

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 (± 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 Ω $\pm 0.5\%$, 250W)	Commercial Grade	Provides 8-ohm load for amplifier output termination.
Output Load Resistor (4 Ω $\pm 0.5\%$, 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.

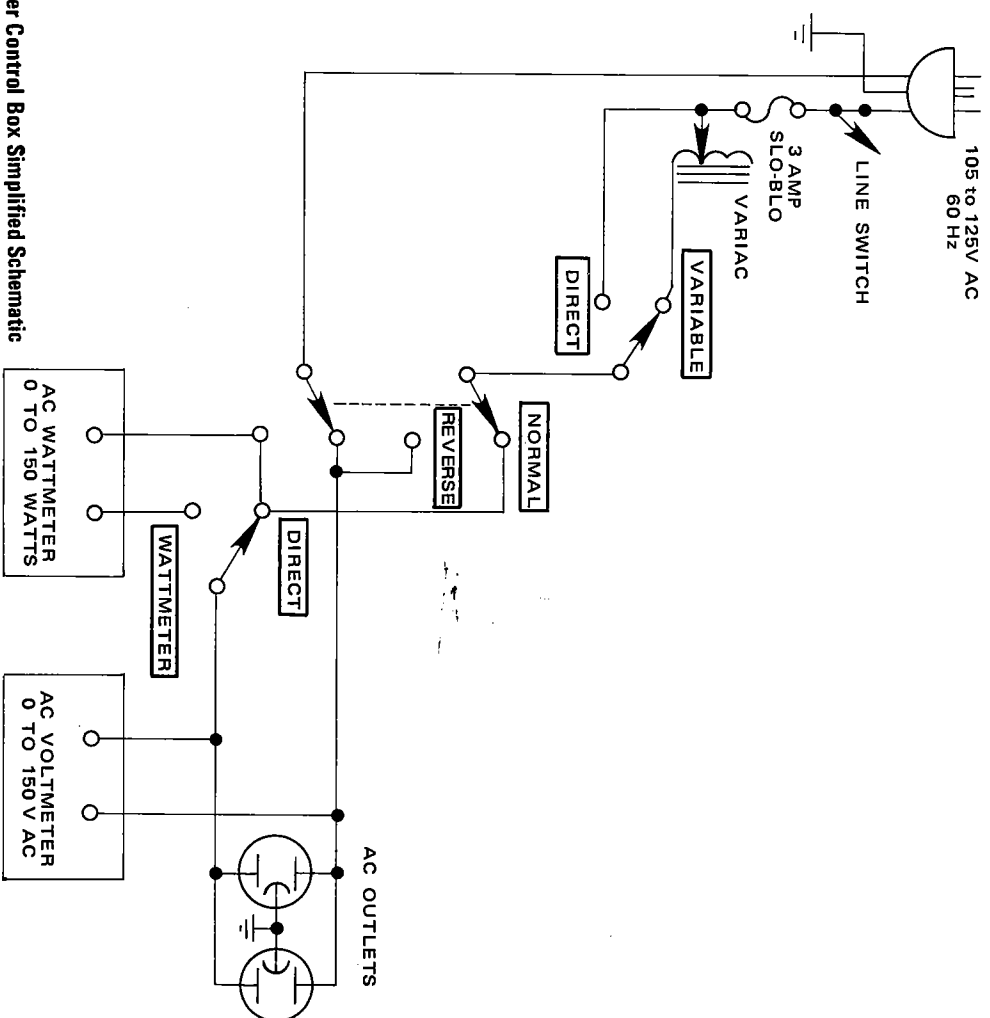


Figure 1. AC Power Control Box Simplified Schematic

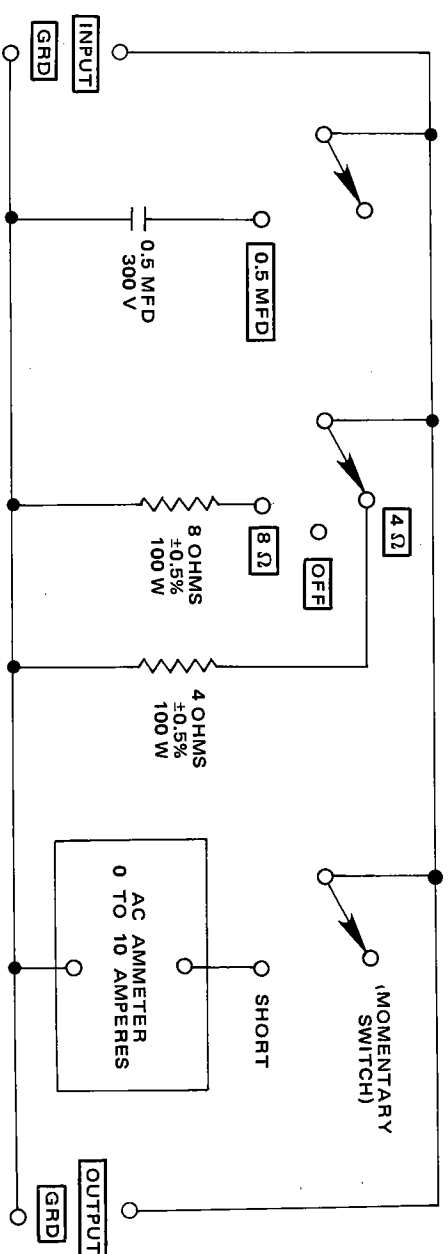


Figure 2. Amplifier Output Load Box Simplified Schematic

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.

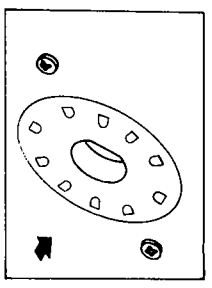
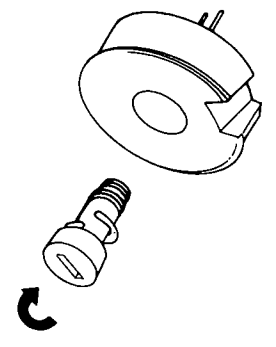
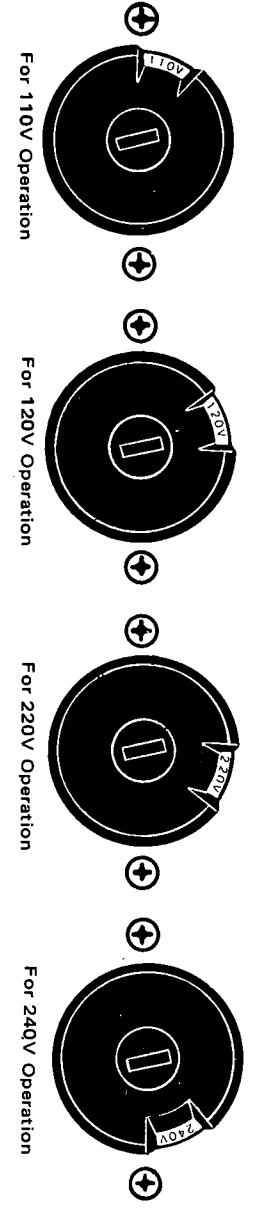
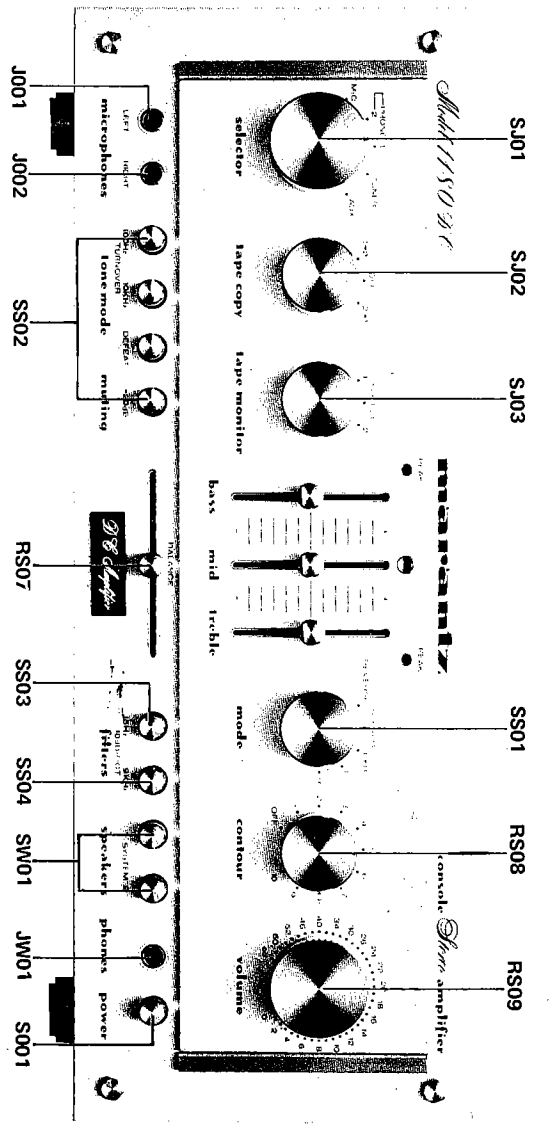


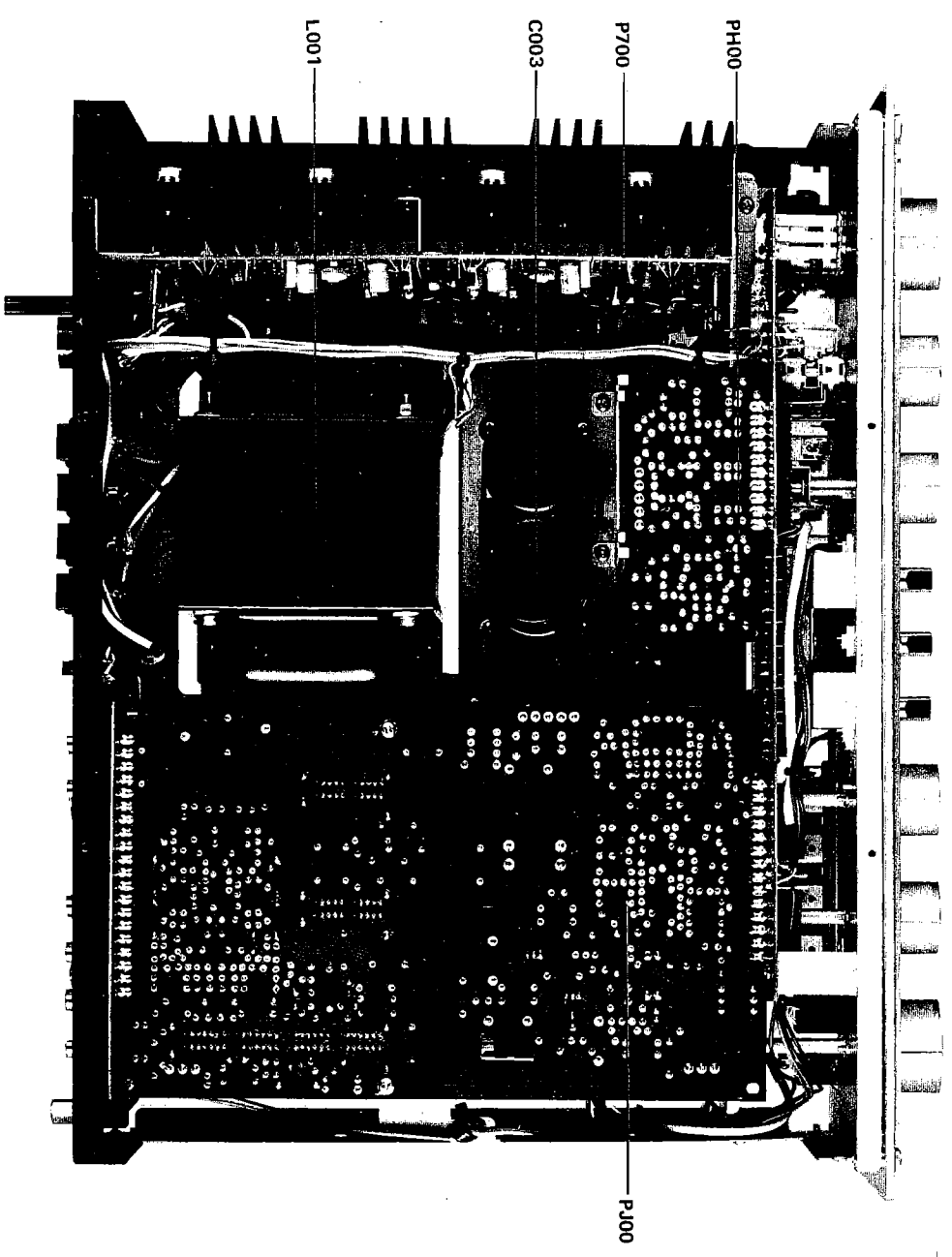
Figure 3. Voltage Conversion Chart



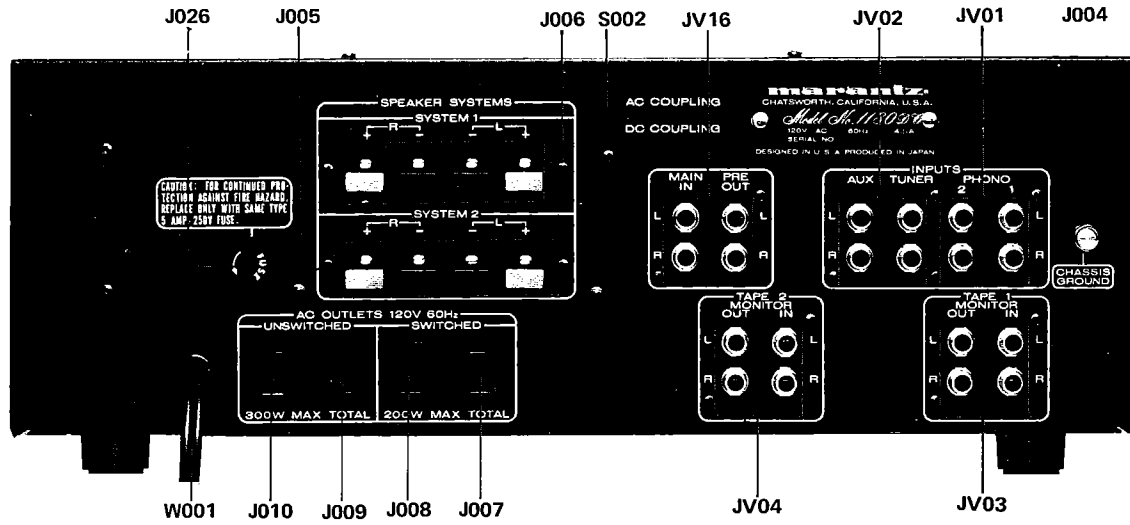
4. MAJOR COMPONENT LOCATIONS
4.1 Front Panel Adjustment and Component Locations



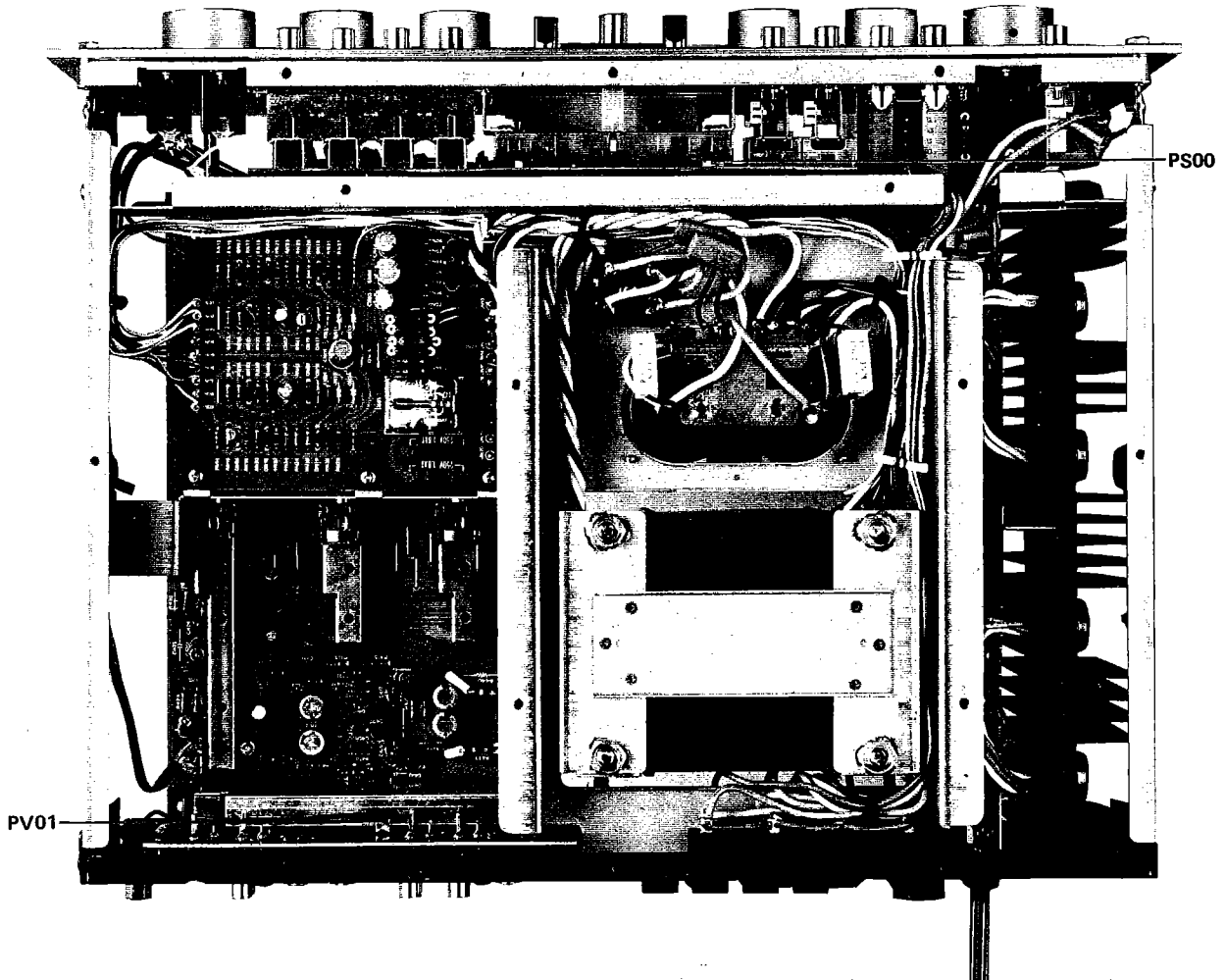
4.2 Main Chassis Component Locations (Top View)

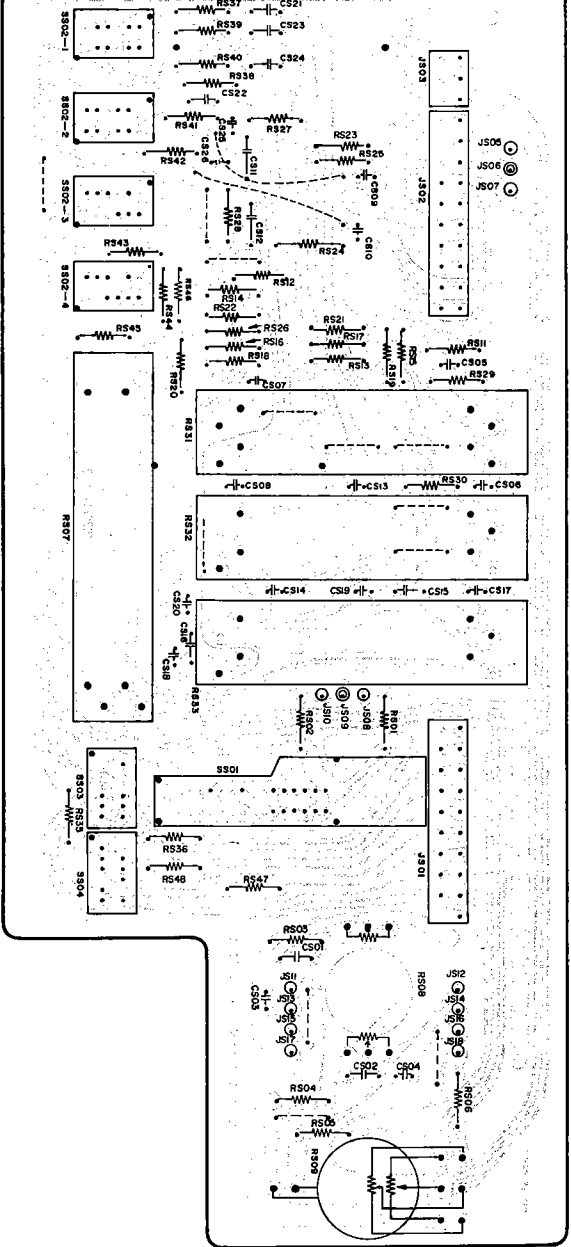
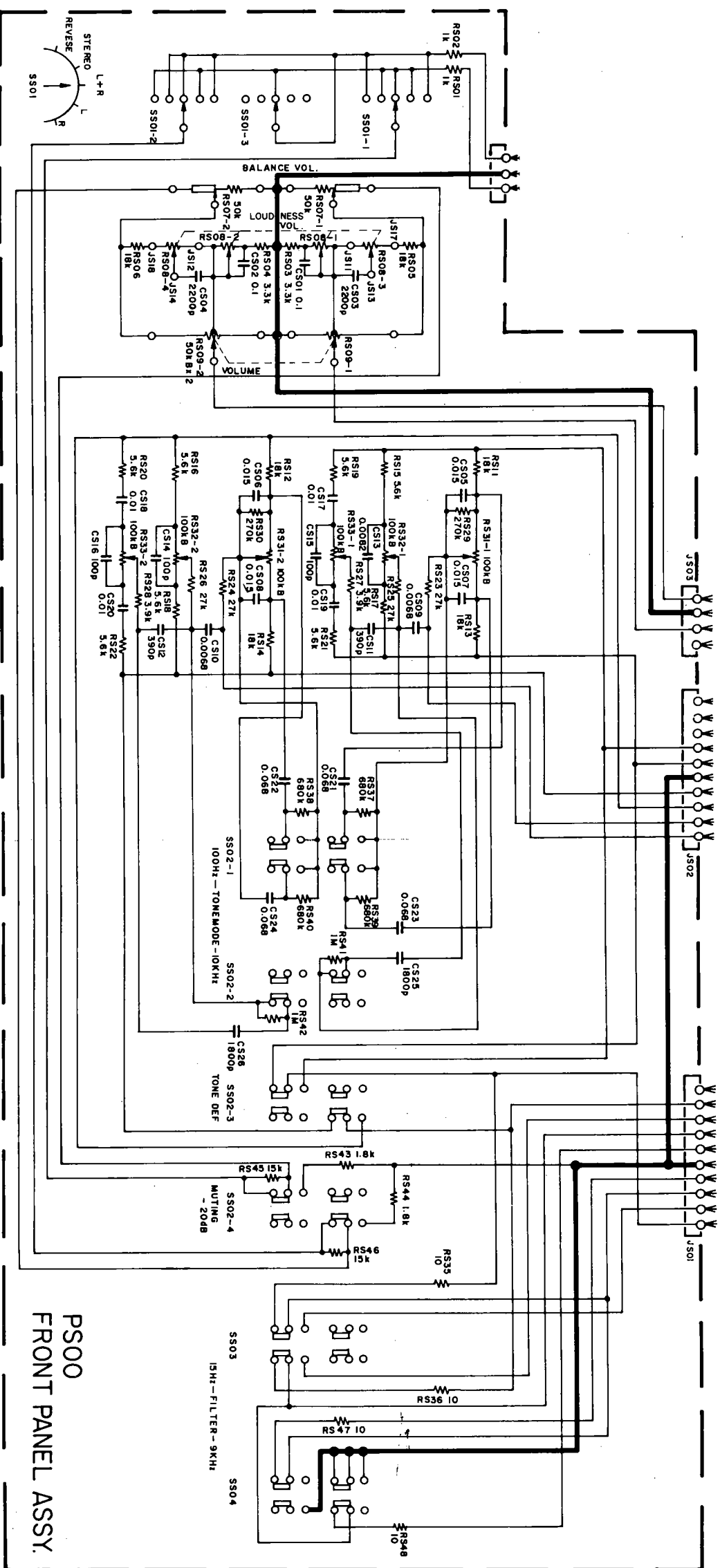


4.3 Rear Panel Adjustment and Component Locations

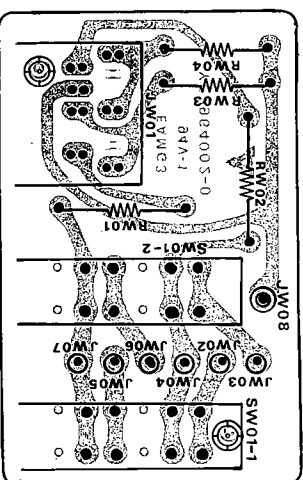
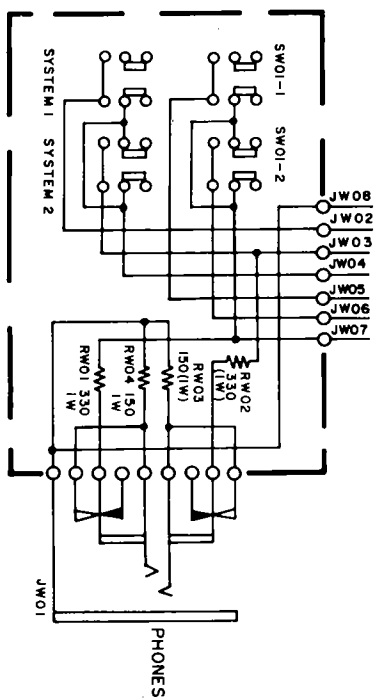


4.4 Main Chassis Component Locations (Bottom View)



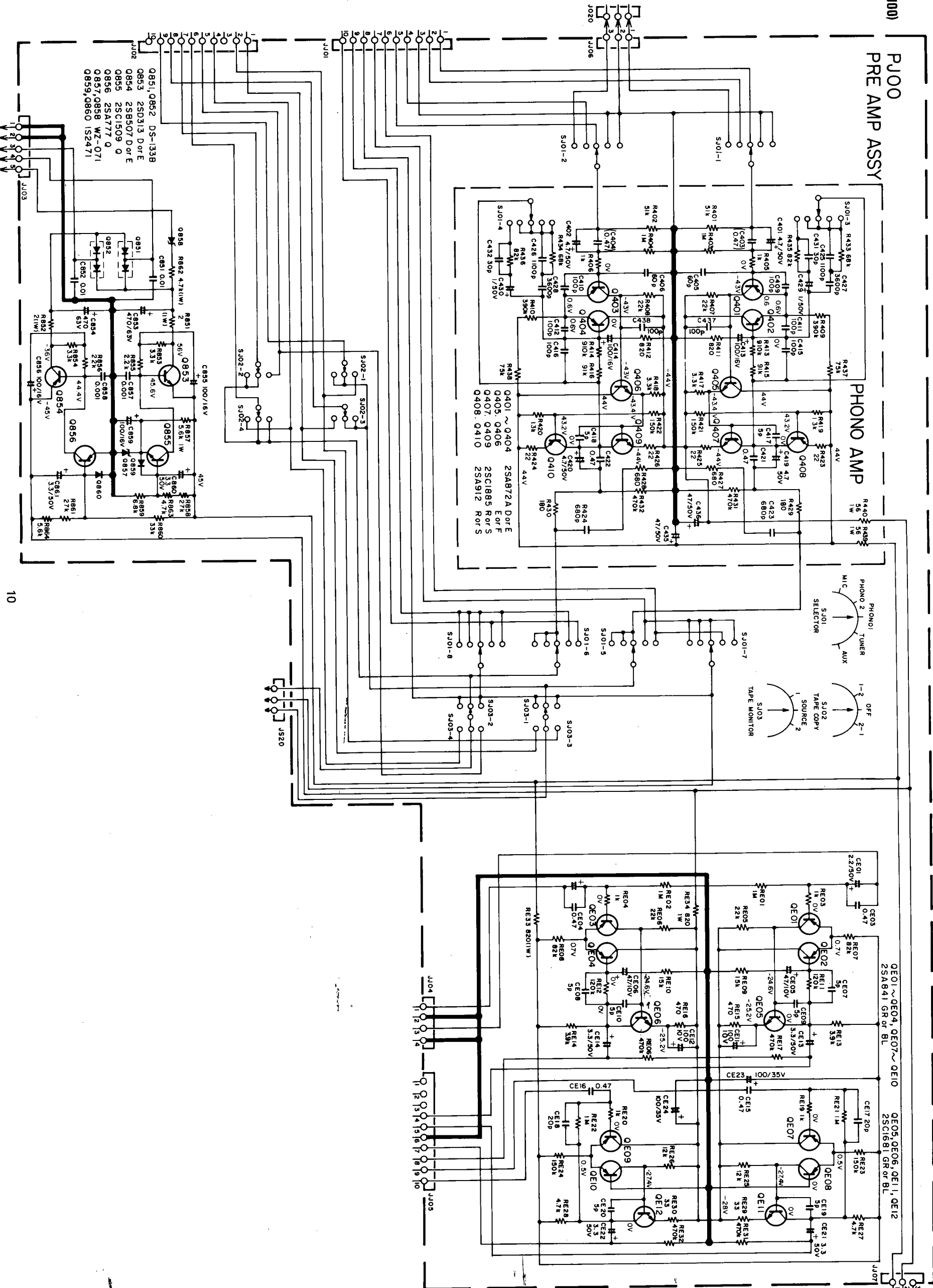


5.3 Speaker Switch Assembly (PW00) Schematic Diagram and Component Locations

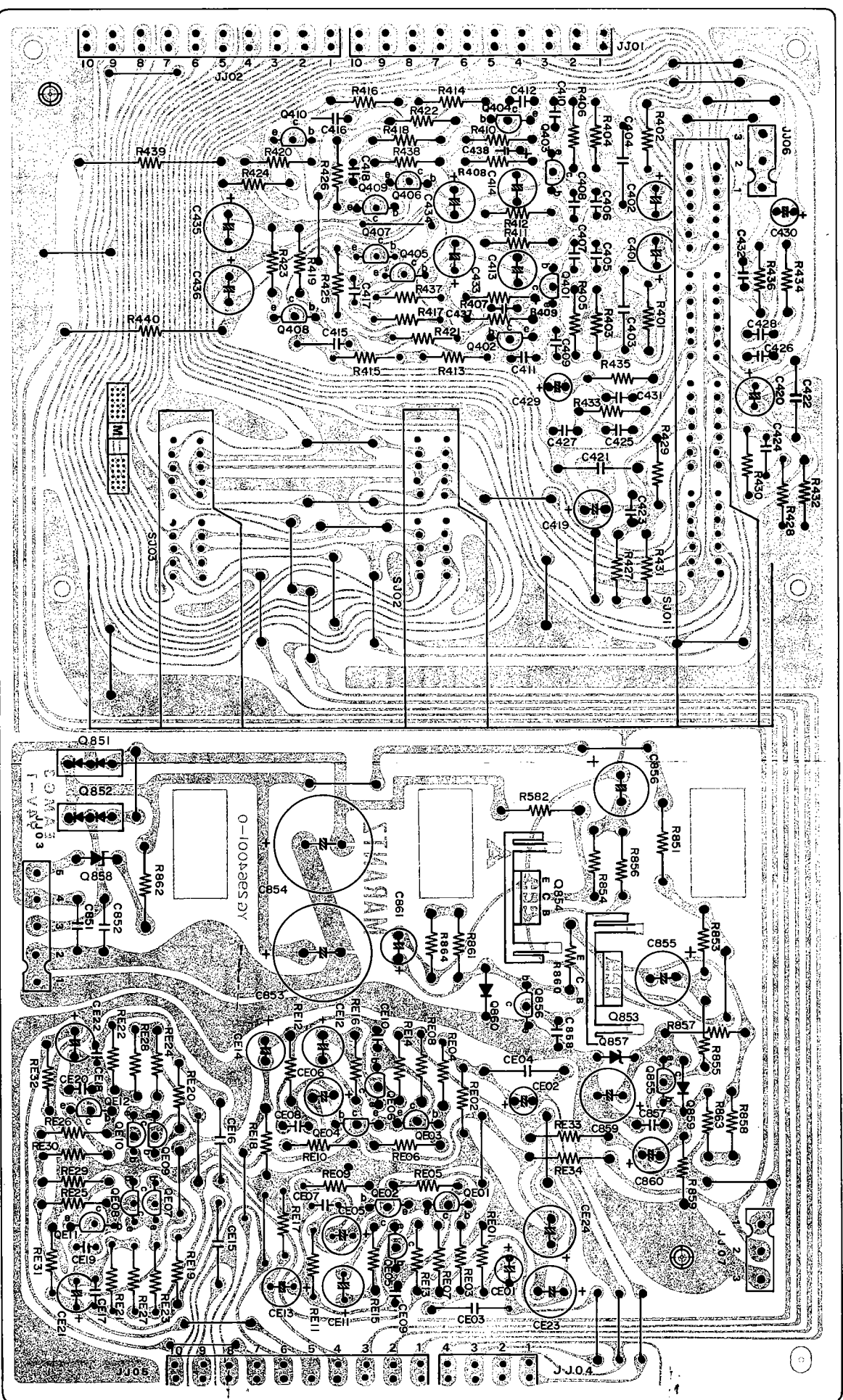


PJ00
PRE AMP ASSY

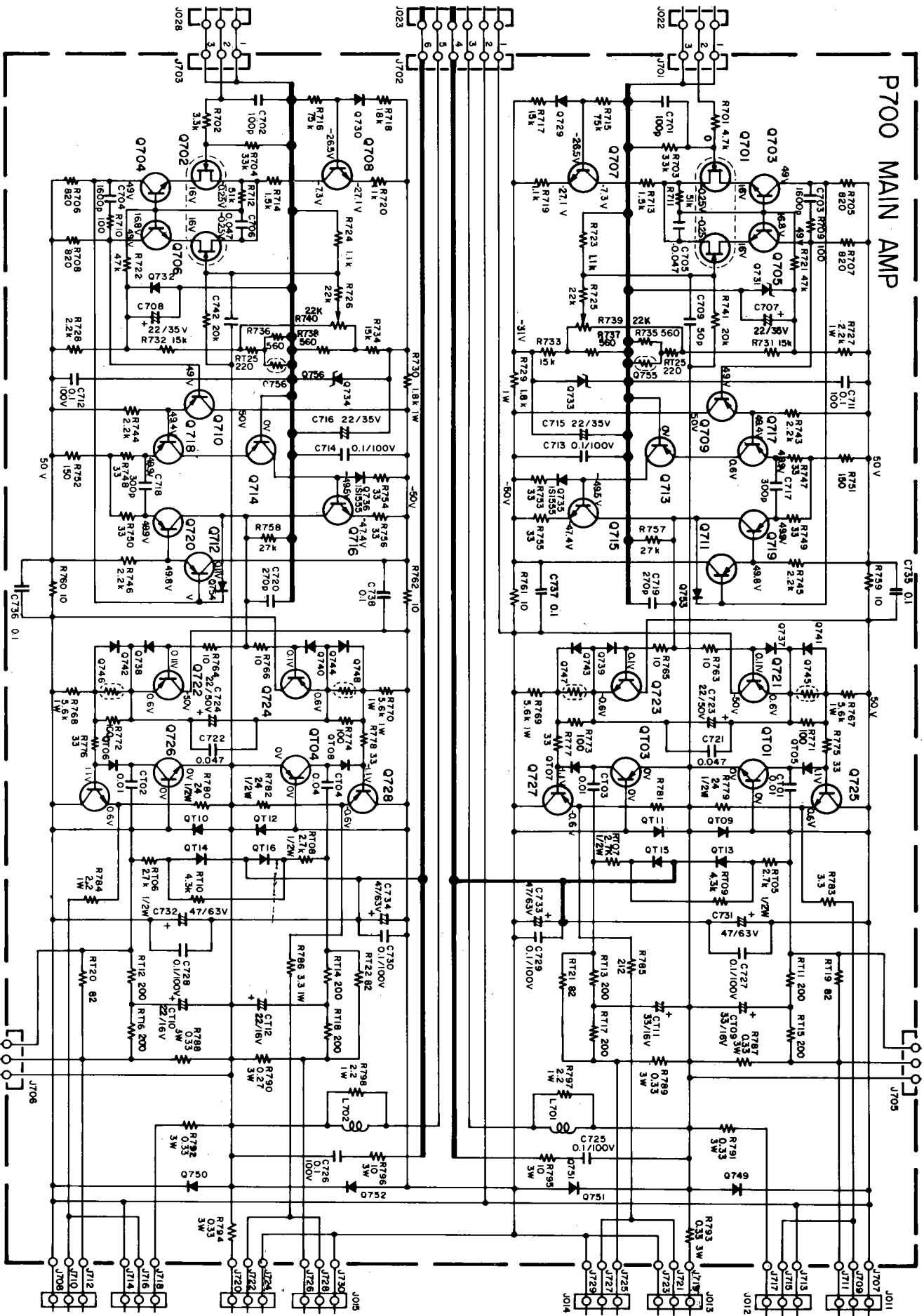
PHONO AMP



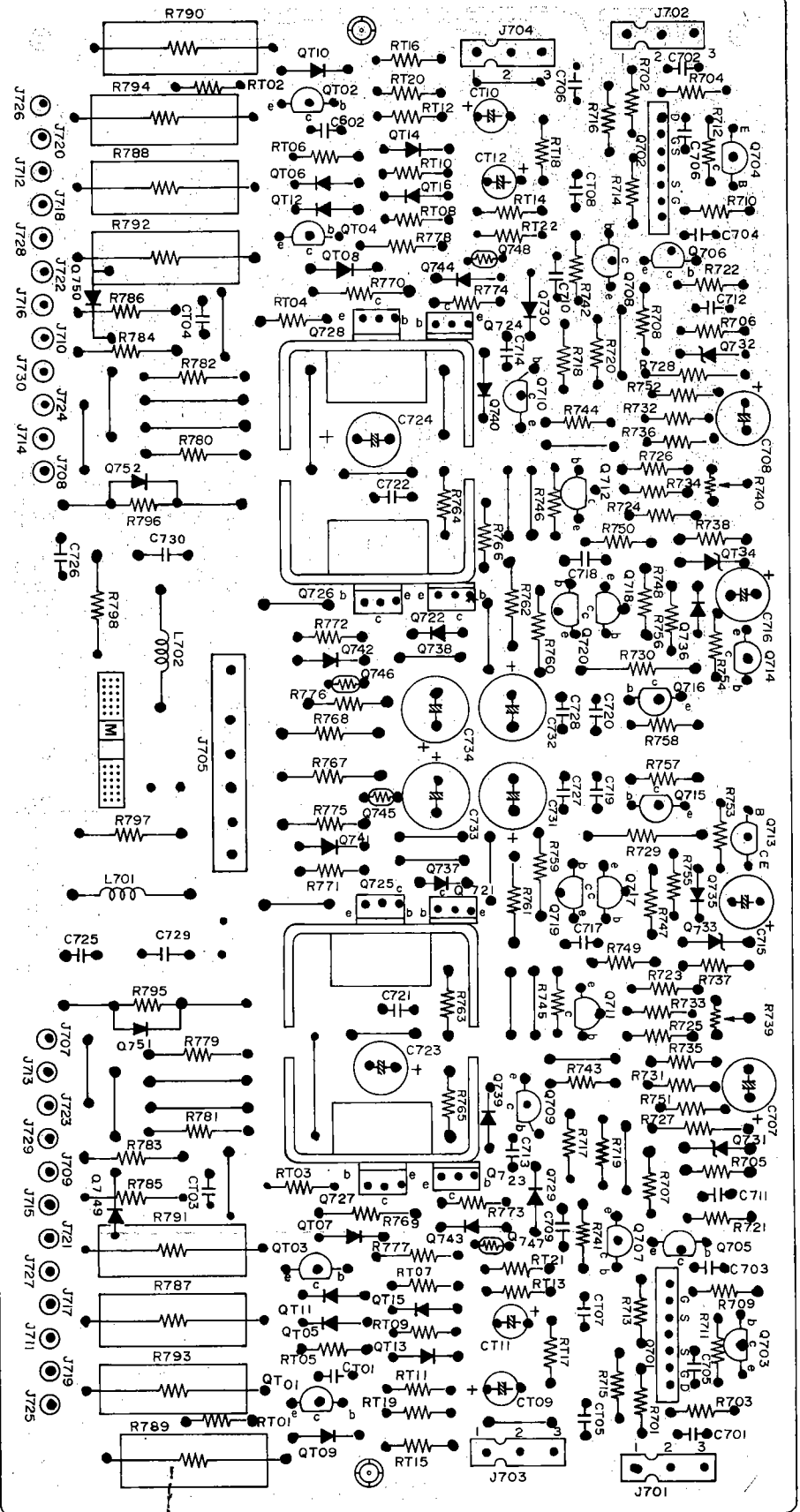
• Pre Amp. Assembly (P100) Component Locations



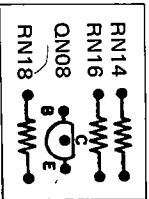
5.5 Main Amp. Assembly (P700) Schematic Diagram



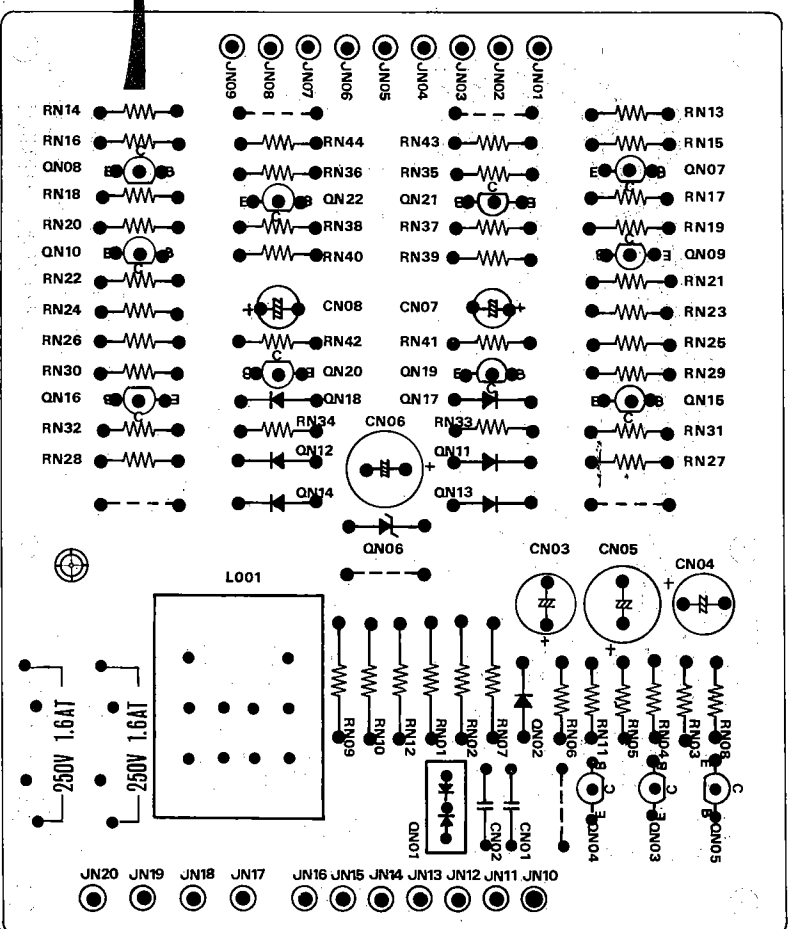
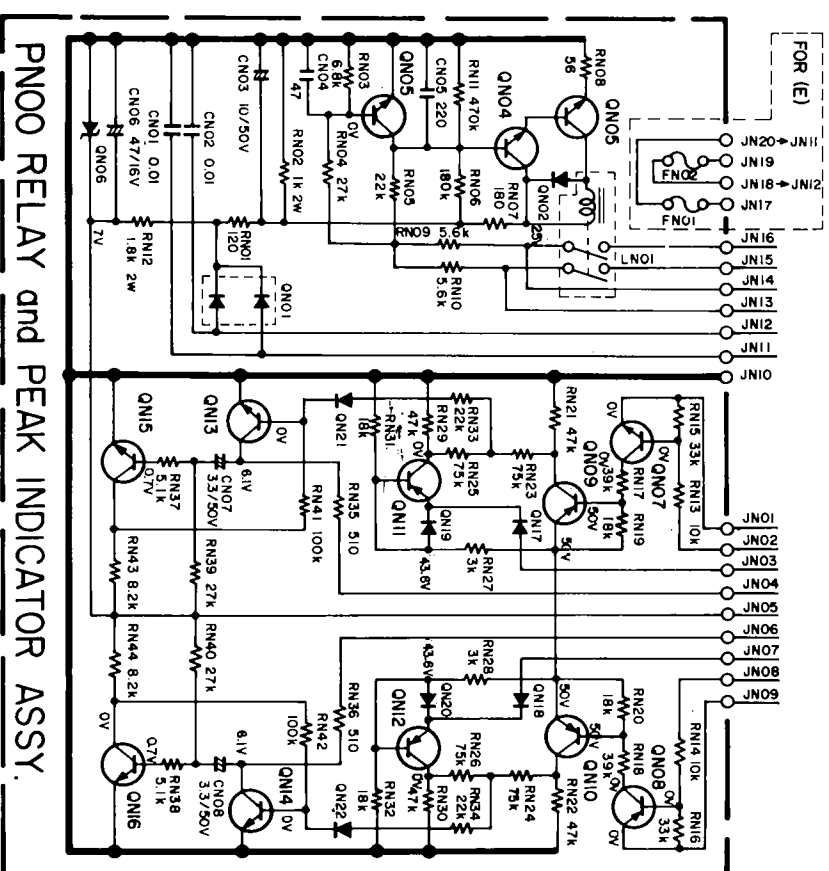
Main Amp. Assembly (P700) Component Locations

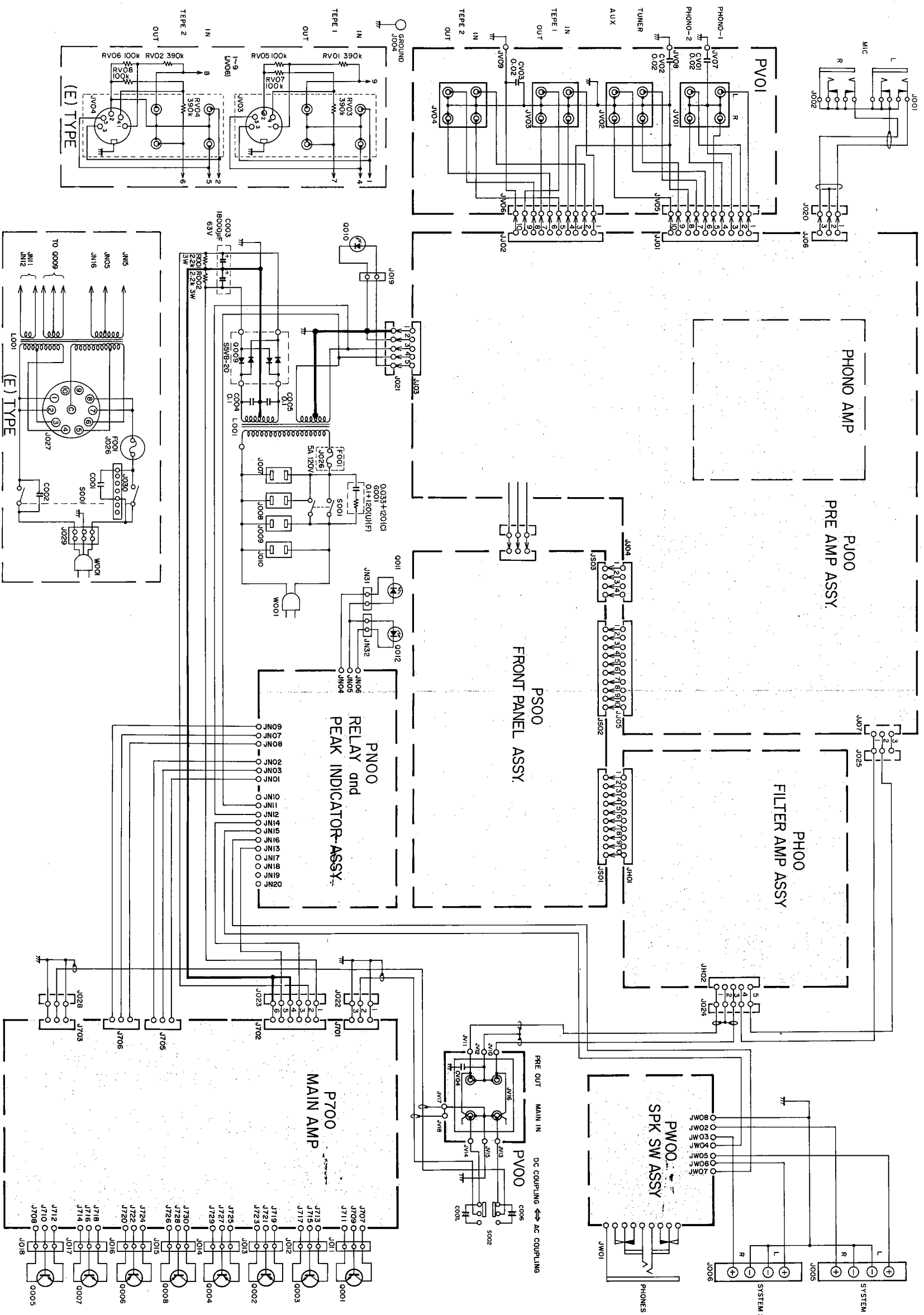


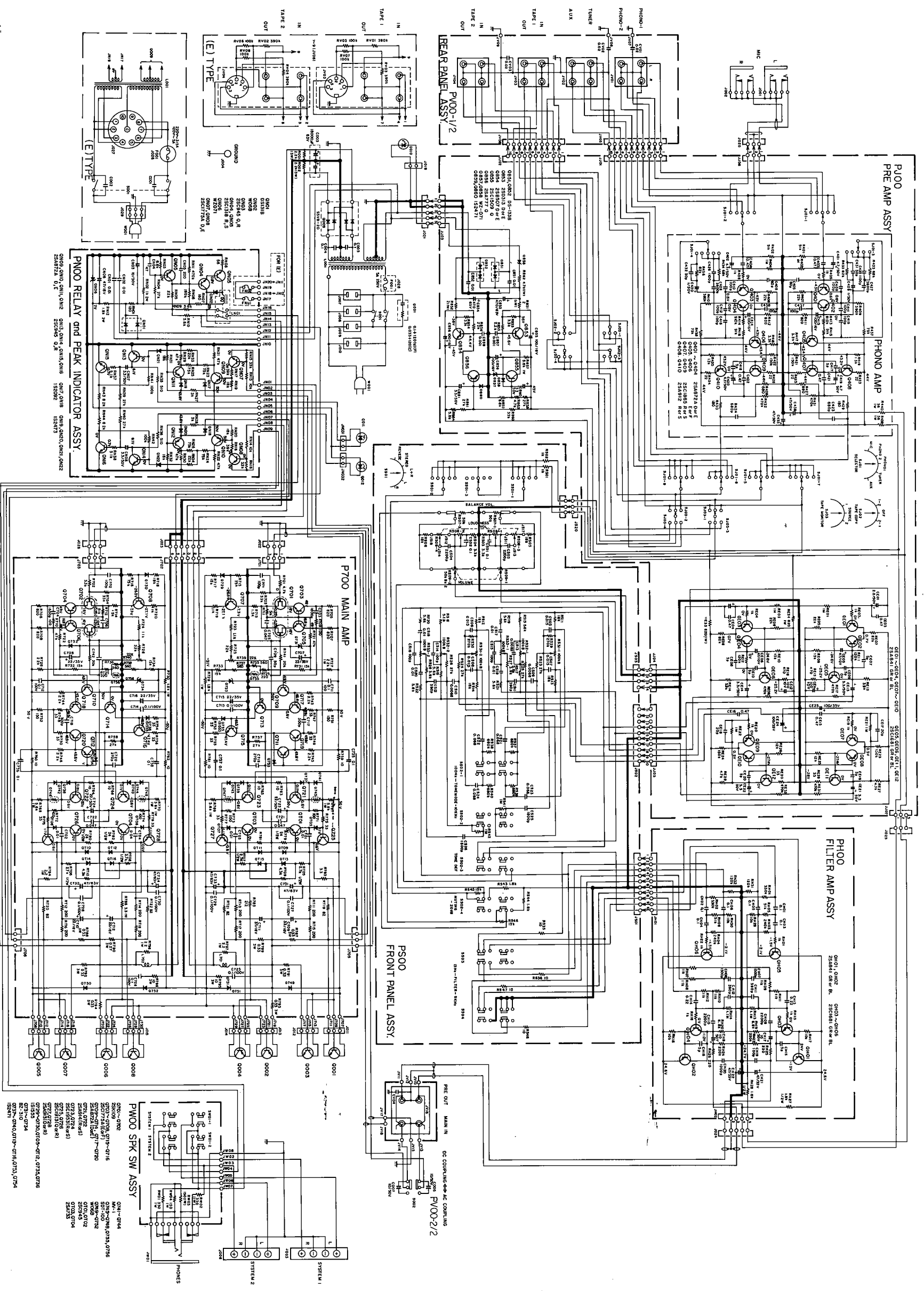
NOTE
Products running from serial numbers U010001 to U020150 and E010001 to E030100 have polarity indication failure of QN08 on the PND0 P.W. Board.
Correct polarity is shown in the following diagram.

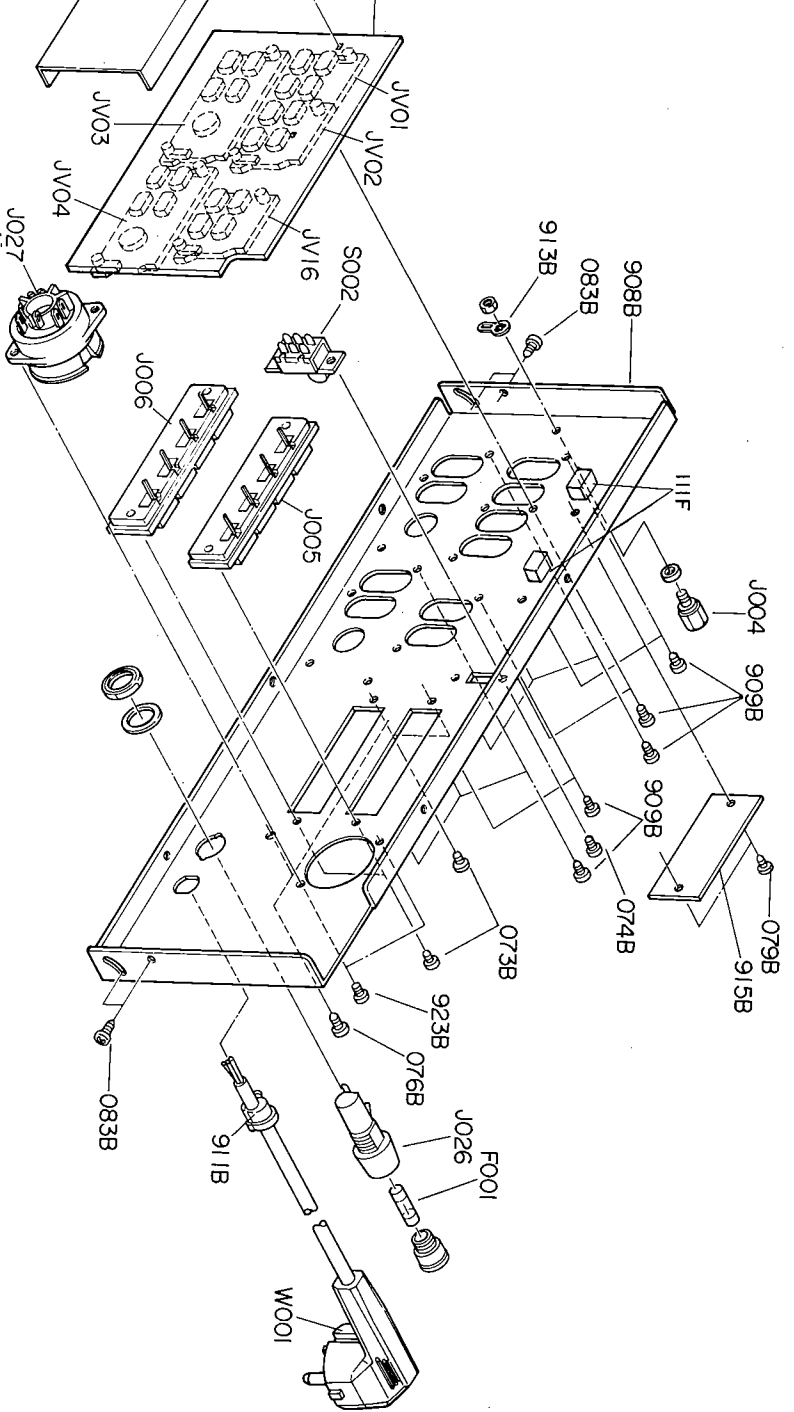
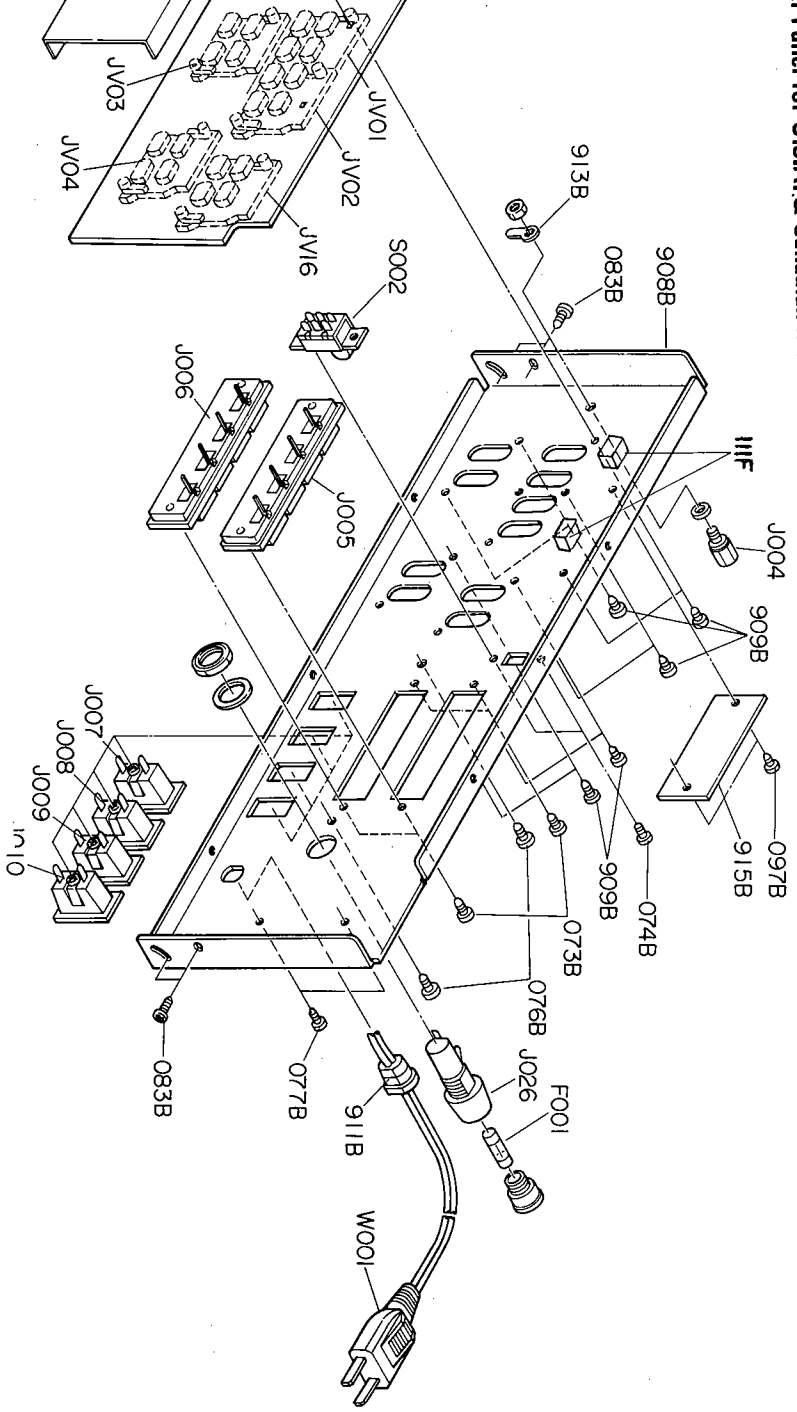


5.6 Relay Assembly (PND0) Schematic Diagram and Component Locations

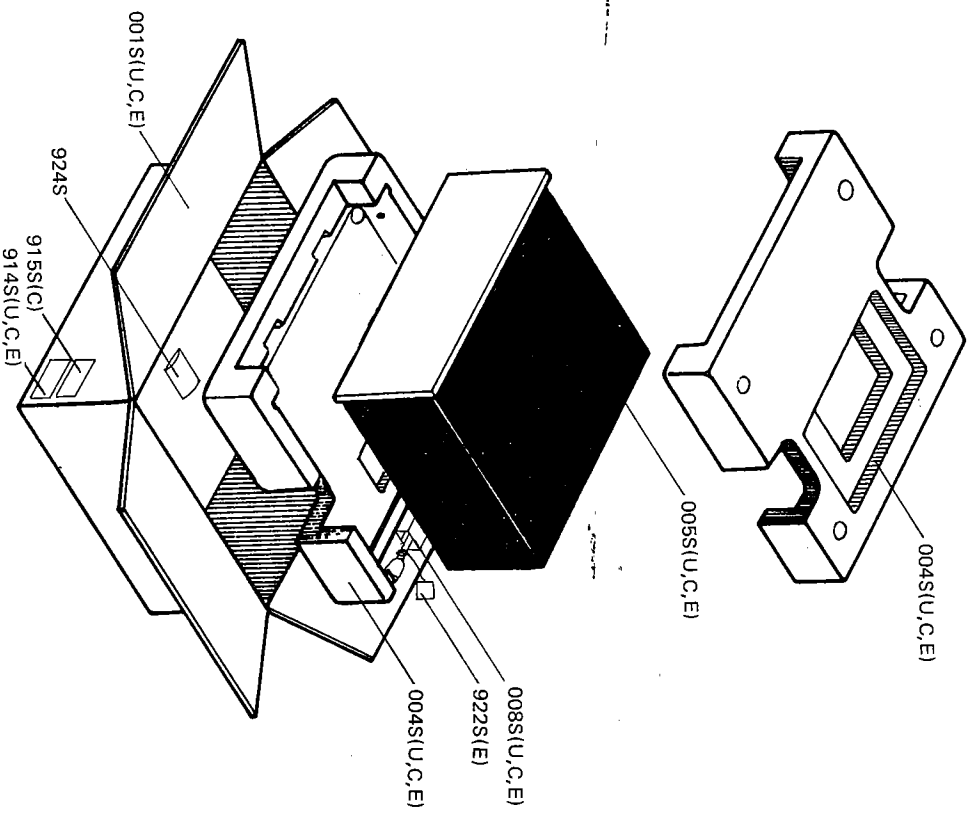
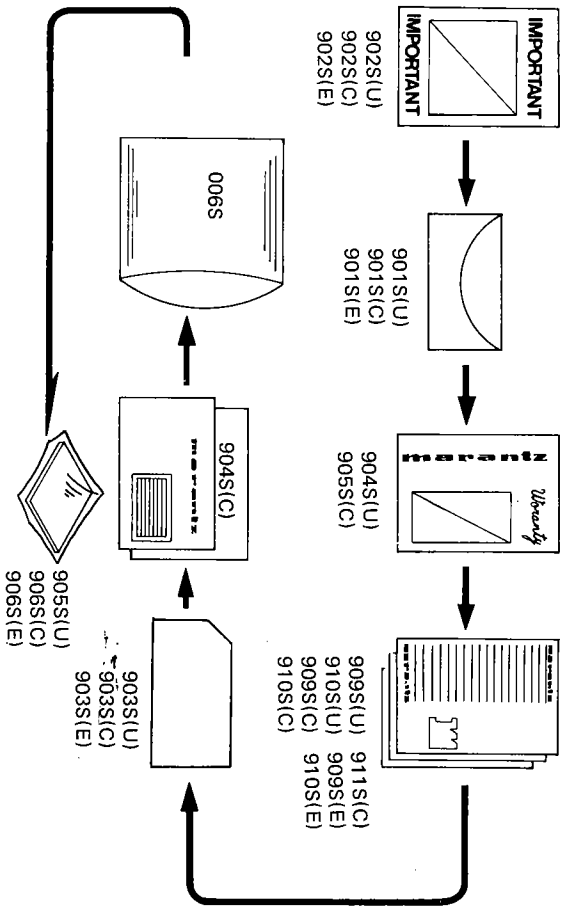








10. PACKING MATERIAL EXPLODED VIEW



• (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
1	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	2978259040	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			070F	1			2964160020	Bracket
1			072F	2			51280306B0	B.H. Tapped Screw, B3 x 6
1			073B	4			51100308U0	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			077B	2			51280308U0	B.H. Tapped Screw, B3 x 8
1			077F	1			2964105020	Chassis
1			078F	1			51280306B0	B.H. Tapped Screw, B3 x 6
1			079B	2			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			9510911020	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	924B	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			2577854010	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			9650000052	S. Station Card	CE12	1			EA10701090	Electrolytic Cap., 100uF 10V
905B	1			2963154010	Knob	CE13	1			EE33505040	Electrolytic Cap., 3.3uF ±20% 50V
905F	1			9512601100	Label	CE14	1			EE33505040	Electrolytic Cap., 3.3uF ±20% 50V
905S	1			2818851040	Instructions	CE15	1			DF16474510	Film Cap., 0.47uF ±10% 100V
906B	4			2970154050	Guarantee Card	CE16	1			DD16474510	Film Cap., 0.47uF ±10% 100V
906B	4			2818851140	Knob	CE17	1			DD15200010	Ceramic Cap., 20pF ±5% 50V
907B	2			5169030609	Socket Screw, HP	CE18	1			DD15200010	Ceramic Cap., 20pF ±5% 50V
908B	1			2976160222	Bracket	CE19	1			DD11050010	Ceramic Cap., 5pF 50V
909B	10			51280308U0	B.H. Tapped Screw, B3 x 8	CE20	1			DD11050010	Ceramic Cap., 5pF 50V
909S	1			2976851010	Instructions	CE21	1			EE33505040	Electrolytic Cap., 3.3uF ±20% 50V
909S	1			2976851310	Instructions	CE22	1			EE33505040	Electrolytic Cap., 3.3uF ±20% 50V
910S	1			2976851020	Instructions	CE23	1			EA10703350	Electrolytic Cap., 100uF 35V
910S	1			2976851030	Instructions	CE24	1			EA10703350	Electrolytic Cap., 100uF 35V
910S	1			2976851050	Instructions	OE01	1			HT108412A0	Transistor, 2S4841 (GR or BL)
911B	1			1455259040	Bushing	OE02	1			HT108412A0	Transistor, 2S4841 (GR or BL)
911B	1			2886851100	Instructions	OE03	1			HT108412A0	Transistor, 2S4841 (GR or BL)
913B	1			62040029W0	Lug	OE04	1			HT108412A0	Transistor, 2S4841 (GR or BL)
914S	4			9522815010	Serial No. Card	OE05	1			HT108412A0	Transistor, 2S4841 (GR or BL)
914S	4			9523015110	Serial No. Card	OE06	1			HT108412A0	Transistor, 2S4841 (GR or BL)
915B	1			2976265010	Indicator	OE07	1			HT108412A0	Transistor, 2S4841 (GR or BL)
915B	1			2976265020	Indicator	OE08	1			HT108412A0	Transistor, 2S4841 (GR or BL)
915B	1			2976265030	Indicator	OE09	1			HT108412A0	Transistor, 2S4841 (GR or BL)
915S	2			9510901020	Label	OE10	1			HT108412A0	Transistor, 2S4841 (GR or BL)
						OE11	1			HT316812A0	Transistor, 2SC1681 (GR or BL)
						OE12	1			HT316812A0	Transistor, 2SC1681 (GR or BL)

• (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	
PN00 RELAY BOARD						
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			
									QT10	1	1	1	HD20011050	Diode, 1S1555			
RS12	1	1	1	RT05183140	Resistor, 18kΩ ±5% ¼W				QT11	1	1	1	HD20011050	Diode, 1S1555			
RS13	1	1	1	RT05183140	Resistor, 18kΩ ±5% ¼W				QT12	1	1	1	HD20011050	Diode, 1S1555			
RS14	1	1	1	RT05183140	Resistor, 18kΩ ±5% ¼W				QT13	1	1	1	HD20003210	Diode, 1S2471			
RS15	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W				QT14	1	1	1	HD20003210	Diode, 1S2471			
RS16	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W												
RS17	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W				QT15	1	1	1	HD20003210	Diode, 1S2471			
RS18	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W				QT16	1	1	1	HD20003210	Diode, 1S2471			
RS19	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W				RT05	1	1	1	GD05272120	Resistor, 2.7kΩ ±5% ¼W			
RS20	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W				RT06	1	1	1	GD05272120	Resistor, 2.7kΩ ±5% ¼W			
RS21	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W				RT07	1	1	1	GD05272120	Resistor, 2.7kΩ ±5% ¼W			
									RT08	1	1	1	GD05272120	Resistor, 2.7kΩ ±5% ¼W			
RS22	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W				RT09	1	1	1	GD05432140	Resistor, 4.3kΩ ±5% ¼W			
RS23	1	1	1	RT05273140	Resistor, 27kΩ ±5% ¼W				RT10	1	1	1	GD05432140	Resistor, 4.3kΩ ±5% ¼W			
RS24	1	1	1	RT05273140	Resistor, 27kΩ ±5% ¼W				RT11	1	1	1	GD05201140	Resistor, 200Ω ±5% ¼W			
RS25	1	1	1	RT05273140	Resistor, 27kΩ ±5% ¼W				RT12	1	1	1	GD05201140	Resistor, 200Ω ±5% ¼W			
RS26	1	1	1	RT05273140	Resistor, 27kΩ ±5% ¼W				RT13	1	1	1	GD05201140	Resistor, 200Ω ±5% ¼W			
RS27	1	1	1	RT05392140	Resistor, 3.9kΩ ±5% ¼W				RT14	1	1	1	GD05201140	Resistor, 200Ω ±5% ¼W			
RS28	1	1	1	RT05392140	Resistor, 3.9kΩ ±5% ¼W				RT15	1	1	1	GD05201140	Resistor, 200Ω ±5% ¼W			
RS29	1	1	1	RT05274140	Resistor, 270kΩ ±5% ¼W				RT16	1	1	1	GD05201140	Resistor, 200Ω ±5% ¼W			
RS30	1	1	1	RT05274140	Resistor, 270kΩ ±5% ¼W				RT17	1	1	1	GD05201140	Resistor, 200Ω ±5% ¼W			
RS31	1	1	1	RS01040040	Variable Resistor, 100kΩBx2				RT18	1	1	1	GD05201140	Resistor, 200Ω ±5% ¼W			
									RT19	1	1	1	GD05820140	Resistor, 82Ω ±5% ¼W			
RS32	1	1	1	RS01040040	Variable Resistor, 100kΩBx2				RT20	1	1	1	GD05820140	Resistor, 82Ω ±5% ¼W			
RS33	1	1	1	RS01040040	Variable Resistor, 100kΩBx2				RT21	1	1	1	GD05820140	Resistor, 82Ω ±5% ¼W			
RS35	1	1	1	RT05100140	Resistor, 10Ω ±5% ¼W				RT22	1	1	1	GD05820140	Resistor, 82Ω ±5% ¼W			
RS36	1	1	1	RT05100140	Resistor, 10Ω ±5% ¼W				CV01	1	1	1	DK18203010	Ceramic Cap., 0.02μF 50V			
RS37	1	1	1	RT05684140	Resistor, 680kΩ ±5% ¼W				CV02	1	1	1	DK18203010	Ceramic Cap., 0.02μF 50V			
RS38	1	1	1	RT05684140	Resistor, 680kΩ ±5% ¼W				CV03	1	1	1	DK18203010	Ceramic Cap., 0.02μF 50V			
RS39	1	1	1	RT05684140	Resistor, 680kΩ ±5% ¼W												
RS40	1	1	1	RT05684140	Resistor, 680kΩ ±5% ¼W												
RS41	1	1	1	RT05105140	Resistor, 1MΩ ±5% ¼W												
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	1	1	BY01050060	Jack, RCA (DIN)
JV03	1	1	1	YT02040150	Terminal, 4P RCA
JV04	1	1	1	BY01050060	Jack, RCA (DIN)
JV04	1	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	1	1	1	YT02040210	Terminal, 4P RCA
JV16	1	1	1	YP10001130	Plug
JV17	1	1	1	YP10001130	Plug
JV18	1	1	1	YP10001130	Plug
PV00 REAR BOARD					
PV00	1	1	1	YF29640010	P.W. Board
	1	1	1	ZZ29641010	P.W. Board Assembly
			1	ZZ29648010	P.W. Board Assembly
RV01	1	1	1	RT05394140	Resistor, 390kΩ ±5% ¼W
RV02	1	1	1	RT05394140	Resistor, 390kΩ ±5% ¼W
RV03	1	1	1	RT05394140	Resistor, 390kΩ ±5% ¼W
RV04	1	1	1	RT05394140	Resistor, 390kΩ ±5% ¼W
RV05	1	1	1	RT05104140	Resistor, 100kΩ ±5% ¼W
RV06	1	1	1	RT05104140	Resistor, 100kΩ ±5% ¼W
RV07	1	1	1	RT05104140	Resistor, 100kΩ ±5% ¼W
RV08	1	1	1	RT05104140	Resistor, 100kΩ ±5% ¼W
JW01	1	1	1	YJ01000860	Jack, Headphone
JW02	?	7	7	YP10001130	Plug
JW08					
PW00 HEADPHONE BOARD					
PW00	1	1	1	YF29640020	P.W. Board
	1	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	1	1	DQ07473540	Oil-Paper Cap., 0.047μF ±20% 450V
C002	1	1	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	1	1	FS10300900	Fuse, SGA 3A
F001	1	1	1	FS10600040	Fuse, UL MGC 6A
G001	1	1	1	BF10400040	Cap Comp.
G001	1	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	?	4	4	YJ04000560	Jack, AC Outlet
J010					
J011	?	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	1	1	YJ08000220	Jack, Fuse Holder 20mm
J026	1	1	1	YJ08000230	Jack, Fuse Holder
J027	1	1	1	BY03110010	Plug, Voltage Selector
J028	1	1	1	YJ06001040	Jack
J029	1	1	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	1	TS61406050	Power Transformer
L001	1	1	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	H110004030	L.E.D., 132B
Q011	1	1	1	H110004030	L.E.D., SLP-132B
Q012	1	1	1	H110004030	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	1	1	SP02010250	Pushswitch, SDG-5P SEMKO
S001	1	1	1	SP02020210	Pushswitch, Power TV-5
S002	1	1	1	SS02020380	Slide Switch, AC-DC Coupling
W001	1	1	1	YC01900030	A.C. Power Cord
W001	1	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 and 7 kHz mixed 4:1 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 (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 (Dynamic Range is the ratio of input 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) (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 (includes Power Amp) . . . 5 Hz to 60 kHz ±1.0 dB

Signal-to-Noise Ratio ("A" Weighted) (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 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, 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 (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 (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 (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
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Idling Power	60 W ±15W
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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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