

# SERVICE DOCUMENTATION



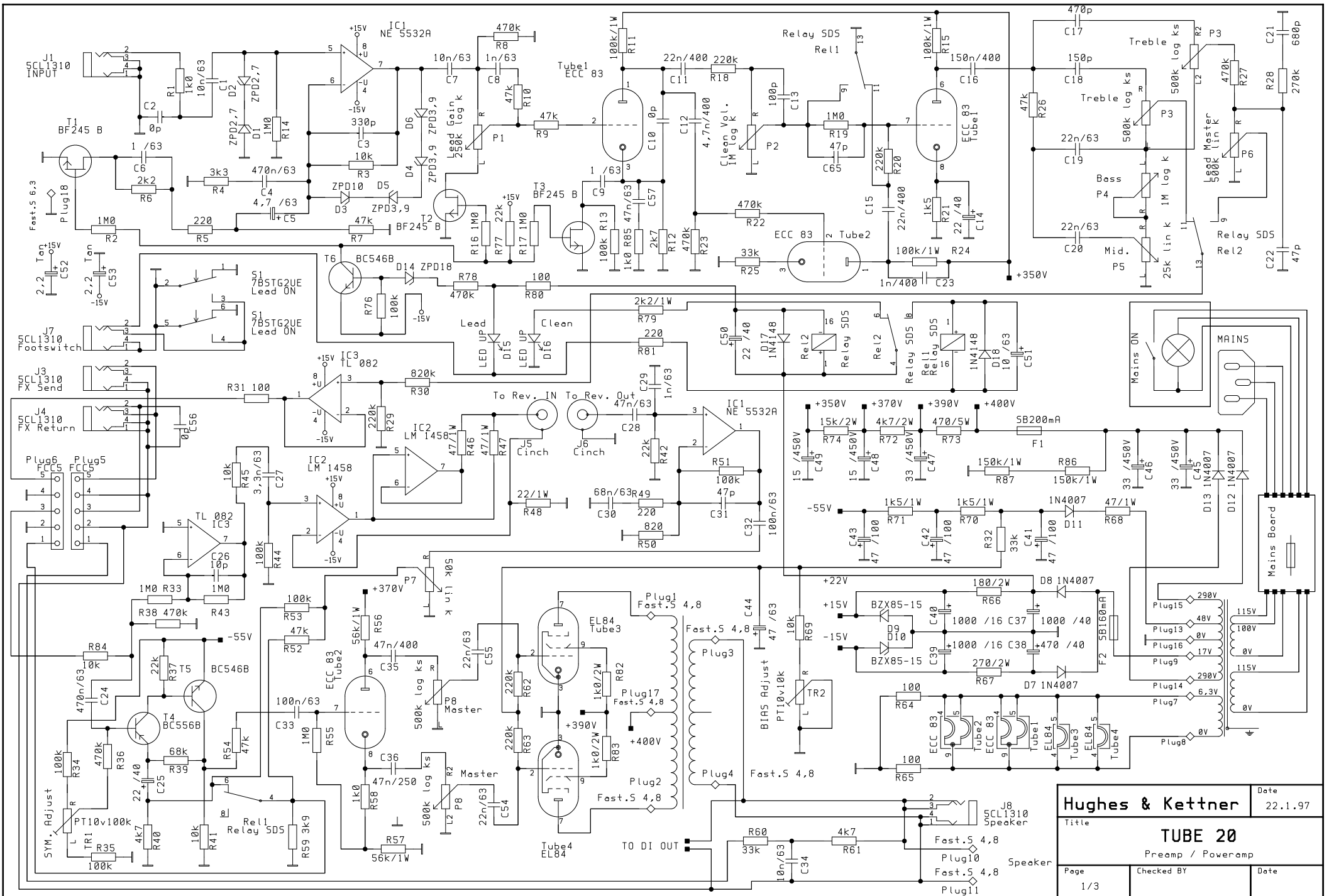
## Studio 84

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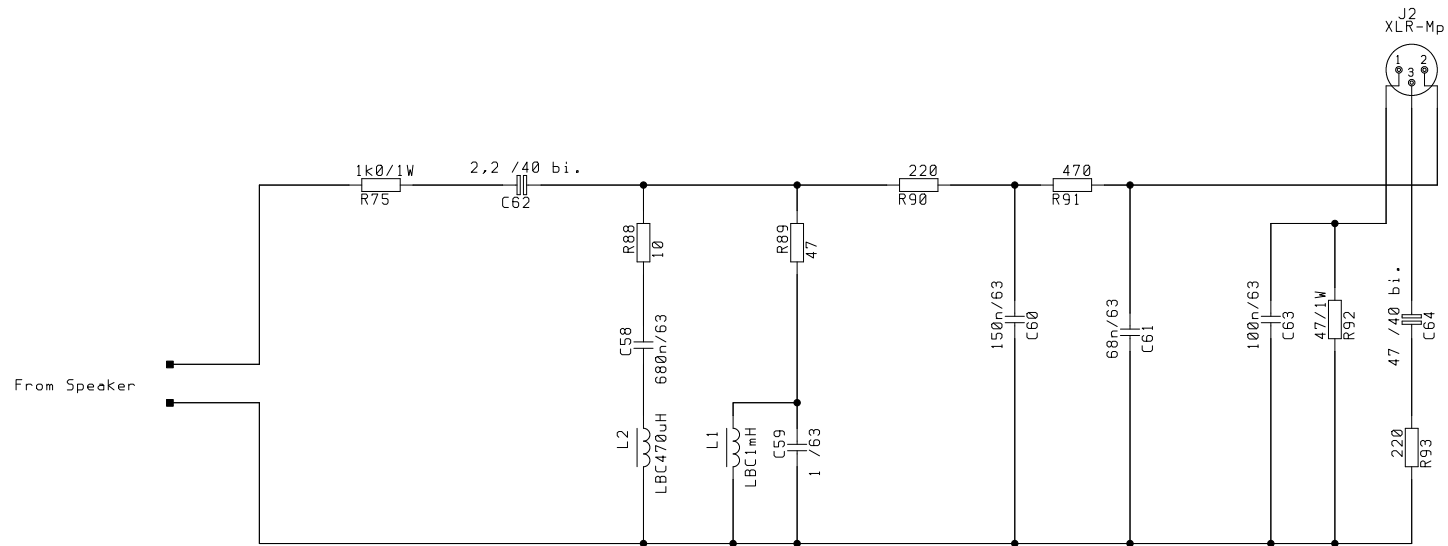
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GD/ 23.11. 99

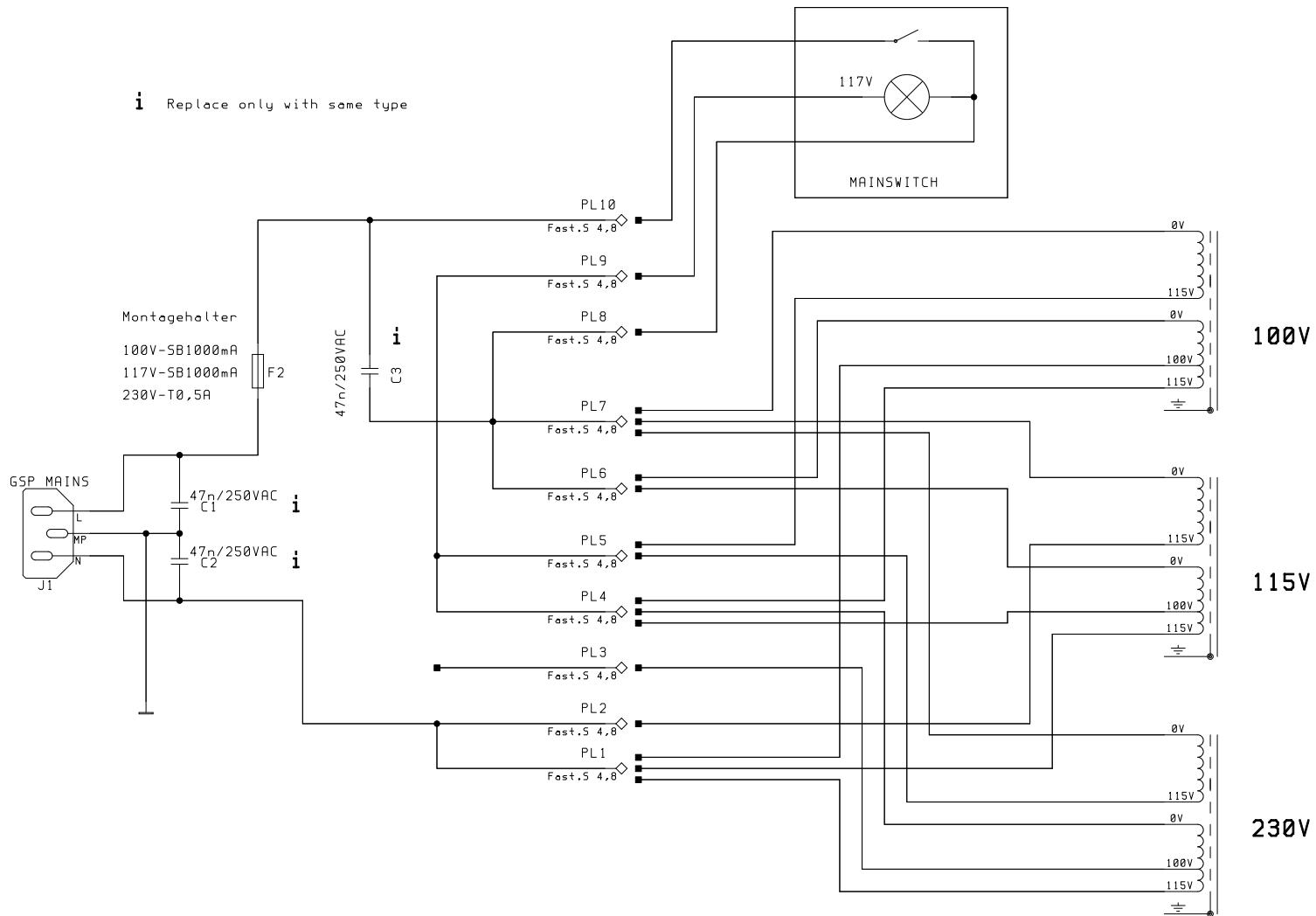
**1 Schaltpläne/ schematics**



<b>Hughes &amp; Kettner</b>		Date
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<b>TUBE 20</b>		
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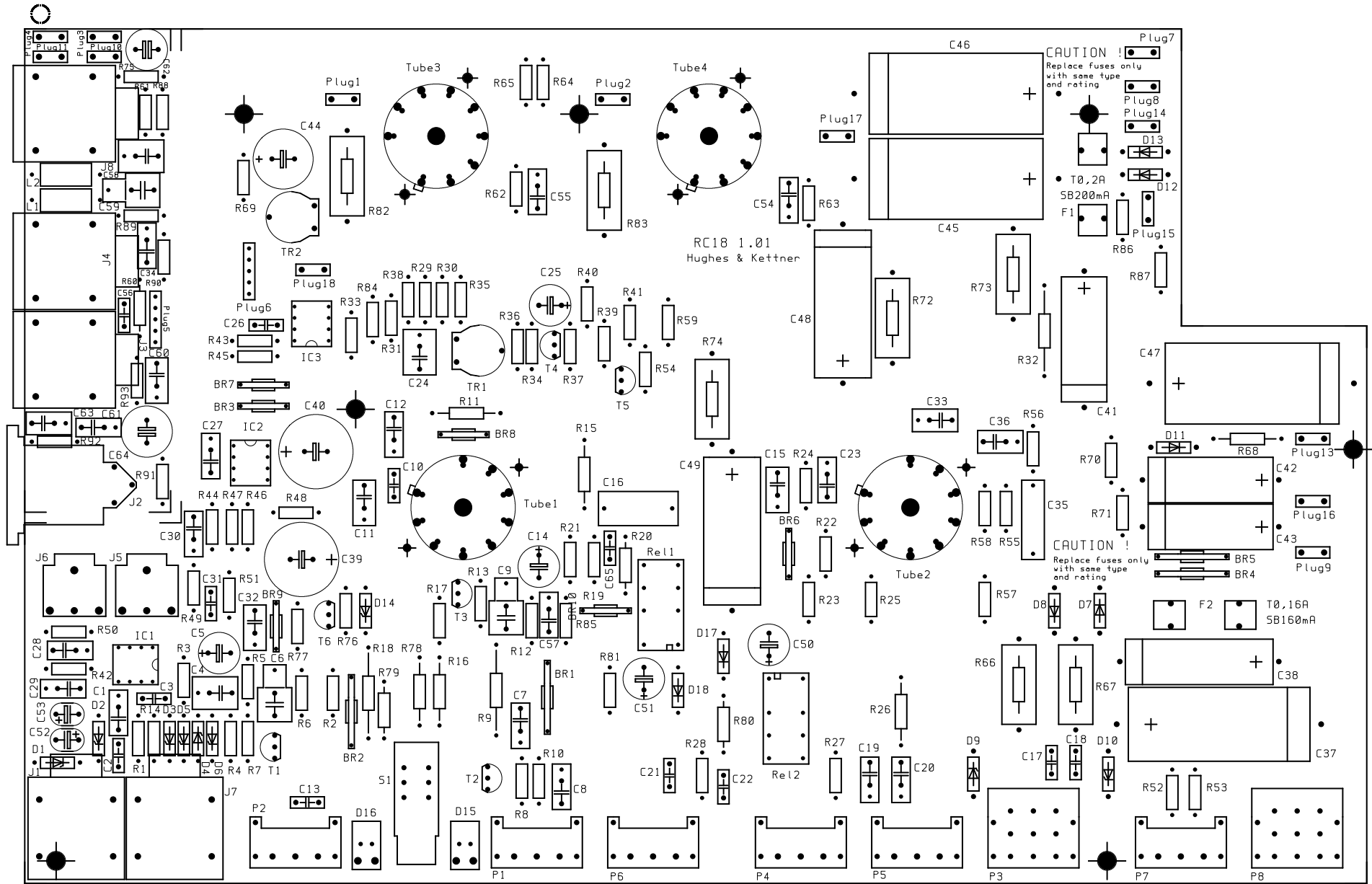
Hughes & Kettner		Date
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TUBE 20		
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Hughes & Kettner		Date 21.6.96
Title <b>TUBE 20</b> MAINBOARD		
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## **2 Bestückungspläne/ component parts**



CAUTION!  
Replace fuses only  
with same type  
and rating.

CAUTION!  
Replace fuses only  
with same type  
with some tube  
and rating.

RC18 1.01  
Hughes & Kettner

T0,2A  
SB200mA

T0,16A  
SB160mA

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**3 Explosionszeichnung/ explosion drawings**

## 3 Bestellnummern/ order no. Studio 84

	schematic position	name	specs	part no.
1	mains switch	switch	230V/ illum.:117V lampe	E 950 030
2	mains transformer	transformer	230V/ 117V/ 100V	E 958 087
3	output transformer	transformer	TADA1A	E 958 081
4	P1 (CH2 gain)	pot	250 K $\Omega$ log, mono	E 914 044
5	P2 (CH1 volume)	pot	1 M $\Omega$ log, mono	E 914 047
6	P3 (treble)	pot	500 K $\Omega$ log, stereo	E 914 046
7	P4 (bass)	pot	1 M $\Omega$ log, mono	E 914 047
8	P5 (mid)	pot	25 K $\Omega$ lin, mono	E 914 041
9	P6 (CH2 master)	pot	500 K $\Omega$ lin, mono	E 914 030
10	P7 (reverb)	pot	50 K $\Omega$ lin, mono	E 914 035
11	P8 (power amp)	pot	500 K $\Omega$ log, stereo	E 914 046
12	S1 (channel select)	switch	2 x um	E 950 001
13	C45- C47	hv cap	33u/ 450V ax	E 926 009
14	C48, C49	hv cap	15u/ 450V ax	E 926 006
15	D7, D8, D11- D13	rectifier	1N4007	E 934 023
16	T1- T3	transistor	BF245B	E 938 028
17	T4	transistor	BC556B	E 938 012
18	T5, T6	transistor	BC546B	E 938 009
19	IC 1	OP Amp	NE5532A	E 940 004
20	IC 2	OP Amp	LM 1458N	E 940 011
21	IC 3	OP Amp	TL082CN	E 940 021
22	Rel1, Rel2	relay	24Vdc/ 2 x um	E 946 008
23	Tube1, Tube2	tube	ECC83/ 12AX7A	E 944 007
24	Tube3, Tube4	EL84	DSS matched **	E 944 012
25	tube socket	socket	9pin/ pcb mount	E 944 003
26	J1, J3, J4, J7, J8	jack	1/4" phone jack mono	E 952 038
27	J2	jack	XLR jack	E 952 054
28	J5, J6	RCA jack	T- 709	E 952 045
			** DSS matched duo available; to order a single tube, please state the PC value indicated on the tube	
	mains board			
29	J1	mains inlet	GSP	E 952 087
30	C1, C2	MKT cap Y2	47n/ 250V/ Y2*	E 920 121
31	C3	MKT cap X2	47n/ 250V/ X2*	E 920 059
32	F1- F4	fuse holder	print; with fuse carrier	E 948 003
			* replace only with same type	

#### **4 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](mailto:service@musicandsales.com)**

**Technische Fragen**

**Tel.:06851/ 905 330**

**E-mail: [service@musicandsales.com](mailto: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](mailto:intlservice_handk@musicandsales.com)**

## 5 Technische Daten/ technical data

### Studio 84

#### Eingänge/ inputs:

Input:	Buchse/ connection:	¼" phone jack
	Bauart Eingang/ input type:	unbalanced
	Eingangsimpedanz/ input impedance:	1 MΩ
	Empfindlichkeit/ sensitivity:	- 10 dB
	max. Eingangspegel/ max.input level:	+10 dB
FX- Return:	Buchse/ connection:	¼" phone jack
	Bauart Eingang/ input type:	unbalanced
	Eingangsimpedanz/ input impedance:	47 kΩ
	Empfindlichkeit/ sensitivity:	0 dB

#### Ausgänge/ outputs:

FX- Send:	Buchse/ connection:	¼" phone jack
	Bauart Ausgang/ output type:	unbalanced
	Ausgangsimpedanz/ output impedance:	100 Ω
	Ausgangspegel/ output level:	0 dB
DI Out:	Buchse/ connection:	XLR jack
	Bauart Ausgang/ output type:	unbalanced
	Ausgangsimpedanz/ output impedance:	220 Ω
	Ausgangspegel/ output level:	-3 dB

#### Power amp:

12 Watts ( RMS ) into 4 Ω @ k = 1%

18 Watts ( RMS ) into 8 Ω @ k = 1%

#### Bias level:

factory setting: 20 mA per tube (EL84/ 6BQ5)

allowed range: 15 mA- 22 mA

#### Speaker out:

Anzahl/ no.: 1 x Klinke/ ¼" phone jack

Impedanz/ impedance: 8 Ω - 16 Ω

#### Speaker(Combo):

no.\ size:	1 x 12"
type \ name:	Celestion Rock Driver Vintage
impedance:	8 Ω
power handling:	50 Watt
power handling programm:	70 Watt

#### Allgemeine elektrische Daten/ general electrical data:

Schutzklasse I/ protection class 1 (protectively earthed)

Netzspannung/ mains voltage: 230V      Netzsicherung/ fuse: T 500 mA

Netzspannung/ mains voltage: 117V      Netzsicherung/ fuse: T 1 A oder SB 1 A

Netzspannung/ mains voltage: 100V      Netzsicherung/ fuse: T 1 A

max. Stromaufnahme/ max. current:	420 mA @ 230V
max. Leistungsaufnahme/ max. power consumption:	100 VA @ 4 Ω + 8 Ω
Netzspannungsbereich/ mains voltage range:	+/- 10 %
Umgebungstemperaturbereich/ temperatur range:	- 10 °C bis + 60 ° C
interne Sicherungen/ internal fuses:	1 x 200 mA (anode) 1 x 100 mA (low voltage)

#### Allgemeine mechanische Daten/ general mechanical data:

Abmessungen/ sizes: Breite/ width: 480 mm      Höhe/ height: 490 mm      Tiefe/ depth: 275 mm

Gewicht/ weight: 16 kg