Laney



Series Mixing Consoles

Concept 10 Concept 16

USER MANUAL

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Concept 10 + Concept 16 User Manual

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THANK YOU

We at Laney are extremely pleased that you have decided to select a Concept product for your mixing and we wish to reinforce your judgement by ensuring you get off to a flying start by including this comprehensive user manual to assist you in getting to know your equipment.

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Before switching on please read this manual carefully since whilst you may well be an experienced user no two brands are the same, and on reading this manual you will become aware of the subtle differences that your Concept mixer offers over its competitors.

UNPACKING

On unpacking your Concept mixer please check carefully for any signs of damage that may have occurred whilst in transit from the Laney factory to your dealer. In the unlikely event that there has been damage please repack your unit in its original carton and consult your dealer.

We would strongly advise you to store away your original transit carton since in the unlikely event that some time in the future your unit should develop a fault, you will be able to return it to your dealer for rectification securely packed.

IMPORTANT SAFETY INFORMATION

Your mixer is supplied with a three pin 'grounded' (or 'earthed') mains lead. Please make sure that the mixer is powered from a 'grounded/earthed' outlet.

WARNING - Never disconnect the earth from your mixer as this is potentialy lethal!

If changing or fitting a plug yourself, ensure that the applicable wiring code is adhered to, for example in the UK the cable colour code is as follows:

EARTH OR GROUND ____ GREEN/YELLOW NEUTRAL _____ BLUE LIVE ____ BROWN

The mixer should never be exposed to moisture or wetness under any circumstances since this would represent a possible shock or fire hazard, and may cause expensive damage to your valuable possession.

In the unlikely event that a fuse should blow, it is imperative that you or your engineer, use a correctly rated replacement.

Details of the fuse required is printed on the rear panel of the mixer, please take special care to use a 'time delay' fuse wherever stated.

Laney have been established in audio amplification for over twenty five years, during which time it has firmly established itself as a benchmark for audio products.

Feedback from musicians and recording engineers, supported by original design ingenuity, are the parameters applied by Laney's development engineers to all new products.

Concept mixers explained within this manual are easy to use but incorporate features which make advanced set ups easy in any role.

Sub-mixing - Main P.A. - Monitors

The mixers in this manual have a combination of Mic/line inputs and Mic/Stereo channels for extra flexibility.

SPECIAL FEATURES

6 or 10 Mic/Line channels

2 or 3 Mic/Stereo channels

2 * 300 Watt Output Power

7 Band Graphic EQ

On Board Digital Reverb

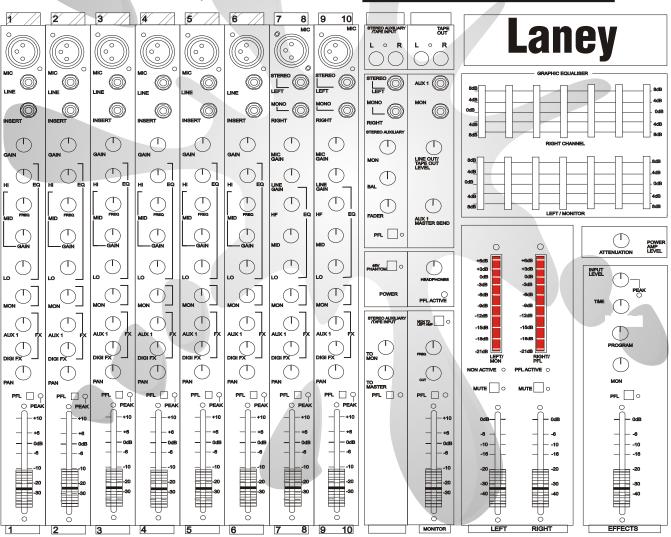
Phantom Power

3 Band EQ

Mon/Aux 1/Digifx sends

Concept Manual

Pfl and Peak Facilities



Concept 10/16 Quick Start Guide

This is a quick start guide so you can be using you mixer sooner rather than later - you can then refer to the detailed description later in this manual when you need.

2 diagrams are provided to supplement this information following these tips

Plugging in!

Connect power to your mixer - always a good start! Switch On -

Connect all you input signals Mics/DI's/Keyboards/Tape machines to there relevant input channels

Connect your condenser Mics before enabling Phantom power

Do not connect dynamic Mics or unbalanced sources to mic inputs when Phantom power is enabled otherwise damage may occur to your them or your mixer

Its a good idea to label up each channel strip, so you know what is connected where - this can be done in chinagraph in the 'write on' areas or use a piece of masking tape along the front edge of the mixer (the old favourite)

Its always good practice to start work on mixer with all gain controls at minimum, all faders at minimum and all EQ set flat.

Input Channel

Do not be intimidated by the input channels on your mixer as it's function is very simple:-1)The gain control - makes little signals big, so they are as far above noise as possible but not so high that the signal is clipped - the peak led illuminates when clipping is near.

2)The EQ section - tonally changes the input signal, this is just like the tone controls on your Hi -Fi but with more knobs. The controls are labelled-Hi, Mid(gain + Frequency) and Lo controls

3)It lets you send the signal to places of use e.g. A Monitor send for a vocalists/Musician Aux 1 and Digifx if you want to add echo/reverb to a signal. These send controls are labelled Mon, Aux 1 and Digifx

4)You can adjust the signals position in the stereo image using the Pan control.

5) Fader - this controls the signal level being sent to Masters

Setting the gain on an Input Channel

By now you will have connected your input signals to your mixer and be ready to set your input gain controls.

- 1)Enable Pfl on the channel which you wish to set up the right meter shows the signal level in that channel and the channels signal appears on the headphones
- 2)Tell the vocalist/musician to play while he plays you should set the channel gain control so that 0dB to +6dB will illuminate on signal peaks
- 3)Increase the channel fader to between -10 and OdB and then increase the masters faders to a level which is a satisfactory volume - power amp level control should be about -6db.

 4) This point is a good time to set the EQ - remember if you boost a lot you will have to reset
- the input gain control as described in 2)

FX

Certain instruments will benefit from the addition of some form of effect for instance snares can be made sound 'bigger' with the addition of a reverb or maybe a vocal could be thickened up with a bit of delay.

You can send signals to FX using the Aux 1 and Digifx controls on the channels.

The Aux 1 master send control adjusts the overall level sent to external FX units via the Aux 1 output socket. Signals from external FX units should be returned by the Stereo auxiliary - a rotary fader is then used to control the level of FX signal sent to masters, enabling a mix to established between FX signal and signal without FX

The Digifx control sends signals to the Digifx section. The input level control on the DigiFx should be set so the Peak light in the DigiFx section is just prior to it illuminating, like the Stereo auxiliary, a fader is provided to control the FX signal sent to the masters.

Time to mix

One way to do this is to increase all the input channels to approx. -10dB to 0dB. Ask the band to play, Increase the master faders for to a satir factory volume level. Adjust the input channel faders so there level relative to other instruments sounds good - e.g. the keyboard player does not sound loader than the lead vocalist.

You can also adjust the position of an ir strument in the stereo image - e.g. to bring a vocalist out in the mix, you could pan all other signals Left or Right by varying amounts.

A graphic equaliser is provided allowing the overall sound of your mix to be fine tuned.

Feedback

As you set up your mix you will probably have problems with feedback. This occurs when microphones pick up sound from the loudspeakers creating a loud whistling/howling sound - very disturbing Here are a few ways to prevent this

- 1)make sure the sound from the speakers ,connected to your Mixers speaker outs, cannot be picked up by microphones .(speakers are best in front + facing away from the band) 2)Keep the faders down on microphones which are not needed.
- 3)Try to cut rather than boost when using any EQ.
- 4)If feedback does occur use the channel EQ /graphic EQ to stop it, this can be done by cutting at the frequency which the feedback occurs.

A feedback filter is provided on the monitor send

Recording

If you want to record your mix a tape out is provided to connect to tape/DAT/MD/DCC machines

The line out / tape out level controls the level sent to the tape machine.

Mon to left Amp

There may be a time when you want to provide the main P.A. and monitors from you mixer. You can do this by enabling the Mon to Left Ampowitch. When you enable his switch, the signal from the monitor fader is sent via the left gradie to the left power amount to the left and Right masters are summed and sent to the right power ampovia the right gradie.

The Left and Right stereo mix are still available on the line outs should wish to connect additional power amps and speakers.

Advanced Set-up's

The flexible routing facilities on you Concept 10/16 allow advanced set-ups to be achieved. The line outs/tape outs have a separate level control, this allows a slave amplifier to be connected and its volume level be controlled from the your mixer. This slave amp could be used for the connection of a subwoofers/active loudspeaker of speakers in another room. The line outs always have the left and right masters on them this could enable you to still have the main PA in stereo when mon to left amp is enabled 'provid' ad you have an additional power amp.

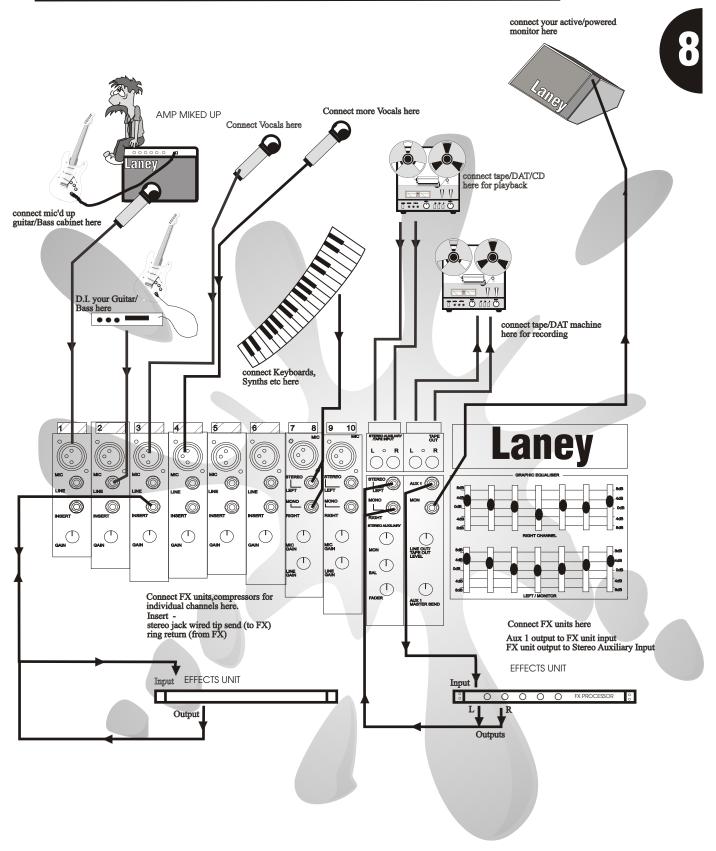
Finally....

Following this section follows more some quick set-up diagrams and more detailed information about your Concept mixer's facilities.

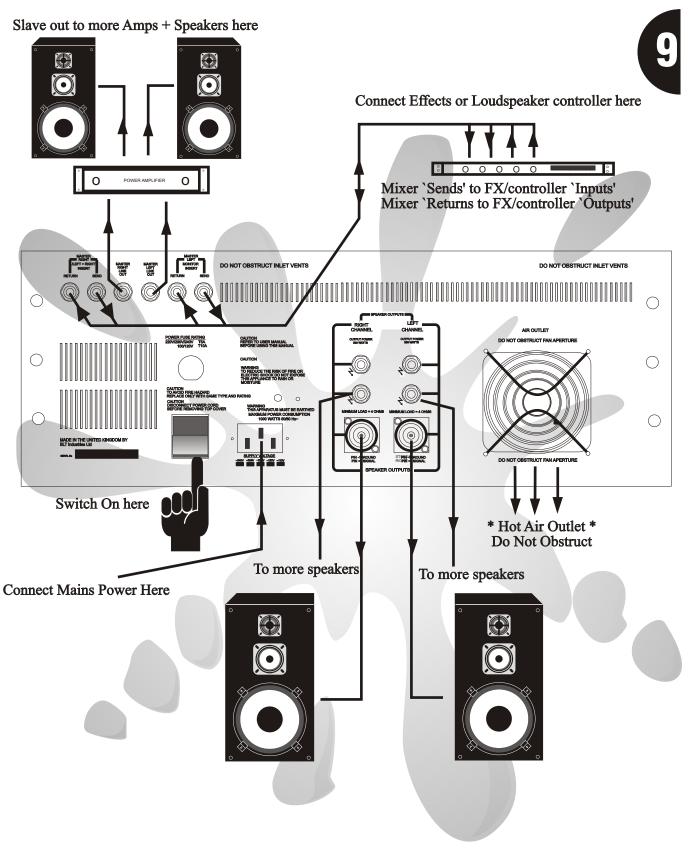
Good luck with your mixing!

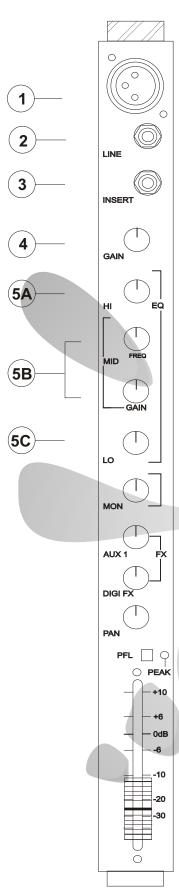


Concept 10/16 Quick Set Up Guide



Concept 10/16 Quick Set Up Guide





Mic/Line channel

1) MIC INPUT (XLR)

The input socket has been designed to accept both balanced and unbalanced signals from microphones with an XLR input connector. Good quality low impedance condenser or dynamic mic's should preferably be used for best effect, these will ensure the best possible results from hand held vocals or closely mic'd instruments.



PHANTOM POWER

Phantom powering is available to all 'mic' inputs for use with condenser microphones

WARNING

Phantom power must always be switched off when using unbalanced sources since the voltage present on the connector may damage you microphones The phantom power switch is above the Power lamp on the front panel

Always connect your condenser microphones before switching the +48V Phantom Power On.

2) LINE INPUT (JACK)

The balanced line inputs are for all balanced/unbalanced line level signals from keyboards, drum machines,tape machines and DI boxes. (eg; from guitars and basses)

3) INSERTS

Each mono channel has an 'insert' via a stereo jack socket,wired to the tip send ,ring return convention . Effects units can be inserted here and enter the signal path post 'gain' but pre-eq.Reverbs/compressors feedback eliminators etc can be inserted here

4) GAIN

Adjusts the level of the input signal into the channel. It should be set so that the input signal is not buried in noise but not too high so that clipping ocurrs, the peak lamp will illuminate to indicate this.

5) EQUALISATION

On Mic/Line channels there is a three band EQ system with a swept mid control Cut and boost is provided in each band and a variable frequency control for the mid control.

5A) HI

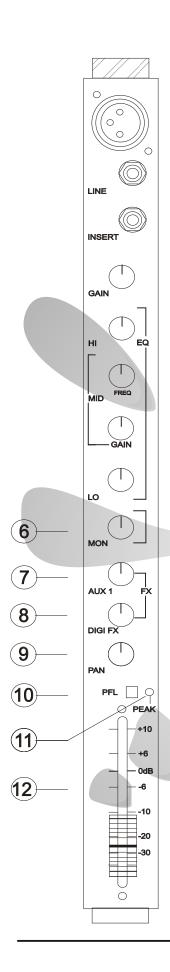
High/Treble frequencies can boosted or cut by this control. Sources that fall in this range are cymbals, soprano vocals and keys above top C on a keyboard.

5B) Mid (gain + freq)

Mid range frequencies can be boosted or cut by this control. The frequency of cut is adjustable from approx middle C and up 3 octaves. Music sources which fall in this range are most Vocals ,lead/rythmn guitar , keyboard parts and brass sections.

5C) LO

Low/Bass frequencies can be boost or cut by this control such as bass guitar,kick drums,deep[vocals and keys below middle C on a keyboard.



Mic/Line channel continued

6) Mon

The Mon control is set for pre-fade operation for use as a monitor send. The signal passes to the feedback filter and monitor fader in the master section before leaving by the jack socket marked Mon.



7) AUX1

The AUX 1 is set for 'post fade' operation, it traditionally being used as an effects send. The signal passes to the Aux 1 master send control before leaving by the socket marked Aux 1 Output.

8) DIGI FX

The DIGIFX control is a post -fade FX send. It controls the amount of signal sent to the built in digital effects processor. The signal can then be

9) **PAN**

Assigns (Pans) the channel signal across the left and right master outputs, the signal being sent equally left and right when set central

10) PFL

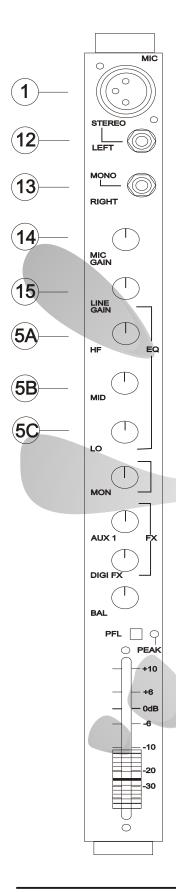
The pre fade listen switch when depressed sends the 'pre fader' channel signal to the right hand 'bargraph' (VU) display and headphones, allowing channel 'Gain' to be set and cued. This is non destructive so may be used at any time during the performance without effecting the main mix output.

11) Peak

A Peak led is provided which illuminates when the channel level is approaching clipping. This also illuminates when the PFL switch is enabled

12) FADER

The channel fader sets the output level of the channel sent to the MASTERS. The relationship between the 'fader' and the channel 'gain' controls is important and this is explained in detail in the setting up procedure section.



mic/stereo channel

1) MIC INPUT (XLR)

The input socket has been designed to accept both balanced and unbalanced signals from microphones with an XLR input connector. Good quality low impedance condenser or dynamic mic's should preferably be used for best effect, these will ensure the best possible results from hand held vocals or closely mic'd instruments.

PHANTOM POWER

Phantom powering is available to all 'mic' inputs for use with condenser microphones

WARNING

Phantom power must always be switched off when using unbalanced sources since the voltage present on the connector may damage you microphones

The phantom power switch is above the Power lamp on the front panel

Always connect your condenser microphones before switching the +48V

12) STEREO LINE INPUTS

13) Each stereo channel has two input jack sockets, one stereo / left and the other mono/ right and each will accept unbalanced line level sources such as keyboards, tape machines and any line level source.

14) MIC GAIN

Adjusts the level of the Microphone input signal into the channel. It should be set so that the input signal is not buried in noise but not too high so that clipping ocurrs, the peak lamp will illuminate to indicate this.

15) LINE GAIN

Adjusts the level of the Stereo input signal into the channel. It should be set so that the input signal is not buried in noise but not too high so that clipping ocurrs,the peak lamp will illuminate to indicate this.

5) **EQUALISATION**

On Mic/Stereo channels there is a three band EQ system Cut and boost is provided in each band

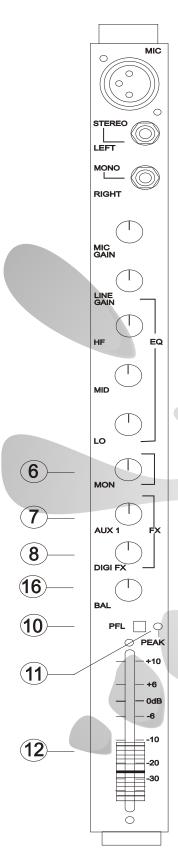
5A) HI High/Treble frequencies can boosted or cut by this control. Sources that fall in this range are cymbals, high pitch vocals and keys above top C on a keyboard.

5B) MID

Mid range frequencies can be boosted or cut by this control. Music sources which fall in this range are most Vocals ,lead/rythmn guitar , keyboard parts and brass sections.

5A) LO

Low/Bass frequencies can be boost or cut by this control such as bass guitar,kick drums,deep[vocals and keys below middle C on a keyboard.



mic/stereo channel continued

6) Mon

The Mon control is set for pre-fade operation for use a monitor send. The signal passes to the feedback filter and monitor fader in the master section before leaving by the jack socket marked Mon.

7) AUX1

The AUX 1 is set for 'post fade' operation, it traditionally being used as an effects send. The signal passes to the Aux 1 master send control before leaving by the socket marked Aux 1 Output.

8) DIGI FX

The DIGIFX control is a post -fade FX send. It controls the amount of signal sent to the built in digital effects board. The signal can then the sent

16) BAL

Adjusts the stereol signal level to the left and right master outputs, the signal being sent equally left and right when set central

10) PFL

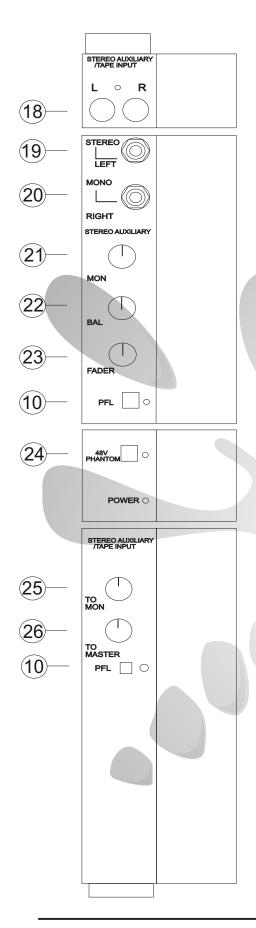
The pre fade listen switch when depressed directs the 'pre fader' channel signal to the right hand 'bargraph' (VU) display and headphones, allowing channel 'Gain' to be set and cued. This is non destructive so may be used at any time during the performance without effecting the main mix output.

11) **Peak**

A Peak led is provided which illuminates when the channel level is approaching clipping. This also illuminates when the PFL switch is enabled

12) FADER

The channel fader sets the output level of the channel sent to the MASTERS .The relationship between the 'fader' and the channel 'gain' controls is important and this is explained in detail in the setting up procedure section.



AUXILIARY INPUTS

18) STEREO AUXILIARY/TAPE INPUT

Stereo Auxilliary / Tape Input Phono (RCA) sockets are provided for the connection of tape/DAT machines. The signal to monitor and master outputs can be independently controlled via the controls labelled 'Tape to monitor' and 'Tape to master'. PFL monitoring of the tape to master signal is provided.

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19 STEREO AUXILIARY

+20) A Stereo Auxiliary Input for use as an FX return or as an additional stereo input.

Stereo signals can be input either on a stereo jack or L + R on mono jacks. If required the Auxilary can be used as a mono input by inputting on the socket labelled Mono.

21) MON

The Mon control is set for pre-fade operation for use a monitor send. The signal passes to the feedback filter and monitor fader in the master section before leaving by the jack socket marked Mon.

22) BAL

Adjusts the stereo signal level to the left and right master outputs, the signal being sent equally left and right when set central.

23) FADER

The fader sets the output level of the Auxiliary to be sent to the MASTERS .

10) PFL

The pre fade listen switch when depressed directs the 'pre fader' Auxiliary signal to the right hand 'bargraph' (VU) display and headphones, allowing Auxiliary signal' to be set and cued. This is non destructive so may be used at any time during the performance without effecting the main.

24) 48V Phantom

48V Phantom Power is provided for condenser microphones. It is globaly switched to all mic XLR sockets via this recessed switch.

Phantom power must always be switched off when using unbalanced sources connected to mic inputs otherwise the source may be damaged

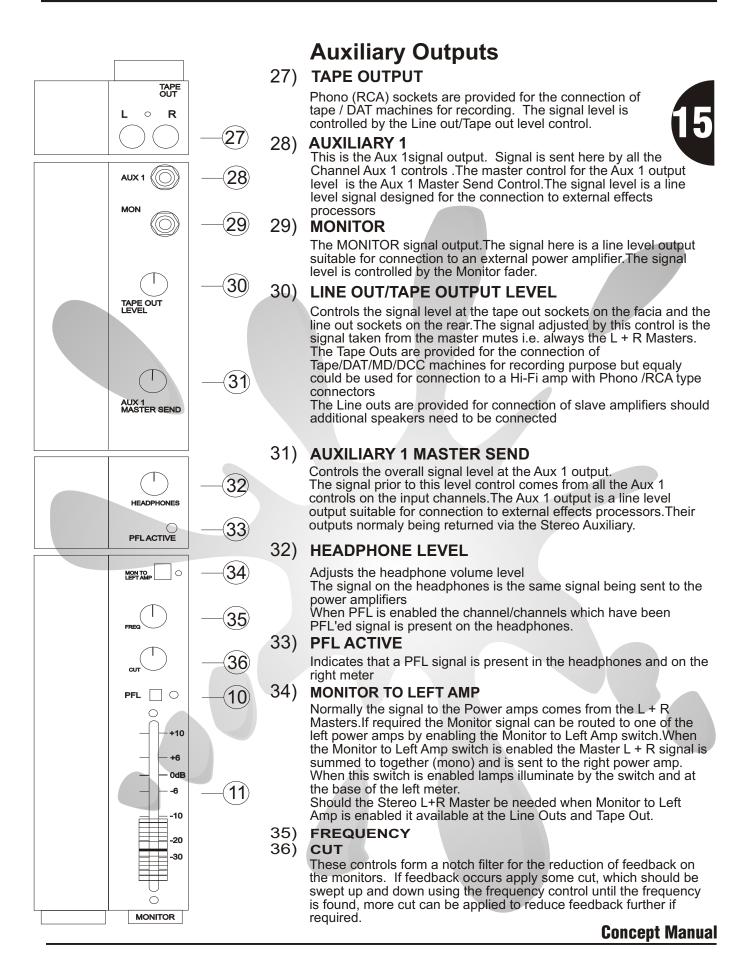
Condenser microphones should be connected to mic inputs before the phantom power is switched on.

25) TO MONITOR

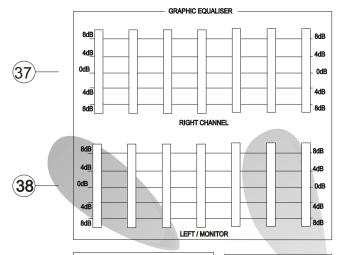
Controls the level of the Stereo Auxilliary/Tape input signal to the monitor.

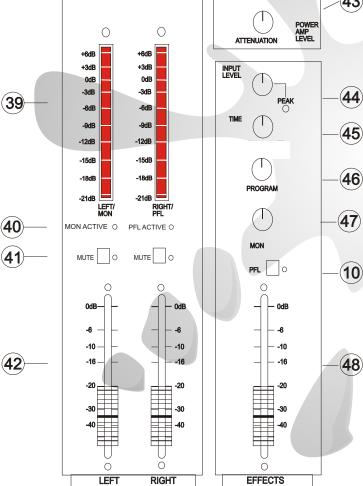
26) TO MASTER

Controls the level of the Stereo Auxilliary/Tape input signal to the Masters



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LEFT

EFFECTS

GRAPHIC EQUALISER

- A Graphic Equaliser is provided for fine 37) tuning of mixes and room acoustics
- 38) Centre frequencies are 80Hz,200Hz,430Hz,1.2KHz,2.2KHz,5.5KHz and 10.5KHz. Varying the 80Hz / 200Hz filters adjusts

bass frequencies Varying the 430Hz,1.2KHz and 2.2KHz adjusts midrange frequencies

Varying the 5.5KHz and 10.5KHz adjusts treble frequencies

39) **MASTER METERS**

The 'master meters' show the signal level to the power amplifiers. The right meter shows RIGHT or PFL when the PFL switch is enabled. The left meter shows LEFT or MONITOR when the MON TO LEFT AMP switch is enabled.

41) **MASTER MUTES**

These turn off the the Master L + R signal. Red lamps illuminate when muted.

MASTER FADERS

The master faders control the signal level of the left and right masters before it is routed to the power amplifiers via mon to left amp switch, graphic equaliser and power amp level

43) POWER AMP LEVEL

This is the overall level control for the signal to the power amps. This provides input sensitivity matching for external units connected to the insert loops on the rear panel and increases dynamic range by reducing residual mix noise. Typical setting is -6dB.

INPUT LEVEL

This controls level of the signal into the built in Effects processor. This provides the user the ability to achieve the best signal to noise performance of the effects unit.

There is peak led near this control to show that the Effects processor is near clipping.

45) **TIME**

PROGRAM

The above controls allows the selection of 1 of the 127 available programs. These programs are arranged into 8 types selectable by the 'Program' control. Different program times can then be selected using the 'Time' control.

47) **MON**

The Mon control enables the user to send the effects signal to the monitor output

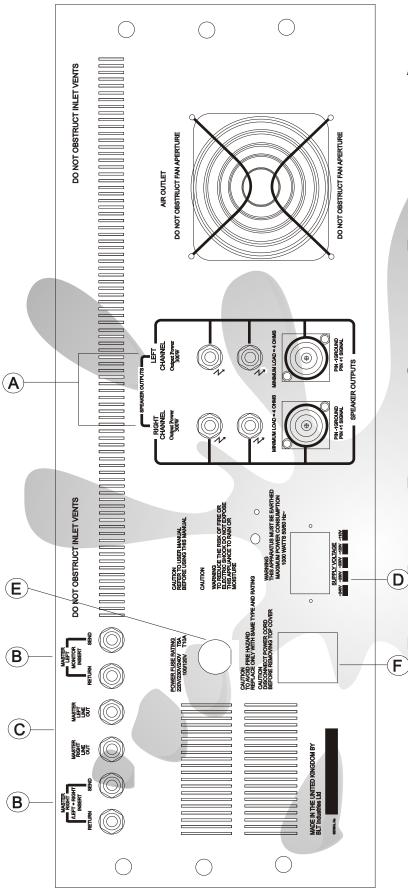
10) **PFL**

In common with all other inputs PFL facilities are provided for the setting up of the effects. When PFL is enabled the signal from the effects unit is displayed on the right meter and is played in the headphones

48) **FADER**

The `EFFECTS' fader controls the level of the effects signal sent to the Masters.

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REAR PANEL FACILITIES

A) SPEAKER OUTPUTS

Two jack sockets and 1 speakon connector are provided for the connection to loudspeakers. The internal power amplifiers are able to deliver 300W/channel into 4 ohms

e to

Under no circumstances should the total load seen by any of the amplifiers be below 4 ohms otherwise thermal shutdown is likely and long term reliability may be impaired

B) INSERT LOOPS

Insert loops are provided before each of the internal power amps. These are provided for the connection of speaker controlers, dynamics such compressors / limiters and feedback eliminators etc 1 jack socket is provided for send and 1 jack socket is provided for return for each loop.

C) LINE OUTS

Line Outs are provided for the connection of additional speaker/power amps,active speakers. The output level signal is controlled by the line out/tape out level control. The signal at these connectors is always the Master L + R.

D) MAINS INLET

Power connection is provided on a 3 pin IEC mains connector. Never disconnect the ground from your mixer as this is potentialy lethal..

DE) MAINS FUSE

The mains fuse is a 20mm Time delay fuse. See rear panel for fuse rating

F) MAINS SWITCH

MIXER COOLING

Please observe all recomendations on cooling.

Air is sucked in through vents on the rear panel and front edge of your mixer, it is then blown out by the fan .

Do Not Obstruct Vents Or Fan Aperture Or You Risk Thermal Shutdown Of Your Mixer

In the event of thermal failure ,Do not switch your mixer of as it will automaticaly reset after about 3-10minutes. Switching the mixer off, switches the fan off thus stopping cooling.

```
MIX NOISE (measured 22Hz-22K,RMS,power amp level max)
           Master Up
                               -80Bu
           1 Channel 0dB
                               -78dBu
           All channels 0dB
                              -77dBu
MIC CHANNEL (Fader 0dB)
MIC INPUT:
           Gain Max.
                              60dB + 10dB @ fader buffer
           Gain Min .
                              0dB + 10dB @ fader buffer
           Bandwidth
                               30Hz-20kHz -1dB
           E.I.N. (Equivalent Input Noise)
                               -128dB (150R source Z)
           Distortion (mic to insets) typically <0.007%
                               +20dB
           Maximum input
           Input Impedance
                               2K
LINE INPUT:
           Gain Max.
                               36dB + 10dB @ fader buffer
           Gain Min.
                              -26dB + 10dB @ fader buffer
           Bandwidth
                               30Hz-20kHz -1dB
EQ:
           HI
                           +12dB @ 12kHz (Shelving)
                           +12dB @ Sweepable from 500Hz-5k5
           Mid
                           +16dB @ 80Hz (Shelving)
           Lo
MIC/STEREO CHANNELS
                                24dB
           Stereo Gain
           Input overload
                                >50V
           Mic Input:
                       (identical to mic amp on stereo channels)
           Gain Max.
                               +60dB + 10dB @ fader buffer
           Gain Min.
                              0dB + 10dB @ fader buffer
           E.I.N.
                               -128dB (150R source Z)
EQ:
           ш
                               +12dB @ 12kHz (Shelving)
           Mid
                              +12dB @ 2KHz
                              +16dB @ 80Hz (Shelving)
           Lo
           Faders Buffer
                              +10dB
TAPE INPUTS (Ref +4dBu @ Output/Fader 0dB)
           Gain
                               15dB
TAPE OUTPUT LEVEL
                               Variable by user
MAXIMUM OUTPUT LEVELS
           Main Outputs (unbalanced) +22dBu
           Aux Output
                               +22dBu
           Mon Output
                               +22dBu
POWER AMPLIFIER
           Power rating
                              2*300W into 4 Ohms (R.M.S)
           Hum and Noise
                              -100dBu (22Hz-22KHz)
                               < 0.01
           Distortion
           Slew Rate
                               20V/us
           Sensitivity
                               +4dB
           Protection
                               Short Circuit, Load
Mismatch, Thermal, D.C.
POWER CONSUMPTION
                               230V/115V40/60Hz 1000 Watts
DIMENSIONS
                         width
                                   depth
                                             height
        Concept 10
                        477mm
                                  449mm
                                            180mm
                        627mm
                                  449mm
                                            180mm
        Concept 16
```

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FURTHER NOTES

