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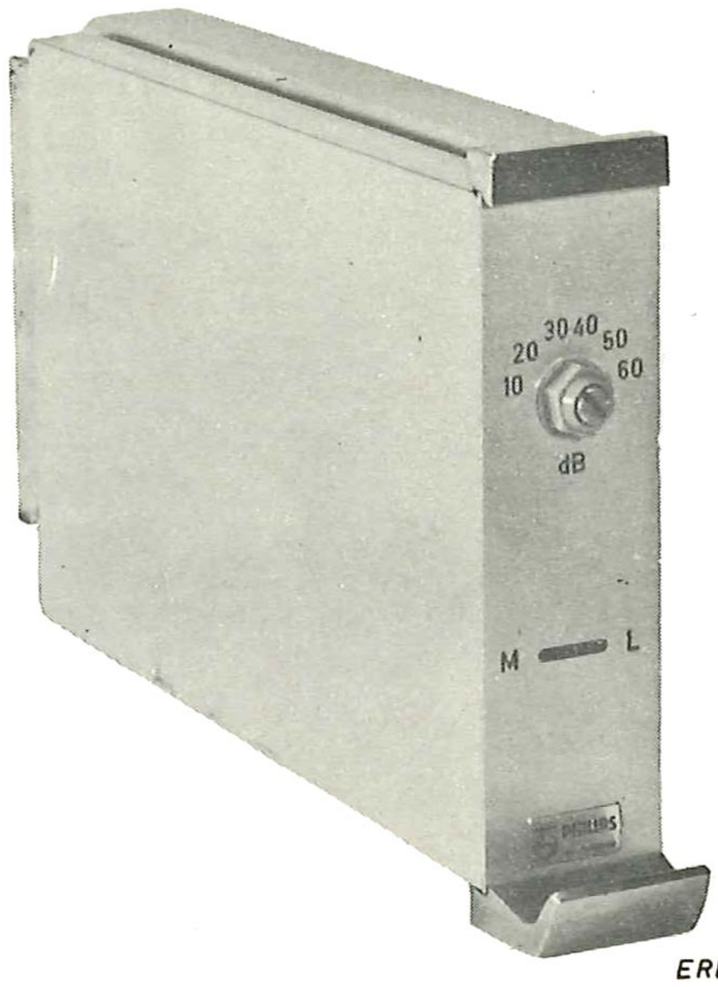

ERE 1153

MICROPHONE/LINE AMPLIFIER

EL 3660/00

93 785 49.1-10 15/965

SERVICE INFORMATION										

CONTENTS

FIGURES

A. GENERAL

The EL 3660/00 amplifier is used in, among other things, mixing consoles and may be used as microphone or line amplifier. For this, SK2, (accessible via an opening in the front) should be set to the correct position.

Technical data

Supply voltage	-24 V to - 32 V
Power consumption	position L: 220 mA
	position M: 80 mA
Input sensitivity	in position 10 dB: 1.04 V for an output voltage of 3.3 V.
Input impedance	connection 4: between 40 c/s and 15,000 c/s: > 32 kΩ
	connection 1: between 40 c/s and 15,000 c/s: > 8 kΩ
Output impedance	connection 10: < 4 Ω
	connection 8: < 8 Ω
Load resistance	position L min. 50 Ω
	position M min. 500 Ω
Max. ambient temperature	60^{o} C
Largest dimensions	height 130 mm (5 1/4")
	width 35 mm (1 3/8")
	depth 240 mm (9 1/4")

B. CONNECTIONS

The connection strip has 11 contacts.

Facing the print side, they have the following functions from right to left:

1 - 2	Input, low-ohmic if 3 and 4 interconnected
2	⏚
4 - 2	Input, high-ohmic
5	Screening of the input leads
6	0 supply voltage
7	- supply voltage
9	⏚
8 and 9	Output, direct (for connection of output transformer)
10 and 9	Output
11	Mechanical ⏚

C. CIRCUIT DESCRIPTION

The EL 3660/00 in principle consists of two highly fed-back amplifiers in cascade which comprise transistors TS1...TS4 and TS6...TS9 respectively.

The amplification is controlled by varying the degree of feed-back by means of SK1.

The filter, consisting of C1, R1, C2 and R2, makes sure that the leakage current at the input, caused by the d.c. base voltage of TS1, is zero.

The following parts are fitted in order to prevent oscillation:

combination C5-R8; C10; C13; C14 and filter L2-C15.

Noise measurement

. Take an amplifier of which the amplification and noise number are known.
. Connect it as shown in Fig. 2.
. Measure the noise at the output in dB m.
. Subtract the amplification of the amplifier in dB.
  The result is the noise number of the 1500 Ω resistor
. Connect this resistor to the EL 3660/00 as shown in Fig. 3.
. Measure the noise at the output in dBm.
. Subtract the noise of the resistor in dB.

The result is the noise number of amplifier EL 3660/00.
This should not exceed 3 dB.

Vce:

TS	1	2	3	4	5	6	7	8	9	10	11	12	13		
V	4	4,7	9	5,5	2,5	5	7,7	8,5	8,7	3,5	3,7	16,5	1	±	10 %

SPARE - PARTS LIST

1	R1 281 12/27	Isolating plate
2	56 201/C	Isolating tube
3	4822 169 00557	Isolating tube
4	4822 169 00558	Nut
SK1	4822 169 00559	Switch
SK2	4822 169 00561	Switch
TS1	ASY 26	Transistor
TS2	AC 107	Transistor
TS3,4	OC 44	Transistor
TS5	OC 75	Transistor
TS6	AC 107	Transistor
TS7,8	OC 44	Transistor
TS9	OC 22	Transistor
TS10	ASZ 17	Transistor
TS11,12	OC 75	Transistor
TS13	AC 128	Transistor

Resistors

R1,2	4822 071 00754	Metalfilm	22	kΩ	¼ %	1/8 W
R3	4822 071 00757	Metalfilm	47	kΩ	¼ %	1/8 W
R4	901/5K1	Carbon	5,1	kΩ	1 %	½ W
R5	901/6K2	Carbon	6,2	kΩ	1 %	½ W
R6	4822 071 00758	Metalfilm	56	kΩ	¼ %	1/8 W
R7	902/K12K	Carbon	12	kΩ	5 %	¼ W
R8	901/51 E	Carbon	51	Ω	1 %	½ W
R9	902/K5K6	Carbon	5,6	kΩ	5 %	¼ W
R10	902/K56K	Carbon	56	kΩ	5 %	¼ W
R11	902/K470E	Carbon	470	Ω	5 %	¼ W
R12	902/K470E	Carbon	470	Ω	5 %	¼ W
R13	902/K12K	Carbon	12	kΩ	5 %	¼ W
R14	902/K2K2	Carbon	2,2	kΩ	5 %	¼ W
R15	902/K470E	Carbon	470	Ω	5 %	¼ W
R16,17	4822 071 00786	Metalfilm	750	Ω	¼ %	1/8 W
R18	901/220E	Carbon	220	Ω	1 %	½ W
R19	4822 071 00 782	Metalfilm	75	Ω	¼ %	1/8 W
R20	4822 071 00 781	Metalfilm	24	Ω	¼ %	1/8 W
R21	901/510E	Carbon	510	Ω	1 %	½ W
R22	4822 071 00 794	Metalfilm	12	kΩ	¼ %	1/8 W
R23	4822 071 00795	Metalfilm	30	kΩ	¼ %	1/8 W
R24	4822 071 00789	Metalfilm	4,3	kΩ	¼ %	1/8 W
R25	902/K33K	Carbon	33	kΩ	5 %	¼ W
R26	902/K47K	Carbon	47	kΩ	5 %	¼ W
R27	902/K15K	Carbon	15	kΩ	5 %	¼ W

R28	901/3K	Carbon	3	kΩ	1 %	½ W
R29	902/K1K5	Carbon	1,5	kΩ	5 %	¼ W
R30	902/K10K	Carbon	10	kΩ	5 %	¼ W
R31	902/K15K	Carbon	15	kΩ	5 %	¼ W
R32	902/K5K6	Carbon	5,6	kΩ	5 %	¼ W
R33 a.b	938/A150E	Carbon	150	Ω	5 %	6,8 W
R34	4822 071 00799	Metalfilm	300	Ω	¼ %	1/8 W
R35	4822 071 00798	Metalfilm	110	Ω	¼ %	1/8 W
R36	4822 071 00797	Metalfilm	33	Ω	¼ %	1/8 W
R37	901/W15E	Carbon measuringresistor	15	Ω	1 %	¼ W
R38	901/2K	Carbon	2	kΩ	1 %	½ W
R39	902/K68E	Carbon	68	Ω	5 %	¼ W
R40	902/K8K2	Carbon	8,2	kΩ	5 %	¼ W
R41	902/K2K7	Carbon	2,7	kΩ	5 %	¼ W
R42	902/K2K2	Carbon	2,2	kΩ	5 %	¼ W
R43	902/K1K2	Carbon	1,2	kΩ	5 %	¼ W
R44	901/4K3	Carbon	4,3	kΩ	1 %	½ W
R45	4822 071 00861	Metalfilm	330	Ω	¼ %	1/8 W
R46	4822 071 00783	Metalfilm	100	Ω	¼ %	1/8 W
R48	901/1K5	Carbon	1,5	kΩ	1 %	½ W
R49	902/K1K2	Carbon	1,2	kΩ	5 %	¼ W
R50	902/K10K	Carbon	10	kΩ	5 %	¼ W

Capacitors

C1,2	C420 AN/A40	Electrolytic	40	µF	2.5	V
C3	909/W10	Electrolytic	10	µF	10	V
C4	909/W250	Electrolytic	250	µF	16	V
C5	904/150E	Ceramic	150	pF	2	%
C6,7	C420 AN/A40	Electrolytic	40	µF	2.5	V
C8	4822 069 00807	Electrolytic	250	µF	25	V
C9	909/C160	Electrolytic	125	µF	10	V
C10	904/220E	Ceramic	220	pF	2	%
C11	909/C50	Electrolytic	50	µF	4	V
C12	909/X64	Electrolytic	64	µF	16	V
C13,14	904/220E	Ceramic	220	pF	2	%
C15	904/150E	Ceramic	150	pF	2	%
C16	4822 069 00579	Electrolytic	2.5	µF	64	V
C17	909/W20	Electrolytic	20	µF	16	V
C18	909/C160	Electrolytic	100	µF	16	V
C19	904/100E	Ceramic	100	pF	2	%
C20	909/U200	Electrolytic	200	µF	10	V
C21	909/W80	Electrolytic	80	µF	4	V
C22	910/C100	Electrolytic	100	µF	25	V
C23	4822 069 00903	Electrolytic	400	µF	25	V

C24	910/C250+250	Electrolytic	500	µF	16	V
C25	909/W250	Electrolytic	250	µF	16	V
C26	4822 069 00903	Electrolytic	400	µF	25	V
C27	4822 069 00807	Electrolytic	250	µF	25	V
C28	4822 069 00613	Electrolytic	2000	µF	2.5	V
C29	4822 069 00903	Electrolytic	400	µF	25	V
C30	904/680E	Ceramic	680	pF	2	%

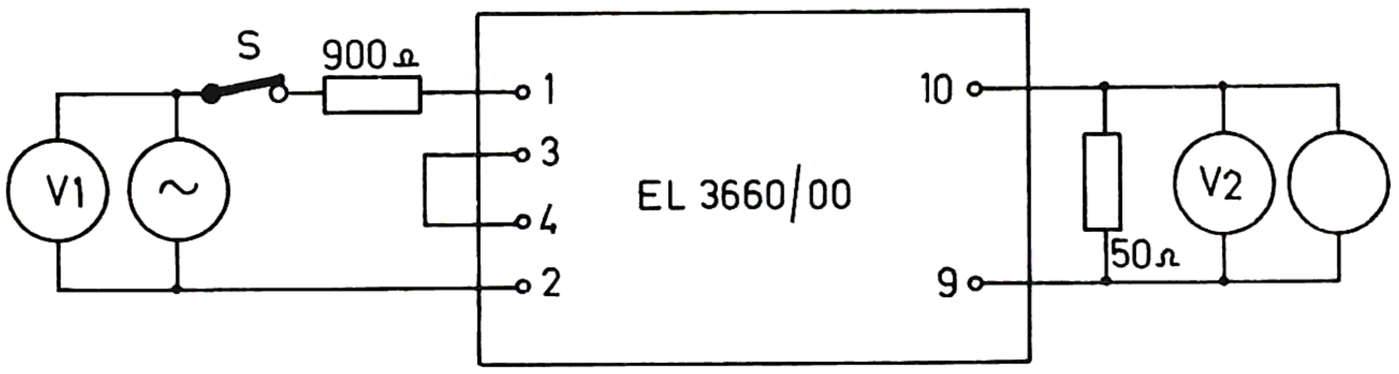

Fig. 1

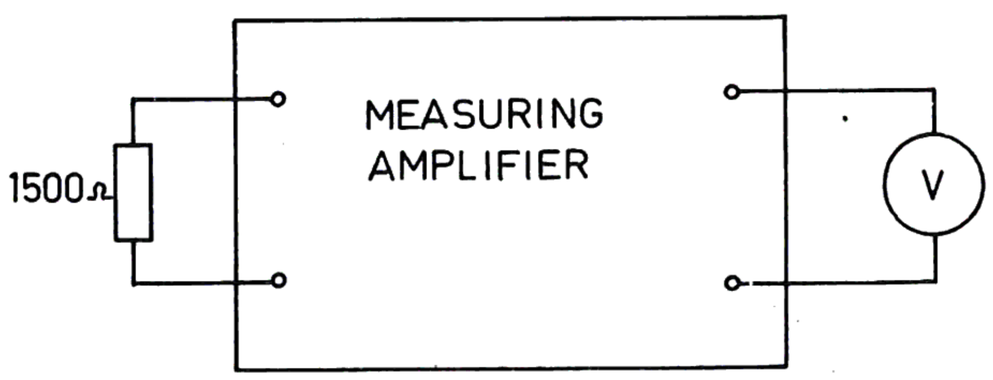

Fig. 2

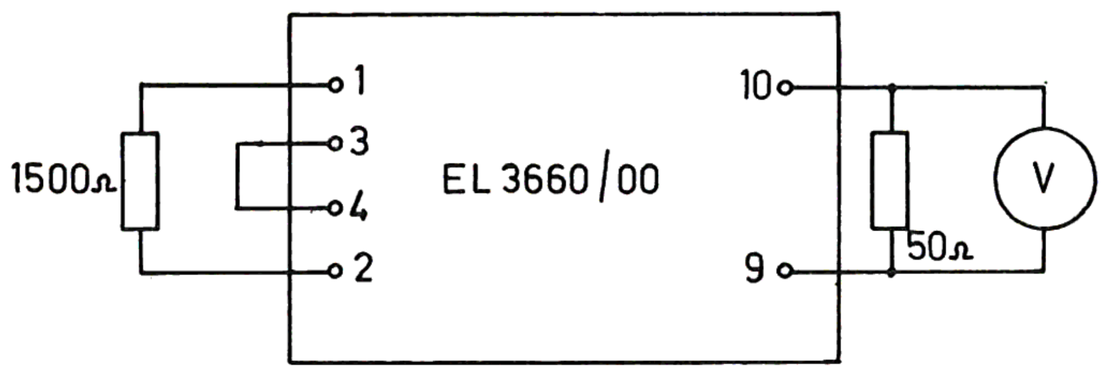

Fig. 3

UNIT A

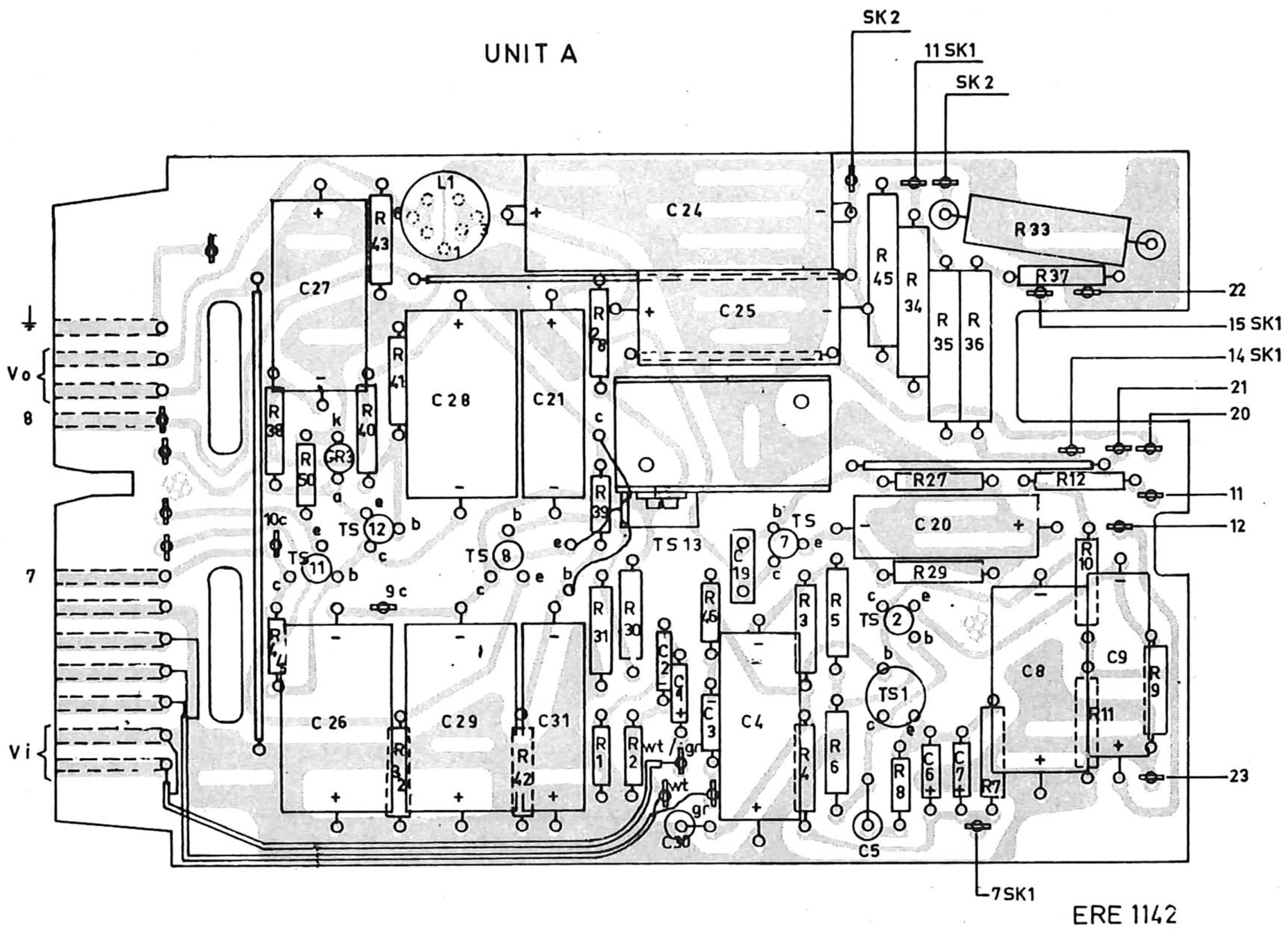

Fig. 5

UNIT B

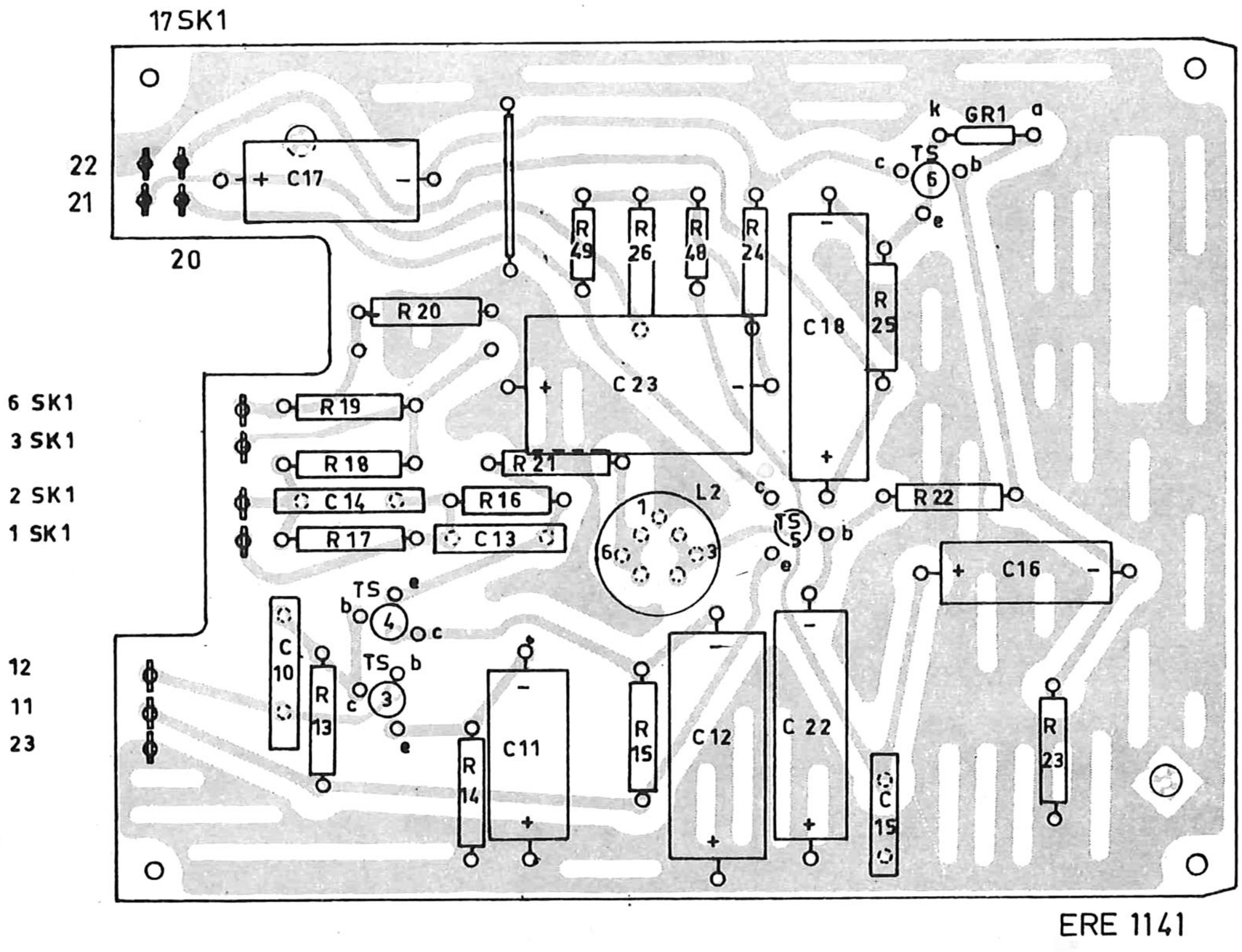

Fig. 6

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INFORMATION

1-5-1966	EL3660/00	EA 64

The following parts have been changed as shown below:

Nachstehende Teile sind wie angegeben geändert worden:

Les pièces suivantes ont été modifiées comme indiqué ci-dessous:

C24	4822 069 00964	500 μF	25 V
C25	4822 069 01043	250 μF	25 V

CENTRAL SERVICE