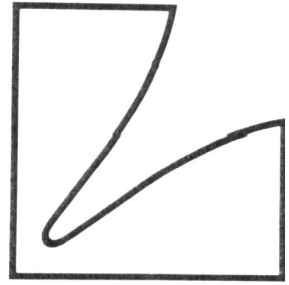


# SERVICE MANUAL



SOLID STATE DC INTEGRATED  
AMPLIFIER **L-10**



## Semi-fixed VR Adjustment

### Main Amp

#### Idling Current / PB-1139 VR402(L ch) PB-1140 VR502(R ch)

- (1) Disconnect the jumper lead between the printed terminals 27(TP-1) and 28(TP-2) of PB-1139 on L ch of the main amp and 25(TP-1) and 26(TP-2) of PB-1140 on R ch.
- (2) Connect a DC amperemeter in between 27 and 28 on L ch and or 25 and 26 on R ch, making 27 and 25 positive respectively.
- (3) Adjust the VR402 to obtain 80mA reading on the meter 5 minutes after turning the power switch on.  
Same should be done with the VR502 on R ch.
- (4) After each adjustment the jumper leads should be respectively connected as before.

#### DC Offset / PB-1139 VR401(L ch) PB-1140 VR501(R ch) 500-ohm

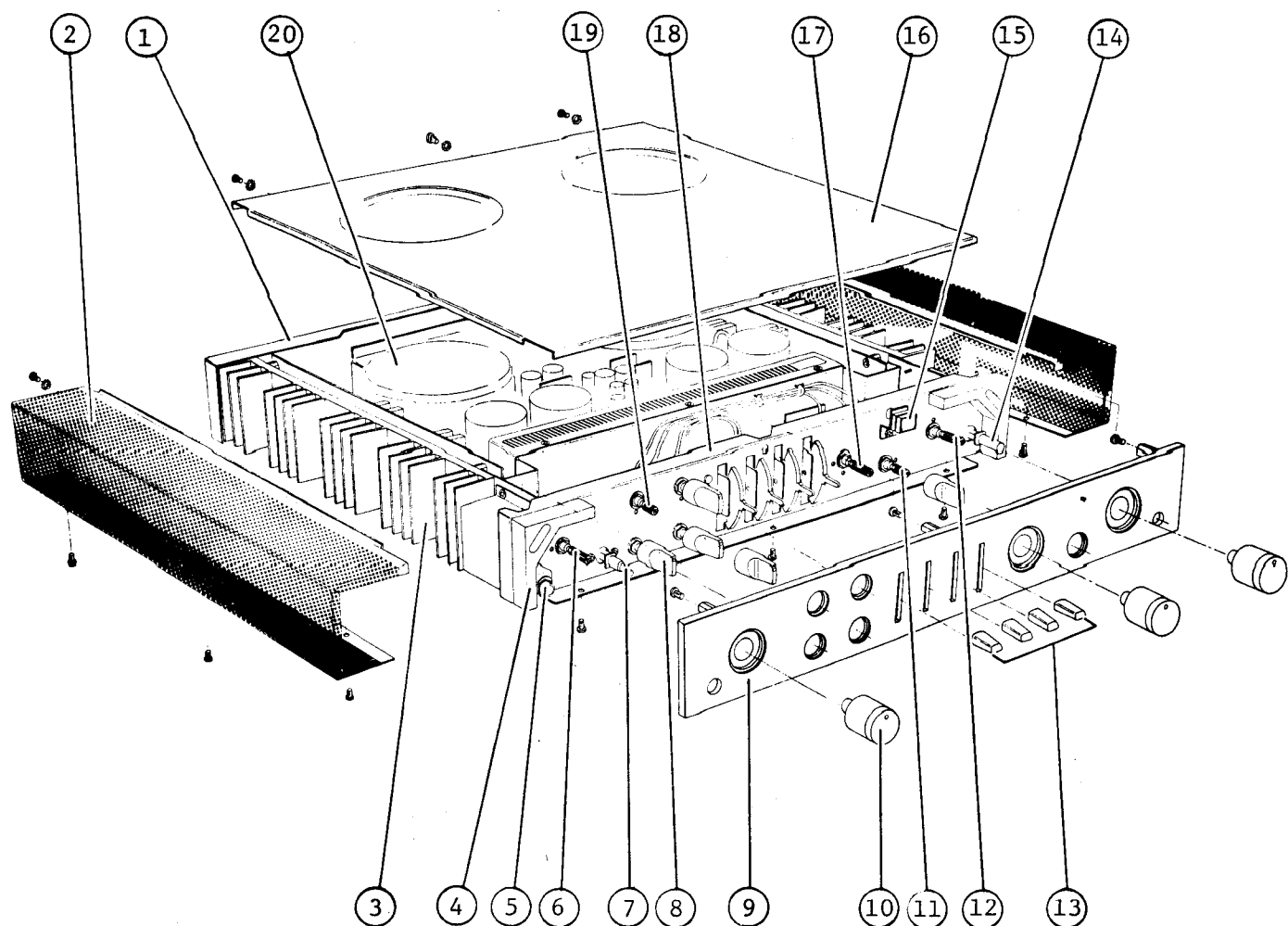
- (1) Connect a DC voltmeter to the speaker terminals and adjust the VR401(L ch) and VR501(R ch) to obtain  $0V \pm 20mV$  reading on the meter.

### EQ OUT

#### DC Offset / PB-1141 VR101a(L ch) VR101b(R ch) 2K-ohm

- (1) Connect a DC voltmeter between the ground(chassis) and any adjacent test point to the C114a of PB-1141 and adjust the VR101a to obtain  $0V \pm 50mV$  reading on the meter.
- (2) Same procedure should be taken with VR101b and test point adjacent to the C114b on R ch adjustment.

EXPLODED VIEW



- |   |  |
|---|--|
| 1. Rear Panel 1073(J)<br>1074(U)        | 11. Balance VR 6255-50kMN  |
| 2. Side Cover 1083(right)<br>1084(left) | 12. Main VR 6255WKHG110 30kAA-L  |
| 3. Heat Sink 1046                       | 13. Knob Set 1048  |
| 4. Spacer 1096                          | 14. Moulded Knob 1089  |
| 5. Headphone Jack LJ264-1-7             | 15. Indicator Lamp Holder 70   |
| 6. Speaker Switch 6255 SRF2035F         | 16. Bonnet 1004  |
| 7. Metal Knob 1097                      | 17. Rotary Switch (function)<br>6255 SRJ2024-L   |
| 8. Knob Set 1047                        | 18. Sub Panel 1035   |
| 9. Front Panel 1092                     | 19. Tone Compensator VR 6255 50kBB   |
| 10. Knob Set 1056                       | 20. Power Transformer P-2180(J)<br>P-2181(J)<br>P-2182(U)<br>P-2183(U)<br>P-2184B(S)<br>P-2185B(S) |

Replacement Parts List

Remarks

Capacitors: C.....Ceramic, E.....Electrolytic, MY....Mylar, G.....G Capacitor  
 S.....Styrol, T.....Tantalum, MI....Mica, MP....MP Capacitor  
 O.....Oil capacitor, TRIM.....Trimmer capacitor, AC....AC Capacitor  
 BP....Electrolytic Bi-Polar type

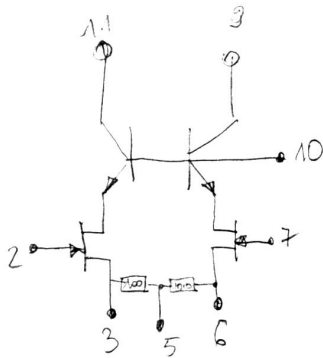
Resistors: ±10%, ±5%, 1/4W, unless specified otherwise

Type: (S).....Model for north European countries  
 (U).....Model for U.S.A. and CANADA  
 (E).....Standard model  
 (J).....Model for JAPAN

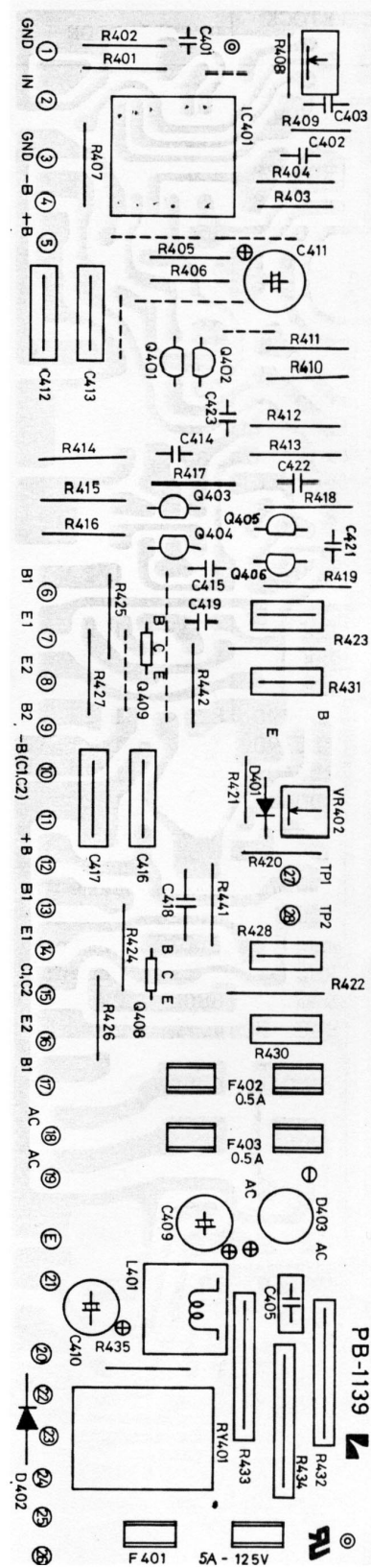
PB1139

SYMBOL NO.	STOCK NO.	DESCRIPTION	LOCATION	SYMBOL NO.	STOCK NO.	DESCRIPTION	LOCATION
R401	RD0043	1K		404	_____		
402	RD0004	1M		405	CQ0005	0.1μ 50V MY	
403	RD0020	68K		406	_____		
404	RD0028	15K		407	_____		
405	RD0028	15K		408	_____		
406	RD0028	15K		409	CE0104	33μ 50V E	
407	RD0022	47K		410	CE0096	220μ 35V E	
408	RN0378	680Ω		411	CE0148	10μ 100V E	
409	RN0422	47K		412	CQ0915	0.22μ MY	
410	RD0028	15K		413	CQ0915F	0.22μ MY	
	RD0069	10Ω		414	CM0056	33p 50V MI	
411	RD0028	15K		C415	CM0056	33p 50V MI	
412	RD0052	220Ω		416	CQ0915F	0.22μ MY	
413	RD0056	100Ω		417	CQ0915	0.22μ MY	
414	RD0046	680Ω		Q401	TR0165	2SC1775A	
415	RD0069	10Ω		402	TR0165	2SC1775A	
416	_____			403	TR0204	2SB646A	
417	RD0115	10K 1/2		404	TR0204	2SB646A	
418	RD0132	680Ω 1/2		405	TR0205	2SD666A	
419	RD0132	680Ω 1/2		406	TR0205	2SD666A	
420	RD0056	100Ω		407	TR0115	2SC1904	
421	RD0037	3.3K		408	TR0209	2SC2238 Y	
422	RD0290	82Ω 1/2		409	TR0210	2SA968 Y	
423	RD0290	82Ω 1/2		D401	TV0002	SV-03	
424	RD0407	15Ω 1/2		402	TD0001	1N4001	
425	RD0407	15Ω 1/2		403	TD0010	W04	
426	RD0407	15Ω 1/2		VR401	RT0068	500Ω	
	RG0072	0.22Ω Cement		402	RT0072	4.7K (B)	
427	RD0407	15Ω 1/2		IC401	TC0024	DML-01	
	RG0072	0.22Ω Cement		F401	BF0213	4A(T) Fuse (SK)	
428	_____				BF0213	4A(T) Fuse (SY)	
429	_____				BF0301	5A Fuse (J)	
430	RG0072	0.22Ω Cement			BF0301	5A Fuse (SB)	
431	RG0072	0.22Ω Cement			BF0301	5A Fuse (SG)	
432	RS0015	4.7Ω 2W			BF0301	5A Fuse (U)	
433	RS0015	4.7Ω 2W		402	BF0206	0.5A(T) Fuse (SK)	
434	RS0054	680Ω 2W			BF0206	0.5A(T) Fuse (SY)	
441	RD0069	10Ω			BF0308	0.5A Fuse (J)	
442	RD0069	10Ω			FB0308	0.5A Fuse (SB)	
C401	CM0060	47p 50V MI					
402	CQ0032	0.047μ 50V MY					
403	CM0050	10p 50V MI					

SYMBOL NO.	STOCK NO.	DESCRIPTION	LOCATION
403	FB0308	0.5A Fuse (SG)	
	BF0308	0.5A Fuse (U)	
	BF0206	0.5A(T)Fuse(SK)	
	BF0206	0.5A(T)Fuse(SY)	
	BF0308	0.5A Fuse (J)	
	BF0308	0.5A Fuse (SB)	
	BF0308	0.5A Fuse (SG)	
	BF0308	0.5A Fuse (U)	
RY401	AY0034	Relay )C-24	

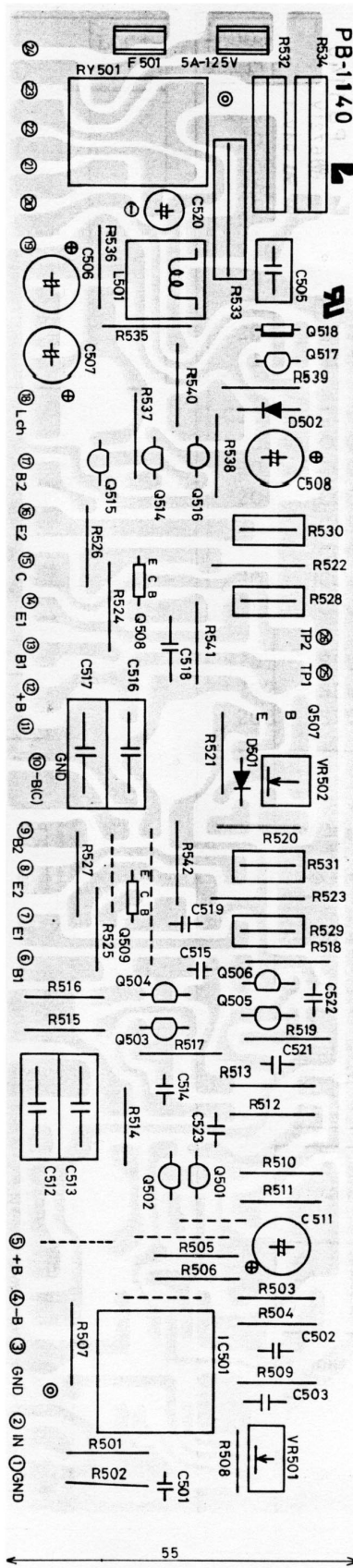


IC-401  
DHL-01



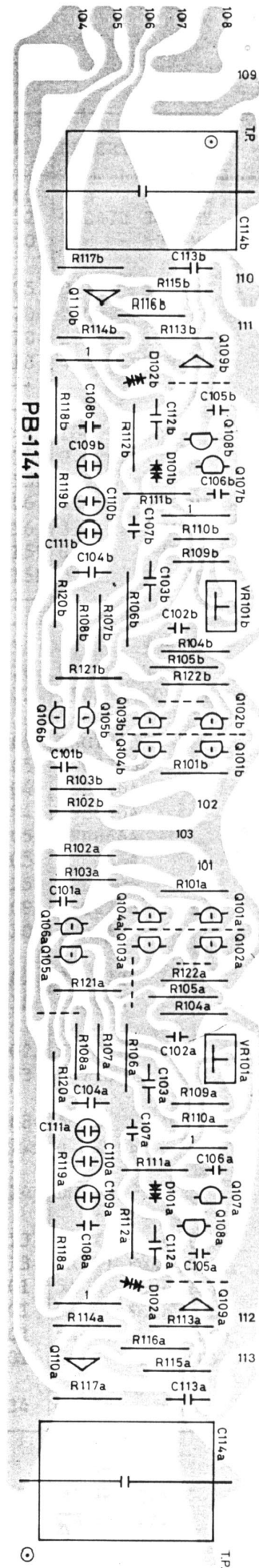
SYMBOL NO.	STOCK NO.	DESCRIPTION	LOCA-TION
R501	RD0043	1K	
502	RD0004	1M	
503	RD0020	68K	
504	RD0028	15K	
505	RD0028	15K	
506	RD0028	15K	
507	RD0022	47K	
508	RN0378	680Ω	
509	RN0422	47K	
510	RD0028	15K	
	RD0069	10Ω	
511	RD0028	15K	
512	RD0052	220Ω	
513	RD0056	100Ω	
514	RD0046	680Ω	
515	RD0069	10Ω	
516			
517	RD0115	10K 1/2	
518	RD0132	680Ω 1/2	
519	RD0132	680Ω 1/2	
520	RD0056	100Ω	
521	RD0037	3.3K	
522	RD0290	82Ω 1/2	
523	RD0290	82Ω 1/2	
524	RD0407	15Ω 1/2	
525	RD0407	15Ω 1/2	
526			
527			
528	RG0072	0.22Ω Cement	
529	RG0072	0.22Ω Cement	
530	RG0072	0.22Ω Cement	
531	RG0072	0.22Ω Cement	
532	RS0054	680Ω 2W	
533	RS0015	4.7Ω 2W	
534	RS0015	4.7Ω 2W	
535	RD0033	6.8K	
536	RD0033	6.8K	
537	RD0043	1K	
538	RD0028	15K	
539	RD0002	2.2M	
540	RD0032	8.2K	
541	RD0069	10Ω	
542	RD0069	10Ω	
R426	RD0407	15Ω 1/2	
427	RD0407	15Ω 1/2	

SYMBOL NO.	STOCK NO.	DESCRIPTION	LOCA-TION
C501	CM0060	47p 50V MI	
502	CQ0032	0.047μ 50V MY	
503	CM0050	10p 50V MI	
504			
505	CQ0005	0.1μ 50V MY	
506	CE0070	220μ 10V E	
507	CE0070	220μ 10V E	
508	CE0118	47μ 25V E	
509			
510			
511	CE0148	10μ 100V E	
512	CQ0915F	0.22μ MY	
513	CQ0915F	0.22μ MY	
514	CM0056	33p 50V MI	
515	CM0056	33p 50V MI	
516	CQ0915F	0.22μ MY	
517	CQ0915F	0.22μ MY	
518			
519			
520	CE0151	4.7μ 50V E	
521	CQ0126	0.01μ 50V MY	
522	CM0072	150p 50V MI	
Q501	TR0165	2SC1775A	
502	TR0165	2SC1775A	
503	TR0204	2SB646A	
504	TR0204	2SB646A	
505	TR0205	2SD666A	
506	TR0205	2SD666A	
507	TR0115	2SC1904	
508	TR0209	2SC2238 Y	
509	TR0210	2SA968 Y	
516	TR0162	2SA872	
518	TR0118	2SD234 Y	
D501	TV0002	SV-03	
502	TD0073	WG713	
VR501	RT0068	500Ω	
502	RT0072	4.7K (B)	
IC501	TC0024	DML-01	
F501	BF0213	4A(T) Fuse (SK)	
	BF0213	4A(T) Fuse (SY)	
	BF0301	5A Fuse (J)	
	BF0301	5A Fuse (SB)	
	BF0301	5A Fuse (SG)	
	BF0301	5A Fuse (U)	
RY501	AY0034	OC-24	



PB1141

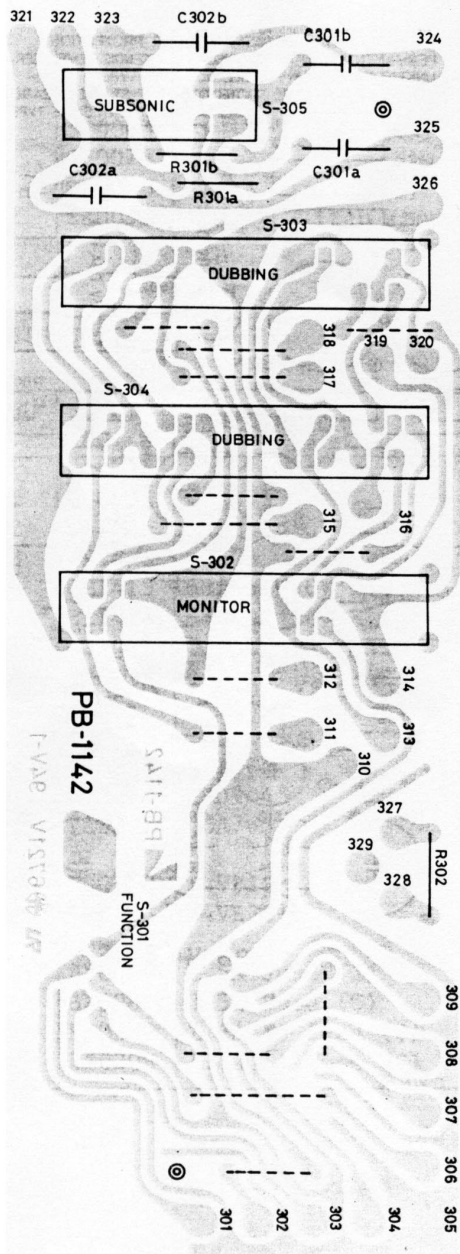
SYMBOL NO.	STOCK NO.	DESCRIPTION	LOCATION
R101	RD0021	56K	
102	RD0049	390Ω	
103	RD0049	390Ω	
104	RD0026	22K	
105	RD0022	47K	
106	RD0021	56K	
107	RN0366	220Ω	
108	RN0366	220Ω	
109	RN0370	330Ω	
110	RN0370	330Ω	
111	RD0042	1.2K	
112	RD0026	22K	
113	RD0050	330Ω	
114	RD0026	22K	
115	RS1052	56Ω	
116	RD0052	220Ω	
117	RD0012	270K	
118	RN0446	470K	
119	RN0420	39K	
120	RD0048	470Ω	
121	RD0046	680Ω	
122	RN0374	470Ω	
C101	CM0056	33p 50V MI	
102	CQ0130	1000p 50V MY	
103	CQ0007	0.068μ 50V MY	
104	CQ0007	0.068μ 50V MY	
105	CM0052	15p 50V MI	
106	CQ0127	3900p 50V MY	
107	CQ0127	3900p 50V MY	
108	CQ0070	6200p 50V S	
109	CQ0210	620p 50V S	
110	CQ0068	1800p 50V S	
111	CQ0065	180p 50V S	
112	CQ0032	0.047μ 50V MY	
113	CQ0032	0.047μ 50V MY	
114	CQ0955	3.3μ 100V MY	
Q101	TF0009	2SK68A	
102	TF0009	2SK68A	
103	TR0025	2SC1345	
104	TR0025	2SC1345	
105	TR0125	2SA836	
106	TR0125	2SA836	
107	TR0125	2SA836	
108	TR0125	2SA836	
109	TR0224	2SD666	
110	TR0224	2SD666	
D101	TV0005	VD-1221	
102	TV0005	VD-1221	
VR101	RT0070	2K	





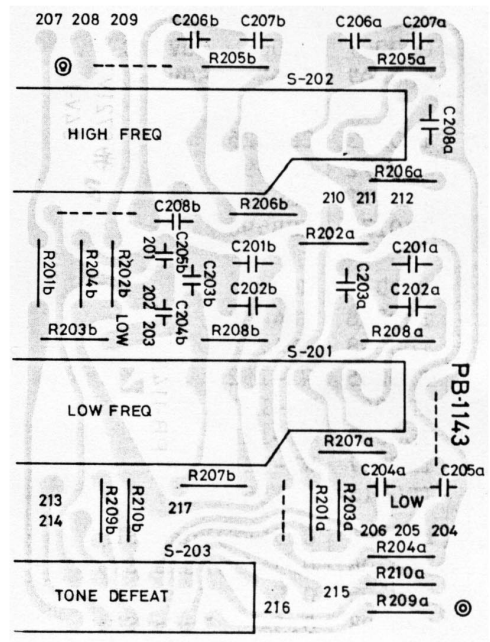
PB1142

SYMBOL NO.	STOCK NO.	DESCRIPTION	LOCATION
R301	RD0004	1M	
302	RS1046	33Ω	
C301	CQ0608	0.68μ 100V F	
302	CQ0608	0.68μ 100V F	
S301	SR0049	Function	
302	SL0032	Monitor	
304	SL0033	Dubbing	
305	SL0030	Subsonic	

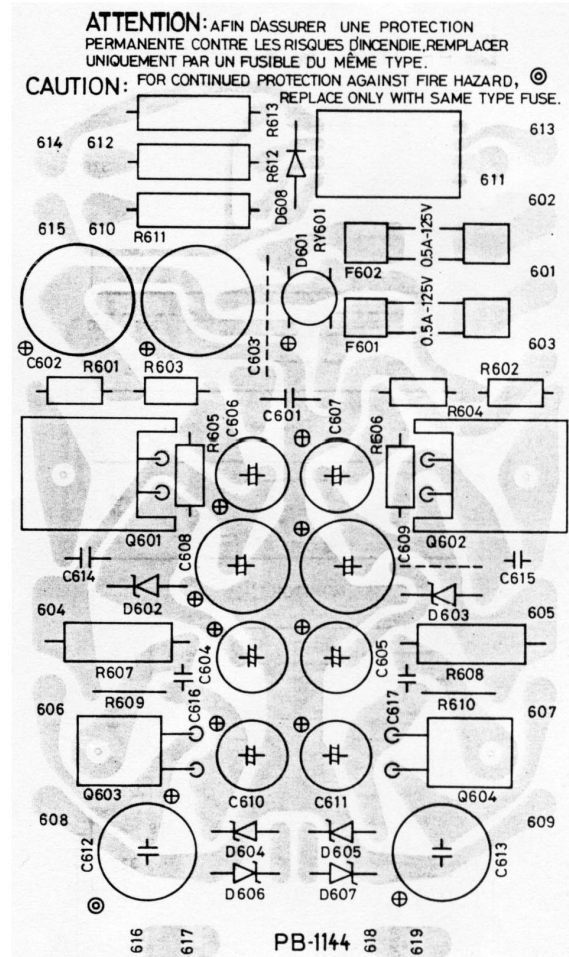


PB1143

SYMBOL NO.	STOCK NO.	DESCRIPTION	LOCATION
R201	RB0202	6.8K	
202	RB0202	6.8K	
203	RB0208	12K	
204	RB0208	12K	
205	RB0254	1M	
206	RB0254	1M	
207	RB0254	1M	
208	RB0254	1M	
209	RB0212	18K	
210	RB0212	18K	
C201	CQ0013	0.022μ 50V MY	
202	CQ0004	0.15μ 50V MY	
203	CQ0018	5600p 50V MY	
204	CQ0018	5600p 50V MY	
205	CQ0018	5600p 50V MY	
206	CQ0022	2700p 50V MY	
207	CQ0020	3900p 50V MY	
208	CQ0157	0.018μ 50V MY	
S201	SR0079	Low Frequency	
202	SR0079	High Frequency	
203	SP0079	Tone Defeat	



SYMBOL NO.	STOCK NO.	DESCRIPTION	LOCATION
R601	RS0074	100	
602	RS0074	100	
603	RD0117	4.7K	
604	RD0117	4.7K	
605	RD0129	1.5K	
606	RD0129	1.5K	
607	RS0050	470	
608	RS0050	470	
609	RD0033	6.8K	
610	RD0033	6.8K	
613	RS0094	1K	
C601	CU0012	5.3μ 160V AC	
602	CE0111	100p 100V E	
603	CE0111	100p 100V E	
604	CE0107	47p 63V E	
605	CE0107	47p 63V E	
606	CE0079	220p 16V E	
607	CE0079	220p 16V E	
608	CE0108	100p 63V E	
609	CE0108	100p 63V E	
610	CE0102	47p 50V E	
611	CE0102	47p 50V E	
612	CE0096	220p 35V E	
613	CE0096	220p 35V E	
614	CC0007	100p 50V C	
615	CC0007	100p 50V C	
616	CC0007	100p 50V C	
617	CC0007	100p 50V C	
Q601	TR0173	2SD526	
602	TR0172	2SB596	
603	TR0173	2SD526	
604	TR0172	2SB596	
D601	TD0010	W04	
602	TD0098	IN4758A	
603	TD0098	IN4758A	
604	TD0065	WZ-192	
605	TD0065	WZ-192	
606	TD0027	WZ-120	
607	TD0027	WZ-120	
608	TD0015	1S1554V	
F601	BF0206	0.5A(T)Fuse(SK)	
	BF0206	0.5A(T)Fuse(SY)	
	BF0308	0.5A Fuse(J)	
	BF0308	0.5A Fuse(SB)	
	BF0308	0.5A Fuse(SG)	
	BF0308	0.5A Fuse(U)	
602	BF0206	0.5A(T)Fuse(SK)	
	BF0206	0.5A(T)Fuse(SY)	
	BF0308	0.5A Fuse(J)	
	BF0308	0.5A Fuse(SB)	
	BF0308	0.5A Fuse(SG)	
	BF0308	0.5A Fuse(U)	
RY601	AY0033	Relay 644D24	



REAR-PANEL UNIT

SYMBOL NO.	STOCK NO.	DESCRIPTION	LOCATION
C008	CK0049	0.1 $\mu$ 12V K	

SUB-PANEL UNIT

SYMBOL NO.	STOCK NO.	DESCRIPTION	LOCATION
VR001	RV0174		
002	RV0174	Tone Compensator	
003	RV0173	" "	
004	RV0107	Balance	
		Main Volume	
S001	SP0063	Power Switch (J)	
	SP0063	" (UW)	
	SP0063	" (UZ)	
	SP0078	" (S)	
	SP0090	" (S)	
002	SR0051	Rotary Switch (Mode)	

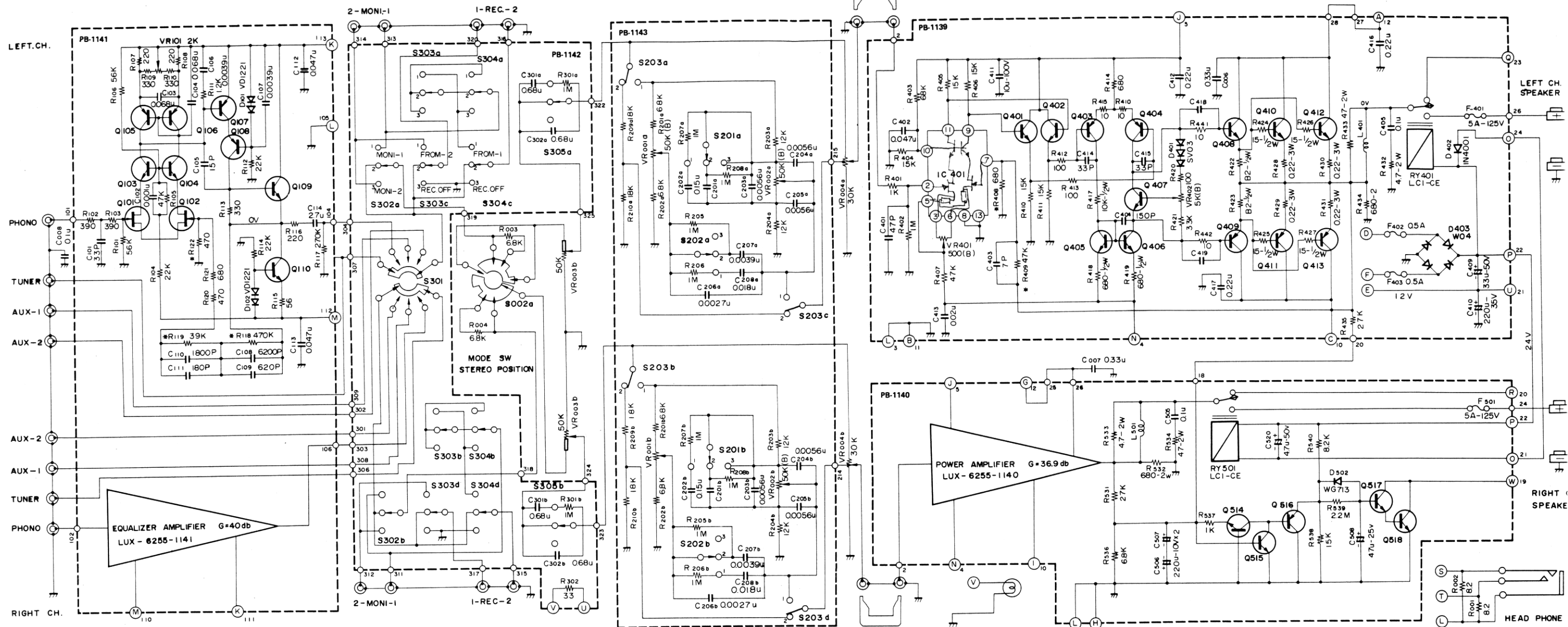
CHASSIS UNIT

SYMBOL NO.	STOCK NO.	DESCRIPTION	LOCATION
C001	CU0001	0.047 $\mu$	
002	CE1415	6800p 50V E	
003	CE1416	6800p 50V E	
004	CE1415	6800p 50V E	
005	CE1416	6800p 50V E	
009	CU0012	0.001 $\mu$ 160V AC	
010	CU0012	0.001 $\mu$ 160V AC	
Q410	TR0226	2SC1445	
411	TR0225	2SA765	
412	TR0226	2SC1445	
413	TR0225	2SA765	
D002	TD0123	S4VB20	
003	TD0123	S4VB20	
F001	BF0080	3.5A Fuse (J)	
	BF0080	3.5A Fuse (U)	
	BF0209	1.6A(T) Fuse (S)	
	BF0209	1.6A(T) Fuse (S)	

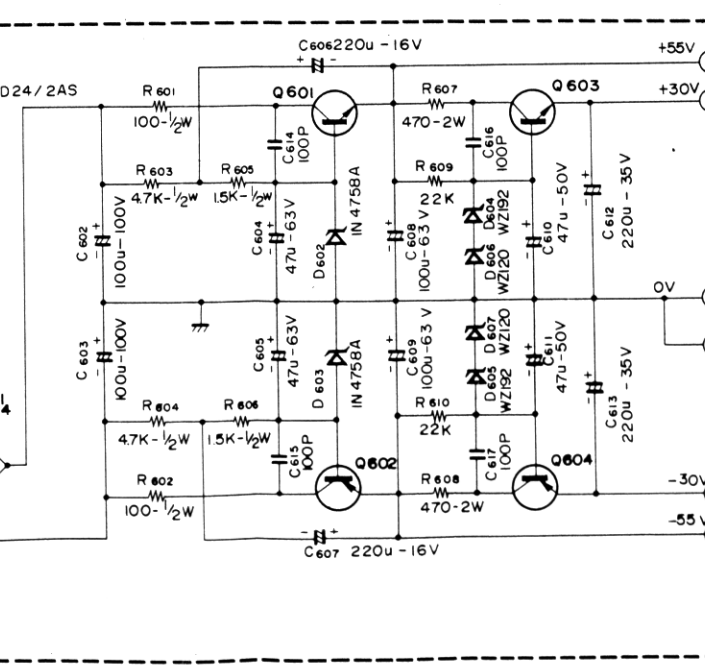
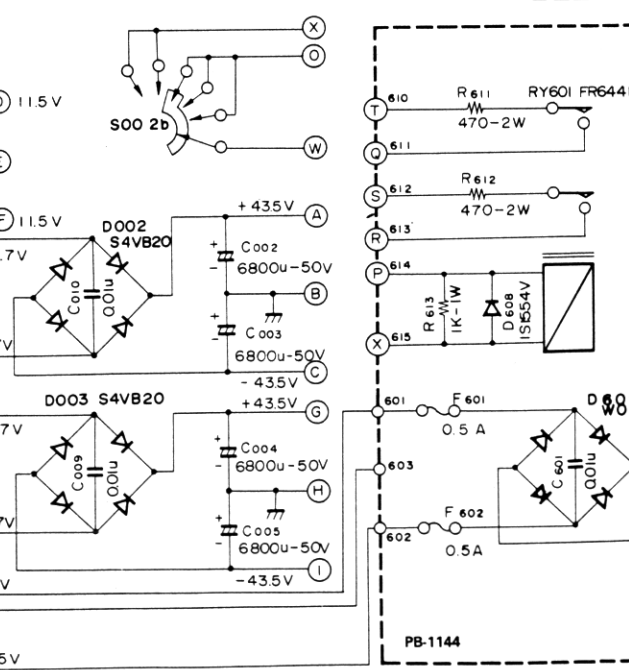
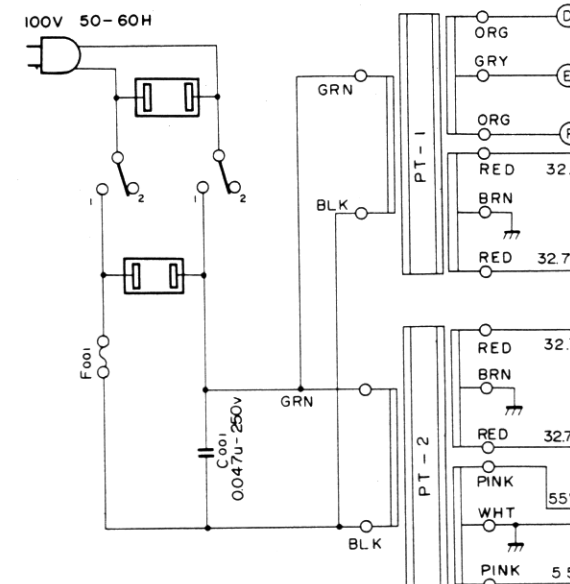
## L-10 SPECIFICATIONS

<b>Power Output:</b>	55 watts minimum continuous per channel into 8 ohms load, both channels driven, at any frequency from 20Hz to 20,000Hz with no more than 0.015% total harmonic distortion.
<b>Rated I.M.:</b>	no more than 0.015% (8 ohms, 55W, 60Hz : 7 kHz = 4 : 1)
<b>Damping Factor:</b>	80 (8 ohms, 1 kHz)
<b>Input Sensitivity:</b>	phono; 3mV, tuner, aux.; 300mV main in; 300mV
<b>Signal-to-Noise Ratio:</b>	phono; no less than 90dB (IHF-A weighted, input 10mV input short-circuited) tuner, aux.; no less than 100dB (IHF-A weighted, input short-circuited) main in; no less than 100dB (IHF-A weighted, input short-circuited)
<b>Input Equivalent Noise:</b>	phono; no more than -131dBV (IHF-A weighted, input short-circuited) tuner; no more than -111dBV (IHF-A weighted, input short-circuited) main in; no more than -111dBV (IHF-A weighted, input short-circuited)
<b>Frequency Response:</b>	phono; 20 Hz—20,000 Hz ( $\pm 0.2$ dB) tuner, aux.; DC—100,000 Hz (-1 dB) main in; DC—100,000 Hz (-1 dB)
<b>Pre Amp Output Voltage:</b>	pre. out: typical 300 mV, max 18 V rec. out: typical 300 mV, max 18 V
<b>Tone Compensator:</b>	variable range; + 2 dB, -2.5 dB maximum (continuously variable) Bass Turnover Frequency: 50 Hz, 200 Hz, 700 Hz Treble Turnover Frequency: 700 Hz, 3 kHz, 10 kHz
<b>Protection Circuit:</b>	Speaker Protection Circuit by sensing DC voltage Excessive Current Protection Circuit
<b>Other Features:</b>	Subsonic Filter (10 Hz, normal, 20 Hz), TAPE-1 Recording Selector (from-1, source, rec. off), TAPE-2 Recording Selector (from-2, source, rec. off), Tape Monitor Switch (tape-1, source, tape-2), Headphone Jack, Extra AC Outlets (SWITCHED, UNSWITCHED)
<b>Power Consumption:</b>	230 W (8 ohms, maximum output) 280 VA (CSA rated)
<b>Dimensions:</b>	438(W) x 363(D) x 78(H) mm (17-1/4" x 14-19/64" x 3-5/64")
<b>Weight:</b>	Net 10.5 kgs (23.1 lbs.) Gross 12.0 kgs (26.4 lbs.)

Specifications and appearance design are subject to possible change without notice.



PT-1 ... J-MODEL : P-2180, U-MODEL : P-2182, S-MODEL : P-2186  
 PT-2 ... J-MODEL : P-2181, U-MODEL : P-2183, S-MODEL : P-2187  
 F001 ... J & U-MODEL : 3.5A-125V, S-MODEL : 1.6A-250V



**PB-1139**

IC401	.....	DML-01
Q401, Q402	.....	2SC1775A
Q403, Q404	.....	2SB645A
Q405, Q406	.....	2SD666A
Q407	.....	2SC1904
Q408	.....	2SC2238
Q409	.....	2SA968
Q410, Q412	.....	2SC1445
Q411, Q413	.....	2SA765

**PB-1140**

IC501	.....	DML-01
Q501, Q502	.....	2SC1775A
Q503, Q504	.....	2SB646A
Q505, Q506	.....	2SD666A
Q507	.....	2SC1904
Q508	.....	2SC2238
Q509	.....	2SA968
Q510, Q512	.....	2SC1445
Q511, Q513	.....	2SA765
Q514, Q515	.....	2SC1775
Q517	.....	2SA872
Q516	.....	2SA872
Q518	.....	2SD234

**PB-1141**

Q101, Q102	.....	2SK68A
Q103, Q104	.....	2SC1345
Q105, Q106	.....	2SA836
Q107, Q108	.....	2SD666
Q109, Q110	.....	2SD666

- PB-1144**
- |            |       |        |
|------------|-------|--------|
| Q601, Q603 | ..... | 2SD526 |
| Q602, Q604 | ..... | 2SB596 |
- SWITCHES**
- S301 ... FUNCTION (1. TUNER 2. PHONO 3. AUX-1 4. AUX-2)
  - S002 ... MODE (1. PHONE MONO 2. PHONE STEREO 3. STEREO 4. REV 5. MONO)
  - S302 ... MONITOR SW (1. MONI-1 2. SOURCE 3. MONI-2)
  - S303 ... DUBBING SW. TAPE-1 (1. FROM-2 2. SOURCE 3. REC. OFF.)
  - S304 ... DUBBING SW. TAPE-2 (1. FROM-1 2. SOURCE 3. REC. OFF.)
  - S305 ... SUBSONIC FILTER (1. 10Hz 2. OFF 3. 20Hz)
  - S203 ... TONE COMPENSATOR (1. ON 2. DEFEAT)
  - S202 ... TURN OVER SELECTOR (1. 700Hz 2. 3kHz 3. 10kHz)
  - S201 ... TURN OVER SELECTOR (1. 50Hz 2. 200Hz 3. 700Hz)
  - S001 ... POWER (1. ON 2. OFF.)
- VOLUME**
- VR001 ... TONE COMPENSATOR
  - VR002 ... TONE COMPENSATOR
  - VR003 ... BALANCER
  - VR004 ... CONTROL VOLUME
  - VR101 ... DC OFFSET ADJ.
  - VR401, VR501 ... DC OFFSET ADJ.
  - VR402, VR502 ... BIAS CURRENT ADJ.

1. UNLESS OTHERWISE SPECIFIED, ALL RESISTOR ARE IN OHM 1/4 WATT. ALL CAPACITOR ARE IN FARAD.  
 2. TRANSISTOR AND DIODES MAY BE REPLACED WITH ANY TYPE HAVING COMPARABLE RATINGS.  
 3. DUE TO CONTINUED IMPROVEMENTS LUX RESERVE THE RIGHT TO ALTER THE CIRCUIT OR SPECIFICATION.  
 \* METAL FILM RESISTOR.

