

TRACE ELLIOT

SERVICE MANUAL

DATE : December 29, 1999
Product Code: T0171/T0166/T0161
Model Number : BOXER65 ' 98
BOXER30 ' 98
BOXER15 ' 98

Issued by:
Trace Elliot Limited
Blackwater Trading Estate
The Causeway
Maldon
Essex
England
CM4 4GG

C12-PCB-BOX-1598 x1.

BOXER 15 BASS COMBO (NEW '98 5-POT MODEL)

PC00098 ISSUE 1

Please write 'B15' on the PCB

Description	Part Code	Qty	Where Used
BOXER PCB	73-PCB-PC00098 x1	1	
ZERO OHM LINKS	72-RCZERO	23	
ZENER DIODE 15V	72-D-BZX55C15V	2	Z1 Z2
RES 1/4W 100K	72-RM100K	3	R32 R21 R17
RES 1/4W 10K	72-RM10K	1	R25
RES 1/4W 10R	72-RM10R	1	R20
RES 1W 1K0	72-RM1K-1WATT	1	R23
RES 1W 470R	72-RM470R-1WATT	2	R22 R31
RES 1/4W 1M0	72-RM1M	3	R26 R33 R34
RES 1/4W 220K	72-RM220K	1	R24
RES 1/4W 22K	72-RM22K	2	R19 R36
RES 1/4W 3K3	72-RM3K3	2	R8 R12
RES 1/4W 470K	72-RM470K	1	R16
RES 1/4W 1K0	72-RM1K	2	R28 R29
RES 1/4W 47K	72-RM33K	1	R30
RES 1/4W 47R	72-RM47R	2	R7 R11
RES 1/4W 4K7	72-RM4K7	3	R9 R10 R18
RES 1W 4R7	72-RM4R7-1WATT	1	R35
RES 1/4W 68K	72-RM68K	1	R27
RES 1/4W 100R	72-RM100R	2	R2 R6
CAP CERAMIC 220p	72-C220P-100VCD	1	C25
CAP CERAMIC 33p	72-C33P-100VCD2	2	C8 C26
CAP POLY 100n 100V	72-C100N-100VP	3	C6 C9 C24
CAP POLY 10n 100V	72-C10N-100VP	3	C1 C2 C20
CAP POLY 1n0 100V	72-C1N-100VP	4	C3 C4 C12 C27
CAP POLY 220n 100V	72-C220N-100VP	1	C16
CAP POLY 2n2 100V	72-C2N2-100VP	1	C17
CAP POLY 47n 100V	72-C47N-100VP	2	C7 C19
CAP TANT 1u0 35V	72-C1-35VT	1	C18
CAP RADIAL 2u2 100V	72-C2.2-100VER	2	C5 C10
CAP RADIAL 10u 63V	72-C10-63VER	2	C22
CAP RADIAL 220u 25V	72-C220-25VER	2	C13 C21
CAP RADIAL 220u 35V	72-C220-35VER	1	C23
PRESET 10K	72-PRESET-10K	1	PR1

TRANSISTOR BF422	72-TBF422	1	TR5
TRANSISTOR BF423	72-TBF423	1	TR6
PCB TAB 6.3mm	72-CRIMP-PCB-TAB	6	GND, PL1, LS1
OP AMP TL072	72-IC-TL072	1	IC1
JFET J112 <i>PINK!!!</i>	72-FET-J-112-P	1	TR8
LED 5mm RED	72-LED-RED	3	LED1 LED2 LED3
SWITCH F2UEE	72-SW-F2UEE	1	SW1
RES 1R 2.5W W/W	72-RWW1R-2.5W	2	R3 R5
POT 16mm B50K	73-POT-50KB	1	RV4
POT 16mm A250K	73-POT-A250K	2	RV1 RV3
POT 16mm A25K	73-POT-A25K	1	RV2
POT 16mm A1M	73-POT-A1M	1	RV5
FUSE HOLDER 20mm	72-FUS-HLD-PCB-4	4	FS1 FS2 Check Orientation
RECTIFIER KBPC602	73-BRIDGE-2	1	DR1
JACK SOCKET MONO	73-SKT-JCKBNBS	1	SK1
JACK SOCKET STEREO	73-SKT-JCKBBBS	1	SK2
CAP 4700u 35V	73-CAP-470035V	2	C11 C15
<u>SECOND STAGE ITEMS.</u>			
DIODE 1N4002	72-D-1N4002	4	D1 D2 D3 D4 coat in compound, fit to h/sink on spacers
PCB TEST PIN	72-TERM-PIN	1	TP1
PUSH BUTTON	71-CAP-SWT-S6	1	fit onto SW1
FUSE 20mm T1.6A	72-FUS-1.6AT	2	FS1 FS2
TRANSISTOR BD647	72-TBD647	1	TR3
TRANSISTOR BD648	72-TBD648	1	TR1
TO220 INSULATING KITS	72-MOS-PAD-TO220	2	TR1 TR3
SPEAKER WIRE FIG '8'	72-WIR-LSP-4	0.5m	solder into LS1
4.8mm CRIMPS	72-CRIMP-FASTON	2	fit to speaker wire
WIRE 16/02mm	green in the centre white on the outsides	0.2m	solder into PL1
2.8mm CRIMPS	72-CRIMP-FASTON3	3	fit to 3 wires
BOXER HEATSINK	G13-HS-BOXER15	1	
FIXINGS:	71-SCR-M3X12PP	2	
	71-WAS-M3NYL	2	

	71-NUT-M3ZINC	2	
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C12-PCB-BOX-3098 x1.

PC00098 ISSUE 1

BOXER 30 BASS COMBO (NEW '98 5-POT MODEL)

Please write 'B30' on the PCB

Description	Part Code	Qty	Where Used
BOXER PCB	73-PCB-PC00098	1	
ZERO OHM LINKS	72-RCZERO	23	
	72-RCZERO	1	FIT TO R25
ZENER DIODE 15V	72-D-BZX55C15V	2	Z1 Z2
RES 1/4W 220K	72-RM220K	1	R24
RES 1/4W 100K	72-RM100K	4	R32 R14 R21 R17
RES 1/4W 10R	72-RM10R	1	R20
RES 1W 1K0	72-RM1K-1WATT	3	R22 R23 R31
RES 1/4W 1M0	72-RM1M	3	R26 R33 R34
RES 1/4W 22K	72-RM22K	2	R13 R19
RES 1/4W 470K	72-RM470K	1	R16
RES 1/4W 1K0	72-RM1K	2	R28 R29
RES 1/4W 47R	72-RM47R	2	R7 R11
RES 1/4W 4K7	72-RM4K7	6	R8 R9 R10 R12 R15 R18
RES 1W 4R7	72-RM4R7-1WATT	1	R35
RES 1/4W 15K	72-RM15K	1	R27
RES 1/4W 100R	72-RM100R	2	R2 R6
CAP CERAMIC 220p	72-C220P-100VCD	1	C25
CAP CERAMIC 33p	72-C33P-100VCD2	2	C8 C26
CAP POLY 100n 100V	72-C100N-100VP	4	C6 C7 C9 C24
CAP POLY 10n 100V	72-C10N-100VP	3	C1 C2 C20
CAP POLY 1n0 100V	72-C1N-100VP	3	C3 C4 C12
CAP POLY 220n 100V	72-C220N-100VP	1	C16
CAP POLY 22n 100V	72-C22N-100VP	1	C17
CAP POLY 47n 100V	72-C47N-100VP	1	C19
CAP TANT 1u0 35V	72-C1-35VT	1	C18
CAP RADIAL 2u2 100V	72-C2.2-100VER	2	C5 C10
CAP RADIAL 10u 63V	72-C10-63VER	2	C22 C14
CAP RADIAL 220u 25V	72-C220-25VER	2	C13 C21
CAP RADIAL 220u 35V	72-C220-35VER	1	C23
PRESET 10K	72-PRESET-10K	1	PR1
TRANSISTOR BF422	72-TBF422	1	TR5
TRANSISTOR BF423	72-TBF423	1	TR6
PCB TAB 6.3mm	72-CRIMP-PCB-TAB	6	GND, PL1, LS1

OP AMP TL072	72-IC-TL072	1	IC1
JFET J112	72-FET-J-112	1	TR7
JFET J112 <i>PINK!!!</i>	72-FET-J-112	1	TR8
LED 5mm RED	72-LED-RED	2	LED1 LED2
SWITCH F2UEE	72-SW-F2UEE	1	SW1
RES 1R 2.5W W/W	72-RWW1R-2.5W	2	R3 R5
POT 16mm B50K	72-POT-50KB	1	RV4
POT 16mm A250K	73-POT-A250K	2	RV1 RV3
POT 16mm A25K	73-POT-A25K	1	RV2
POT 16mm A1M	73-POT-A1M	1	RV5
FUSE HOLDER 20mm	72-FUS-HLD-PCB-4	4	FS1 FS2
RECTIFIER KBPC602	73-BRIDGE-2	1	DR1
JACK SOCKET MONO	73-SKT-JCKBNBS	1	SK1
JACK SOCKET STEREO	73-SKT-JCKBBBS	1	SK2
CAP 4700u 35V	73-CAP-470035V	2	C11 C15
<u>SECOND STAGE ITEMS.</u>			
DIODE 1N4002	72-D-1N4002	4	D1 D2 D3 D4 coat in compound, fit to h/sink on spacers
PUSH BUTTON	71-CAP-SWT-S6	1	fit onto SW1
FUSE 20mm T1.6A	72-FUS-1.6AT	2	FS1 FS2
PCB TEST PIN	72- TERM-PIN	1	TP1
TRANSISTOR BD647	72-TBD647	1	TR3
TRANSISTOR BD648	72-TBD648	1	TR1
TO220 INSULATING KITS	72-MOS-PAD-TO220	2	TR1 TR3
THERMISTOR PTC	72-THERMISTOR-3	1	TH1
SPEAKER WIRE FIG '8'	72-WIR-LSP-4	0.5m	solder into LS1
4.8mm CRIMPS	72-CRIMP-FASTON	2	fit to speaker wire
WIRE 16/02mm	green in the centre white on the outsides	0.2m	solder into PL1
2.8mm CRIMPS	72-CRIMP-FASTON3	3	fit to 3 wires
BOXER HEATSINK	E13-HS-BOXER65	1	
FIXINGS:	71-SCR-M3X12PP	3	
	71-WAS-M3NYL	3	
	71-NUT-M3ZINC	3	

C12-PCB-BOX-6598 x2.

PC00098 ISSUE 2

BOXER 65 BASS COMBO (NEW '98 5-POT MODEL)

Please write 'B65' on the PCB

(GOLD JACKS)

Description	Part Code	Qty	Where Used
BOXER PCB ISSUE1	73-PCB-PC00098	1	
ZERO OHM LINKS	72-RCZERO	23	
	72-RCZERO	1	R25
ZENER DIODE 15V	72-D-BZX55C15V	2	Z1 Z2
RES 1/4W 100K	72-RM100K	5	R32 R14 R21 R30 R17
RES 1/4W 10R	72-RM10R	1	R20
RES 1W 1K0	72-RM1K-1WATT	1	R23
RES 1/4W 1M0	72-RM1M	3	R26 R33 R34
RES 1/4W 220K	72-RM220K	1	R24
RES 1/4W 22K	72-RM22K	2	R13 R19
RES 1/4W 2K2	72-RM2K2	1	R37
RES 1W 2K2	72-RM2K2-1WATT	2	R22 R31
RES 1/4W 3K3	72-RM3K3	2	R8 R12
RES 1/4W 470K	72-RM470K	1	R16
RES 1/4W 1K0	72-RM1K	2	R28 R29
RES 1/4W 47R	72-RM47R	2	R7 R11
RES 1/4W 4K7	72-RM4K7	4	R9 R10 R15 R18
RES 1W 4R7	72-RM4R7-1WATT	1	R35
RES 1/4W 15K	72-RM15K	1	R27
RES 1/4W 82R	72-RM82R	2	R2 R6
CAP CERAMIC 220p	72-C220P-100VCD	1	C25
CAP CERAMIC 33p	72-C33P-100VCD2	2	C8 C26
CAP POLY 100n 100V	72-C100N-100VP	4	C6 C7 C9 C24
CAP POLY 10n 100V	72-C10N-100VP	3	C1 C2 C20
CAP POLY 1n0 100V	72-C1N-100VP	3	C3 C4 C12
CAP POLY 220n 100V	72-C220N-100VP	1	C16
CAP POLY 22n 100V	72-C22N-100VP	1	C17
CAP POLY 47n 100V	72-C47N-100VP	1	C19
CAP TANT 1u0 35V	72-C1-35VT	1	C18
CAP RADIAL 2u2 100V	72-C2.2-100VER	2	C5 C10
CAP RADIAL 10u 63V	72-C10-63VER	2	C22 C14
CAP RADIAL 220u 25V	72-C220-25VER	3	C13 C21
CAP RADIAL 220u 35V	72-C220-35VER	1	C23
PRESET 10K	72-PRESET-10K	1	PR1

TRANSISTOR BF422	72-TBF422	1	TR5
TRANSISTOR BF423	72-TBF423	1	TR6
PCB TAB 6.3mm	72-CRIMP-PCB-TAB	6	GND, PL1, LS1
OP AMP TL072	72-IC-TL072	1	IC1
JFET J112	72-FET-J-112	1	TR7
JFET J112 <u>PINK!!!</u>	72-FET-J-112-P	1	TR8
LED 5mm RED	72-LED-RED	2	LED1 LED2
SWITCH F2UEE	72-SW-F2UEE	1	SW1
RES 1R0 2.5W W/W	72-RWW1R-2.5W	4	R1 R3 R4 R5
POT 16mm B50K	72-POT-50KB	1	RV4
POT 16mm A250K	73-POT-A250K	2	RV1 RV3
POT 16mm A25K	73-POT-A25K	1	RV2
POT 16mm A1M	73-POT-A1M	1	RV5
FUSE HOLDER 20mm	72-FUS-HLD-PCB-4	4	FS1 FS2
RECTIFIER KBPC602	73-BRIDGE-2	1	DR1
JACK SOCKET MONO	73-SKT-JCKBNBG	1	SK1
JACK SOCKET STEREO	73-SKT-JCKBBBG	1	SK2
CAP 4700u 63V	73-CAP-470063B	2	C11 C15
<u>SECOND STAGE ITEMS.</u>			
DIODE 1N4002	72-D-1N4002	4	D1 D2 D3 D4 coat in compound, fit to h/sink on spacers
PCB TEST PIN	72-TERM-PIN	1	TP1
PUSH BUTTON	71-CAP-SWT-S6	1	fit onto SW1
FUSE 20mm T2A	72-FUS-2AT	2	FS1 FS2
TRANSISTOR BD647	72-TBD647	2	TR3 TR4
TRANSISTOR BD648	72-TBD648	2	TR1 TR2
TO220 INSULATING KITS	72-MOS-PAD-TO220	4	TR1....TR4
THERMISTOR PTC	72-THERMISTOR-3	1	TH1
SPEAKER WIRE FIG '8'	72-WIR-LSP-4	0.5m	solder into LS1
4.8mm CRIMPS	72-CRIMP-FASTON	2	fit to speaker wire
WIRE 16/02mm	green in the centre white on the outsides	0.2m	solder into PL1
2.8mm CRIMPS	72-CRIMP-FASTON3	3	fit to 3 wires
BOXER HEATSINK	E13-HS-BOXER65	1	
FIXINGS:	71-SCR-M3X12PP	5	
	71-WAS-M3NYL	5	
	71-NUT-M3ZINC	5	