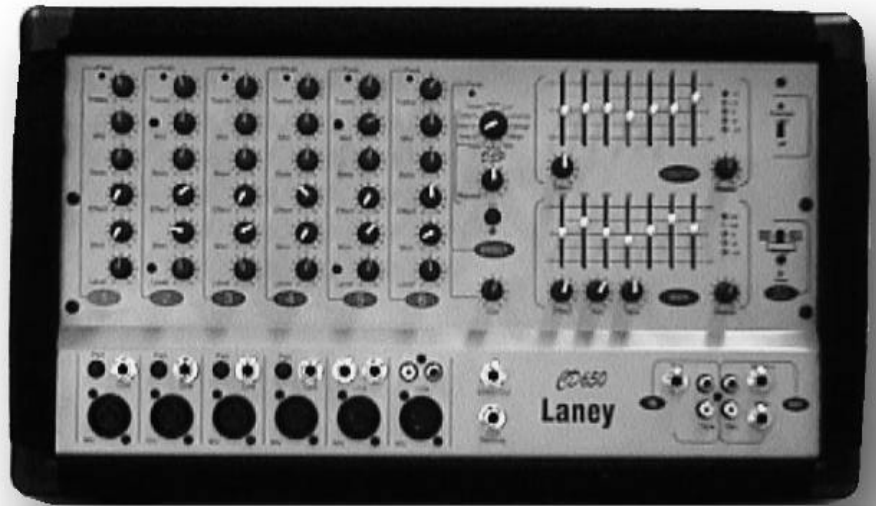


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# Concept



## CD650 Mixer/Amplifier Service Information

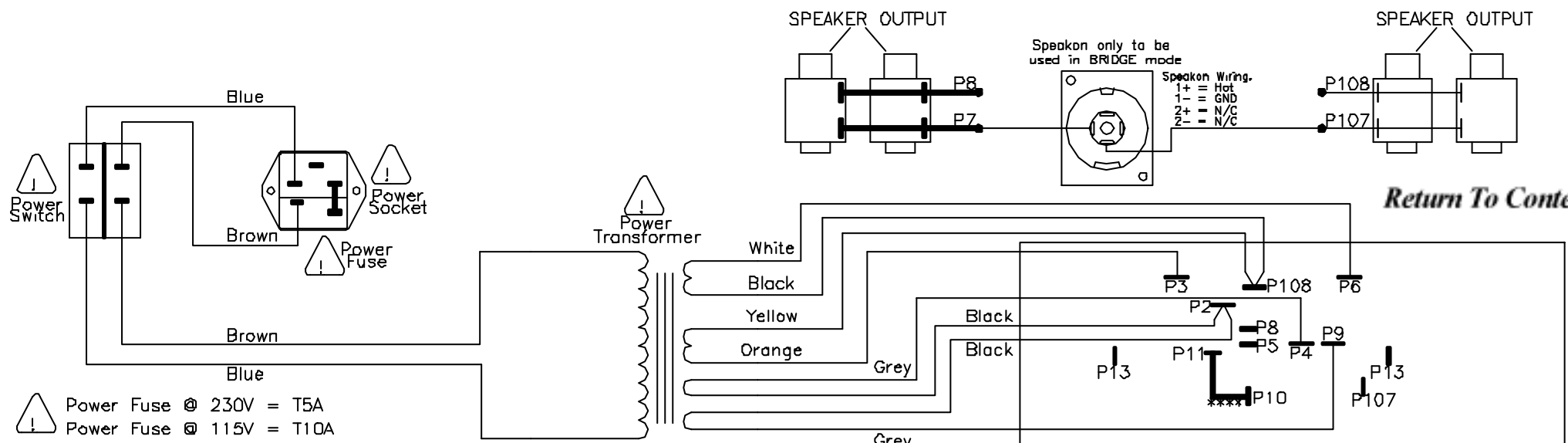
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for a new millennium**

Part Number - SM3041

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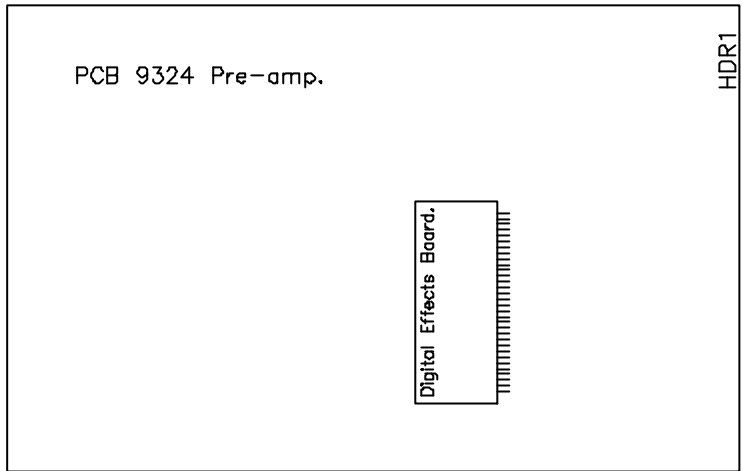
## Contents

- 1.DWG 3044 Service Schematic
- 2.DWG 2615 Mains Wiring
- 3.DWG 3010 Block Diagram
- 4.DWG 9324 Preamp Diagram Channel (Issue 2)
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- 9.DWG 9323 Power Amp Diagram (Issue 2)
- 10.DWG 9323 Power Amp Diagram (Issue 3)
- 11.Pre-amp PCB Assembly List
- 12.Output PCB Assembly list
- 13.Final Assembly List
- 14.Cabinet Assembly List
- 15.Contact



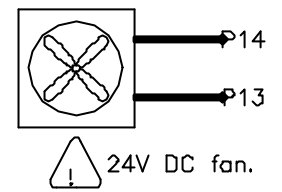
⚠ Power Fuse @ 230V = T5A  
 ⚠ Power Fuse @ 115V = T10A

⚠ Power Transformer @ 230V = 8T-6134  
 ⚠ Power Transformer @ 115V = 8T-6135  
 ref drawing 2615 for mains wiring info.



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\*\*\*\* Option for Thermal Trip



⚠ =ONLY REPLACE WITH SAME TYPE AND RATING

ISSUE	DESCRIPTION	APPD.	DATE

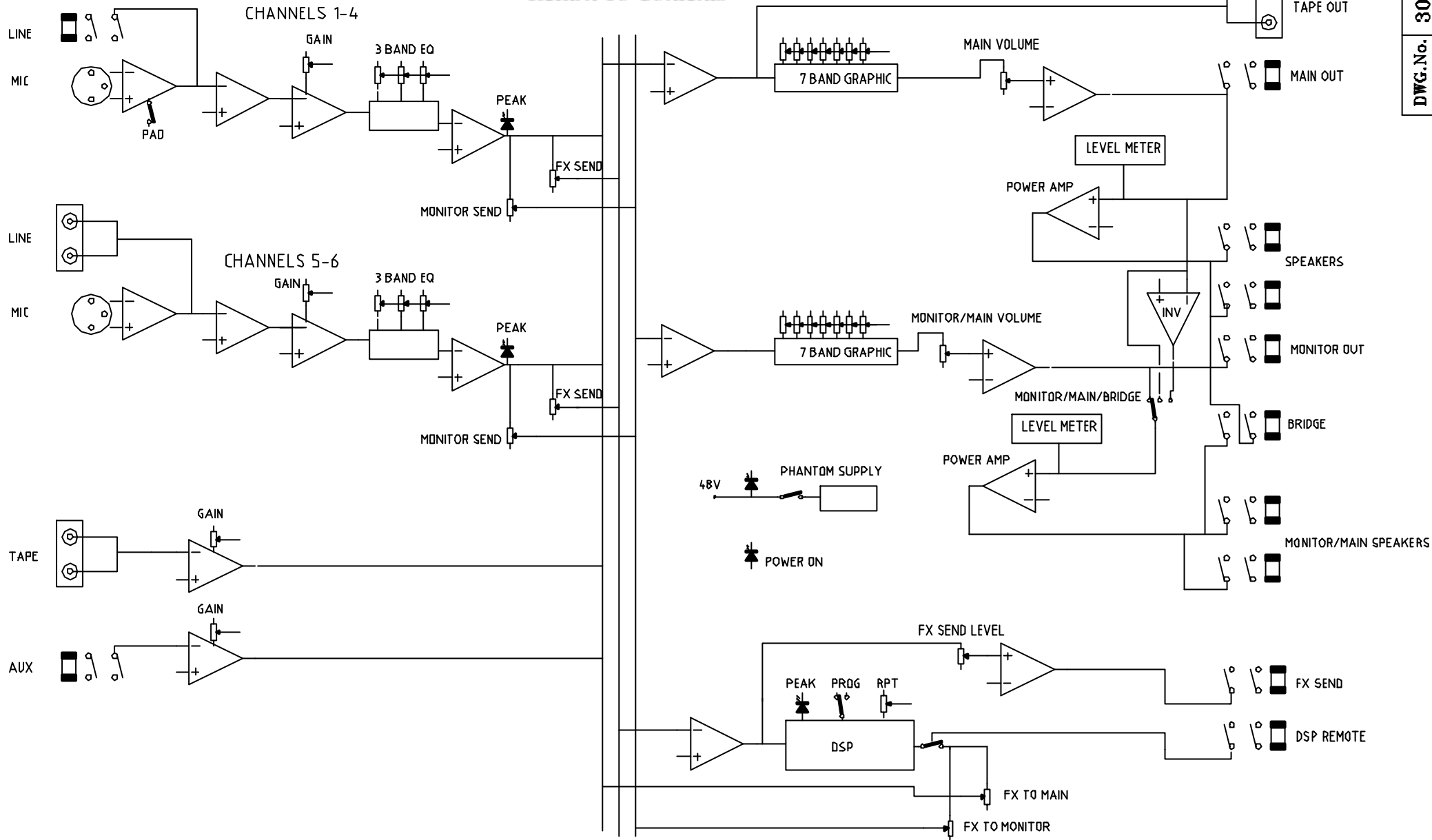
**BLT**  
 Industries Ltd.

**TITLE**  
 CD650 Service Schematic  
 PART No

DRAWN	TRACED	CHECKED	APPROVED	DATE
S.L.				15/11/99
DRAWING No.		3044		



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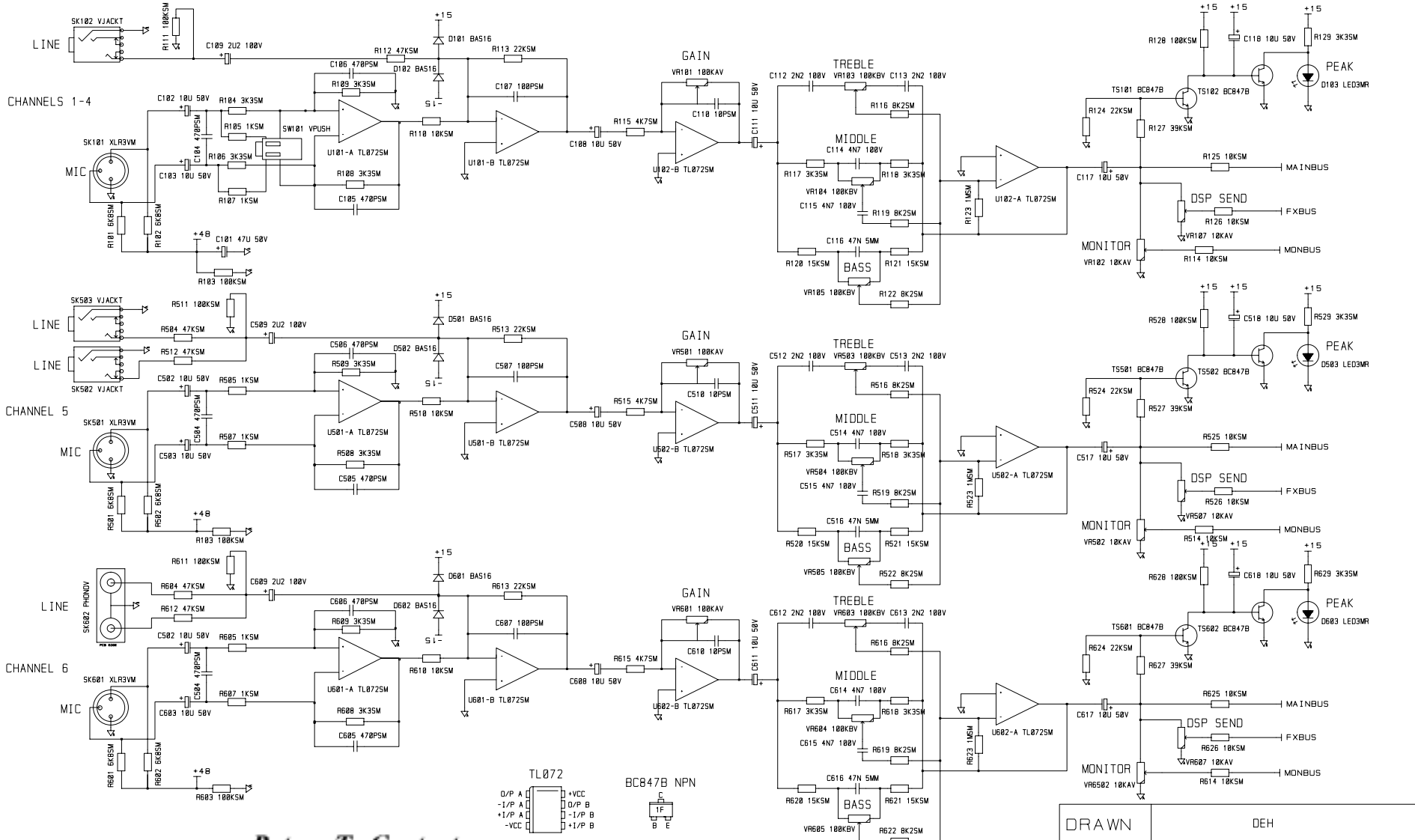
DWG.No. 3010

ISSUE	DESCRIPTION	APPD.	DATE

**BLT**  
Industries Ltd.

**TITLE**  
CD650  
BLOCK DIAGRAM  
PART No

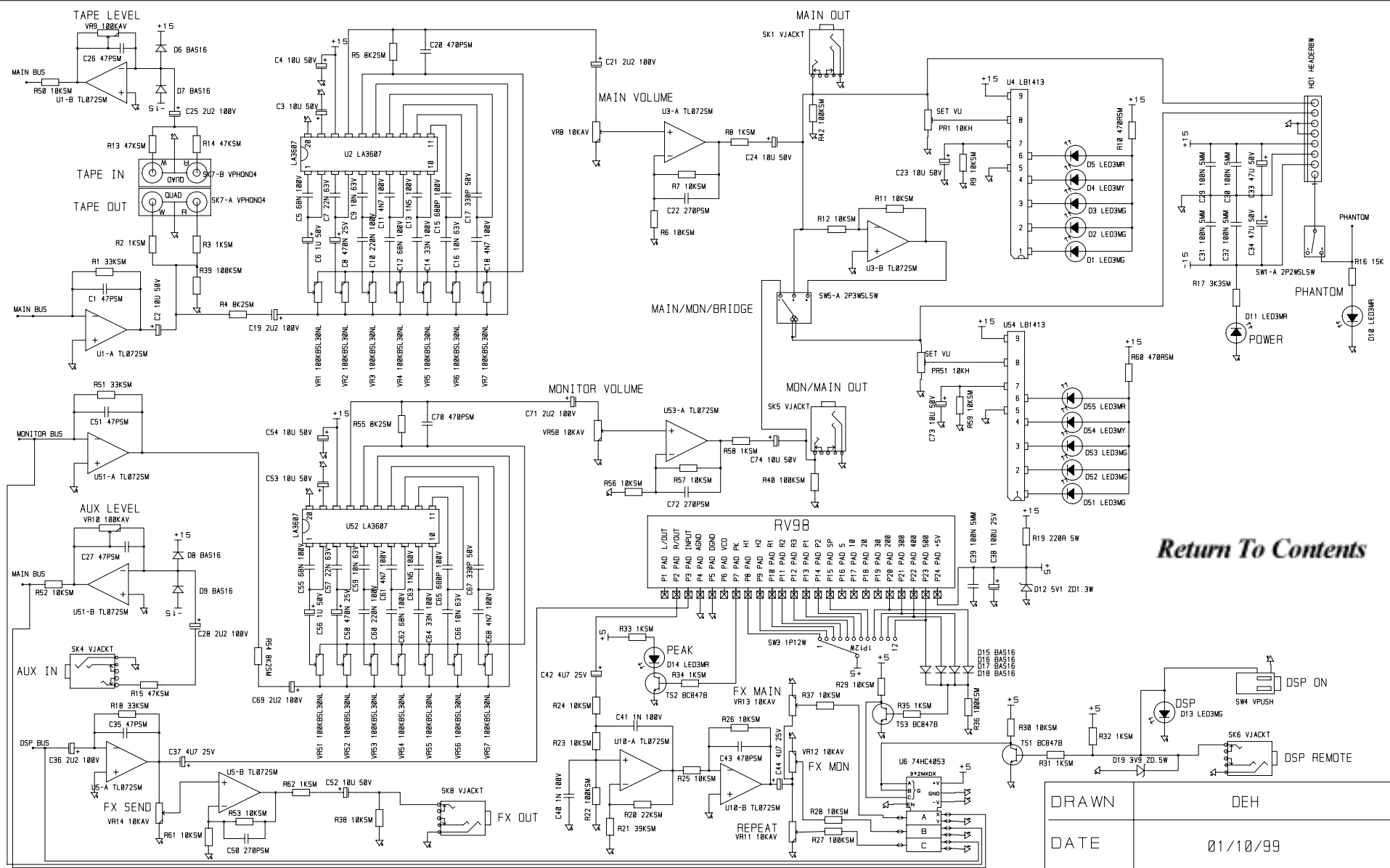
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DEH				13/08/99
DRAWING No.		3010		



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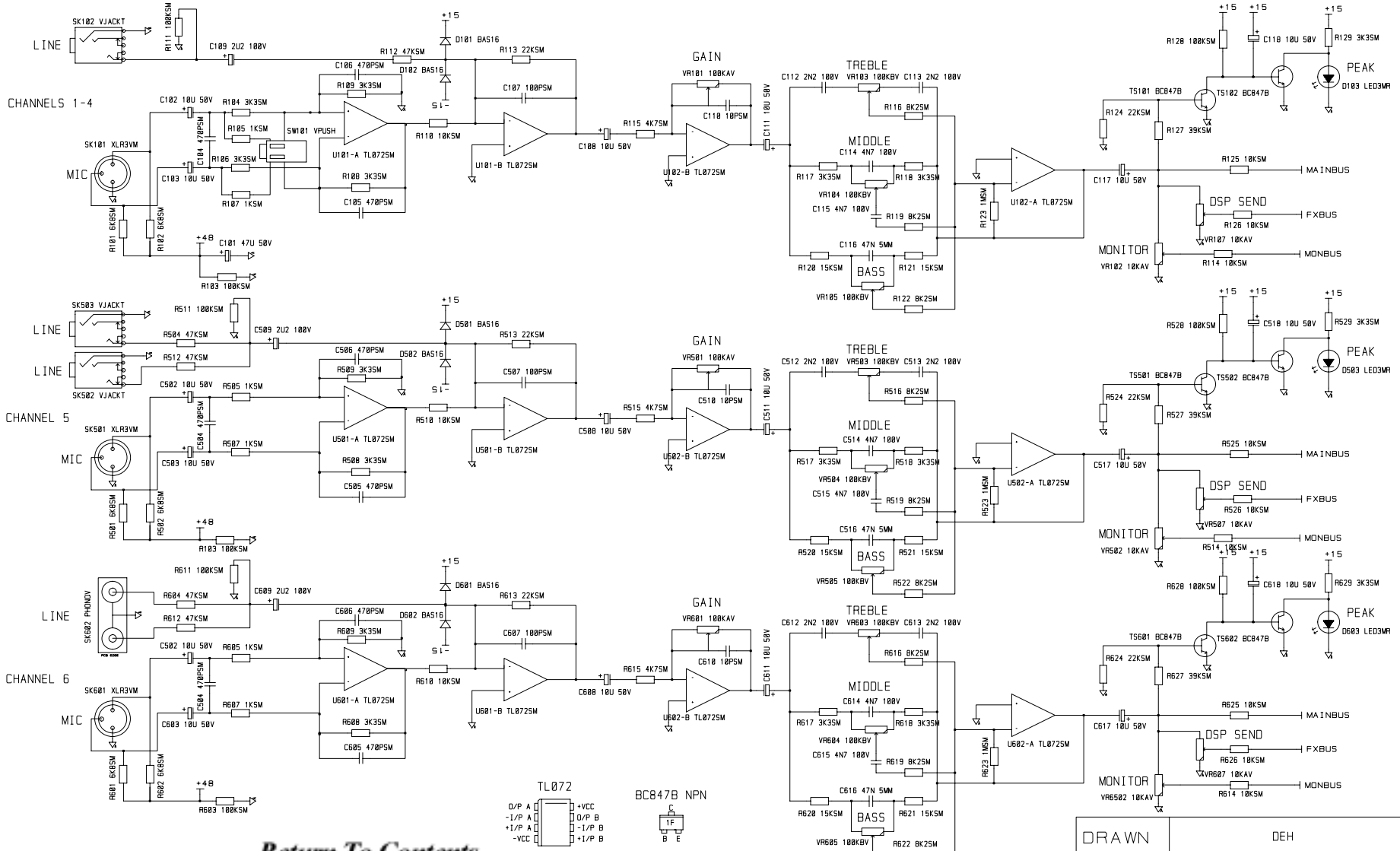
DRAWN	DEH
DATE	16/08/99
TITLE	CD650 CHANNELS
DRW. NO.	9324A_2

ISSUE	2 13/08/99	16/9/99 EQ MODIFIED IN ALL CHANNELS				
TYPE	MONITOR CONTROL TO POST EQ GAIN POT REVERSED U102A/B REVERSED INPUT JACK FOOTPRINT C108 ADDED R124 1K TO 22K C114 15N TO 1N5 XLR PIN 2&1 REVERSED	C114 1N5 TO 4N7 C115 15N TO 4N7 R120 4K7 TO 15K R121 4K7 TO 15K				



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ISSUE			DRAWN	DEH
TYPE			DATE	01/10/99
			TITLE	CR650 MASTERS
			DRW. NO.	9324M_2

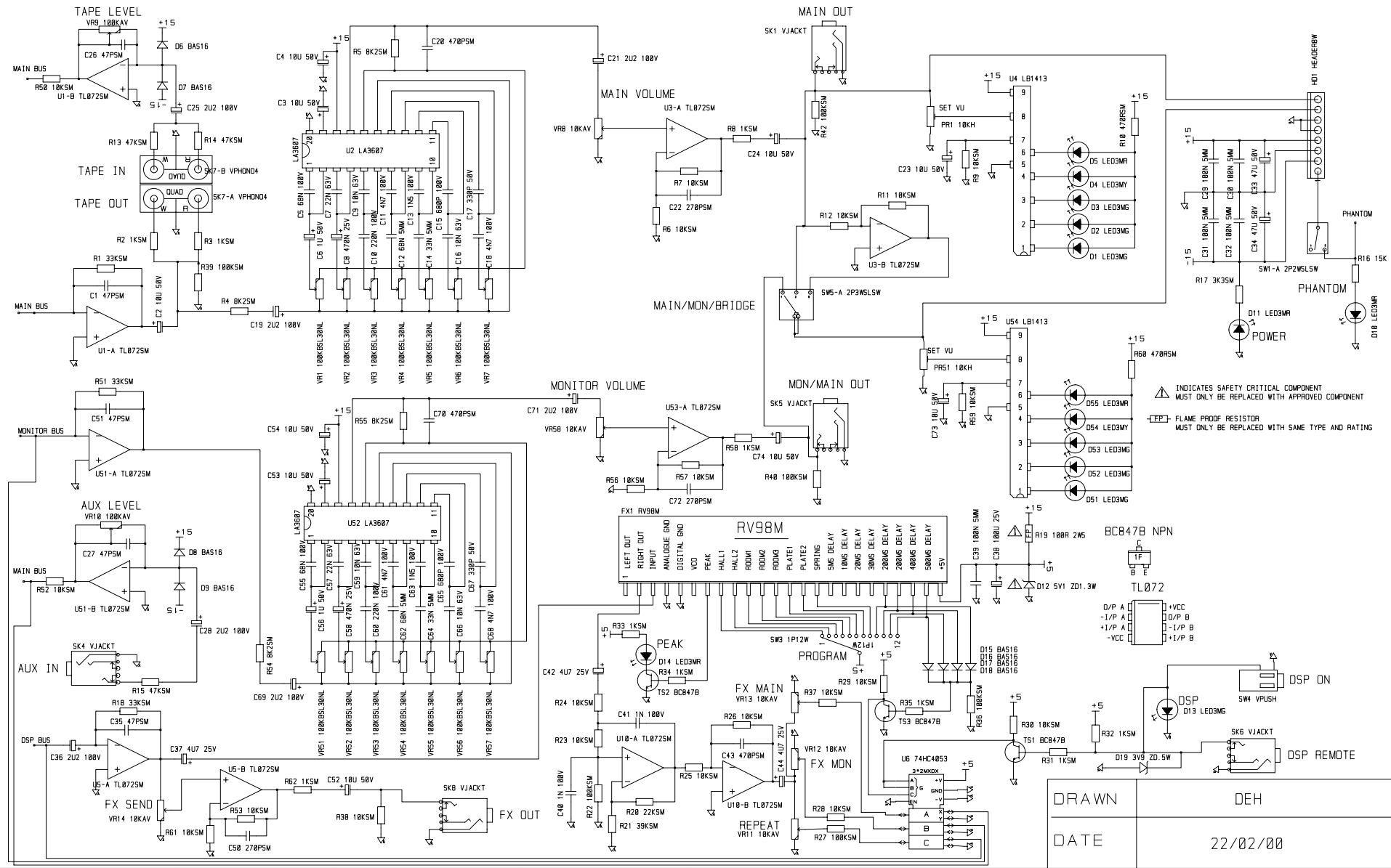


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DRAWN	DEH
DATE	16/08/99
TITLE	CD650 CHANNELS
DRW. NO.	9324A_3

ISSUE	3 21/10/99						
TYPE	LAYOUT						





ISSUE	3 21/10/99
TYPE	LAYOUT

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DRAWN	DEH
DATE	22/02/00
TITLE	CR650 MASTERS
DRW. NO.	9324M_3

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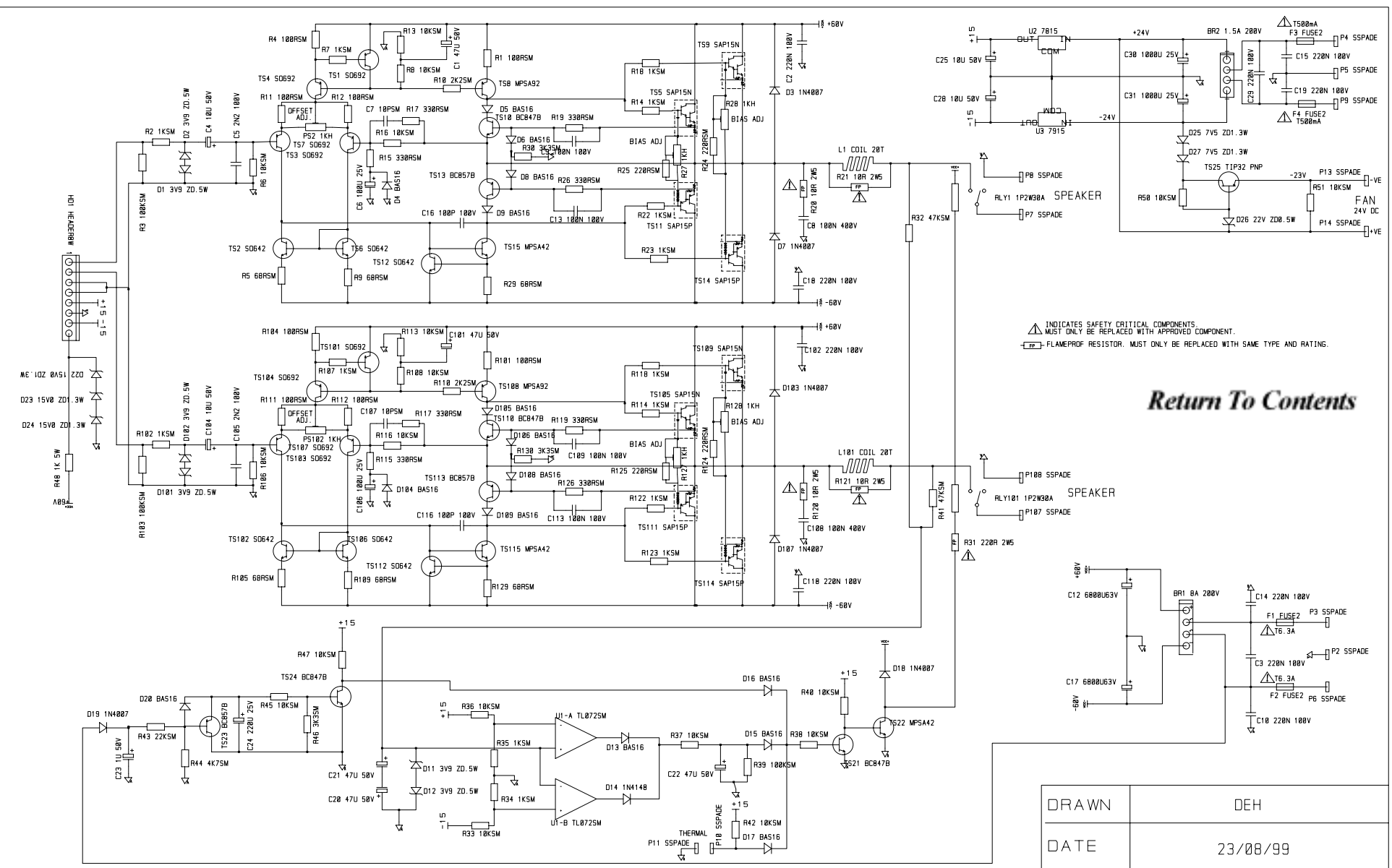
23/11/99 Issue 1

## Preset Adjustment PCB 9323

To reset the amplifier bias following service or device replacement, follow these steps.

1. Before powering up the unit for the first time after replacing devices, Turn **R27,R28,R127 and R128** (All 1K presets) fully clockwise. This will bias the output devices into minimum conduction. Failure to do this may result in the amp appearing to draw excessive current, Especially if powered through a "Current limit" device.
2. Reset amplifier DC offset for Channel 1 by measuring between **P2** (0V) and **P107** (Speaker). Set to **0V DC.  $\pm 1\text{mV}$** , by Adjusting **PS102**.
3. Reset amplifier DC offset for Channel 2 by measuring between **P2** (0V) and **P7** (Speaker). Set to **0V DC.  $\pm 1\text{mV}$** , by Adjusting **PS2**.
4. Measure DC mV across **TS109** Sense and Emitter junction. Adjust **R128** until a reading of **10mV  $\pm 1\text{mV}$**  is obtained.
5. Measure DC mV across **TS105** Sense And Emitter junction. Adjust **R127** until a reading of **10mV  $\pm 1\text{mV}$**  is obtained.
6. Recheck Across **TS109** as above. Reset if necessary to **10mV**.
7. Check **S, E** junction of all four devices on channel 1 (**TS105,TS109,TS111,TS114**) This Should be **10mV  $\pm 3\text{mV}$** . This completes Channel 1 re-biasing.
8. Measure DC mV across **TS9** Sense And Emitter junction. Adjust **R28** until a reading of **10mV  $\pm 1\text{mV}$**  is obtained.
9. Measure DC mV across **TS5** Sense And Emitter junction. Adjust **R27** until a reading of **10mV  $\pm 1\text{mV}$**  is obtained.
10. Recheck Across **TS9** as above. Reset if necessary to **10mV**.
11. Double check **S, E** junction of all four devices on channel 2 (**TS5,TS9,TS11,TS14**) This Should be **10mV  $\pm 3\text{mV}$** . This completes the amplifier re-biasing.

In practice, It may be easier to disconnect the Pre-Amp loom and facia from the rear chassis.

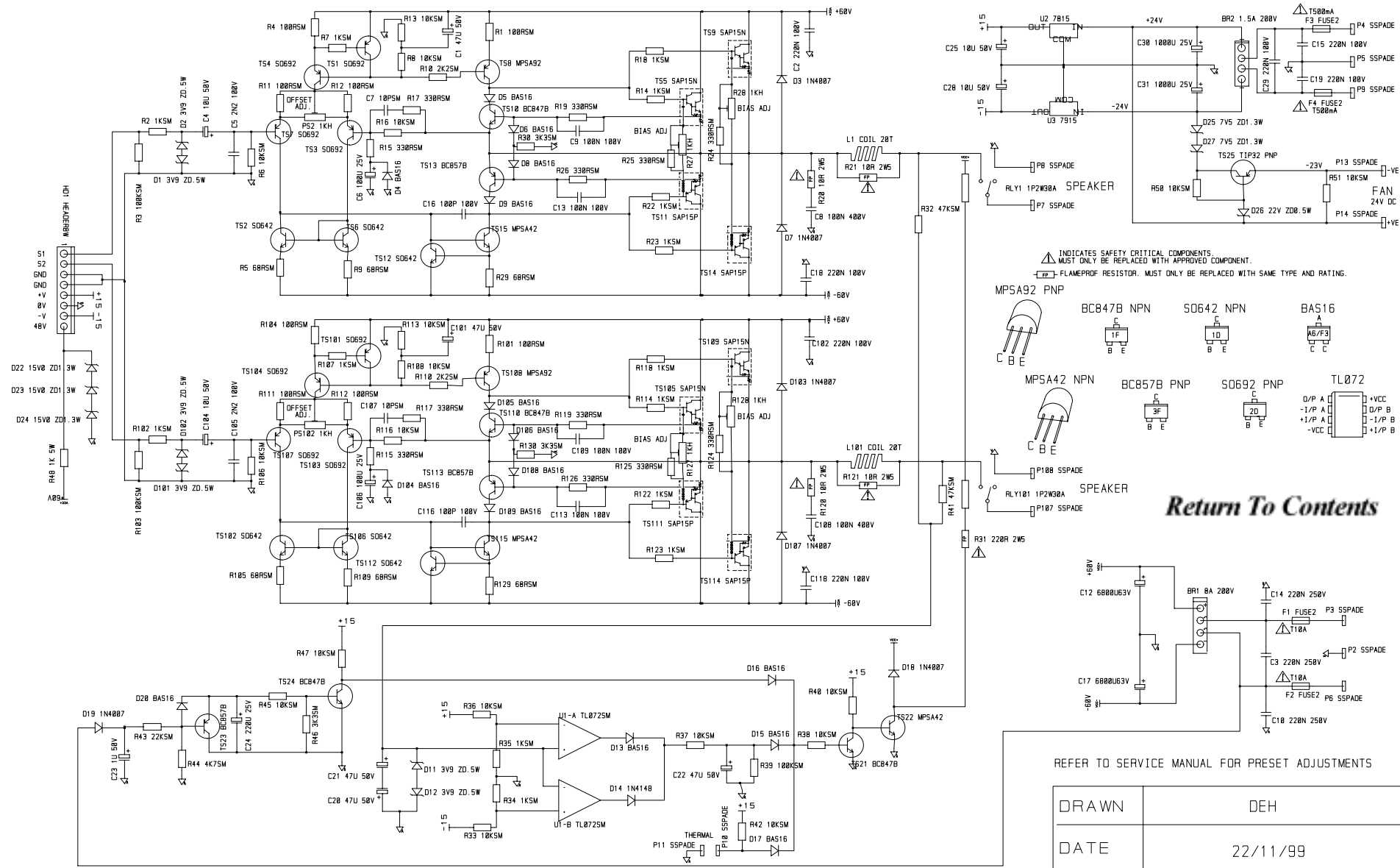


△ INDICATES SAFETY CRITICAL COMPONENTS.  
 MUST ONLY BE REPLACED WITH APPROVED COMPONENT.  
 □ FLAMEPROOF RESISTOR. MUST ONLY BE REPLACED WITH SAME TYPE AND RATING.

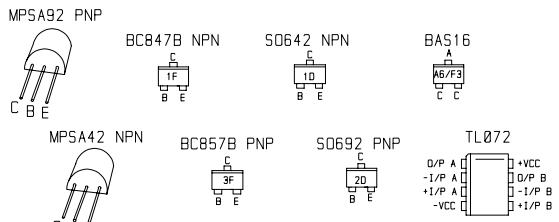
*Return To Contents*

DRAWN	DEH
DATE	23/08/99
TITLE	CD650 OUTPUT MODULE
DRW. NO.	9323_2

ISSUE	
TYPE	



INDICATES SAFETY CRITICAL COMPONENTS. MUST ONLY BE REPLACED WITH APPROVED COMPONENT.  
 FLAMEPROOF RESISTOR. MUST ONLY BE REPLACED WITH SAME TYPE AND RATING.



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REFER TO SERVICE MANUAL FOR PRESET ADJUSTMENTS

DRAWN	DEH
DATE	22/11/99
TITLE	CD650 OUTPUT MODULE
DRW. NO.	9323_3

ISSUE	3 13/10/99	3 22/11/99			
TYPE	LAYOUT DETAIL (NO ELECTRICAL CHANGE)	R24/R25/R124/R125 FROM 220R > 330R REFER CHANGE NOTE 271			

Assembly List For ( 006347 ) Preamp PCB Assembly

Stock Code	Item	Qty Req
1038	15K .25W RESISTOR	1
1300	ORO SHORTING LINK	69
1303	100R 5% RESISTOR	2
1306	10K 5% RESISTOR	44
1309	1M 5% RESISTOR	6
1310	100K 5% RESISTOR	25
1311	470R 5% RESISTOR	2
1312	4K7 5% RESISTOR	18
1314	8K2 5% RESISTOR	22
1315	47K 5% RESISTOR	11
1316	22K 5% RESISTOR	13
1317	39K 5% RESISTOR	7
1318	6K8 5% RESISTOR	12
1326	3K3 5% RESISTOR	39
1327	1K 5% RESISTOR	22
1331	33K 5% RESISTOR	3
1504	100R 2.5W RESISTOR	1
1920	ZERO OHM RESISTOR	38
2004	47UF 50V RADIAL	3
2013	10UF 50V CAPACITOR	40
2014	100UF 35V RADIAL	1
2024	2.2UF 63V RADIAL	13
2025	1UF 63V RADIAL	2
2026	.47UF 63V RADIAL	2
2027	4.7UF 63V RADIAL	9
2200	220NF 100V 10MM	2
2408	33NF 250V 10MM	2
2409	68NF 250V 10MM	4
2413	1N5 100V 5mm	8
2414	1NF 100V 5mm	2
2415	2.2NF 100V 5mm	12
2417	4.7NF 100V 5mm	4
2419	100NF 63V 5mm	9
2420	22NF 100V 5mm	2
2421	10NF 100V 5mm	4
2423	330PF 100V 5mm	2
2425	47NF 100V 5mm	6
2426	15NF 100V 5mm	6
2601	10PF 50V 10% COG	6
2602	47PF 50V 10% COG	5
2603	100PF 50V 10% COG	6
2604	270PF 50V 10% COG	3
2605	470PF 50V 10% COG	21
2827	680PF 50V CERAMIC	2
3007	3V9 .5W ZENER DIODE	1
3022	3mm GREEN LED	7
3033	3mm LED RED	11
3034	3mm LED YELLOW	2
3039	5V1 1.3W ZENER	1
3500	BAS16 TRANSISTOR	20
3503	BC847B TRANSISTOR	15

Assembly List For ( 006347 ) Preamp PCB Assembly

Stock Code	Item	
3508	34072 IC (SMD TL072)	18
3805	LB1413	2
3806	LA3607	2
3926	74HC4053 IC	1
4019	10K HORIZ PRESET	2
4102	B100K 27.5mm POT	18
4103	A100K 27.5mm POT	8
4104	A10K 27.5MM POT	18
4108	30mm 100K LIN SLIDER	14
5043	8 WAY LOCKING HEADER	1
5304	8.5MM VERTICAL PUSH	5
5305	QUAD PC PHONO	1
5306	DUAL PHONO VERT PC	1
5307	X902-03 XLR	6
5309	6.3MM PHONE JACK	11
5311	SLIDE SWITCH 3.5mm	1
5312	2mm SLIDE SWITCH	1
5313	12 POS ROTARY SWITCH	1
5657	LED SPACER 12.7MM	20
9324	CR650 PREAMP	1

Assembly List For ( 006348 ) Output PCB Assembly

Stock Code	Item	Qty Req
1010	47K .25W RESISTOR	1
1300	ORO SHORTING LINK	9
1303	100R 5% RESISTOR	8
1305	2K2 5% RESISTOR	2
1306	10K 5% RESISTOR	17
1310	100K 5% RESISTOR	3
1312	4K7 5% RESISTOR	1
1315	47K 5% RESISTOR	1
1316	22K 5% RESISTOR	2
1320	220R 5% RESISTOR	4
1326	3K3 5% RESISTOR	5
1327	1K 5% RESISTOR	14
1329	330R 5% RESISTOR	8
1323	68R 5% RESISTOR	6
1500	10R 2.5W RESISTOR	4
1501	220R 2.5W RESISTOR	1
1701	1K 5W RESISTOR	1
1920	ZERO OHM RESISTOR	18
2004	47UF 50V RADIAL	5
2009	1000UF 25V RADIAL	2
2013	10UF 50V CAPACITOR	4
2014	100UF 35V RADIAL	2
2021	6800UF 63V 30*40	2
2025	1UF 63V RADIAL	1
2029	220UF 25V CAPACITOR	1
2200	220NF 100V 10MM	10
2400	100NF 250V 10MM	4
2410	100NF 400V 15MM	2
2415	2.2NF 100V 5mm	2
2601	10PF 50V 10% COG	2
2817	100PF 100V CERAMIC	2
3000	1N4007 DIODE	6
3006	1N4148 DIODE	1
3007	3V9 .5W ZENER DIODE	6
3014	15V 1.3W ZENER	3
3017	1.5A 200V BRIDGE	1
3019	7V5 1.3W ZENER DIODE	2
3038	22V .5W ZENER	1
3040	8A 600V INLINE	1
3411	MPSA42/43 TRANSISTOR	3
3412	MPSA92/93 TRANSISTOR	2
3500	BAS16 TRANSISTOR	15
3501	SO642 TRANSISTOR	6
3502	SO692 TRANSISTOR	8
3503	BC847B TRANSISTOR	4
3504	BC857B TRANSISTOR	3
3508	34072 IC (SMD TL072)	1
3611	TIP32C TRANSISTOR	1
3807	SAP15N	4
3808	SAP15P	4
3901	7815 IC	1
3902	7915 IC	1
4000	1K HORIZ PRESET	6
5006	20 TURN COIL	2

Assembly List For ( 006348 ) Output PCB Assembly

Stock Code	Item	Qty Req
5008	TV125 FLAT HEATSINK	3
5011	TO3P WASHER	8
5022	PCB FUSE CARRIER	4
5043	8 WAY LOCKING HEADER	1
5566	20mm T500ma FUSE(UL)	2
540023	20mm T10A FUSE	2
5609	30A RELAY	2
5657	LED SPACER 12.7MM	4
5686	NEW SPADE TERMINAL	14
9204	NO 4*1/4 PLASTITE	8
9323	CR650 O/P	1
580006	REFER 9234	9
588006	POP RIVET (BLACK)	3
8P-5031	CD650/630 HEATSINK	1



Assembly List For ( 007652 ) Final Assembly

Stock Code	Item	Qty Req
5005	NEW TYPE MAINS SOCKET	1
5308	80*80*25MM FAN 24V	1
5310	RV98M	1
5503	7.5mm ROUND BLACK	5
5509	SMALL WHITE CAP	14
5511	5MM SOLDER TAG	1
5531	20mm T5A FUSE	1
5542	ROCKER SWITCH	1
5555	80mm METAL FAN GUARD	1
5558	100mm TIE WRAP	10
5571	8 WAY END CONNECTOR	2
5659	SHORT BOARD SPACER	6
5666	RED P402 KNOB	9
5667	BLUE P402 KNOB	18
5668	BEIGE P402 KNOB	17
5669	YELLOW CONTROL KNOB	1
6347	Preamp PCB Assembly	1
6348	Output PCB Assembly	1
9151	3mm INT SHAKEPROOF	6
9171	M5 INT SHAKEPROOF	2
9173	5*12mm PAN POZI	1
9181	5mm BRASS HEX NUT	1
9189	5mm CAGE NUT	4
9200	NO 6*3/8 FLANGE POZI	6
9201	NO 8*3/8 PLASTITE	4
9204	NO 4*1/4 PLASTITE	26
9217	4mm NUTSERT	8
10004	MONO JACK SOCKET	4
530066	SPEAKON SOCKET	1
540038	EARTH WARNING LABEL	1
541004	HC25/50 4.8 FASTON	15
541053	1/4" LG RECEPTACLE	4
586004	M8 * 70 CUP SQUARE	1
586023	8mm SHKPRF WASHER	1
588006	POP RIVET (BLACK)	4
5P-587003	30mm WASHER	1
8P-8850	CD650 FACIA	1
8P-8851	CD650 REAR	1
8P-8852	CD630/650 SIDE	2
8T-6134	CD650 MAINS	1

Assembly List For ( 20464 ) Cabinet Assembly

Stock Code	Item	Qty Req
10039	PENN CORNER C1839K	8
10055	PLASTIC CABINET FOOT	4
10100	STRAP HANDLE	1
10200	M5 x 10mm TEENUT	2
10202	5mm X 25mm CSK POZI	2
10209	5*35mm PAN POZI	4
10224	35mm FINISHED NAILS	30
10231	No8x1/2" FLANGE POZI	16
10234	No 8 X 3/4 CSK POZI	4
10301	18mm CHIPBOARD	0
10321	DB CARPET 1.5M WIDTH	0
10454	CARTON CD630	1
10600	32/18 STAPLES	12
10621	POLY. BAG 30(0) X 36	1
10629	MASKING TAPE 1.5"	1

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