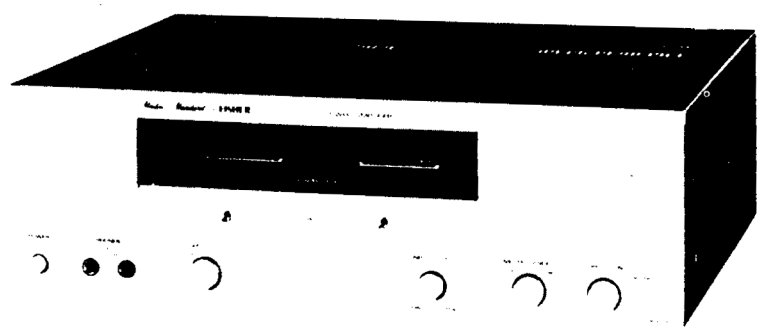
SERVICE MANUAL

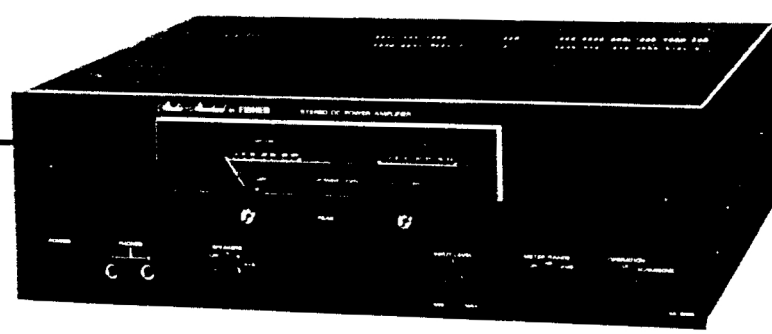
FISHER

BA-6000

Power Amplifier

(EUROPE)





The first name in high fidelity

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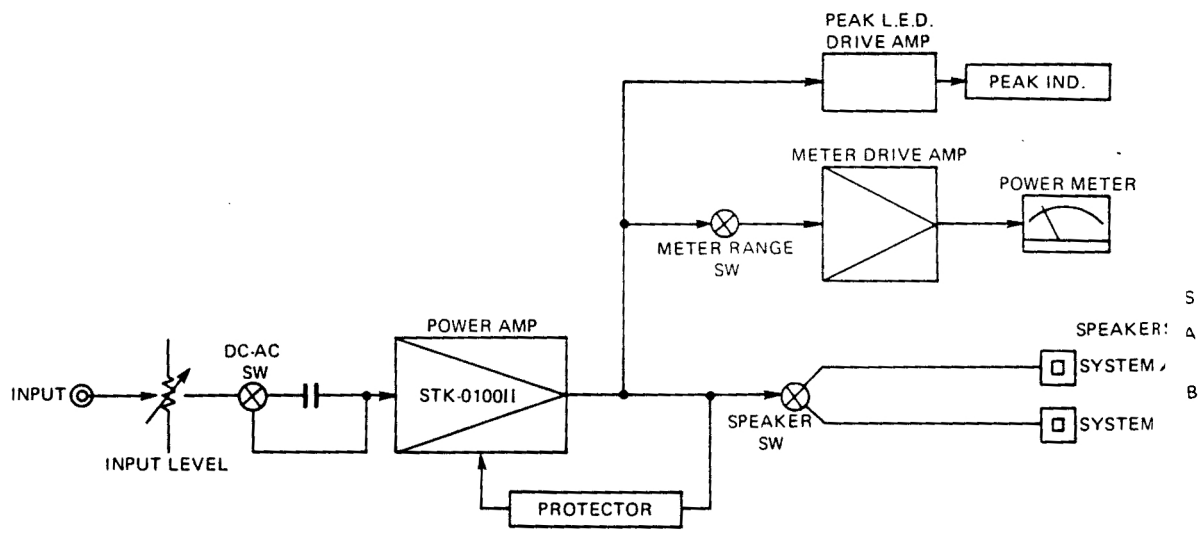
FUNCTIONAL BLOCK DIAGRAM



SPECIFICATIONS

POWER AMPLIFIER		BA-6000
Continuous Power	at 1000 Hz (4 ohms)	2 x 120 W
	at 1000 Hz (8 ohms)	2 x 120 W
	20 Hz to 20 kHz (4 ohms)	2 x 110 W
	20 Hz to 20 kHz (8 ohms)	2 x 100 W
Music Power	(4 ohms)	2 x 130 W
	(8 ohms)	2 x 130 W
Harmonic Distortion at Rated Power (at 1 kHz, 8 ohms)		0.002 %
I.M. Distortion at Rated Power (at 1 kHz, 8 ohms)		0.002 %
Damping Factor (8 ohms)		80
Power Bandwidth		DC –75 kHz
Frequency Response at Rated Power		20 Hz - 20 kHz, ±0.3 dB
Input Sensitivity and Impedance		1000 mV/100 kohms
Headphones Output		5 V/100 ohms
Level Meter		VU Meter
Meter Range (Switch-over)		0 dB/–20 dB
Subsonic Filter (–10 dB)		3 Hz
Crosstalk		75 dB
S/N Ratio (DIN)	at Rated Power	110 dB
	50 mW Output	$\geq$ 60 dB
Power Requirements		110/220 V, 50/60 Hz
Power Consumption at Rated Power (Idling)		400 W (30 W)
Dimensions (W x H x D)		440 x 134 x 320 mm
Weight (approx.)		14.1 kg

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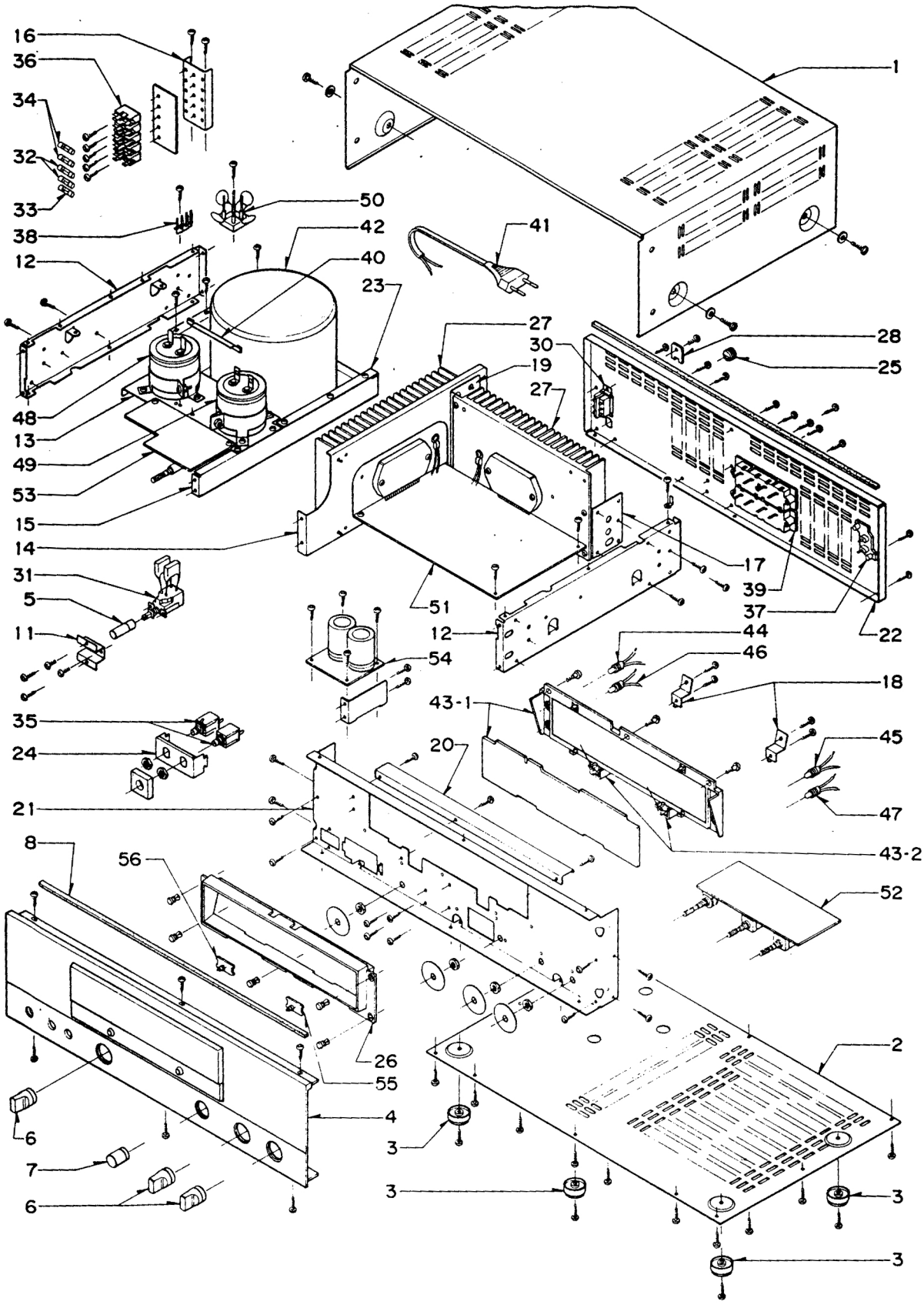
CABINET & CHASSIS EXPLODED VIEW



PARTS LIST

PACKING PARTS LIST

Ref. No.	Parts Number	Description
	131 6 1139 78104	Box Corrugate-EXP
	131 6 2119 01362	Bag Polyethylene-EXP
	131 6 3009 28760	Pad (Right, Left)

ACCESSORIES PARTS LIST

Ref. No.	Parts Number	Description
	131 2 1801 13900	Leg
	131 6 2719 10801	Bag Fan
	131 6 2719 11300	Bag Fan
	131 6 4119 79601	Explanatory Booklet
	131 6 4519 15700	Guarantee Certificate

CABINET PARTS LIST

Ref. No.	Parts Number	Description
1	131 2 1401 22600	Cover
2	131 2 1105 24700	Plate Bottom
3	131 2 1801 12900	Leg

APPEARANCE PARTS LIST

Ref. No.	Parts Number	Description
4	131 0 1016 34000	Panel Decorate Assy (Silver)
	131 0 1016 34001	Panel Decorate Assy (Black)
5	131 0 1001 52600	Power Switch Knob (Silver)
	131 0 1001 52601	Power Switch Knob (Black)
6	131 0 1001 53700	Function Knob (Silver)
	131 0 1001 53701	Function Knob (Black)
7	131 0 1001 53800	Volume Knob (Silver)
	131 0 1001 53801	Volume Knob (Black)
8	131 2 5205 15300	Cushion

CHASSIS PARTS LIST

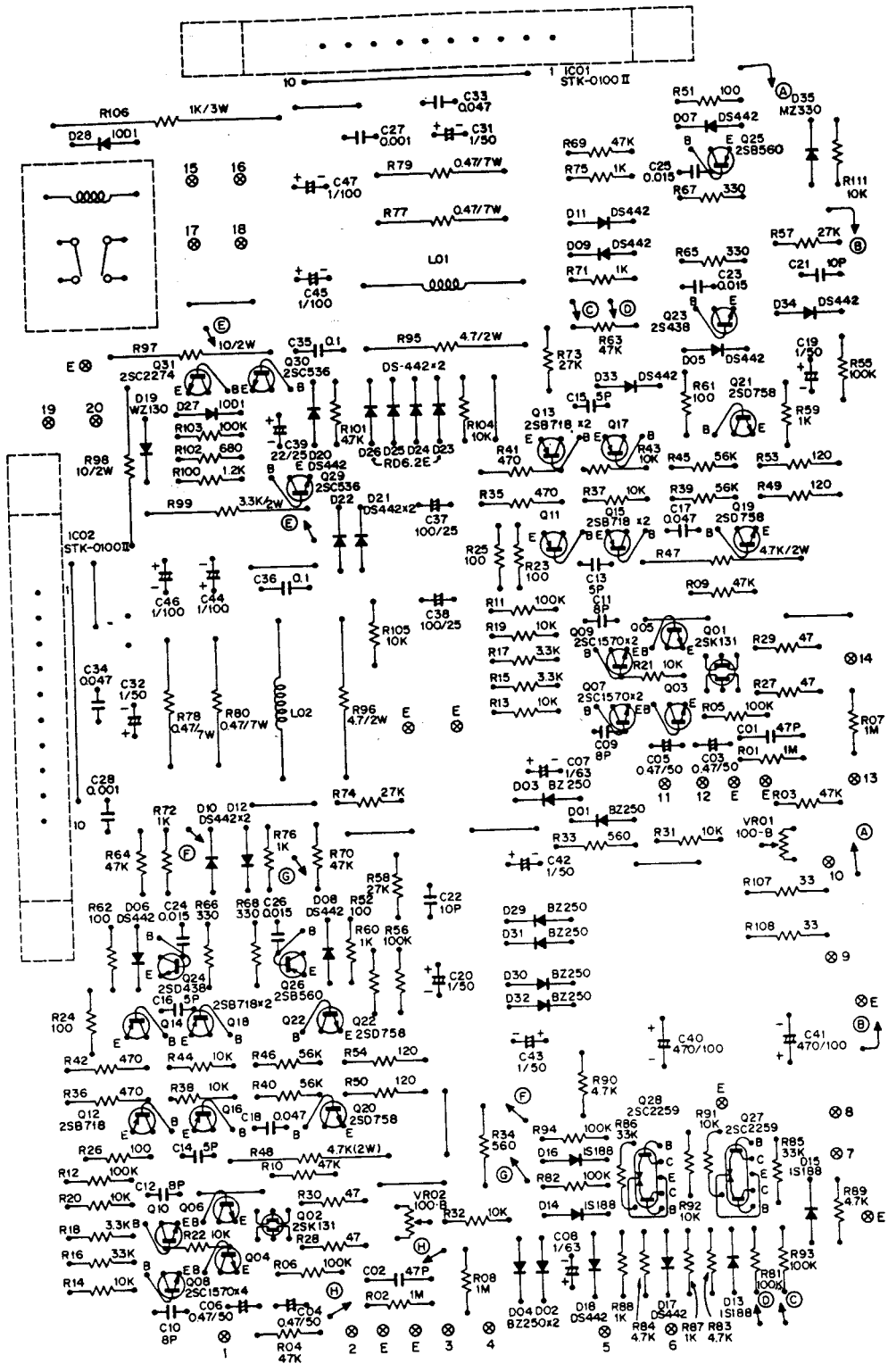
Ref. No.		Parts Number	Description
11		131 2 3101 66500	Metal Mount (Power Switch)
12		131 2 3101 66600	Metal Mount (Side)
13		131 2 3101 66700	Metal Mount
14		131 2 3101 66800	Metal Mount (Heat Sink)
15		131 2 3101 66900	Metal Mount (Center)
16		131 2 3101 67000	Metal Mount (Fuse)
17		131 2 3101 67100	Metal Mount (Side Panel)
18		131 2 3101 67200	Metal Mount (Rear Under)
19		131 2 3101 67300	Metal Mount (Heat Sink)
20		131 2 3101 67400	Metal Mount (Rear Upper)
21	*	131 2 3305 27100	Panel Front
22	*	131 2 3306 30300	Panel Rear
23		131 2 3617 17800	Metal Mount Transformer
24		131 2 3624 13000	Mount Headphone Jack
25		131 2 6111 14200	Bushing (AC Cord)
26		131 2 6113 35300	Shelter
27		131 2 6201 27400	Plate Heat Sink
28		131 2 7104 00500	Plate Pad Switch

ELECTRICAL PARTS LIST

Ref. No.		Parts Number	Description
30		4 2312 01020	Switch Slide
31		4 2312 01050	Switch Power 5P
32		4 2349 20310	Fuse 500mA
33		4 2349 20380	Fuse 1A
34		4 2349 21570	Fuse 6.3A
35		4 2352 00030	Jack Headphone
36		4 2359 21021	Fuse Holder
37		4 2359 23070	RCA 2P Jack
38		4 2372 00140	Terminal GND
39		4 2372 00680	SP Terminal
40		4 2372 00700	Terminal
41		4 2439 20526	Power Cord
42		4 2512 10120	Power Transformer
43		4 5112 00470	Meter VU Assy
43-1		131 0 1018 00800	Housing Assy
43-2		131 0 9905 00600	Movement
44		4 6122 00600	Pilot Lamp (8V 200mA)
45		4 6122 00620	Pilot Lamp (8V 200mA)
46		4 6122 01120	Pilot Lamp (8V 200mA)
47		4 6122 01130	Pilot Lamp (8V 200mA)
C01,02		C2EHRM103A	Metallized Paper 0.01 μF 250V ±20%
C03,04 05,06		C2HYDP103A	Ceramic 0.01 μF 500V +100,−0%
48(C07)		4 2232 00281	Electrolytic 15000 μFx1 67V
49(C08)		4 2232 00280	Electrolytic 15000 μFx1 67V
C09		C1HYDZ473A	Ceramic 0.047 μF 50V +80,−20%
50(D01)		DDD-S10VB20	Bridge Diode, S10VB20
51	*	131 0 4001 03620	Power Amp P.C.B. Assy
52	*	131 0 4001 03630	Input/Meter P.C.B. Assy
53	*	131 0 4001 03640	SP Select P.C.B. Assy
54	*	131 0 4001 03650	Power Supply P.C.B. Assy
55	*	131 0 4001 03660	L.E.D. P.C.B. Assy
56	*	131 0 4001 03670	L.E.D. P.C.B. Assy

*—Not a servie part.

POWER AMP P.C.BOARD
(BOTTOM VIEW)



IC PIN NUMBERS VOLTAGES											
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10
IC01,02	STK-0010II	-3.7V	-57.8V	0V	-1.7V	-0.6V	0.5V	1.7V	0V	57.6V	3.7V

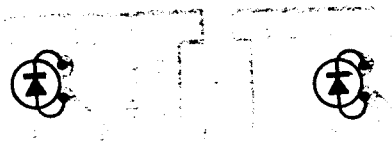
PARTS LIST

POWER AMP P.C.B. Assy
131 0 4001 03620

Ref. No.	Parts Number	Description
	4 2329 20170	Relay LY-2-0
	HLL-PTH487A-B	Posistor
L01,02	4 2539 20281	Coil
VR01,02	4 2222 00240	VR 100-B
	CAPACITORS	
C01,02	C1HCZJ470SPA	Ceramic 47 pF 50V ±5%
C03,04	C1HRE-474AL	Electrolytic 0.47 μF 50V
05,06		
C07,08	C1JRY-105APA	Electrolytic 1 μF 63V
C09,10	C1HCYD080APA	Ceramic 8 pF 50V ±0.5%
11,12		
C13,14	C2HCDK050SL	Ceramic 5 pF 500V ±10%
15,16		
C17,18	C1HFAJ473A	Mylar 0.047 μF 50V ±5%
C19,20	C1HRE-105A	Electrolytic 1 μF 50V
C21,22	C1HCDD100SL	Ceramic 10 pF 50V ±0.5%
C23,24	C1HFAJ153A	Mylar 0.015 μF 50V ±5%
25,26		
27,28	C2YFRK102A	Mylar 0.001 μF 150V ±10%
C31,32	C1HRY-105APA	Electrolytic 1 μF 50V
C33,34	C1HFYK473APA	Mylar 0.047 μF 50V ±10%
C35,36	C1HFAJ104A	Mylar 0.1 μF 50V ±5%
C37,38	C1EAEN107A	Electrolytic 100 μF 25V ±30%
C39	C1ERE-226A	Electrolytic 22 μF 25V
C40,41	C2ARE-477A	Electrolytic 470 μF 100V
C42,43	C1HRY-105APA	Electrolytic 1 μF 50V
C44,45	C2ARY-105APA	Electrolytic 1 μF 100V
46,47		
	SEMICONDUCTORS	
D01,02	DJJ-BZ-250	Zener Diode, BZ-250 (25V)
03,04		
D05,06	205 5 9040 44210	Diode, DS-442
07,08,09,10,11,12		
D13,14	202 5 9110 18820	Diode, 1S188FM1
15,16		
D17,18	205 5 9040 44210	Diode, DS-442
D19	DJJ-WZ-130	Diode, WZ-130
D20,21	205 5 9040 44210	Diode, DS-442
22		
23	DNN-RD6.2E	Diode, RD-6.2E
D24,25	205 5 9040 44210	Diode, DS-442
D26	DNN-RD6.2E	Diode, RD-6.2E
D27,28	DCC-10D1----NA	Diode, 10D1
D29,30	DJJ-BZ-250	Zener Diode, BZ-250 (25V)
31,32		
D33,34	205 5 9040 44210	Diode, DS-442
D35	DMZ-MZ330---A	Diode, MZ330A (30V)
IC01,02	206 5 5210 10010	IC, STK-0100II
Q01,02	TNN-2SK131--K	FET 2SK131 K, L
Q03,04	203 5 5251 57079	TR 2SC1570 GL, HL
05,06,07,08,09,10		
Q11,12	TKK-2SB718--C	TR 2SB718 C, D
13,14,15,16,17,18		
Q19,20	TKK-2SD758--C	TR 2SD758 C, D
21,22		
Q23,24	203 5 6830 43850	TR 2SD438 E, F
Q25,26	203 5 6840 56050	TR 2SB560 E, F
Q27,28	TMM-2SC2259-F	TR 2SC2259
Q29,30	203 5 5000 53660	TR 2SC536 F, G
Q31	203 5 7252 27450	TR 2SC2274 E, F

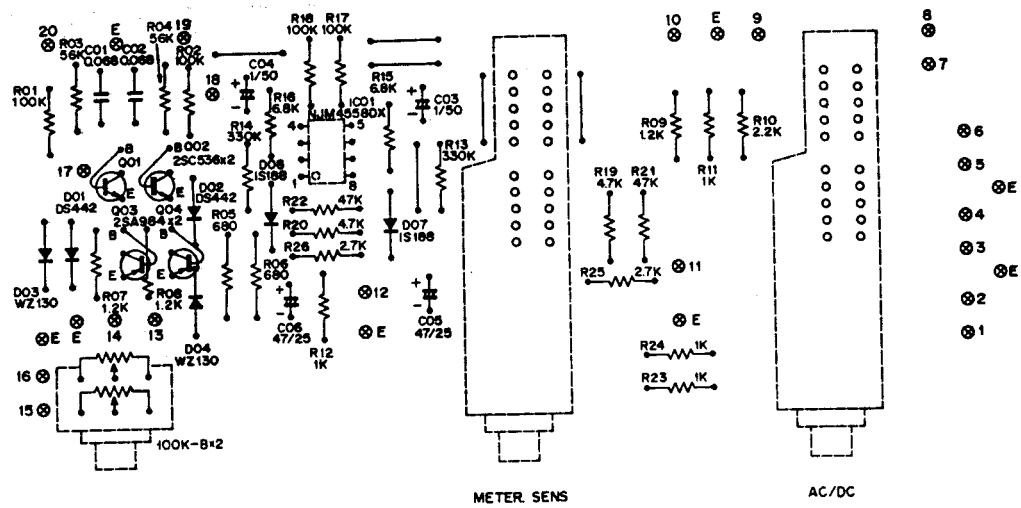
Ref. No.	Parts Number	Description
	RESISTORS	
R01,02	R2EDZJ105APA	Carbon 1M 1/4W ±5%
R03,04	R2EDZJ473APA	Carbon 47k 1/4W ±5%
R05,06	R2EDZJ104APA	Carbon 100k 1/4W ±5%
R07,08	R2EDZJ105APA	Carbon 1M 1/4W ±5%
R09,10	R2EDZJ473APA	Carbon 47k 1/4W ±5%
R11,12	R2EDZJ104APA	Carbon 100k 1/4W ±5%
R13,14	R2EDZJ103APA	Carbon 10k 1/4W ±5%
R15,16	R2EDZJ332APA	Carbon 3.3k 1/4W ±5%
17,18		
R19,20	R2EDZJ103APA	Carbon 10k 1/4W ±5%
21,22		
R23,24	R2EDZJ101APA	Carbon 100 1/4W ±5%
25,26		
R27,28	R2EDZJ470APA	Carbon 47 1/4W ±5%
29,30		
R31,32	R2EDZJ103APA	Carbon 10k 1/4W ±5%
R33,34	R2HZPK561A	Fuse 560 1/2W ±10%
R35,36	R2HZPK471A	Fuse 470 1/2W ±10%
R37,38	R2EDJZ103APA	Carbon 10k 1/4W ±5%
R39,40	R2EDZJ563APA	Carbon 56k 1/4W ±5%
R41,42	R2HZPK471A	Fuse 470 1/2W ±10%
R43,44	R2EDZJ103APA	Carbon 10k 1/4W ±5%
R45,46	R2EDZJ563APA	Carbon 56k 1/4W ±5%
R47,48	R3DXBJ472A	Oxide Metal Film 4.7k 2W ±5%
R49,50	R2HZPK121A	Fuse 120 1/2W ±10%
R51,52	R2EDZJ101APA	Carbon 100 1/4W ±5%
R53,54	R2HZPK121A	Fuse 120 1/2W ±10%
R55,56	R2EDZJ104APA	Carbon 100k 1/4W ±5%
R57,58	R2EDJZ273APA	Carbon 27k 1/4W ±5%
R59,60	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R61,62	R2EDZJ101APA	Carbon 100 1/4W ±5%
R63,64	R2EDZJ473APA	Carbon 47k 1/4W ±5%
R65,66	R2EDZJ331APA	Carbon 330 1/4W ±5%
67,68		
R69,70	R2EDZJ473APA	Carbon 47k 1/4W ±5%
R71,72	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R73,74	R2EDZJ273APA	Carbon 27k 1/4W ±5%
R75,76	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R77,78	4 2212 00070	Cemen 0.47 7W
79,80		
R81,82	R2EDZJ104APA	Carbon 100k 1/4W ±5%
R83,84	R2EDZJ472APA	Carbon 4.7k 1/4W ±5%
R85,86	R2EDZJ333APA	Carbon 33k 1/4W ±5%
R87,88	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R89,90	R2EDZJ472APA	Carbon 4.7k 1/4W ±5%
R91,92	R2EDZJ103APA	Carbon 10k 1/4W ±5%
R93,94	R2EDZJ104APA	Carbon 100k 1/4W ±5%
R95,96	R3DXBJ4R7A	Oxide Metal Film 4.7 2W ±5%
R97,98	R3DXBJ100A	Oxide Metal Film 10 2W ±5%
R99	R3EXBJ332A	Oxide Metal Film 3.3k 2W ±5%
R100	R2EDZJ122APA	Carbon 1.2k 1/4W ±5%
R101	R2EDZJ472APA	Carbon 4.7k 1/4W ±5%
R102	R2EDZJ681APA	Carbon 680 1/4W ±5%
R103	R2EDZJ104APA	Carbon 100k 1/4W ±5%
R104,105	R2EDZJ103APA	Carbon 10k 1/4W ±5%
R106	R3WXBJ102A	Oxide Metal Film 1k 3W ±5%
R107,108	R2HZPK330A	Fuse 33 1/2W ±10%
R111	R2EDZJ103APA	Carbon 10k 1/4W ±5%

L.E.D. P.C.BOARD
(BOTTOM VIEW)



INPUT/METER P.C.BOARD
(BOTTOM VIEW)

IC PIN NUMBERS VOLTAGES					
SYMBOL No.	DEVICE	1	2	3	4
IC01	NJM4558.	0V	0V	0V	−19.0V
		5	6	7	8
		0V	0V	0V	22.0V



PARTS LIST

L.E.D. P.C.B. Assy
131 0 4001 03660

Ref. No.	Parts Number	Description
	SEMICONDUCTORS	
D01	DOO-SLP-132B	Diode, SLP-132B

L.E.D. P.C. B. Assy
131 0 4001 03670

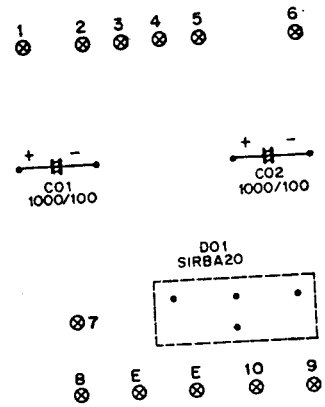
Ref. No.	Parts Number	Description
	SEMICONDUCTORS	
D01	DOO-SLP-132B	Diode, SLP-132B

INPUT/METER P.C.B. Assy
131 0 4001 03630

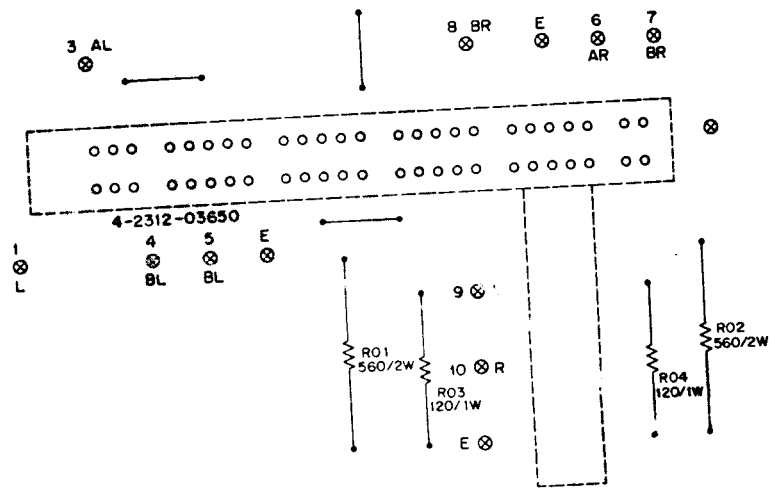
Ref. No.	Parts Number	Description
	4 2222 01520	VR 100k-Bx2
	4 2312 03630	Switch Rotary 2-3
	4 2312 03640	Switch Rotary 4-2

Ref. No.	Parts Number	Description
	CAPACITORS	
C01,02	C1HFAJ683A	Mylar 0.068 μF 50V ±5%
C03,04	C1HRY-105APA	Electrolytic 1 μF 50V
C05,06	C1ERY-476APA	Electrolytic 47 μF 25V
	SEMICONDUCTORS	
D01,02	205 5 9040 44210	Diode, DS442
D03,04	DJJ-WZ-130	Diode, WZ-130
D07,08	202 5 9110 18820	Diode, 1S188FM1
IC01	IJJ-NJM4558DC	IC, NJM4558D (C Rank)
Q01,02	203 5 5000 53660	TR 2SC536 F, G
	RESISTORS	
R01,02	R2EDZJ104APA	Carbon 100k 1/4W ±5%
R03,04	R2EDZJ563APA	Carbon 56k 1/4W ±5%
R05,06	R2HZPK681A	Fuse 680 1/2W ±10%
R07,08	R2EDZJ122APA	Carbon 1.2k 1/4W ±5%
09		
R10	R2EDZJ222APA	Carbon 2.2k 1/4W ±5%
R11,12	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R13,14	R2EDZJ334APA	Carbon 330k 1/4W ±5%
R15,16	R2EDZJ682APA	Carbon 6.8k 1/4W ±5%
R17,18	R2EDZJ104APA	Carbon 100k 1/4W ±5%
R19,20	R2EDZJ472APA	Carbon 4.7k 1/4W ±5%
R21,22	R2EDZJ473APA	Carbon 47k 1/4W ±5%
R23,24	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R25,26	R2EDZJ272APA	Carbon 2.7k 1/4W ±5%

POWER SUPPLY P.C.BOARD
(BOTTOM VIEW)



SP SELECT P.C.BOARD
(BOTTOM VIEW)



PARTS LIST

POWER SUPPLY P.C.B. Assy
131 0 4001 03650

Ref. No.	Parts Number	Description
	CAPACITORS	
C01,02	4 2232 00290	Electrolytic 1000 μF 100V
	SEMICONDUCTORS	
D01	DDD-S1RBA20	Bridge Diode, S1RBA20 (1A)

SP SELECT P.C.B. Assy
131 0 4001 03640

Ref. No.	Parts Number	Description
	4 2312 03650	Switch Rotary1C-4
	RESISTORS	
R01,02	R3DXBJ561A	Oxide Metal Film 560 2W ±5%
R03,04	R3AXBJ121A	Oxide Metal Film 120 1W ±5%

ADJUSTMENT OF THE POWER AMP P.C.BOARD

BEFORE ADJUSTMENT

1. After the power switch is turned ON, allow a few minutes before making adjustment, to be sure of the most stable operation.

2. Connect dummy load resistors (8 ohms) to the SPEAKERS terminals.

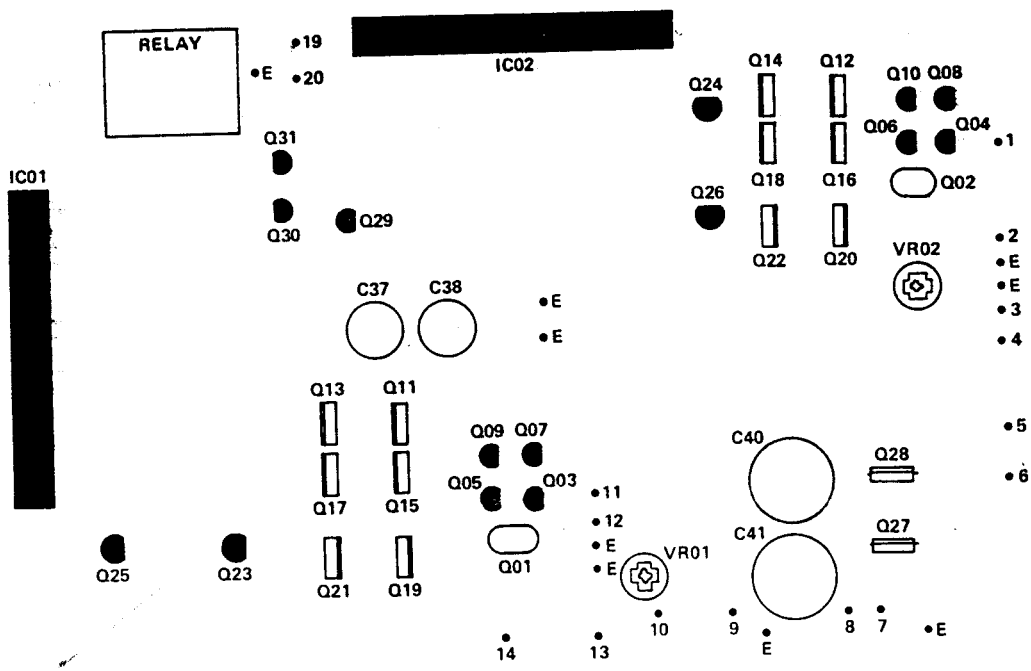
3. Use a DC V.T.V.M. (input impedance: More than 50k ohms/V).

ZERO BALANCE ADJUSTMENT

- Connect DC V.T.V.M. to the speaker output terminal and turn the volume control fully to the minimum position. Turn VR01, 02 under the above condition until the output voltage becomes 0 V.

POWER AMP P.C.BOARD LAYOUT

(TOP VIEW)

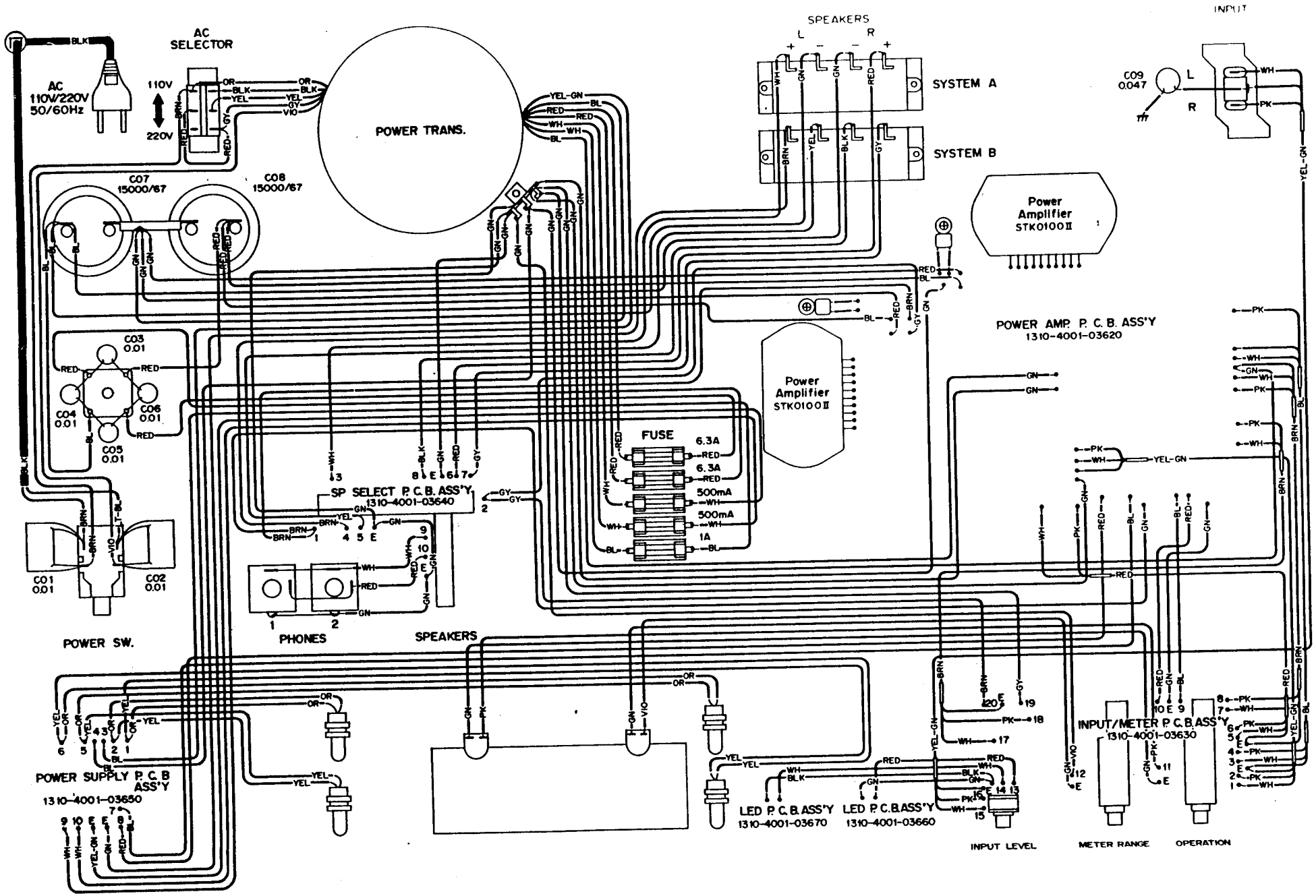


EXPLANATION OF PROTECTIVE CIRCUITS

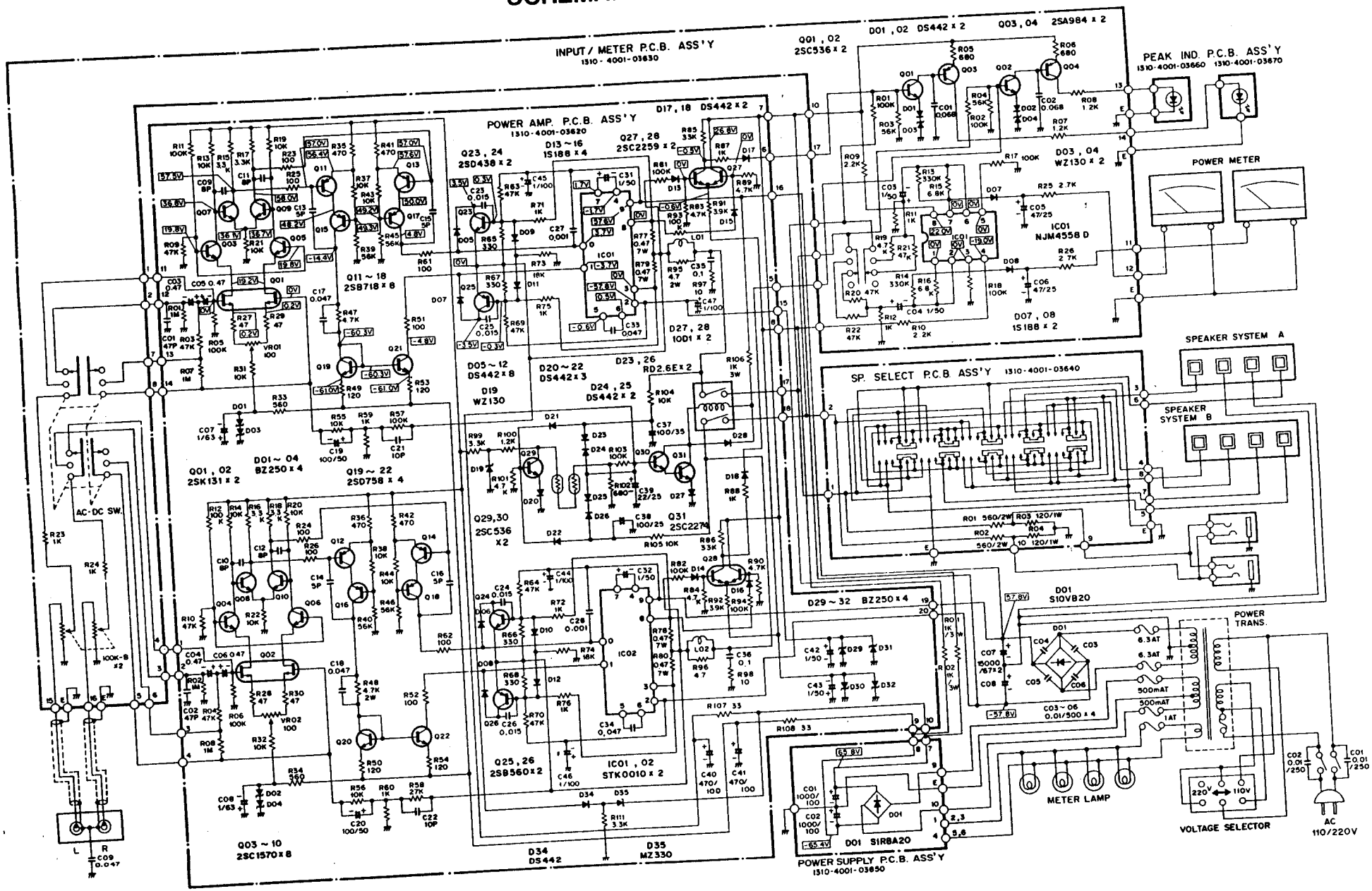
*For about two seconds after the power switch is turned on, the speakers remain silent because the power muting circuit operates during this time.

*If the speaker terminals are short-circuited or the ventilation holes at the cabinet top are blocked during long periods of operation, the internal temperature may rise abnormally. At about 90 C, the thermal sensor (temperature detection) circuit becomes activated and will interrupt the signal. If the cause is removed and the internal temperature is back to normal, the unit automatically resets itself to restore normal operation.

POINT TO POINT WIRING DIAGRAM



SCHEMATIC DIAGRAM



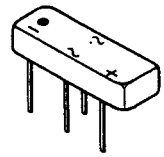
NOTES:

1. All resistors values are indicated in "ohm" (K=10^3, M=10^6)
2. All capacitors values are indicated in "μF" (P=10^{-12})
3. All voltages indicated on the schematics are measured under the
   b. All voltages ±10% with respect chassis ground
   c. No signals at input terminals
   d. AC input at 220 volts 50 Hz
4. This is a fundamental schematics diagram. Some products may
   without notice

SEMICONDUCTOR LEAD IDENTIFICATION

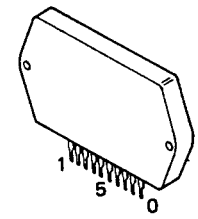
DIODES

- DS442
- WZ130
- 1S188
- BZ-250
- RD-6.2E
- 10D1
- MZ330A

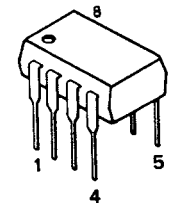


- S1RBA20

INTEGRATED CIRCUIT

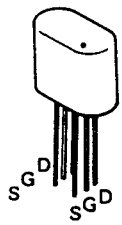


- STK-0100II

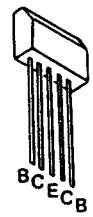


- NJM4558

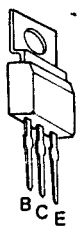
TRANSISTORS



- 2SK131

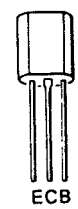


- 2SC2259



- 2SB718
- 2SD758

- 2SC536
- 2SC1570
- 2SC2274



- 2SD438
- 2SB560

POWER AMP IC STK0100II EQUIVALENT CIRCUIT