Soundcraft

200B

USER MANUAL

Soundcraft Electronics Ltd.
Cranborne House
Cranborne Industrial Estate
Cranborne Road
Potters Bar
Hertfordshire EN6 3JN
England
Tel: 0707 665000
Fax: 0707 660482
Telex: 21198

JBL
PO Box 2200
8500 Balboa Boulevard
Northridge
CA 91329
Tel: 818 893 4351
Telex: 23 66 4923
Facsimile: 818 893 3639

Soundcraft Canada Inc
1444 Hymus Boulevard
Dorval
Quebec. Canada. H9P 1J6.
Tel: (514) 685 1610
Telex: 05 822582
Facsimile: (514) 685 2094

Soundcraft Japan
4F Yoyogi Living,
12-21 Sendagaya 5,
Shibuyaku, Tokyo, 151 Japan.
Tel: (03) 341 6201.
Facsimile: (03) 341 5260

The information in this document has been carefully checked and is believed to be entirely reliable. However, no responsibility is assumed for inaccuracies. Furthermore, Soundcraft reserves the right to make changes to any products herein to improve reliability, function or design.

Soundcraft does not assume any liability arising out of the application or use of any product or circuit described herein.

SOUNDCRAFT SERIES 200B MIXING CONSOLE

CONTENTS

		PAGE NO.
1.00	CONSOLE SPECIFICATION	2
2.00	GENERAL DESCRIPTION	3
2.01	Input Module	4
2.02	Master Module	7
2.03	Optional Stereo Input Module	12
3.00	CONNECTIONS AND WIRING	15
3.01	Input Connection Panel	15
3.02	Output Connection Panel	16
3.03	Stereo Input Rear Connection Panel	18
3.04	General Wiring	19
3.05	Interface levels	21
3.06	Fuse Ratings	22
4.00	8-TRACK OPERATION	23
4.01	P.A. APPLICATIONS	27
4.02	OPERATION OF STEREO INPUT	28
5.00	MAINTENANCE	29
5.01	General Fault Finding	29
5.02	Removing Modules	30
5.03	Meter Alignment	31
5.04	Lamp Replacement	31
5.05	Power Supply Servicing	32
6.00	GLOSSARY OF TERMS USED	33
7.00	TECHNICAL DESCRIPTION	35
7.01	General description	35
7.02	Input Channels	36
7.03	Group Outputs	36
7.04	Master LH PCB (Auxiliary Masters)	37
7.05	Master RH PCB	37
8.00	WARRANTY	39
9.00	CUSTOMER SPARES KIT LIST	41
10.00	SCHEMATICS	42

*Note
CPS 450 or 650 Power Supplies have seperate USER MANUAL.

1.00 SERIES 200B

Model No. ..... Frame size.....

Serial No. ..... PSU Serial No. .....
(as used in final test)

Original Customer..... Works Order No. .....

PROGRESS	NAME	DATE	SUPERVISORS INSPECTION
Frame Fitted by.....			
Assembled/Wired by.....			
First Test by.....			
Final Test by.....			
Despatch Inspection by.....			

EQUIPPED WITH	TYPE	QUANTITY ISSUE
Input Modules.....		
Output Modules.....		
Master Module.....		
P.S.U.		

OPTIONS - SPECIFY

ALTERATIONS TO SPEC.

SPECIAL INSTRUCTIONS

DESPATCH KIT REQUIRED

2.00 SOUNDCRAFT SERIES 200B CONSOLE

GENERAL DESCRIPTION

The Soundcraft Series 200B is designed primarily for up to 8-track recording, as well as public address and monitor applications.

The console has 4 main buses, 4 auxiliary outputs and dedicated mix outputs. All inputs are electronically balanced.

Electronic balancing reduces the degradation of signal quality which is introduced by more conventional transformer coupled designs, ensuring superior transient response, minimal phase shift and excellent common mode rejection even at high frequencies.

The outputs, with the exception of the Mix Outputs and the Control Room Outputs, are "GROUND COMPENSATED" to minimise hum or interference in differing enviroments, where earthing rules, etc may not always have been adhered to.

The Microphone Input impedance is greater than 2kOhms, which will not cause any loading effects on any normally used microphone. The Line level Input has an input impedance of greater than 10kOhms, which is high enough to ensure that it will interface with most studio peripheral equipment without causing loading effects.

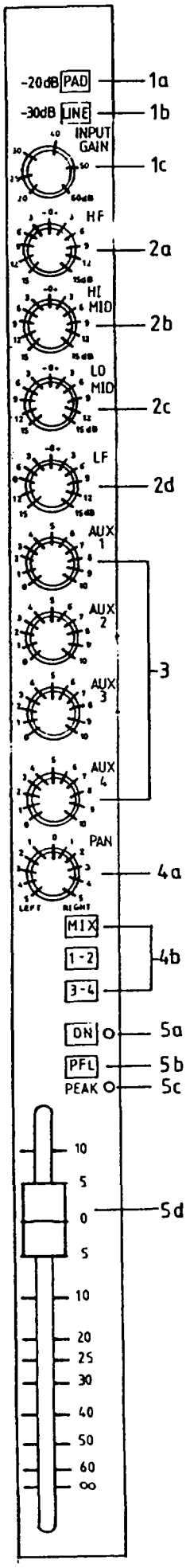
The auxiliary sends are selectable between both Pre/Post EQ and Pre/Post Fade by the use of push-on links (Jumpers) on the PCB.

Metering is via 4 VUs reading Group Outputs 1-4. Meters 3 and 4 are switchable as a pair to read the monitor source. This may be either the stereo mix bus, the 2-track return or any PFL/AFL signal.

The power supply is an external unit supplying the console with 17volts positive and negative rails and +48V Phantom Power supply.

The console is designed to work at either +4dBu or -10dBV (Tascam) level. Changing between the two requires altering an internal switch on the group outputs and adding push-on jumpers on the input channel PCBs.

The console is available with 8, 16, or 24 input modules. There is also an optional rack mounting version with a maximum of 8 input modules. A stereo Line input module will also be available for use with stereo effects devices, keyboards etc. In a broadcast situation this module is available to introduce stereo cart machines, turntables etc into the console.



2.01 INPUT MODULE

1. Channel Input Section

The Channel can be operated in either Mic or Line Input modes. Both the Mic Input and the Line Input are electronically balanced for optimum low noise performance.

Mic Input impedance is greater than 2kOhms and Line Input impedance is greater than 10kOhms.

a) PAD
Pressing the PAD button inserts a 20dB attenuator into the Mic path.

b) LINE
The high level Line Input is selected by pressing the LINE button. Tape returns should be re-patched into the Line Input socket for remix purposes.

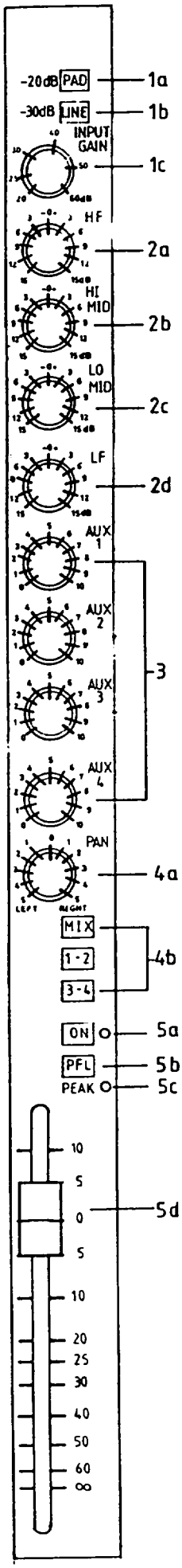
c) INPUT GAIN
The Input Gain is used to ensure that the source, whether Mic or Line sufficiently "drives" the module. If the source signal is too high, causing distortion, the level may be attenuated to match the working level of the module. If the source signal is too low, it may be boosted to reach the working level of the module.

To achieve the optimum working level for the module, and for the console, first set the fader(s) and the relevant group fader to unity gain, and then adjust the input gain(s) so that you are sending sufficient level to tape for optimum signal to noise, without introducing distortion.

2. Equaliser Section

The Equaliser on each module is a 4-band, fixed frequency design. All amplitude pots are centre detented for easy zeroing.

a) HF
Provides 15dB of boost or cut at 12kHz. The control has a "shelving" characteristic, ie. The slope of the EQ curve does not keep rising with frequency but having reached the desired amount, flattens out or "shelves" from that frequency on.



b) HI MID
15dB of boost or cut is available at 5kHz with a "peak/dip" characteristic. ie. Having reached maximum amplitude (or minimum in the case of cut), the amplitude response returns to zero on either side of that frequency. The shape of the curve, when plotted, gives a characteristic bell shape.

c) LO MID
15dB of boost or cut is available at 250Hz with a "peak/dip" characteristic.

d) LF
15dB of boost or cut is available at 60Hz with a "shelving" characteristic.

3. Auxiliary section

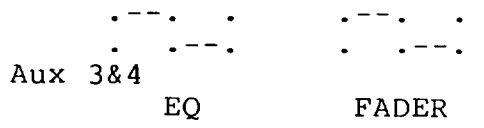
There are four auxiliary sends available for use as echo, foldback or other auxiliary effects units.

For each pair of Auxiliary sends there are three options on where to take the auxiliary send from, these are:-

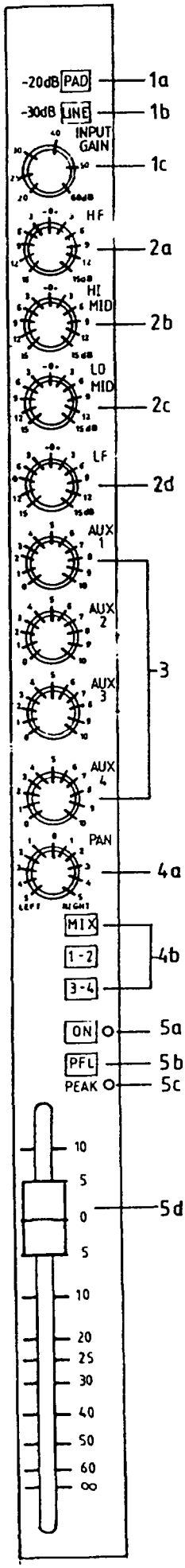
i. Pre-EQ and Pre-Fade.
ii. Post-EQ and Pre-Fade.
iii. Post-EQ and Post-Fade.

These options are selected by a series of push-on links (jumpers) as marked on the PCB.

eg.



Refer to the Input module circuit diagram, (ED2183) and the Input module signal flow diagram, (ED2227).



4. Routing Section

The channel input can be routed to any or all of the 4 Group outputs and the stereo mix by selecting the relevant routing button.

a) PAN POT
The pan pot is a centre detented control, with a loss of 4.5dB at its centre point. This is a compromise between the 3dB loss required for constant power panning and the 6dB loss required for constant voltage panning.

b) ROUTING
Selection of any of the routing buttons assigns the channel input signal to any pair of group outputs or the stereo mix via the Pan Pot. By panning left the signal may be routed to odd numbered groups and by panning right the signal may be routed to even numbered groups.

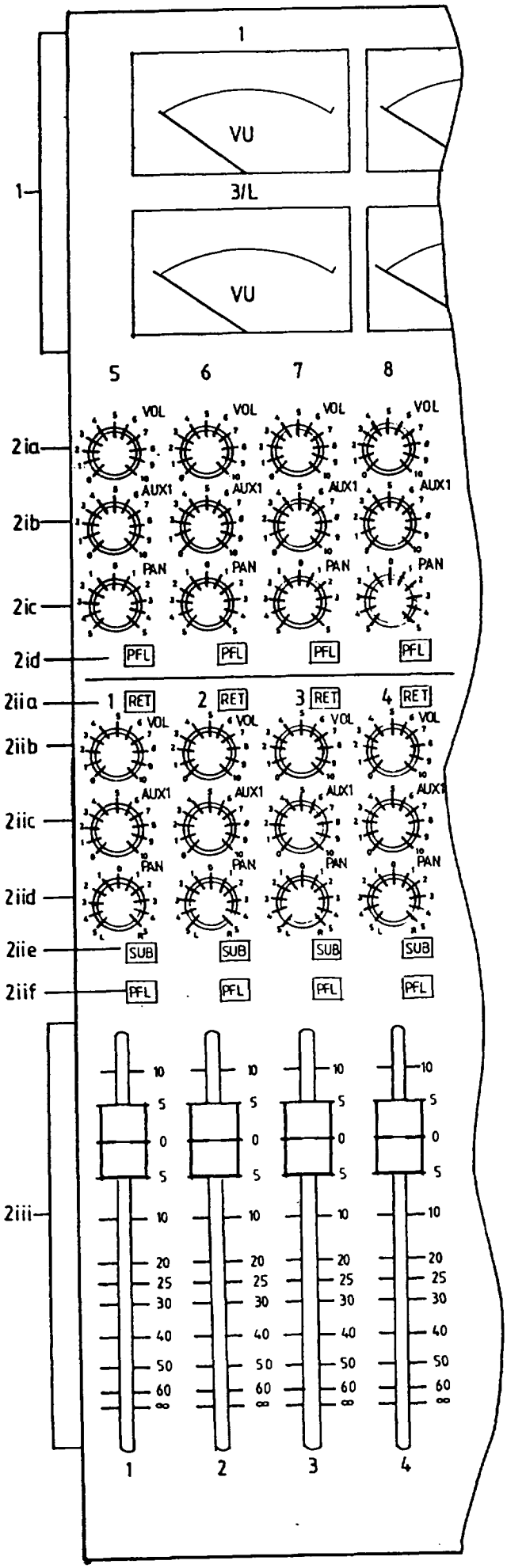
5. Channel status section

a) ON
The channel "ON" status is indicated by a green LED.

b) PFL
Pressing PFL (Pre-fade listen) soloes the signal from that module on the monitor/headphone outputs, along with any other modules that have their PFL button down. The PFL signal is taken after the insert return but before the ON switch.

c) PEAK
The PEAK LED illuminates when the signal level at the insert send point is 4dB below clipping.

d) CHANNEL FADER
The Channel fader is a long throw linear fader. Infinity cut off is greater than 90dB.



2.02 MASTER MODULE

The Master Module contains the VU meters, the Group/Returns sections, Oscillator, Talkback, the Auxiliary masters and the Control Room Monitor section

1. The VU meters

The four VU meters usually monitor the outputs from the 4 groups, or Tape/FX Returns. Pressing the MNTR button changes the function of meters 3 and 4. These may now be used to monitor the main mix bus, or the auxiliaries, 3 reads left and 4 reads right.

If PFL or AFL has been pressed then the meters will monitor the PFL/AFL buses which feed the monitors/headphones.

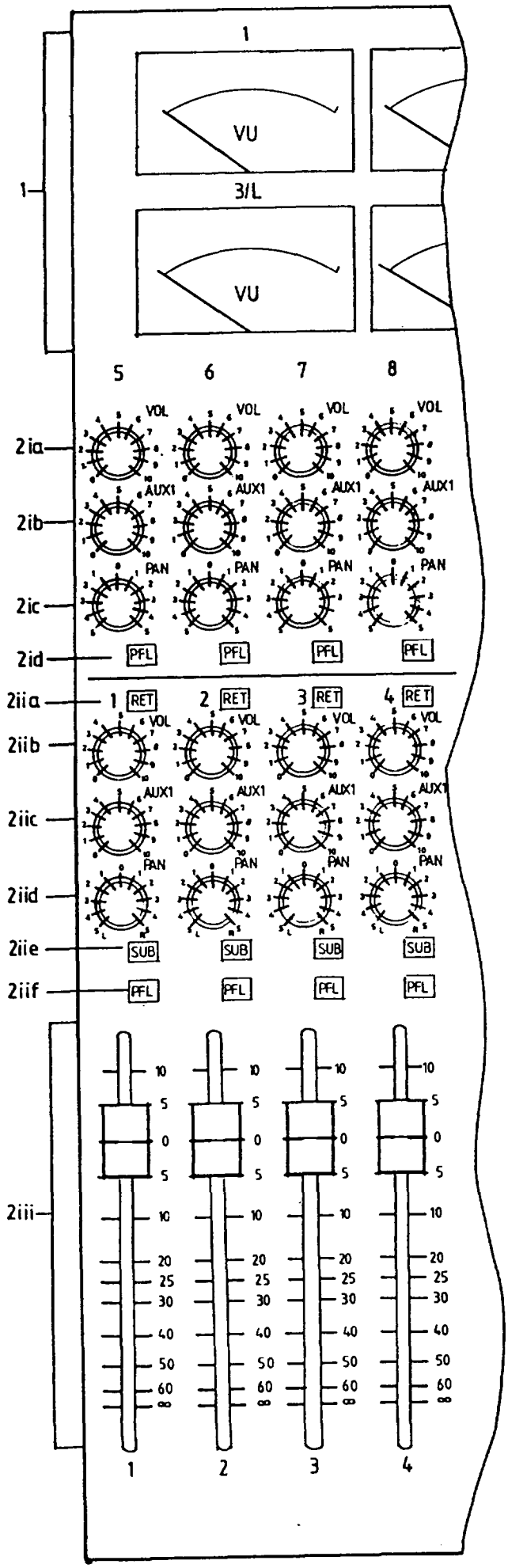
2. Group/Return section

The Group/Return section handles the functions of 2 Tape/FX Returns and a Group Output. The monitor section may be used to monitor either the group output or the corresponding return when this is selected by the appropriate RET button. Returns 1-4 are positioned at the bottom and Returns 5-8 at the top.

i. RETURNS 5-8
These are dedicated Tape/FX Return monitors.

a) VOL
The Monitor Volume control enables the monitor contribution to the stereo mix to be adjusted in level, allowing a satisfactory monitor balance to be achieved during record and playback.

b) AUX 1
The auxiliary send is post fader and may be used to provide headphone mixes during recording and overdubbing.



c) PAN
The PAN control allows the monitor signal to be panned to the correct position within the stereo mix.

d) PFL
The PFL facility on the monitor signal is independent of the monitor volume.

ii. SECTIONS 1-4
These may be used to monitor either the associated group outputs OR one of the Tape/FX Returns 1-4.

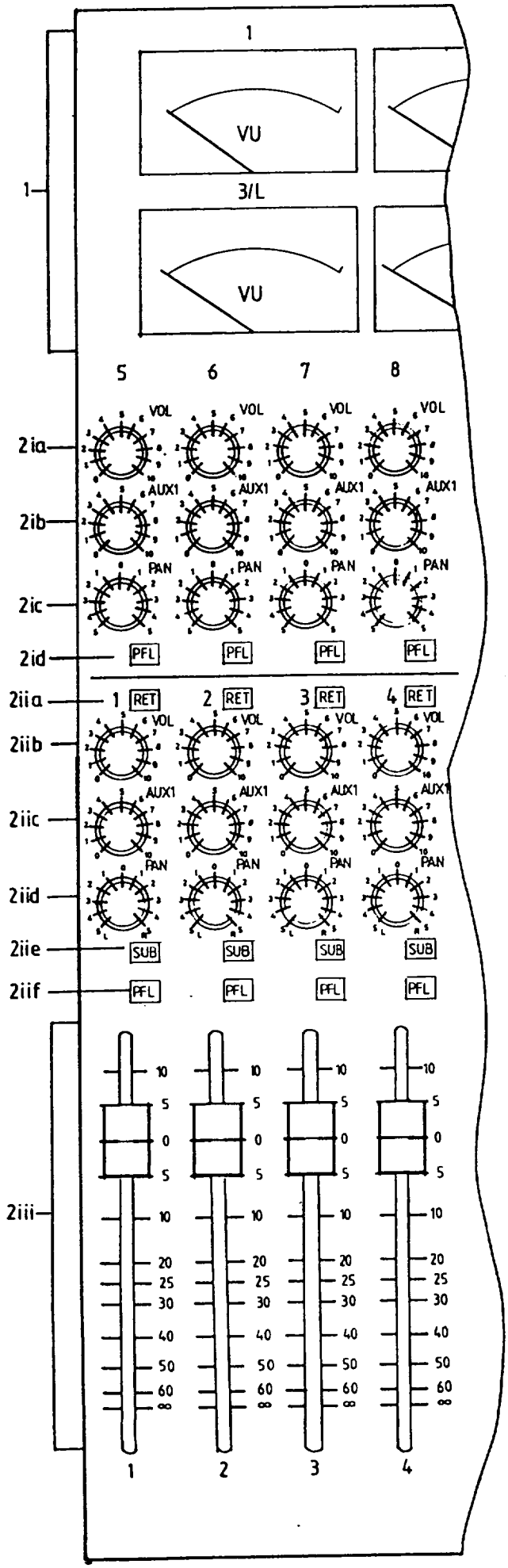
a) RET
When the RET button is pressed the monitor source will be the Tape/FX Return. When the Return button is up the monitor source will be the Group Output.

b) VOL
The Monitor Volume control enables the monitor contribution to the stereo mix to be adjusted in level, allowing a satisfactory monitor balance to be achieved during record and playback.

c) AUX 1
The auxiliary send is post fader and may be used to provide headphone mixes during recording and overdubbing.

d) PAN
The PAN control allows the monitor signal to be panned to the correct position within the stereo mix.

e) SUB
When the SUB button is pressed the group fader below overrides the VOL control and accesses the mix bus via the pan pot, and consequently the main master outputs.



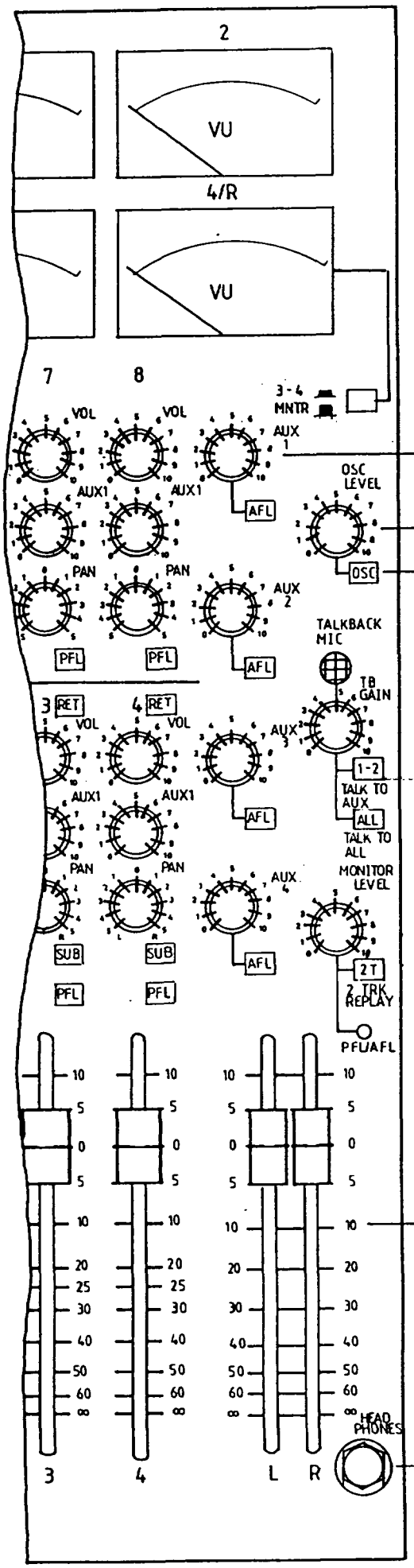
The VOL control, although bypassed, is not redundant. If RET is selected, the VOL controls the signal from the appropriate return socket and routes it to the Group below. This additional signal may be regarded as a separate input with level control and aux send BUT it can only access one group. ie. for Return 1, Group 1.

f) PFL

The PFL facility on the monitor signal is independent of the monitor volume.

iii. GROUP FADERS

The 4 long throw, linear faders control the overall group output levels.



3. Auxiliary Master Section

Each of the four auxiliary buses has its own master level control and an AFL select. The AFL works in the same way as the PFL bus. eg. AFL soloes the signal from that Auxiliary master on the monitor, (headphone output), along with any other Auxiliary masters with AFL selected.

4. Oscillator

a) OSC LEVEL
The oscillator may be adjusted in level.

b) ON
The ON switch enables the internal 1kHz Oscillator and routes it to the Group and Auxiliary buses.

5. Talkback

The Talkback microphone is an electret microphone and has variable gain controlled by the Talkback Gain pot. The Talkback signal overrides the Oscillator.

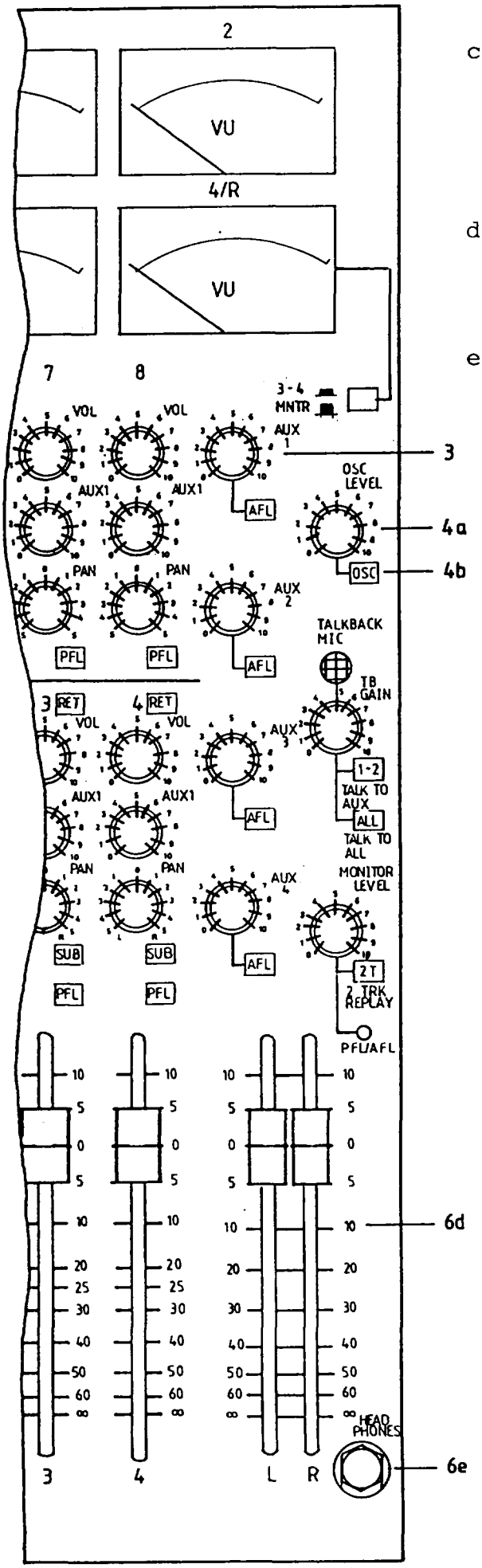
a) TB TO ALL
This routes the Talkback signal to the Group buses and all four Auxiliaries.

b) TB TO AUX 1-2
This sends the Talkback signal to Auxiliaries 1 and 2.

6. Monitor Section

a) MON VOL
The Monitor Volume is controlled by a variable gain pot.

b) 2T
This allows the signal from the 2-track master machine to be routed to the monitor speakers/headphones.

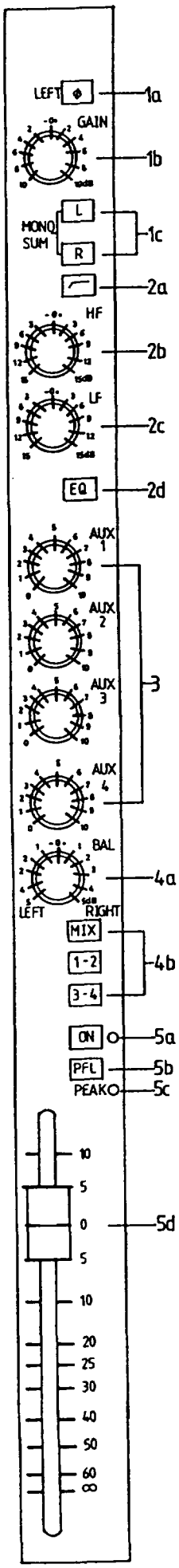


c) SOLO LED
The SOLO LED illuminates whenever a PFL has been selected on an Input module or Group Output OR when an AFL has been selected on the Auxiliary masters.

d) MASTER FADERS
The long throw master faders control the overall level of the stereo mix.

e) PHONES
The headphone socket expects to see 600 Ohms. Monitor speakers are cut when headphones are inserted. The socket is wired as follows:-

Tip:	LEFT
Ring:	RIGHT
Sleeve:	GROUND



OPTIONAL STEREO INPUT MODULE

The optional stereo input module is available in blocks of 2.

1. Channel Input Section

The channel Line Input is electronically balanced with an input impedance of greater than 10kOhms, which is high enough to interface to any normal professional peripheral equipment without loading the source.

The interface level can be either +4dBu or -10dBV. To select -10dBV remove jumpers J1 and J2 on the input PCB.

a) ϕ(Phase)
Pressing the Phase button will invert the phase on the left-hand input only to correct for any input mismatch.

b) INPUT GAIN
The Input Gain can be varied between -10dB and +10dB of gain using the Gain Trim control.

c) L & R

i With both these switches out the module works in stereo mode.

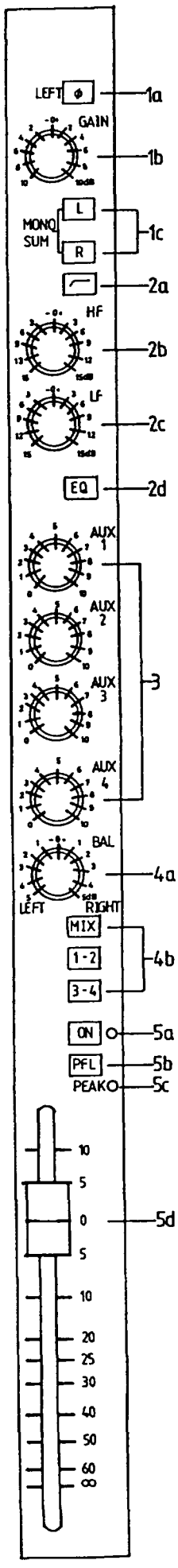
ii With either L or R switched in, both channels of the module are fed by either the left or right input.

iii With both switches pressed, both channels of the module are fed by a mono sum of the left and right input.

2. Equaliser Section

The Equaliser is a versatile unit, allowing 3 areas of control over the audio spectrum. All amplitude pots are centre detented for easy zeroing.

a) ⌐¯ (High Pass Filter)
The High Pass Filter operates at 100Hz with an ultimamte slope of 12dB/Octave. This will effectively remove low frequency stage rumble, and other extraneous signals.



b) HF (High Frequency)
15dB of boost or cut is available at 10kHz, with a "shelving" characteristic, ie. the slope of the EQ curve does not keep rising with frequency but, having reached the desired amount, flattens out or "shelves" from that frequency on.

c) LF (Low Frequency)
15dB of boost or cut is available at 60Hz, with a "shelving" characteristic.

d) EQ
The Equaliser circuitry can be switched in and out of the signal path, independently of the high pass filter.

3. Auxiliary section

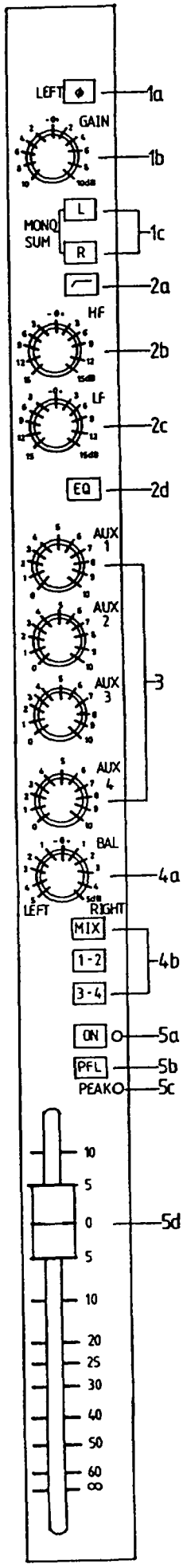
There are four auxiliary sends available for use as echo, foldback or other auxiliary effects units.

Each pair of Auxiliaries may be pre selected either pre or post fader. These options are selected by a series of push-on links (jumpers) as marked on the PCB.

eg.

```
     Pre Post
Aux 1&2
     .--.  .
     .  .--.
Aux 3&4
      FADER
```

Refer to the Stereo Input module circuit diagram, (ED2298) and the Stereo Input module signal flow diagram, (ED2259).



4. Routing Section

The channel input signal may be routed to any pair of Group Ouputs, (1-2, 3-4) and/or the Stereo Mix, by selecting the relevant routing button.

a) BALANCE
The balance control corrects or deliberately creates any changes in stereo imaging before the fader and the auxiliary sends. The balance control has a range of ±5dB.

b) ROUTING
Selection of any routing button assigns the channel signal to a pair of output groups, or the stereo mix, via the balance correction.

5. Channel Status Section

a) ON
The channel "ON" status is indicated by a green LED.

b) PFL
Pre-Fade Listen soloes the Pre-fader, post insert jack signal independently of the the ON switch. This gives a mono check of the signal, after the insert point but before the on/off switch. PFL operation is indicated by a red master warning LED on the master module.

c) PEAK
A red LED indicates the peak signal level. This gives a visual indication that the higher signal, either Right or Left, before the insert points is within 5dB of clipping.

d) CHANNEL FADER
The Channel Fader is an accurately matched long throw stereo fader. Infinity cut off is greater than -90dB.

3.00 CONNECTIONS AND WIRING

There are two types of standard connector panel on the Series 200B console. These are the Input connector panel and the main output connector panel. There is always one output panel, but the input panels each serve 8 input modules. So if you have a 16 input console you will have two input panels.

If you have the rack mounting version the input and output connection panels are not separate.

3.01 INPUT CONNECTION PANEL

The Input panel serves 8 Input modules and the panel is labelled accordingly. ie. 1-8, 9-16 etc.

a) INS

These stereo standard jacks carry both the insert send and the insert return signals. Under normal conditions with nothing inserted the signal is normalled through by the jack socket and thus inserting a jack will automatically break this link.

The insert point is post EQ but BEFORE the PFL, ON switch and fader.

Tip: Insert return (Unbalanced)
Ring: Insert send (Unbalanced)
Sleeve: COMMON GROUND

b) LINE

These stereo standard jacks carry the balanced Line Input, and are wired as follows:-

Tip: HOT (In phase signal)
Ring: COLD (Out of phase signal)
Sleeve: GROUND

c) MIC

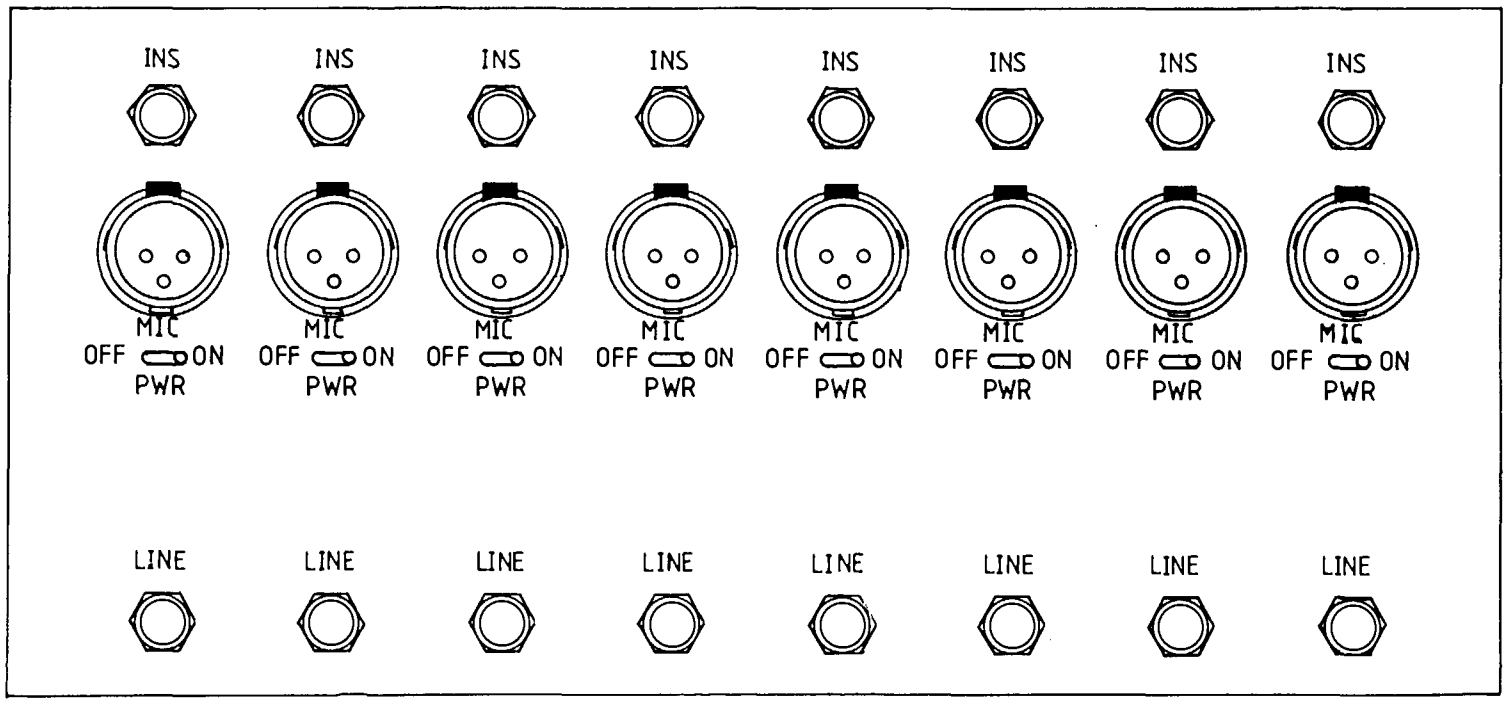
These carry the balanced microphone inputs and are wired as follows:-

Pin 1: GROUND
Pin 2: HOT (In phase signal)
Pin 3: COLD (Out of phase signal)

d) PWR

The PWR switch provides phantom power of +48volts for capacitor microphones.
NB: It is not advisable to use an unbalanced microphone, or DI boxes with the Phantom power on.

ISSUE 1
18-2-85



	THIRD ANGLE PROJECTION	TOLERANCE All imperial dimensions ±0·010 All metric dimensions ± 0·25mm All angles ± 0·50° Unless otherwise stated	HOLE INDEX	MATL	DRN AB	SOUNDCRAFT ELECTRONICS LTD 5-8 GREAT SUTTON STREET LONDON EC1V 0BX. TELEPHONE. 01-251-3631/2/3 TELEGRAMS. SOUNDCRAFT LDN EC1 TELEX. UK. No. 21198. USA. No. 224408	TITLE S 200B 8WAY I/P REAR CONN PANEL
				FINISH	TRCD		
				SCALE	CHKD		DRG. No. MI2422

UDO 30910

3.02 OUTPUT CONNECTION PANEL

a) GROUP OUTPUTS 1-4

These carry the signal from the Group Outputs and are Ground Compensated, they are wired as follows:-

Pin 1: GROUND
Pin 2: HOT
Pin 3: COLD

As the console only has the 4 outputs to feed all 8 tracks of the tape machine either

i. Parallel the connections of the inputs on the 8-track of tracks 1-4 and 5-8, using the tape machines logic to ensure that you record on the correct tracks,

OR

ii. Use a box which changes over the feeds either individually or all together,

OR

iii. Simply manually plug the correct outputs from the console into the inputs of the 8-track on an individual basis as the session progresses.

b) TAPE RETURNS

These stereo standard jack sockets carry the Tape Returns and are wired as follows:-

Tip: HOT (In phase signal)
Ring: COLD (Out of phase signal)
Sleeve: GROUND

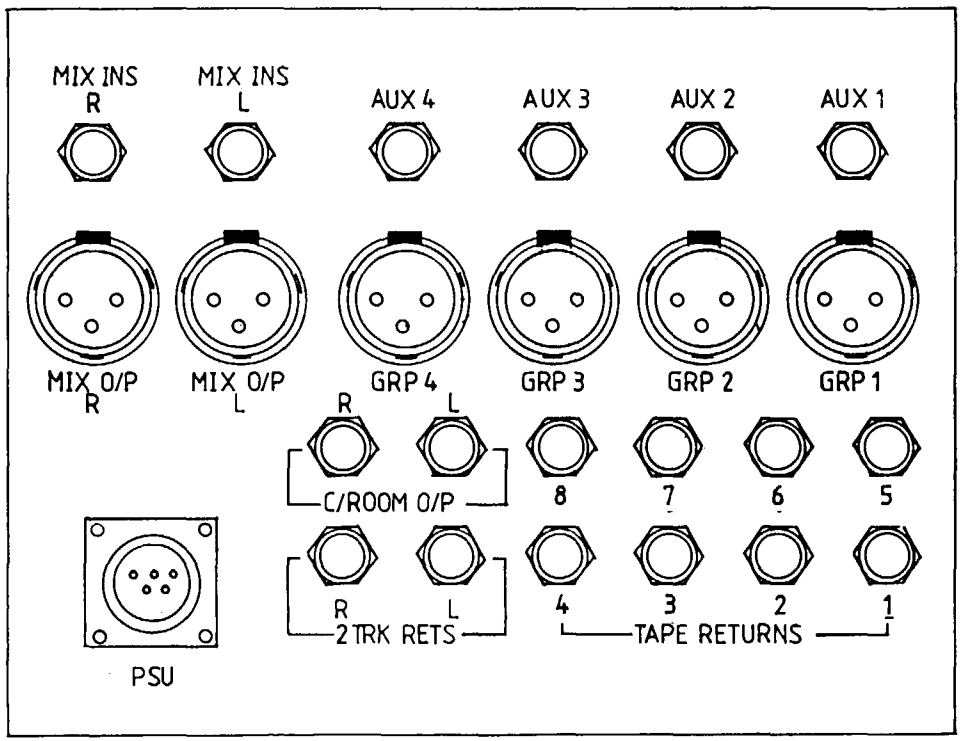
During mix down, you would normally connect the outputs of the 8-track to the Line Inputs on modules 1-8 to make use of the input module's more extensive facilities, thus freeing the RETs inputs for effects returns etc.

It is perfectly feasible to parallel the outputs of the 8-track and to permanently connect one set to the RETs sockets and the other to the line input sockets on modules 1-8. This is assuming that you have more than 8 inputs, so that during mix down, you may bring effects returns etc. down individual input modules.

If you have an 8-track which has dedicated sync outputs, such as the SOUNDCRAFT 381, you would normally connect the sync outputs to RETs 1-8 and the playback outputs to line inputs 1-8.

ISSUE 1

15-2-85



THIRD ANGLE PROJECTION

TOLERANCE

All imperial dimensions ± 0·010
All metric dimensions ± 0·25mm
All angles ± 0·50°
Unless otherwise stated

HOLE INDEX

MATL

FINISH

SCALE

DRN AB

TRCD

CHKD

SOUNDCRAFT ELECTRONICS LTD
5-8 GREAT SUTTON STREET
LONDON EC1V 0BX.
TELEPHONE. 01-251-3631/2/3
TELEGRAMS. SOUNDCRAFT LDN EC1
TELEX. UK. No. 21198. USA. No. 224408

TITLE S200B
STD O/P REAR CONN PANEL

DRG. No. MI2420

c) MIX INSERTS

This stereo standard jack socket allows the Mix bus to be accessed immediately before the Master Faders, and is wired as follows:-

Tip: Insert return (Unbalanced)
Ring: Insert send (Unbalanced)
Sleeve: COMMON GROUND

d) 2-TRACK RETURNS

These stereo standard jacks carry 2-track returns and are wired as follows:-

Tip: HOT (In phase signal)
Ring: COLD (Out of phase signal)
Sleeve: GROUND

e) AUX OUTPUTS

These are stereo standard jack sockets for the Auxiliary masters and are ground compensated. (MI2426).

Tip: HOT
Ring: COLD
sleeve: GROUND

f) MIX OUTPUTS

These sockets carry the main stereo outputs and are balanced. They are wired as follows:-

Pin 1: GROUND
PIn 2: HOT (In phase signal)
Pin 3: COLD (Out of phase signal)

If your master machine is unbalanced, connect the cold pin (3) to ground at the input to your machine, and a standard 1/4" jack from the outputs of the tape machine will suffice.

g) CONTROL ROOM

These unbalanced jack sockets carry the signal to the monitor speakers. This signal path is interrupted when headphones are plugged in to the headphone socket. They are wired as follows:-

Tip: HOT (In phase signal)
Ring: Signal Common
Sleeve: Signal Common

3.03 OPTIONAL STEREO INPUT REAR CONNECTOR PANEL

Each connector panel for the stereo input modules contains 2 channels, thus, the stereo input modules can only be fitted in blocks of 2. (Either 2 modules or 1 module and 1 blank.)

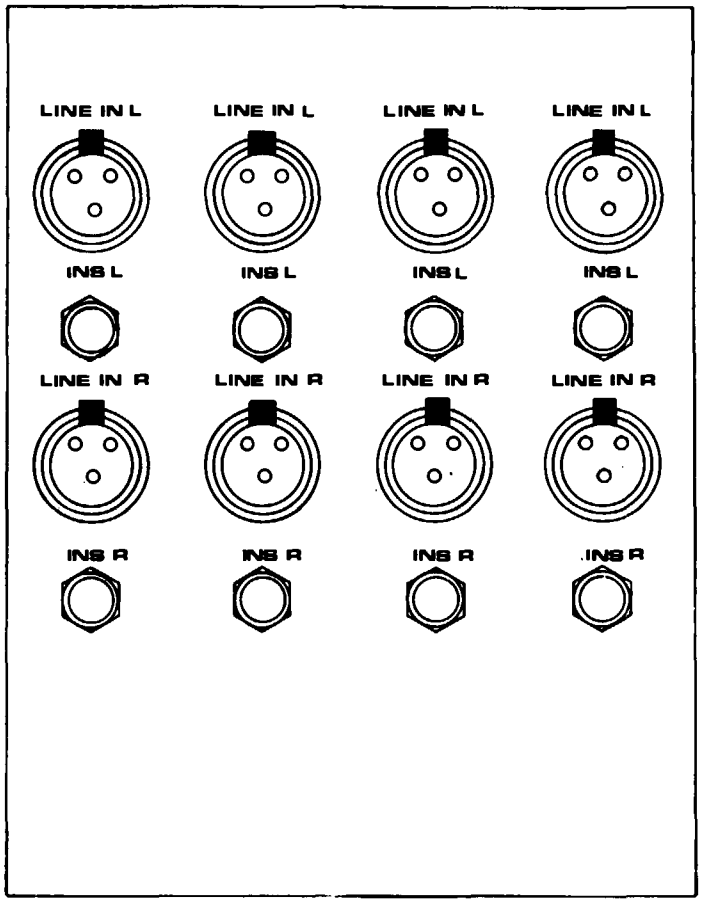
a) L & R LINE INPUTS

The XLR sockets carry the balanced line inputs for the left and right inputs as marked. They are wired as follows:
Pin 1: GROUND
Pin 2: HOT (In phase signal)
Pin 3: COLD (Out of phase signal)

b) L & R INSERTS

These stereo standard jacks carry both the insert sends and returns for the left and right channels as marked and are wired as follows:-
Tip: Return (Unbalanced)
Ring: Send (Unbalanced)
Sleeve: Common Ground

ISSUE 1
16-10-85



TOLERANCES

HOLE SIZES AFTER PAINTING		GENERAL TOLERANCE
0-3mm	$\pm^{0.10}_{0.00}$	Delete where not applicable.
OVER 3-6mm	$\pm^{0.12}_{0.00}$	± 0·50mm (0·020")
OVER 6-10mm	$\pm^{0.15}_{0.00}$	± 0·25mm (0·010")
OVER 10-19mm	$\pm^{0.18}_{0.00}$	± 0·12mm (0·005")
OVER 19-25mm	$\pm^{0.21}_{0.00}$	HOLE CENTRES ± 0·004"
OVER 25mm	$\pm^{0.25}_{0.00}$	ALL ANGLES ± 0·50°
		Unless otherwise stated.

HOLE INDEX

MATL	DRN AB
FINISH	TRCD
SCALE	CHKD

THIRD ANGLE PROJECTION

THIS DRAWING TO COMPLY TO BS308.

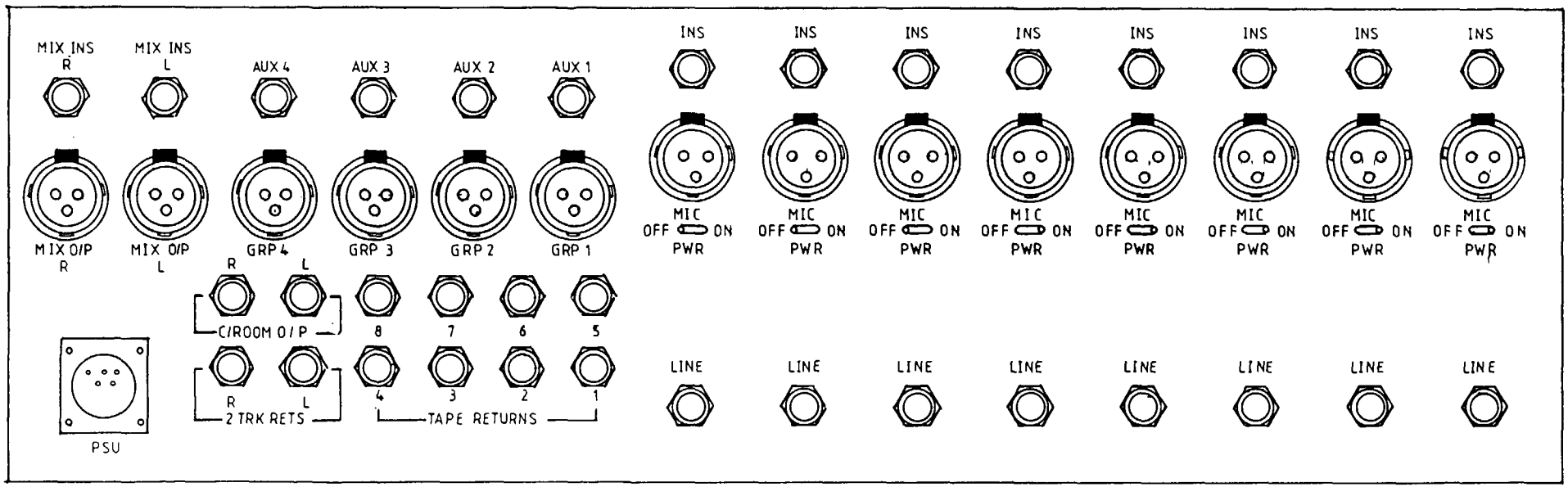
SOUNDCRAFT ELECTRONICS LTD
UNIT 2,
BOREHAMWOOD INDUSTRIAL PARK,
ROWLEY LANE,
BOREHAMWOOD,
HERTFORDSHIRE WD6 5PZ.
TELEPHONE: 01-207-5050
FACSIMILE No. 2070194

TITLE
S200B STEREO I/P
REAR CONN PANEL

DRG.No. MI2515

ISSUE 1

18-2-85



THIRD ANGLE PROJECTION	TOLERANCE	HOLE INDEX	MATL	DRN AB	SOUNDCRAFT ELECTRONICS LTD 5-8 GREAT SUTTON STREET LONDON EC1V 0BX. TELEPHONE. 01-251-3631/2/3 TELEGRAMS. SOUNDCRAFT LDN EC1 TELEX. UK. No. 21198. USA. No. 224406	TITLE S200B RACK MOUNT REAR CONN PANEL
	All imperial dimensions ± 0·010 All metric dimensions ± 0·25mm All angles ± 0·50° Unless otherwise stated		FINISH	TRCD		DRG. No. MI2423
			SCALE	CHKD		

UDO 30910

3.04 GENERAL WIRING PROCEDURE

To take full advantage of your Soundcraft Console, with its excellent signal to noise ratio and low distortion figures, care must be taken that the enviroment into which you place your console does not degrade its performance.

Typical problems are hum, buzz, instability and radio interference, these are usually problems which are NOT of the console's making. When finally traced, they often turn out to be earth loops or an inferior earthing system. Indeed, in some areas the mains supply earth is inadequate and separate arrangements for earthing must be made.

A separate technical earth should be installed in these instances, and you should ALWAYS check with your electricity supply company to ensure that you do not infringe any regulations.

The installation of a successful earthing system requires careful planning and adherance to the "rules". Outlined below are the main points which should assist you in establishing a good audio earthing system.

Central Earth

To provide optimum performance, there should only be ONE earth point, (star point), for the entire audio installation. Each piece of equipment should run a separate lead to this point for its earth. It is not good enough to "daisy chain" - joining several earths together on their way to the earth point is NOT correct.

Separate Supplies

A separate mains feed should be used for the audio installation, and ONLY for the audio installation. A separate feed should be taken from the distribution box and use another feed for any other mains outlets such as lighting, kettles etc.

It may be necessary to install an isolating transformer for the audio supply, so that there is positively no interferance from the other mains feed. The transformer should be provided with a Faraday shield which should be connected to earth.

Location of Equipment

NEVER place audio equipment near the mains distribution box. Especially tape recorders, as these are particularly sensitive to electro-magnetic radiation.

Racks

A rack full of balanced professional equipment may be earthed as a rack, with the rack being connected to the star point by a separate lead. ANY equipment which has either unbalanced inputs OR outputs should be isolated from the rack and earthed separately to the star point. (Otherwise you will get an earth loop.)

Audio Connection

Having established the "star" system, then start connecting the various audio lines, listening for hum etc. as you go. If you do it this way, you should be able to isolate a problem quickly. It is probably best to use a logical sequence such as: multitrack, stereo tape machines, monitors, echo sends one by one, effects units and finally microphone lines.

Audio Shields

The screen should generally only be connected at ONE end of the cable and this is usually at the signal end. However, there are a few exceptions and below is a table covering all the interconnection possibilities. If radio frequency seems to be a major problem, it is probably best to connect the screen via a 0.01 micro-farad capacitor.

Combinations of unbalanced, balanced and electronically balanced, (differential), systems mean that there are nine interconnection permutations. The optimum of the screen in each case is shown in Table 1.

TABLE 1

	OUTPUT	INPUT	SCREEN
1	Unbalanced	Unbalanced	Source
2	Unbalanced	Balanced	Source
3	Unbalanced	Differential	Source
4	Balanced (Note 1)	Unbalanced	Destination
5	Balanced	Balanced	Source
6	Balanced (Note 2)	Differential	Destination
7	Differential (Note 3)	Unbalanced	Source
8	Differential	Balanced	Source
9	Differential	Differential	Source

Note 1 - The shield is connected to the destination earth point, which is opposite to normal practice, because the signal wires being shielded are referenced to the input earth, not the output earth.

Note 2 - If the output transformer is centre tapped to earth, the screen should be connected at the source.

Note 3 - When an active differential output is operated in unbalanced mode, it is very important that the output current returns to earth via the shortest, least reactive route. Check for instability at the output.

N.B.

a) In all cases, use good quality twin screened audio cable. Check for instability at the output.

b) Always connect both conductors at both ends, and ensure that the screen is only connected at one end.

c) Do not disconnect the mains earth from each piece of equipment. This is needed to provide both safety and screen returns to the system star point.

d) Equipment which has balanced inputs and outputs may need to be electrically isolated from the equipment rack and/or other equipment, to avoid earth loops.

Ground Compensated Outputs

The main outputs of the Series 200B are Ground Compensated, as already mentioned. When connecting a ground compensated output to an unbalanced destination, make sure that the cold lead is connected to earth at the DESTINATION end. The consideration for wiring the screen at only one end is not of such importance with a ground compensated output. (See MI2426)

3.05 INTERFACE LEVELS

The Series 200B is normally supplied to be compatible with standard professional equipment ie. +4dBu (ref. 0.775 volt).

However, provision has been made to allow the user to operate with semi-professional tape machines etc. which operate at -10dBV (ref. 1.0volt).

The change in tape interface operating level is accomplished by reducing the console group output level and increasing the console monitor return gain by an equal amount.

This is easily achieved by pushing a switch, S5, located on the Output Module PCB. (Switch OUT for +4dBu, switch IN for -10dBV).

MIX OUTPUTS left and right may also interface to -10dBV by removing jumpers J1 and J2 . -10dBV operation is also available on 2-track returns left and right, for 2-track return left REMOVE J3 and J4 and 2-track return right REMOVE J5 and J6. (See ED2251 Master Right-hand circuit diagram.)

To allow the Line Input to interface to -10dBV simply remove a link on the Input Module PCB. (See ED2183 - on the circuit diagram this is located just below the LINE switch). This link is located above Conn 1 and immediately left of RIC 1 on the input PCB.

POWER AMPLIFIERS are often rated at 300mV sensitivity for full output. In such cases, an attenuator should be installed at the input to the power amplifier to attenuate the +4dB level (1.228 volt) coming from the console, by approximately 10-15dB.

This may be achieved by using a 2.2kOhm series resistor and 680 Ohm shunt resistor across the amplifier's input.

3.06 FUSE RATINGS

220-240 volts AC the fuse should be 3.15 amps 20mm anti-surge.

100-120 volts AC the fuse should be 6.3 amps 20mm anti-surge.

BEFORE SWITCHING ON ALWAYS CHECK THAT THE VOLTAGE SELECTOR IS SET CORRECTLY AND THAT THE FUSE IS CORRECT.

4.00 8-TRACK OPERATION

The Series 200B is particularly suited to 8-track recording, since it has a full 8-track monitoring section, 4 auxiliary sends and a lot of flexibility.

The following section contains some suggestions for methods of operation. When reading this section you may wish to refer to the signal flow diagrams, ED2224 and ED2227.

1. Monitoring

The Series 200B is designed for both Loudspeaker monitoring and Headphone monitoring.

To monitor over loudspeakers simply connect the Control Room outputs (located on the output connection panel), to the inputs of your amplifier. It may be necessary to turn the monitor volume pot right down to avoid overloading the input to your amplifier, and it some cases it may be necessary to connect a stereo attenuator in between the two systems. Be sure to take care with earthing.

Try, wherever possible, to have only one earth point for your entire system, and NOT to have all your pieces of equipment earthed in separate places, which is almost guaranteed to give you mains hum: either 50 or 60Hz depending on where you live. (See wiring.)

2. Recording - the first tracks

When laying the first tracks, you will normally have microphones plugged into the Input modules and then in turn you will want to route these to the 8-track machine. The routing switches may be used to send up to 4 tracks at one time. This is usually enough, but it is possible to record on more than 4 tracks at one time if required. For instance, you may only need to record 4 tracks, but would like to put the guide vocal on tape for reference.

To send more than 4 signals or groups of signals to the 8-track, you have 2 options: you may either use the auxiliary buses, if you are not currently using them for echo etc, OR you may take the signals direct from the insert points.

Using the auxiliary buses is a good option, since the auxiliary system is a very similar one to the groups. The circuitry is the same and there is an overall level control for each auxiliary bus, so that you could easily sum several signals and then have overall level control to tape. Effects and echo etc. are best added via the insert points if they are required, thus keeping the auxiliary sends free for recording any groups.

Using the insert points is not such an easy option, but probably a good one if you only need to send one signal and all the auxiliaries are being used. The insert send from the input module comes before the module fader, and so level control to tape will have to be done at the input to the multitrack. Note that the send on the insert socket is the ring of the stereo jack.

To monitor your sends to tape you normally use the level controls 1-4 on the monitor panel, making sure that the RET and SUB buttons are NOT pressed. This will allow you to listen to the 4 group sends from the console. The levels to tape are set via the 4 group faders, the rotary controls 1-4 do not affect the level to tape, only the level to the monitors/headphones.

It is probably best to send to the first 4 tracks recorded to tracks 5-8 (1-4 and 5-8 are usually paralleled - the switching done on the multitrack remote), so that monitoring becomes clearer during overdub.

If you are recording more than 4 tracks in one go or do not send to tracks 5-8 first you will have to control your monitoring statuses from the multitrack remote - see below.

3. Overdubbing

When you have recorded the first 4 (or less) tracks, you will need to listen to them back. To do this you just use the rotary controls 5-8, if you have recorded your first tracks on 5-8. Then when you add the next 4 tracks, these correspond to group faders 1-4.

When you send out groups 1-4 (either together or individually) you monitor via rotary controls 1-4, and when you need to listen back to a particular track press the respective RET button.

4. Using the Multitrack controls

If your session involves complications such as repeated overdub, track-bouncing, or recording more than 4 tracks at once, then it is probably best to use the multitracks own controls to determine your monitor status.

Press the 4 RET buttons and from then on the 8 rotary controls form a mix of all 8 outputs from the machine at any one time. When laying a track or tracks, switch the relevant channel(s) to INPUT for laying them and switch them to OUTPUT for listening or overdubbing. (Remember to make sure you are in Sync during all track laying).

5. Progressing towards Mix

As your session progresses, the number of tracks being sent to at any time usually becomes no more than two, and the number of input channels being used also reduces. Assuming that you have enough input modules which are unused, you can start preparing for your mix as you overdub. You may not necessarily mix straight away, but it is often useful to monitor via the Input modules so that EQ may be used and more than one auxiliary send accessed.

Plug the outputs from the 8-track into 8 input modules, (1-8 if possible for simplicity - they may already be plugged in permanently - see connectors and wiring), and turn down all the rotary controls 1-8.

The most straightforward method of obtaining a Mix is to simply select MIX on the routing matrix of the input channels, this routes the signal directly to the main Mix bus. However, should the operator not want to use the mix bus there is another, more complex, method of obtaining a stereo mix.

Reserve one of the pairs of groups for sending to the multitrack, and then route all the other input modules to the other pair. Say, for example, that 3-4 will be used to send to the multitrack, and 1-2 will now form the monitor mix.

Press SUB above faders 1 and 2, set them to unity gain 0dB, and pan 1 hard left and 2 hard right. This pair of faders is now feeding the stereo mix bus and, consequently, the monitor/headphone output.

Now your monitoring can be done via the 8 input modules corresponding to the 8 tracks and the Input/Output status is controlled at the machine. When overdubbing is complete, you are already set up for Remix.

6. Mixing down

Connections and switching for mixing down has already been described above, and it should be noted that the monitor channels 5-8 may be used as effects returns as they directly access the stereo mix bus via their pan pots and respective level controls.

It is also possible to use monitor channels 1-4 as effects returns. This may be simply achieved by selecting SUB, which then routes the signal present in the monitor channels directly to the mix bus. Selecting SUB overrides the rotary control but this is not redundant. If RET is selected the VOL controls the signal from the appropriate tape return socket and routes it to the group below. This additional signal may be regarded as a separate input with level control and aux send BUT it can only access one group. ie. for return 1, group 1. If two of these channels, say 1 and 2, were used they can only feed left and right respectively and, therefore, are ideal as a stereo echo return or similar.

The same rules would apply to rotary controls 3 and 4 if their RET and SUB buttons were pressed.

Note that the master faders control the send to the mixdown machine and also feed the monitors/headphones.

The monitor/headphone outputs then have a separate level control and amplifier, but you will not hear anything unless the master faders are up or the 2T button is pressed. 2T feeds the outputs from your mixdown machine directly to the monitor/headphone output.

4.01 P.A. APPLICATIONS

The Soundcraft Series 200B is also suitable for live sound work, either;

a) providing stage foldback for musicians

OR

b) as the front of house desk in a small set up.

To use the Series 200B as a monitor console all instruments are connected to the console via microphones or D/I boxes, in the usual way. Each output would then be assigned to one or more monitor loudspeaker on the stage.

eg. Mix L and R output might feed the sidefills whilst Groups 1-4 may be used to feed the individual musicians monitors.

The Auxiliaries may also be used if more than 6 monitor sends are required.

Should the operator wish to use Effects devices on the foldback then Returns 5-8 may be used to feed the main mix outputs OR, when RET and SUB are pressed on Returns 1-4 signal from Tape Returns 1-4 can access the 4 groups and the Mix outputs.

The operator's monitor is provided by the Phones output.

When used in a small P.A. system the main Mix outputs of the Series 200B can provide the sends for the main PA. Effects Returns can be routed to the mix bus either by using Returns 5-8 OR by selecting RET and SUB on Returns 1-4.

Should the Series 200B be required to provide both the main PA sends and foldback sends then the main mix outputs provide the front of house PA whilst the Auxiliaries may be used to provide the foldback sends, taking the signal for the foldback from the Auxiliary outputs. Using the Auxiliaries for foldback sends allows the Returns to be used for FX Returns on the main PA.

4.02 OPERATION OF STEREO INPUT

The Stereo Line input module is similar in operation to the standard module except that all paths are in stereo. (NB: Aux sends, however, are mono.). This module is particularly useful when you wish to introduce stereo keyboards or effects devices into the console. In a broadcast situation the stereo input modules can be used for cart machines, turntable feeds etc.

Should the signal entering the module be out of phase pressing the Phase button will invert the phase on the left-hand input only. The L & R buttons allow a mono source to feed both the left and right channels of the module. In the situation where a full track recording is replayed on a stereo machine pressing both L & R will provide a mono sum of the two inputs.

The High pass filter and Equaliser can be independently switched into the signal path thus enabling the operator to enhance sounds before going to tape or 'on air'.

Four Auxiliary sends, which may be pre-selected in pairs either Pre or Post Fade, are available for headphone mixes etc. however, it should be noted that the auxiliary sends are mono.

The signal in the module may be routed to any pair of groups, via the balance control, which corrects or deliberately creates any errors in stereo imaging.

5.00 MAINTENANCE

Every console that leaves Soundcraft undergoes a thorough testing at all stages of manufacture. These tests include individual testing of every function on all the PCB's, a thorough testing of all the functions of the completed mixer, a soak test of 48 hours before the final test, which consists of listening, measuring and mechanical function checks prior to packaging and shipment. In this way we try to ensure that any faulty components show up long before the console leaves the company. Thus a long and trouble-free life can be expected.

Although all Soundcraft Consoles have been designed with long term reliability in mind, it is inevitable that occasional maintenance will be required. However, due to the amount of attention given to the problems of maintenance during the design stages of this console, and the modular construction, servicing tends to be extremely simple to carry out, with the minimum of test equipment needed to isolate and rectify faults.

5.01 General Fault Finding

With the exception of the electronically balanced microphone amplifier, and the hybrid discrete/op amp summing amps, all signal electronics are configured around high slew rate, low noise integrated circuits. The microphone amplifier is a proprietory design, utilizing a discrete transistor, noise cancelling front end, differentially summed via a low noise integrated circuit.

The use of integrated circuits means that the majority of audio faults can be repaired by simply replacing the I.C., having first isolated the fault to a particular stage in the signal chain. The isolation can often be done without even having to remove the module from the console, by judicious use of insert points, and/or switching the module to various modes. As with all servicing a good knowledge of the basic signal flow is necessary for best results. Each module should be viewed as a number of signal blocks, through which the signal must flow. If the signal appears at the input to a block, but not at the output, then the fault lies within that block. By dividing a module into individual sections, what at first appears to be an extremely complicated piece of equipment can be simplified into a series of sequential stages. This is the basic first move in all types of fault finding, and usually requires no more than a certain amount of logical thought. Servicing a console is more a matter of clear thinking and having an understanding of what should be happening, than having a highly developed technical knowledge.

To illustrate the method of logical fault finding, let us assume that we have a non functioning input module, in both microphone and line modes.

The first step is to ensure that a fault really does exist! Check that the module is in the correct mode of operation, and that no jacks are inserted in the insert points, which may be interrupting the signal flow.

If in doubt about the module operation, set up an adjacent module in exactly the same way, which will allow a direct comparison between a working and possible non-working module.

Route the channel directly to MIX, so that the channel may be monitored in the normal way. Using an oscillator set it to approximately 1kHz and patch the oscillator signal into the channel Line Input. If all is well, an undistorted signal should now be heard. More likely, because of the fault it won't.

Large sections of the module circuitry can be by-passed by monitoring the signal at the insert send.

If bypassing a section causes the signal to re-appear, then the fault is located in that section, which can then be traced at component level, by removing the module from the console frame, and reconnecting it via extender cables.

With the module installed on extender cables, access is now available to all parts of the module, and the signal may be traced through the various stages, using an oscilloscope, millivoltmeter, or even high impedance headphones. Refer to the Block Schematic which shows the signal flow through the modules. When a point is reached where the signal is not present, or is distorted, the probable faulty components can be checked out and if necessary replaced. Integrated cicuits, due to their internal complexity, are the most likely cause of problems, followed by mechanical components such as switches and faders, which are susceptible to physical contamination from oxidisation, dust and liquids.

5.02 Removing Modules

Remove the 2 module retaining screws, which will allow the module to be carefully withdrawn from the console. The ribbon cable will now be exposed, and may be detached from the module. The module will still have some cables attached, but these are sufficiently long to allow the module to be completely withdrawn from the console. Extender cables can now be plugged into the main ribbon cable, and the module, taking care not to twist the extender cable. Modules should NOT be plugged in or unplugged with the power switched ON.

5.03 METER ALIGNMENT

Each VU meter has its own individual drive card on the master RH PCB.

0VU is normally adjusted to indicate a line level of +4dBu ie. a level of 1.228 volts. However, it can be re-adjusted to indicate a different line level, if required, by the pre-set potentiometer on the card.

Connect a millivoltmeter to the group output. Route the oscillator to the group and adjust the group output level to read the required level on the millivoltmeter. (Normally this would be +4dBu). Adjust the VU drive pre-set to indicate 0VU on the VU meter and repeat for all other groups.

5.04 LAMP REPLACEMENT

Illumination of the VU meters is provided by 1 lamp in each meter, these are 12 volt lamps. The lamps in each pair of meters are wired in series and powered by the $\pm$17 volt audio supply. A series resistor in each meter pair provides turn on current limiting to prolong the lamp life.

To replace the lamp remove the VU meter from the panel. This is achieved by the following method:-

1. Remove the group/master module from the console.
2. Unscrew the four screws through the PCB and remove the connecting cable.
3. The meter assembly can now be removed from the module.
4. Remove the front from the meter(s) and replace the bulb.
5. To replace the assembly reverse the above procedure.

5.05 Power Supply Servicing

The Series 200B power supply provides the following regulated supply rails;
i) +/- 17 volts, Audio
ii) +48 volts, Phantom Power

If a power supply fault is suspected, first ensure that it really is the P.S.U. which is at fault, and not a short circuit in the console. This can be checked by disconnecting the P.S.U. from the console, and measuring the voltage at the connector. A load across the supply should be provided, to simulate the normal load conditions imposed by the console.

A 10 Ohm, 20 Watt resistor should be connected across each of the audio supply rails. The phantom power supply can be loaded with a 2.2kOhm, 1 Watt resistor.

The ripple and noise value of the various supply rails can now be measured, using a millivoltmeter or an oscilloscope.

If a fault is found to exist in the P.S.U., disconnect the mains supply and remove the cover. Check visually for any obvious problems, such as blown fuse, burnt components, etc. If nothing obvious is observed, reconnect the mains and measure the voltages across the various electrolytic smoothing capacitors, which should be as follows;

Audio Supply	C1	= +26volts
	C2	= -26volts
Phantom Supply	C12	= +59volts

Differences of ±10% are acceptable, due to variations in the incoming mains voltage. If satisfactory, the problem lies in the regulator section. If not, however, check the bridge rectifier, smoothing capacitor and transformer for failure.

6.00 GLOSSARY OF TERMS USED

AFL	After fade Listen: This button will "solo" the signal (or ALL with their AFL buttons down) on the monitors, and the feed for this solo is taken AFTER the fader.
Attenuate	To reduce the electrical level or amount of gain.
Auxiliary Send	Extra output from the console, usually used for echo sends and foldback.
Bus	Wire carrying a signal or sum of a group of signals.
Cold	The negative going current of a signal. With 2 signal wires, one is positive going (hot), and the other is negative going.(cold)
Cut	To cut a channel means to turn it OFF.
dB (decibel)	A logarthmic ratio used to represent voltage or power gain. The reference about which the ratio is made is usually stated.
Ground	Earth or screen of a cable when refering to connecting leads.
Group Output	The output of a group bus which is carrying a sum of all the signals assigned to that group number.
Hot	Positive going current of a signal. With 2 signal wires, one is positive going (hot), and the other is negative going.(cold)
Hz	Measurement of frequency (Hertz) 1Hz = 1 cycle per second.
Insert	An insert point allows peripheral equipment to be introduced into the signal path.
Khz	Measurement of frequency expressed to the power of 1000.i.e. 1Khz = 1000 cycles per second.
kOhm	Measurement of electrical resistance expressed to the power of 1000.i.e. 1 kOhm = 1000 Ohms.
Mains	Local Electrical Supply.
Multitrack Logic	Either the multitrack machine's monitor switching or its safe/record switching.

Ohm	Measurement of electrical resistance.
Overdubbing	The process of recording new tracks on a multitrack tape recorder whilst listening back in synchronisation with previously recorded tracks.
Pan Pot	A pan pot places a signal across two stereo lines (left & right) turning it to the left will send all the signal to the left line, and when turned to the right, all the signal will be sent to the right side. If the pan pot is at its centre detent, an equal amount of signal will be fed to both sides and the image in the stereo picture will be central.
PFL	Pre fade Listen: This button will "solo" the signal (or ALL with their PFL buttons down) on the monitors, and the feed for this solo is taken BEFORE the fader.
Phantom Power	A voltage (usually +48 Volts) across the microphone input to power capacitor microphones.
Post	Post means after the fader.
Pre	Pre means before the fader.
Ring	The connecting part in the middle of a stereo jack,(it mates second).
Signal to Noise Ratio	The ratio between the level of signal and the level of unwanted noise.
Sleeve	The connecting part of a stereo jack which mates last and is always earth.
Star Point	A single point to which ALL earths are separately connected.
Sync Mode	Used whilst overdubbing; previously recorded tracks are played back through the record head whilst you record on other tracks.
Tip	The connecting part at the end of a stereo jack, (it mates first).
Track Bouncing	Taking a group of previously recorded tracks and recording them as a group onto another track. e.g. bouncing down 4 vocals from 4 tracks to just one track "frees" 3 tracks for fresh recording.

7.00 SERIES 200B TECHNICAL DESCRIPTION

7.01 GENERAL

1. Configuration

Inputs:
Between 8 and 32 input channel modules.
8 tape returns in the monitor/mix section.
1 two-track tape return.

Outputs:

4 Groups.	Ground compensated. (See MI2426)
4 Auxiliaries.	Ground compensated. (See MI2426)
Mix L and R.	Electronically balanced.
Headphones. (Breaks CRM.)	
Control Room Monitor, (CRM).	Electronically balanced.

2. Level switching

There is extensive level switching within the console, enabling it to be used with both +4dBu and -10dBV, (Tascam level), external equipment. The level switching is done on a per-PCB basis allowing both level standards to be used.

3. Operating levels

Inputs:
Line In: +4dBu or -10dBV.
Mic In:-

Group outputs/Tape returns:
+4dBu or -10dBV.

Aux outputs:
+4dBu. Not switchable; adjust level on Aux master pot.

Mix outputs:
+4dBu or -10dBV.

2-track return:
+4dBu or -10dBV.

Internal:
-6dBu nominal.

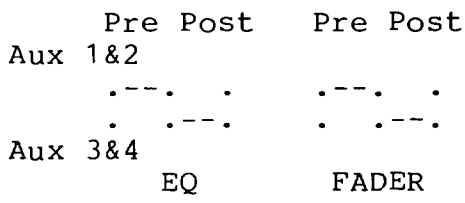
7.02 INPUT CHANNEL

The circuitry of the channel is fairly standard, and only the points of interest are noted.

A jumper provides the gain switching for the line input. Pushing the jumper ON introduces extra attenuation, and provides suitable sensitivity for +4dBu operation. This is located above Conn 1 and to the left of RIC 1.

The PFL switch, (S4), signals a PFL condition to the Solo Enable bus by connecting it to V- through a 100k resistor, (R25). The Solo Enable bus operates as a virtual-earth bus so that there are no transient signals on it that might crosstalk onto the audio buses.

Extensive changes in the sourcing of the 4 Aux sends are possible by moving the pre/post jumpers located towards the centre of the PCB, these allow various combinations of pre/post EQ and pre/post fader sends. The Auxes are arranged in two pairs.



(Refer to Input module Circuit diagram ED2183 and Input module Signal flow diagram ED2227.)

Routing is through 22k resistors, the outward end being grounded when routing switching is released, so that crosstalk cannot occur to the bus across the switch contact capacitance.

7.03 GROUP OUTPUT

The Series 200B Group Output summing circuit is a conventional virtual-earth amp whose output feeds the fader. At this point the signal is out of phase. The fader amp is configured for 10dB of gain, and restores the signal to its -6dBu nominal level and correct phase. The output amp is a ground compensated type. This has output level swtiching in its feedback loops.

Switch, S5, OUT for +4dBu.
Switch, S5, IN for -10dBV.

TAPE RETURNS
Two returns are provided per group. For Group 1, the returns are 1 and 5, for Group 2, they are 2 and 6, etc. Each return is balanced with an input impedance of >10k. There is level switching in the feedback loop, and the switch contacts are combined with those of the Group Output so that by operating one switch, all levels on a Group PCB are changed.

The output of return amp 1 goes to the normally open side of the RET switch, (S2). The meter and PFL feeds are taken from the wiper of S2. When pressed, the signal accesses VR1, (Aux 1), and VR2, (Vol). The output of IC goes to the SUB switch, (S4), which normally routes it to the Pan pot, (VR3), and then the Mix bus.

If the SUB switch is pressed, IC 's output goes via a mix resistor to the group bus, and the Group Output is fed into the Panpot. With SUB and RET out, the Group Output feeds the meter, VR1, VR2 and the Panpot via IC and SUB: the tape return goes no-where.

Return 5 is somewhat simpler in operation: the balanced input goes to the gain-switched return amp and then into AUX1, (VR4), VOL, (VR5), and PFL. The VOL amp's output is applied to the Panpot and the Mix buses.

7.04 MASTER LH PCB (Auxiliary Masters)

The are 4 Aux masters, each of which have a master level pot and an AFL switch. They reside on the Master LH PCB. The circuitry is conventional and consists of a virtual-earth summing amp followed by a level pot and ground compensated output amp.

7.05 MASTER RH PCB

This PCB holds the Mix L and R paths, 2-track returns, headphone monitors, PFL/AFL system, oscillator and talkback circuitry.

MIX PATH
The Mix summing amp is followed by an inverting insert-send driver which corrects the signal phase. The insert return feeds the fader and its amp, (+10dB gain). The level switching stage drives the EBOS amp, the output of which goes to the Mix XLR and the 2-track return switch.

2-TRACK RETURN
This is a balanced line input with level switching. Its output is switched by an FET into the headphone monitor circuit.

PFL/AFL SYSTEM
The PFL/AFL signal is summed, passes through an inverting stage and then goes to the switching FETs.

When a PFL or AFL switch is pressed the PFL/AFL enable bus is connected to V- by a 100k resistor. IC9 is connected as a virtual earth stage and so acts to maintain zero volts on the bus by moving its output positively. When the op-amp output goes positive, TR5 is turned on by R70 and the not-PFL logic signal goes low. TR6 is turned off by R42 and the PFL logic circuit goes high. These changes turn off TR7 via D1 and allow R21 to keep TR8 held on. Therefore, the signal from IC23 is ignored, and that from the PFL/AFL summing amp, IC8, is passed to the monitoring system instead. R22 helps absorb FET

switching transients.

HEADPHONE MONITORING
The FET outputs go to the meter switch, talkback switches, (which kill the phones when operated), and the Monitor Volume pot. The tip-normal and ring-normal contacts of the phones socket feed the Control Room monitor EBOS amps.

OSCILLATOR AND TALKBACK
The talkback, (TB), and slate oscillator, (OSC), share the same set of mix resistors, and therefore only one can be used at a time. TB always overrides OSC. When neither are enabled S3D, S5B, and S4C ground the mix resistors to prevent interbus crosstalk. C48 is not grounded by S3D or S4D and the TB mic amp gain is reduced to unity.

The oscillator is enabled by S5A and switches S3C, S5B and S3D take the output signal to ground when it is not slated. When OSC is pressed the ground is removed from both the osc output and the mix resistors, which slates the oscillator.

For Talkback to be enabled, either TB ALL or TB 1-2 are used. TB 1-2 selects the first 2 Auxes, TB ALL applies TB to the 4 group buses, Auxes 1 and 2 and the mix buses.

Operating TB switch removes the ground on the mix resistors and applies a ground to C48 to allow the full mic gain set by VR2 to be realised. R84 sets the maximum gain and R82, C45 provide smooth power to the electret microphone.

METER DRIVE
This is an active gain, single op-amp driver.

8.00 SOUNDCRAFT RECOMMENDED WARRANTY

(This warranty applies to sales within the UK and should form the basis of the warranty offered by the overseas vendor of Soundcraft products.)

1. 'Soundcraft' means Soundcraft Electronics Ltd.
   'End User' means the person who first puts the equipment into regular operation.
   'Dealer' means the person other than Soundcraft (if any) from whom the End User purchased the Equipment, provided such a person is authorised for this purpose by Soundcraft or its accredited Distributor.
   'Equipment' means the equipment supplied with this manual.

2. If within the period of twelve months from the date of delivery of the Equipment to the End User it shall prove defective by reason only of faulty materials and/or workmanship (but not faulty design) to such an extent that the effectiveness and/or usability thereof is materially affected the Equipment or the defective component should be returned to the Dealer or to Soundcraft and subject to the following conditions the Dealer or Soundcraft will repair or at its option replace the defective components. Any components replaced will become the property of Soundcraft.

3. Any Equipment or component returned will be at the risk of the End User whilst in transit (both to and from the Dealer or Soundcraft) and postage must be prepaid.

4. This warranty shall only be available if:-
   a) the Equipment has been properly installed in accordance with instructions contained in Soundcraft's manual; and
   b) the End User has notified Soundcraft or the Dealer within 14 days of the defect appearing; and
   c) no persons other than authorised representatives of Soundcraft or the Dealer have effected any replacement of parts maintenance adjustments or repairs to the Equipment; and
   d) the End User has used the Equipment only for such purposes as Soundcraft recommends, with only such operating supplies as meet Soundcraft's specifications and otherwise in all respects in accordance with Soundcraft's recommendations.

5. Defects arising as a result of the following are not covered by this Warranty: faulty or negligent handling, chemical or electro-chemical or electrical influences, accidental damage, Acts of God, neglect, deficiency in electrical power, air-conditioning or humidity control.

6. The benefit of this Warranty may not be assigned by the End User.

7. End Users who are consumers should note their rights under this Warranty are in addition to and do not affect any other rights which they may be entitled against the seller of the Equipment.

9.00 SERIES 200B CUSTOMER SPARES KIT LIST - RZ2259

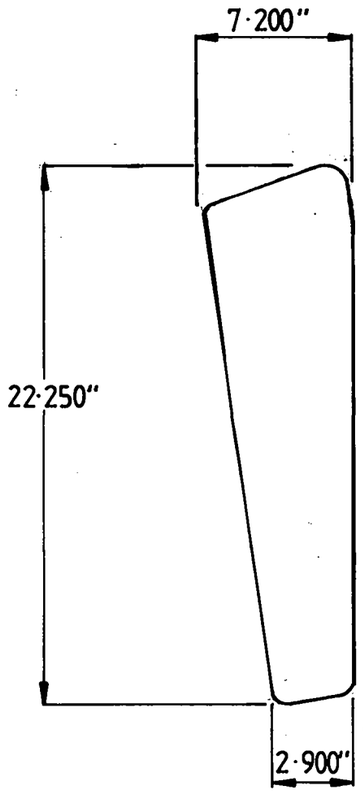
COMPONENT ITEM NO.	DESCRIPTION	QTY
BA0001	DIODE IN4148	5
BB0106	ZENER DIODE 400mW 11V	1
BC0302	BDG RECT KBF02 200V 2.5A	1
BD0301	PNP TRANS 2SA842GR/2SA970GR	1
BD0302	NPN TRANS 2SC1681BL/2SC2240BL	5
BD0317	NPN TRANS BD135	1
BD0322	FET SWITCH J112	2
BD0329	PNP TRANS 2N4403	5
BE0403	QUAD OP AMP IC TL074	2
BE0404	SGL OP ICTL071	2
BE0413	DUAL OP AMP IC TL072	5
BE0418	V.REG LM337K-1.2/37V 1.5A (TO3)	1
BE0419	V.REG LM317K+1.2/37V 1.5A (TO3)	1
BE0428	DUAL OP AMP IC NE5532	5
JA0001	TOSHIBA MINI LED GREEN TLG102	3
JA0002	TOSHIBA MINI LED RED TLR102	3
JA0003	TOSHIBA LED RED TLR104	1
NA0130	M3x8mm PAN POZI BLCK SCRW	10
NC0231	M3 BLACK NYLON WASHER	10
RV1297	S200B EXTENDER WFM ASSY.	1
ZD0301	1.6A ANTI-SURGE FUSE 20mm	3
ZD0307	6.3A 20mm FUSE	3

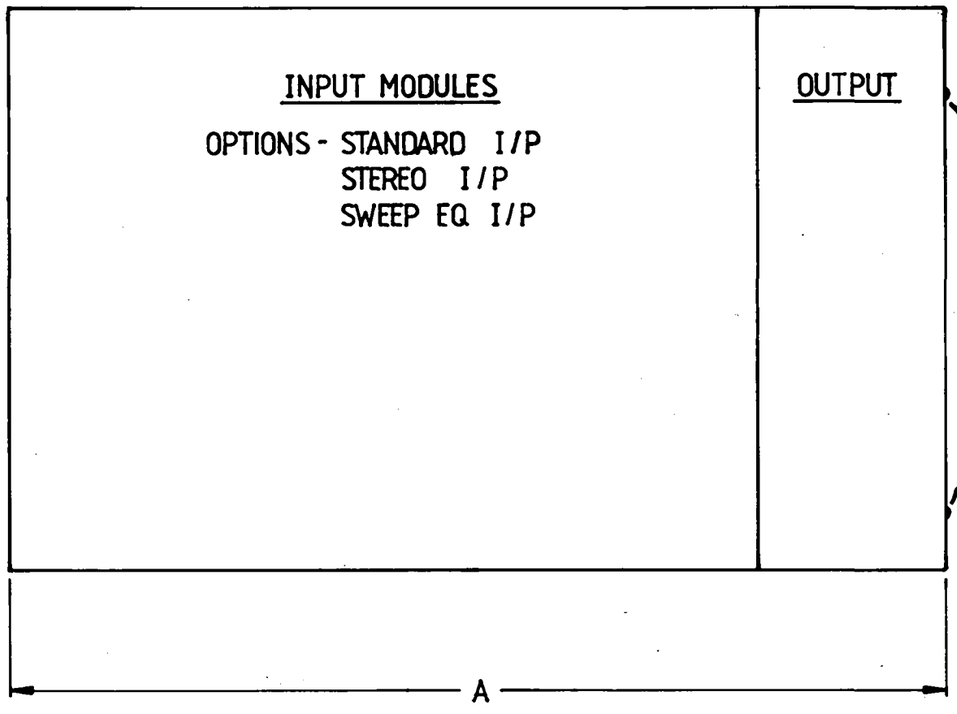
DRAWINGS FOR S200B MANUAL - iss 3

ED2183	I/P MODULE PCB CCT DIAGRAM
ED2251	RH MASTER PCB CCT DIAGRAM
ED2179	O/P PCB CCT DIAGRAM
ED2255	LH MASTER PCB CCT DIAGRAM
ED2116	S400B PSU CCT DIAGRAM
ED2227	INPUT MODULE SIGNAL FLOW DIAGRAM
ED2224	MASTER MODULE SIGNAL FLOW DIAGRAM
ED2262	S200B BLOCK DIAGRAM
MI2420	STD O/P REAR CONN LINE DRAWING
MI2422	STD I/P REAR CONN LINE DRAWING
MI2423	RACK MOUNT REAR CONN LINE DRAWING
MI2475	S200B CONSOLE CONFIGURATION
MI2476	S200B RACKMOUNT CONSOLE CONFIGURATION
MI2426	GROUND COMPENSATION DIAGRAM

ISSUE	DETAIL
P1 12 / 2 / 88	
1	6-4-88 DIMNS FOR LENGTHS CHND.
2	END PROFILE SHAPE CHANGED 27-5-88

INPUT REAR CONNS	OUTPUT REAR CONNS





NOTE
SCREW HEADS PROTRUDE 3mm BEYOND PROFILE EACH END.
MAX. DIMNS INCLUDE SCREW DIMN.

S200B MAX FRAME SIZES (LENGTH 'A')
&
S200BVE

8 CH= 17·570"
16 CH= 27·570"
24 CH= 37·570"
32 CH = 47·570"

TOLERANCES

HOLE SIZES AFTER PAINTING

0–3mm	$= {}^{+0.10}_{-0.00}$
OVER 3–6mm	$= {}^{+0.12}_{-0.00}$
OVER 6–10mm	$= {}^{+0.15}_{-0.00}$
OVER 10–18mm	$= {}^{+0.18}_{-0.00}$
OVER 18–25mm	$= {}^{+0.21}_{-0.00}$
OVER 25mm	$= {}^{+0.25}_{-0.00}$

GENERAL TOLERANCE

Delete where not applicable.
± 0·50 mm (0·020")
± 0·25 mm (0·010")
± 0·12 mm (0·005")
HOLE CENTRES ± 0·004"
ALL ANGLES ± 0·50°
Unless otherwise stated.

HOLE INDEX

MATL	DRN MJH
FINISH	TRCD
SCALE N.T.S.	CHKD

THIRD ANGLE PROJECTION

THIS DRAWING TO COMPLY TO BS308.

SOUNDCRAFT ELECTRONICS LTD
UNIT 2,
BOREHAMWOOD INDUSTRIAL PARK,
ROWLEY LANE,
BOREHAMWOOD,
HERTFORDSHIRE WD6 5PZ.
TELEPHONE: 01-207-5050
FACSIMILE No. 2070194

TITLE
S200B & 200BVE
OVERALL DIMENSIONS
& OPTIONS

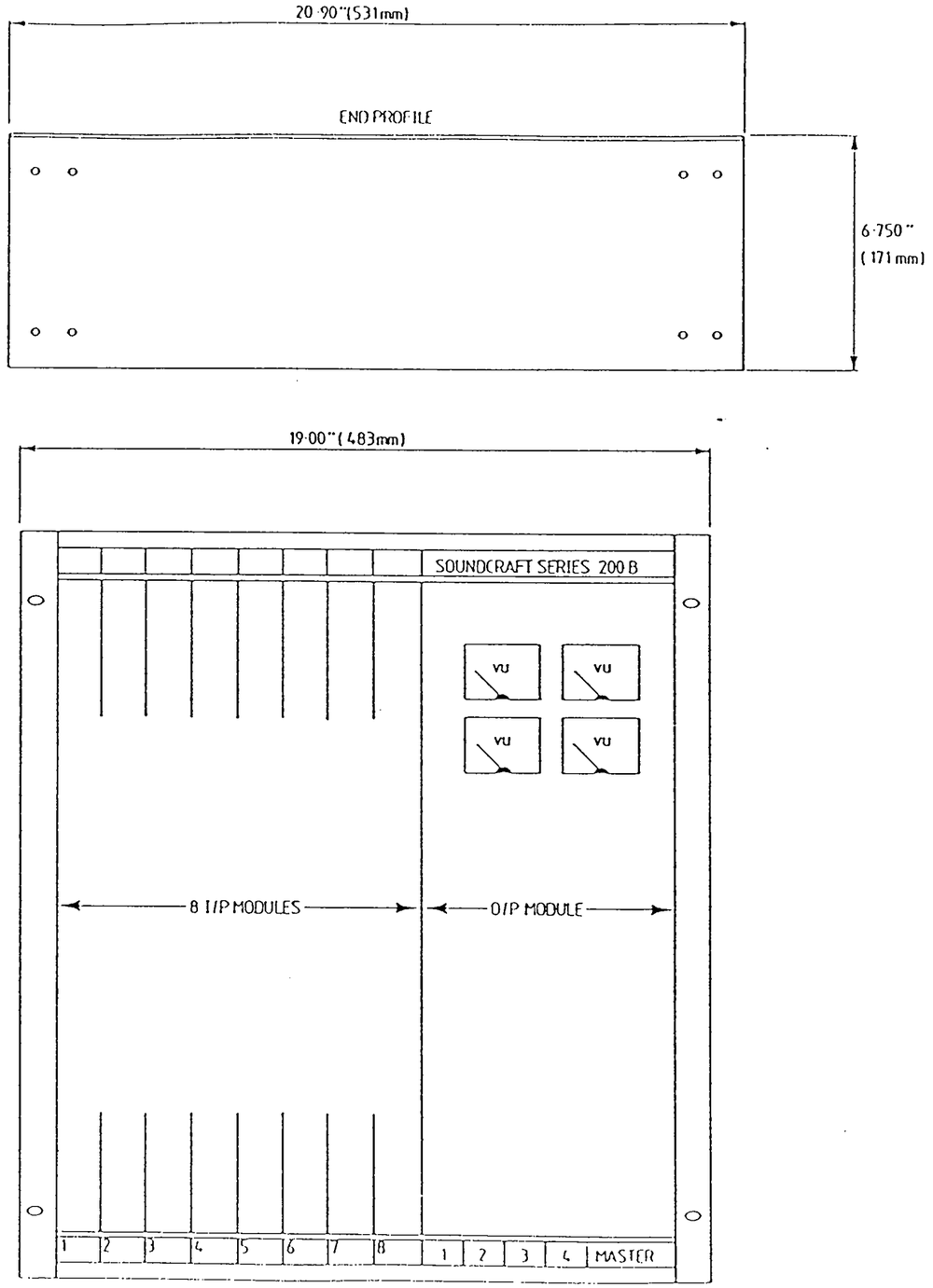
DRG. No. MI 2684

LTB 1187

1226-287T

DWG no. M12476

6 - 6 - 85



Soundcraft Electronics Limited own the copyright of this drawing which is not to be copied, reproduced or disclosed, in part or whole, to a third party without written permission.

NOTES.

HOLE INDEX.

TOLERANCE.
All imperial dimensions ±0.010
All metric dimensions ±0.25mm
All angles ±0.50°
Unless otherwise stated

THIRD ANGLE PROJECTION

MATL.

FINISH.

SCALE.

DRG. CHRIS

THCD.

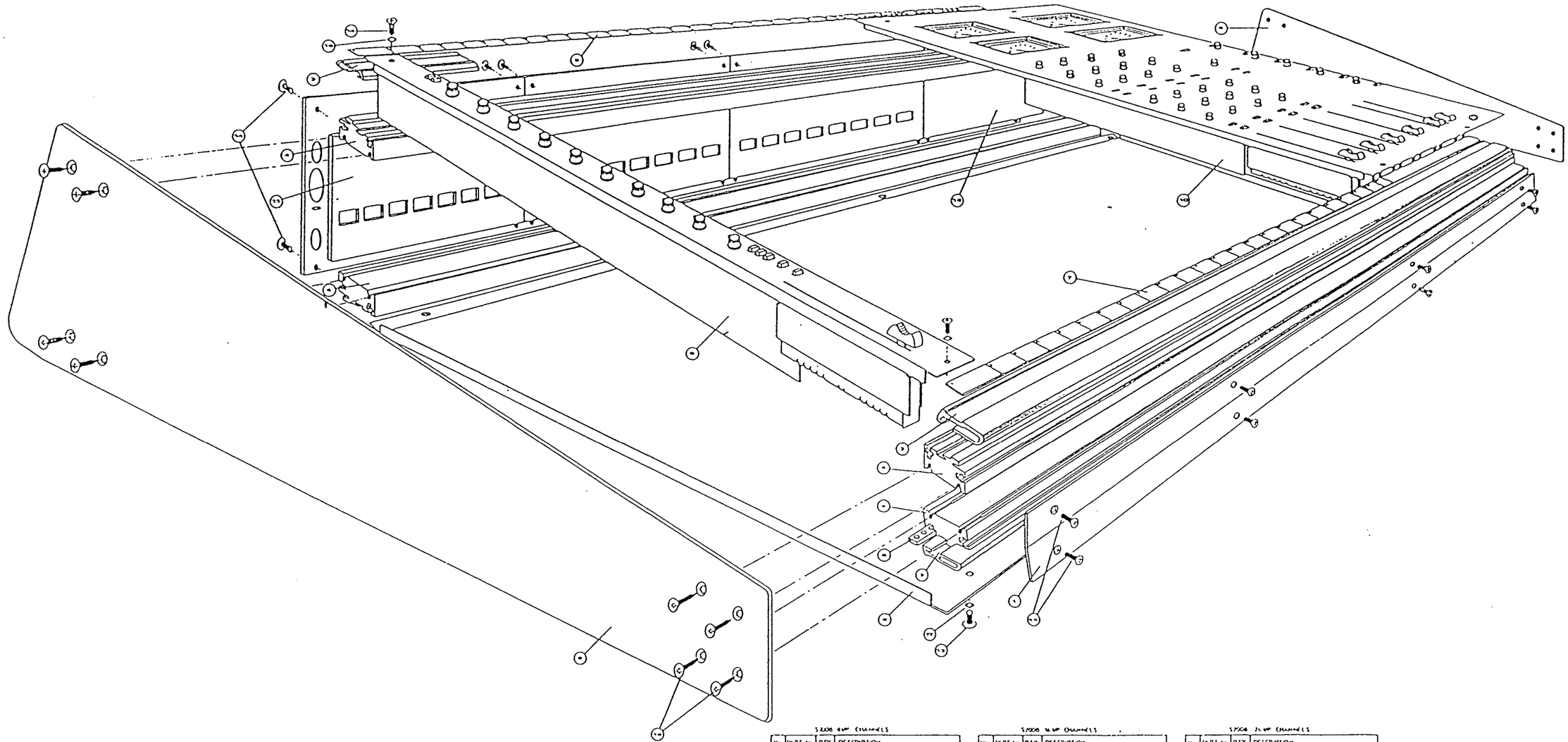
CHKD.

SOUNDCRAFT ELECTRONICS LTD
5-8 GREAT SUTTON STREET
LONDON. EC1V. ONX.
TELEPHONE. 01-251-3431/2/3
TELEGRAMS SOUNDCRAFT LDN EC1

TITLE. S200B
RACKMOUNT
CONSOLE CONFIGURATION

DWG no. M12476

DRG NO M1247P



S3008 4U CHANNELS

No	PART No	QTY	DESCRIPTION
*	P80251	1	S3008 4U/A front panel
*	P80154	2	S3008 profile panel
*	P1015	3	S3008 4U/p fan extension
*	P1005	4	S3008 4U/p aluminium extrusion
*	M5015		5" tagged strip
*	P5091	1	S3008 4U/p base panel
*	P5071	1	S3008 4U/p bottom stand
*	P5015	1	S3008 4U/p upper stand
*	M5041	8	S3008 standard 4U module assy
**	M5042	1	S3008 4U/p module assy
**	M5043	1	S3008 4U/p input rear conn assy
**	M5044	1	S3008 output rear conn assy
**	M4061	6	M3.5mm pan pozi black screw
**	M4010	16	M3.5mm pan pozi black screw
**	M4019	4	Nutsert type A8 flange head s/s black
**	M2011	16	M3 black nylon washer
**	M3160	6	M3.5 internal tooth lock washer

S3008 4U/P CHANNELS

No	PART No	QTY	DESCRIPTION
*	P80252	1	S3008 4U/P front panel
*	P80154	2	S3008 profile panel
*	P1015	3	S3008 4U/p fan extension
*	P1005	4	S3008 4U/p aluminium extrusion
*	M5015		5" tagged strip
*	P5091	1	S3008 4U/p base panel
*	P5071	1	S3008 4U/p bottom stand
*	P5015	1	S3008 4U/p upper stand
**	M5041	16	S3008 standard 4U module assy
**	M5042	1	S3008 4U/p module assy
**	M5043	1	S3008 4U/p input rear conn assy
**	M5044	1	S3008 output rear conn assy
**	M4061	6	M3.5mm pan pozi black screw
**	M4010	16	M3.5mm pan pozi black screw
**	M4019	4	Nutsert type A8 flange head s/s black
**	M2011	16	M3 black nylon washer
**	M3160	6	M3.5 internal tooth lock washer

S3008 2U CHANNELS

No	PART No	QTY	DESCRIPTION
*	P80251	1	S3008 2U/A front panel
*	P80154	2	S3008 profile panel
*	P1007	3	S3008 2U/p fan extension
*	P1007	4	S3008 2U/p aluminium extrusion
*	M5015		5" tagged strip
*	P5091	1	S3008 2U/p base panel
*	P5071	1	S3008 2U/p bottom stand
*	P5011	1	S3008 2U/p upper stand
**	M5041	16	S3008 standard 4U module assy
**	M5042	1	S3008 4U/p module assy
**	M5043	1	S3008 4U/p input rear conn assy
**	M5044	1	S3008 output rear conn assy
**	M4061	6	M3.5mm pan pozi black screw
**	M4010	16	M3.5mm pan pozi black screw
**	M4019	4	Nutsert type A8 flange head s/s black
**	M2011	16	M3 black nylon washer
**	M3160	6	M3.5 internal tooth lock washer

ISSUE	NOTES
1	

DRG NO	ISSUE TO SALES	DRAWN	CHECKED
TITLE: S3008 STANDARD FRAME EXPLODED		COMPONENT ELECTRONICS LIMITED 5-6 CECIL SUTTON STREET, LONDON E1 5LY 081 TELEPHONE 01 791 9431	

ISSUE	DETAILS
P1	7 - 6 - 85
1	3 - 7 - 85
2	CON 1 PINS TRANSPOSED COMPONPONENT PRE-FIXES ADDED 470R VALUES WERE 150 MJH 2/2/89

LINE INPUT SKTn

T
TN
RN
R
S

MIC INPUT XLR SKTn

CHASSIS
1
+2
-3

+48v
Rn 6K8
6K8 Rn
PHANTOM POWER
Rn 47K

4K7 Rn
4K7 Rn
470R Rn
470R Rn

INSERT JACK SKTn

T
TN
RN
R
S
S

INSERT SEND
INSERT RETURN

MIC INPUT
LINE INPUT

CN1
+ 9
+ 7
10 -
8 -
5 3 1
6 4 2
S R

CONNECTOR VEIWED FROM SOLDER SIDE OF REAR CONN PCB

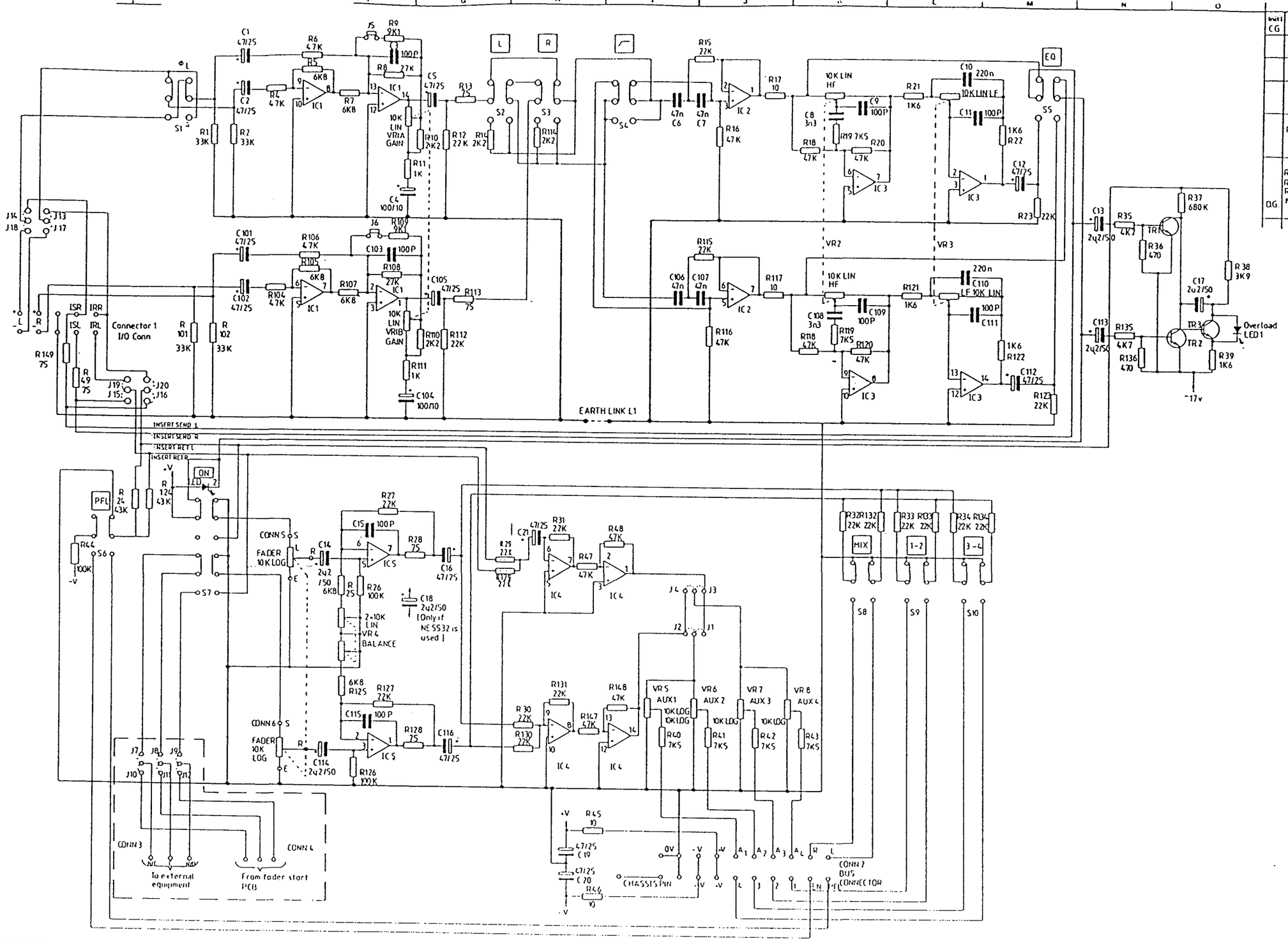
NB
CHANNEL 1 OF 8 SHOWN

THIRD ANGLE PROJECTION	TOLERANCE All imperial dimensions ± 0·010 All metric dimensions ± 0·25mm All angles ± 0·50° Unless otherwise stated	HOLE INDEX	MATL FINISH SCALE	DRN CHRIS TRCD CHKD	SOUNDCRAFT ELECTRONICS LTD 5-8 GREAT SUTTON STREET LONDON EC1V 0BX. TELEPHONE. 01-251-3631/2/3 TELEGRAMS. SOUNDCRAFT LDN EC1 TELEX. UK. No. 21198. USA. No. 224408	TITLE S 200B INPUT RCP CCT DIA DRG. No. ED 2301

UOO 30910

ORG No. ED2298

Init	Issue 1
CG	7 — 1 — 86
	Issue 2 26 — 6 — 86
	Issue 3 7 — 8 — 86
	ISSUE 4 IDENT CHANGE 5-1-87
	ISSUE 5 R24 & R124 WAS 22K 28/9/87
DG	ISSUE 6 R3, R103 REMOVED R4, R6, R104 AND R106 WERE 68K NOW 47K 13-10-88



Soundcraft Electronics Limited own the copyright of this drawing which is not to be copied, reproduced or disclosed, in part or whole, to a third party without written permission.

NOTES
1. Connectors viewed from component side of PCB
2. If using stereo I/P connpt, use J17, J18, J19, J20
3. If using std I/P connpt use, J13, J14, J15, J16 and omit R49, R149

HOLE INDEX

ALL TRANSISTORS: BC559/2SC2240
IC1,3,4 = TL074
IC2 = TL072
IC5 = NE5532
LED2 = TLG102
LED1 = TLR102

TOLERANCES

HOLE SIZES AFTER PLATING	
0-3 mm	+0.10 -0.00
over 3-6 mm	+0.15 -0.00
over 6-10 mm	+0.15 -0.05
over 10-18 mm	+0.15 -0.10
over 18-23 mm	+0.21 -0.00
over 23 mm	+0.25 -0.00

Unless otherwise stated

GENERAL TOLERANCES
Unless others not specified
± 0.5 mm to 0.010 in
± 0.25 mm to 0.005 in
± 0.12 mm to 0.005 in
All angles ± 0.5°
Hole centres ± 0.004"

MATL
FINISH
SCALE
THIRD ANGLE PROJECTION
THIS DRAWING TO COMPLY TO BS308

DRN CRS 6.....
THCD
CHKD

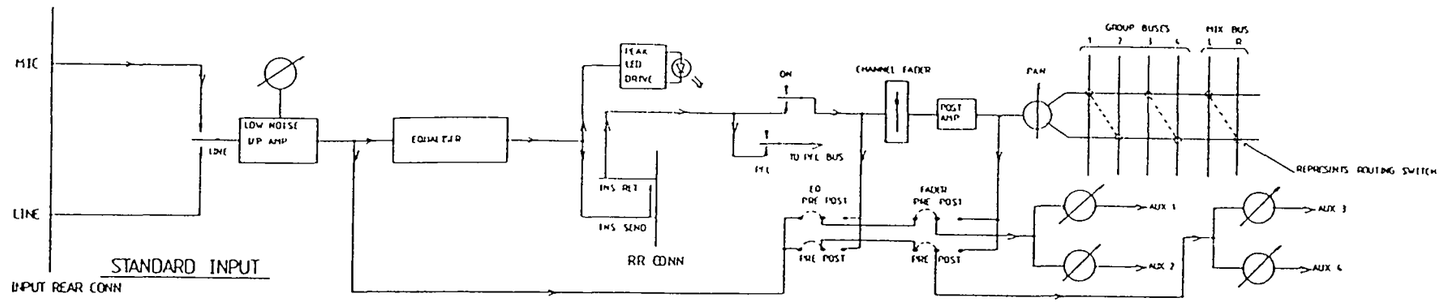
SOUNDCRAFT ELECTRONICS LTD
UNIT 2,
BOREHAMWOOD INDUSTRIAL PARK,
ROWLEY LANE,
BOREHAMWOOD,
HERTFORDSHIRE WD6 5PZ
TELEPHONE 01-207-5050
FACSIMILE No 2070104

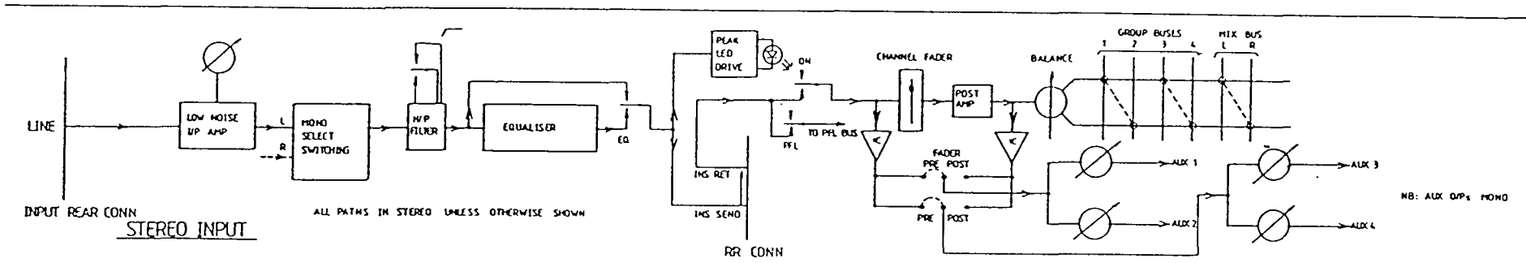
TITLE
S 2018
STEREO I/P CCT

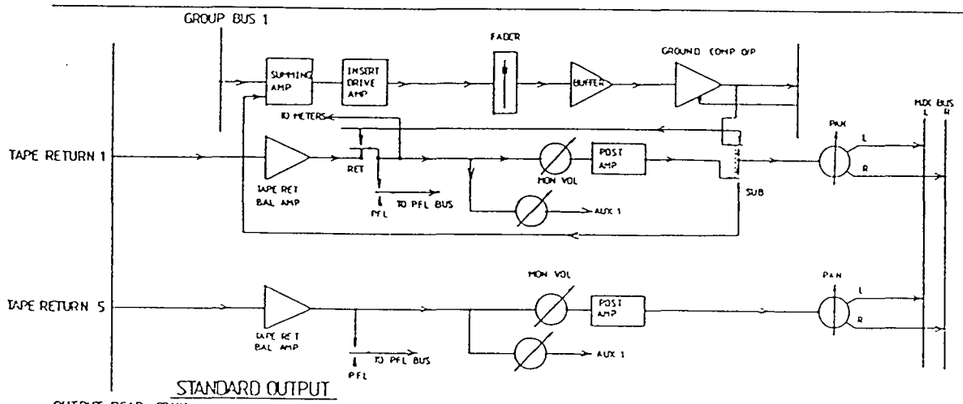
DWG No ED 2298

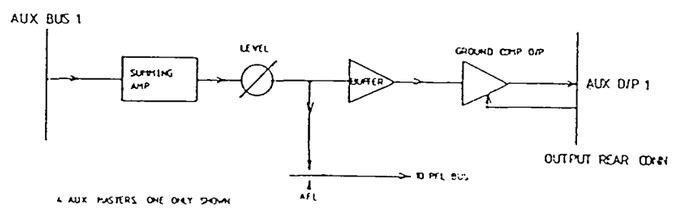
DRG No.

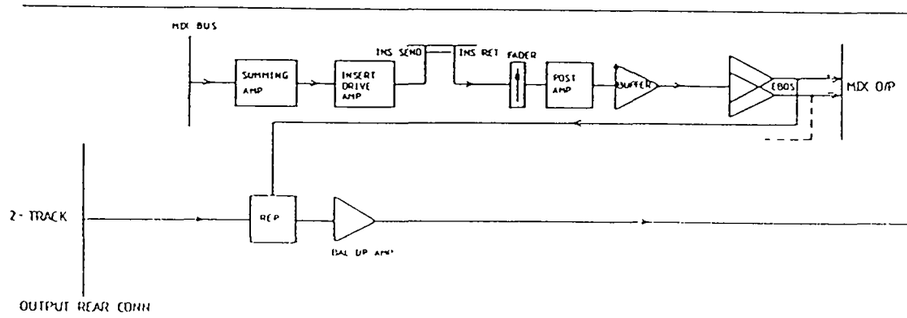
Init	
	Issue 1 9-5-85
	Issue 2 3-7-85

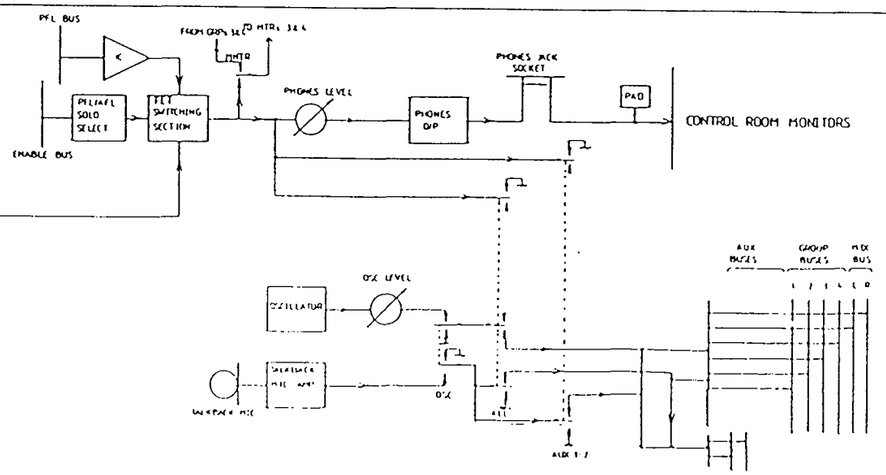












Soundcraft Electronics Limited own the copyright of this drawing which is not to be copied, reproduced or disclosed, in part or whole, to a third party without written permission.

NOTES.

HOLE PUNCH.

TOLERANCE.
All imperial dimensions ±0.010
All metric dimensions ±0.25mm
All angles ±0.50°
Unless otherwise stated

THIRD ANGLE PROJECTION

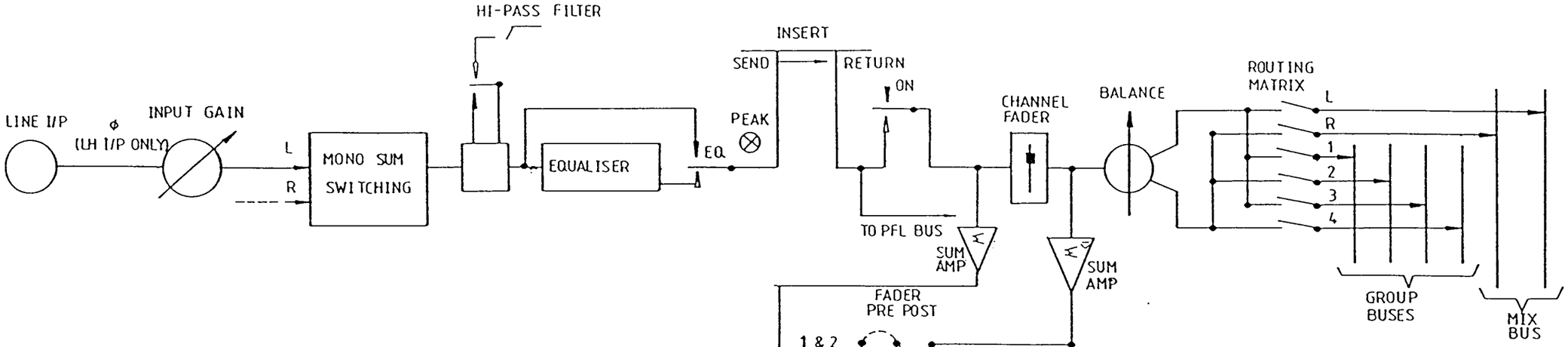
MATL.
FINISH.
SCALE.
DRG. AB
TRCD.
CHKD.

SOUNDCRAFT ELECTRONICS LTD.
5-8 GREAT SUTTON STREET
LONDON. EC1V. 0BX.
TELEPHONE. 01-251-3631/2/3
TELEGRAMS. SOUNDCRAFT LDN EC1
TELEX. UK No. 21198. USA No. 01-2203

TITLE.
S2008
BLOCK DIAGRAM

DRG No. ED2262

ISSUE 1
30-4-85

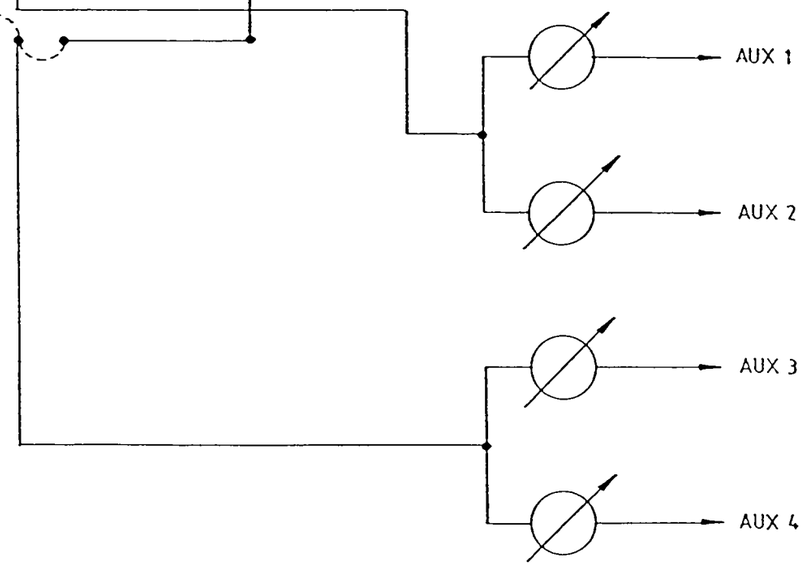


ALL PATHS IN STEREO, UNLESS OTHERWISE SHOWN.

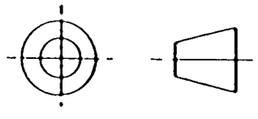
NORMALLY CLOSED CONTACT

NORMALLY OPEN CONTACT

PUSH ON LINK

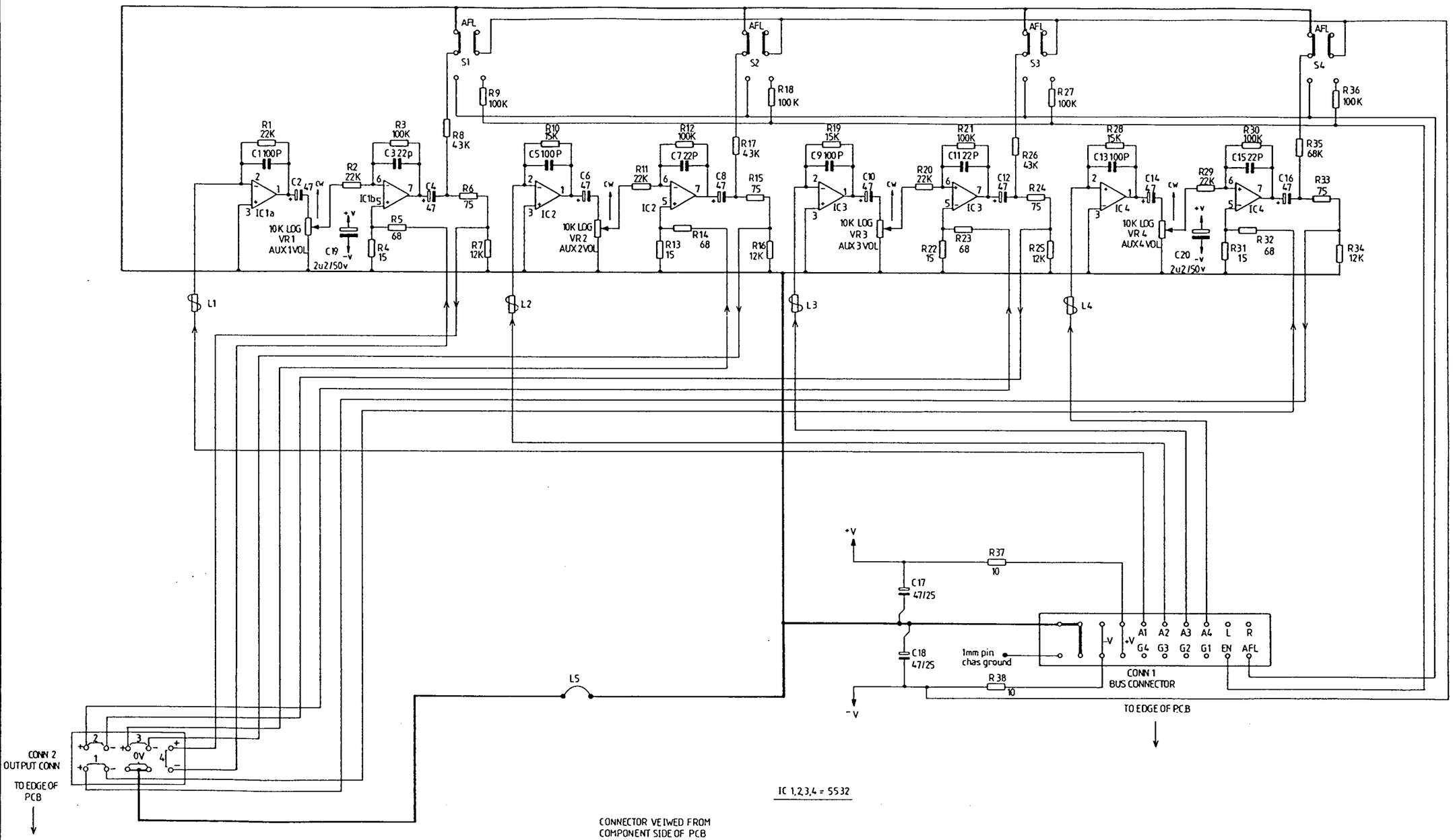


NB: AUX SENDS IN MONO

	THIRD ANGLE PROJECTION 	TOLERANCE All imperial dimensions ± 0·010 All metric dimensions ± 0·25mm All angles ± 0·60° Unless otherwise stated	HOLE INDEX	MATL FINISH SCALE	DRN AB TRCD CHKD	SOUNDCRAFT ELECTRONICS LTD 5-8 GREAT SUTTON STREET LONDON EC1V 0BX. TELEPHONE. 01-251-3631/2/3 TELEGRAMS. SOUNDCRAFT LDN EC1 TELEX. UK. No. 21198. USA. No. 224408	TITLE SERIES 200B STEREO I/P MODULE SIGNAL FLOW DIAGRAM DRG. No. ED2259

DRG No. ED 2255

Init	
	Issue 1 9 - 4 - 85
	Issue 2 13 - 5 - 85
	Issue 3 3 - 7 - 85
	Issue 4 31 7 85
	ISSUE 5 12 - 2 - 86
	ISSUE 6 6-9-89



Soundcraft Electronics Limited own the copyright of this drawing which is not to be copied, reproduced or disclosed, in part or whole, to a third party without written permission.

NOTES.
ALL CONNECTORS VIEWED FROM COMPONENT SIDE OF PCB

HOLE INDEX.

TOLERANCE.
All imperial dimensions ±0·010
All metric dimensions ±0·25mm
All angles ±0·50°
Unless otherwise stated.

THIRD ANGLE PROJECTION

MATL.	DRG. CHRIS
FINISH.	TRCD.
SCALE.	CHKD.

SOUNDCRAFT ELECTRONICS LTD.
5-8 GREAT SUTTON STREET
LONDON. EC1V. 0BX.
TELEPHONE. 01-251-3631/2/3
TELEGRAMS. SOUNDCRAFT LDN. EC1
TELEX. UK No. 21198. USA No. 01-2203

TITLE. S 200 B
LH MASTER CCT DIAGRAM
(SC 1539)

DRG No. ED 2255

DRG No. ED 2251

Init	
	Issue 1 12 - 4 - 85
	Issue 2 13 - 5 - 85
	Issue 3 3 - 7 - 85
	ISSUE 4 R1, 14, 15, 26, 33, R46, 47 & 58 WERE 22K. R85 - 94 WERE 47K. R95, 97, 99 & 101 WERE 27K 19 - 3 - 87
	Issue 5 Conn. 3. Pin No's 1 & 8 Transposed. 29-5-87
	Iss.6 R12, R13 R44 R45 WERE 1K5 VR4, VR5 WERE 2K 2 17-05-89

COMPONENT	TYPE	PART Nº
IC 11, 9	TL071	BE0404
IC 2,6,7,8, 10.	TL072	BE0413
IC 12	TL074	BE0403
IC 1,3,4,5.	NE5532	BE0428
TR 2, TR 4.	2SA970 GR	BD 0301
TR 1, 3, 5, 6.	2SC2240 BL	BD 0302
TR 7,8,9,10	J 112 FET	BD0322
D1-11	IN4148	BA0001
LED 1	TLR 104	JA0003

Soundcraft Electronics Limited own the copyright of this drawing which is not to be copied, reproduced or disclosed, in part or whole, to a third party without written permission.

NOTES. ALL CONNECTORS VIEWED FROM COMP' SIDE OF PCB

ALL JUMPERS SHOWN FOR +4 dBu OPERATING LEVEL

—o o— JUMPER INSERTED

—o o— JUMPER NOT INSERTED

FOR -10dBV OPERATING LEVEL REVERSE ALL JUMPERS

HOLE INDEX.

TOLERANCE.

All imperial dimensions ±0·010

All metric dimensions ±0·25mm

All angles ±0·50°

Unless otherwise stated

THIRD ANGLE PROJECTION

MATL.		DRG.	CHRIS
FINISH.		TRCD.	
SCALE		CHKD.	

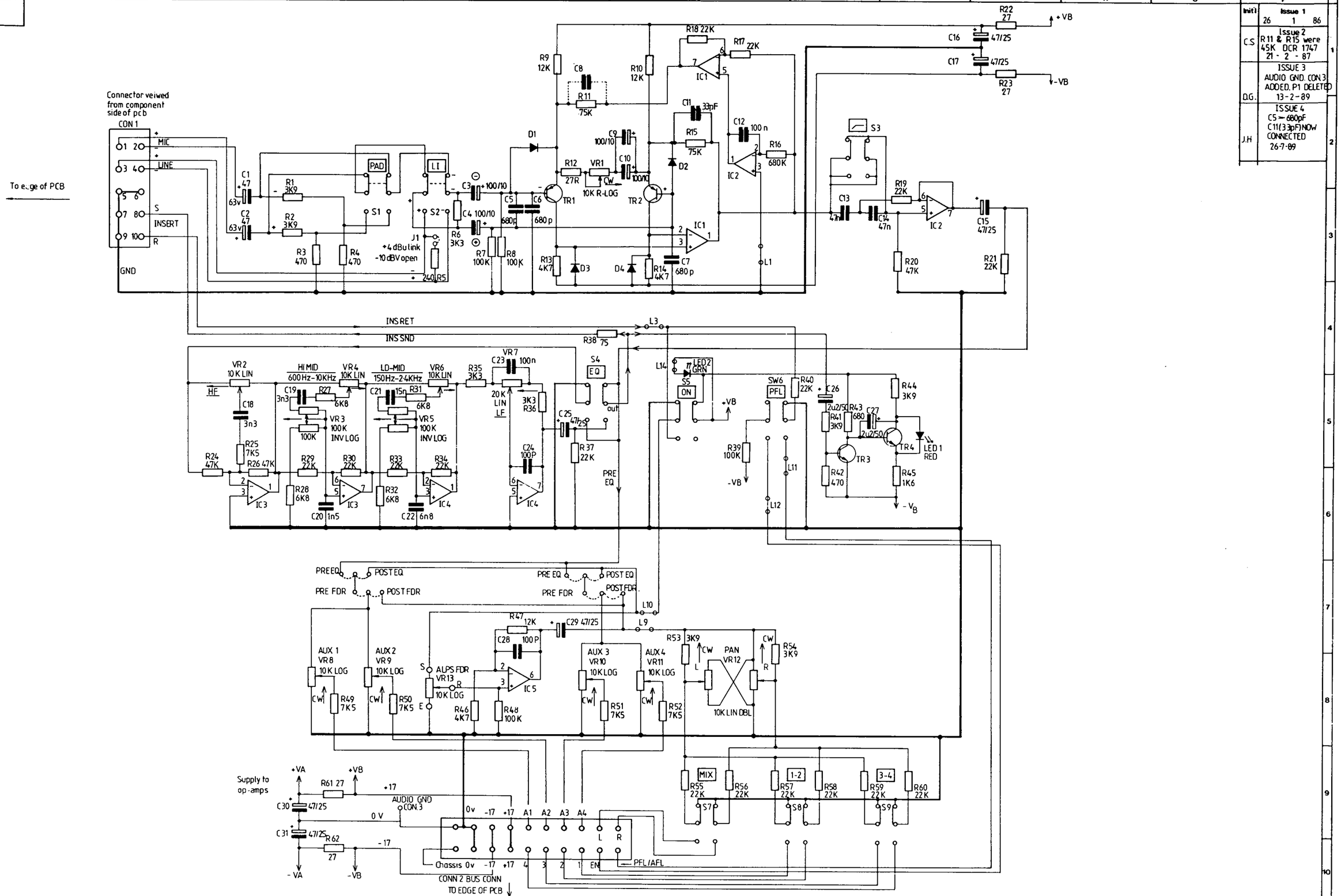
SOUNDCRAFT ELECTRONICS LTD.
5-8 GREAT SUTTON STREET
LONDON. EC1V. 0BX.
TELEPHONE. 01-251-3631/2/3
TELEGRAMS. SOUNDCRAFT LDN EC1
TELEX UK No. 21198. USA No. 01-2203

TITLE. S 200 B
MASTER R/H CIRCUIT DIAGRAM
(SC 1540)

DRG No. ED 2251

DRG No. ED2531

Init	P
	Issue 1 26 1 86
C.S	Issue 2 R11 & R15 were 45K DCR 1747 21 - 2 - 87
D.G.	ISSUE 3 AUDIO GND. CON3 ADDED. P1 DELETED 13-2-89
J.H	ISSUE 4 C5 = 680pF C11(33pF) NOW CONNECTED 26-7-89



Soundcraft Electronics Limited own the copyright of this drawing which is not to be copied, reproduced or disclosed, in part or whole, to a third party without written permission.

NOTES

IC 1,2,3,4 = TL072
IC 5 = TL071
TR 1,2 = 2N4403
TR 3,4 = 2SC2240BL
LED 2 GREEN
LED 1 RED

HOLE INDEX

TOLERANCES

HOLE SIZES AFTER PAINTING

0-3mm	+0·10 -0·00
OVER 3-6mm	+0·12 -0·00
OVER 6-10mm	+0·15 -0·00
OVER 10-18mm	+0·18 -0·00
OVER 18-25mm	+0·21 -0·00
OVER 25mm	+0·25 -0·00

Unless otherwise stated.

GENERAL TOLERANCES

Delete where not appicable.
± 0·50mm (0·020")
± 0·25mm (0·010")
0·12 mm (0·005")
All angles ± 0·50°
Hole centres ± 0·004"

MATL
FINISH
SCALE
DRN
TRCD
CHKD

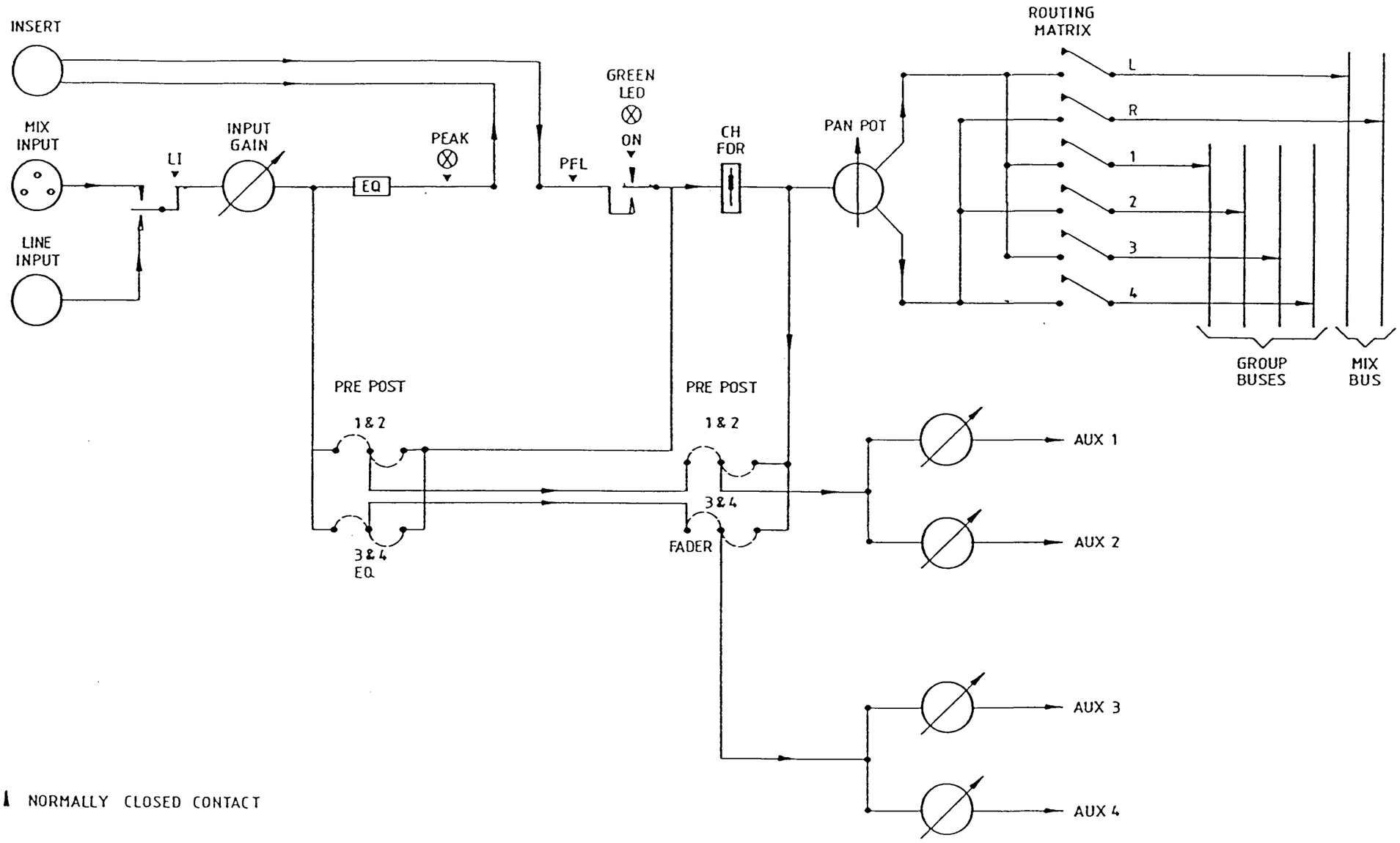
THIRD ANGLE PROJECTION
THIS DRAWING TO COMPLY TO BS308.

SOUNDCRAFT ELECTRONICS LTD
UNIT 2,
BOREHAMWOOD INDUSTRIAL PARK,
ROWLEY LANE,
BOREHAMWOOD,
HERTFORDSHIRE WD6 5PZ.
TELEPHONE: 01-207-5050
FACSIMILE No. 2070194

TITLE. S 200 B
SWEEP EQ I/P
CCT

DRG No. ED 2531

ISSUE 1
25-2-85



NORMALLY CLOSED CONTACT

NORMALLY OPEN CONTACT

THIRD ANGLE PROJECTION	TOLERANCE All imperial dimensions ± 0·010 All metric dimensions ± 0·25mm All angles ± 0·60° Unless otherwise stated	HOLE INDEX	MATL FINISH SCALE	DRN TRCD CHKD	SOUNDCRAFT ELECTRONICS LTD 5-8 GREAT SUTTON STREET LONDON EC1V 0BX. TELEPHONE. 01-251-3631/2/3 TELEGRAMS. SOUNDCRAFT LDN EC1 TELEX. UK. No. 21198. USA. No. 224408	TITLE 200B INPUT MODULE SIGNAL FLOW DIAGRAM DRG. No. ED 2227

UDO 30910

ISSUE 1
26-2-85

ISSUE 2
SWITCH CONTACTS REVERSED
21/12/87

GROUP SUMMING AMPS

GROUP FADERS

GP O/P 1
GP O/P 2
GP O/P 3
GP O/P 4

MULTI-TRACK RETURNS
1
2
3
4
5
6
7
8

RET PFL
ELECTRICAL INTERLOCKED
MON VOL
SUB
AUX 1
PFL

MON PAN
L
R

NORMALLY CLOSED CONTACT
NORMALLY OPEN CONTACT

MIX FADERS
MIX O/P L
MIX O/P R

REP MONITOR VOLUME
HEADPHONES JACK

2-TRACK L
2-TRACK R

TB LEVEL
TB MIC
OSC ON
OSC
OSC LEVEL
CONTROL SWITCHING FOR TB TO OVERIDE OSC
TO MIX & AUX BUSES

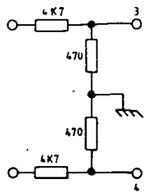
AFL
AUX SUM AMP
AUX LEVEL
GROUND COMP OUTPUT

AUX SECTION: 1 OF 4 SHOWN

THIRD ANGLE PROJECTION	TOLERANCE	HOLE INDEX	MATL	DRN	SOUNOCRAFT ELECTRONICS LTD 58 GREAT SUTTON STREET LONDON EC1V 0BX. TELEPHONE. 01-251-3631/2/3 TELEGRAMS. SOUNDCRAFT LDN EC1 TELEX. UK. No. 21198. USA. No. 224406	TITLE 2008 MASTER MODULE SIGNAL FLOW DIAGRAM
	All imperial dimensions ± 0·010 All metric dimensions ± 0·25mm All angles ± 0·50° Unless otherwise stated		FINISH	TRCD Evelyn Hamilton		
			SCALE	CHKD		DRG. No. ED 2224

UOO 30910

DRG No. ED2183



T. EDGE OF PCB

LINE I/P PAD ON REAR CONN. PCB.

CONNECTOR VIEWED FROM COMPONENT SIDE OF PCB

CONN.1

MIC
LINE
GND
S
INS
R

C2 47 63V
C1 47 63V
R1 3·9K
R2 3·9K
R3 470
R4 470
PAD
LI
S1
S2
+4d9u LINK
10dBV OPEN
R49 3·3K
R48 240
C4 100
C3 100
C6 680P
C5 680P
C23 680P

+VA
-VA
C25 22pF
R8 75K
R5 12K
C26 100/10
C7 100/10
CW
GAIN VR1 10K R LOG
R6 27
R7 12K
R50 75K
TR1
TR2
R53 4K7
R54 4K7
R55 4K7
VERTICAL RESISTORS
R56 4K7
D1
D2
IC1a
R51 22K
R52 22K
C9 100nf
R9 680K
IC3b
IC3a
072

C24 47/25

HF VR2 20K LIN
R12 4·7K
C10 2·2n
R10 180K
R14 180K
C11 33n
R13 22K
R11 1·6K
R16 1·6K
LO MID VR3 20K LIN
C12 22n
IC1b

C13 4·7n
HI MID VR4 20K LIN
R15 1·6K
R20 1·6K
R18 4·7K
C14 2·2n
R19 22K
R17 3·3K
R21 3·3K
LF VR5 20K LIN
C15 100n
IC2a
C16 47
R23 75
R22 22K
C19 2·2
R41 390K
R44 3·9K
R43 680K
C20 2·2
LED 2 RED
TR4
TR3
R42 47K
R45 1·6K
-VB

PRE EQ
POST EQ
PRE FADER
POST FADER

AUX 1 VR6 10K LOG
AUX 2 VR7 10K LOG
ALPS FDR VR8 10K LOG
AUX 3 VR9 10K LOG
AUX 4 VR10 10K LOG
R26 7·5K
R27 7·5K
R28 4·7K
R29 180K
R31 7·5K
R32 7·5K
R30 12K
C18 47
C17 100p
IC2b
R33 3·9K
PAN VR11 10K LIN DBL
R34 3·9K

+VB
LED 1 GREEN
ON
PFL
S3
S4
R24 22K
R25 100K

R35 22K MIX
R36 22K
R37 27K 1-2
R38 22K
R39 22K 3-4
R40 22K

R46 10
R47 10
C21 47
C22 47
AUDIO GND. CONN. 3
0V
-17
+17
A1
A2
A3
A4
L
R
CONN. 2 BUS CONNECTOR
S5
S6
S7
CHASSIS 0V
EN PFL/AFL

TO EDGE OF PCB

INTEGRATED CIRCUITS	PART Nos
IC 1,2,3=TL072	BE0413
TRANSISTORS	
TR1,2 = 2N4403	BD0329
TR3,4 = 2SC2240BL	BD0302
POTS	
VR1 = 10K REV LOG	DM1104
VR2-5 = 20K LIN	DM1107
VR6,7 ,9,10 = 10K LOG	DM1103
VR11 = 10K LIN DBL	DM1101
SWITCHES	
S1-7	DF0516
LED'S	
LED1 = GREEN	JA0001
LED2 = RED	JA0002
DIODES	
D1,2 IN4148	BA0001

Init	
	Issue 1 30-8-84
	Issue 2 8-5-8
	Issue 3 3-7-85
	Issue 4 25-7-85
	Issue 5 8-8-86
	Issue 6 MIC. AMP CIRCUIT ADDED 3-3-87
	Issue 7 Remove C8, C27. C25 was in circuit dotted. 12pF add. R53–56 Shown with 4K7 values. R41-390 was 3K9 R42-47K was 470 R46,47 value 10 was 75. Line circuitry added at A1, A2. 11-6-87
MJH	ISSUE 8 CONN.1 PINS TRANSPOSED CAPACITORS TRANSPOSED 16/10/87
D.G.	ISSUE 9 CON.3 ADDED 4-11-88
J.H	ISSUE 10 C5,C6,C23=680P C25=22pF 26-7-89

Soundcraft Electronics Limited own the copyright of this drawing which is not to be copied, reproduced or disclosed, in part or whole, to a third party without written permission.

NOTES. ALL CONNECTORS VIEWED FROM COMPONENT SIDE OF PCB
All resistors in ohms
Capacitors in micro farads
Unless otherwise stated

HOLE INDEX.

TOLERANCE.
All imperial dimensions ±0·010
All metric dimensions ±0·25mm
All angles ±0·50°
Unless otherwise stated.

THIRD ANGLE PROJECTION

MATL. ———
FINISH. ———
SCALE. ———
DRG. Barry
TRCD. ———
CHKD.

SOUNDCRAFT ELECTRONICS LTD.
5-8 GREAT SUTTON STREET
LONDON. EC1V. 0BX.
TELEPHONE. 01-251-3631/2/3
TELEGRAMS. SOUNDCRAFT LDN. EC1
TELEX. UK No. 21198. USA No. 01-2203

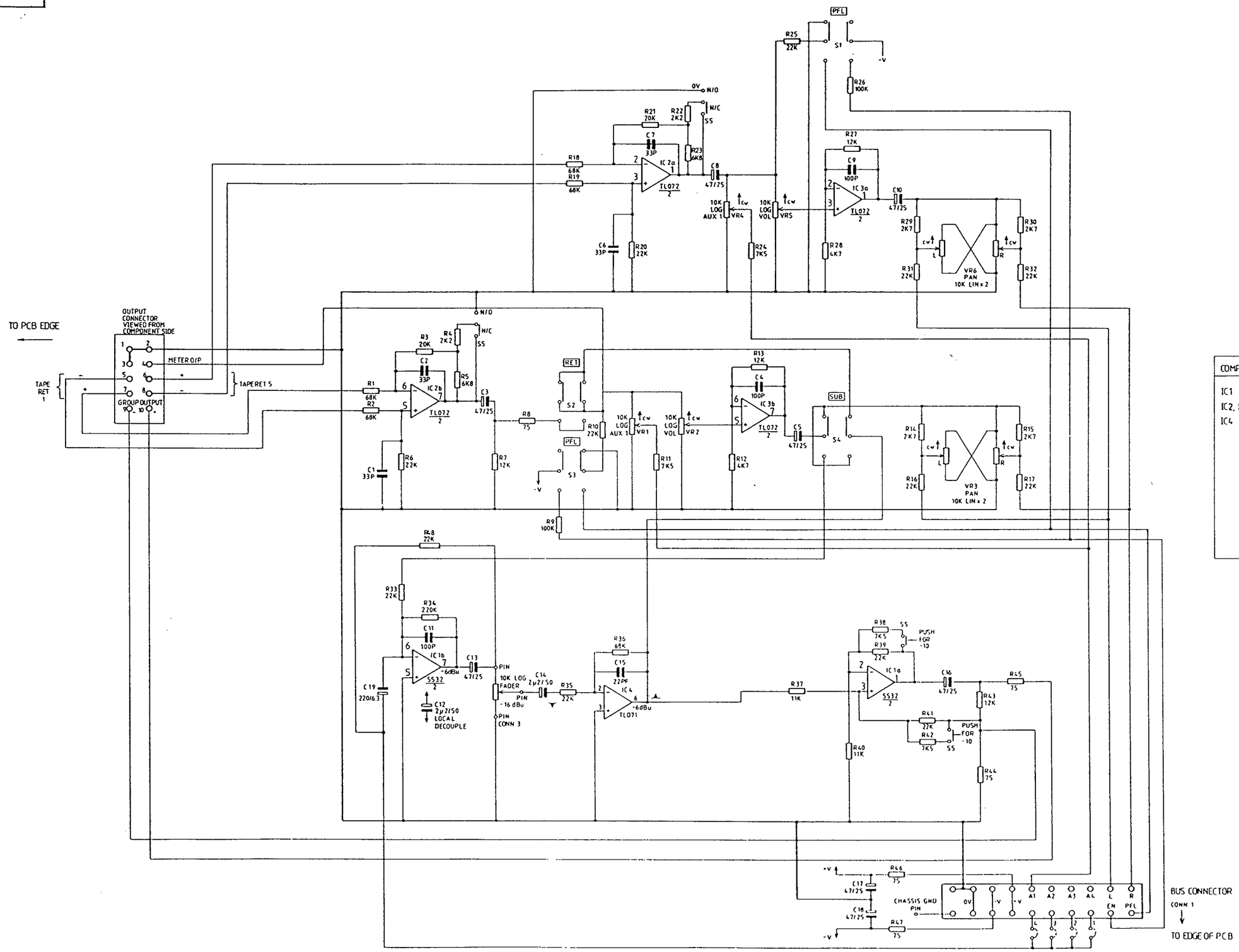
TITLE. S200B STANDARD INPUT CIRCUIT DIAGRAM (SC1447)

DRG No. ED2183

DRG No. ED 2179

Init	Issue 1
	ISSUE 2 MODDED 15-11-84
	ISSUE 3 COMM MODDED AND RES N° CHANGED 9 - 5 - 85
	Issue 4 3 - 7 - 85
	Issue 5 22 - 8 - 86
C.S	Issue 6 R37 & R40 were 6K8 DCR 1746 21 - 2 - 87
	ISSUE 7 C13 REVERSED 23-2-87
D.G.	ISSUE 8 CHANGED VALUE R34 220k was 22k C19 220/63 was 47/25 ADDED R48 22K 25-4-89

COMPONENT	TYPE	PART NO.
IC1	NE5532	BE0428
IC2, IC3	TL072	BE0413
IC4	TL071	BE0404



Soundcraft Electronics Limited own the copyright of this drawing which is not to be copied, reproduced or disclosed, in part or whole, to a third party without written permission.

NOTES.

ALL CONNECTORS VIEWED FROM COMPONENT SIDE OF PCB

HOLE INDEX.

TOLERANCE.

All imperial dimensions ±0·010
All metric dimensions ±0·25mm
All angles ±0·50°
Unless otherwise stated.

THIRD ANGLE PROJECTION

MATL.

FINISH.

SCALE.

DRG.

TRCD.

CHKD.

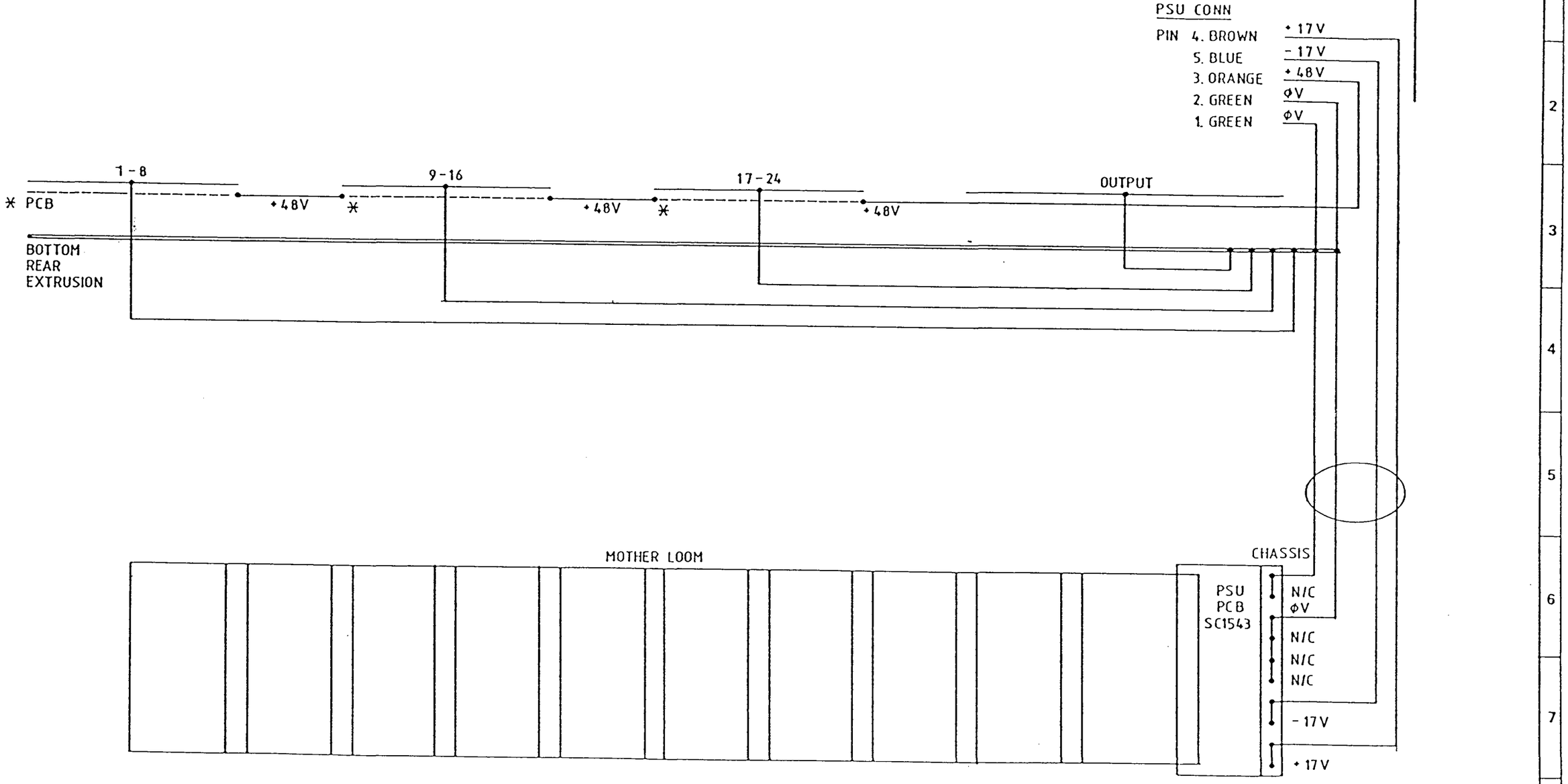
SOUNDCRAFT ELECTRONICS LTD.
5-8 GREAT SUTTON STREET
LONDON. EC1V. 0BX.
TELEPHONE. 01-251-3631/2/3
TELEGRAMS. SOUNDCRAFT LDN. EC1
TELEX. UK No. 21198. USA No. 01-2203

TITLE.

S200B
STANDARD OUTPUT
CIRCUIT. (SC1446)

DRG No. ED 2179

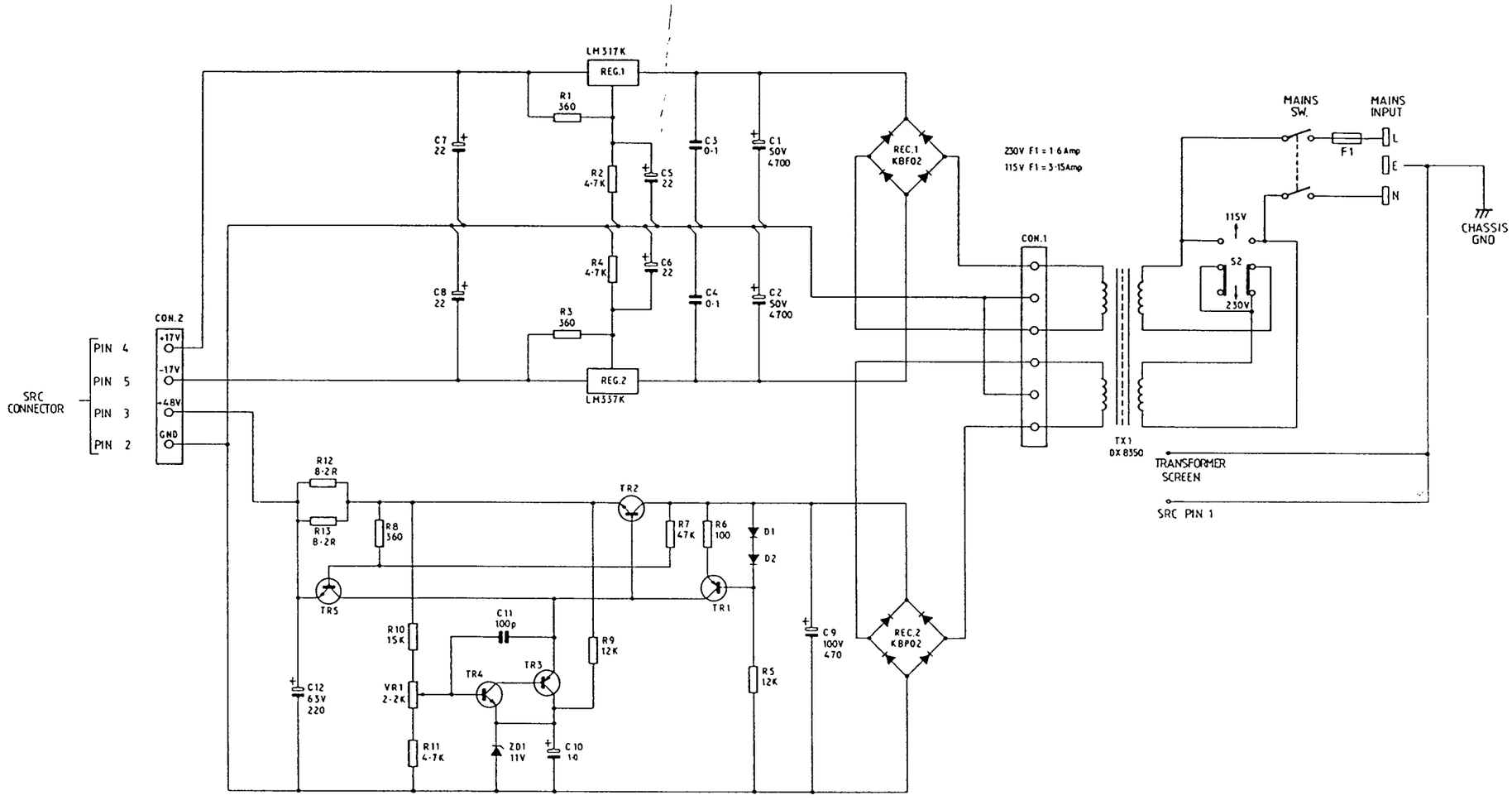
ISSUE 1
27-3-85



	THIRD ANGLE PROJECTION	TOLERANCE All Imperial dimensions ±0·010 All metric dimensions ±0·25mm All angles ±0·50° Unless otherwise stated	HOLE INDEX	MATL FINISH SCALE	DRN TRCD CHKD	SOUNDCRAFT ELECTRONICS LTD 6-8 GREAT SUTTON STREET LONDON EC1V 0BX. TELEPHONE. 01-251-3831/2/3 TELEGRAMS. SOUNDCRAFT LDN EC1 TELEX. UK. No. 21198. USA. No. 224408	TITLE S200B CONSOLE WIRING DIAGRAM DRG. No. MI2433	

DRG No. ED 2116

Init'l	
	Issue 1 2 - 11 - 82
	Issue 2 C10 was 22µf 28-8-84
	ISSUE 3 Title was 400 B 8 - 1 - 86
MJH	ISSUE 4 CHASSIS GND ADDED 29/1/88
DG	ISSUE 5 F1 FUSE RE-POSITIONED 21-8-89



TRANSISTORS
TR1&3 = 2SA970GR
TR2 = BD135
TR4&5 = 2SC1681BL

Soundcraft Electronics Limited own the copyright of this drawing which is not to be copied, reproduced or disclosed, in part or whole, to a third party without written permission.

NOTES.
All resistors in ohms.
All capacitors in micro farads
Unless otherwise stated.

HOLE INDEX

TOLERANCE.
All imperial dimensions ±0·010
All metric dimensions ±0·25mm
All angles ±0·50°
Unless otherwise stated.

THIRD ANGLE PROJECTION

MATL.	—	DRG.	Mark
FINISH.	—	TRCD.	
SCALE.	—	CHKD.	

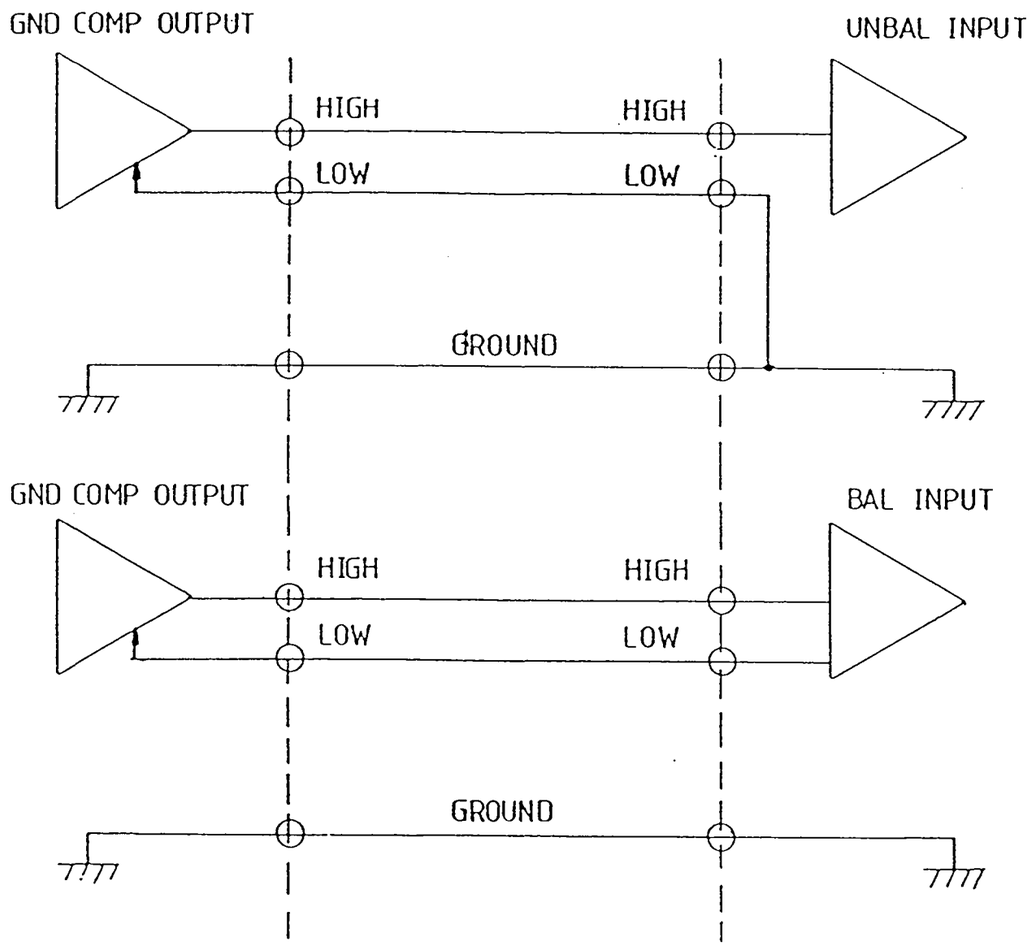
SOUNDCRAFT ELECTRONICS LTD.
5-8 GREAT SUTTON STREET
LONDON, EC1V, 0BX.
TELEPHONE. 01-251-3631/2/3
TELEGRAMS. SOUNDCRAFT LDN. EC1
TELEX. UK No. 21198. USA No. 01-2203

TITLE. SMALL CONSOLE
POWER SUPPLY
P.C.B

DRG No. ED 2116

ISSUE 1
28-2-85

WIRING FOR GROUND COMPENSATED OUTPUT



THIRD ANGLE PROJECTION	TOLERANCE All Imperial dimensions ± 0·010 All metric dimensions ± 0·25mm All angles ± 0·50° Unless otherwise stated	HOLE INDEX	MATL FINISH SCALE	DRN GS TRCD AB CHKD	SOUNDCRAFT ELECTRONICS LTD 66 GREAT SUTTON STREET LONDON EC1V 0BX. TELEPHONE. 01-251-3631/2/3 TELEGRAMS. SOUNDCRAFT LDN EC1 TELEX. UK. No. 21198. USA. No. 224408	TITLE WIRING FOR GND COMP O/P DRG. No. MI 2426