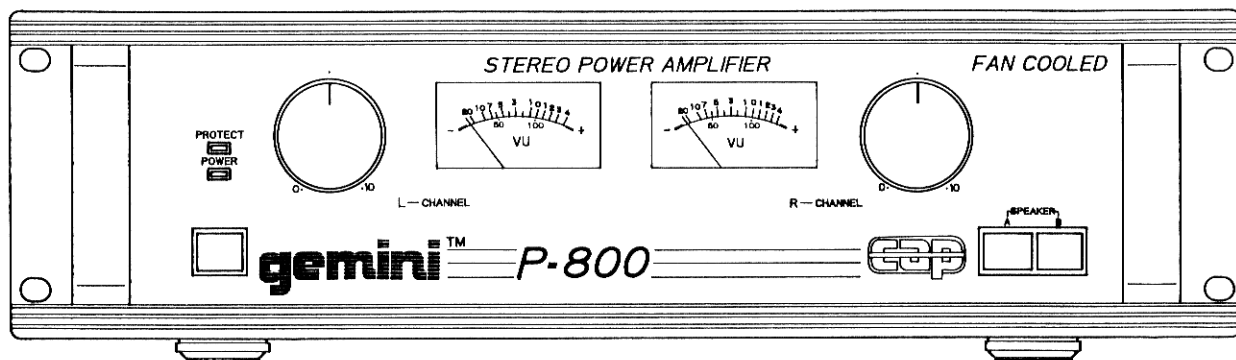




SERVICE MANUAL
STEREO POWER AMPLIFIER
MODEL P-600/P-800



CONTENTS

SPECIFICATIONS	2
CONNECTION AND OPERATING INSTRUCTIONS	2
DISASSEMBLY PROCEDURES	4
ADJUSTMENTS	6
INTERNAL DIAGRAMS AND PINOUT OF INTEGRATED CIRCUITS	7
WIRING DIGRAM	9
SCHEMATIC DIAGRAM	13
PRINTED CIRCUIT BOARDS	17
EXPLODED VIEW OF CABINET	19
CABINET PARTS LIST	21
PARTS LIST	21

GEMINI SOUND PRODUCTS CORP.

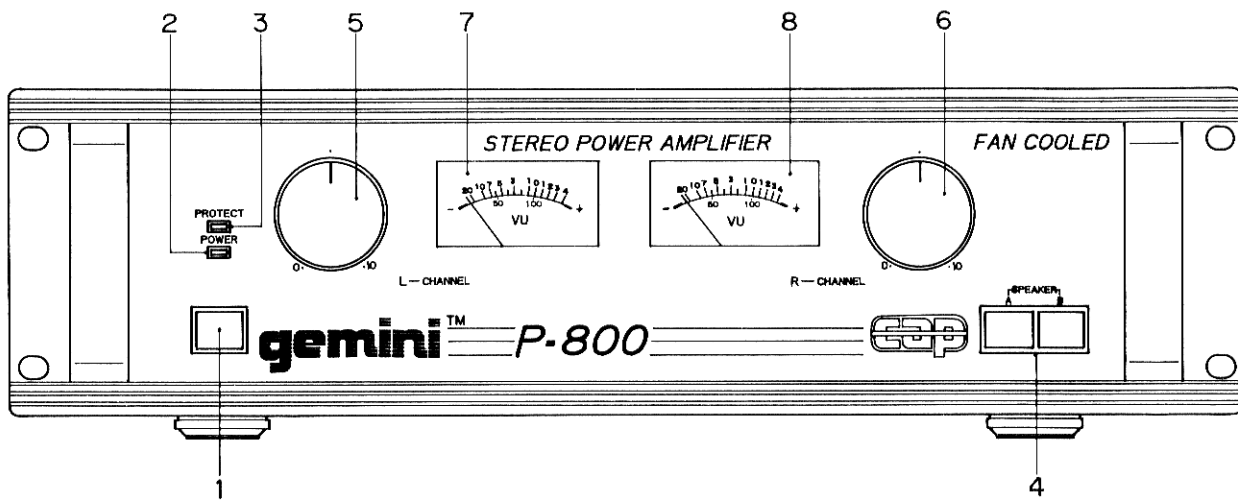
1100 MILIK STREET CARTERET, NEW JERSEY 07008 U.S.A.

TEL: 908-969-9000 FAX: 908-969-9090

SPECIFICATIONS

P-600	Momentary Music Peak Power at 1kHz : 500 watts Maximum Power Output (RMS) at 1KHz : 120 watts at 4 Ω 85 watts at 8 Ω Total Harmonic Distortion : Less Than 0.08% at rated Power Output into 8 Ω Frequency Response : 20Hz to 60 kHz (+ 0/-3dB) Signal To Noise Ratio : 98 dB (IEC-A) Output Section : 4-16 Ω Indicators : Power & Protection Power Consumption : 500 watts(Max.) Dimensions : 19"(L)×5"(H)×10 1/2"(D) 483mm(W) ×127mm(H) ×267mm(D) Weight : 19.8 lbs. (9Kgs) Rack : 3.5 U rack spaces
P-800	Momentary Music Peak Power at 1kHz : 800 watts Maximum Power Output (RMS) at 1KHz : 180 watts at 4 Ω 125 watts at 8 Ω Total Harmonic Distortion : Less Than 0.08% at rated Power Output into 8 Ω Frequency Response : 20Hz to 60 kHz (+ 0/-3dB) Signal To Noise Ratio : 98 dB (IEC-A) Output Section : 4-16 Ω Indicators : Power & Protection Power Consumption : 800 watts(Max.) Dimensions : 19"(L)×5"(H)×10 1/2"(D) 483mm(W) ×127mm(H) ×267mm(D) Weight : 21.6 lbs. (9.8Kgs) Rack : 3.5 U rack spaces

CONNECTION AND OPERATING INSTRUCTIONS



CONNECTION INSTRUCTIONS

1. Be sure that POWER (1) is in the OFF position . All connections must be made with all equipment OFF.
2. Before plugging in the power cord , make sure the VOLTAGE SELECTOR SWITCH (51) is set to the correct voltage.
3. Use the LINE IN (52) jacks to attach your input signal to the P-600 or P-800. Make sure that you correctly attach the left and right cables. You can use either RCA or 1/4" connectors .
4. There are two supplied AC Outlets (53) , one unswitched (Max. 500W) and one switched (Max. 400W) , which allow the electrical hook up of other units.
5. The P-600 and P-800 provide two pairs of Speaker Output Terminals (54) to enable you to run two sets of speakers. You can either use banana plugs or bared speaker wire for your connections.
6. A GND terminals (55) is provided for grounding the P-600 or P-800 to your other equipment .
7. Make sure that the FAN (56) is not obstructed.

OPERATING INSTRUCTIONS

1. Power ON

Once you have made all source connections to your P-800 or P-600, Press the POWER(1) button , the power will turn on and the POWER LED (2) will illuminate GREEN.

2. Protection Led

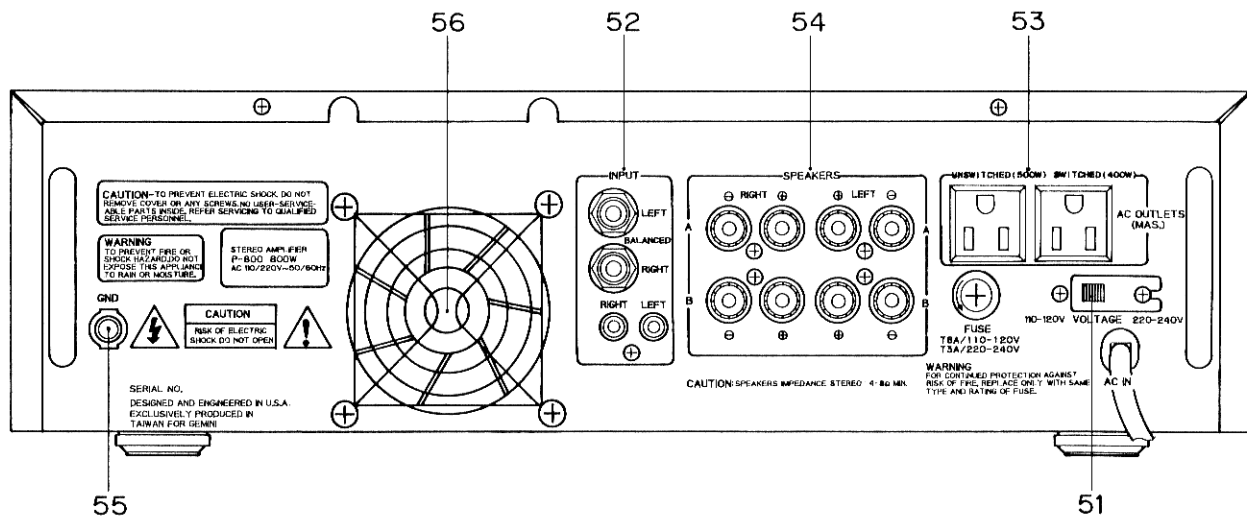
The PROTECTION LED (3) illuminates RED when The amplifier overheats or when a shorted load or DC is detected on the amplifier output . The amplifier will reset itself when the problem is corrected.

3. Speaker Selection

The P-800 and P-600 are capable of handling two sets of speakers. To select , push the proper SPEAKER BUTTONS (4). You can select either A ,B or both A & B.

4. Volume Control

You can easily control the output level to your speakers(the volume) by using the rotary VOLUME CONTROLS (5, 6). VOLUME CONTROL (5) adjusts the left channel and VOLUME CONTROL (6) adjusts the right channel. On model P-800 , the dual analog VU METERS (7,8) visually display the volume levels.



DISASSEMBLY PROCEDURES

1. Removal of Top Cover

- (a) Remove 4 screws (A). (Fig.1)
- (b) Remove 2 screws (B). (Fig.1)

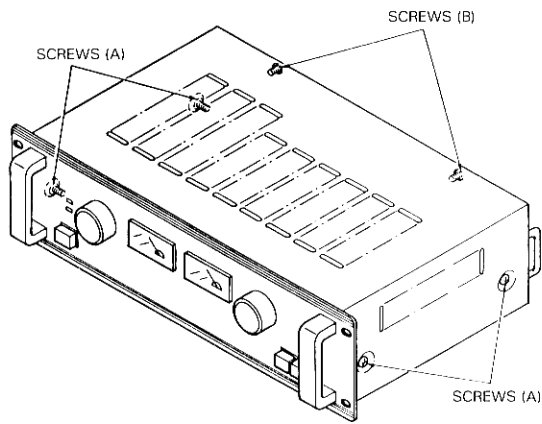


Fig. 1

3. Removal of Vr Bracker

- (a) Remove 2 knobs (F). (Fig.3)
- (b) Remove 2 screws (G). (Fig.3)

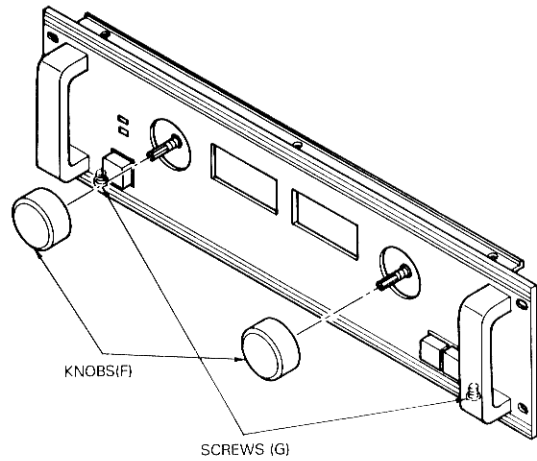


Fig. 3

2. Removal of Front Panel

- (a) Remove 3 screws (C). (Fig.2)
- (b) Remove 5 screws (D). (Fig.2)
- (c) Remove 6 screws (E). (Fig.2)

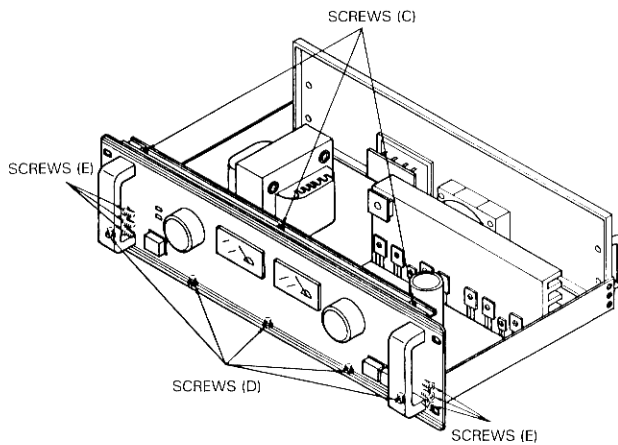


Fig. 2

4. Removal of Each P. C. B.

- (a) Removal of Power Led PCB. (Fig.4)
Remove 1 screw (H).
- (b) Removal of Power Switch PCB. (Fig.4)
Remove 2 screws (I).
- (c) Removal of Push Switch PCB. (Fig.4)
Remove 2 screws (J).
- (d) Removal of Vol VR PCB. (Fig.5)
Remove 2 nuts (K).

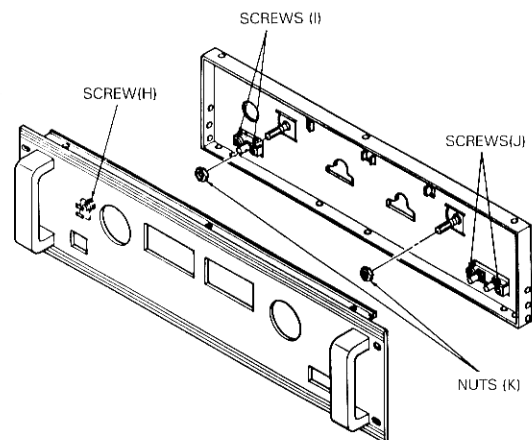


Fig. 4

5. Removal of Rear Cover and Other

- (a) Removal of Rear Cover. (Fig.5)
 - Remove 3 screws (L).
 - Remove 6 screws (M).
- (b) Removal of Fan. (Fig.5)
 - Remove 4 screws (N).
- (c) Removal of Phone Jack. (Fig.5)
 - Remove 1 screw (O).
- (d) Removal of Speaker Terminal. (Fig.5)
 - Remove 4 screws (P).
- (e) Removal of Voltage Selector. (Fig.5)
 - Remove 2 screws (Q).

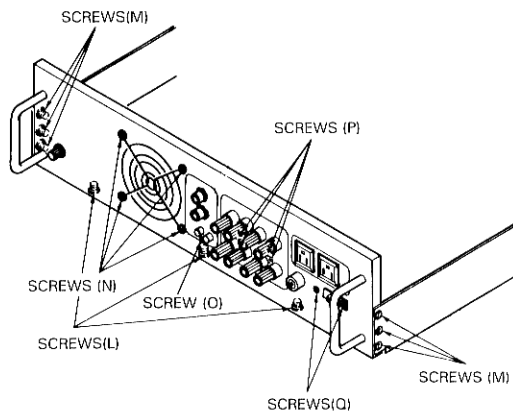


Fig. 5

6. Removal of Transistor and Main PCB

- (a) Removal of Transistor. (Fig.6)
 - Remove 4 nuts (R).
- (b) Removal of Main PCB. (Fig.6)
 - Remove 6 screws (S).
- (c) Removal of Heat Sink. (Fig.6)
 - Remove 6 screws (T).

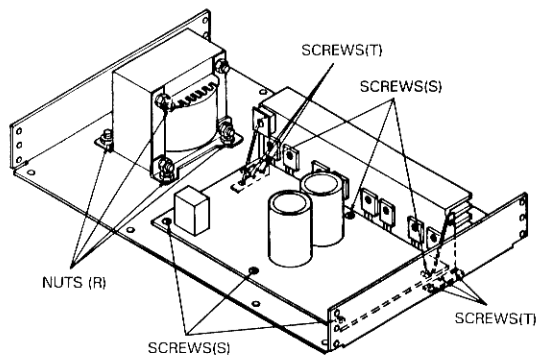


Fig. 6

ADJUSTMENT

AUDIO CIRCUIT ADJUSTMENT

EQUIPMENT REQUIRED

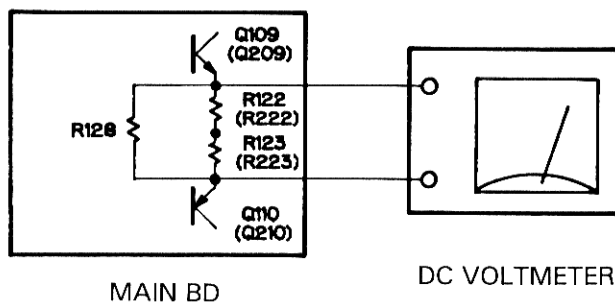
1. Oscilloscope
2. Audio Oscillator
3. DC Voltmeter
4. AC Voltmeter
5. Distortion Meter

Note: Maintain voltage at 120 voltage AC 60 Hz for U.S.A. & Canadian models.

(Use 220/240 volts AC 50 Hz for European and 240 volts AC 50 Hz for Australian models.)

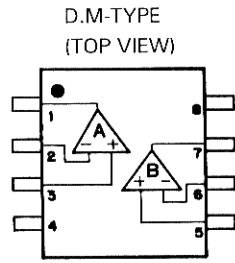
ADJUSTMENT

Austment	Equipment	Connection	Audio Freq	Model	Level	Adjustment
Idling current adjustment	DC Voltmeter	See below	No signal	P-600	3.5mV	VR102(VR202)
				P-800	8 mV	1 kohm

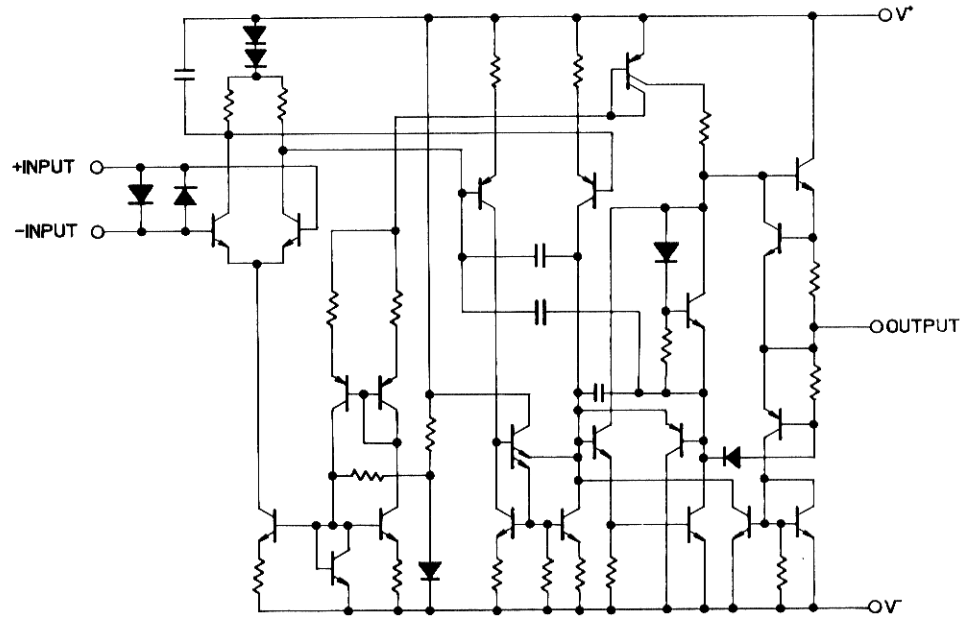


INTERNAL DIAGRAMS AND PINOUT OF EQUIVALENT CIRCUITS

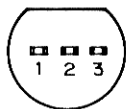
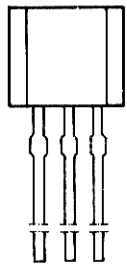
NJM5532



- PIN FUNCTION
- 1. A OUTPUT
 - 2. A- INPUT
 - 3. A+ INPUT
 - 4. V-
 - 5. B+ INPUT
 - 6. B- INPUT
 - 7. B OUTPUT
 - 8. V+

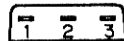
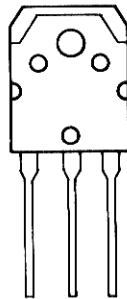


2SA1015/2SA970/2SA733



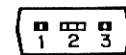
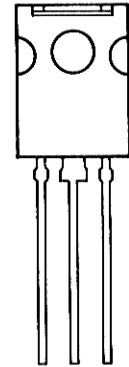
- 1. EMITTER
- 2. COLLECTOR
- 3. BASE

2SA1516/2SC3907



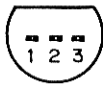
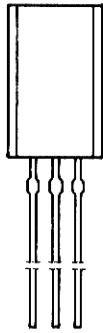
- 1. BASE
- 2. COLLECTOR (HEAT SINK)
- 3. EMITTER

2SC3421



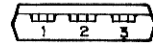
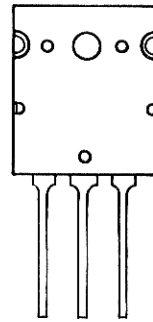
- 1. EMITTER
- 2. COLLECTOR
- 3. BASE

2SA1145/2SC2705



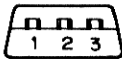
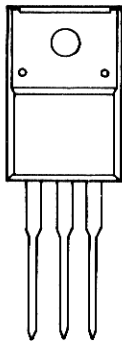
- 1. EMITTER
- 2. COLLECTOR
- 3. BASE

2SA1302/2SC3281



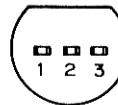
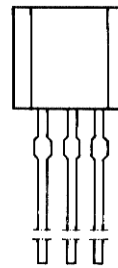
- 1. BASE
- 2. COLLECTOR (HEAT SINK)
- 3. EMITTER

2SA1837/2SC4793



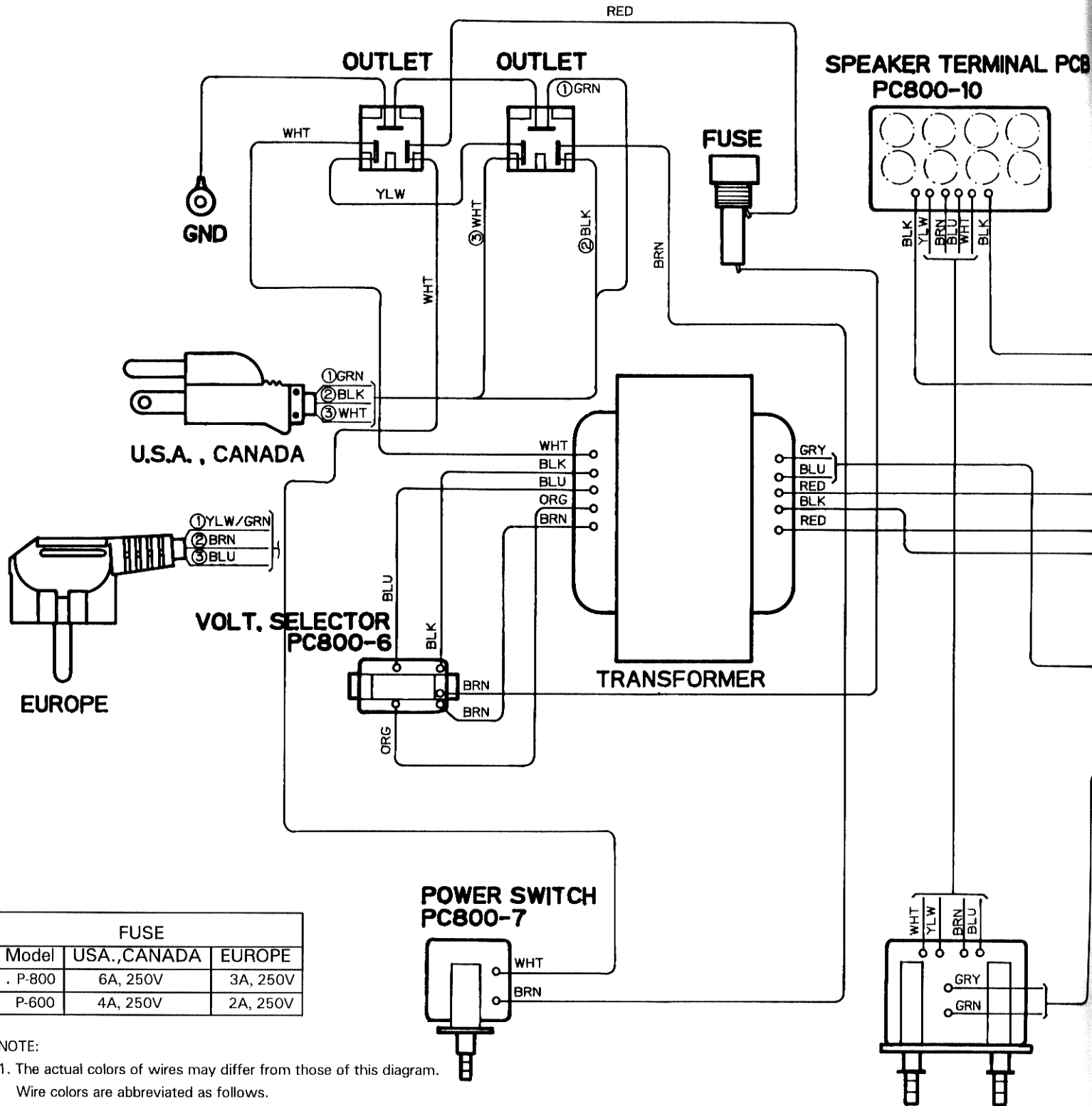
- 1. BASE
- 2. COLLECTOR
- 3. EMITTER

2SC1815/2SC945



- 1. EMITTER
- 2. COLLECTOR
- 3. BASE

WIRING DIAGRAM (P-600)



FUSE		
Model	USA., CANADA	EUROPE
P-800	6A, 250V	3A, 250V
P-600	4A, 250V	2A, 250V

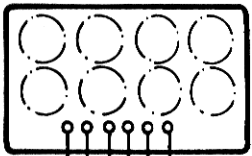
NOTE:

1. The actual colors of wires may differ from those of this diagram.

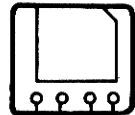
Wire colors are abbreviated as follows.

- | | |
|----------------------|----------------------|
| BRN Brown | YLW Yellow |
| VLT Violet | RED Red |
| GRN Green | GRY Gray |
| ORG Orange | BLU Blue |
| WHT White | BLK Black |

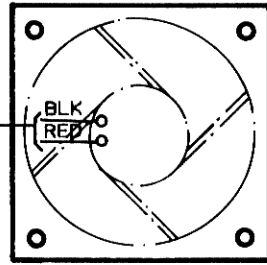
**PEAKER TERMINAL PCB
PC800-10**



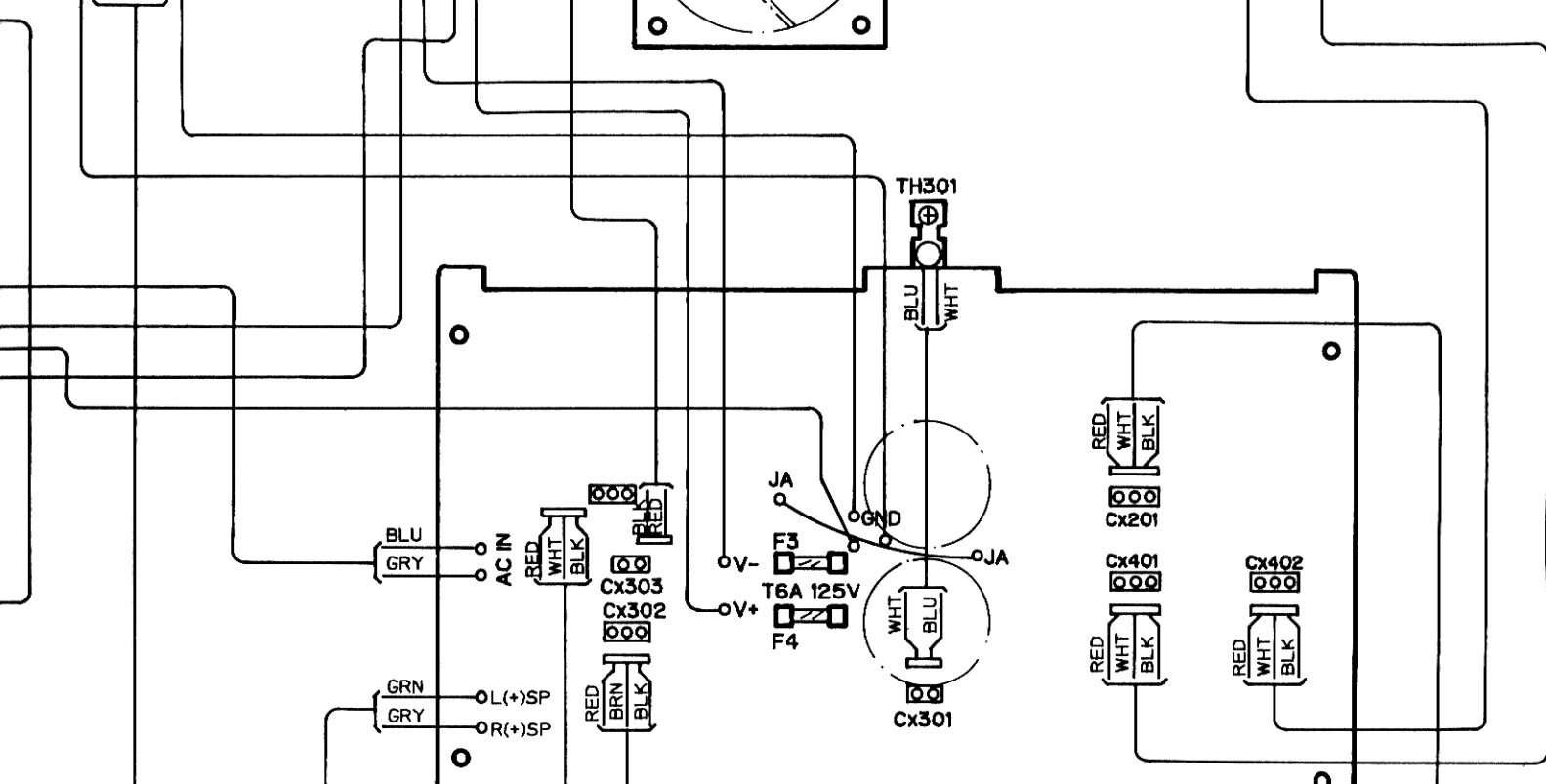
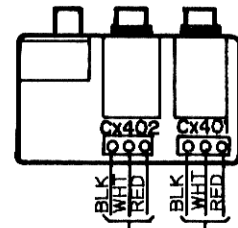
**RECTIFIER PCB
PC800-8**



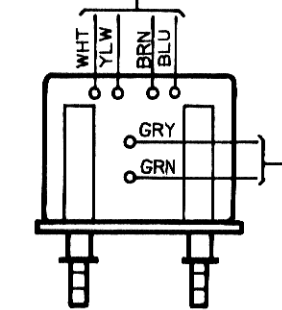
FAN



**PHONE JACK PCB
PC800-4**

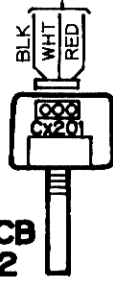


**MAIN PCB
PC800-1**

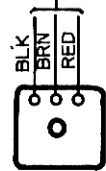


**PUSH SWITCH PCB
PC800-9**

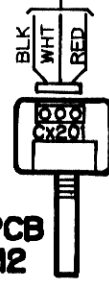
**VOL VR PCB
PC2000-12**



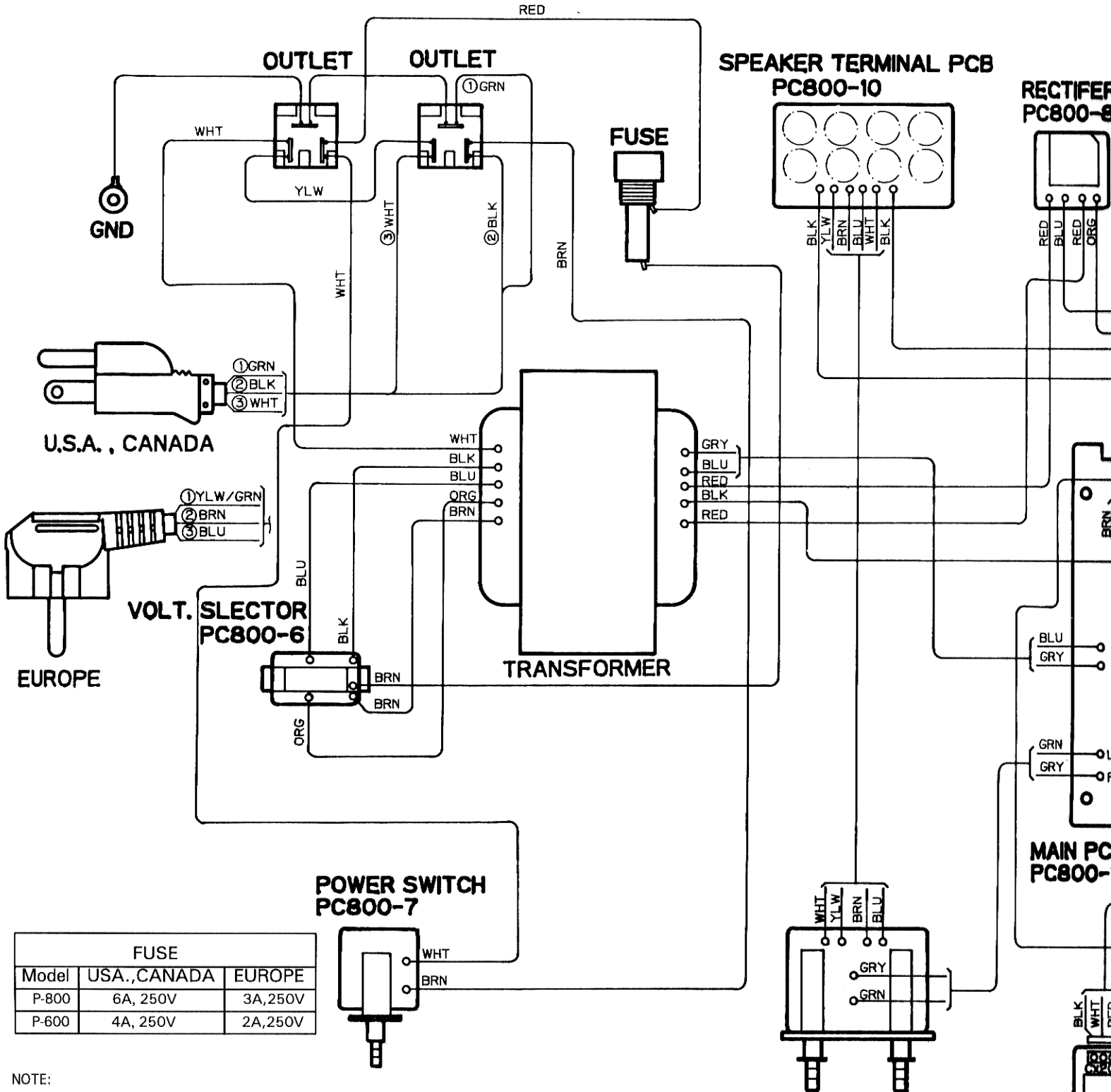
**POWER LED PCB
PC800-3**



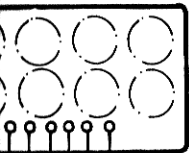
**VOL VR PCB
PC2000-12**



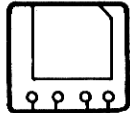
WIRING DIAGRAM (P-800)



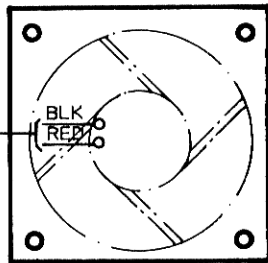
FRONT TERMINAL PCB
PC800-10



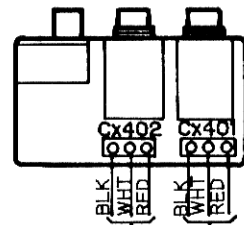
RECTIFIER PCB
PC800-8



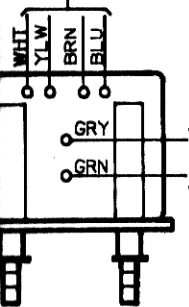
FAN



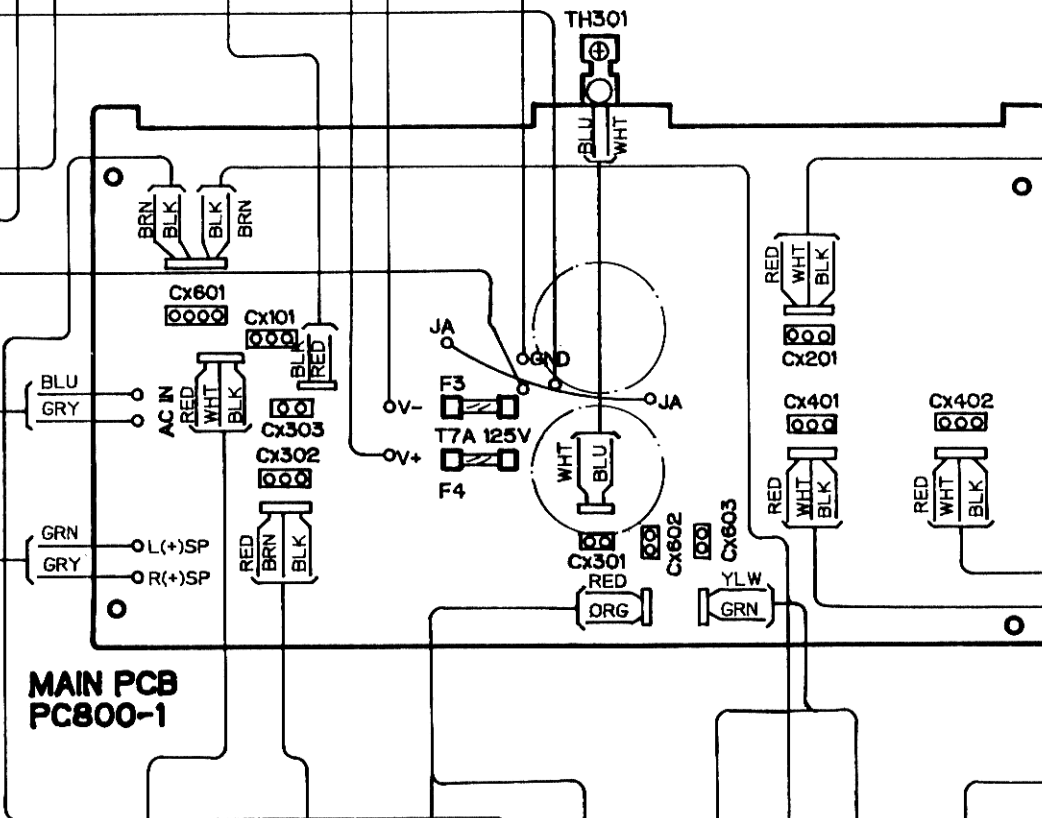
PHONE JACK PCB
PC800-4



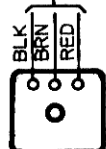
POWER SWITCH PCB
PC800-9



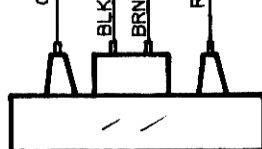
MAIN PCB
PC800-1



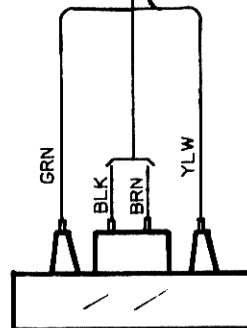
POWER LED PCB
PC800-3



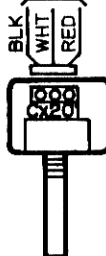
VU



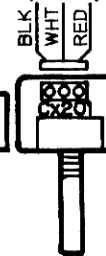
VU



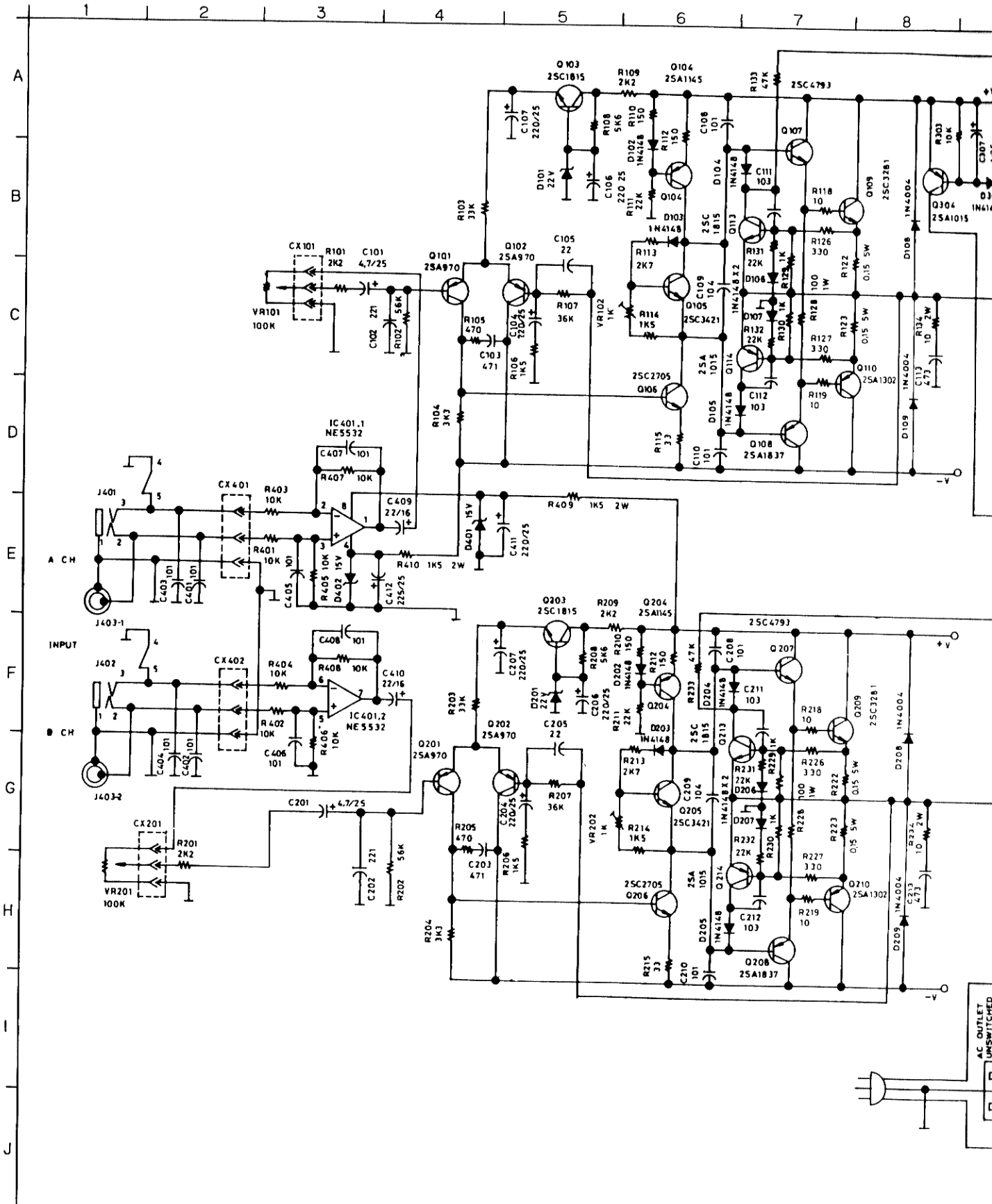
VOL VR PCB
PC800-11



VOL VR PCB
PC800-12

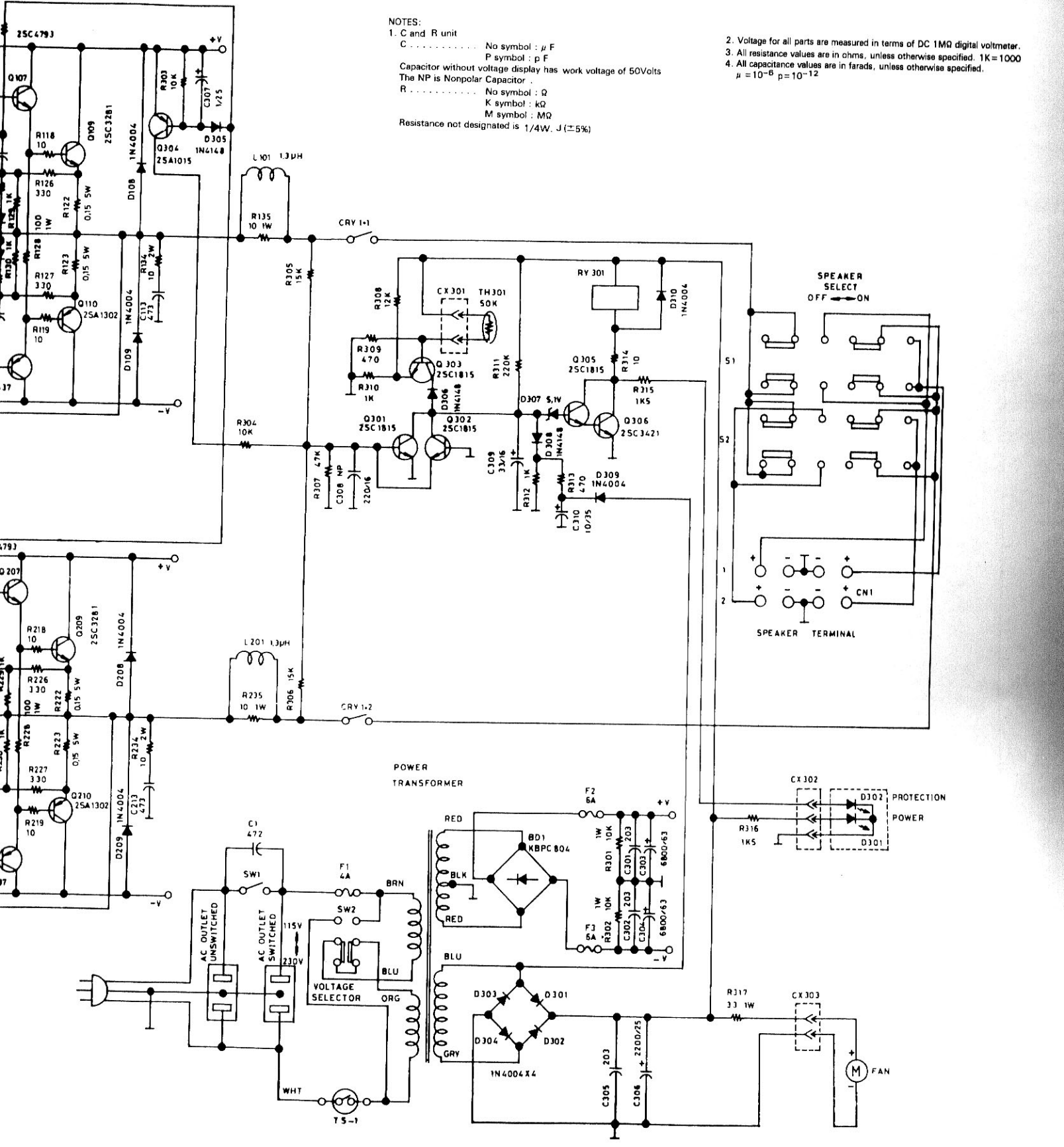


SCHEMATIC DIAGRAM(P-600)

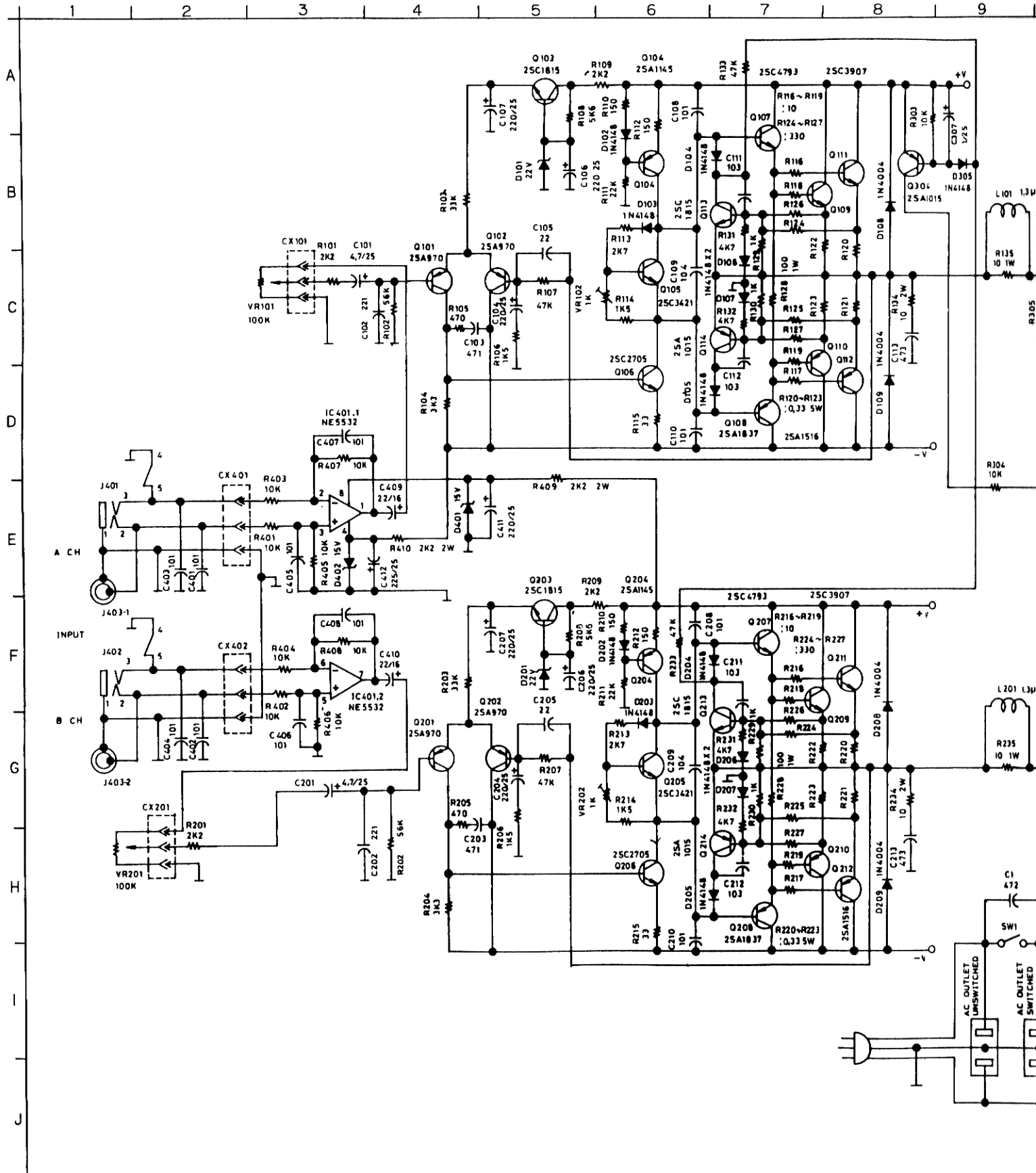


NOTES:
 1. C and R unit
 C No symbol : μ F
 P P symbol : p F
 Capacitor without voltage display has work voltage of 50Volts
 The NP is Nonpolar Capacitor
 R No symbol : Ω
 K K symbol : k Ω
 M M symbol : M Ω
 Resistance not designated is 1/4W, J ($\pm 5\%$)

2. Voltage for all parts are measured in terms of DC 1M Ω digital voltmeter.
 3. All resistance values are in ohms, unless otherwise specified. 1K = 1000
 4. All capacitance values are in farads, unless otherwise specified.
 $\mu = 10^{-6}$ p = 10^{-12}



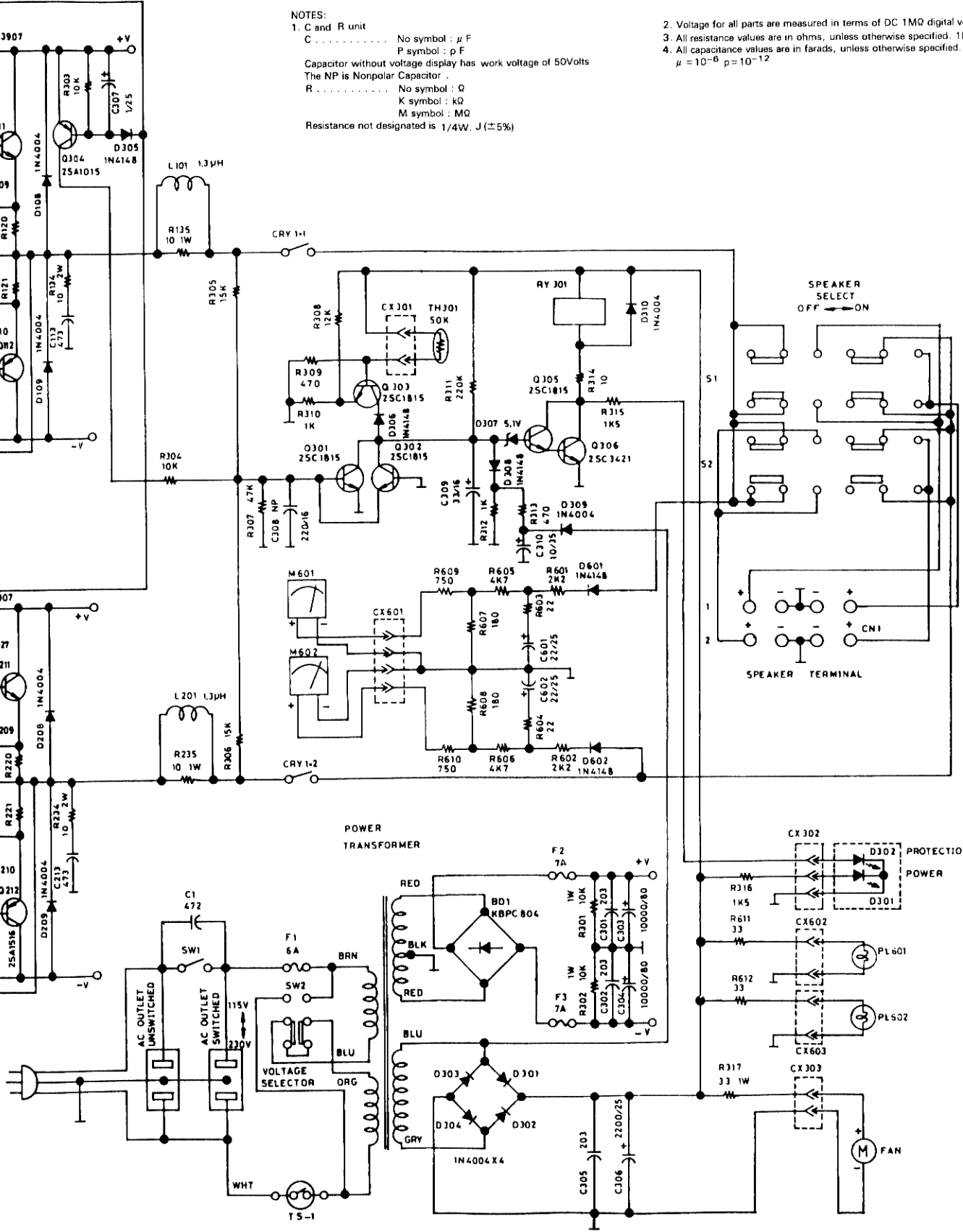
SCHEMATIC DIAGRAM(P-800)



NOTES:

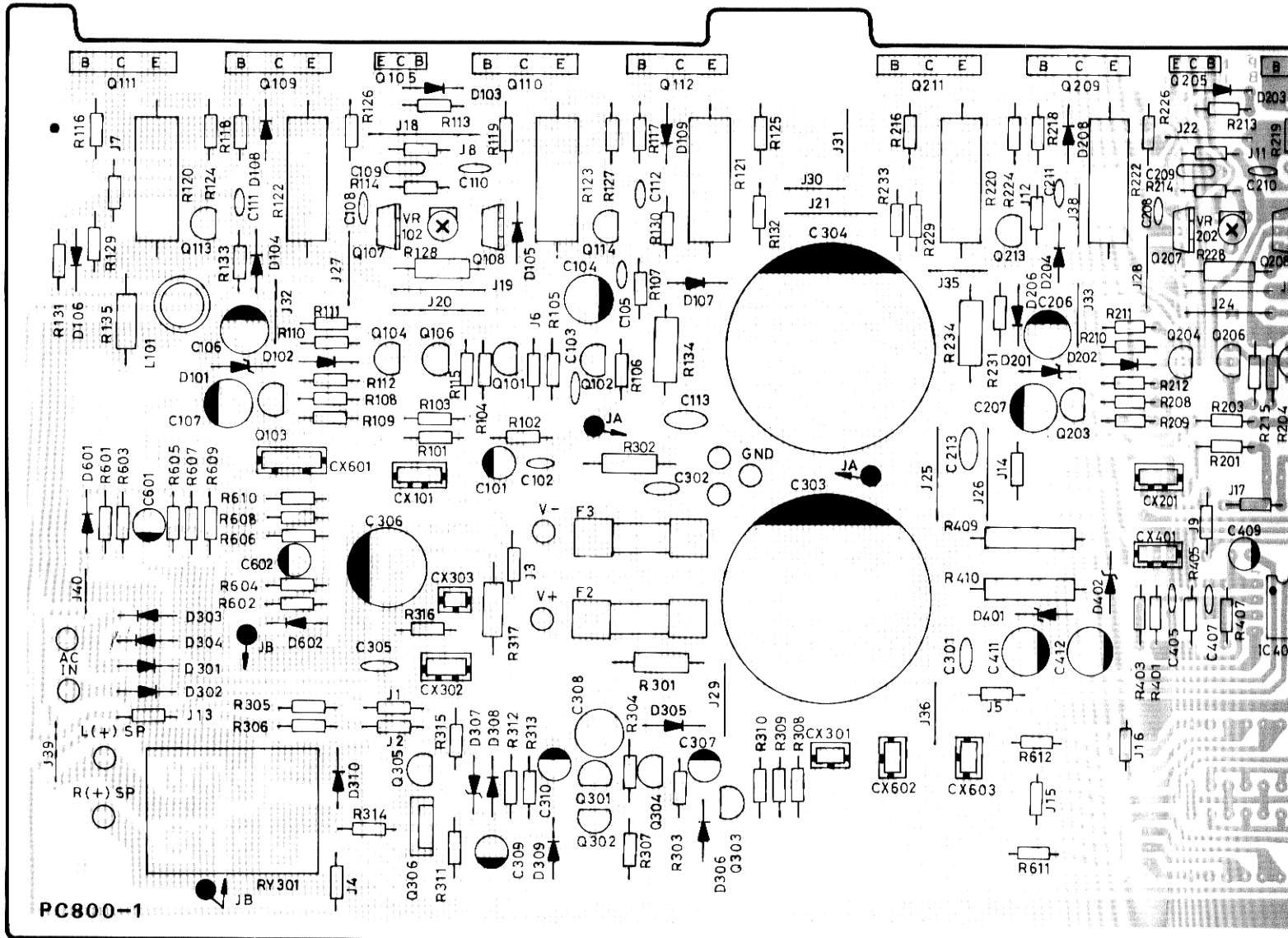
- 1. C and R unit
- C No symbol : μ F
- P symbol : p F
- Capacitor without voltage display has work voltage of 50Volts
- The NP is Nonpolar Capacitor .
- R No symbol : Ω
- K symbol : k Ω
- M symbol : M Ω
- Resistance not designated is 1/4W, J (\pm 5%)

- 2. Voltage for all parts are measured in terms of DC 1M Ω digital voltmeter.
- 3. All resistance values are in ohms, unless otherwise specified. 1K=1000
- 4. All capacitance values are in farads, unless otherwise specified.
- $\mu = 10^{-6}$ p=10⁻¹²

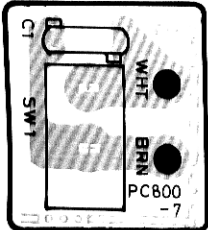


PRINTED CIRCUIT BOARDS

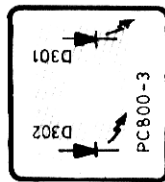
MAIN PCB



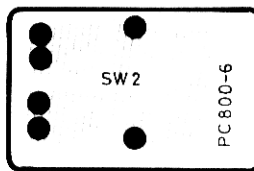
POWER SWITCH PCB



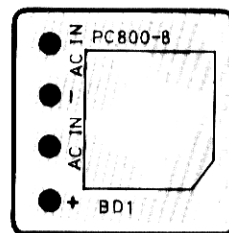
POWER LED PCB



VOLT. SLECTOR PCB

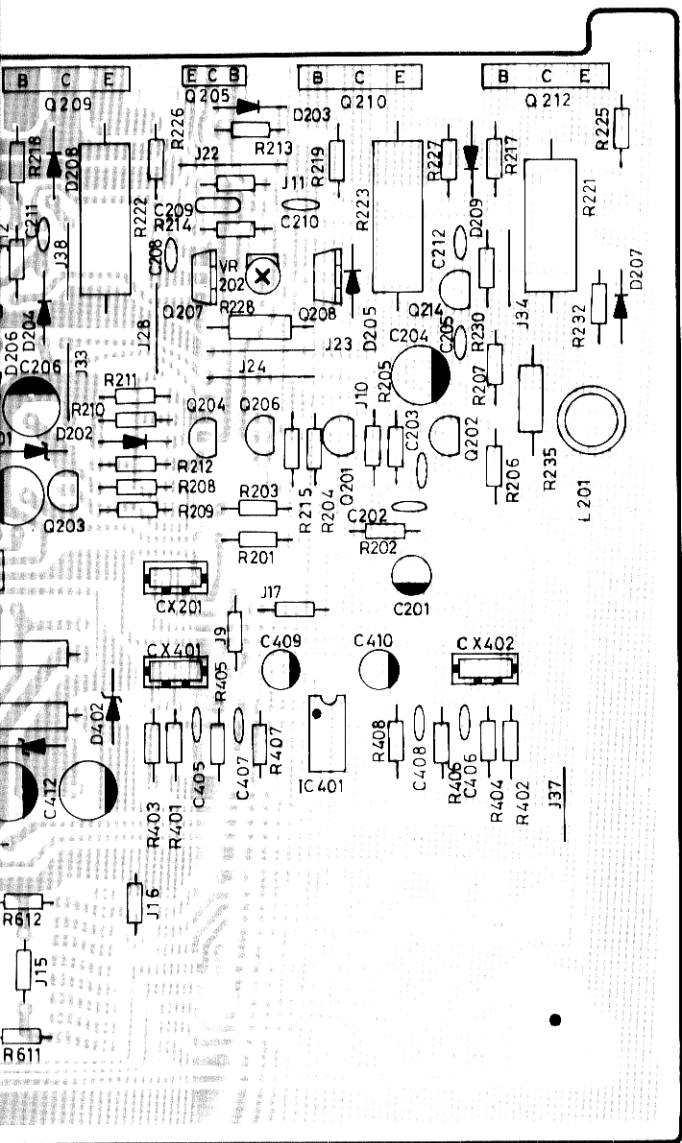


RECTIFIER PCB

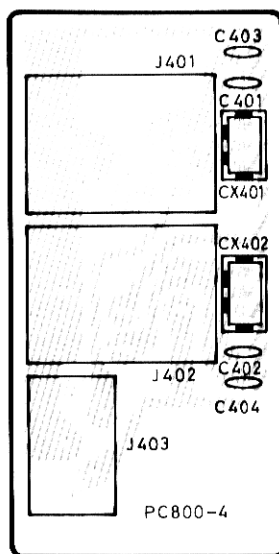


VOL VR PCB

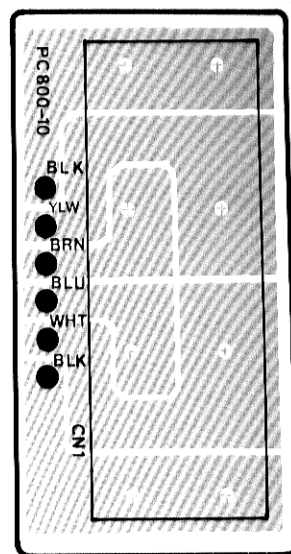




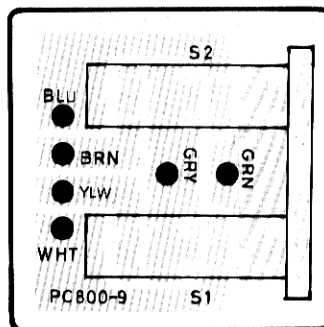
PHONE JACK PCB



SPEAKER TERMINAL PCB



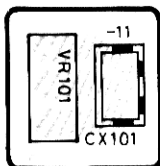
PUSH SWITCH PCB



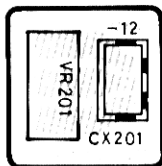
R PCB



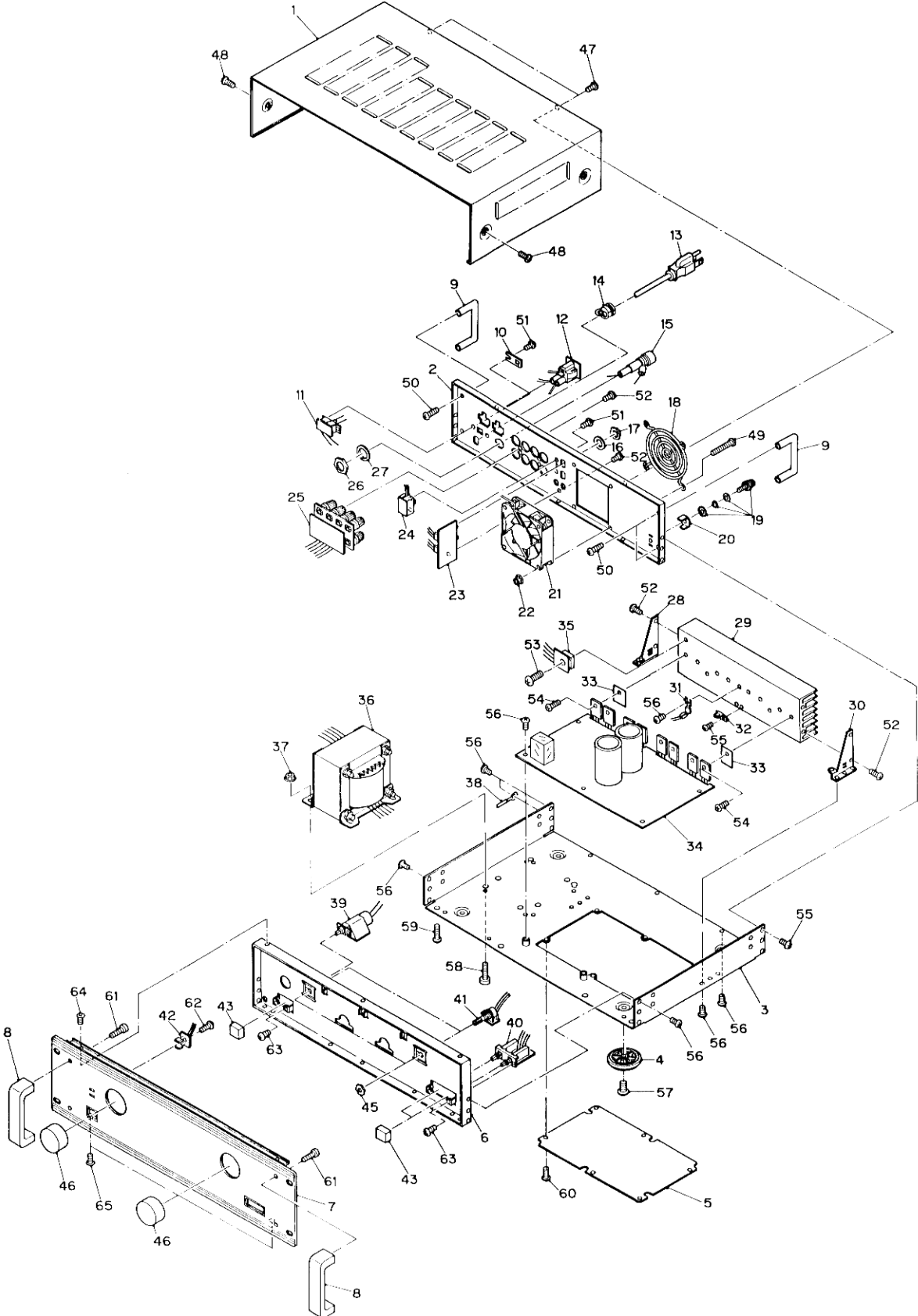
VOL VR PCB



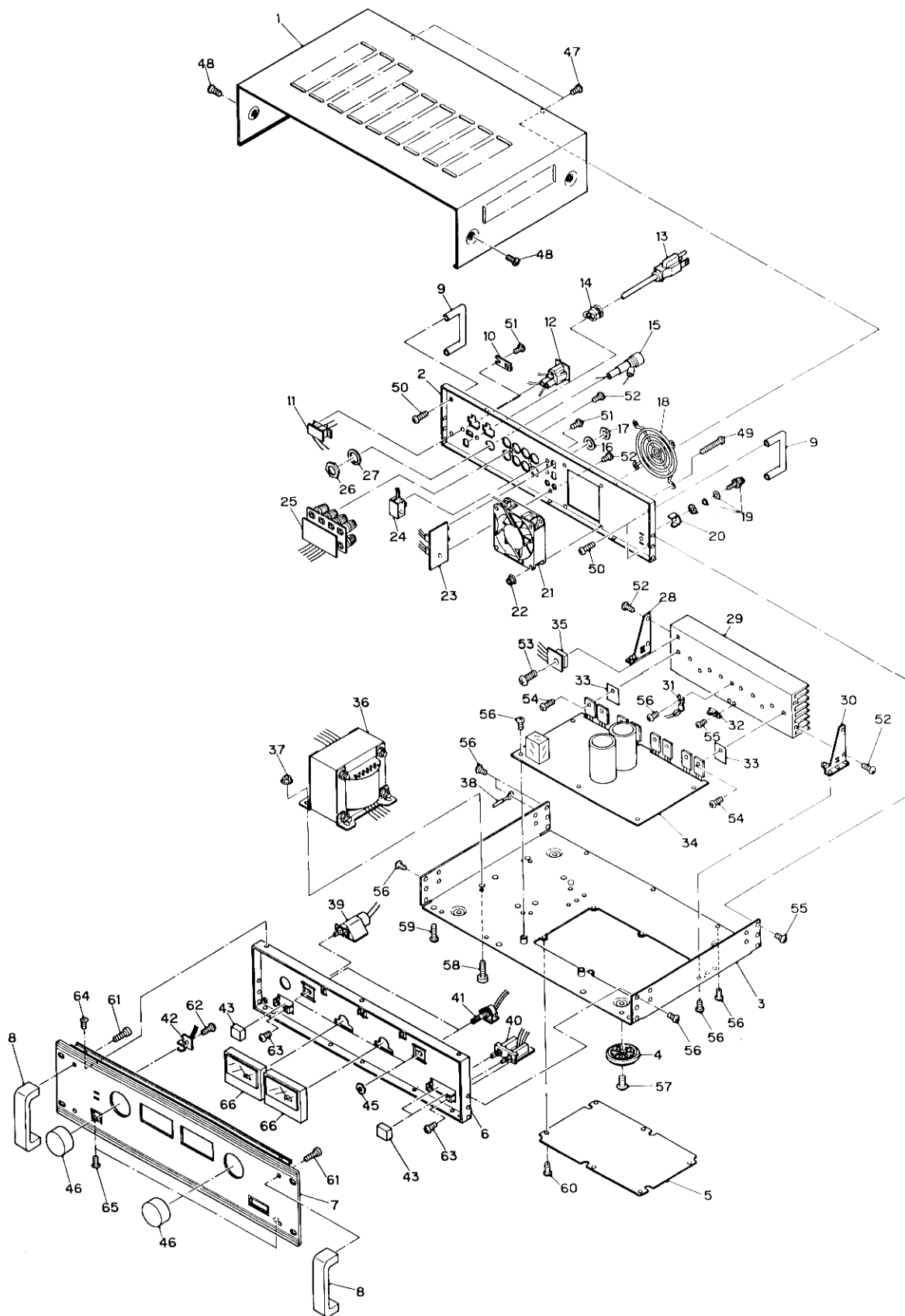
VOL VR PCB



EXPLODED VIEW OF CABINET (P-600)



EXPLODED VIEW OF CABINET (P-800)



CABINET PARTS LIST

Symbol No.	Parts No.	Description
1	021-132	TOP COVER
2	021-821	REAR PLATE(P-600)
2	021-822	REAR PLATE(P-800)
3	021-216	BOTTOM COVER
4	049-192	FOOT RUBBER
5	021-133	COVER
6	021-722	VR BRACKER
7	002-093	FRONT PANEL(P-600)
7	002-094	FRONT PANEL(P-800)
8	041-210	HANDLE (FRONT PANEL)
9	022-266	PROTECTOR FOR REAR PANEL(HANDLE)
10	002-096	ORNAMENT
11	081-026	SLIDE SWITCH
12	092-082	3P AC OUTLET
13	093-311	AC CORD (U.S.A. , CANADA)
13	093-355	AC CORD (EUROPE)
14	049-187	STRAIN RELIEF BUSHING
15	047-529	FUSE HOLDER
16		WASHER
17		NUT
18	022-842	METAL FAN GUARDS
19	146-706	GROUND SCREW
20	022-292	GROUND PLATE
21	001-604	DC FAN
22	131-074	K NUT
23	092-081	PHONE JACK
24	081-020	SLIDE SWITCH (P-800)
25	161-108	8P SPEAKER TERMINAL
26		NUT
27		WASHER
28	022-841	BRACKER HOLDER-LEFT
29	041-019	HEAT SINK FOR TR.(POWER)
30	022-840	BRACKER HOLDER-RIGHT
31		THERMISTOR
32	022-315	HOLDER
33		MICA WASHER(AC-263) (P-600)
33		MICA WASHER(AC-238) (P-800)
34	162-694	MAIN PCB
35	162-689	RECTIFIER PCB
36	059-143	POWER TRANSFORMER(P-600)
36	059-144	POWER TRANSFORMER(P-800)
37	131-074	K NUT
38	093-342	GROUND RING TONG
39	083-066	POWER SWITCH
40	083-074	PUSH SWITCH
41	162-691	VOL VR PCB
42	162-661	POWER LED PCB
43	002-499	PUSH KNOB
44		
45		NUT
46	003-080	ROTARY KNOB
47	111-046	SCREW (BTS-3 3×6)
48	111-045	SCREW (BTS-3 4×8)
49	106-010	SCREW (TMS M4×35)
50	102-117	SCREW (M5×12)
51	111-046	SCREW (BTS-3 3×6)
52	110-031	SCREW (PTS-2 3×8)
53	111-031	SCREW (BTS-3 3×12)
54	111-044	SCREW (BTS-3 3×10)
55	102-028	SCREW (M2.6×5)
56	111-046	SCREW (BTS-3 3×6)
57	110-150	SCREW (PTSS-2 3×8)

PARTS LIST

Symbol No.	Parts No.	Description
58	107-022	SCREW (M3×6)
59	111-044	SCREW (BTS-3 3×10)
60	111-046	SCREW (BTS-3 3×6)
61	102-105	SCREW (M4×12)
62	110-172	SCREW (BTS-2 3×8)
63	111-044	SCREW (BTS-3 3×6)
64	111-043	SCREW (FTS-3 3×6)
65	111-044	SCREW (BTS-3 3×10)
66	087-014	ANALOG VU METER (P-800)
Diodes		
D101	079-037	ZENER DIODE MTZ22B
D102	079-003	SILICON DIODE IN4148
D103	079-003	SILICON DIODE IN4148
D104	079-003	SILICON DIODE IN4148
D106	079-003	SILICON DIODE IN4148
D107	079-003	SILICON DIODE IN4148
D108	079-034	RECTIFIER DIODE IN4004
D109	079-034	RECTIFIER DIODE IN4004
D201	079-037	ZENER DIODE MTZ22B
D202	079-003	SILICON DIODE IN4148
D203	079-003	SILICON DIODE IN4148
D204	079-003	SILICON DIODE IN4148
D206	079-003	SILICON DIODE IN4148
D207	079-003	SILICON DIODE IN4148
D208	079-034	RECTIFIER DIODE IN4004
D209	079-034	RECTIFIER DIODE IN4004
D301	079-034	RECTIFIER DIODE IN4004
D302	079-034	RECTIFIER DIODE IN4004
D303	079-034	RECTIFIER DIODE IN4004
D304	079-034	RECTIFIER DIODE IN4004
D305	079-003	SILICON DIODE IN4148
D306	079-003	SILICON DIODE IN4148
D307	079-035	ZENER DIODE MTZ5.1B
D308	079-003	SILICON DIODE IN4148
D309	079-034	RECTIFIER DIODE IN4004
D310	079-034	RECTIFIER DIODE IN4004
D401	079-018	ZENER DIODE MTZ15B
D402	079-018	ZENER DIODE MTZ15B
D601	079-003	SILICON DIODE IN4148
D602	079-003	SILICON DIODE IN4148
BD1	086-019	BRIDGE RECTIFIER KBPC804W
D301	080-084	LED(GREEN) R2139-T (PC800-3)
D302	080-082	LED(RED) R5139-T (PC800-3)
ICs		
IC401	074-085	IC NE5532
Transistors		
Q101	076-031	2SA970(GR)
Q102	076-031	2SC970(GR)
Q103	076-002	2SC945(P)
Q104	076-101	2SA1145(Y)
Q105	076-074	2SC3421(Y)
Q106	076-102	2SC2705(Y)
Q107	076-100	2SC4793
Q108	076-099	2SA1837
Q109	076-057	2SC3907(O)

Symbol No.	Part No.	Description
Q110	076-056	2SA1516(O)
Q111	076-057	2SC3907(O)
Q112	076-056	2SA1516(O)
Q113	076-002	2SC945(P)
Q114	076-020	2SA733(P)
Q201	076-031	2SA970(GR)
Q202	076-031	2SA970(GR)
Q203	076-002	2SC945(O)
Q204	076-101	2SA1145(Y)
Q205	076-074	2SC3421(Y)
Q206	076-102	2SC2705(Y)
Q207	076-100	2SC4793
Q208	076-099	2SA1837
Q209	076-057	2SC3907(O)
Q210	076-056	2SA1516(O)
Q211	076-057	2SC3907(O)
Q212	076-056	2SA1516(O)
Q213	076-002	2SC945(P)
Q214	076-020	2SA733(P)
Q301	076-002	2SC945(P)
Q302	076-002	2SC945(P)
Q303	076-002	2SC945(P)
Q304	076-020	2SA733(P)
Q305	076-002	2SC945(P)
Q306	076-074	2SC3421(Y)
Electrical Parts		
S1	083-074	SPK SW PUSH SWITCH SPUN24A002-CE
S2	083-074	SPK SW PUSH SWITCH SPUN24A002-CE
SW1	083-096	POWER SWITCH TV5 SFDLBIE7U-CE
VR101	071-096	VR RK163111R650-100KB(CE)
VR102	073-016	SEMI FIXED VR6-550-51K(B)60
VR201	071-096	VR RK163111R650-100KB(CE)
VR202	073-016	SEMI FIXED VR6-550-51K(B)60
RY301	086-512	RELAY SRET-202DP
CN1	161-108	8P SPEAKER TERMINAL
J401	092-081	φ6.3 PHONE JACK RPJ-06
J402	092-081	φ6.3 PHONE JACK RPJ-06
J403	161-083	2P RCA JACK
Packing		
101	153-143	POLYFORM
102	157-683	OWNERS MANUAL (P-600)
102	157-684	OWNERS MANUAL (P-800)