |                             | CT03        | 1    | 1 | 1 | DF16103010 | Film Cap., 0.01μF ±10% 50V          |
|             |      |    |    |            |                             | CT04        | 1    | 1 | 1 | DF16103010 | Film Cap., 0.01μF ±10% 50V          |
|             |      |    |    |            |                             | CT09        | 1    | 1 | 1 | EA22601690 | Electrolytic Cap., 22μF 16V         |
|             |      |    |    |            |                             | CT10        | 1    | 1 | 1 | EA22601690 | Electrolytic Cap., 22μF 16V         |
| PS00        | 1    | 1  | 1  | YD29702020 | P.W. Board, Front Panel     | CT11        | 1    | 1 | 1 | EA22601690 | Electrolytic Cap., 22μF 16V         |
|             | 1    | 1  | 1  | ZZ29762020 | P.W. Board Assembly         | CT12        | 1    | 1 | 1 | EA22601690 | Electrolytic Cap., 22μF 16V         |
| RS01        | 1    | 1  | 1  | RT05102140 | Resistor, 1kΩ ±5% ¼W        | QT01        | 1    | 1 | 1 | HT309452A0 | Transistor, 2SC945 (Q or R)         |
| RS02        | 1    | 1  | 1  | RT05102140 | Resistor, 1kΩ ±5% ¼W        | QT02        | 1    | 1 | 1 | HT309452A0 | Transistor, 2SC945 (Q or R)         |
| RS03        | 1    | 1  | 1  | RT05332140 | Resistor, 3.3kΩ ±5% ¼W      | QT03        | 1    | 1 | 1 | HT107332A0 | Transistor, 2SA733 (Q or R)         |
| RS04        | 1    | 1  | 1  | RT05332140 | Resistor, 3.3kΩ ±5% ¼W      | QT04        | 1    | 1 | 1 | HT107332A0 | Transistor, 2SA733 (Q or R)         |
| RS05        | 1    | 1  | 1  | RT05183140 | Resistor, 18kΩ ±5% ¼W       |             |      |   |   |            |                                     |
| RS06        | 1    | 1  | 1  | RT05183140 | Resistor, 18kΩ ±5% ¼W       | QT05        | 1    | 1 | 1 | HD20011050 | Diode, 1S1555                       |
| RS07        | 1    | 1  | 1  | RS05030320 | Variable Resistor, 50kΩx2   | QT06        | 1    | 1 | 1 | HD20011050 | Diode, 1S1555                       |
| RS08        | 1    | 1  | 1  | RG05030060 | Variable Resistor, 50kΩAx2  | QT07        | 1    | 1 | 1 | HD20011050 | Diode, 1S1555                       |
| RS09        | 1    | 1  | 1  | RM05030720 | Variable Resistor, 50kΩBx2  | QT08        | 1    | 1 | 1 | HD20011050 | Diode, 1S1555                       |
| RS11        | 1    | 1  | 1  | RT05183140 | Resistor, 18kΩ ±5% ¼W       | QT09        | 1    | 1 | 1 | HD20011050 | Diode, 1S1555                       |
| RS12        | 1    | 1  | 1  | RT05183140 | Resistor, 18kΩ ±5% ¼W       | QT10        | 1    | 1 | 1 | HD20011050 | Diode, 1S1555                       |
| RS13        | 1    | 1  | 1  | RT05183140 | Resistor, 18kΩ ±5% ¼W       | QT11        | 1    | 1 | 1 | HD20011050 | Diode, 1S1555                       |
| RS14        | 1    | 1  | 1  | RT05183140 | Resistor, 18kΩ ±5% ¼W       | QT12        | 1    | 1 | 1 | HD20011050 | Diode, 1S1555                       |
| RS15        | 1    | 1  | 1  | RT05562140 | Resistor, 5.6kΩ ±5% ¼W      | QT13        | 1    | 1 | 1 | HD20003210 | Diode, 1S2471                       |
| RS16        | 1    | 1  | 1  | RT05562140 | Resistor, 5.6kΩ ±5% ¼W      | QT14        | 1    | 1 | 1 | HD20003210 | Diode, 1S2471                       |
| RS17        | 1    | 1  | 1  | RT05562140 | Resistor, 5.6kΩ ±5% ¼W      |             |      |   |   |            |                                     |
| RS18        | 1    | 1  | 1  | RT05562140 | Resistor, 5.6kΩ ±5% ¼W      | QT15        | 1    | 1 | 1 | HD20003210 | Diode, 1S2471                       |
| RS19        | 1    | 1  | 1  | RT05562140 | Resistor, 5.6kΩ ±5% ¼W      | QT16        | 1    | 1 | 1 | HD20003210 | Diode, 1S2471                       |
| RS20        | 1    | 1  | 1  | RT05562140 | Resistor, 5.6kΩ ±5% ¼W      | RT05        | 1    | 1 | 1 | GD05272120 | Resistor, 2.7kΩ ±5% ¼W              |
| RS21        | 1    | 1  | 1  | RT05562140 | Resistor, 5.6kΩ ±5% ¼W      | RT06        | 1    | 1 | 1 | GD05272120 | Resistor, 2.7kΩ ±5% ¼W              |
| RS22        | 1    | 1  | 1  | RT05562140 | Resistor, 5.6kΩ ±5% ¼W      | RT07        | 1    | 1 | 1 | GD05272120 | Resistor, 2.7kΩ ±5% ¼W              |
| RS23        | 1    | 1  | 1  | RT05273140 | Resistor, 27kΩ ±5% ¼W       | RT08        | 1    | 1 | 1 | GD05272120 | Resistor, 2.7kΩ ±5% ¼W              |
| RS24        | 1    | 1  | 1  | RT05273140 | Resistor, 27kΩ ±5% ¼W       | RT09        | 1    | 1 | 1 | GD05432140 | Resistor, 4.3kΩ ±5% ¼W              |
| RS25        | 1    | 1  | 1  | RT05273140 | Resistor, 27kΩ ±5% ¼W       | RT10        | 1    | 1 | 1 | GD05432140 | Resistor, 4.3kΩ ±5% ¼W              |
| RS26        | 1    | 1  | 1  | RT05273140 | Resistor, 27kΩ ±5% ¼W       | RT11        | 1    | 1 | 1 | GD05201140 | Resistor, 200Ω ±5% ¼W               |
| RS27        | 1    | 1  | 1  | RT05392140 | Resistor, 3.9kΩ ±5% ¼W      | RT12        | 1    | 1 | 1 | GD05201140 | Resistor, 200Ω ±5% ¼W               |
| RS28        | 1    | 1  | 1  | RT05392140 | Resistor, 3.9kΩ ±5% ¼W      | RT13        | 1    | 1 | 1 | GD05201140 | Resistor, 200Ω ±5% ¼W               |
| RS29        | 1    | 1  | 1  | RT05274140 | Resistor, 270kΩ ±5% ¼W      | RT14        | 1    | 1 | 1 | GD05201140 | Resistor, 200Ω ±5% ¼W               |
| RS30        | 1    | 1  | 1  | RT05274140 | Resistor, 270kΩ ±5% ¼W      | RT15        | 1    | 1 | 1 | GD05201140 | Resistor, 200Ω ±5% ¼W               |
| RS31        | 1    | 1  | 1  | RS01040040 | Variable Resistor, 100kΩBx2 | RT16        | 1    | 1 | 1 | GD05201140 | Resistor, 200Ω ±5% ¼W               |
| RS32        | 1    | 1  | 1  | RS01040040 | Variable Resistor, 100kΩBx2 | RT17        | 1    | 1 | 1 | GD05201140 | Resistor, 200Ω ±5% ¼W               |
| RS33        | 1    | 1  | 1  | RS01040040 | Variable Resistor, 100kΩBx2 | RT18        | 1    | 1 | 1 | GD05201140 | Resistor, 200Ω ±5% ¼W               |
| RS35        | 1    | 1  | 1  | RT05100140 | Resistor, 10Ω ±5% ¼W        | RT19        | 1    | 1 | 1 | GD05820140 | Resistor, 82Ω ±5% ¼W                |
| RS36        | 1    | 1  | 1  | RT05100140 | Resistor, 10Ω ±5% ¼W        | RT20        | 1    | 1 | 1 | GD05820140 | Resistor, 82Ω ±5% ¼W                |
| RS37        | 1    | 1  | 1  | RT05684140 | Resistor, 680kΩ ±5% ¼W      | RT21        | 1    | 1 | 1 | GD05820140 | Resistor, 82Ω ±5% ¼W                |
| RS38        | 1    | 1  | 1  | RT05684140 | Resistor, 680kΩ ±5% ¼W      | RT22        | 1    | 1 | 1 | GD05820140 | Resistor, 82Ω ±5% ¼W                |
| RS39        | 1    | 1  | 1  | RT05684140 | Resistor, 680kΩ ±5% ¼W      | CV01        | 1    | 1 | 1 | DK18203010 | Ceramic Cap., 0.02μF 50V            |
| RS40        | 1    | 1  | 1  | RT05684140 | Resistor, 680kΩ ±5% ¼W      | CV02        | 1    | 1 | 1 | DK18203010 | Ceramic Cap., 0.02μF 50V            |
| RS41        | 1    | 1  | 1  | RT05105140 | Resistor, 1MΩ ±5% ¼W        | CV03        | 1    | 1 | 1 | DK18203010 | Ceramic Cap., 0.02μF 50V            |
| RS42        | 1    | 1  | 1  | RT05105140 | Resistor, 1MΩ ±5% ¼W        |             |      |   |   |            |                                     |
| RS43        | 1    | 1  | 1  | RT05182140 | Resistor, 1.8kΩ ±5% ¼W      |             |      |   |   |            |                                     |
| RS44        | 1    | 1  | 1  | RT05182140 | Resistor, 1.8kΩ ±5% ¼W      |             |      |   |   |            |                                     |
| RS45        | 1    | 1  | 1  | RT05153140 | Resistor, 15kΩ ±5% ¼W       |             |      |   |   |            |                                     |
| RS46        | 1    | 1  | 1  | RT05153140 | Resistor, 15kΩ ±5% ¼W       |             |      |   |   |            |                                     |
| RS47        | 1    | 1  | 1  | RT05100140 | Resistor, 10Ω ±5% ¼W        |             |      |   |   |            |                                     |
| RS48        | 1    | 1  | 1  | RT05100140 | Resistor, 10Ω ±5% ¼W        |             |      |   |   |            |                                     |

• (U) for U.S.A  
 • (C) for Canada  
 • (E) for Europe

| REF. DESIG. | Q'TY |   |   | PART NO.   | DESCRIPTION                       |
|-------------|------|---|---|------------|-----------------------------------|
|             | U    | C | E |            |                                   |
| CV04        | 1    | 1 | 1 | DF17104010 | Film Cap., 0.11μF 50V             |
| JV01        | 1    | 1 | 1 | YT02040150 | Terminal, 4P RCA                  |
| JV02        | 1    | 1 | 1 | YT02040150 | Terminal, 4P RCA                  |
| JV03        |      |   | 1 | BY01050060 | Jack, RCA (DIN)                   |
| JV03        | 1    | 1 |   | YT02040150 | Terminal, 4P RCA                  |
| JV04        |      |   | 1 | BY01050060 | Jack, RCA (DIN)                   |
| JV04        | 1    | 1 |   | YT02040150 | Terminal, 4P RCA                  |
| JV05        | 1    | 1 | 1 | YJ06000400 | Jack, 10P AMP                     |
| JV06        | 1    | 1 | 1 | YJ06000400 | Jack, 10P AMP                     |
| JV07        | ?    | 9 | 9 | YP10001130 | Plug                              |
| JV15        |      |   |   |            |                                   |
| JV16        | 1    | 1 | 1 | YT02040210 | Terminal, 4P RCA                  |
| JV17        | 1    | 1 | 1 | YP10001130 | Plug                              |
| JV18        | 1    | 1 | 1 | YP10001130 | Plug                              |
|             |      |   |   |            | <b>PV00 REAR BOARD</b>            |
| PV00        | 1    | 1 | 1 | YF29640010 | P.W. Board                        |
|             | 1    | 1 |   | ZZ29641010 | P.W. Board Assembly               |
|             |      |   | 1 | ZZ29648010 | P.W. Board Assembly               |
| RV01        |      |   | 1 | RT05394140 | Resistor, 390kΩ ±5% ¼W            |
| RV02        |      |   | 1 | RT05394140 | Resistor, 390kΩ ±5% ¼W            |
| RV03        |      |   | 1 | RT05394140 | Resistor, 390kΩ ±5% ¼W            |
| RV04        |      |   | 1 | RT05394140 | Resistor, 390kΩ ±5% ¼W            |
| RV05        |      |   | 1 | RT05104140 | Resistor, 100kΩ ±5% ¼W            |
| RV06        |      |   | 1 | RT05104140 | Resistor, 100kΩ ±5% ¼W            |
| RV07        |      |   | 1 | RT05104140 | Resistor, 100kΩ ±5% ¼W            |
| RV08        |      |   | 1 | RT05104140 | Resistor, 100kΩ ±5% ¼W            |
| JW01        | 1    | 1 | 1 | YJ01000860 | Jack, Headphone                   |
| JW02        | ?    | 7 | 7 | YP10001130 | Plug                              |
| JW08        |      |   |   |            |                                   |
|             |      |   |   |            | <b>PW00 HEADPHONE BOARD</b>       |
| PW00        | 1    | 1 | 1 | YF29640020 | P.W. Board                        |
|             | 1    | 1 |   | ZZ29641020 | P.W. Board Assembly               |
| RW01        | 1    | 1 | 1 | GJ05331010 | Resistor, 330Ω ±5% 1W             |
| RW02        | 1    | 1 | 1 | GJ05331010 | Resistor, 330Ω ±5% 1W             |
| RW03        | 1    | 1 | 1 | GJ05151010 | Resistor, 150Ω ±5% 1W             |
| RW04        | 1    | 1 | 1 | GJ05151010 | Resistor, 150Ω ±5% 1W             |
| SW01        | 1    | 1 | 1 | SP04020210 | Pushswitch                        |
| C001        |      |   | 1 | DQ07473540 | Oil-Paper Cap., 0.047μF ±20% 450V |
| C002        |      |   | 1 | DQ07473540 | Oil-Paper Cap., 0.047μF ±20% 450V |
| C003        | 1    | 1 | 1 | E112906310 | Electrolytic Cap., 12000μF×2 63V  |
| C004        | 1    | 1 | 1 | DF17104520 | Film Cap., 0.1μF ±20% 200V        |
| C005        | 1    | 1 | 1 | DF17104520 | Film Cap., 0.1μF ±20% 200V        |
| C006        | 1    | 1 | 1 | EQ10601610 | Electrolytic Cap., 10μF 16V       |
| C007        | 1    | 1 | 1 | EQ10601610 | Electrolytic Cap., 10μF 16V       |
| F001        |      |   | 1 | FS10300900 | Fuse, SGA 3A                      |
| F001        | 1    | 1 |   | FS10600040 | Fuse, UL MGC 6A                   |
| G001        |      |   | 1 | BF10400040 | Cap Comp.                         |
| G001        | 1    | 1 |   | BF33300020 | Cap Comp., 0.033μF+120ΩECQ-JC     |
| J001        | 1    | 1 | 1 | YJ01001010 | Jack, MIC                         |
| J002        | 1    | 1 | 1 | YJ01001010 | Jack, MIC                         |
| J004        | 1    | 1 | 1 | YT01010050 | Terminal, Ground                  |
| J005        | 1    | 1 | 1 | YT03040160 | Terminal                          |

| REF. DESIG. | Q'TY |   |   | PART NO.   | DESCRIPTION                       |
|-------------|------|---|---|------------|-----------------------------------|
|             | U    | C | E |            |                                   |
| J006        | 1    | 1 | 1 | YT03040160 | Terminal                          |
| J007        |      |   |   |            |                                   |
| J007        | 4    | 4 |   | YJ04000560 | Jack, AC Outlet                   |
| J010        |      |   |   |            |                                   |
| J011        |      |   |   |            |                                   |
| J011        | 8    | 8 | 8 | YJ05000220 | Jack, Transistor Socket           |
| J018        |      |   |   |            |                                   |
| J019        | 1    | 1 | 1 | YJ05000250 | Jack, LED Socket                  |
| J020        | 1    | 1 | 1 | YJ06001040 | Jack, 3P Jack                     |
| J021        | 1    | 1 | 1 | YJ06001050 | Jack                              |
| J022        | 1    | 1 | 1 | YJ06001040 | Jack 3P                           |
| J023        | 1    | 1 | 1 | YJ06001450 | Jack, 6P                          |
| J024        | 1    | 1 | 1 | YJ06001050 | Jack, 5P                          |
| J025        | 1    | 1 | 1 | YJ06001040 | Jack, 3P                          |
| J026        |      |   | 1 | YJ08000220 | Jack, Fuse Holder 20mm            |
| J026        | 1    | 1 |   | YJ08000230 | Jack, Fuse Holder                 |
| J027        |      |   | 1 | BY03110010 | Plug, Voltage Selector            |
| J028        | 1    | 1 | 1 | YJ06001040 | Jack                              |
| J029        |      |   | 1 | YL09030010 | Terminal, Connector               |
| J031        | 1    | 1 | 1 | YJ05000250 | Jack, LED Socket                  |
| J032        | 1    | 1 | 1 | YJ05000250 | Jack, LED Socket                  |
| J033        | 1    | 1 | 1 | YJ06001040 | Jack, 3P                          |
| J034        | 1    | 1 | 1 | YJ06001040 | Jack, 3P                          |
| L001        | 1    | 1 |   | TS61406050 | Power Transformer                 |
| L001        |      |   | 1 | TS61406060 | Power Transformer                 |
| Q001        | 1    | 1 | 1 | HT404272A0 | Transistor, 2SD427 (R or O)       |
| Q002        | 1    | 1 | 1 | HT205572A0 | Transistor, 2SB557 (R or O)       |
| Q003        | 1    | 1 | 1 | HT404272A0 | Transistor, 2SD427 (R or O)       |
| Q004        | 1    | 1 | 1 | HT205572A0 | Transistor, 2SB557 (R or O)       |
| Q005        | 1    | 1 | 1 | HT404272A0 | Transistor, 2SD427 (R or O)       |
| Q006        | 1    | 1 | 1 | HT205572A0 | Transistor, 2SB557 (R or O)       |
| Q007        | 1    | 1 | 1 | HT404272A0 | Transistor, 2SD427 (R or O)       |
| Q008        | 1    | 1 | 1 | HT205572A0 | Transistor, 2SB557 (R or O)       |
| Q009        | 1    | 1 | 1 | HD20004290 | Diode, S5VB-20                    |
| Q010        | 1    | 1 | 1 | HI10004030 | L.E.D., 132B                      |
| Q011        | 1    | 1 | 1 | HI10004030 | L.E.D., SLP-132B                  |
| Q012        | 1    | 1 | 1 | HI10004030 | L.E.D., SLP-132B                  |
| R001        | 1    | 1 | 1 | GS10222030 | Resistor, 2.2kΩ ±10% 3W           |
| R002        | 1    | 1 | 1 | GS10222030 | Resistor, 2.2kΩ ±10% 3W           |
| S001        |      |   | 1 | SP02010250 | Pushswitch, SDG-5P SEMKO          |
| S001        | 1    | 1 |   | SP02020210 | Pushswitch, Power TV-5            |
| S002        | 1    | 1 | 1 | SS02020380 | Slide Switch, AC-DC Coupling      |
| W001        |      |   | 1 | YC01900030 | A.C. Power Cord                   |
| W001        | 1    | 1 |   | YC02400170 | A.C. Power Cord                   |
| C401        | 1    | 1 | 1 | EE47505040 | Electrolytic Cap., 4.7μF ±20% 50V |
| C402        | 1    | 1 | 1 | EE47505040 | Electrolytic Cap., 4.7μF ±20% 50V |
| C405        | 1    | 1 | 1 | DD15600010 | Ceramic Cap., 60pF ±5% 50V        |
| C406        | 1    | 1 | 1 | DD15600010 | Ceramic Cap., 60pF ±5% 50V        |
| C409        | 1    | 1 | 1 | DD15101020 | Ceramic Cap., 100pF ±5% 50V       |
| C410        | 1    | 1 | 1 | DD15101020 | Ceramic Cap., 100pF ±5% 50V       |
| C411        | 1    | 1 | 1 | DD15101020 | Ceramic Cap., 100pF ±5% 50V       |
| C412        | 1    | 1 | 1 | DD15101020 | Ceramic Cap., 100pF ±5% 50V       |
| C413        | 1    | 1 | 1 | EE10701640 | Electrolytic Cap., 100μF ±20% 16V |
| C414        | 1    | 1 | 1 | EE10701640 | Electrolytic Cap., 100μF ±20% 16V |
| C415        | 1    | 1 | 1 | DF65101010 | Film Cap., 100pF ±5% 50V          |









- (U) for U.S.A
- (C) for Canada
- (E) for Europe

| REF. DESIG. | Q'TY |   |   | PART NO.   | DESCRIPTION                  |
|-------------|------|---|---|------------|------------------------------|
|             | U    | C | E |            |                              |
| R763        | 1    | 1 | 1 | GD05100140 | Resistor, 10Ω ±5% ¼W         |
| R764        | 1    | 1 | 1 | GD05100140 | Resistor, 10Ω ±5% ¼W         |
| R765        | 1    | 1 | 1 | GD05100140 | Resistor, 10Ω ±5% ¼W         |
| R766        | 1    | 1 | 1 | GD05100140 | Resistor, 10Ω ±5% ¼W         |
| R767        | 1    | 1 | 1 | GJ05562010 | Resistor, 5.6kΩ ±5% 1W       |
| R768        | 1    | 1 | 1 | GJ05562010 | Resistor, 5.6kΩ ±5% 1W       |
| R769        | 1    | 1 | 1 | GJ05562010 | Resistor, 5.6kΩ ±5% 1W       |
| R770        | 1    | 1 | 1 | GJ05562010 | Resistor, 5.6kΩ ±5% 1W       |
| R771        | 1    | 1 | 1 | GD05101140 | Resistor, 100Ω ±5% ¼W        |
| R772        | 1    | 1 | 1 | GD05101140 | Resistor, 100Ω ±5% ¼W        |
| R773        | 1    | 1 | 1 | GD05101140 | Resistor, 100Ω ±5% ¼W        |
| R774        | 1    | 1 | 1 | GD05101140 | Resistor, 100Ω ±5% ¼W        |
| R775        | 1    | 1 | 1 | GF05330140 | Resistor, 33Ω ±5% ¼W         |
| R776        | 1    | 1 | 1 | GF05330140 | Resistor, 33Ω ±5% ¼W         |
| R777        | 1    | 1 | 1 | GF05330140 | Resistor, 33Ω ±5% ¼W         |
| R778        | 1    | 1 | 1 | GF05330140 | Resistor, 33Ω ±5% ¼W         |
| R779        | 1    | 1 | 1 | GF05240120 | Resistor, 24Ω ±5% ½W         |
| R780        | 1    | 1 | 1 | GF05240120 | Resistor, 24Ω ±5% ½W         |
| R781        | 1    | 1 | 1 | GF05240120 | Resistor, 24Ω ±5% ½W         |
| R782        | 1    | 1 | 1 | GF05240120 | Resistor, 24Ω ±5% ½W         |
| R787        | 1    | 1 | 1 | GW10332030 | Resistor, 0.33Ω ±10% 3W      |
| R788        | 1    | 1 | 1 | GW10332030 | Resistor, 0.33Ω ±10% 3W      |
| R789        | 1    | 1 | 1 | GW10332030 | Resistor, 0.33Ω ±10% 3W      |
| R790        | 1    | 1 | 1 | GW10332030 | Resistor, 0.33Ω ±10% 3W      |
| R791        | 1    | 1 | 1 | GW10332030 | Resistor, 0.33Ω ±10% 3W      |
| R792        | 1    | 1 | 1 | GW10332030 | Resistor, 0.33Ω ±10% 3W      |
| R793        | 1    | 1 | 1 | GW10332030 | Resistor, 0.33Ω ±10% 3W      |
| R794        | 1    | 1 | 1 | GW10332030 | Resistor, 0.33Ω ±10% 3W      |
| R795        | 1    | 1 | 1 | GJ05100030 | Resistor, 10Ω ±5% 3W         |
| R796        | 1    | 1 | 1 | GJ05100030 | Resistor, 10Ω ±5% 3W         |
| R797        | 1    | 1 | 1 | GJ05022020 | Resistor, 2.2Ω ±5% 2W        |
| R798        | 1    | 1 | 1 | GJ05022020 | Resistor, 2.2Ω ±5% 2W        |
| C851        | 1    | 1 | 1 | DK18103510 | Ceramic Cap., 0.01μF 500V    |
| C852        | 1    | 1 | 1 | DK18103510 | Ceramic Cap., 0.01μF 500V    |
| C853        | 1    | 1 | 1 | EA47706310 | Electrolytic Cap., 470μF 63V |
| C854        | 1    | 1 | 1 | EA47706310 | Electrolytic Cap., 470μF 63V |
| C855        | 1    | 1 | 1 | EA10701690 | Electrolytic Cap., 100μF 16V |
| C856        | 1    | 1 | 1 | EA10701690 | Electrolytic Cap., 100μF 16V |
| C857        | 1    | 1 | 1 | DF16102010 | Film Cap., 0.001μF ±10% 50V  |
| C858        | 1    | 1 | 1 | DF16102010 | Film Cap., 0.001μF ±10% 50V  |
| C859        | 1    | 1 | 1 | EA10701690 | Electrolytic Cap., 100μF 16V |
| C860        | 1    | 1 | 1 | EA33505090 | Electrolytic Cap., 3.3μF 50V |
| C861        | 1    | 1 | 1 | EA33505090 | Electrolytic Cap., 3.3μF 50V |
| Q851        | 1    | 1 | 1 | HD20013030 | Diode, DS-133B               |
| Q852        | 1    | 1 | 1 | HD20013030 | Diode, DS-133B               |
| Q853        | 1    | 1 | 1 | HT403132P0 | Transistor, 2SD313 (D or E)  |
| Q854        | 1    | 1 | 1 | HT205072P0 | Transistor, 2SB507 (D or E)  |
| Q855        | 1    | 1 | 1 | HT315091Q0 | Transistor, 2SC1509 (Q)      |
| Q856        | 1    | 1 | 1 | HT107771Q0 | Transistor, 2SA777 (Q)       |
| Q857        | 1    | 1 | 1 | HD30023090 | Zener, WZ-071                |
| Q858        | 1    | 1 | 1 | HD30023090 | Zener, WZ-071                |
| Q859        | 1    | 1 | 1 | HD20003210 | Diode, 1S2471 Black          |
| Q860        | 1    | 1 | 1 | HD20003210 | Diode, 1S2471 Black          |
| R851        | 1    | 1 | 1 | GJ05022010 | Resistor, 2.2Ω ±5% 1W        |
| R852        | 1    | 1 | 1 | GJ05022010 | Resistor, 2.2Ω ±5% 1W        |
| R853        | 1    | 1 | 1 | RT05332140 | Resistor, 3.3kΩ ±5% ¼W       |
| R854        | 1    | 1 | 1 | RT05332140 | Resistor, 3.3kΩ ±5% ¼W       |

| REF. DESIG. | Q'TY |   |   | PART NO.   | DESCRIPTION            |
|-------------|------|---|---|------------|------------------------|
|             | U    | C | E |            |                        |
| R855        | 1    | 1 | 1 | RT05222140 | Resistor, 2.2kΩ ±5% ¼W |
| R856        | 1    | 1 | 1 | RT05222140 | Resistor, 2.2kΩ ±5% ¼W |
| R857        | 1    | 1 | 1 | GJ05562010 | Resistor, 5.6kΩ ±5% 1W |
| R858        | 1    | 1 | 1 | RT05273140 | Resistor, 27kΩ ±5% ¼W  |
| R859        | 1    | 1 | 1 | RT05682140 | Resistor, 6.8kΩ ±5% ¼W |
| R860        | 1    | 1 | 1 | RT05333140 | Resistor, 33kΩ ±5% ¼W  |
| R861        | 1    | 1 | 1 | RT05273140 | Resistor, 27kΩ ±5% ¼W  |
| R862        | 1    | 1 | 1 | GJ05472010 | Resistor, 4.7kΩ ±5% 1W |
| R863        | 1    | 1 | 1 | RT05472140 | Resistor, 4.7kΩ ±5% ¼W |
| R864        | 1    | 1 | 1 | RT05562140 | Resistor, 5.6kΩ ±5% ¼W |

**12. TECHNICAL SPECIFICATIONS**

● FOR U.S.A. MODEL ONLY

**AMPLIFIER SECTION**

**RATED POWER OUTPUT, MINIMUM CONTINUOUS**

|  |                 |
|--|-----------------|
| AVERAGE POWER PER CHANNELS, BOTH CHANNELS DRIVEN ..... | 90 WATTS        |
| POWER BAND .....                                       | 20 Hz to 20 kHz |
| TOTAL HARMONIC DISTORTION .....                        | 0.03%           |
| LOAD IMPEDANCE .....                                   | 8 OHMS          |

**RATED POWER OUTPUT, MINIMUM CONTINUOUS**

|   |                 |
|---|-----------------|
| AVERAGE POWER PER CHANNELS, BOTH CHANNELS DRIVEN..... | 113 WATTS       |
| POWER BAND .....                                      | 20 Hz to 20 kHz |
| TOTAL HARMONIC DISTORTION .....                       | 0.06%           |
| LOAD IMPEDANCE .....                                  | 4 OHMS          |

|   |           |
|---|-----------|
| I.M. Distortion (IHF method, 60 Hz<br>and 7 kHz mixed 4:1<br>at rated power output) |           |
| at 8 ohm load impedance .....   | 0.03%     |
| at 4 ohm load impedance .....   | 0.09%     |
| Damping Factor (at 20 Hz) .....   | 60        |
| Sensitivity (at MAIN IN) .....  | 1.5 V     |
| Impedance (at MAIN IN) .....  | 36 k ohms |
| Frequency Response for Power Amp Only<br>(at 1 watt output, 20 Hz to 20 kHz) .....  | ±0.2 dB   |
| S/N Ratio (MAIN IN, "A" Weighted) .....   | 110 dB    |

**PREAMPLIFIER SECTION**

|  |           |
|--|-----------|
| Phono  |           |
| Input Overload at 1 kHz .....  | 310 mV    |
| Equivalent Input Noise ("A" Weighted) .....  | 0.48 μV   |
| Dynamic Range<br>(Dynamic Range is the ratio of input<br>overload to equivalent input noise) ..... | 117 dB    |
| Input Sensitivity .....  | 1.8 mV    |
| Input Impedance .....  | 47 k ohms |
| Frequency Response, RIAA 20 Hz to 20 kHz .....   | ±0.2 dB   |
| Signal-to-Noise Ratio ("A" Weighted)<br>(at rated output and 7.75 mV input) .....                  | 83 dB     |
| High Level (Aux and Tape)  |           |
| Input Sensitivity .....  | 180 mV    |
| Input Impedance .....  | 20 k ohms |

|   |                        |
|---|------------------------|
| Frequency Response<br>(includes Power Amp) .....                                      | 5 Hz to 60 kHz ±1.0 dB |
| Signal-to-Noise Ratio ("A" Weighted)<br>(ref. to rated output and 775 mV input) ..... | 93 dB                  |
| Output Levels   |                        |
| Tape Out (ref. 7.75 mV at Phono inputs) .....   | 775 mV                 |
| Pre-Out (ref. 180 mV at Aux inputs) .....   | 1.5 V                  |
| (ref. 500 mV at Aux inputs, Main<br>Amp disconnected) .....                           | 4.2 V                  |
| Output Impedance  |                        |
| Tape Out .....  | 330 ohms               |
| Pre-Out .....   | 220 ohms               |

**GENERAL**

|   |                    |
|---|--------------------|
| Power Requirements .....  | 120 VAC 60 Hz      |
| Power Consumption at rated output,<br>both channels operating ..... | 370 Watt           |
| Idling Power (Volume Control at zero) .....                         | 65 Watt            |
| Dimensions  |                    |
| Panel Width .....   | 416 mm (16-3/8")   |
| Panel Height .....  | 146 mm ( 5-3/4")   |
| Depth .....   | 316 mm (12-3/8")   |
| Weight  |                    |
| Unit alone .....  | 15.0 kg (33.0 lbs) |
| Packed for Shipment .....   | 17.0 kg (37.4 lbs) |

● FOR EUROPEAN MODEL ONLY

Audio Section

|   |               |
|---|---------------|
| POWER OUTPUT AT 1% DISTORTION .....   | 160 W         |
| RATED POWER OUTPUT, 1 kHz .....   | 113 W         |
| TOTAL HARMONIC DISTORTION AT RATED POWER OUTPUT, 1 kHz .....  | 0.09%         |
| I.M. DISTORTION AT RATED POWER OUTPUT<br>(I.H.F. METHOD, 300 Hz AND 10 kHz MIXED 4:1 AT RATED POWER OUTPUT) ..... | 0.09%         |
| POWER BANDWIDTH, ½ RATED POWER OUTPUT .....   | 7 Hz ~ 70 kHz |
| LOAD IMPEDANCE .....  | 4 OHMS        |

|   |               |
|---|---------------|
| POWER OUTPUT AT 1% DISTORTION .....   | 105 W         |
| RATED POWER OUTPUT, 1 kHz .....   | 90 W          |
| TOTAL HARMONIC DISTORTION AT RATED POWER OUTPUT, 1 kHz .....  | 0.03%         |
| I.M. DISTORTION AT RATED POWER OUTPUT<br>(I.H.F. METHOD, 300 Hz AND 10 kHz MIXED 4:1 AT RATED POWER OUTPUT) ..... | 0.03%         |
| POWER BANDWIDTH, ½ RATED POWER OUTPUT .....   | 7 Hz ~ 70 kHz |
| LOAD IMPEDANCE .....  | 8 OHMS        |

|                           |    |
|---------------------------|----|
| Damping Factor, SP Output |    |
| 40 Hz .....               | 60 |
| 1 kHz .....               | 50 |
| 12.5 kHz .....            | 45 |

|                               |         |
|-------------------------------|---------|
| Frequency Response            |         |
| Phono 40 Hz ~ 1.6 kHz .....   | ±0.5 dB |
| Aux 40 Hz ~ 1.6 kHz .....     | ±0.5 dB |
| Main In 40 Hz ~ 1.6 kHz ..... | ±0.2 dB |

|                              |       |
|------------------------------|-------|
| Signal-to-Noise Ratio, 1 kHz |       |
| Phono .....                  | 56 dB |
| Aux .....                    | 56 dB |
| Main In .....                | 58 dB |

|   |        |
|---|--------|
| Input Sensitivity, 1 kHz<br>(Rated Input Voltage) |        |
| Phono .....                                       | 1.8 mV |
| Aux .....   | 180 mV |
| Main In .....                                     | 1.5 V  |

|                        |           |
|------------------------|-----------|
| Input Impedance, 1 kHz |           |
| Phono .....            | 47 k ohms |
| Aux .....              | 20 k ohms |
| Main In .....          | 36 k ohms |

|                                    |        |
|------------------------------------|--------|
| Phono Equivalent Input Noise ..... | 1.0 µV |
| Phono Dynamic Range .....          | 110 dB |
| Phono Input Capacitance .....      | 100 pF |

|                          |        |
|--------------------------|--------|
| Channel Balance          |        |
| Phono 0 ~ -40 dB .....   | 2.5 dB |
| Aux 40 Hz ~ 16 kHz ..... | 2.0 dB |
| Main In .....            | 1.0 dB |

|                        |       |
|------------------------|-------|
| Interchannel Crosstalk |       |
| Phono 1 kHz .....      | 43 dB |
| 250 Hz ~ 10 kHz .....  | 40 dB |
| Aux 1 kHz .....        | 45 dB |
| 250 Hz ~ 10 kHz .....  | 33 dB |
| Tape 1 kHz .....       | 45 dB |
| 250 Hz ~ 10 kHz .....  | 33 dB |
| Main In 1 kHz .....    | 55 dB |
| 250 Hz ~ 10 kHz .....  | 50 dB |

|                                    |       |
|------------------------------------|-------|
| Intersource Crosstalk, Worst Point |       |
| 1 kHz .....                        | 45 dB |
| 250 Hz ~ 10 kHz .....              | 33 dB |

|                       |        |
|-----------------------|--------|
| Output Voltage, 1 kHz |        |
| Tape Out .....        | 0.18 V |
| Pre Out .....         | 1.5 V  |

|                         |          |
|-------------------------|----------|
| Output Impedance, 1 kHz |          |
| Tape Out .....          | 330 ohms |
| Pre Out .....           | 220 ohms |

|                          |       |
|--------------------------|-------|
| Power Consumption        |       |
| Idling .....             | 60 W  |
| Rated Power, 1 kHz ..... | 350 W |

General

|  |                |
|--|----------------|
| Power Requirements .....   | 220 V ~, 50 Hz |
| (E and N versions are featuring an external voltage selector for use on 110/120/240 V. Other versions can be converted by a qualified technician to operate on 110/120/240 V.) |                |

|  |            |
|--|------------|
| Power Consumption at rated output, both channels operating ..... | 350 W ±50W |
|--|------------|

|                    |           |
|--------------------|-----------|
| Idling Power ..... | 60 W ±15W |
|--------------------|-----------|

|                                |    |
|--------------------------------|----|
| Semiconductor Complement       |    |
| Transistors .....              | 83 |
| Diodes .....                   | 50 |
| Field Effect Transistors ..... | 4  |

|                    |                        |
|--------------------|------------------------|
| Dimensions         |                        |
| Panel Width .....  | 416 mm (16-3/8 inches) |
| Panel Height ..... | 146 mm ( 5-3/4 inches) |
| Depth .....        | 316 mm (12-3/8 inches) |

|                           |                    |
|---------------------------|--------------------|
| Weight                    |                    |
| Unit Alone .....          | 15.0 kg (33.0 lbs) |
| Packed for Shipment ..... | 17.0 kg (37.4 lbs) |



**marantz**

**MARANTZ CO., INC. · P. O. BOX 577 · CHATSWORTH, CALIFORNIA · 91311**

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