

SERVICE DOCUMENTATION



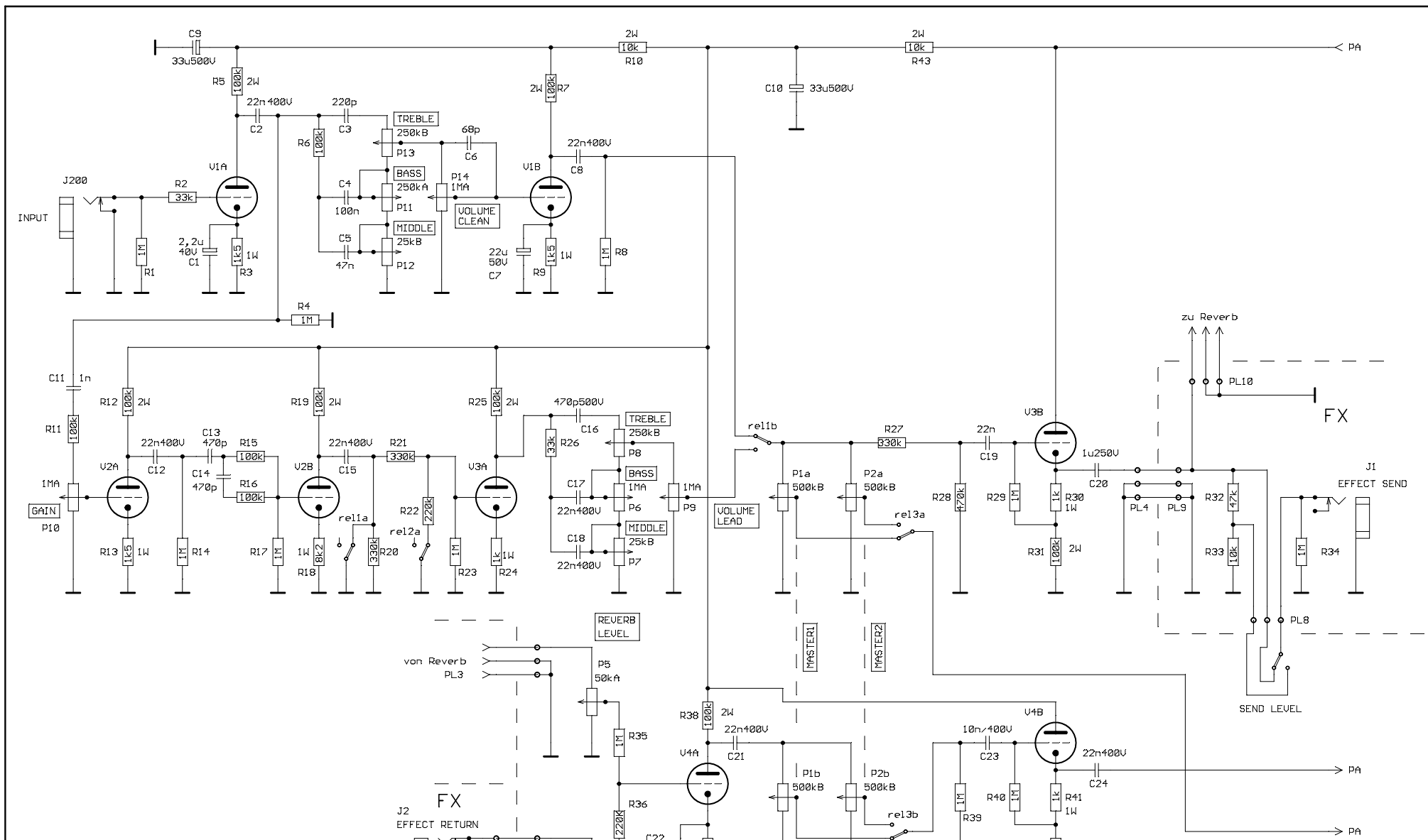
Duotone Combo

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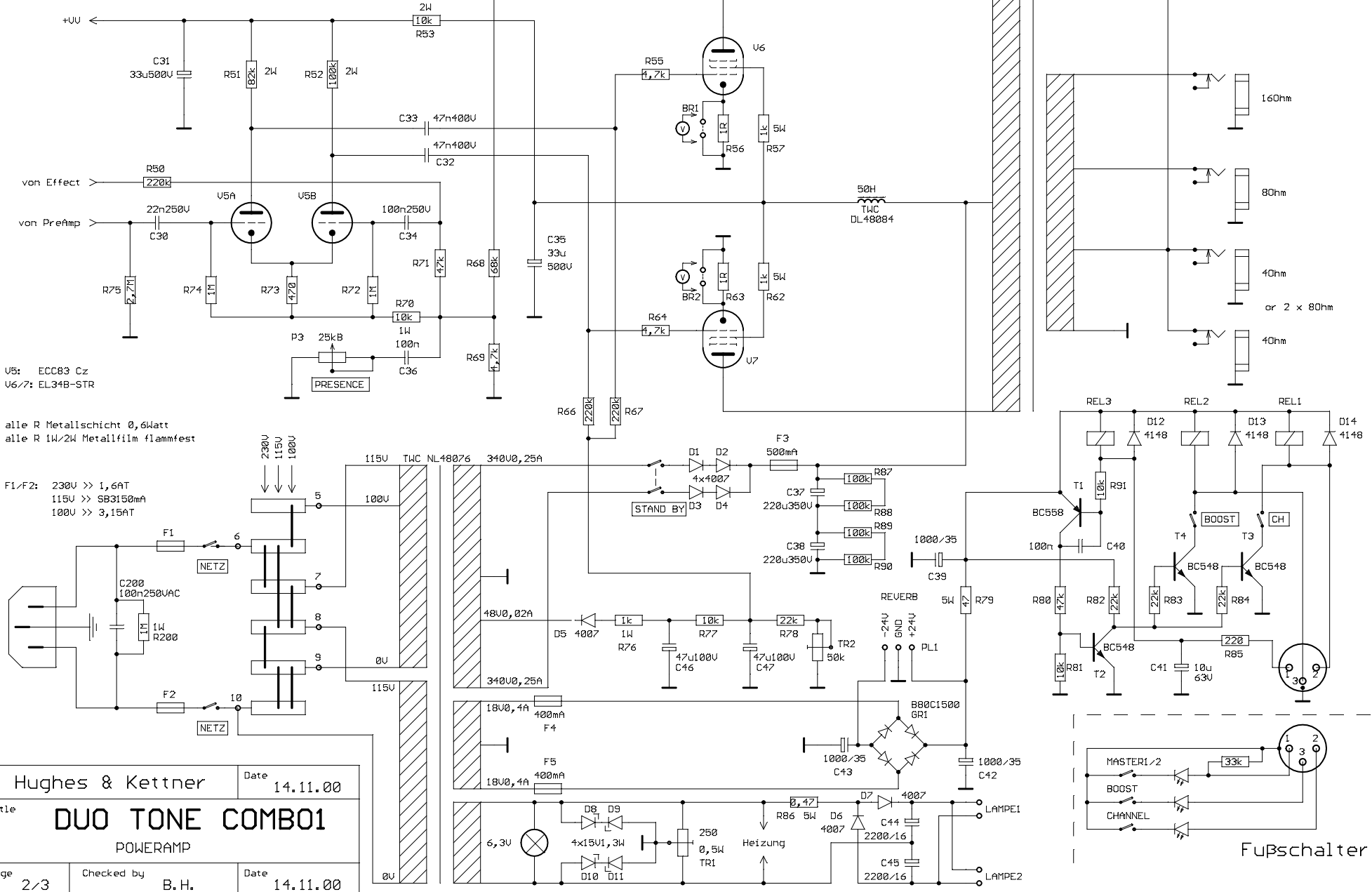
GD/ 19.09.00

1 Schaltpläne/ schematics



Hughes & Kettner		Date	14.11.00
Title			
DUO TONE COMBO1			
PREAMP			
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		Date	14.11.00

V1-4: ECC83 Cz
 alle R Metallschicht 0,6Watt
 alle R 1W/2W Metallfilm flammfest

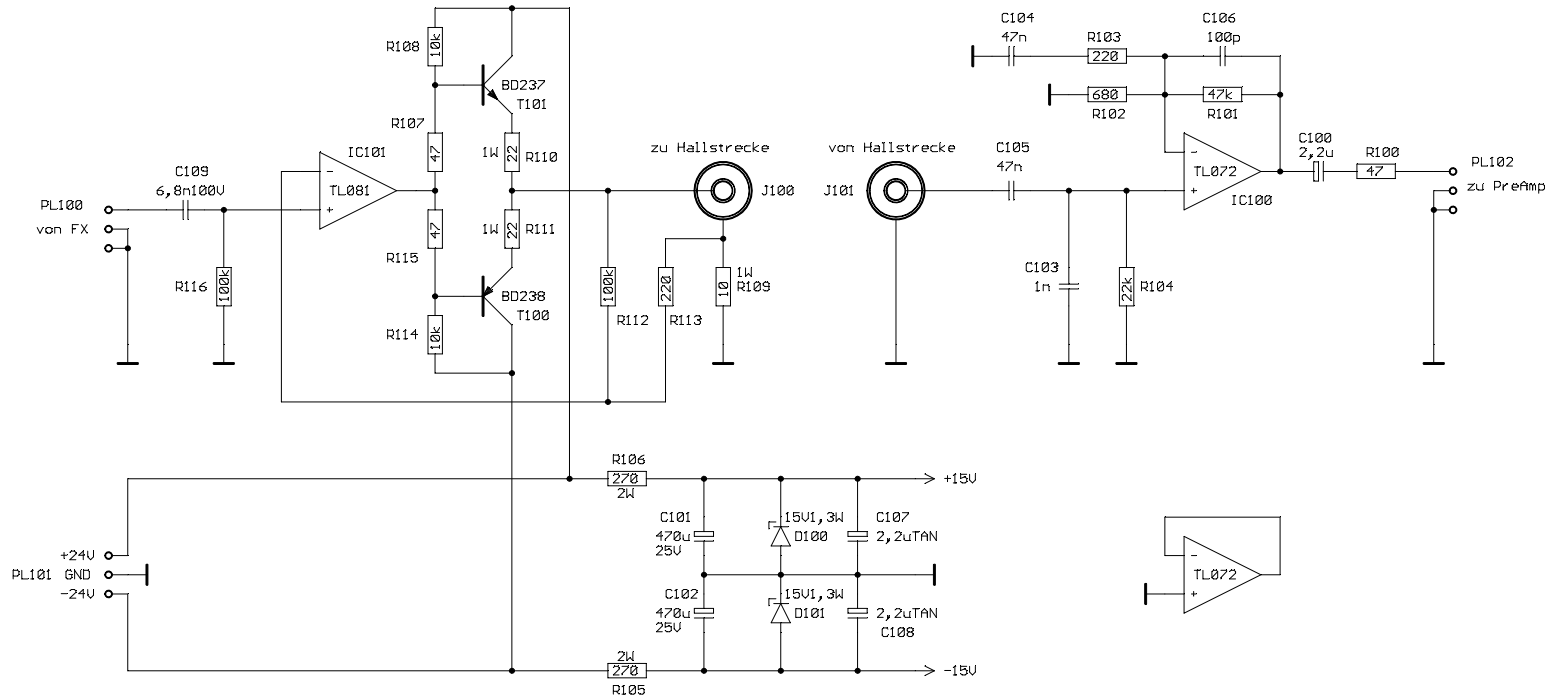


U5: ECC83 Cz
 U6/7: EL34B-STR

alle R Metallschicht 0,6Watt
 alle R 1W/2W Metallfilm flammfest

F1/F2: 230V >> 1,6AT
 115V >> SB3150mA
 100V >> 3,15AT

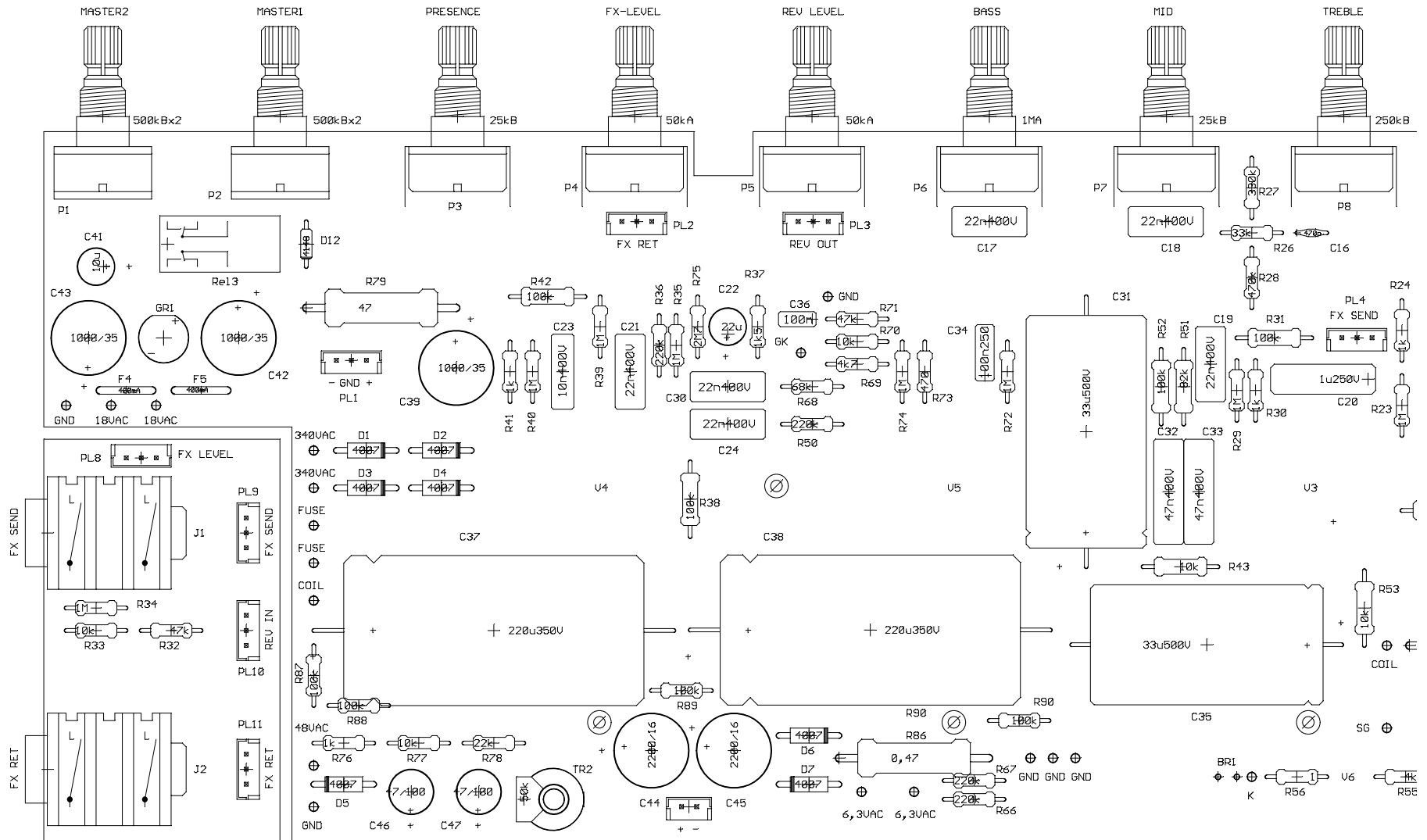
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DUO TONE COMBO1			
POWERAMP			
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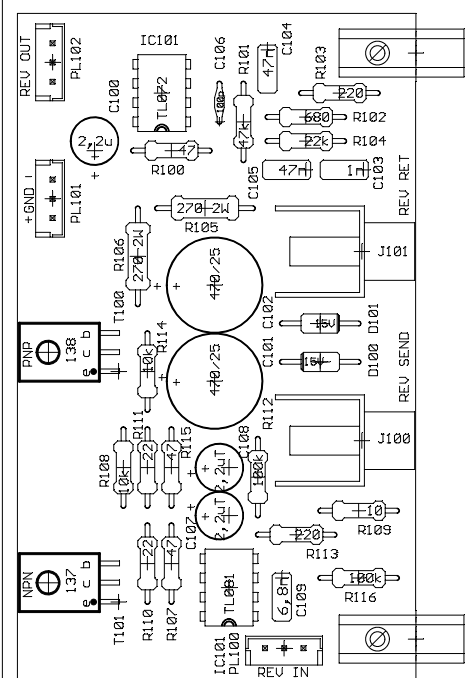
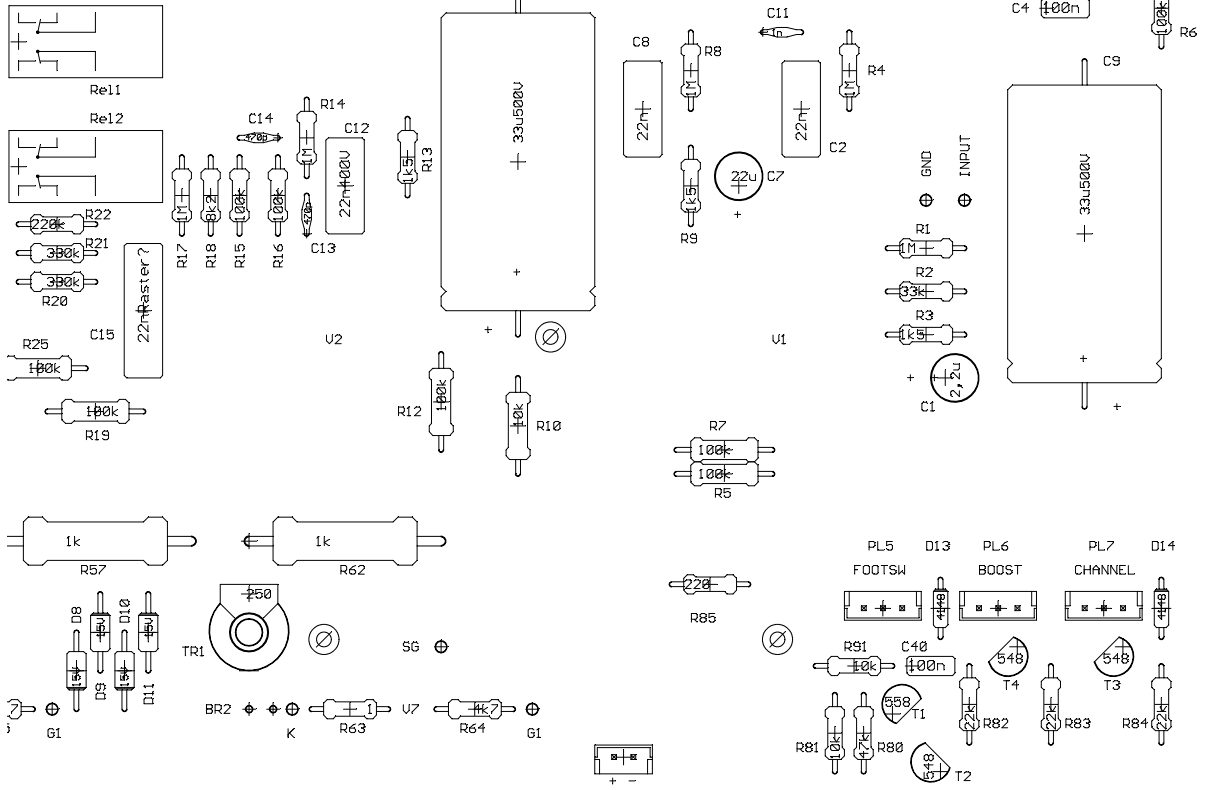
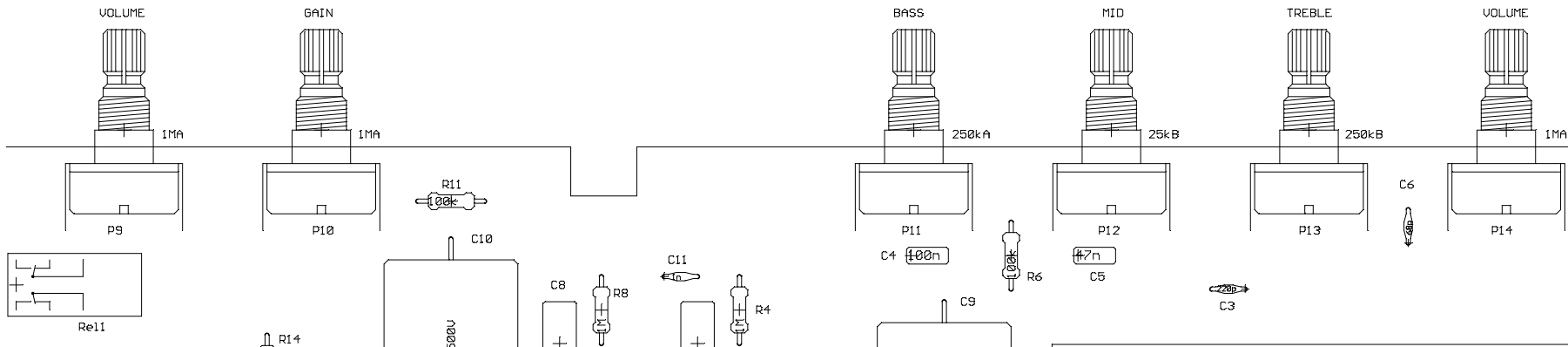


Hughes & Kettner		Date 14.11.00
Title DUO TONE COMBO1 REVERB		
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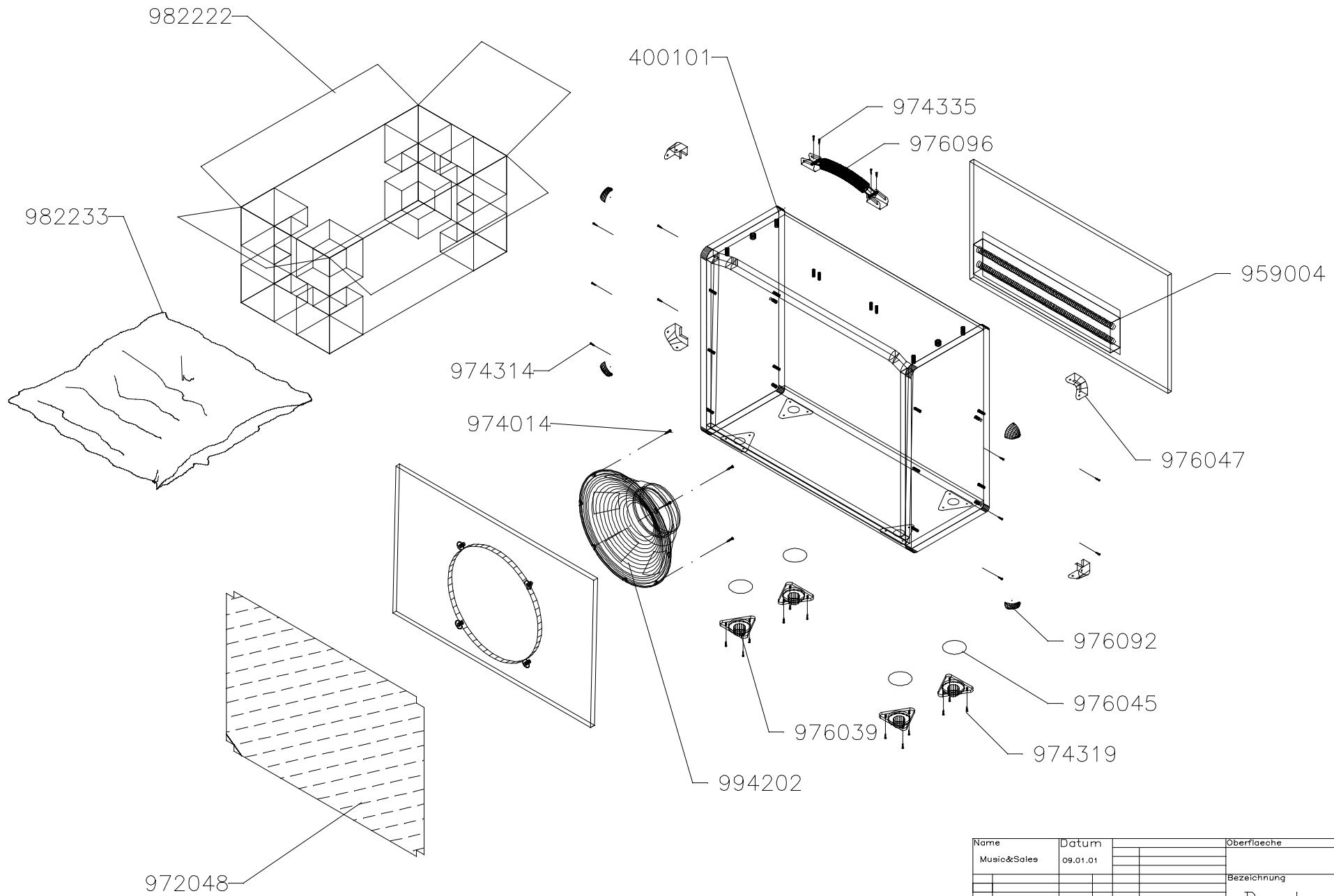
2 Bestückungspläne/ component parts



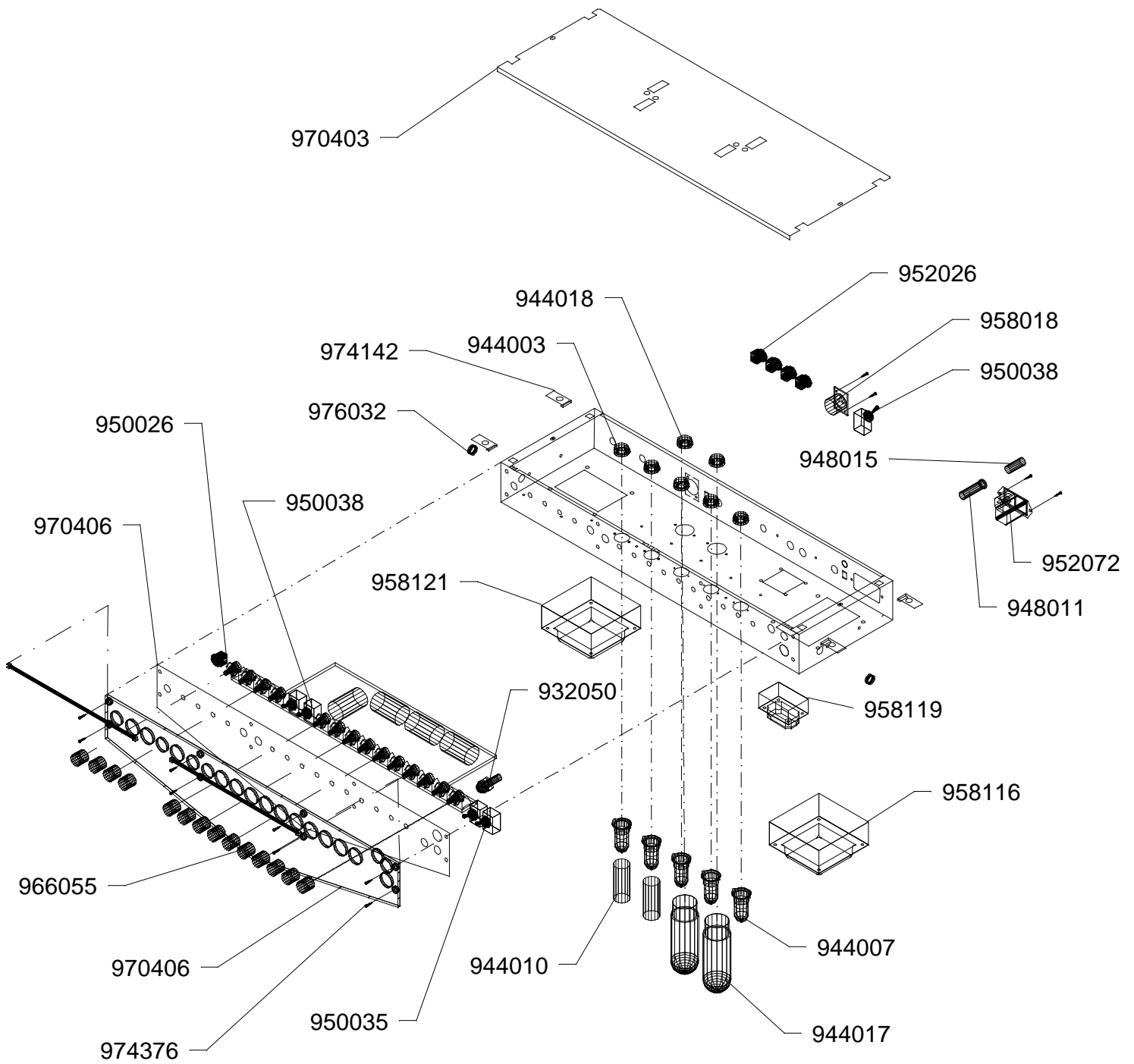


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3 Explosionszeichnung/ explosion drawings



Name	Datum		Oberflaeche
Music&Sales	09.01.01		
			Bezeichnung
			Duotone Combo



Name	Datum	Überfläche
Music&Sales	09.01.01	
		Bezeichnung
		Duotone Combo

4 Bestellnummern/ order no. Duotone Combo

no.	schematic position	name	specs	part no.
1	mains switch	switch	230V	E 950 035
2	standby switch	switch	230V	E 950 035
3	mains inlet	mains inlet	KE10.6100.151-00	E 952 072
4	voltage selector		KE4305.0048.10-00	E 952 073
5	fuse holder insert		KEC4305.0011-00	E 952 074
6	C200	MKT cap X2	100n/ 250V/ X2*	E 920 069
			* replace only with same type	
7	mains transformer	transformer	230V/ 117V/ 100V	E 958 116
8	output transformer	transformer	ÜL 48984	E 958 121
9	filter choke	choke	DL 48084	E 958 119
10	switch (CH,Boost,FX)	switch	T80T-8011	E 950 038
11	lens pilot light	lens	red	E 948 027
12	holder pilot light	lamp holder	two-piece	E 948 028
13	lamp pilot light	lamp	6,3V	E 932 050
14	fuse holder (anode fuse)	fuse holder	FEU0031.1693-00	E 948 011
15	fuse holder insert		FEK0031.1663-00	E 948 015
16	P1 (Master 2)	pot	500 K Ω lin, stereo	E 914 057
17	P2 (Master 1)	pot	500 K Ω lin, stereo	E 914 057
18	P3 (Presence)	pot	25 K Ω lin, mono	E 914 041
19	P4 (FX Level)	pot	50 K Ω log, mono	E 914 034
20	P5 (Rev Level)	pot	50 K Ω log, mono	E 914 034
21	P6 (Overdrive Bass)	pot	1 M Ω log, mono	E 914 047
22	P7 (Overdrive Mid)	pot	25 K Ω lin, mono	E 914 041
23	P8 (Overdrive Treble)	pot	250 K Ω lin, mono	E 914 043
24	P9 (Overdrive Master)	pot	1 M Ω log, mono	E 914 047
25	P10 (Overdrive Gain)	pot	1 M Ω log, mono	E 914 047
26	P11 (Clean Bass)	pot	250 K Ω log, mono	E 914 044
27	P12 (Clean Mid)	pot	25 K Ω lin, mono	E 914 041
28	P13 (Clean Treble)	pot	250 K Ω lin, mono	E 914 043
29	P14 (Clean Vol)	pot	1 M Ω log, mono	E 914 047
30	D1- D7	diode	1N4007	E 934 023
31	GR1	rectifier	B80C1500	E 934 027
32	D8- D11,D100,D101	z-diode	15V/ 1,3W	E 934 004
33	C9, C10,C31, C35	hv cap	33 μ / 500V ax	E 926 014
34	C37, C38	hv cap	220 μ / 350V ax	E 926 016
35	C42, C43	cap	1000 μ /35V	E 924 050
36	C44, C45	cap	2200 μ /16V	E 924 049
37	TR1	trim pot	250 Ω	E 915 010
38	TR2	trim pot	50 K Ω	E 915 012
39	Rel1- Rel4	relay	12Vdc/ 2 x um	E 946 003
40	T1	transistor	BC556B	E 938 012
41	T2- T4	transistor	BC546B	E 938 009
42	T100	transistor	BD238	E 938 022
43	T101	transistor	BD237	E 938 019
44	IC 100	OP amp	TL072CN	E 940 018
45	IC 101	OP amp	TL081CN	E 940 020
46	V1- V5	tube	ECC83/ 12AX7A	E 944 007
47	tube socket V1- V5	socket	9pin/ pcb mount	E 944 003
48	V6- V7	EL34B	DSS matched **	E 944 017
			** DSS matched duos available; to order a single tube, please state the PC value indicated on the tube	

no.	schematic position	name	specs	part no.
49	tube socket V6- V7	socket	8pin/ soldering	E 944 018
50	J200,J1,J2,all speaker outs	jack	1/4" phone jack mono	E 952 026
51	J100, J101	RCA jack	T- 709	E 952 045
52	XLR jack footswitch	XLR jack	female,metal	E 952 018
53	Spring reverb	reverb	9AB2C1B	E 959 004
54	3 buttons footpedal	footpedal	with XLR jack	E 959 009
55	lamp, inverter inclusive	lamp	with cabling	E 932 049
56	speaker	speaker	Vintage 30, 16 ohms	E 994 202
57	knob	knob	chromium, with dot	E 966 055

5 Bestellinformationen/ ordering informations

Bestellinformationen und Ersatzteilbestellungen

Deutschland:

Music & Sales

Leipziger Straße 3

D- 66606 St. Wendel

Service

Tel.: 06851/ 905 333

Fax: 06851/ 905 100

E-mail: service@musicandsales.com

Technische Fragen

Tel.:06851/ 905 330

E-mail: service@musicandsales.com

Sparepart orders and technical questions for all other countries:

contact your local distributor or

Hughes & Kettner

Leipzigerstr. 3

66606 St. Wendel

Germany

Tel.: +49 6851/905 210

Fax: +49 6851/905 200

Email: intlservice_handk@musicandsales.com

6 Technische Daten/ technical data**Duotone Combo****Eingänge/ inputs:**

Input:	Buchse/ connection:	¼" phone jack
	Bauart Eingang/ input type:	unbalanced
	Eingangsimpedanz/ input impedance:	1 MΩ
	Empfindlichkeit/ sensitivity:	- 10 dB
	max. Eingangsspegel/ max.input level:	+10 dB
FX- Return:	Buchse/ connection:	¼" phone jack
	Bauart Eingang/ input type:	unbalanced
	Eingangsimpedanz/ input impedance:	1 MΩ
	Empfindlichkeit/ sensitivity:	0 dB
	max. Eingangsspegel/ max.input level:	+6 dB

Ausgänge/ outputs:

FX- Send:	Buchse/ connection:	¼" phone jack
	Bauart Ausgang/ output type:	unbalanced
	Ausgangsimpedanz/ output impedance:	8 kΩ/ 15 kΩ
	Ausgangspegel/ output level:	-10 dB/ +6 dB switchable
	max. Ausgangsspegel/ max.output level:	+6 dB

Power amp:

50 Watts (RMS) into 4 Ω @ k = 1%

50 Watts (RMS) into 8 Ω @ k = 1%

50 Watts (RMS) into 16 Ω @ k = 1%

Bias level:

factory setting: 30 mA per tube (EL34/ 6CA7/ KT77)

allowed range: 25 mA- 32 mA

Speaker out:

Anzahl/ no.: 4 x Klinke/ ¼" phone jack

Impedanz/ impedance: 1 x 4 Ω, 2 x 8 Ω/ 1 x 8 Ω/ 1 x 16 Ω

Speaker(Combo):

no.\ size: 1 x 12"

type \ name: Celestion Vintage 30

impedance: 16 Ω

power handling: 100 Watt

power handling programm: 200 Watt

Allgemeine elektrische Daten/ general electrical data:

Schutzklasse I/ protection class 1 (protectively earthed)

Netzspannung/ mains voltage: 230V Netzsicherung/ fuse: T 1,6 A

Netzspannung/ mains voltage: 117V Netzsicherung/ fuse: T 3,15 A oder SB 3,15 A

Netzspannung/ mains voltage: 100V Netzsicherung/ fuse: T 3,15 A

max. Stromaufnahme/ max. current: 1 A @ 230V (0,22 A Standby)

max. Leistungsaufnahme/ max. power consumption: 278 VA @ 253 V

Netzspannungsbereich/ mains voltage range: +/- 10 %

Umgebungstemperaturbereich/ temperatur range: - 10 °C bis + 60 ° C

externe Sicherungen/ external fuses: 1 x T 500 mA (anode voltage)

interne Sicherungen/ internal fuses: 2 x Polyswitch 400 mA (low voltage)

Allgemeine mechanische Daten/ general mechanical data:

Combo:

Abmessungen/ sizes: Breite/ width: 670 mm Höhe/ height: 560 mm Tiefe/ depth: 250 mm

Gewicht/ weight: 27 kg