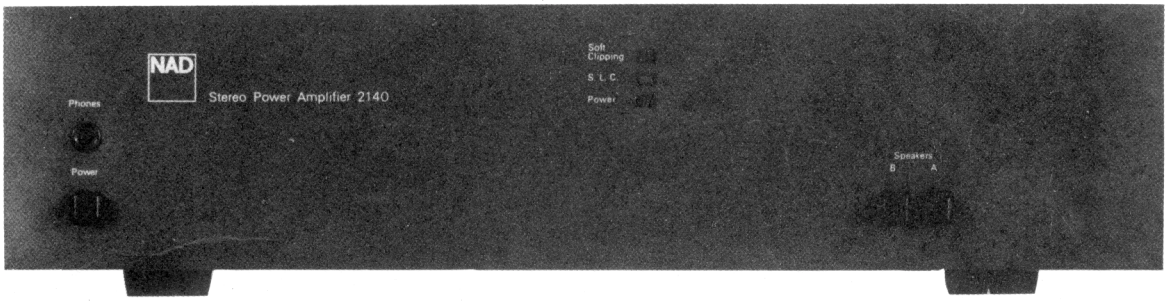
SERVICE MANUAL
NAD MODEL 2140
STEREO AMPLIFIER



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SPECIFICATIONS

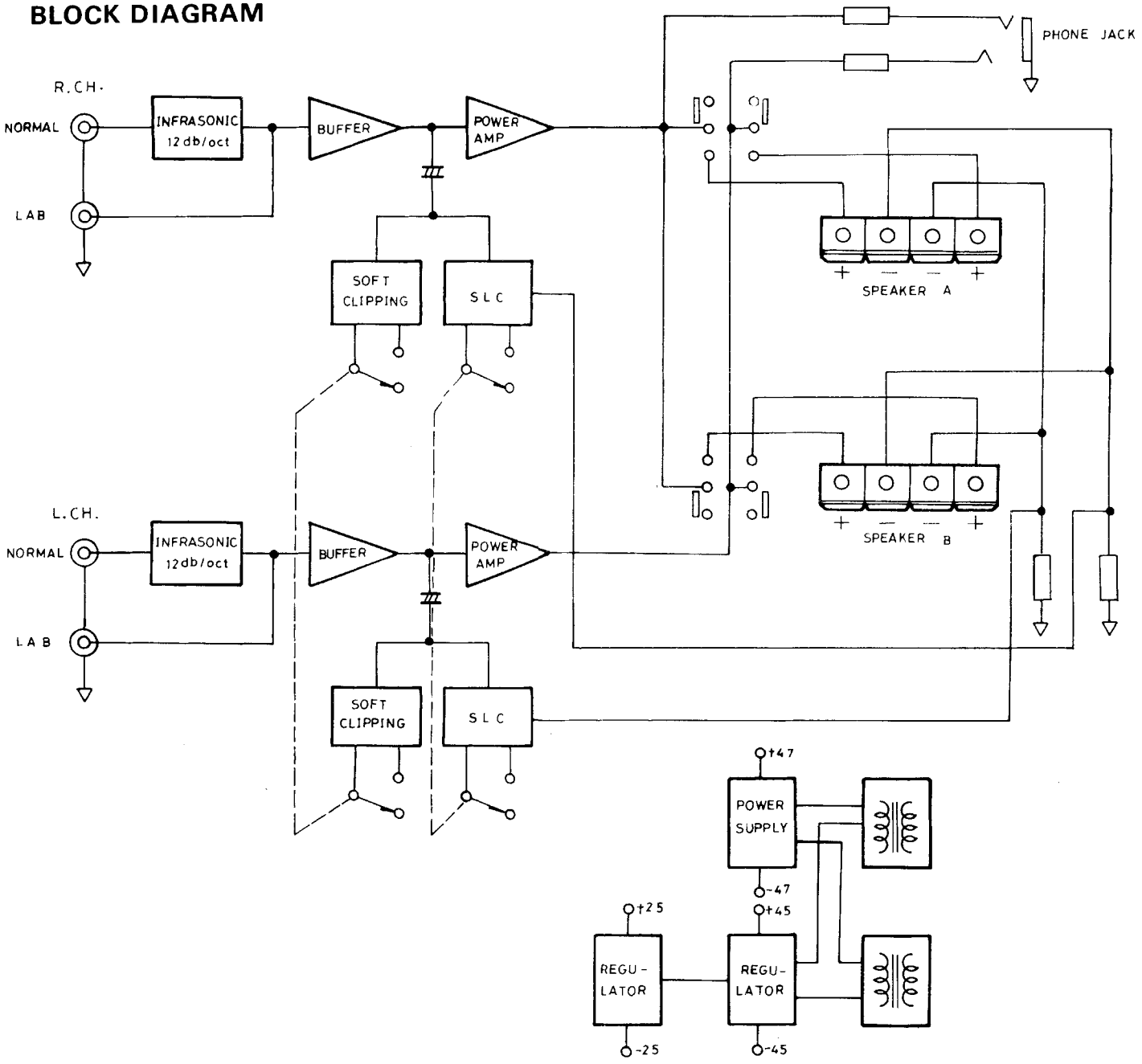
All specifications are measured in accordance with IHF Standard A–202

Continuous Average Power Output at 8 ohm 20–20K Hz both Channels Driven		50 W
Rated Distortion, 20–20K Hz		< 0.03%
Clipping Headroom	at 8 ohm	+0.5 dB
Clipping Power	at 8 ohm	57 W
	at 4 ohm	80 W
	at 2 ohm	90 W
Dynamic Headroom	at 8 ohm	+ 1.8 dB
Dynamic Power	at 8 ohm	80 W
	at 4 ohm	130 W
	at 2 ohm	150 W
Transient Overload Recovery Time		1 usec
Slew Factory		50
Slew Rate		30 V/usec
Damping Factor at 50 Hz (Ref. 8 ohm)		150
THD 20–20K Hz from 250 mW to 50 W		< 0.03 %
SMPTE IMD (60 Hz + 7K Hz, 4 : 1) from 250 mW to 50 W		< 0.03 %
IHF IMD (19K Hz + 20K Hz) at 50 W		< 0.03 %
TIM (15K Hz Sinewave + 3.18K Hz Square Wave) at 50 W		< 0.03 %
Frequency Response, 20–20K Hz		± 0.05 dB
Frequency Response Range –3 dB		10–30K Hz

PHYSICAL SPECIFICATION

Dimensions	W x H x D	16.5 x 3.8 x 11 (inch)
		420 x 96 x 280 (mm)
Net Weight		8.3 Kg/18.3 Lbs
Shipping Weight		9.4 Kg/20.7 Lbs

BLOCK DIAGRAM



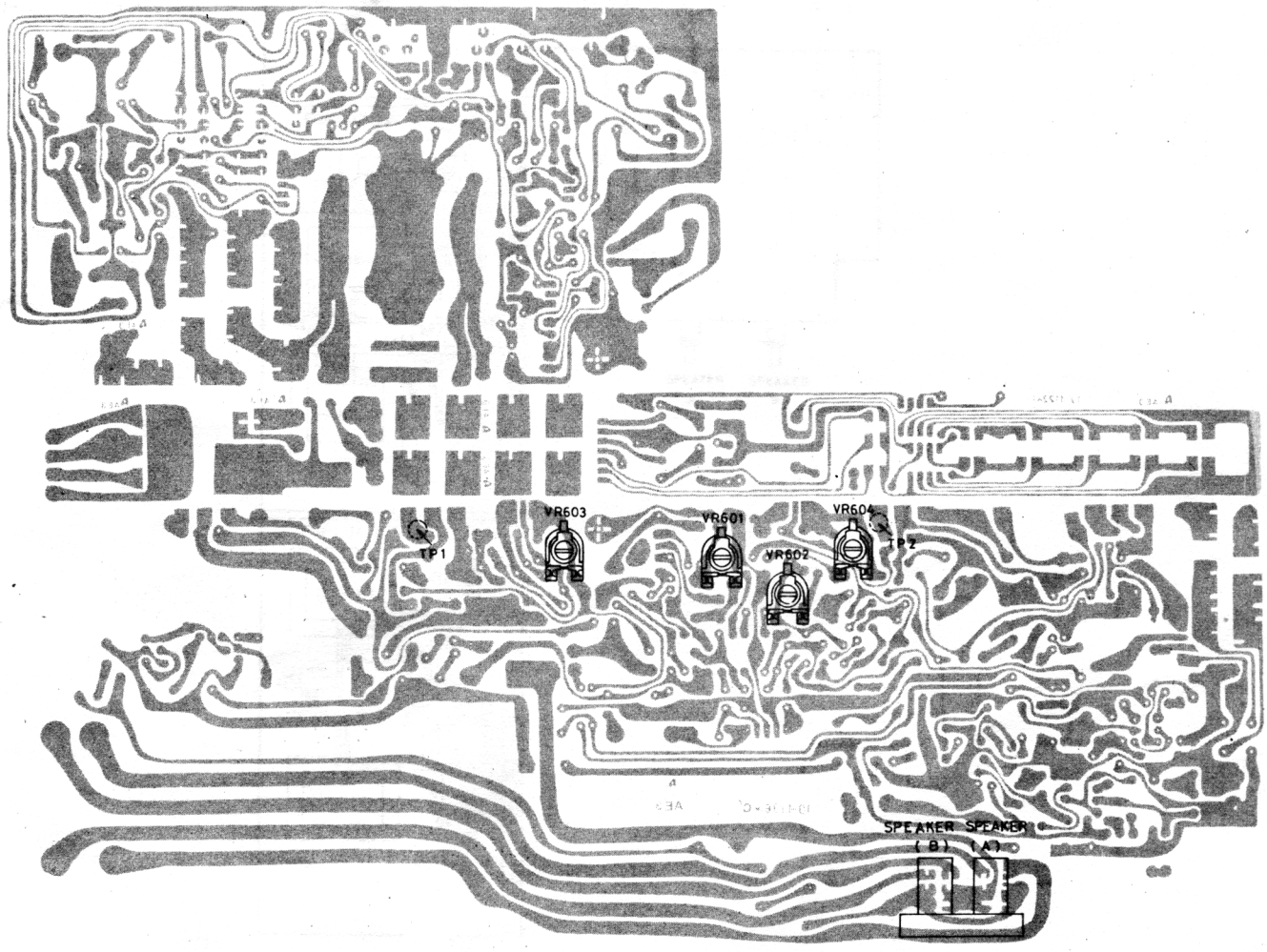
ALIGNMENT & INSIDE VIEW

IDLE CURRENT ALIGNMENT

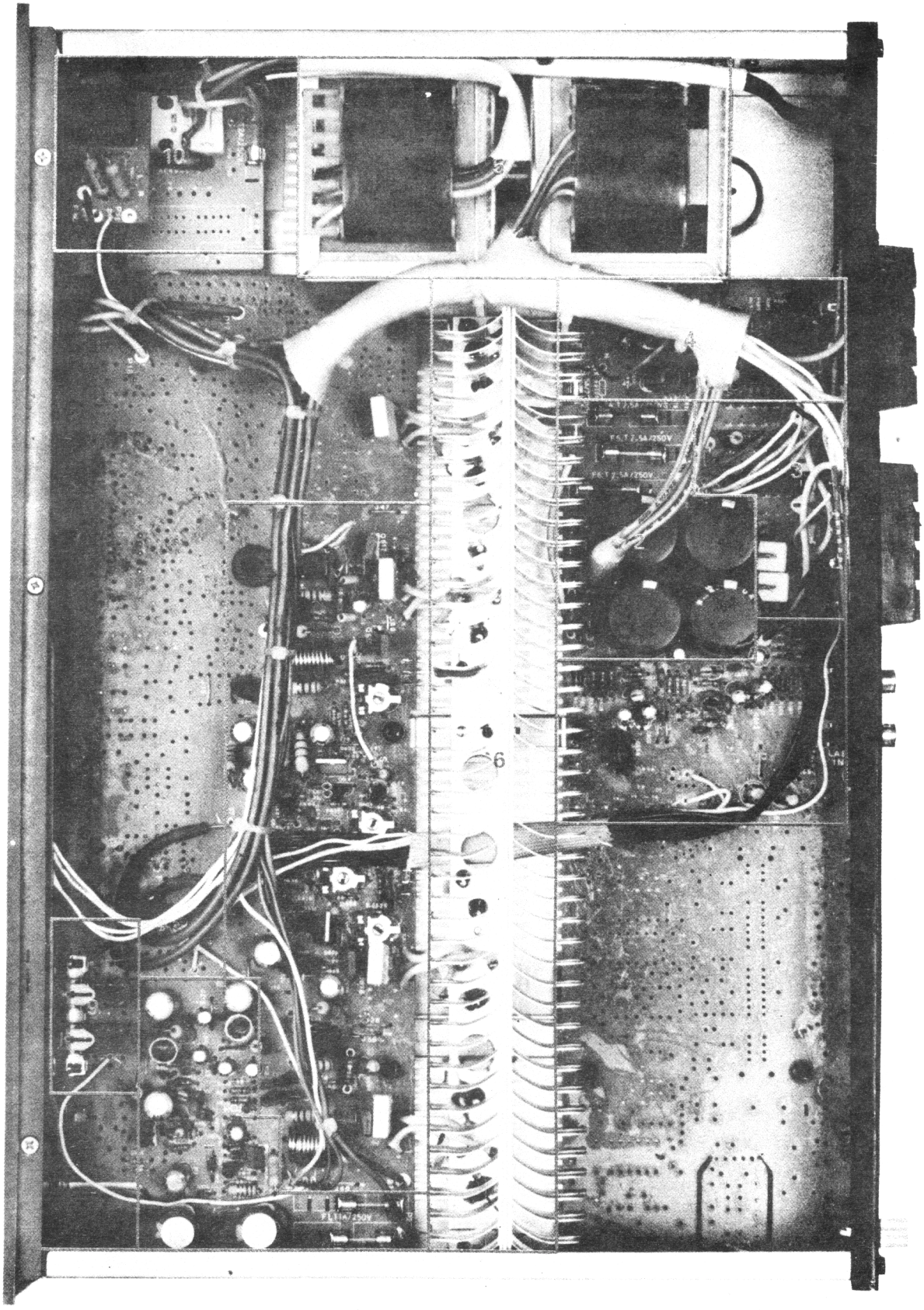
1. Disconnect all sources input to the power amplifier.
2. Turn VR–603 and VR–604 to fully clock wise position.
3. Set on the power for 1 minute pre-heating.
4. Remove the cord on speaker terminals.
5. Connect one probe of DC millivolt-meter to L channel speaker terminals "+" the other to point TP1 on main PCB, adjust VR–603 until 6 mV reading is reached, and this figure will keep on increasing, then wait for 1 minute later turn down the current until 6 mV is re-obtained.
6. Connect one probe of DC millivolt-meter to R channel speaker terminals "+" the other to point TP2 on main PCB, adjust VR–604 until 6 mV reading is reached, and this figure will keep on increasing, then wait for 1 minute later turn down the current until 6 mV is re-obtained.

DC OFF-SET ALIGNMENT

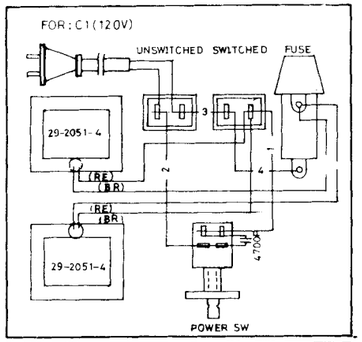
1. Disconnect all sources input to the power amplifier.
2. Set on the power for 5 minutes pre-heating.
3. For L channel alignment: connect probe of DC millivolt-meter to L channel speaker terminals, then adjust VR–601 until zero voltage reading is reached.
4. For R channel alignment: connect probe of DC millivolt-meter to R channel speaker terminals, then adjust VR–602 until zero voltage reading is reached.

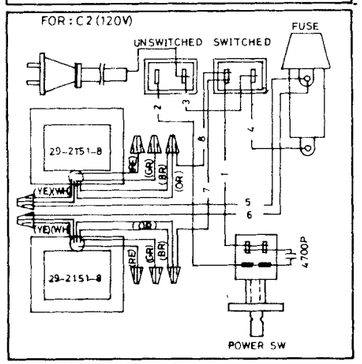


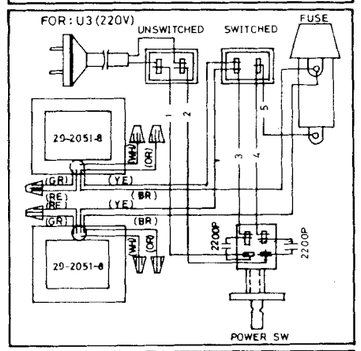
1. Power I/P Buffer.
2. Main Supply.
3. SLC Circuit.
4. Soft Clipping.
5. Power Transformer.
6. Heat Sink.
7. Regulator.
8. Power Amplifier.
9. Speaker SW.
10. Power SW.

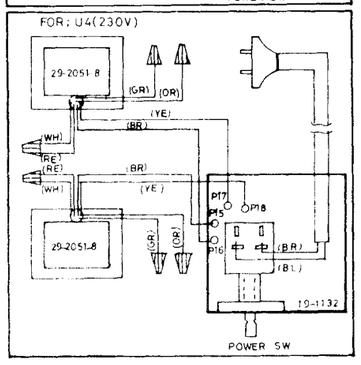


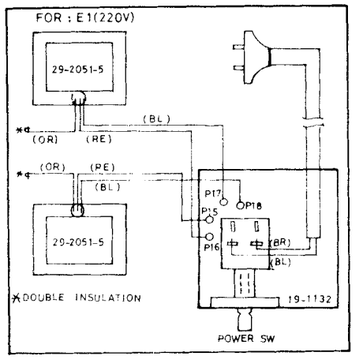
WIRING DIAGRAM

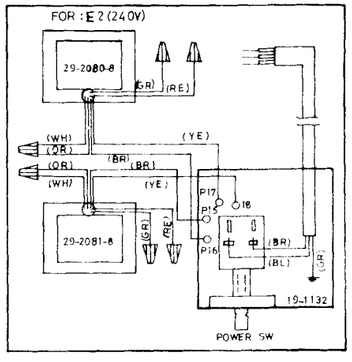


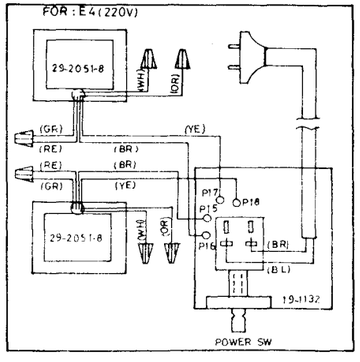


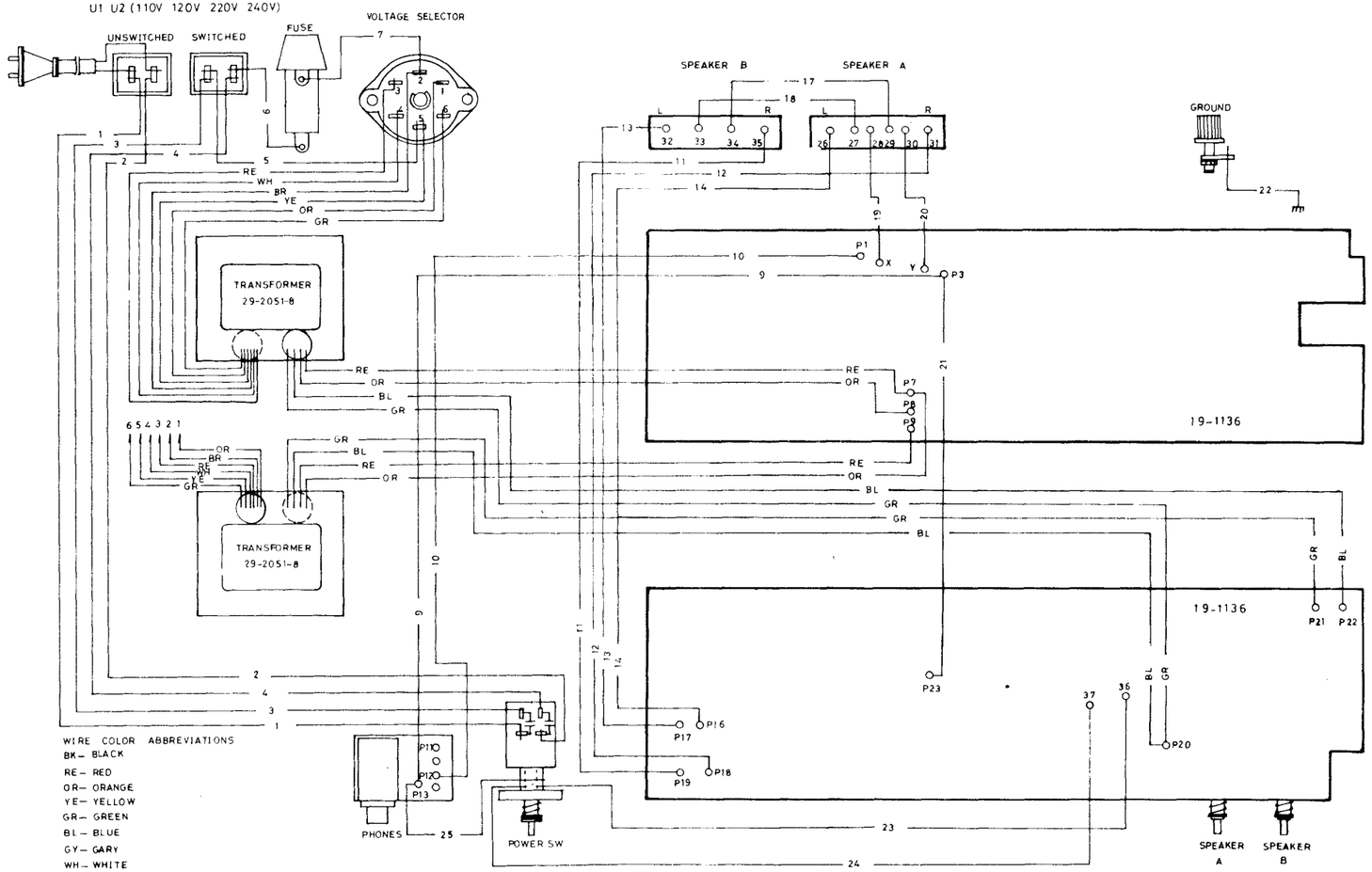




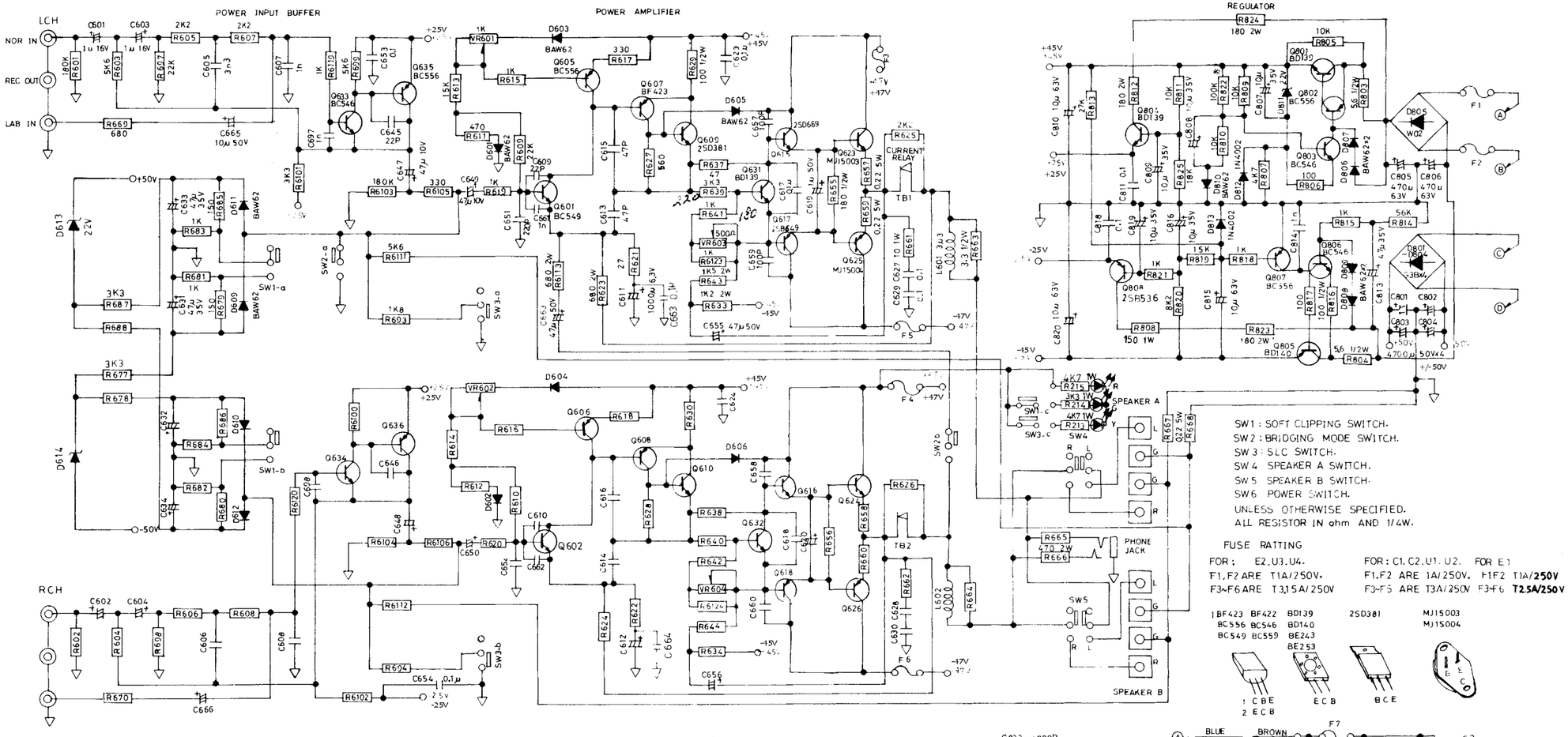


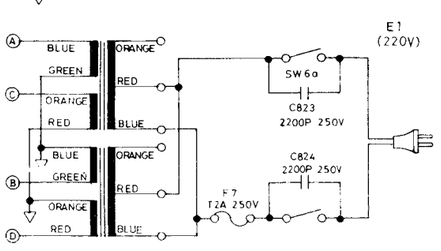


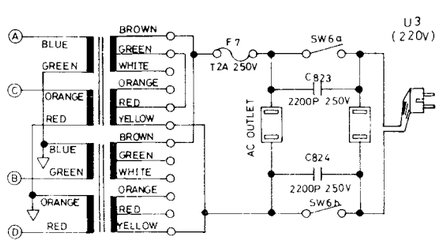


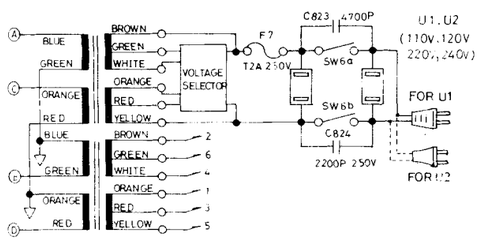


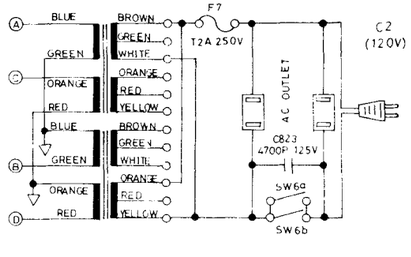
CIRCUIT DIAGRAM

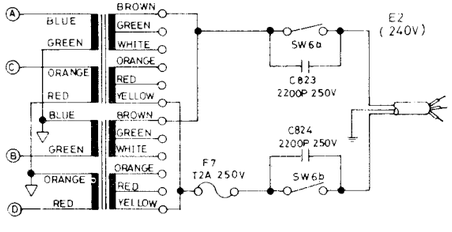


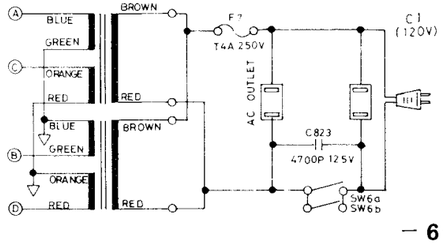


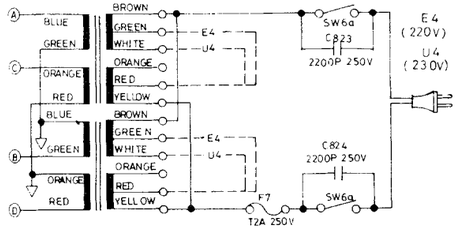




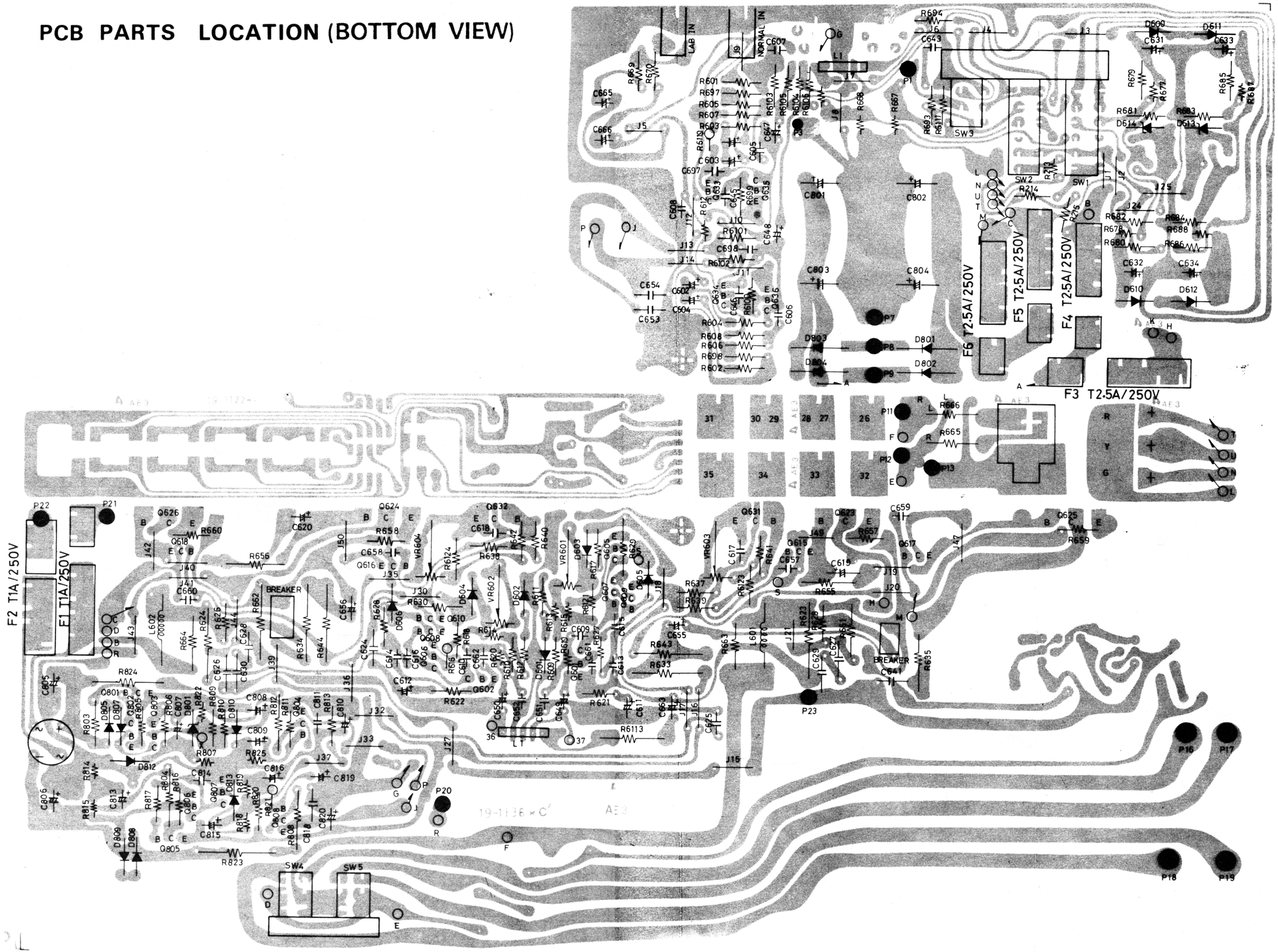




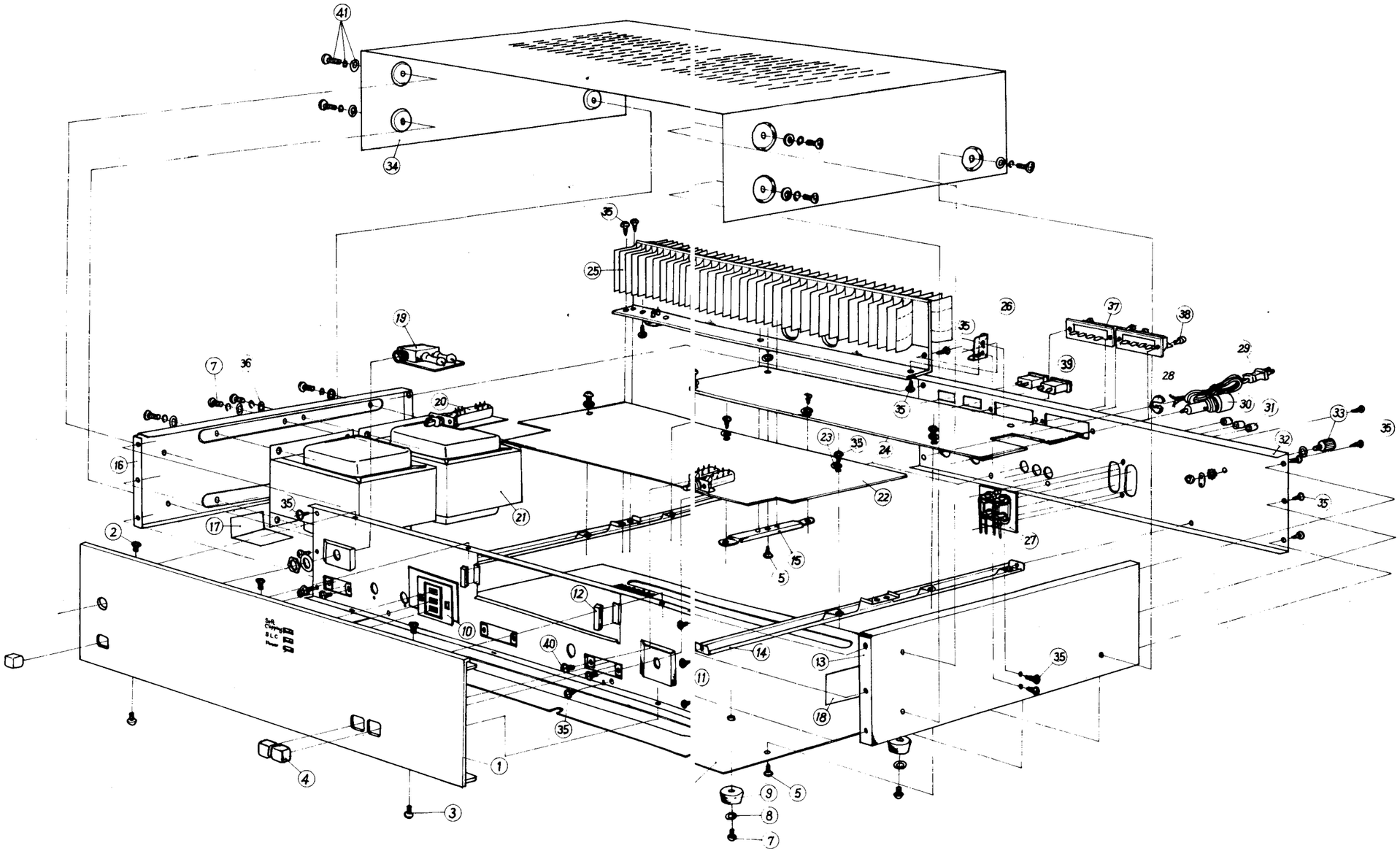




PCB PARTS LOCATION (BOTTOM VIEW)



ASSEMBLY DIAGRAM



ASSEMBLY PARTS

ITEM	DESCRIPTION	PART NO.	Q'TY
1	Front Panel	11-8179	1
2	Flat MA Screw 3x6	S1E03+I06SZ-2	3
3	TRI Screw 3x8	S5B03+I0810SL-2	3
4	Push Knob	12-3090	3
5	Tap Screw 3x6	S2B03+ I06SL–2	11
6	Bottom Chassis	11-6060	1
7	MA Screw 4x10	S1B04+I10SL–2	12
8	Washer 4x8	A04A08SL 0.8	4
9	Rubber Feet	28-1029	4
10	LED Holder	13-4056	1
11	Chassis Front	11-6067-1	1
12	Retainer	28-2086	2
13	Chassis R	11-6091	1
14	Chassis Center	11-6074	2
15	PCB Holder	11-2208	1
16	Chassis L	11-6073	1
17	Insulation Plate A	13-4051	1
18	Insulation Plate B	13-4052	1
19	Headphone Jack	12-2078	1
20	Power SW.	31-1129	1
21	Transformer	29-2051	2
22	PCB	19-1132	1
23	Fiber Washer 3x8	A03A08F 0.5	8
24	PCB	19-1136	1
25	Heat Sink	11-5053	1
26	Bracket for Heat Sink	11-2188	1
27	Socket 4P	12-2092	1
28	Cord Bushing 4N4	14-5003	1

ITEM	DESCRIPTION	PART NO.	Q'TY
29	Power Cord	14-5033	1
30	Fuse Holder	32-2005	1
31	Push Knob	12-3095	3
32	Back Panel	11-8180-1	1
33	Ground Screw	15-2037	1
34	Cabinet	50-1023	1
35	Tap Screw 3x8	S2B03+I08SL-2	30
36	Washer 4x10	A04A10SL0 1	8
37	Speaker Terminal	12-2095	2
38	Plastic Screw	15-2048	4
39	AC Outlet	12-2006	2
40	MA Screw 3x6	S1B03+I06SL-2	7
41	Special Screw	15-2051	6
42	Speaker Switch	31-1179	1

PARTS LIST

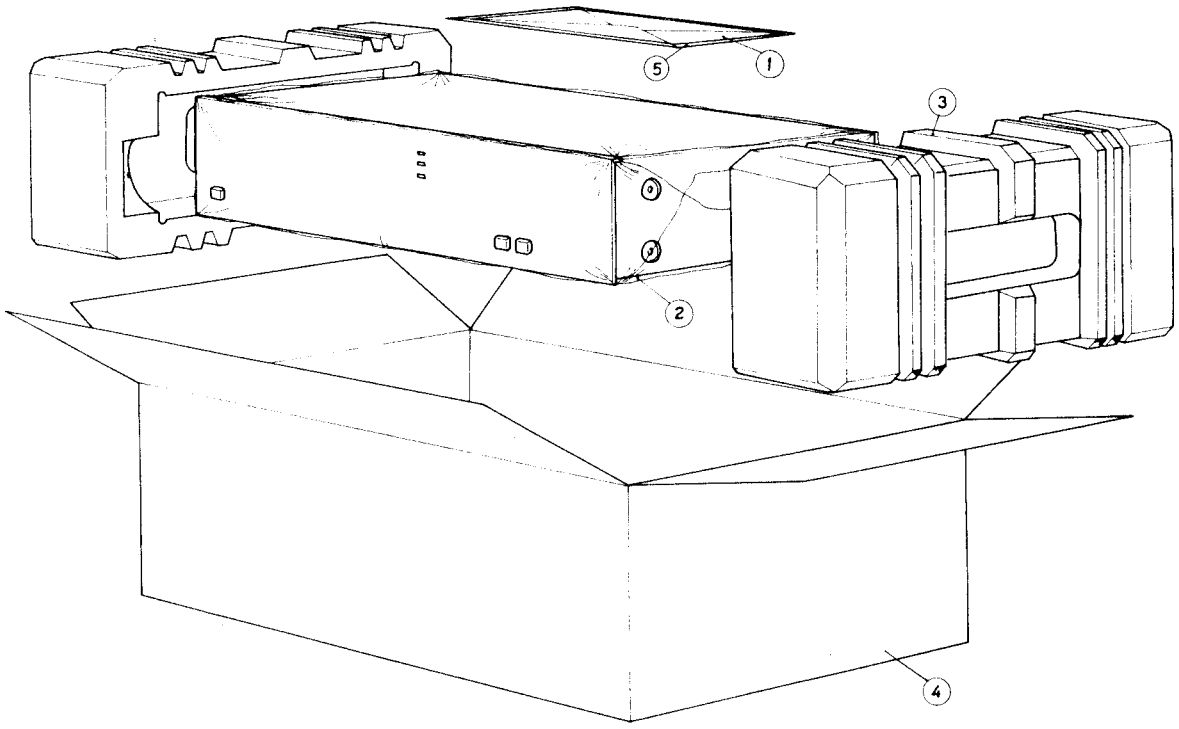
REF. NO.	PART NO.	DESCRIPTION	NOTE
		CAPACITORS	
C601-C604	17-1.6R105K	Electrolytic Solid 1uF+–10% 16V	
C605 C606	17-5FR332J	Mylar 3300PF+–5% 50V	
C607 C608	17-5FR102J	Mylar 1000PF+–5% 50V	
C609 C610	17-5DR220M	Ceramic 22PF+–20% 50V	
C611 C612	17-0.63E108Y	Electrolytic 1000uF+50–10% 6.3V	
C613-C616	17-5DR470M	Ceramic 47PF+–20% 50V	
C617 C618	17-5DR104M	Ceramic 0.1uF+–20% 50V	
C619 C620	17-5ER105Y	Electrolytic 1uF+50–10% 50V	
C623 C624	17-5DR104M	Ceramic 0.1uF+–20% 50V	
C627-C630	17-5DR104M	Ceramic 0.1uF+–20% 50V	
C631-C634	17-3.5ER476Y	Electrolytic 47uF+50–10% 35V	
C645 C646	17-5DR220M	Cearmic 22PF+–20% 50V	
C647 C650	17-1ER476Y	Electrolytic 47uF+50–10% 10V	
C651 C652	17-5DR221M	Ceramic 220pF+–20% 50V	
C653 C654	17-5DR104M	Ceramic 0.1uF+–20% 50V	
C655 C656	17-5ER476Y	Electrolytic 47uF+50–10% 50V	
C657 C660	17-5DR101M	Ceramic 100PF+–20% 50V	
C661 C662	17-5DR102M	Ceramic 1000PF+–20% 50V	
C663	17-5ER476Y	Electrolytic 47uF+50–10% 50V	
C665 C666	17-5FR102J	Mylar 1000pF+–5% 50V	
C801-C804	17-5P478Y	Electrolytic 4700uF+50–10% 50V	
C805 C806	17-6.3E477Y	Electrolytic 470uF+50–10% 63V	
C807-C809	17-3.5ER106Y	Electrolytic 10uF+50–10% 35V	
C810	17-6.3ER106Y	Electrolytic 10uF+50–10% 63V	
C811 C812	17-5DR104M	Ceramic 0.1uF+–20% 50V	
C813	17-3.5ER476Y	Electrolytic 47uF+50–10% 35V	
C814	17-5FR102J	Mylar 1000PF+–5% 50V	
C815	17-6.3ER106Y	Electrolytic 10uF+50–10% 63V	
C816 C819	17-3.5ER106Y	Electrolytic 10uF+50–10% 35V	
C820	17-6.3ER106Y	Electrolytic 10uF+50–10% 63V	
C697 C698	17-5ER106Y	Electrolytic 10uF+50–10% 50V	
C823 C824	17-2008	Capacitor 2200PF 250VAC	
		DIODES	
D601-D606	30-1019	Diode BAW62/BAW76	
D609-D612	30-1019	Diode BAW62/BAW76	
D613 D614	30-1041	Diode Zener 22V 0.5W	
D801-D804	30-1017-1	Diode G3B	
D805	30-1040	Diode Rectifier 200V 1.5A W02	
D806-D810	30-1019	Diode BAW62/BAW76	
D811	30-1041	Diode Zener 22V 0.5W	
D812 D813	30-1002	Diode Rectifier 100V 1A 1N4002/10D1	

REF. NO.	PART NO.	DESCRIPTION	NOTE
LD211	30-1075	LED Red LT3211R	
LD212	30-1085	LED Green LT3231G	
LD213	30-1076	LED Yellow LT3251Y	
		TRANSISTORS	
Q601 Q602	30-2084-3	BC549C	
Q605 Q606	30-2096	BC556A	
Q607 Q608	30-2238	BF423	
Q609 Q610	30-2087	2SD381	
Q615 Q616	30-2259	2SB649	
Q617 Q618	30-2260	2SB669	
Q623 Q624	30-2251	MJ15003	
Q625 Q626	30-2252	MJ15004	
Q633 Q634	30-2090-2	BC546B	
Q635 Q636	30-2096	BC556A	
		RESISTORS	
R601 R602	16-1/4CA184J	Carbon 1/4W 180K Ohm +–5%	
R603 R604	16-1/4CA562J	Carbon 1/4W 5K6 Ohm +–5%	
R605–R608	16-1/4CA222	Carbon 1/4W 2K2 Ohm +–5%	
R609 R610	16-1/4CA223J	Carbon 1/4W 22K Ohm +–5%	
R611 R612	16-1/4CA471J	Carbon 1/4W 470 Ohm +–5%	
R613 R614	16-1/4CR153J	Carbon 1/4W 15K Ohm +–5%	
R615 R616	16-1/4CR102J	Carbon 1/4W 1K Ohm +–5%	
R617 R618	16-1/4CA331J	Carbon 1/4W 330 Ohm +–5%	
R619 R620	16-1/4CA102J	Carbon 1/4W 1K Ohm +–5%	
R621 R622	16-1/4CA270J	Carbon 1/4W 27 Ohm +–5%	
R623 R624	16-2A681J	Metal Oxide 2W 680 Ohm +–5%	
R625 R626	16-1/4CA222J	Carbon 1/4W 2K2 Ohm +–5%	
R627 R628	16-1/4CA561J	Carbon 1/4W 560 Ohm +–5%	
R629 R630	16-1/2A101J	Metal Oxide 1/2W 100 Ohm +–5%	
R633 R634	16-2A122J	Metal Oxide 2W 1K2 Ohm +–5%	
R635	16-1/2A3R3J	Metal Oxide 1/2W 3.3 Ohm +–5%	
R637 R638	16-1/4CA470J	Carbon 1/4W 47 Ohm +–5%	
R639 R640	16-1/4CA332J	Carbon 1/4W 3K3 Ohm +–5%	
R641 R642	16-1/4CA102J	Carbon 1/4W 1K Ohm +–5%	
R643 R644	16-2A152J	Metal Oxide 2W 1K5 Ohm +–5%	
R655 R656	16-1/2CP181J	Carbon 1/2W 180 Ohm +–5%	

REF. NO.	PART NO.	DESCRIPTION					NOTE
R657–R660	16-1003	Metal Plate	5W	0.22	Ohm	+–5%	
R661 R662	16-1A100J	Metal Oxide	1W	10	Ohm	+–5%	
R663 R664	16-1/2A3R3J	Metal Oxide	1/2W	3.3	Ohm	+–5%	
R665 R666	16-2A471J	Metal Oxide	2W	470	Ohm	+–5%	
R667 R668	16-1017	Metal Plate	5W	0.22	Ohm	+–5%	
R669 R670	16-1/4CA681J	Carbon	1/4W	680	Ohm	+–5%	
R677 R678	16-1/4CR332J	Carbon	1/4W	3K3	Omh	+–5%	
R679 R680	16-1/4CA151J	Carbon	1/4W	150	Ohm	+–5%	
R681 –R684	16-1/4CA102J	Carbon	1/4W	1K	Ohm	+–5%	
R685 R686	16-1/4CA151J	Carbon	1/4W	150	Ohm	+–5%	
R687 R688	16-1/4CR332J	Carbon	1/4W	3K3	Ohm	+–5%	
R693 R694	16-1/4CA182J	Carbon	1/4W	1K8	Ohm	+–5%	
R697 R698	16-1/4CA223J	Carbon	1/4W	22K	Ohm	+–5%	
R699 R6100	16-1/4CA562J	Carbon	1/4W	5K6	Ohm	+–5%	
R6101	16-1/4CA332J	Carbon	1/4W	3K3	Ohm	+–5%	
R6102	16-1/4CA332J	Carbon	1/4W	3K3	Ohm	+–5%	
R6103	16-1/4CA184J	Carbon	1/4W	180K	Ohm	+–5%	
R6104	16-1/4CA184J	Carbon	1/4W	180K	Ohm	+–5%	
R6105	16-1/4CA331J	Carbon	1/4W	330	Ohm	+–5%	
R6106	16-1/4CA331J	Carbon	1/4W	330	Ohm	+–5%	
R6111	16-1/4CA562J	Carbon	1/4W	5K6	Ohm	+–5%	
R6112	16-1/4CR562J	Carbon	1/4W	5K6	Ohm	+–5%	
R6113	16-2A681J	Metal Oxide	2W	680	Ohm	+–5%	
R6119	16-1/4CA102J	Carbon	1/4W	1K	Ohm	+–5%	
R6120	16-1/4CA102J	Carbon	1/4W	1K	Ohm	+–5%	
R803 R804	16-1/2A5R6J	Metal Oxide	1/2W	5.6	Ohm	+–5%	
R805	16-1/4CA103J	Carbon	1/4W	10K	Ohm	+–5%	
R806	16-1/4CA101J	Carbon	1/4W	100	Ohm	+–5%	
R807	16-1/4CR472J	Carbon	1/4W	4K7	Ohm	+–5%	
R808	16-1A151J	Metal Oxide	1W	150	Ohm	+–5%	
R809–R811	16-1/4CA103J	Carbon	1/4W	10K	Ohm	+–5%	
R812	16-2A181J	Metal Oxide	2W	180	Ohm	+–5%	
R813	16-1/4CA273J	Carbon	1/4W	27K	Ohm	+–5%	
R814	16-1/4CR563J	Carbon	1/4W	56K	Ohm	+–5%	
R815	16-1/4CA102J	Carbon	1/4W	1K	Ohm	+–5%	
R816	16-1/2A101J	Mteal Oxide	1/2W	100	Ohm	+–5%	
R817	16-1/4CA101J	Carbon	1/4W	100	Ohm	+–5%	
R818	16-1/4CR102J	Carbon	1/4W	1K	Ohm	+–5%	
R819	16-1/4CR153J	Carbon	1/4W	15K	Ohm	+–5%	

REF. NO.	PART NO.	DESCRIPTION	NOTE
R820	16-1/4CA822J	Carbon 1/4W 8K2 Ohm +–5%	
R821	16-1/4CR102J	Carbon 1/4W 1K Ohm +–5%	
R822	16-1/4CR104J	Carbon 1/4W 100K Ohm +–5%	
R823 R824	16-2A181J	Metal Oxide 2W 180 Ohm +–5%	
R825	16-1/4CR183J	Carbon 1/4W 18K Ohm +–5%	
R6123	16-1/4CA102J	Carbon 1/4W 1K Ohm +–5%	
R6124	16-1/4CA102J	Carbon 1/4W 1K Ohm +–5%	
L601 L602	29-1036-1	Coil 3.3uF	
VR603	29-4055	VR Semi TR14RA01–500ΩB	
VR604	29-4055	VR Semi TR14RA01–500ΩB	

PACKING DIAGRAM



ITEM	PART NO.	DESCRIPTION	Q'TY
1.	21–4028	Instruction Manual	1
2.	26–0005	Polypaper	1
3.	34–1027	Polylone	2
4.	CT–5131	Inner Carton	1
5.	26–2434	Poly Bag	1