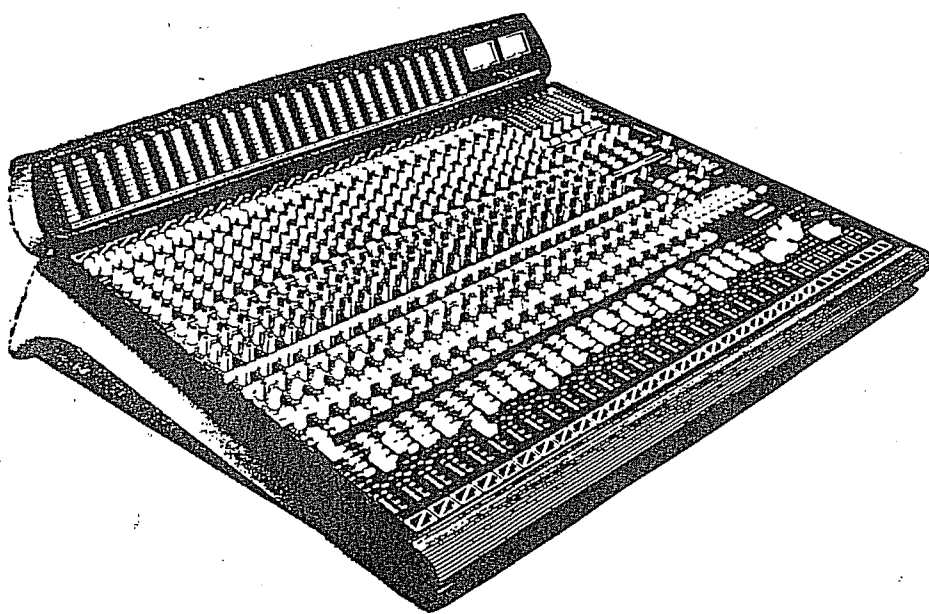


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# SOUNDTRACS<sub>PLC</sub> TOPAZ



Production  
Console  
Operating Manual

ISSUE D1



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The following section provides technical information about the TOPAZ console.

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# 46 Technical Information

## The Power Supply

All TOPAZ consoles are supplied with an external A.C. Power Pack which provides the necessary voltages. The Power Pack connects to the PSU IN input on the rear panel of the console.

The mains input to the Power Pack is via an IEC type mains connector which is supplied with the unit. If the mains cable does not have a mains plug connected, the user must fit the correct plug as required in their country. The mains cable should be wired as follows:

Brown wire - live, Blue - neutral, Green/Yellow - earth

The mains voltage of the power supply can be adjusted to either 230 volts or 115 volts to suit the requirements of individual countries. It is important that you check the voltage before switching on. To change the mains voltage remove the fuse holder below the IEC socket on the rear of the power supply. You should use a small flat head screwdriver to lever out the fuse holder. Turn it through 180 degrees (see drawing). The voltage setting is shown at the top of the fuse holder. The 230v setting covers all voltages between 220 and 240 volts. The 115v setting covers all voltages between 100 and 120 volts.

Use a fuse rated at T2.0 Amps when 230V is selected and T3.15 Amps when 115V is selected.

The voltage regulators etc. for the D.C. supplies required by the console are mounted on a panel inside. They provide stabilised supplies at the following ratings :-

+/- 17 Volts @ 1.5 Amps (24 ch.), 2.3 Amps (32 ch.)

+ 48 Volts @ 0.25 Amps

*N.B. The power supply transformer may cause hum in sensitive equipment, and should be located as far as possible from the console, signal cables, effects processors and other sensitive equipment.*

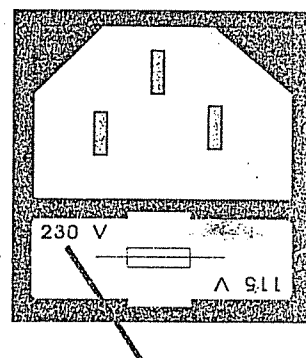
The underside of the console and the rear of the meterbridge (if fitted) are used to dissipate heat from the regulators. It is therefore normal that these will feel warm.

## Power Supply Connector

XLR 4 pin, female socket cable mounted on power pack.

Pins 1&2 - 21V AC, Pins 3&4 - 21V AC

*To change the voltage setting remove the fuse holder and rotate it by 180 degrees.*



*The voltage selected is shown here*

## Disassembly/re-assembly

The TOPAZ provides user selectable options and must be disassembled to gain access to the internal solder links; the disassembly procedure is described below.

First find a suitable area in which to work. The console will need to be turned upside down for this work, so a soft surface such as a carpet is recommended.

Two types of chassis metalwork are used on the Topaz consoles. One type has a base panel and a combined top/rear panel. The other type has separate top and rear panels (i.e. the rear panel can be removed separately if required). All newer issue (*Project 8*) consoles are of this type. This version has self tapping screws to secure the top edge of the rear panel to the top panel. The other fixings are the same on both types, and they may both be dismantled for normal service access in the same way. The P.C.B.'s are fixed to the top and rear panels in both cases.

First remove the 6 fixing screws from the top panel, three at each end. Then remove the two screws from the right and left hand ends of the rear panel (one next to the ch.1 mic. socket, one next to the 'MAIN R' output socket). Lastly remove the row of screws from the bottom of the rear panel. The top panel may now be lifted off and turned over for internal access.

Re-assembly is the reverse of the above sequence.

## Location of main parts

Most of the parts in the TOPAZ are mounted on p.c.b.'s in blocks of eight channels.

The input/output connectors are mounted on 'rear' p.c.b.'s, named the I/O rear and Master rear respectively. These are fixed to the rear panel and connect to the main panel p.c.b.'s via ribbon cables.

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## The User Options

The TOPAZ provides user selectable options for the operating level of the 2 track inputs and outputs (mix out), the multitrack tape inputs and outputs, and Auxiliary 1 and 2 pre or post fader operation. The mix output is factory set to +4dBu, and the others are factory set to -10dBV, but can be altered to match equipment operating on the +4dBu standard if required. Only some (later issue) TOPAZ consoles have an option for changing auxiliaries 1 and 2 operation. Check with your distributor if you are unsure. These operations should be carried out by your distributor or a suitably qualified technician. The procedure for changing the settings of these options is described below.

### Tape input and output level

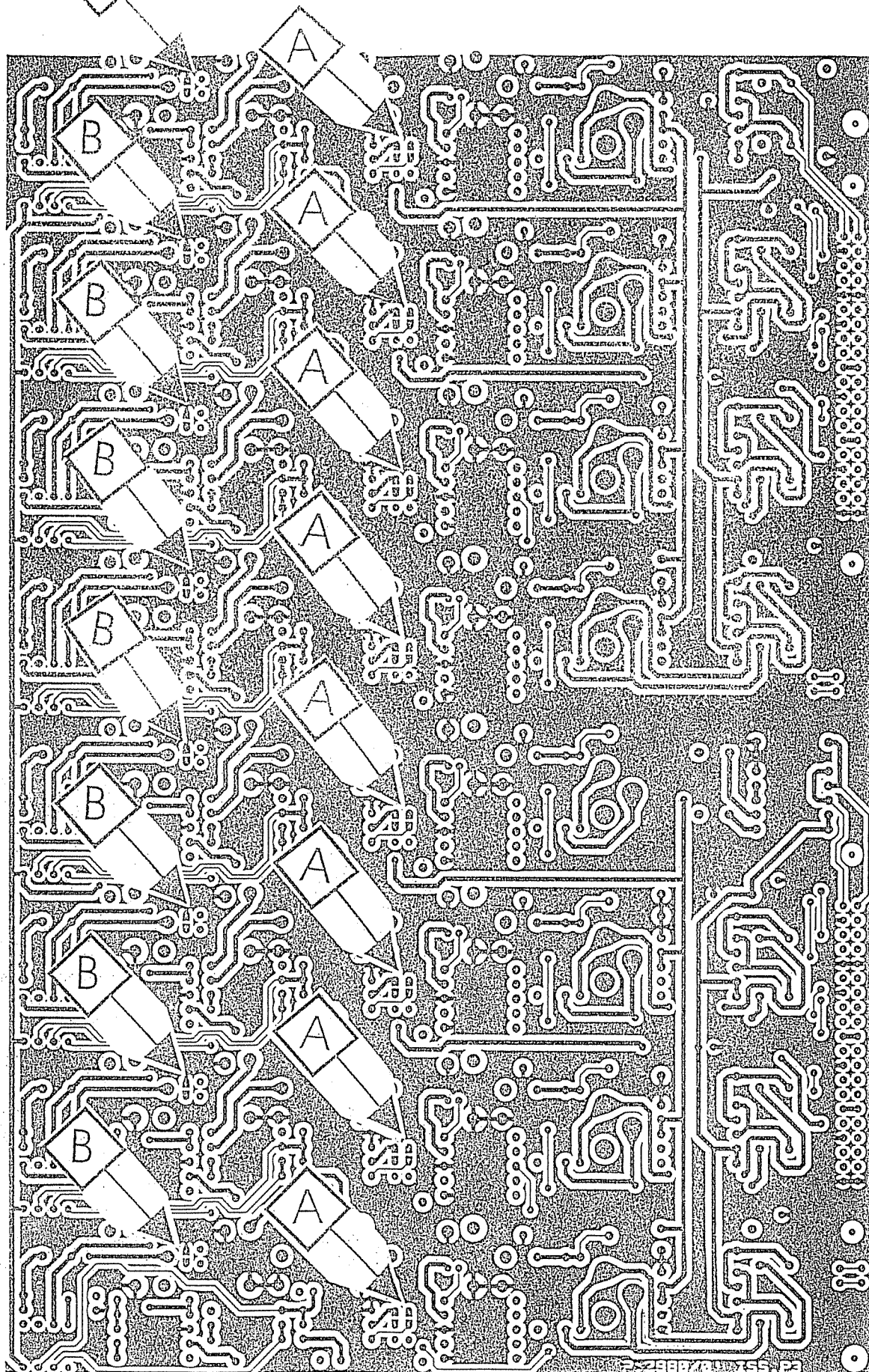
Remove the top panel of the console as described on the previous page.

The P.C.B.'s have special solder pads which must be either shorted or opened to set the higher operating level (+4dBu). Each P.C.B. has eight channels on it so there are eight sets of links. A bridge of solder is sufficient to make the connection as the pads are positioned very close together to allow for this.

Tape Out	(link 'B')	Short for - 10, open for +4
Monitor/Tape In	(links 'A')	Short for + 4, open for - 10 (2 links per channel - balanced input)

Refer to the pcb diagram opposite for the precise location of these links.





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## 2 Track input

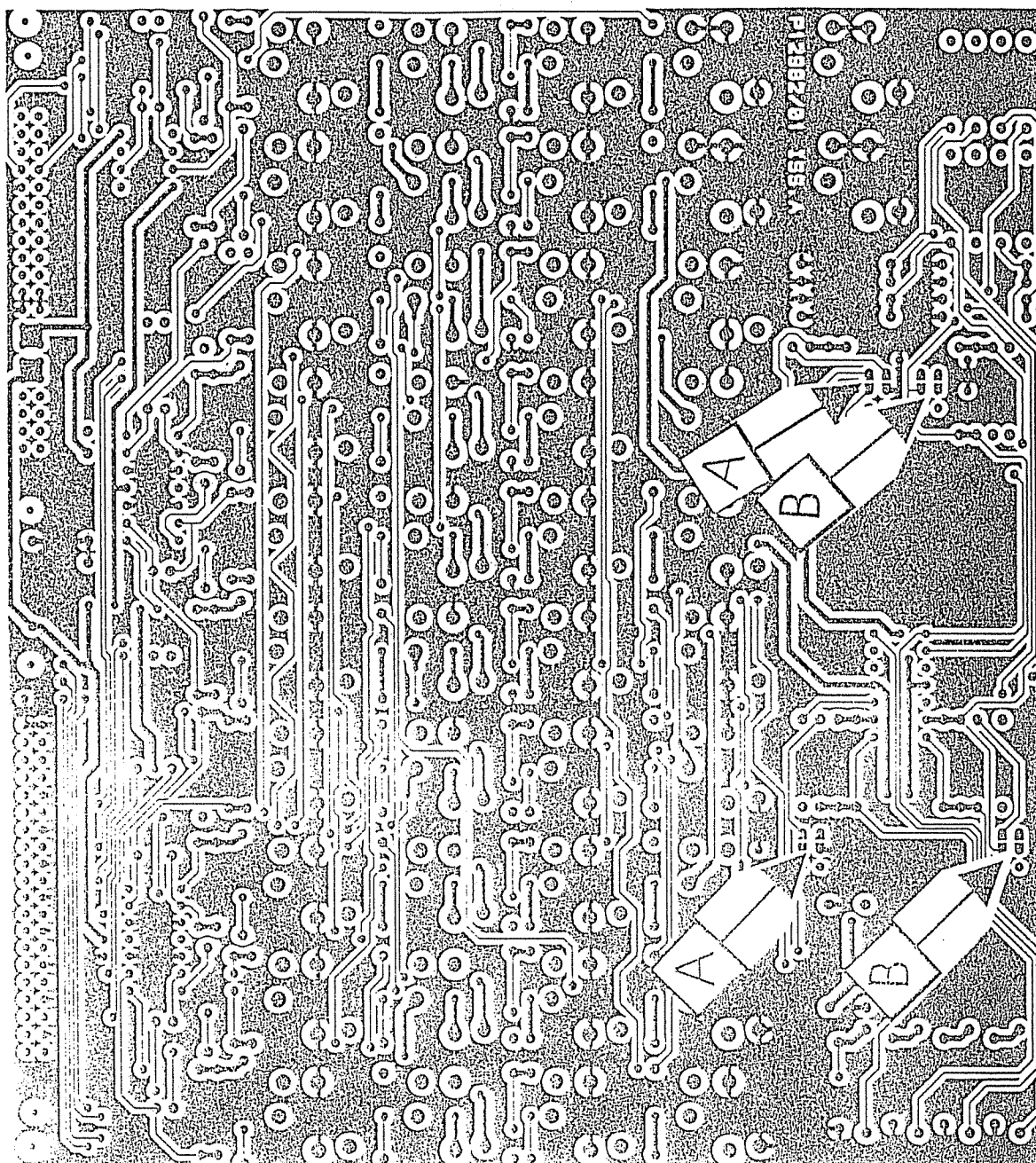
Remove the top panel of the console as described on the previous page.

The master P.C.B. has special solder pads which must be shorted to set the higher operating level (+4dBu). A bridge of solder is sufficient to make the connection as the pads are positioned very close together to allow for this.

2 Track Return A    (links 'A')                      Short for + 4, open for - 10  
(2 links per channel - balanced inputs, i.e.4 links per return)

2 Track Return B    (links 'B')                      Short for + 4, open for - 10  
(2 links per channel - balanced inputs, i.e.4 links per return)

Refer to the pcb diagram opposite for the precise location of these links.



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### Aux 1 and 2 Sends

Remove the top panel as described on the previous pages.

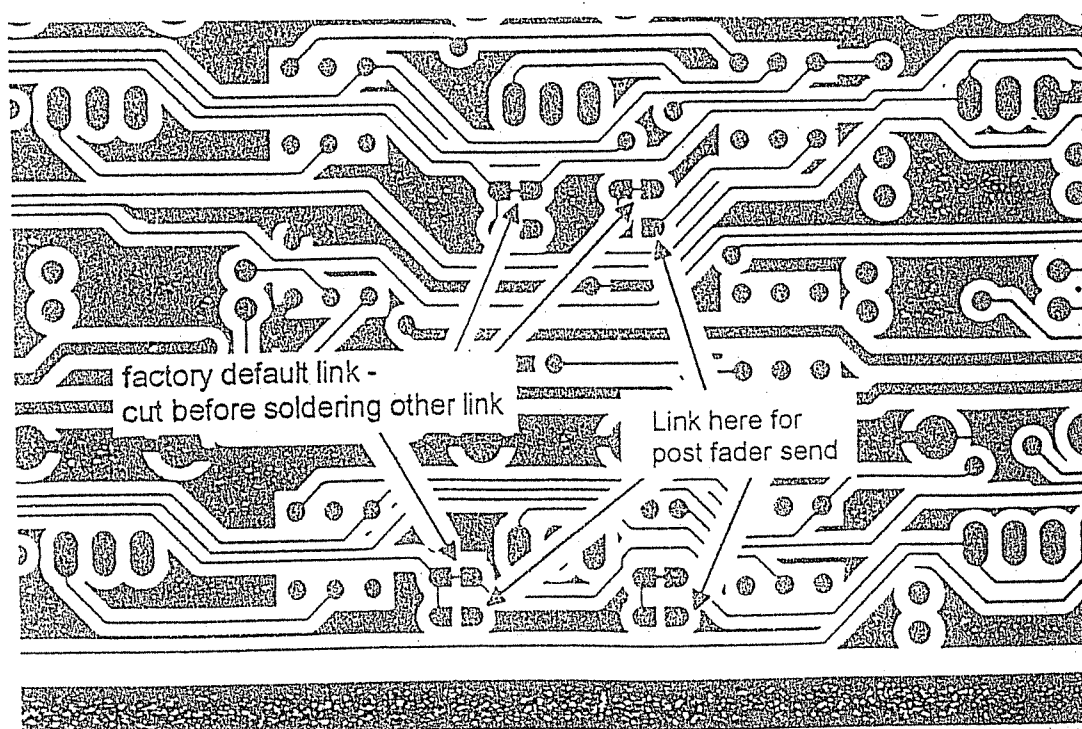
The main channel P.C.B's have special solder pads which can be shorted to provide post fader send for either or both of AUX 1 and AUX 2. The factory default is Pre fader send. If the mixer is once set to post fader the process can be reversed if the need arises.

This option is available on Topaz Project 8 mixers with main channel P.C.B's P12979 issue F and above only (refer to identification on the P.C.B. itself for confirmation of issue version). It is not fitted on the Topaz Record 8 or early Project 8 mixers.

Note that AUX 1 always sends from the main channel path and AUX 2 from the monitor path, no matter if they are set pre or post fader. Whilst each channel is individually modified, it is strongly recommended that all the controls for each send are modified to be the same. e.g. all AUX 1 are pre and all AUX 2 are post etc.

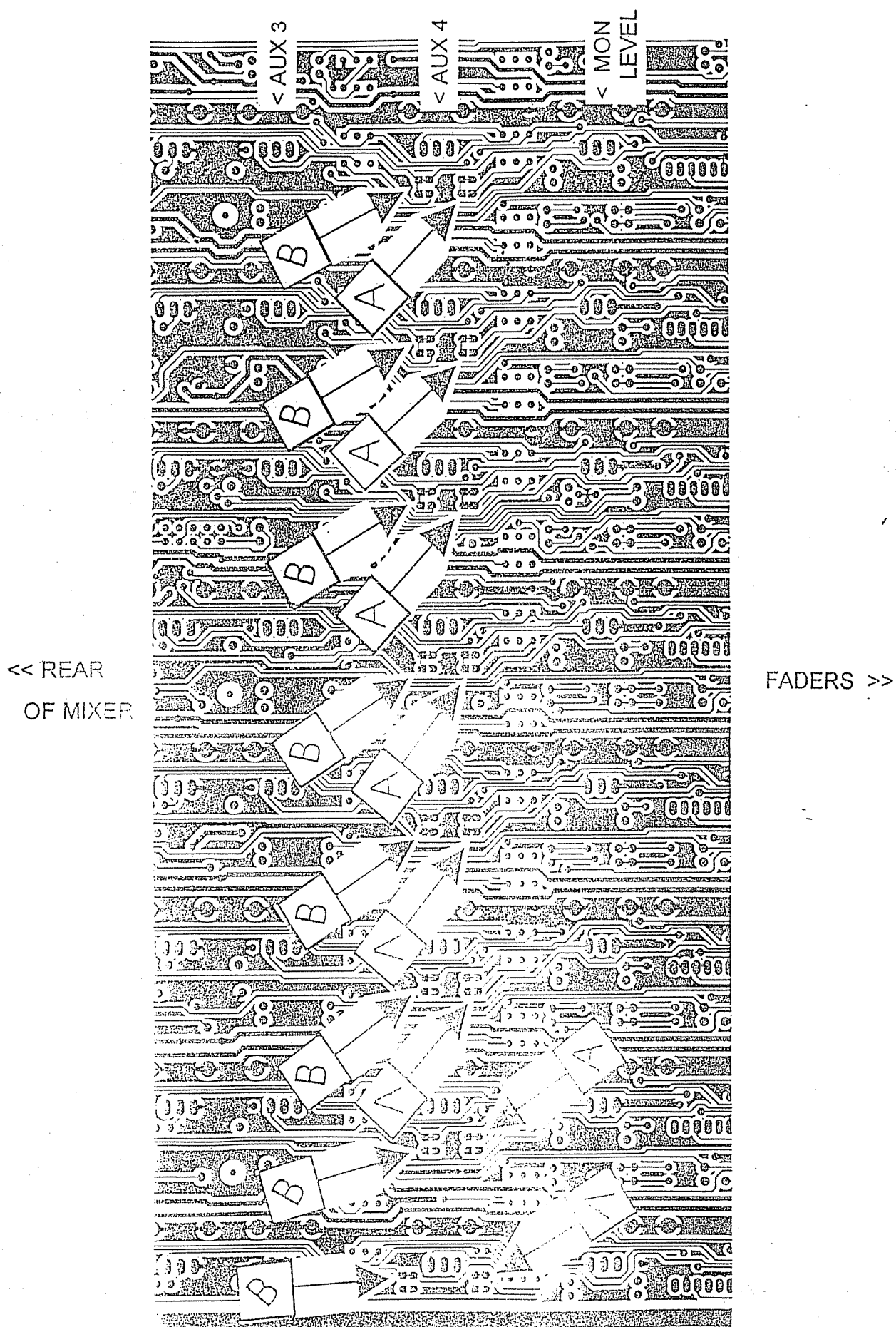
Refer to the diagrams for the precise location of the links. All Links are located adjacent to the channel AUX 4 control. On the diagram opposite A is for AUX 1 and B is for AUX 2.

Note that the P.C.B. is manufactured with a small track joining the PRE link pads. If the mixer is to be set for post fader send operation this must be cut with a small sharp knife before soldering the post pads. If the send is then to be returned to Pre fader operation the Pre link will need to be soldered across.



<< REAR OF MIXER

enlarged detail of  
channels 7 & 8



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## Specifications

Microphone noise	.....	-129dBu
Line input noise	.....	-95dBu
Mix bus noise		
24 channels routed L/R	.....	-84dBr
32 channels routed L/R	.....	-81dBr
Group bus noise		
24 channels routed to group	.....	-84dBr
32 channels routed to group	.....	-81dBr
Aux bus noise		
24 channel console	.....	-84dBr
32 channel console	.....	-81dBr
Frequency response	.....	10Hz-40kHz +0, -1dB
Channel Mute crosstalk	.....	>-100dB @ 1kHz
Fader off crosstalk	.....	>-100dB @ 1kHz
Routing crosstalk	.....	>-90dB @ 1kHz
Adjacent channel crosstalk	.....	>-90dB @ 1kHz
Harmonic distortion (Line in -mast out)	.....	<0.005% @ 1kHz
Output Impedance (all outputs)	.....	50 Ohms approx.
Input Impedance (Line/Tape)	.....	10K Ohms approx.
Input Impedance (Mic)	.....	1K Ohms approx.
Reference level (0dBr)	.....	+4dBu (1.23 v r.m.s.)
Power consumption	.....	160 Watts max.

## Weights and dimensions

	24 Channel	32 Channel
Total Weight (unpacked)	30 kg	40 kg
Overall width	970 mm	1220 mm
Overall height - @ rear	165 mm	165 mm
Overall height - @ front	85 mm	85 mm
Overall depth (front to back)	680 mm	680 mm

All figures are approximate, and do not include the optional meter bridge.

## Circuit diagrams

The following section provides circuit diagrams and parts lists for the TOPAZ console.  
The parts list for each p.c.b. follows the relevant circuit.

Block Diagram (S13095) .....	S1
I/O Channel (S12979) .....	S2
I/O Channel Rear (S12980) .....	S3
Master (S12981A) .....	S4
Master (S12981B) .....	S5
Master (S12981C) .....	S6
Master (S12981D) .....	S7
Master (S12981E) .....	S8
Master Rear (S12982) .....	S9
Sub Master (S13029) .....	S10
Power supply (S13003) .....	S11