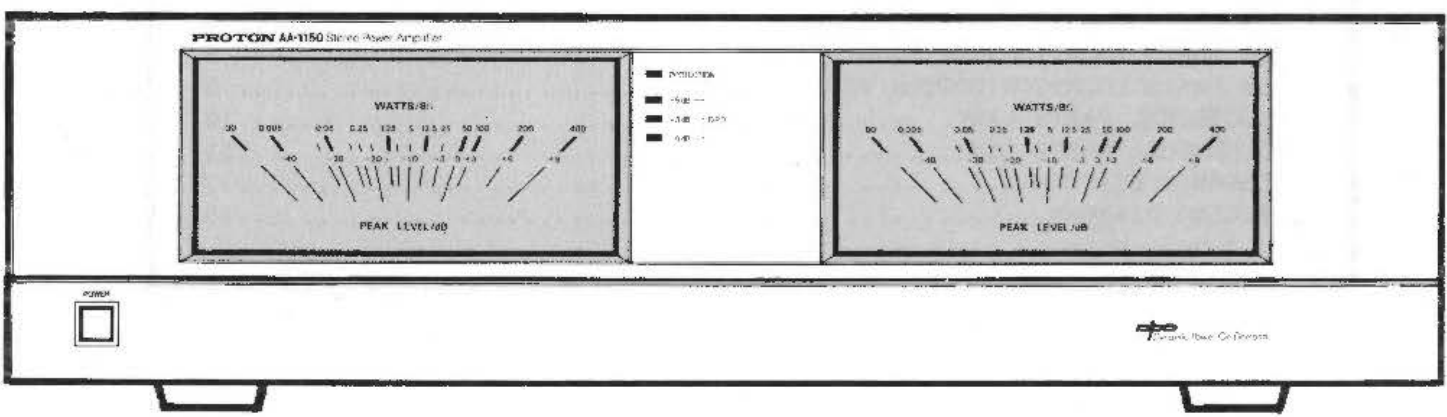


PROTON SERVICE MANUAL

AA-1150

STEREO POWER AMPLIFIER



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SPECIFICATION

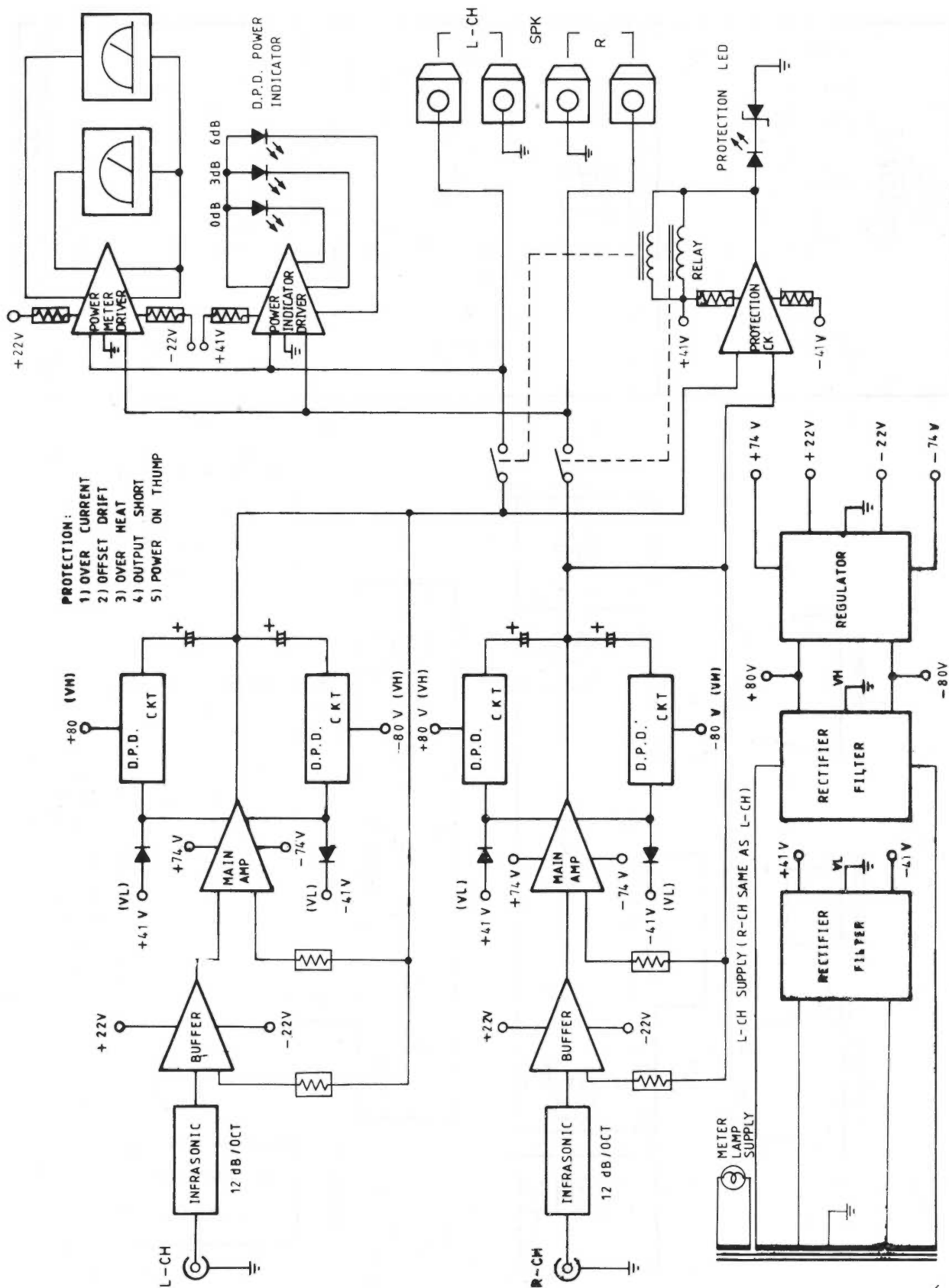
Rated Power Output (20Hz-20KHz, 8 Ohms)	50W, Per Channel
Dynamic Power At 8 Ohm/4 Ohm/2 Ohm	
1. I.H.F. Standard 20ms Duration:	280W/450W/600W
2. 100ms Duration:	220W/300W/350W
3. 200ms Duration: (Duty Cycle:500ms)	180W/240W/260W
Dynamic Headroom At 8 Ohm/4 Ohm/2 Ohm:	7dB
T.H.D. At Rated Power:	0.02%
I.M.D. At Rated Power:	0.02%
Clipping Power At 8 Ohm/4 Ohm/2 Ohm:	55W/85W/110W
Damping Factor:	> 150
Frequency Response 20-20KHz:	+/-0.3dB
Power Bandwidth At T.H.D. 0.1%	12-70KHz
Input Resistance/Capacitance:	12K Ohm/220pF
Input Sensitivity:	1V
Channel Crosstalk (1 KHz):	90dB
S/N Ratio (A-Weighted):	115dB
Normal Dimensions WxHxD (Inch):	16.53"x4.8"x15.6"
Normal Dimensions WxHxD (MM):	420x122x395 (MM)
Net Weight:	11.5Kg/25.3Lbs
Shipping Weight:	13.9Kg/30.58Lbs

ALIGNMENT

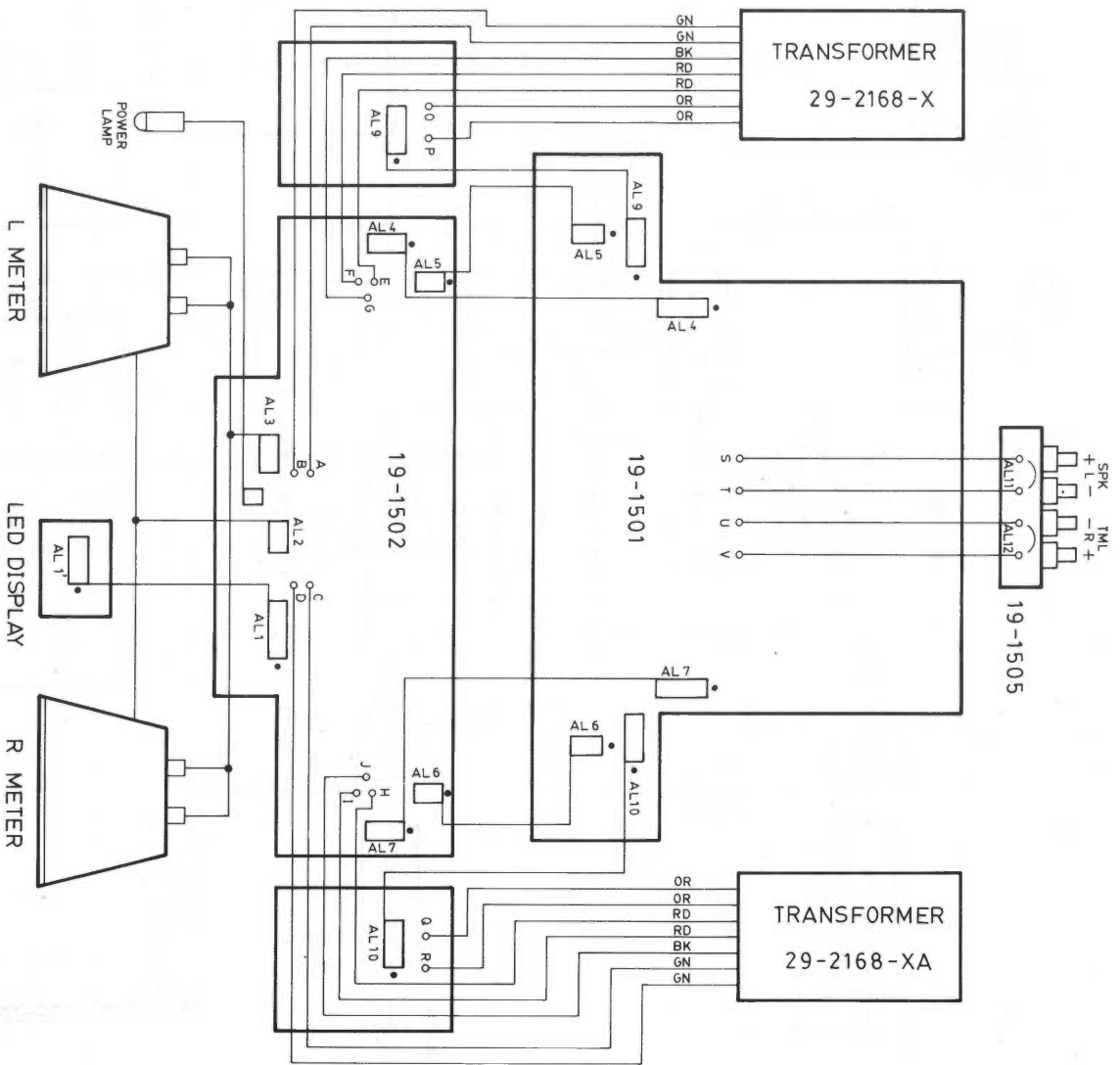
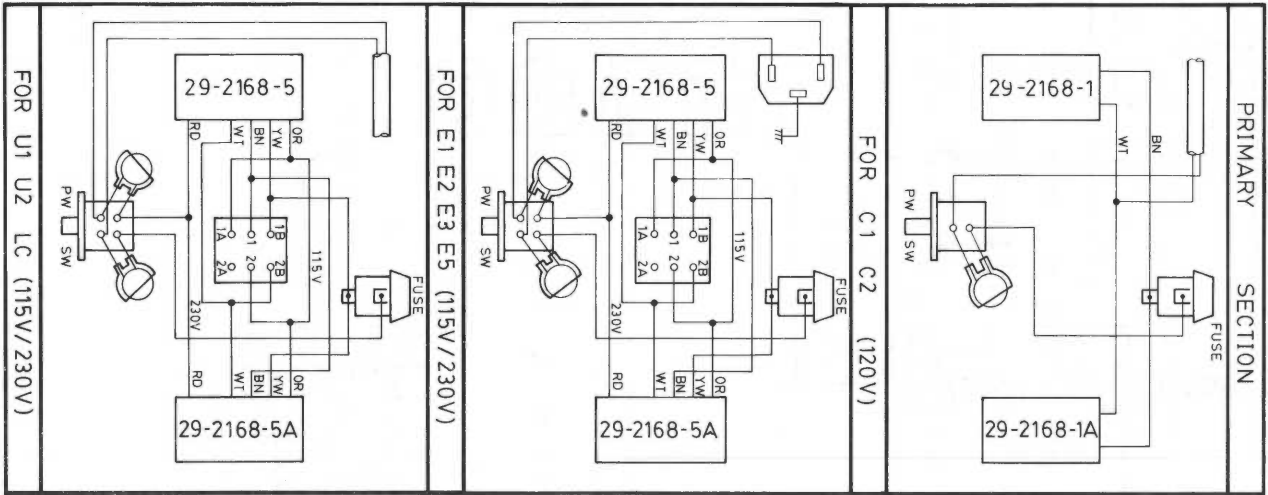
IDLE CURRENT ALIGNMENT

1. Turn VR601 VR604 to fully counter clockwise position.
2. Remove the load from speaker terminal.
3. Push on power for 5 minutes pre-heating.
4. Connect DC millivolt-meter across R649 for left channel R650 for right channel. The meter sensitivity should be set at 100mV full scale deflection.
5. Adjust VR601 (left channel) and VR602 (right channel) till the reading from meter is between 2.5mV and 5.0mV the alignment is Completed.

BLOCK DIAGRAM

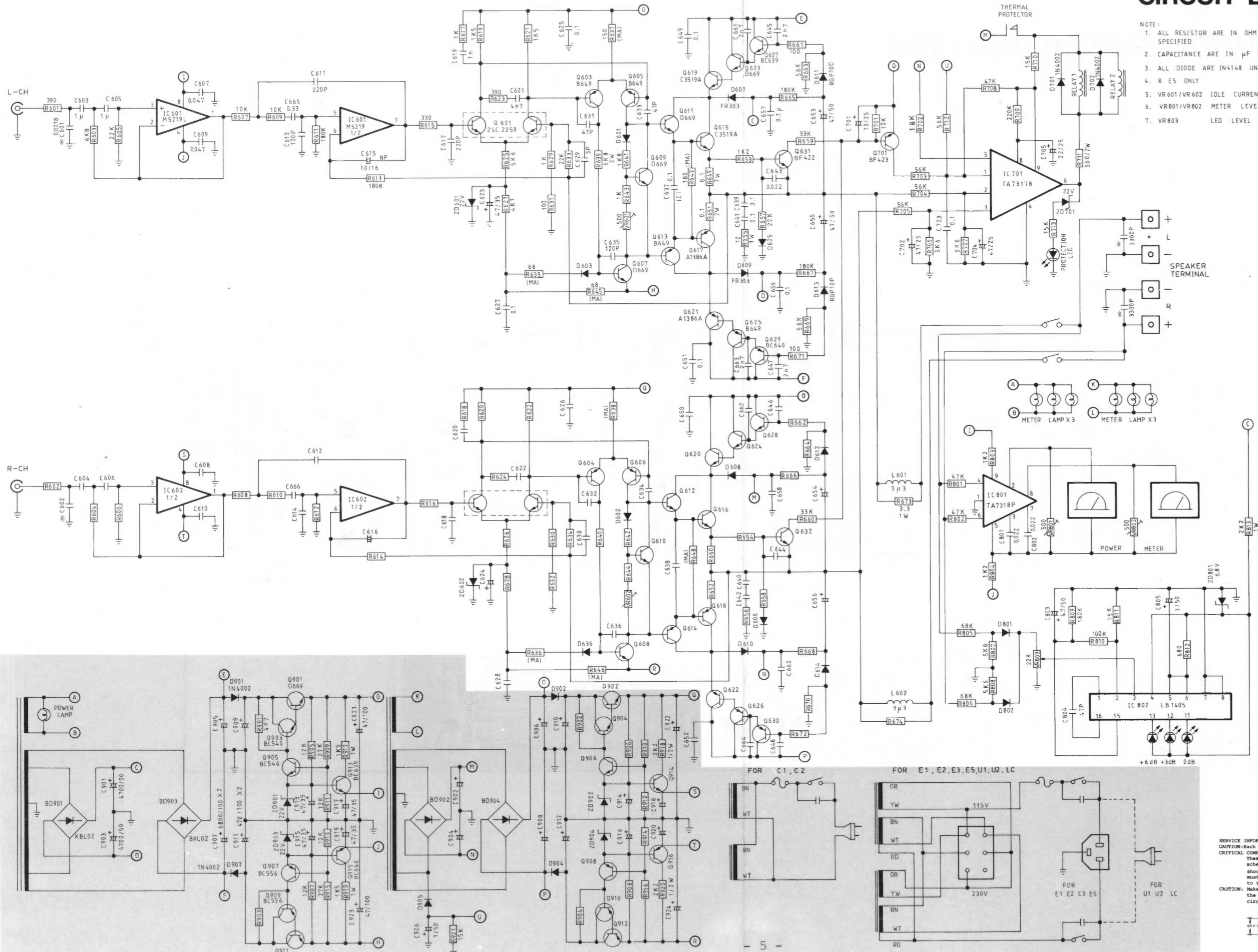


WIRING DIAGRAM

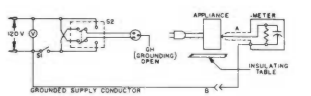


CIRCUIT DIAGRAM

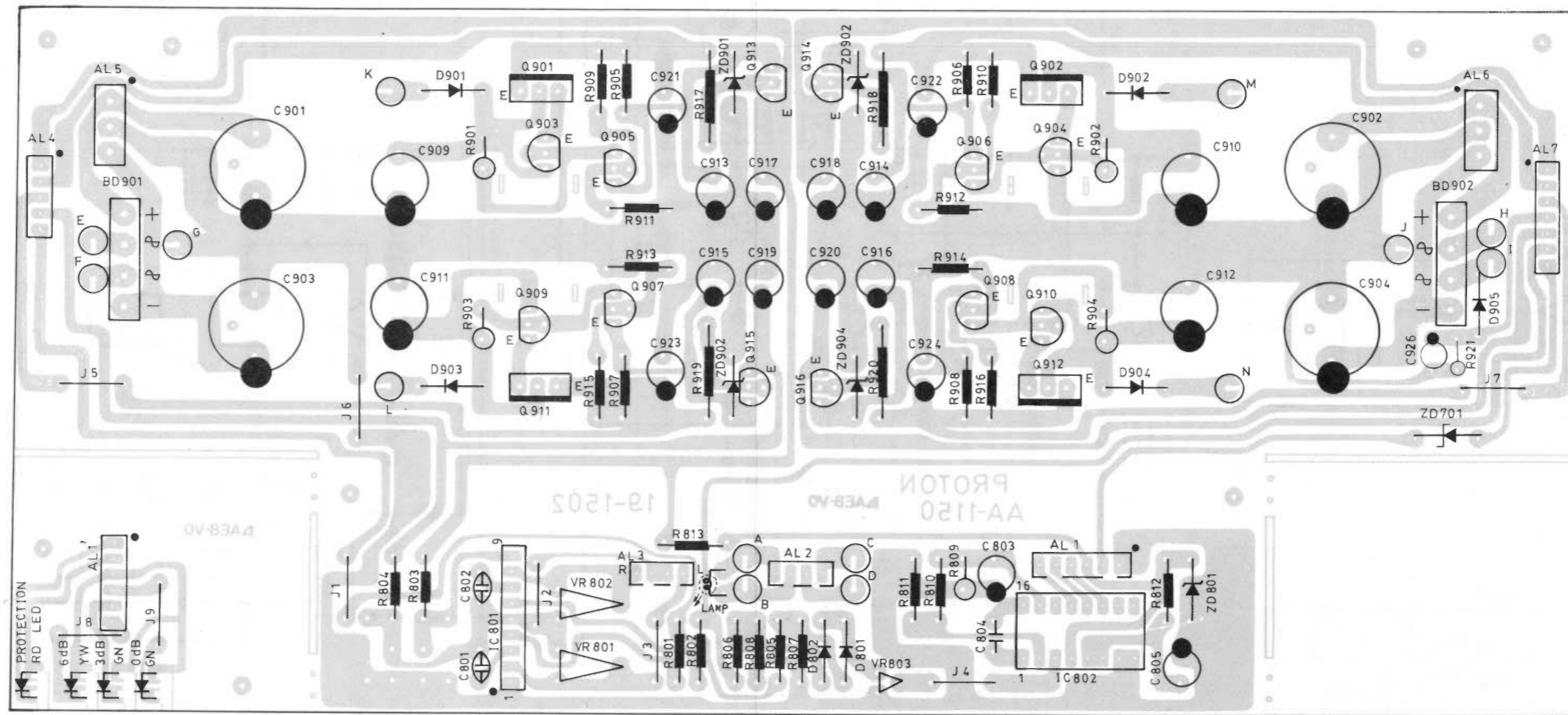
- NOTE:
1. ALL RESISTOR ARE IN OHM 1/4W ±5% CARBON UNLESS OTHERWISE SPECIFIED
 2. CAPACITANCE ARE IN μF UNLESS OTHERWISE SPECIFIED
 3. ALL DIODE ARE 1N4148 UNLESS OTHERWISE SPECIFIED
 4. X E5 ONLY
 5. VR601/VR602 IDLE CURRENT ADJ
 6. VR801/VR802 METER LEVEL ADJ
 7. VR803 LED LEVEL ADJ



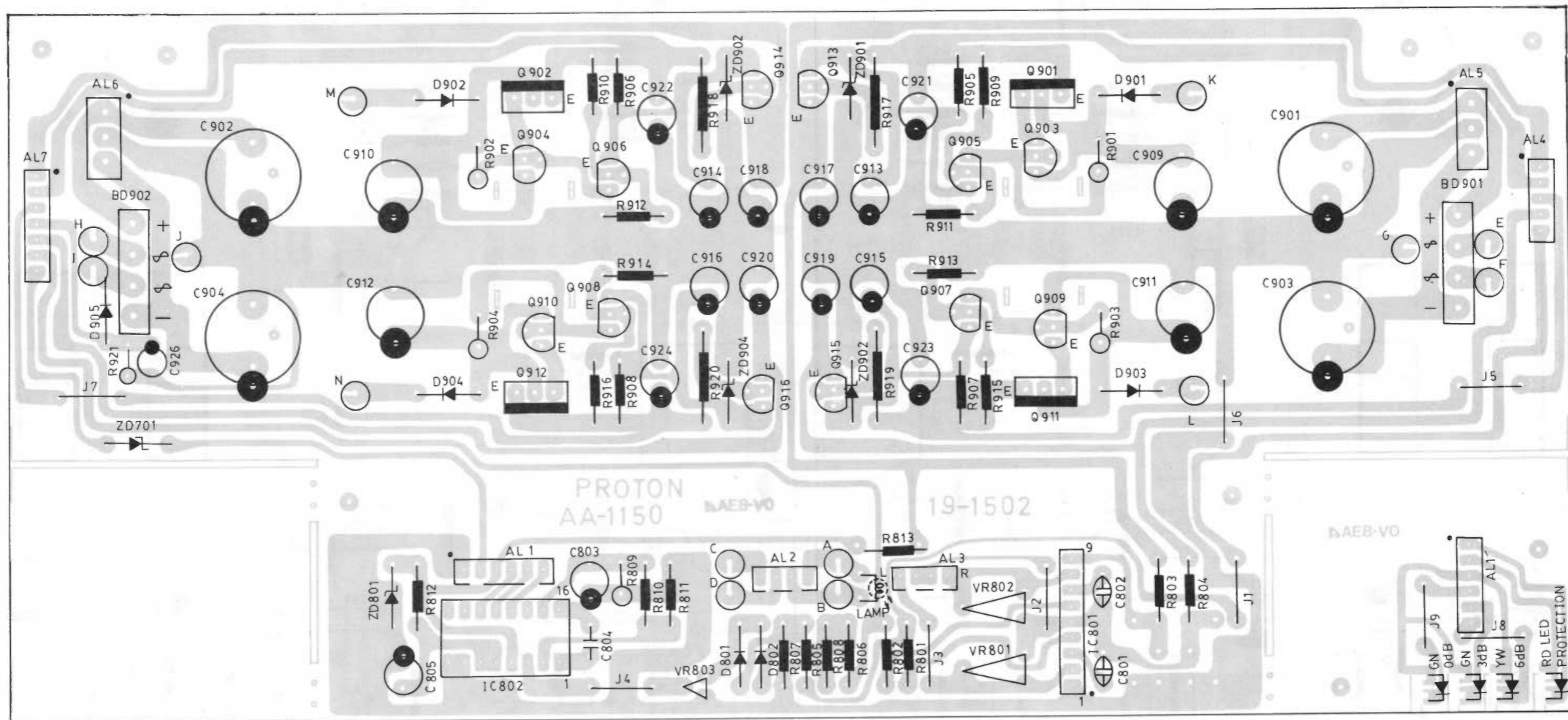
SERVICE INFORMATION
CAUTION: Each precaution to be followed during servicing.
CRITICAL COMPONENT WARNING: These CRITICAL COMPONENTS that are shaded of the schematic diagram are used to prevent electric shock and fire hazard. All these special components must be replaced only with the same type identical to these in the schematic diagram.
CAUTION: Make leakage current measurement before returning the appliance to the customer. See measurement circuit as shown below.



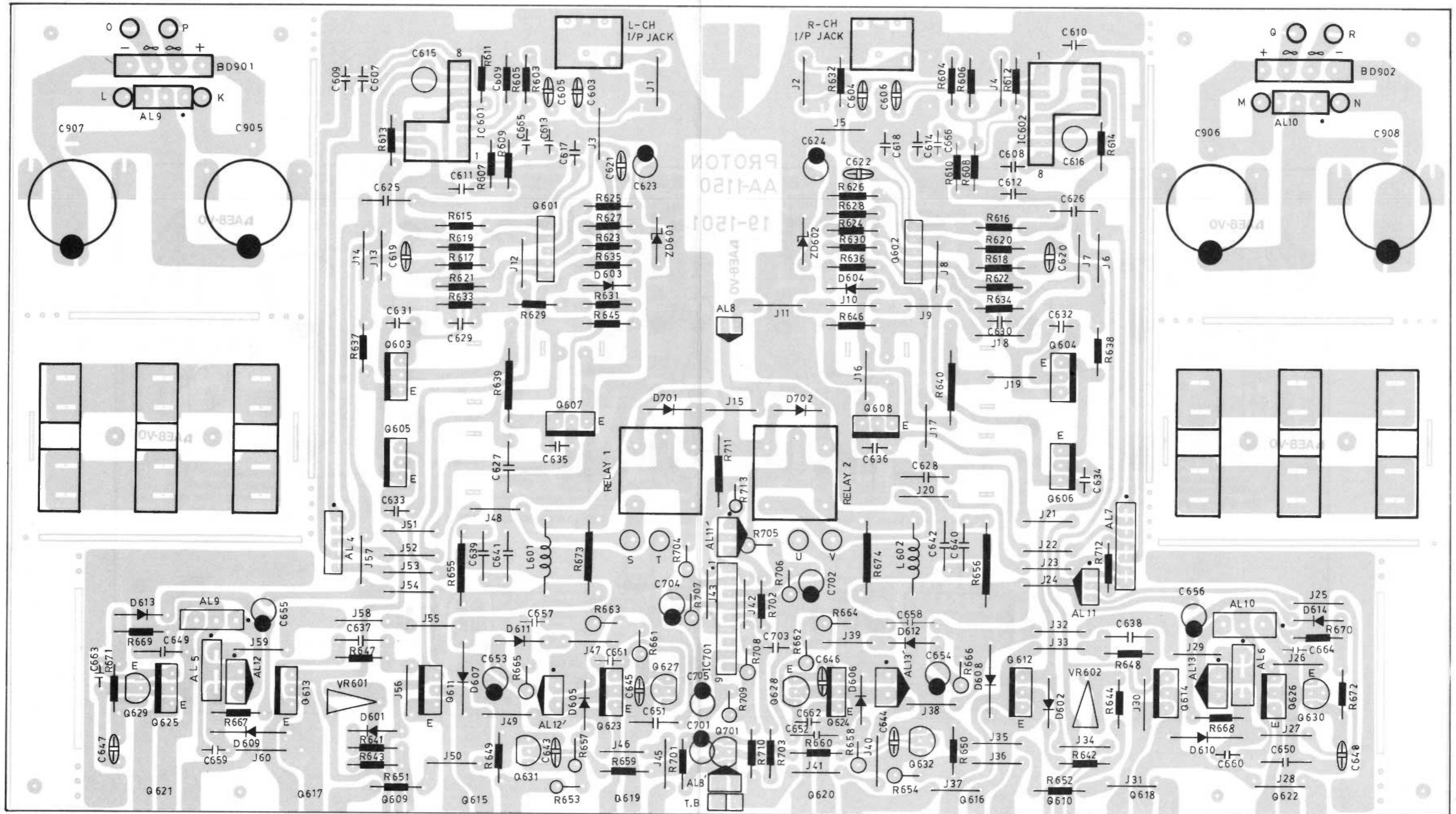
PCB PARTS LOCATION (TOP VIEW)



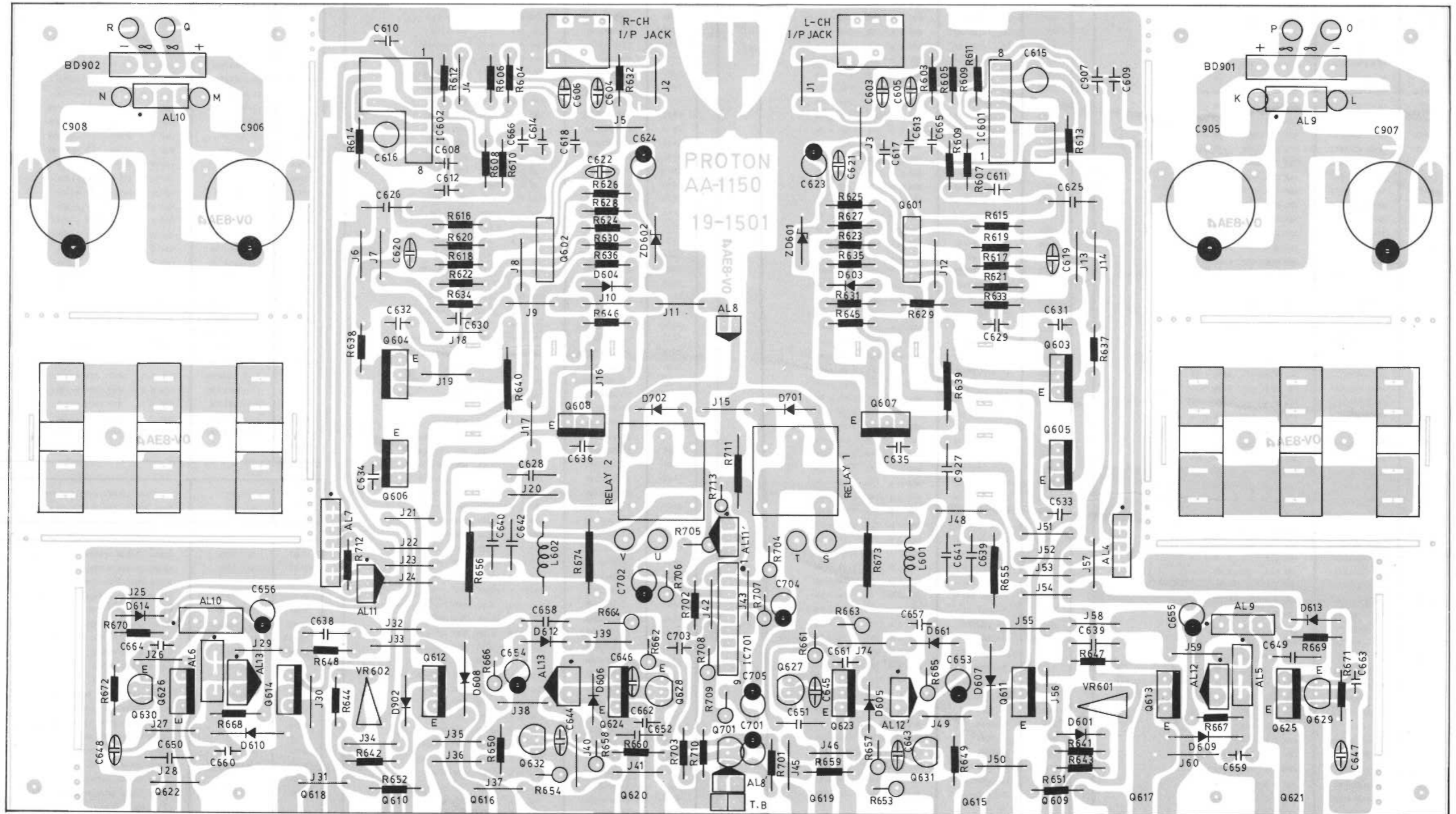
PCB PARTS LOCATION (BOTTOM VIEW)



PCB PARTS LOCATION (TOP VIEW)



PCB PARTS LOCATION (BOTTOM VIEW)



MECHANICAL PARTS LIST

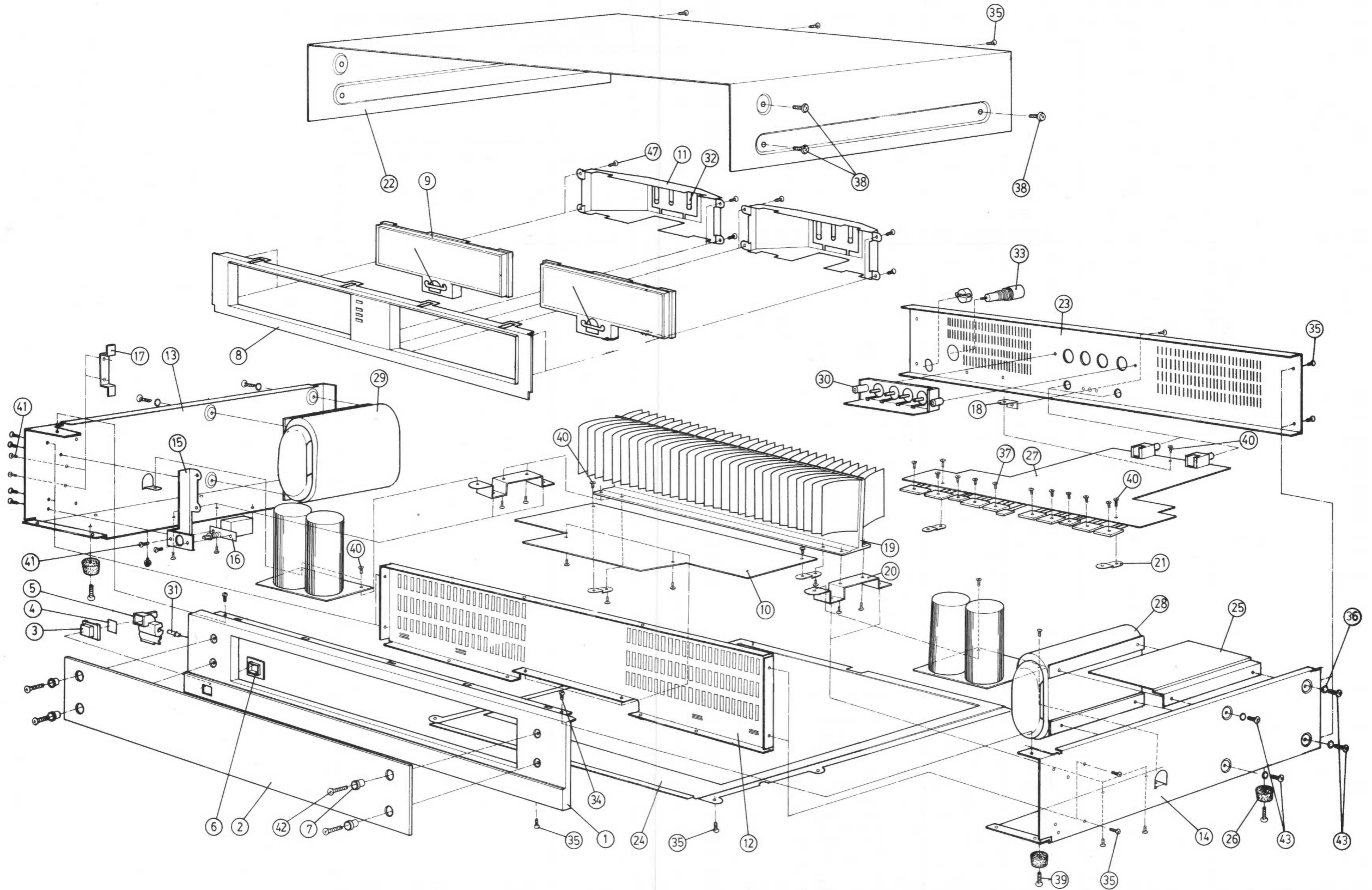
ASSEMBLY DIAGRAM

ITEM	DESCRIPTION	PART NO.	Q'TY
1	FRONT PANEL	11-8474	1
2	SMOKED GLASS	11-9160-1	1
3	PUSH KNOB	12-3193	1
4	SHIELD	11-9161	1
5	POWER SWITCH CONNECTOR	12-7044	1
6	BUSHING A	12-7042	1
7	BASE FOR GLASS	15-2T01	4
8	AUX. PANEL	11-8384	1
9	METER SIGNAL	35-1031	2
10	MAIN PCB	19-1502	1
11	LIGHT COLLECTOR	11-9162	2
12	FRONT CHASSIS	11-6247	1
13	AUX. CHASSIS L	11-6248	1
14	AUX. CHASSIS R	11-6249	1
15	POWER SWITCH HOLDER	11-3127	1
16	POWER SWITCH	31-1272 (31-1292)	1
17	SCREW STOPPER	11-9180	1
18	BRACKET FOR X'FORMER B	11-2402-2	1
19	HEAT SINK	11-5086	1
20	SINK HOLDER	11-3142	2
21	PCB HOLDER	11-3121	4
22	CABINET	50-1055-1	1
23	BACK PANEL	11-8452	1
24	BOTTOM CHASSIS	11-6211*A	1
25	X'FORMER SHIELD	11-9167*A	1
26	RUBBER STAND	28-1029	4
27	MAIN PCB	19-1501	1
28	X'FORMER	29-2168-X	1
29	X'FORMER	29-2168-XA	1
30	SPK TML	12-2007	1
31	LAMP	31-2044	1
32	LAMP	31-2044	1
33	FUSE	32-14001W(S) (32-12001W(S))	1
34	MACHINE SCREW	S1E03+I06SL-2	4
35	TAPPING SCREW	S2D03+I08SL-2	58
36	SPRING WASHER	A04G07SL01	8
37	MACHINE SCREW	S1D03+I10SL-2	10
38	SPECIAL SCREW	15-2062	6
39	SPECIAL SCREW	15-2063	4
40	SPECIAL SCREW	15-2075	11
41	MACHINE SCREW	S1D03+I06SL-2	6
42	MACHINE SCREW	S1E04+I18SL-2	4
43	MACHINE SCREW	S1D04+I10SL-2	8

REF. NO.	PARTS NO.	DESCRIPTION
D904	30-1002	DIODE RECTI 100V1A 1N4002/10D1
ZD601	30-1041	DIODE ZENER RD22EB3
ZD602	30-1041	DIODE ZENER RD22EB3
ZD701	30-1041	DIODE ZENER RD22EB3
ZD901	30-1041	DIODE ZENER RD22EB3
ZD902	30-1041	DIODE ZENER RD22EB3
ZD903	30-1041	DIODE ZENER RD22EB3
ZD904	30-1041	DIODE ZENER RD22EB3
BD901	30-1049	DIODE BRIDGE 200V3A KBLO2
BD902	30-1049	DIODE BRIDGE 200V3A KBLO2
BD903	30-1049	DIODE BRIDGE 200V3A KBLO2
BD904	30-1049	DIODE BRIDGE 200V3A KBLO2
ZD801	30-1050	DIODE ZENER RD6.8EN3
TRANSISTOR		
Q601	30-2404	TR 2SC2259
Q602	30-2404	TR 2SC2259
Q603	30-2259	TR 2SB649AC P -1.5A -160V
Q604	30-2259	TR 2SB649AC P -1.5A -160V
Q605	30-2259	TR 2SB649AC P -1.5A -160V
Q606	30-2259	TR 2SB649AC P -1.5A -160V
Q607	30-2260	TR 2SD669AC N 1.5A 160V
Q608	30-2260	TR 2SD669AC N 1.5A 160V
Q609	30-2260	TR 2SD669AC N 1.5A 160V
Q610	30-2260	TR 2SD669AC N 1.5A 160V
Q611	30-2260	TR 2SD669AC N 1.5A 160V
Q612	30-2260	TR 2SD669AC N 1.5A 160V
Q613	30-2259	TR 2SB649AC P -1.5A -160V
Q614	30-2259	TR 2SB649AC P -1.5A -160V
Q615	30-2399-1	TR 2SC3519A N 15A 180V
Q616	30-2399-1	TR 2SC3519A N 15A 180V
Q617	30-2398-1	TR 2SA1386A P -15A -180V
Q618	30-2398-1	TR 2SA1386A P -15A -180V
Q619	30-2399-1	TR 2SC3519A N 15A 180V
Q620	30-2399-1	TR 2SC3519A N 15A 180V
Q621	30-2398-1	TR 2SA1386A P -15A -180V
Q622	30-2398-1	TR 2SA1386A P -15A -180V
Q623	30-2260	TR 2SD669AC N 1.5A 160V
Q624	30-2260	TR 2SD669AC N 1.5A 160V
Q625	30-2259	TR 2SB649AC P -1.5A -160V
Q626	30-2259	TR 2SB649AC P -1.5A -160V
Q627	30-2353	TR BC639 N 1.5A 80V
Q628	30-2353	TR BC639 N 1.5A 80V
Q629	30-2354	TR BC640 P -1.5A -80V
Q630	30-2354	TR BC640 P -1.5A -80V
Q631	30-2237	TR BF422 N 20MA 250V
Q632	30-2237	TR BF422 N 20MA 250V
Q701	30-2238	TR BF423 P -20MA -250V
Q901	30-2260	TR 2SD669AC N 1.5A 160V
Q902	30-2260	TR 2SD669AC N 1.5A 160V
Q903	30-2090	TR BC546 N 200MA 65V
Q904	30-2090	TR BC546 N 200MA 65V
Q905	30-2090	TR BC546 N 200MA 65V
Q906	30-2090	TR BC546 N 200MA 65V
Q907	30-2096	TR BC556B P -100MA -65V
Q908	30-2096	TR BC556B P -100MA -65V
Q909	30-2096	TR BC556B P -100MA -65V
Q910	30-2096	TR BC556B P -100MA -65V
Q911	30-2259	TR 2SB649AC P -1.5A -160V
Q912	30-2259	TR 2SB649AC P -1.5A -160V
Q913	30-2353	TR BC639 N 1.5A 80V
Q914	30-2353	TR BC639 N 1.5A 80V
Q915	30-2354	TR BC640 P -1.5A -80V

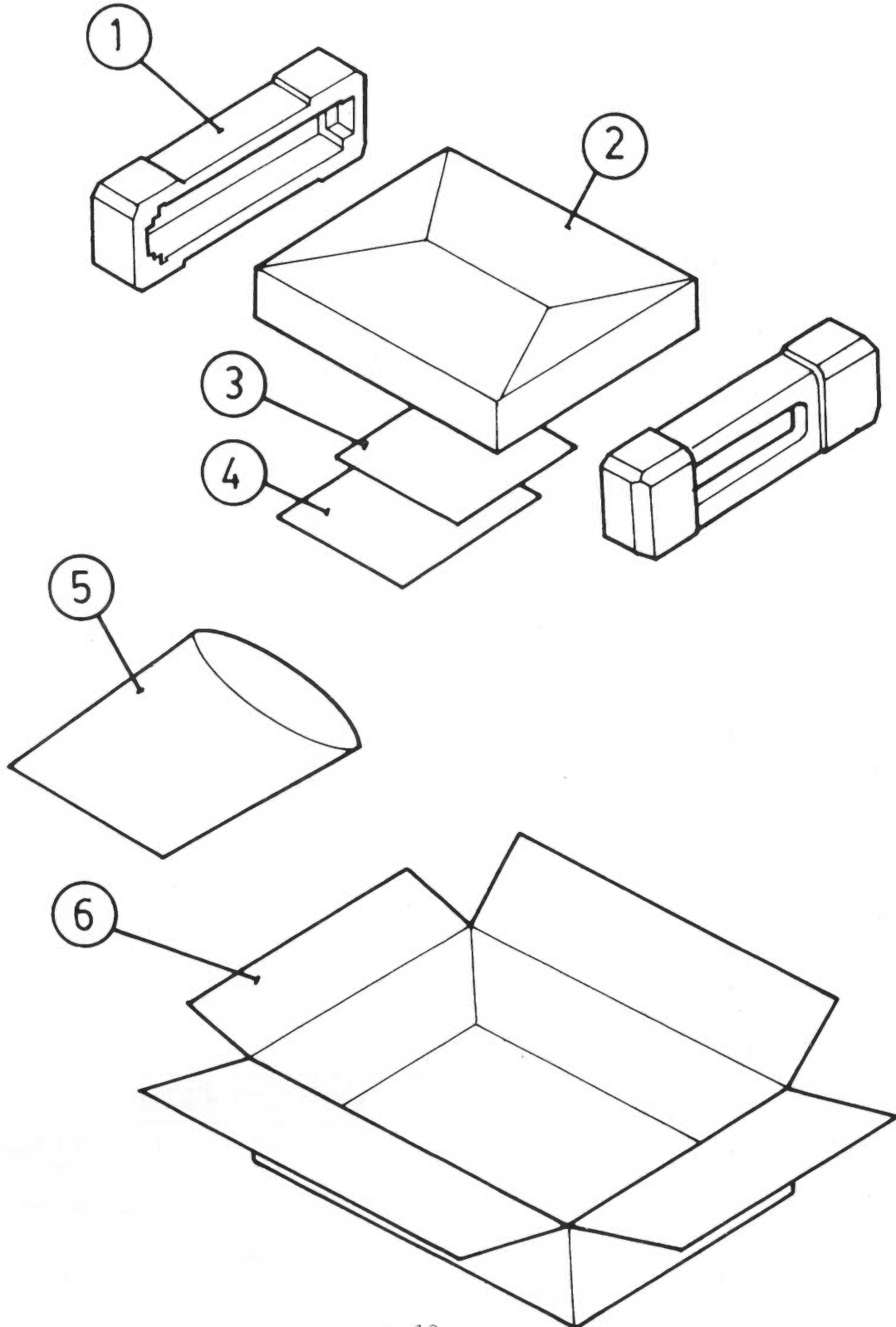
REF. NO.	PARTS NO.	DESCRIPTION
Q916	30-2354	TR BC640 P -1.5A -80V
LED		
LED	30-1075	LED RD LT3211R/X-253PFR
LED	30-1076	LED YW LT-3251Y/X-253FY
LED	30-1085	LED GN LT3231G/X-253FG
LED	30-1085	LED GN LT3231G/X-253FG
MISCELLANEOUS		
IC601	30-3247	IC DUAL OP M5219L 8P
IC602	30-3247	IC DUAL OP M5219L 8P
IC701	30-3187	IC PROTECTION TA7317P 9P
IC801	30-3404	IC TA7318 9P
IC802	30-3038	IC METER DRIVER LB1405 16P
LAMP	31-2044	LAMP 4.75MMD 6.3V 150MA 320MM
RELAY	35-3058	RELAY DC24V SRU-S-124D
VR601	VR03-F08501B	SEMI-FIX 8* 500B FLAT W/SHAFT
VR602	VR03-F08501B	SEMI-FIX 8* 500B FLAT W/SHAFT
VR801	VR03-F08501B	SEMI-FIX 8* 500B FLAT W/SHAFT
VR802	VR03-F08501B	SEMI-FIX 8* 500B FLAT W/SHAFT
VR803	VR06-F06223B	SEMI-FIX 6* 22KB FLAT
	31-2043	LAMP 6V 300mA
	12-2201	RCA JACK 1P WHITE
	12-2202	RCA JACK 1P RED
	16-2002	THERMAL PROTECTOR
	14-5061	PW CORD SPT-2 #16
	14-5064	PW CORD PLUG D&N S F
	14-5065	PW CORD UK
	14-5063	PW CORD PLUG
	29-2168-1/1A	XFMR PW R-100 120V
	29-2168-5/5A	xfmr pw r-100 115V/230V
	31-1272	SW PW PUSH UL/CAS
	31-1292	SW PW PUSH ESB-90702V
	31-1380	SW VOLTAGE SELECTOR
	32-2005	FUSE HOLDER FH-032
	32-2012	FUSE HOLDER FH-B02 SEMKO
	32-1315IS	FUSE SEMKO SLOW 3.15A
	32-1160IS	SUSE SEMKO SLOW 1.6A
	32-14001W	FUSE US/CSA SLOW 4A

ASSEMBLY DIAGRAM



PACKING DIAGRAM

1	POLYLONE	34-1054	2
2	POLY PAPER	26-0001	1
3	WARRANTY CARD		1
4	MANUAL	21-4167	1
5	POLY BAG	26-2434 *A	1
6	INNER CARTON	CT-5320	1



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