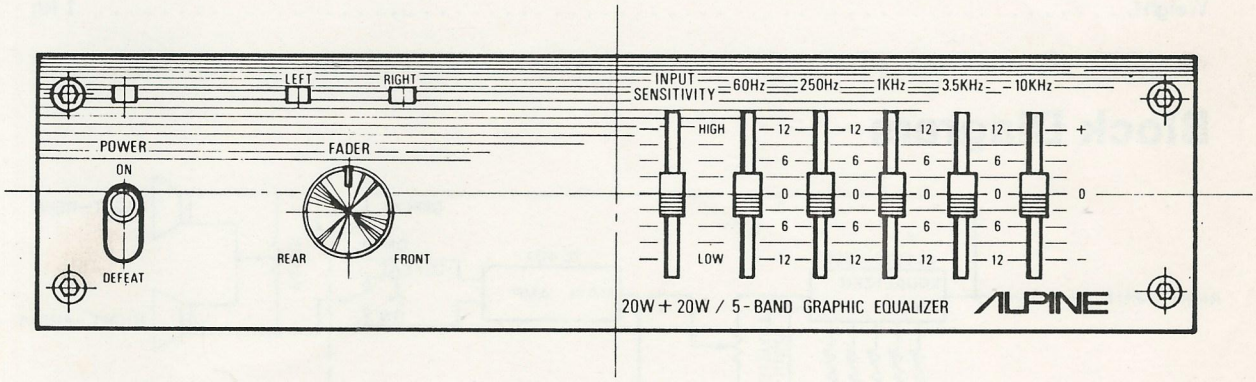
DENNIS

ALPINE SERVICE MANUAL

20W+20W/5-Band Graphic Equalizer

— REVISED —

This Service Manual is applicable to manufacture's Serial Numbers after 11001.



3004

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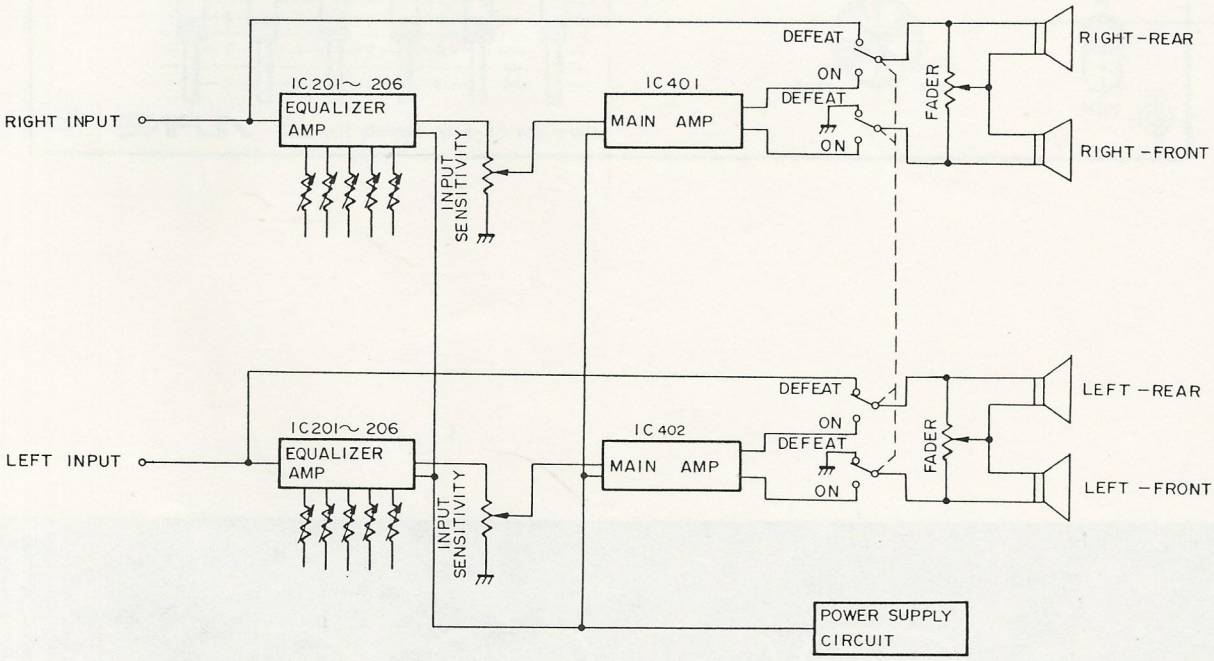
Specifications

Power Source . . . . . 14V D.C.
Grounding System. . . . . Negative Type
Current Drain . . . . . 3.5 A (Output 12W)
Power Output. . . . . 16W (at 1 kHz, T.H.D. 10%)/ch
Graphic Range
Equalization Range . . . . . ±12 dB
Equalization Frequency . . . . . 60 Hz, 250 Hz, 1 kHz, 3.5 kHz, 10 kHz
Frequency Response . . . . . 35 Hz to 20 kHz (–3 dB)
Input Sensitivity . . . . . 1V (Output: 12W/ 1 kHz, Sensitivity Volume: Maximum)
Load Impedance 4Ω
Semi-Conductors. . . . . 8 ICs, 2 Transistors, 3 Diodes, 3 LEDs
Dimensions . . . . . 180 (W) x 42.6 (H) x 145 (D) mm
Weight. . . . . 1 kg

Block Diagram



Parts Locations and Disassembly Instruction

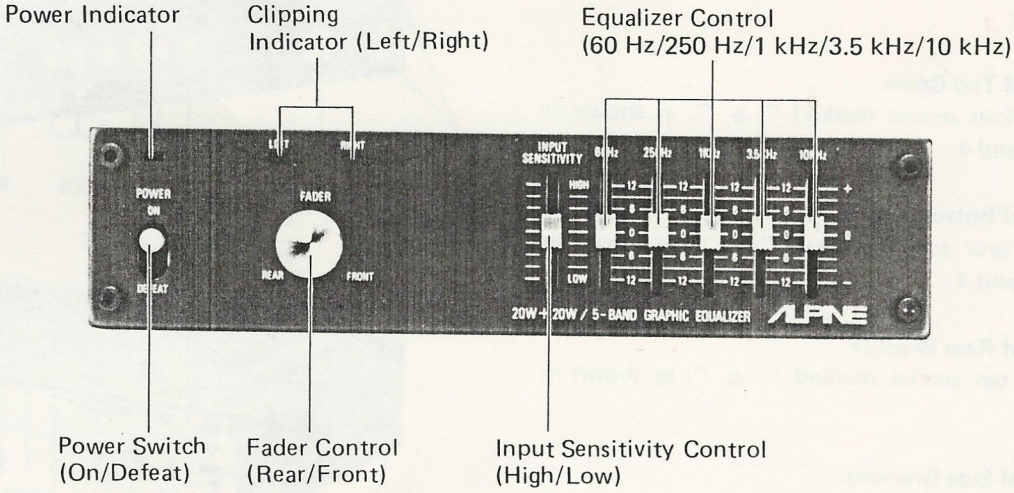


Figure 1

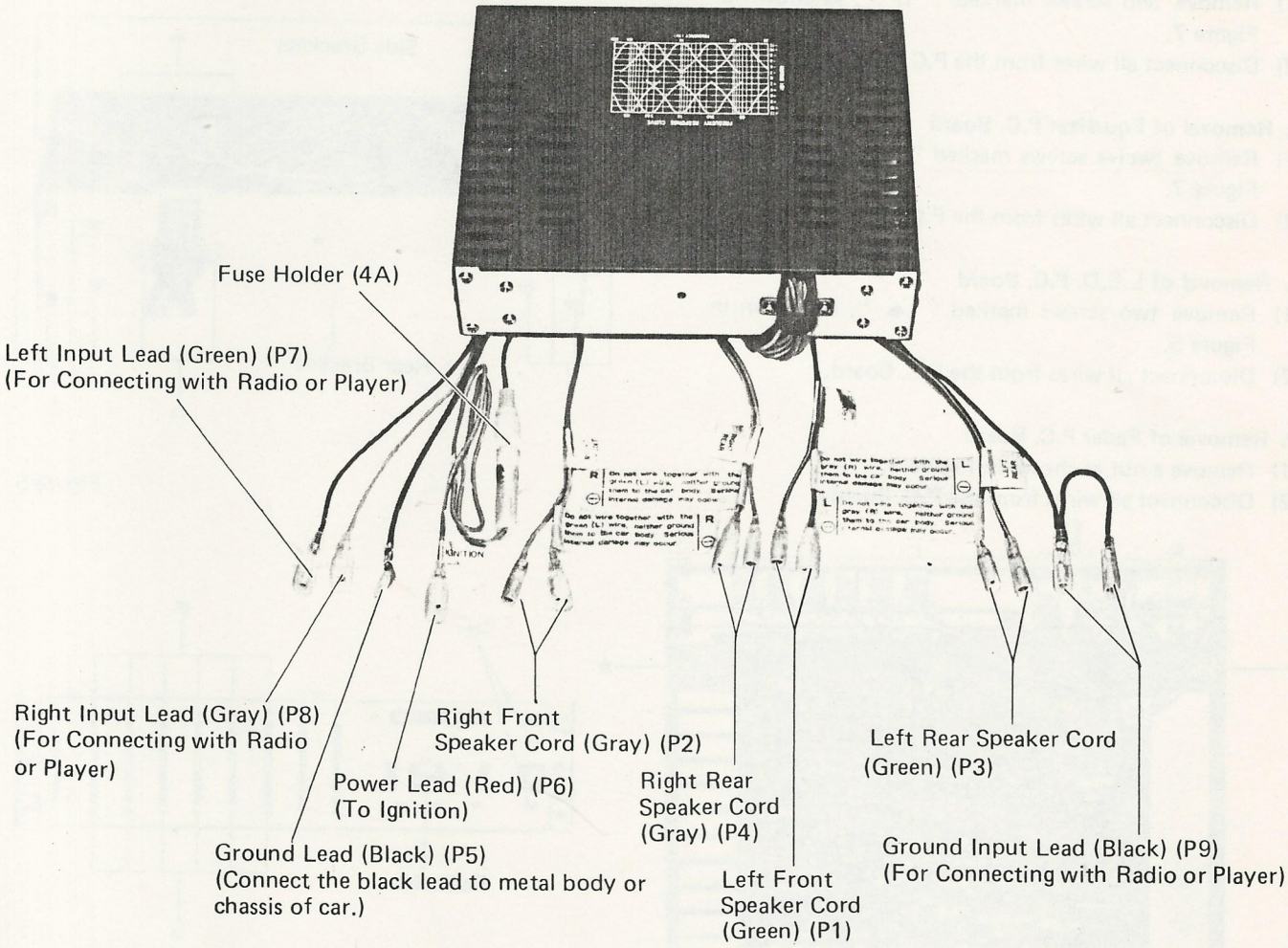


Figure 2

1. Removal of Front Bezel

(1) Pull out six slide knobs and a fader knob as shown in Figure 3.

(2) Remove four screws marked " ● ", as shown in Figure 3.

2. Removal of Top Cover

(1) Remove four screws marked " ■ ", as shown in Figure 3 and 4.

3. Removal of Bottom Cover

(1) Remove four screws marked " □ " as shown in Figure 3 and 4.

4. Removal of Rear Bracket

(1) Remove ten screws marked " △ ", as shown in Figure 5.

5. Removal of Side Brackets

(1) Remove four screws marked " ★ " as shown in Figure 4 and 6.

6. Removal of Switch P.C. Board

(1) Remove two screws marked " ☆ ", as shown in Figure 7.

(2) Disconnect all wires from the P.C. Board.

7. Removal of Equalizer P.C. Board

(1) Remove twelve screws marked " ※ ", as shown in Figure 7.

(2) Disconnect all wires from the P.C. Board.

8. Removal of L.E.D. P.C. Board

(1) Remove two screws marked " ◆ ", as shown in Figure 5.

(2) Disconnect all wires from the P.C. Board.

9. Removal of Fader P.C. Board

(1) Remove a nut as shown in Figure 7.

(2) Disconnect all wires from the P.C. Board.

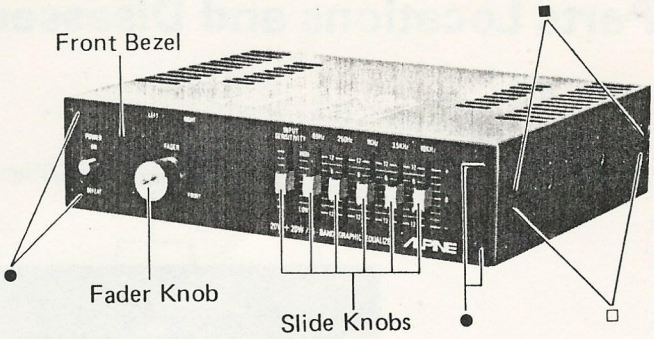


Figure 3

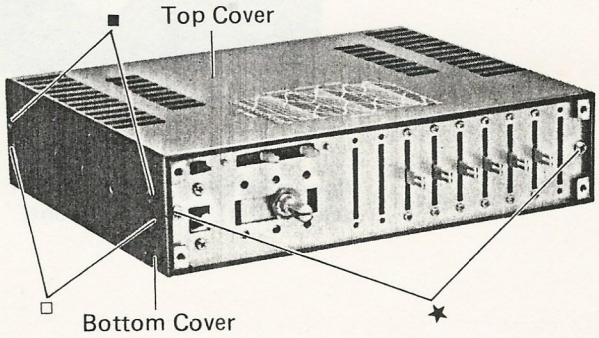


Figure 4

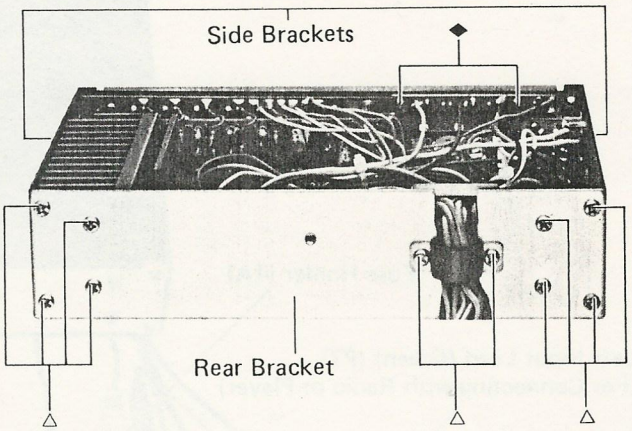


Figure 5

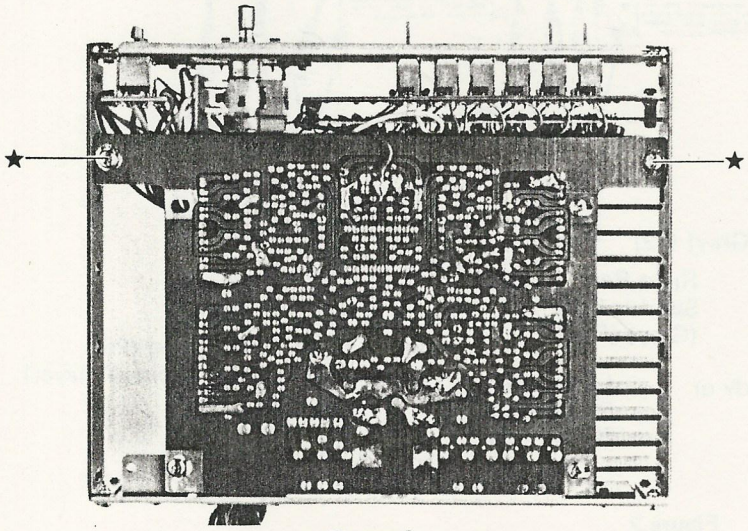


Figure 6

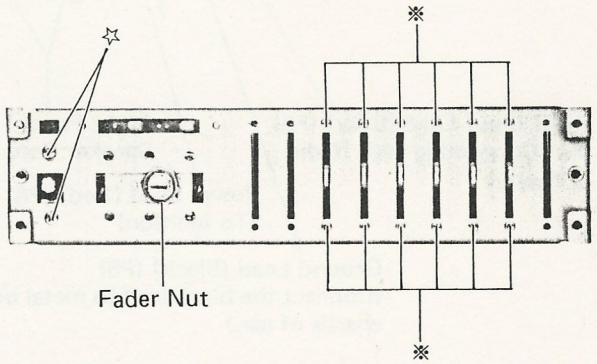


Figure 7

Parts Locations and Disassembly Instruction

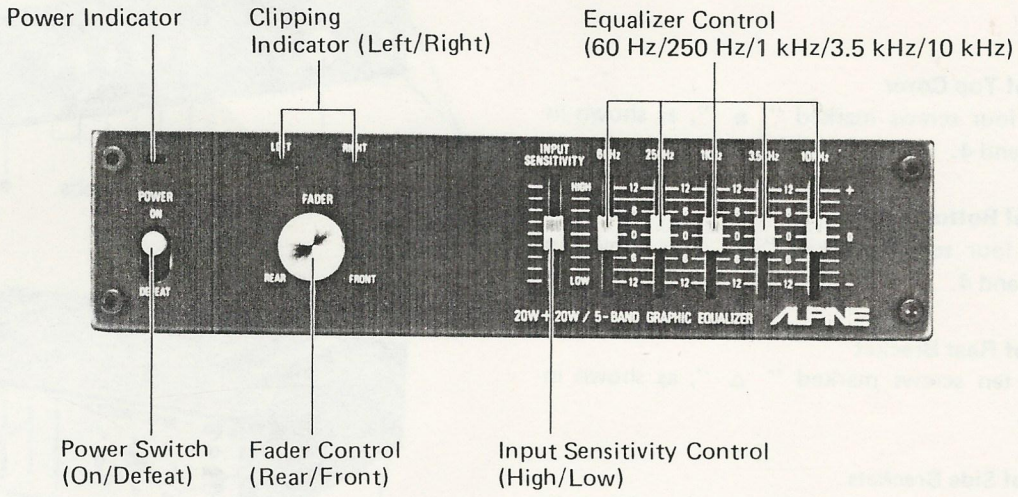


Figure 1

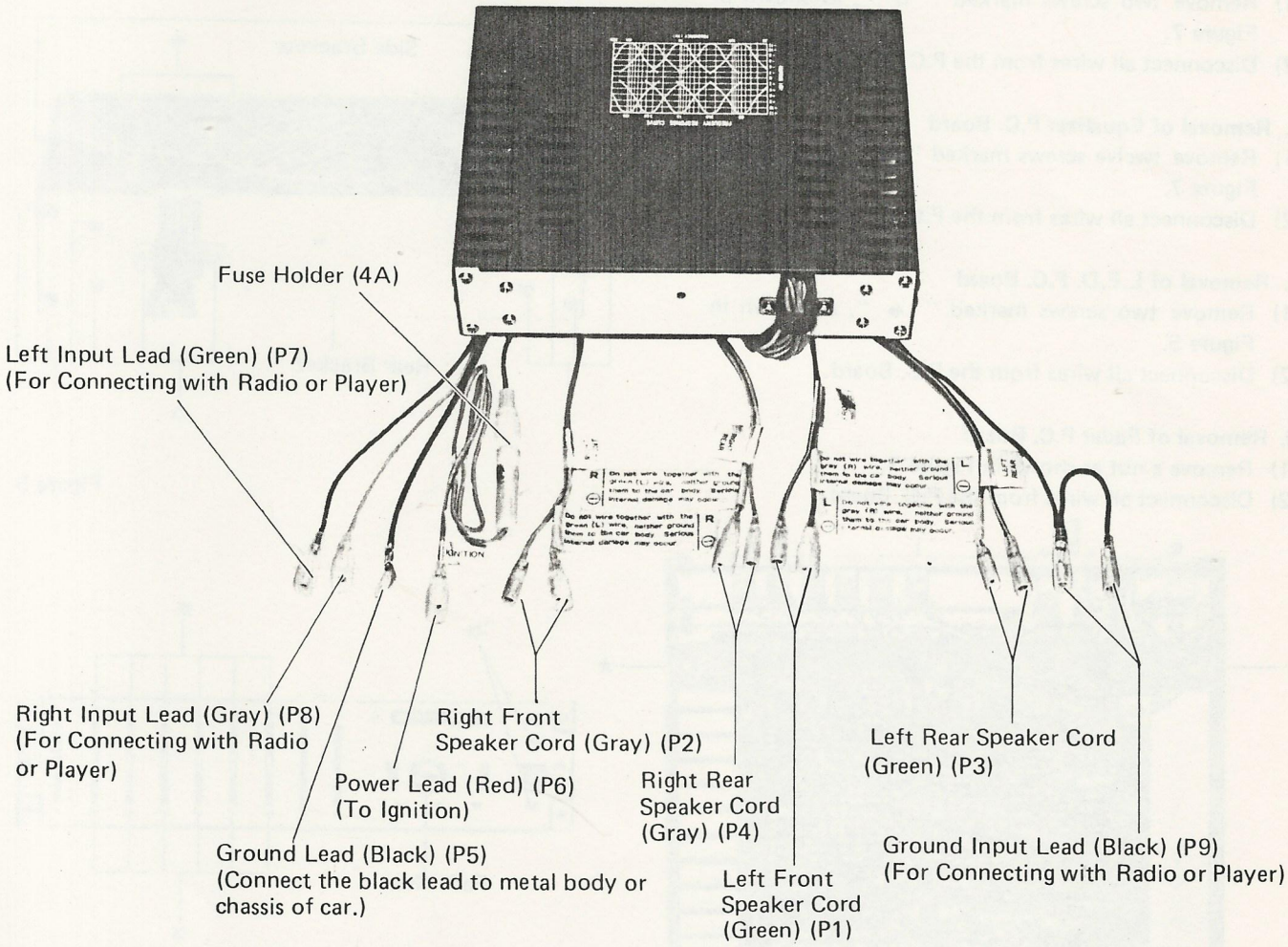
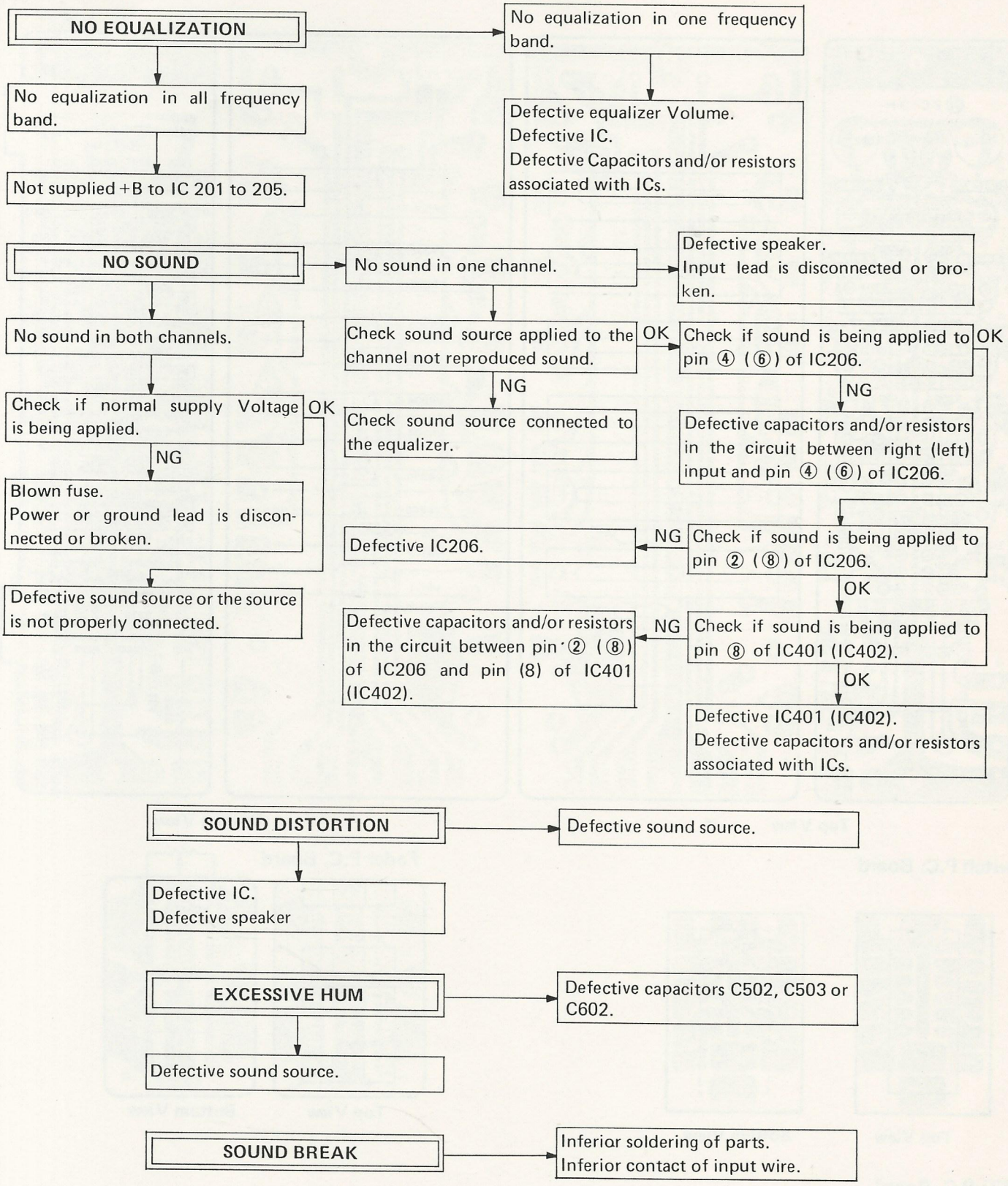


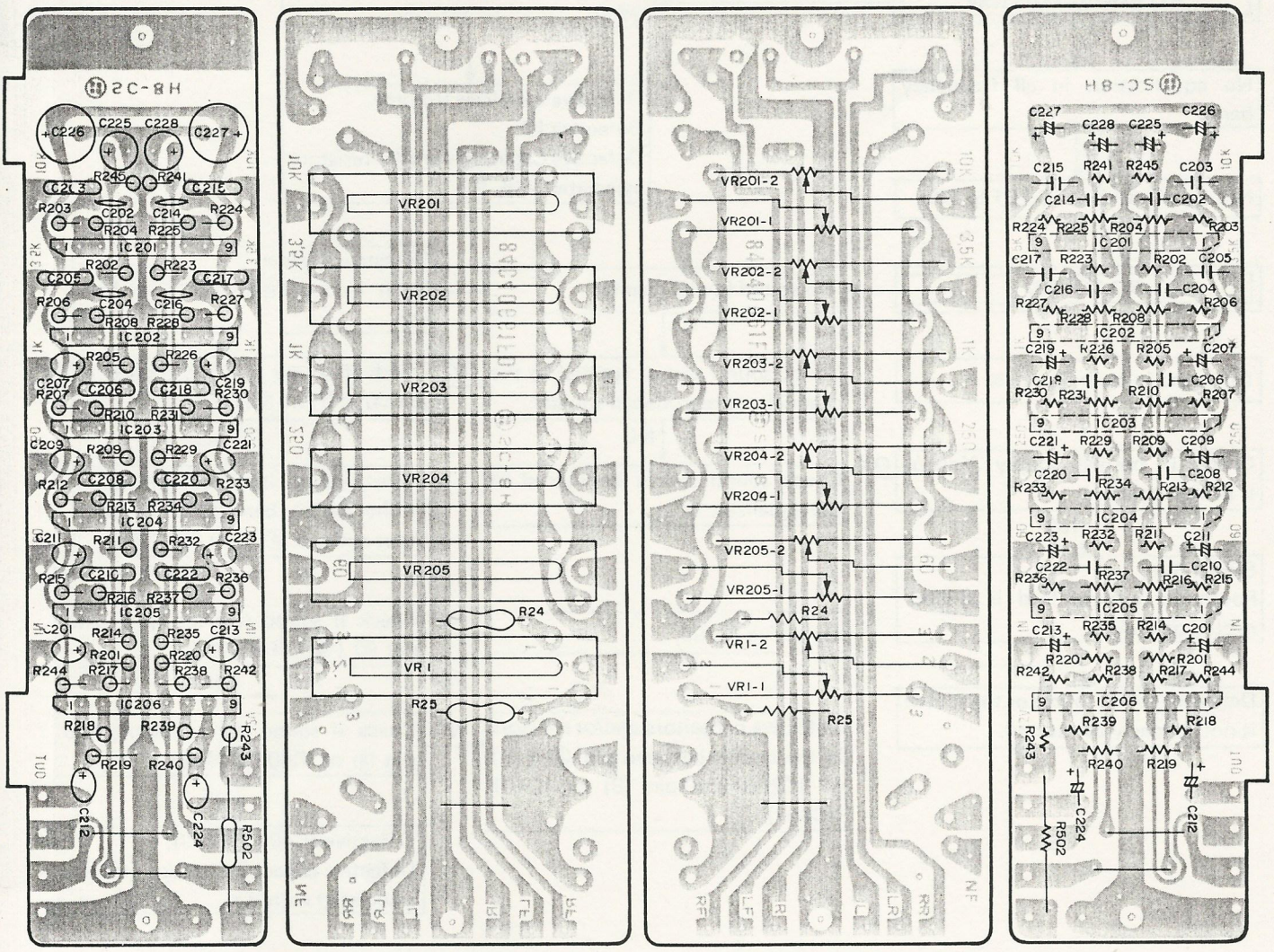
Figure 2

Trouble Shooting



Parts Layout on P.C. Boards

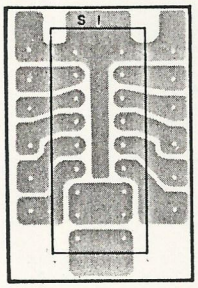
Equalizer P.C. Boards



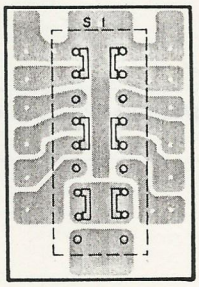
Top View

Bottom View

Switch P.C. Board

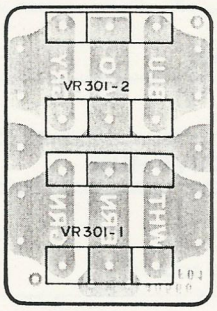


Top View

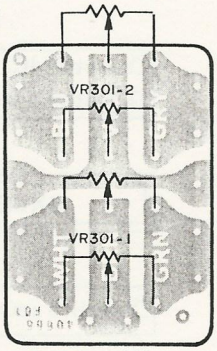


Bottom View

Fader P.C. Board

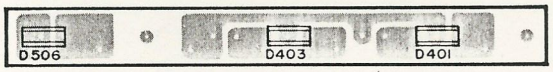


Top View

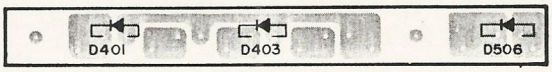


Bottom View

LED P.C. Board

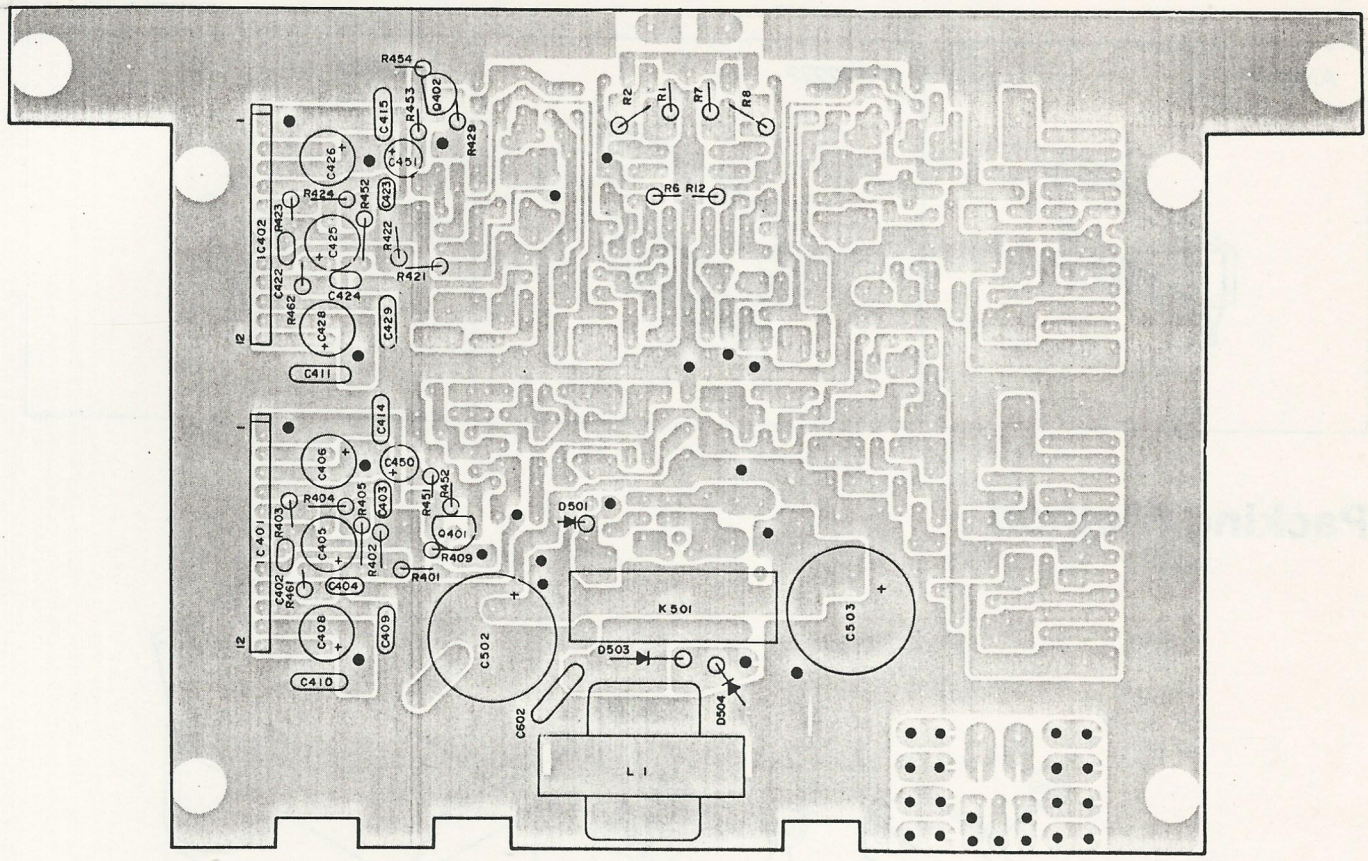


Top View

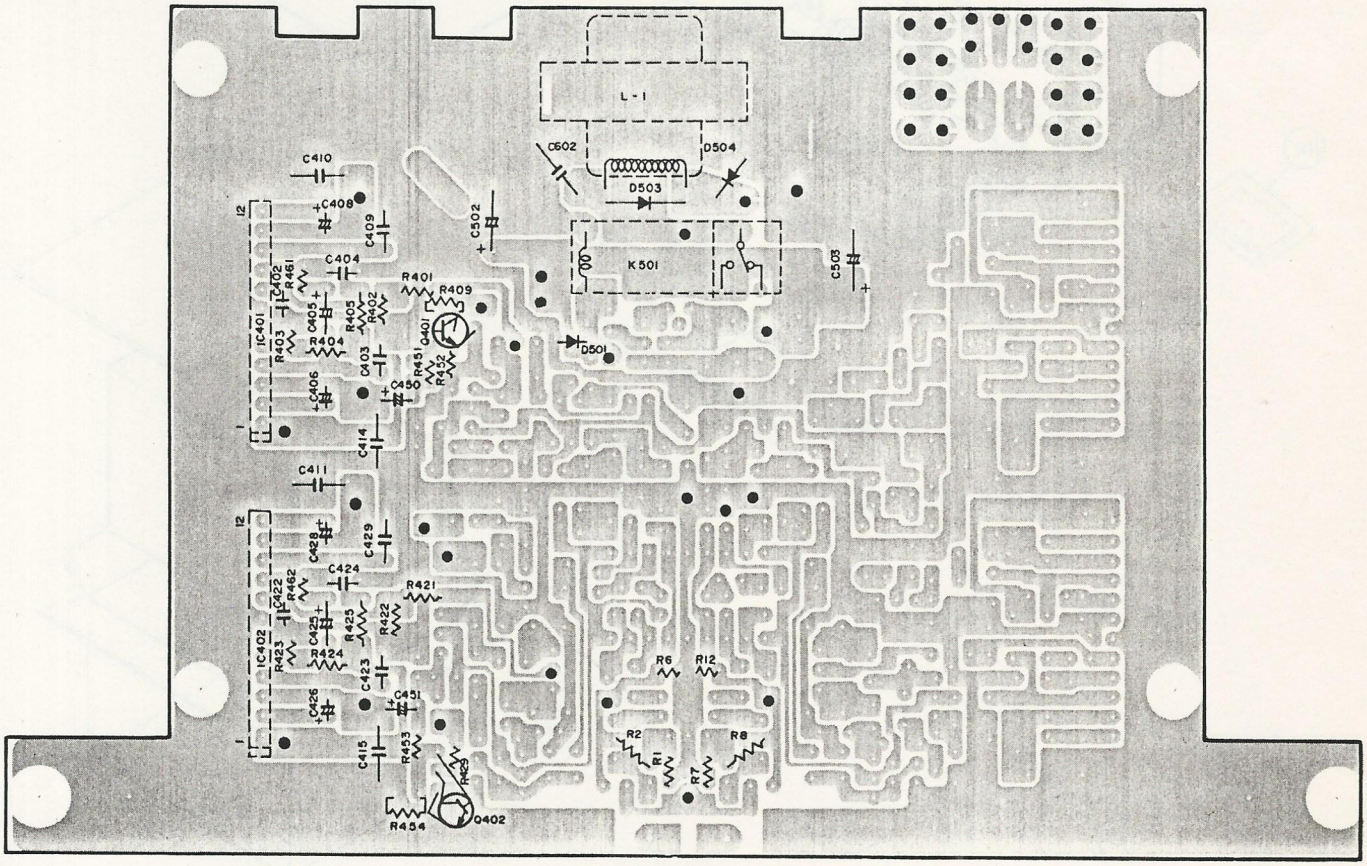


Bottom View

Main Amplifier P.C. Board

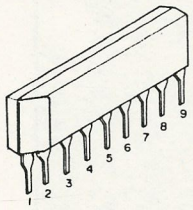
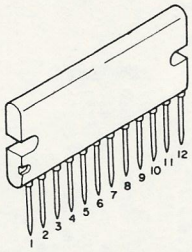
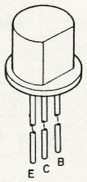


Top View

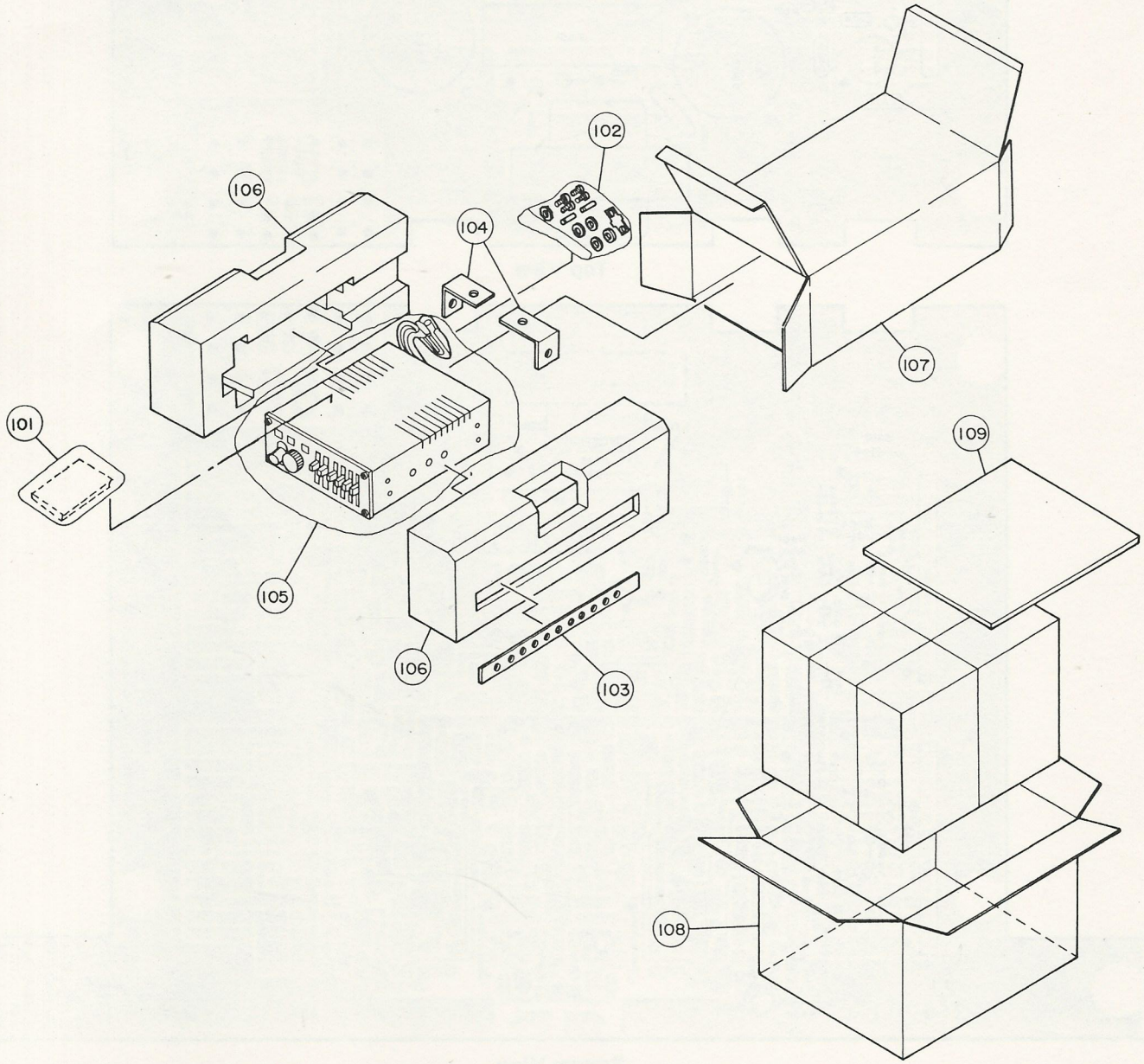


Bottom View

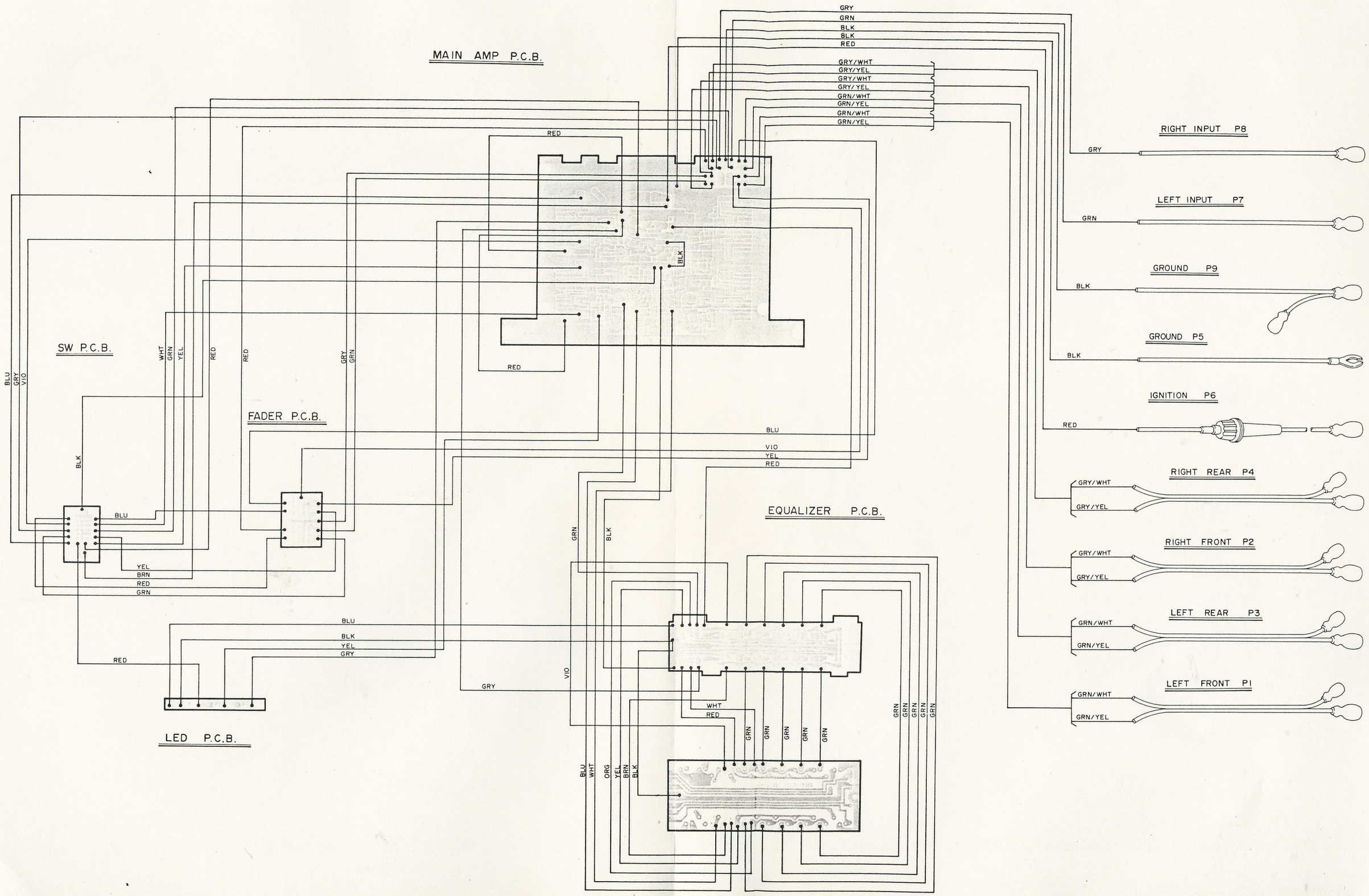
Semiconductor Lead Identifications

AN6551	TA7227P	2SC373
		

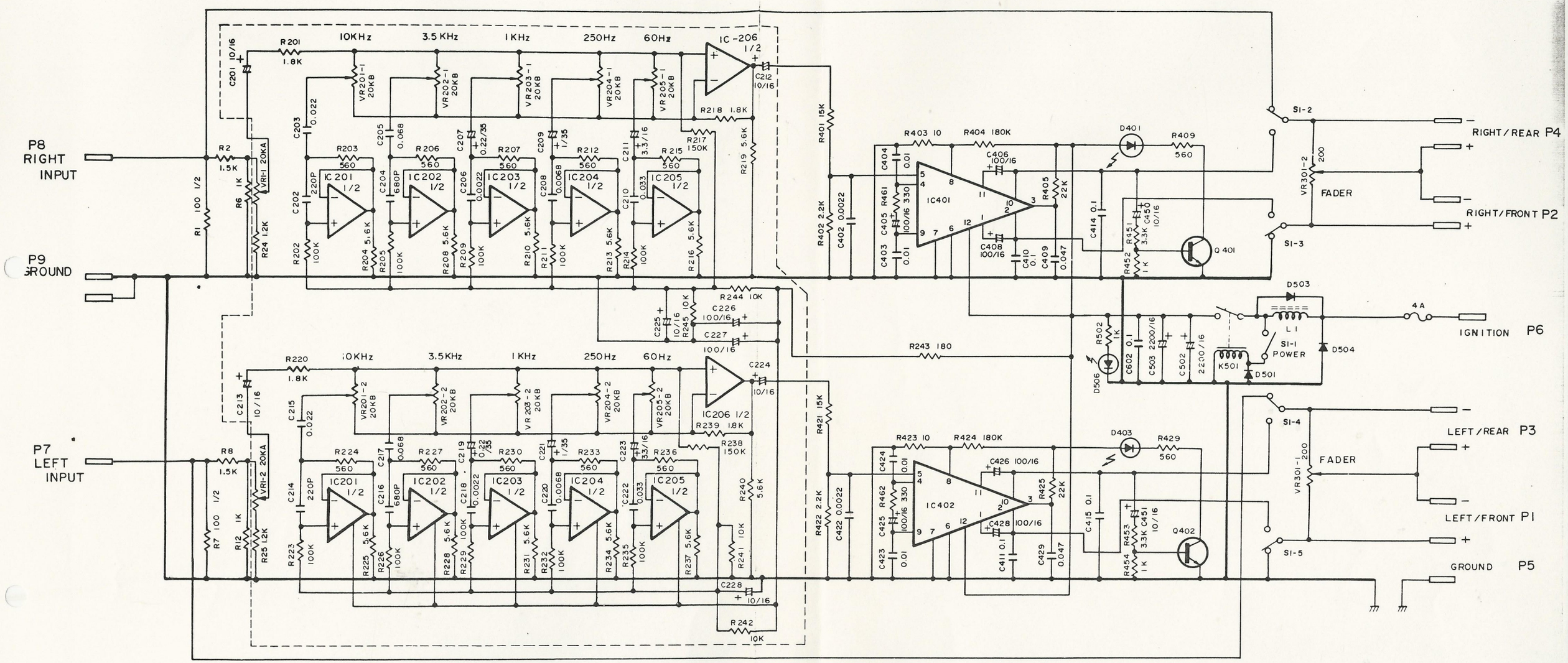
Packing Method



Wiring Diagram



Schematic Diagram

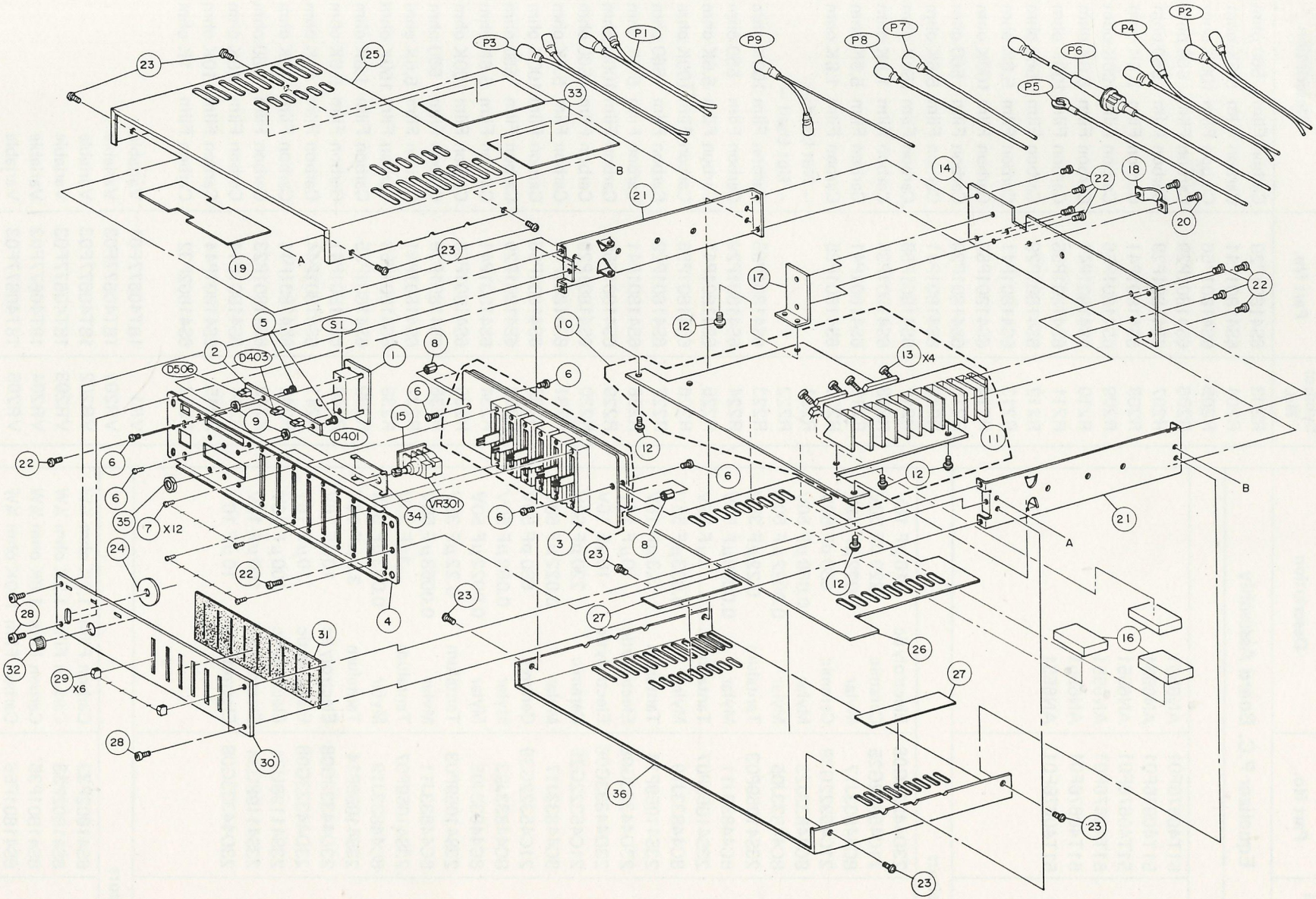


IC201～IC206	AN6551
IC401 , IC402	TA7227P
Q401 , Q402	2SC373
D401 , D403	GL-9HY10
D503 , D501	10E2
D504	30D1
D506	GL-9RD10

NOTES:

1. All resistance values are in ohms. K=1,000
2. All capacitance values are in microfarads. $P=\frac{1}{1,000,000}$

Exploded View



Parts List

Symbol No.	Part No.	Description
Equalizer P.C. Board Assembly		
ICs		
IC201	51T40676F01	AN6551
IC202	51T40676F01	AN6551
IC203	51T40676F01	AN6551
IC204	51T40676F01	AN6551
IC205	51T40676F01	AN6551
IC206	51T40676F01	AN6551
Capacitors		
C201	23D44333G08	Electrolytic 10 μF 16V
C202	21C45322G25	Ceramic 220 pF 50V
C203	8C44833J17	Mylar 0.022 μF 50V
C204	21C45322G39	Ceramic 680 pF 50V
C205	8C44833J23	Mylar 0.068 μF 50V
C206	8C44833J05	Mylar 0.0022 μF 50V
C207	23S41059P03	Tantalum 0.22 μF 35V
C208	8C44833J11	Mylar 0.0068 μF 50V
C209	23S41059P07	Tantalum 1 μF 35V
C210	8C44833J19	Mylar 0.033 μF 50V
C211	23S41059P14	Tantalum 3.3 μF 16V
C212	23D44333G08	Electrolytic 10 μF 16V
C213	23D44333G08	Electrolytic 10 μF 16V
C214	21C45322G25	Ceramic 220 pF 50V
C215	8C44833J17	Mylar 0.022 μF 50V
C216	21C45322G39	Ceramic 680 pF 50V
C217	8C44833J23	Mylar 0.068 μF 50V
C218	8C44833J05	Mylar 0.0022 μF 50V
C219	23S41059P03	Tantalum 0.22 μF 35V
C220	8C44833J11	Mylar 0.0068 μF 50V
C221	23S41059P07	Tantalum 1μF 35V
C222	8C44833J19	Mylar 0.033 μF 50V
C223	23S41059P14	Tantalum 3.3 μF 16V
C224	23D44333G08	Electrolytic 10 μF 16V
C225	23D44333G08	Electrolytic 10 μF 16V
C226	23S41198U34	Electrolytic 100 μF 16V
C227	23S41198U34	Electrolytic 100 μF 16V
C228	23D44333G08	Electrolytic 10 μF 16V
Resistors		
R24	6S41802P33	Carbon Film 1.2K ohm ¼W
R25	6S41802P33	Carbon Film 1.2K ohm ¼W
R201	6S41801P35	Carbon Film 1.8K ohm ¼W
R202	6S41801P56	Carbon Film 100K ohm ¼W
R203	6S41801P29	Carbon Film 560 ohm ¼W
R204	6S41801P41	Carbon Film 5.6K ohm ¼W
R205	6S41801P56	Carbon Film 100K ohm ¼W
R206	6S41801P29	Carbon Film 560 ohm ¼W
R207	6S41801P29	Carbon Film 560 ohm ¼W
R208	6S41801P41	Carbon Film 5.6K ohm ¼W
R209	6S41801P56	Carbon Film 100K ohm ¼W
R210	6S41801P41	Carbon Film 5.6K ohm ¼W
R211	6S41801P56	Carbon Film 100K ohm ¼W
R212	6S41801P29	Carbon Film 560 ohm ¼W
R213	6S41801P41	Carbon Film 5.6K ohm ¼W
R214	6S41801P56	Carbon Film 100K ohm ¼W
R215	6S41801P29	Carbon Film 560 ohm ¼W
R216	6S41801P41	Carbon Film 5.6K ohm ¼W
R217	6S41801P58	Carbon Film 150K ohm ¼W
R218	6S41801P35	Carbon Film 1.8K ohm ¼W
R219	6S41801P41	Carbon Film 5.6K ohm ¼W
R220	6S41801P35	Carbon Film 1.8K ohm ¼W
R221		– Not Used –
R222		– Not Used –
R223	6S41801P56	Carbon Film 100K ohm ¼W
R224	6S41801P29	Carbon Film 560 ohm ¼W
R225	6S41801P41	Carbon Film 5.6K ohm ¼W
R226	6S41801P56	Carbon Film 100K ohm ¼W
R227	6S41801P29	Carbon Film 560 ohm ¼W
R228	6S41801P41	Carbon Film 5.6K ohm ¼W
R229	6S41801P56	Carbon Film 100K ohm ¼W
R230	6S41801P29	Carbon Film 560 ohm ¼W
R231	6S41801P41	Carbon Film 5.6K ohm ¼W
R232	6S41801P56	Carbon Film 100K ohm ¼W
R233	6S41801P29	Carbon Film 560 ohm ¼W
R234	6S41801P41	Carbon Film 5.6K ohm ¼W
R235	6S41801P56	Carbon Film 100K ohm ¼W
R236	6S41801P29	Carbon Film 560 ohm ¼W
R237	6S41801P41	Carbon Film 5.6K ohm ¼W
R238	6S41801P58	Carbon Film 150K ohm ¼W
R239	6S41801P35	Carbon Film 1.8K ohm ¼W
R240	6S41801P41	Carbon Film 5.6K ohm ¼W
R241	6S41801P44	Carbon Film 10K ohm ¼W
R242	6S41801P44	Carbon Film 10K ohm ¼W
R243	6S41801P23	Carbon Film 180 ohm ¼W
R244	6S41801P44	Carbon Film 10K ohm ¼W
R245	6S41801P44	Carbon Film 10K ohm ¼W
R502	6S41802P32	Carbon Film 1K ohm ¼W
VR1	18T40677F01	Variable
VR201	18T40677F03	Variable
VR202	18T40677F03	Variable
VR203	18T40677F03	Variable
VR204	18T40677F03	Variable
VR205	18T40677F03	Variable

Symbol No.	Part No.	Description
Main Amplifier P.C. Board Assembly		
ICs		
IC401	51T42684U01	TA7227P
IC402	51T42684U01	TA7227P
Transistors		
Q401	48S40170G01	2SC373
Q402	48S40170G01	2SC373
Diodes		
D501	48C40235G02	10E2
D503	48C40235G02	10E2
D504	48T40870U02	30D1
Relay & Filter		
K501	80T44966P01	Relay, LC1-C-E
L1	25T40405F01	Filter, Choke
Capacitors		
C402	8C44833J05	Mylar 0.0022μF 50V
C403	8C44833J13	Mylar 0.01μF 50V
C404	8C44833J13	Mylar 0.01μF 50V
C405	23S41198U34	Electrolytic 100μF 16V
C406	23S41198U34	Electrolytic 47μF 16V
C408	23S41198U34	Electrolytic 100μF 16V
C409	8C44833J21	Mylar 0.047μF 50V
C410	8C44833J25	Mylar 0.1μF 50V
C411	8C44833J25	Mylar 0.1μF 50V
C414	8C44833J25	Mylar 0.1μF 50V
C415	8C44833J25	Mylar 0.1μF 50V
C422	8C44833J05	Mylar 0.0022μF 50V
C423	8C44833J13	Mylar 0.01μF 50V
C424	8C44833J13	Mylar 0.01μF 50V
C425	23S41198U34	Electrolytic 100μF 16V
C426	23S41198U34	Electrolytic 100μF 16V
C428	23S41198U34	Electrolytic 100μF 16V
C429	8C44833J21	Mylar 0.047μF 50V
C450	23D44333G08	Electrolytic 10μF 16V
C451	23D44333G08	Electrolytic 10μF 16V
C502	23S41198U71	Electrolytic 2200μF 16V
C503	23S41198U71	Electrolytic 2200μF 16V
C602	8C44833J25	Mylar 0.1μF 50V

Symbol No.	Part No.	Description
Resistors		
R1	6D44744G20	Carbon Film 100 ohm ½W
R2	6S41801P34	Carbon Film 1.5K ohm ¼W
R6	6S41801P32	Carbon Film 1K ohm ¼W
R7	6D44744G20	Carbon Film 100 ohm ½W
R8	6S41801P34	Carbon Film 1.5K ohm ¼W
R12	6S41801P32	Carbon Film 1K ohm ¼W
R401	6S41801P46	Carbon Film 15K ohm ¼W
R402	6S41801P36	Carbon Film 2.2K ohm ¼W
R403	6S41801P08	Carbon Film 10 ohm ¼W
R404	6S41801P59	Carbon Film 180K ohm ¼W
R405	6S41801P48	Carbon Film 22K ohm ¼W
R409	6S41801P29	Carbon Film 560 ohm ¼W
R421	6S41801P46	Carbon Film 15K ohm ¼W
R422	6S41801P36	Carbon Film 2.2K ohm ¼W
R423	6S41801P08	Carbon Film 10 ohm ¼W
R424	6S41801P59	Carbon Film 180K ohm ¼W
R425	6S41801P48	Carbon Film 22K ohm ¼W
R429	6S41801P29	Carbon Film 560 ohm ¼W
R451	6S41801P38	Carbon Film 3.3K ohm ¼W
R452	6S41801P32	Carbon Film 1K ohm ¼W
R453	6S41801P38	Carbon Film 3.3K ohm ¼W
R454	6S41801P32	Carbon Film 1K ohm ¼W
R461	6S41801P26	Carbon Film 330 ohm ¼W
R462	6S41801P26	Carbon Film 330 ohm ¼W
Miscellaneous Parts		
S1	40T40675F01	Switch, Power
D401	48T42247U02	L.E.D.
D403	48T42247U02	L.E.D.
D506	48T42247U03	L.E.D. (Red)
VR301	18T40359U03	Fader Control
P1	30T40818F01	Assembly, Speaker Cord (L/Front)
P2	30T40817F01	Assembly, Speaker Cord (R/Front)
P3	30T40820F01	Assembly, Speaker Cord (L/Rear)
P4	30T40819F01	Assembly, Speaker Cord (R/Rear)
P5	30T40813F01	Assembly, Ground Wire
P6	30T40706F01	Receptacle, Fuse Wire
P7	30T40815F01	Assembly, Left Connecting Wire

Symbol No.	Part No.	Description
P8	30T40814F01	Assembly, Right Connecting Wire
P9	30T40816F01	Assembly, Ground Wire In
General Assembly Parts		
1	84B40662F01	Panel, Switch
2	84A40663F01	Panel, L.E.D.
3	1V41600F08	Assembly, Equalizer Panel
4	7B40172F01	Bracket, Front
5	3C40014G15	Screw, Machine (M2x8)
6	3C40014G12	Screw, Machine (M2.6x4)
7	3C40014G07	Screw, Machine (M2x4)
8	46A40637F01	Stud, Shoulder
9	43A41837U01	Spacer, Switch
10	1V41600F10	Assembly, Main Amplifier Panel
11	7B40175F02	Heat Sink
12	3C40121T02	Screw, Machine (M3x6)
13	3S40011G15	Screw, Machine (M3 x 10)
14	7B40173F02	Bracket, Rear
15	84A40666F01	Panel, Fader
16	75A40620U03	Pad, Rubber
17	7A40186F01	Bracket, P.C. Board
18	7A40176F01	Bracket, Cord
19	14B43672U01	Insulator Fiber
20	3C40014G10	Screw, Machine (M3 x 8)
21	7B40171F01	Bracket, Side
22	3C40014G09	Screw, Machine (M3 x 5)
23	3S40011G91	Screw, Machine (M2.6 x 5)
24	14A41740F01	Cover, Dust
25	15C40179F01	Cover, Top
26	14B40178F01	Insulator, Bottom
27	14A40709F01	Cover, Dust
28	3B40942T01	Screw, Hex. Socket (M3 x 6)
29	36A40180F01	Knob, Slide
30	13B40189F01	Bezel, Front
31	14A40635F01	Cover, Dust (A)
32	36B40965F01	Knob, Fader
33	14A40718F01	Cover, Dust
34	7A40188F01	Bracket, Volume
35	2S40000G24	Nut (M9x0.75)
36	15C40179F03	Cover, Bottom

Symbol No.	Part No.	Description
Packing Assembly Parts		
101	1V40500F96	Assembly, Pamphlet
101-1	68P40880F62	Owner's Manual
101-2	56B40230G12	Sack, Polyethylene
101-3	68P44370P26	Card, Warranty
101-4	68P42522F01	Manual, Combination Chart
101-5	54A44217U02	Cord, Consumer Servey
101-6	54A40001F01	Cord, S. Station List
102	1V40500F72	Assembly, Kit
102-1	3A43315G01	Screw, Machine (M4 x 10)
102-2	4S40072G08	Washer, Tooth Lock
102-3	4S40072G11	Washer, Tooth Lock
102-4	3S40012G39	Screw, Tapping (M5x20)
102-5	3S40012G45	Screw, Tapping (M5x10)
102-6	2S40000G33	Nut, Hex.
102-7	65A40348G12	Fuse
102-8	56B40230G27	Sack, Polyethylene
102-9	3A43315G08	Screw, Machine (M5 x 20)
103	42B40994G05	Strap, Receiver Mounting
104	7B40725F01	Bracket, Mounting
105	56B40230G22	Sack, Polyethylene
106	56C40710F01	Tray, Packing
107	56C40719F01	Carton, Packing (Individual)
108	56C40826F04	Carton, Packing (Master)
109	56C40826F01	Carton, Packing