SPIRIT
By Soundcraft

# FX16

USERS GUIDE

Handbuch
Manuel d'utilisation
Manuele Utente
Guía del usuario

**For your own safety and to avoid invalidation of the warranty please read this section carefully.**

# INTRODUCTION

**Thank you for purchasing an FX16 mixer, brought to you with pride by the SPIRIT team of Andy, Colin, Chris, Simon, Mukesh, Graham, Martin, Paul, Tony and Peter, with the support of many others - we hope you will have as much fun using it as we did building it!**

## SAFETY PRECAUTIONS

**The SPIRIT FX16 mixer must only be connected through the Power Supply supplied:**

The wires in the mains lead are coloured in accordance with the following code:

*Earth:* Green and Yellow
(Green/Yellow - US)

*Neutral:* Blue
(White - US)

*Live:* Brown
(Black - US)

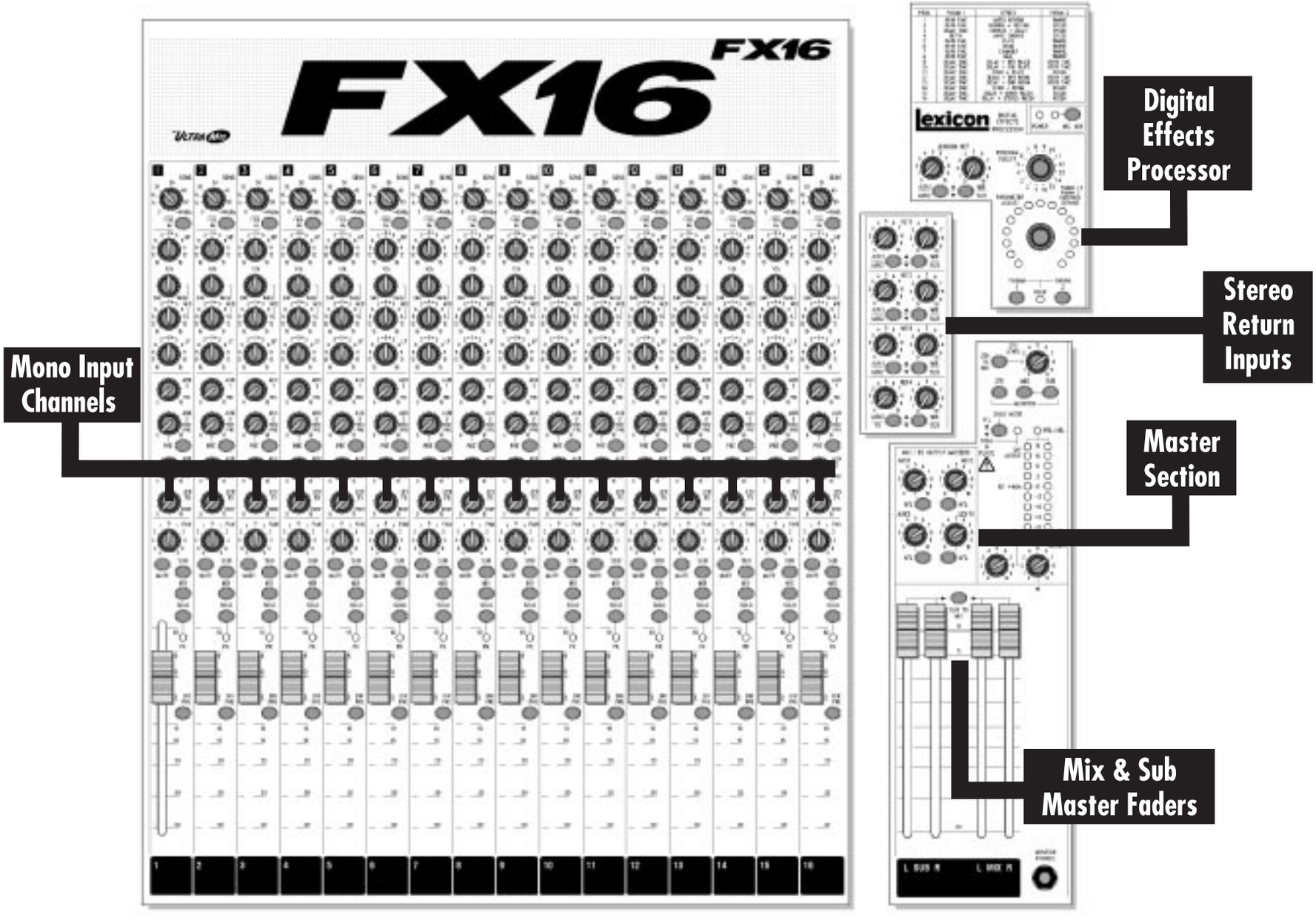
As the colours of the wires in the mains lead may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

- The wire which is coloured Green and Yellow must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol.
- The wire which is coloured Blue must be connected to the terminal in the plug which is marked with the letter N.
- The wire which is coloured Brown must be connected to the terminal in the plug which is marked with the letter L.

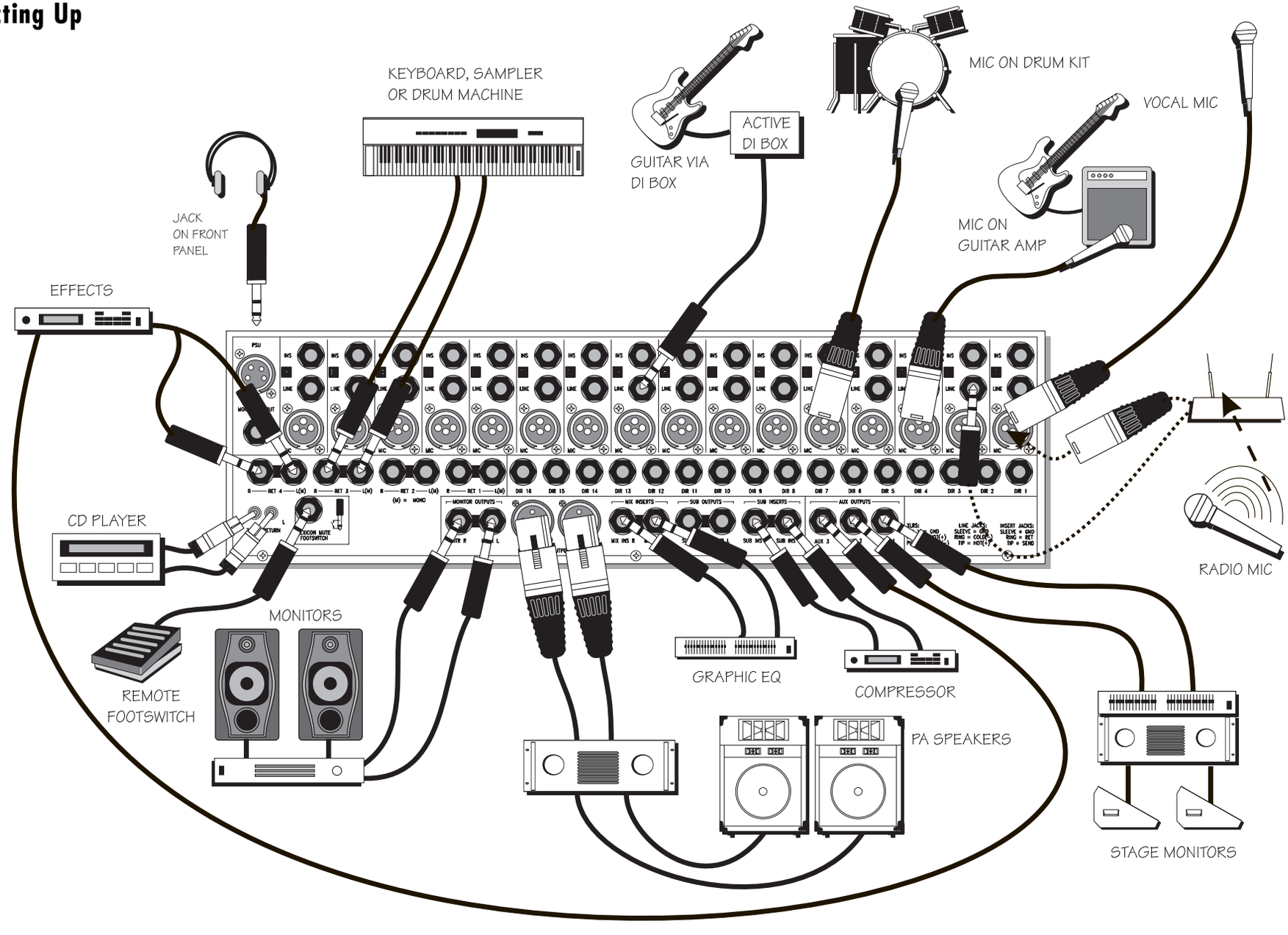
Ensure that these colour codings are followed carefully in the event of the plug being changed.

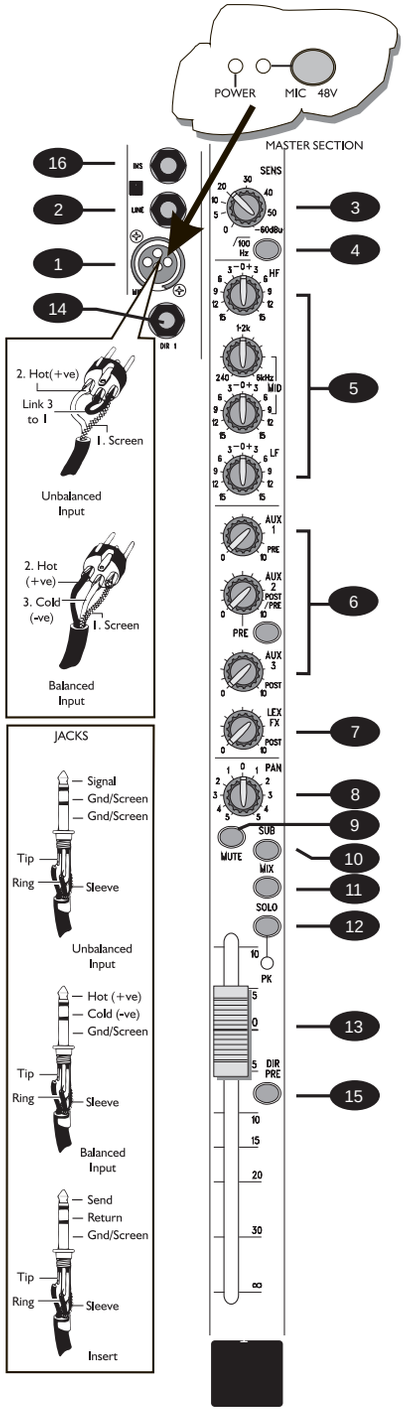
**To avoid the risk of fire, replace the mains fuse only with the correct value fuse, as marked on the rear panel.**

## GETTING STARTED - Overview



## Connecting Up






# USING THE FX16

## Input Channel

### 1 Mic Input ™ULTRA MIC

The mic input accepts XLR-type connectors and is designed to suit a wide range of BALANCED or UNBALANCED signals. Professional dynamic, condenser or ribbon mics are best because these will be LOW IMPEDANCE. You can use low-cost HIGH IMPEDANCE mics, but the level of background noise will be higher. If you press the MIC 48V switch down (top right of the master section) the XLR socket provides a suitable powering voltage for professional condenser mics (this is also known as Phantom Power).

**ONLY connect condenser microphones with the 48V powering OFF (switch UP), and ONLY turn the 48V powering on or off with all output faders DOWN, to prevent damage to the mixer or external devices.**

**TAKE CARE when using unbalanced sources, which may be damaged by the phantom power voltage on pins 2 & 3 of the XLR connector.**

Unplug any mics if you want to use the LINE Input. The input level is set using the SENS knob.

### 2 LINE INPUT

Accepts 3-pole `A' gauge (TRS) jacks. Use this high impedance input for sources other than mics, such as keyboards, drum machines, synths, tape machines or guitars. The input is BALANCED for low noise and top quality from professional equipment, but you can use UNBALANCED sources by wiring up the jacks as shown, although you should then keep cable lengths as short as possible. Unplug anything in the MIC input if you want to use this socket. Set the input level using the SENS knob.

### 3 SENS (Sensitivity)

This knob sets how much of the source signal is sent to the rest of the mixer. Too high, and the signal will distort as it overloads the channel. **Too low, and the level of any background hiss will be more noticeable and you may not be able to get enough signal level to the output of the mixer.**

Setting the knob to the '10' mark gives approximately unity gain for the LINE input. Note that some sound equipment, particularly that intended for domestic use, operates at a lower level (-10dBV) than professional equipment and will therefore need a higher gain setting to give the same output level.

See `Setting Up & Troubleshooting' on page 8 to learn how to set SENS correctly.

### 4 100Hz HI-PASS FILTER

Pressing this switch activates a steep 18dB per octave filter which reduces the level of bass frequencies only. Use this in live PA situations to clean up the mix, reducing stage rumble or 'popping' from microphones.

### 5 EQUALISER

The 3 band swept Equaliser (EQ) allows fine manipulation of the frequency bands, and is particularly useful for improving the sound in live PA applications where the original signal is often far from ideal and where slight boosting or cutting of particular voice frequencies can dramatically improve clarity.

#### HF EQ

Turn clockwise to boost high (treble) frequencies (12kHz and above) by up to 15dB, adding crispness to cymbals, vocals and electronic instruments. Turn anticlockwise to cut by up to 15dB, reducing hiss or excessive sibilance which can occur with certain types of microphone. Set the knob in the centre-detented position when not required.

#### MID EQ

This pair of knobs work together to form a MID frequency EQ section. The lower knob provides 15dB of boost and cut, just like the HF EQ knob, but the frequency at which this occurs can be set by the upper knob over a range of 240Hz to 6kHz. This allows some truly creative improvement of the signal in live situations, because the mid band covers the range of most vocals. Listen carefully as you use these controls together to find how particular characteristics of, for instance, a vocal signal can be enhanced or reduced. Set the gain (lower) knob to the centre-detented position when not required. Note: Q is set at 1.5.

#### LF EQ

Turn clockwise to boost low (bass) frequencies (60Hz and below) by up to 15dB, adding warmth to vocals or extra punch to synths, guitars and drums. Turn anticlockwise to cut low frequencies by up to 15dB for reducing hum, stage rumble or to improve a mushy sound. Set the knob to the centre-detented position when not required.

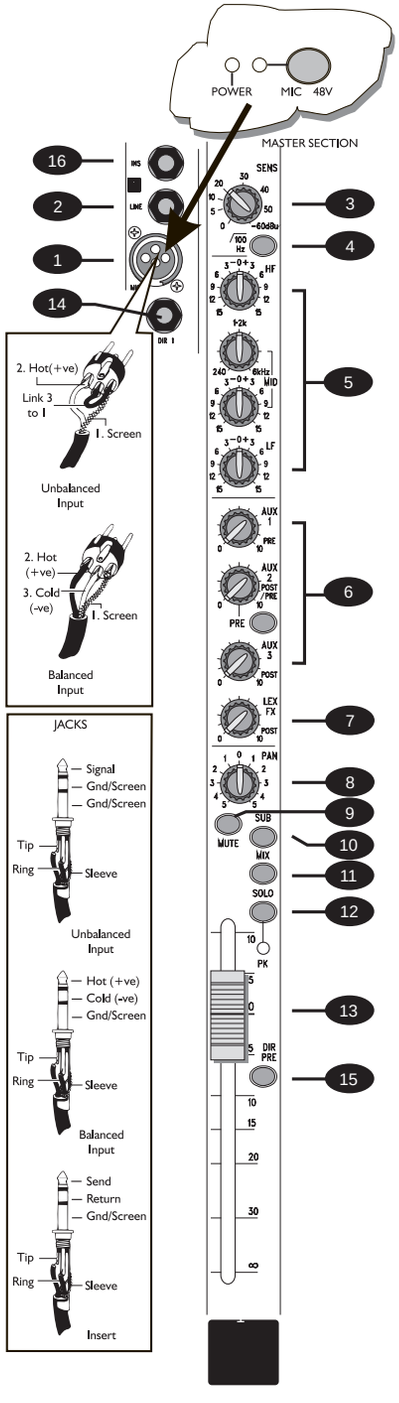
### 6 AUX SENDS

These are used to set up separate mixes for FOLDBACK, EFFECTS or recording, and the combination of each Aux Send is mixed to the respective Aux Output at the rear of the mixer. For Effects it is useful for the signal to fade up and down with the fader (this is called POST-FADE), but for Foldback or Monitor feeds it is important for the send to be independent of the fader (this is called PRE-FADE). All Aux Sends are muted with the other channel outputs when the MUTE switch is pressed.

Aux 1 is always PRE-FADE, POST EQ, and would typically be used as a foldback or monitor feed. Aux 2 & 3 are normally POST-FADE, POST-EQ for use as effects sends or additional submixes, but for flexibility Aux 2 may be switched to PRE-FADE, POST-EQ by pressing the associated PRE switch.

### 7 LEX FX

The LEX FX control is identical to the post-fade Aux 3, but the signal is sent to the internal bus which feeds the input of the built-in LEXICON digital effects processor. The output of the LEXICON processor may be added to the Mix or Aux 1 or 2. The further round the dial the more channel signal you send to the Lexicon effects unit.




## 8 PAN

This control sets the amount of the channel signal feeding the MIX L & R or SUB L & R busses (see SUB & MIX below), allowing you to move the source smoothly across the stereo image. When the control is turned fully right or left you are able to route the signal at unity gain to either left or right outputs individually. A mono sum of the post-fader channel signal is also fed to the Mono output, unaffected by the position of the PAN control.

## 9 MUTE

All outputs from the channel except inserts and pre-fade Direct outputs are active when the MUTE switch is released and muted when the switch is down, allowing levels to be pre-set before the signal is required.

## 10 SUB

The channel signal may be routed to the SUB L & R busses by pressing this switch, with the channel signal fed proportionately to left or right depending on the position of the PAN control.

## 11 MIX

The channel signal may be routed to the MIX L & R busses by pressing this switch, with the channel signal fed proportionately to left or right depending on the position of the PAN control.

## 12 SOLO/PK

The FX16 provides versatile non-destructive PFL (Pre-Fade-Listen) and SOLO-IN-PLACE monitoring, as selected by the SOLO MODE switch on the Master section.

### PFL

When the latching SOLO switch is pressed, the pre-fade, post-EQ signal is fed to the headphones, control room output and meters, where it replaces the selected monitor source. The adjacent LED illuminates to identify the selected channel and the PFL/AFL LED on the Master section illuminates to warn that a PFL is active. This is a useful way of listening to any required input signal without interrupting the main mix, for making adjustments or tracing problems.

When the PFL switch is released the LED serves as a PEAK indicator which illuminates approximately 4dB before clipping to give warning of a possible overload. The signal is sampled both pre-insert and after the HF EQ.

Note: It is normal for the Peak/PFL LED to go off slowly when the switch is pressed.

### SOLO-IN-PLACE

In contrast to PFL, SOLO-IN-PLACE mode allows an individual channel, or selection of channels to be monitored in isolation from the rest of the mix, but at the correct mix levels and with all sends and effects active. With SOLO MODE active, pressing any one or more SOLO switches mutes all channels which are not SOLOed, leaving only the selected channels in the mix. When the SOLO switches are released the original mix is restored (See also Page 7).

## 13 FADER

The 100mm FADER allows precise balancing of the various source signals being mixed to the selected outputs. You get most control when the input Sensitivity is set up correctly, giving full travel on the fader. See the `Setting Up & Troubleshooting' section on page 8 for help in setting a suitable signal level.

## 14 DIRECT OUTPUT

Each channel has a dedicated Direct Output which allows direct connection to external devices, for example to feed Tape Machines or effects units.

The pre-fade direct output level may be monitored by pressing the SOLO switch on the appropriate channel (with the mixer in PFL mode) to feed the pre-fade signal to the monitors and the bargraph meters.

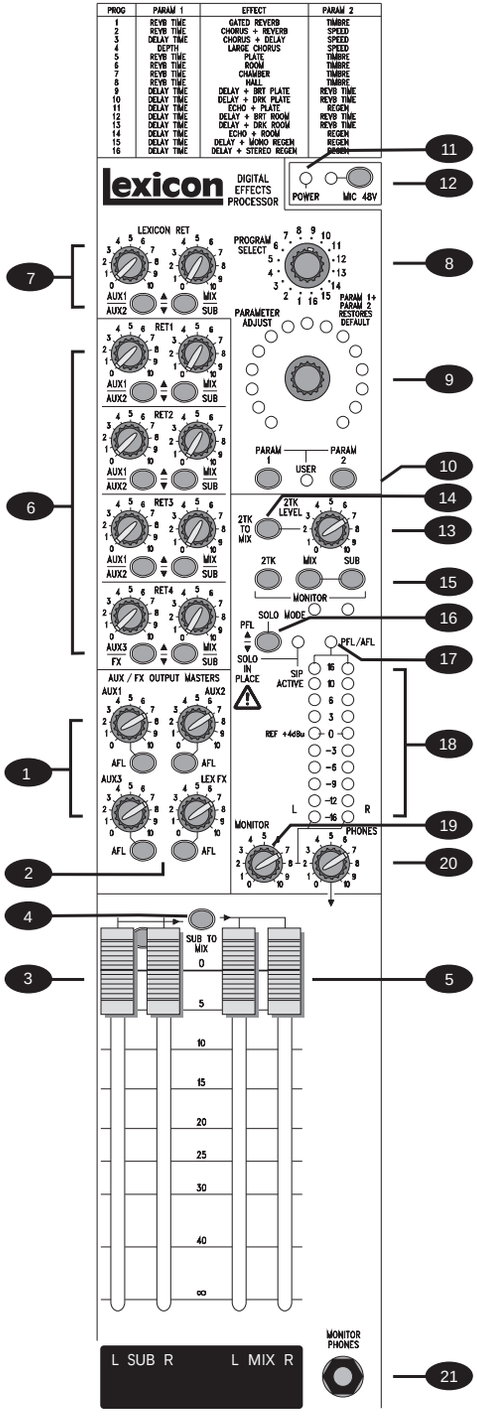
## 15 DIR. PRE

The Direct Outputs are normally POST-FADE for use as effects sends or to provide fader control of recording levels in a studio recording application. For live recording the outputs can be individually changed to PRE-FADE by pressing this switch, so that the direct output level remains unaffected by fader settings for the main PA mix.

## 16 INSERT POINT

The unbalanced, **pre-EQ** insert point is a break in the channel signal path, allowing limiters, compressors, special EQ or other signal processing units to be added in the signal path. The Insert is a 3-pole 'A' gauge jack socket which is normally bypassed. When a jack is inserted, the signal path is broken, just before the EQ section. The Send may be tapped off as an alternative pre-fade, pre-EQ direct output if required, using a lead with tip and ring shorted together so that the signal path is not interrupted.

Inserts can also be used to send and return from a multitrack tape machine.




# Master Section

## 1 AUX MASTERS

Each of the three AUX outputs has a master level control which sets the output level of the combined Aux signals from the channels, and an associated AFL switch. Just as the Channel PFL switches allow *pre-fade listening*, so you can monitor each AUX output *after the level control* by pressing the AFL switch (when PFL mode is selected by the SOLO MODE switch), allowing you to determine what level is leaving the output connector. This routes the AUX output signal to the MONITOR or PHONES, replacing any existing signal which is selected. The METERS also switch from the selected source to display the PFL/AFL signal and the PFL/AFL LED lights to warn that a PFL or AFL switch is pressed. When you release the switch the Monitor swaps back to the previous source.

## 2 LEX FX MASTER

The LEX FX master control sets the overall level of the FX sends from the channels before the input of the LEXICON Digital Effects Processor. An associated AFL switch allows the signal to be monitored in the same way as the Aux masters (see above).

Note: When LEX FX AFL switch is pressed, the meters become the Lexicon Input level indicators.

## 3 SUB MASTER FADERS

The MASTER FADERS set the final level of the SUB L & R outputs. These should normally be set close to the `0' mark if the input GAIN settings have been correctly set, to give maximum travel on the faders for smoothest control.

## 4 SUB TO MIX

The SUB mix may be used to provide alternative outputs from the mixer, or, by pressing SUB TO MIX the SUB L & R master faders may be used as audio subgroups, setting the level of a combination of input channels which are added to the main mix under the control of a pair of faders.

## 5 MIX MASTER FADERS

The MASTER FADERS set the final level of the MIX L & R outputs. These should normally be set close to the `0' mark if the input GAIN settings have been correctly set, to give maximum travel on the faders for smoothest control.

## 6 STEREO RETURNS

Four balanced Stereo Returns are available for the outputs of effects units or other stereo sources and are mixed directly to the AUX or MIX/SUB busses at a level set by the respective controls. The left-hand control sets the level to a choice of AUX 1 or AUX 2 (AUX 3 or LEX FX in the case of RET 4), depending on the postion of the adjacent switch. The right-hand control sets the level to MIX or SUB depending on the position of the adjacent switch (it is effectively a rotary fader).

If a mono source is used, plugging into the Left jack only automatically feeds the signal to both Left and Right.

## 7 LEXICON RETURN

The Lexicon Return is similar to the Stereo Returns, but instead of taking an external source this section is fed from the output of the internal LEXICON Digital Effects Processor. Routing is to a choice of AUX 1/2 or MIX/SUB.



Lexicon

## DIGITAL EFFECTS PROCESSOR

The built-in processor provides a wide range of echo, reverb and acoustic treatments to add fullness to the sound, complement room acoustics or for specific effects.

## 8 PROGRAM SELECT

This rotary switch allows any one of 16 factory-programmed effect combinations to be selected, as listed on the panel legend below the controls. These factory presets have been carefully selected and should be suitable for most applications.

## 9 10 PARAMETER ADJUST

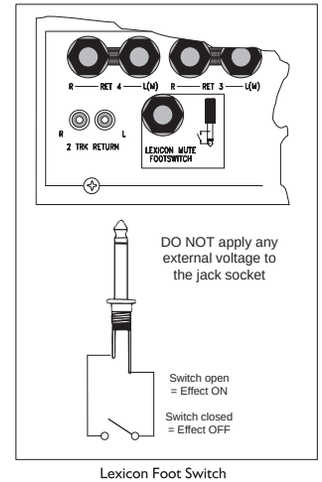
Two effects Parameters may be adjusted and saved in the onboard RAM for each of the pre-programmed effects, using the encoder knob (9) and the two PARAMeter switches (10). The best setting for a particular application will be found by experimentation and careful listening to the final sound.

Adjustments are made by turning the encoder knob while pressing and holding the required PARAM switch, listening to the result. As soon as the PARAM switch is released the setting will be held in internal flash RAM memory. Any alterations to the pre-programmed settings are retained, even if the mixer is turned off, and will be recalled the next time that the particular program is selected. If these settings differ from the original default settings the USER MODE LED illuminates.

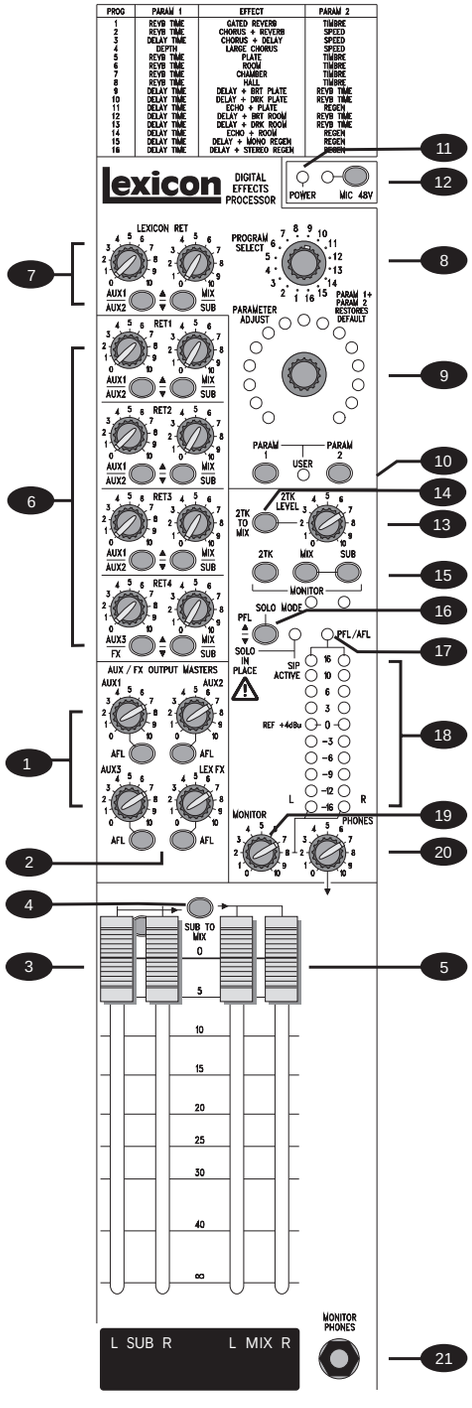
**Each factory default setting may be restored by pressing and holding both PARAM switches until the USER MODE LED goes out.**

## LEXICON MUTE FOOT SWITCH

The Effects may be turned ON or OFF remotely by connecting a standard latching or non-latching guitar foot-switch, or similar unit providing an isolated switch closure, to the rear panel Lexicon Foot Switch jack socket as shown. The Effect is muted when the switch is closed.




Lexicon Foot Switch Connections




## 11 POWER INDICATOR

This LED illuminates to show that power is being supplied to the console.

## 12 MIC 48V (Phantom Power)

Many professional condenser mics need an external powering voltage, normally 48V, also known as PHANTOM POWER. This is a method of sending a powering voltage down the same wires as the mic signal. Press the switch to supply the 48V power to all of the MIC inputs. The adjacent LED illuminates when the power is active.

**DO NOT USE unbalanced mics with 48V switched on as they may be damaged by the phantom power voltage. Balanced dynamic mics and leads can normally be used with 48V switched on (contact your microphone manufacturer for guidance)**

**Mics should always be plugged in, and all output faders set to minimum before switching 48V ON to avoid damage to external equipment**

## 13 2TK LEVEL

The rotary control sets the level of the 2 Track Tape input, which is routed to the headphones, monitor outputs and meters, or directly to the Mix outputs by pressing the adjacent switch (14). These unbalanced inputs, on RCA phono connectors, are ideal to connect the playback of a tape machine for monitoring.

## 14 2TK TO MIX

Pressing this switch adds the 2Track Tape input to the Mix and is an ideal way of feeding pre-show music to the main outputs in live applications without using up valuable input channels.

## 15 MONITOR SOURCE SELECT

These switches allow a choice source for the Phones, Monitor outputs and meters. Normally the monitor source is either MIX or SUB (or both, depending on which of the two right-hand switches is selected), but pressing the 2TK switch swaps the monitoring to the 2 Track input. When the switch is released the normal MIX/SUB selection is restored.

## 16 SOLO MODE

This switch selects either non-destructive AFL/PFL (switch UP), or SOLO-IN-PLACE monitoring (switch DOWN). The two modes are described below:

### PFL

When any input channel SOLO switch or master section AFL switch is pressed, the selected signal is fed to the headphones, control room output and meters, where it replaces the selected monitor source. The PFL/AFL LED illuminates to warn that a PFL is active. This is a useful way of listening to any required input signal without interrupting the main mix, for making adjustments or tracing problems.

### SOLO-IN-PLACE

In contrast to PFL, SOLO-IN-PLACE mode allows an individual channel, or selection of channels to be monitored in isolation from the rest of the mix, but at the correct mix levels and with all sends, pans and effects active. With SOLO MODE active (switch down), pressing any one or more SOLO switches on the input channel mutes all channels which are not SOLOed, leaving only the selected channels in the mix. When the SOLO switches are released the original mix is restored.

**Note that when SOLO MODE is active, pressing any SOLO switch interrupts the main MIX, and should therefore not be used during live performance.**

## 17 PFL/AFL

The PFL/AFL LED illuminates to show that a PFL/AFL is active and is the source for the monitors and meters. The LED will normally be OFF

## 18 BARGRAPH METERS

3-colour peak reading BARGRAPH METERS are provided to monitor the 2TK, MIX or SUB signals, giving you a constant warning of excessive peaks in the signal which might cause overloading. Aim to keep the signal within the amber segments at peak levels for best performance.

Similarly, if the output level is too low and hardly registering at all on the meters, the level of background noise may become significant. Take care to set up the input levels for best performance.

When any SOLO or AFL switch is pressed, the L & R meters automatically switch to show the selected PFL/AFL signal on both meters, in mono.

## 19 MONITOR

This control sets the output level to the MONITOR LEFT & RIGHT outputs without affecting the level to the meters.

## 20 PHONES

This control sets the level of the monitor signal to the MONITOR PHONES output.

## 21 MONITOR PHONES

The MONITOR PHONES output appears on a 3-pole 1/4" jack, **suitable for headphones with an impedance of 200Ω or higher**.

# Setting Up & Troubleshooting

## Initial Set Up

Once you have connected up your system (see the sections on connection and wiring earlier in this manual for guidance) you are ready to set initial positions for the controls on your mixer.

**The front panel drawing on page 20 shows typical initial control positions which may serve as a useful guide to setting up the mixer for the first time.**

Set up individual input channels as follows:

- Connect your sources (microphone, keyboard etc.) to the required inputs and release the MUTE switches. Note: Phantom powered mics should be connected before the 48V is switched on.
- Set Master faders at 0, input faders at 0, route the channels to MIX and set power amplifier level to suit the application. Select MIX as the monitor source on the Master section.
- Provide a typical performance level signal and press the SOLO button on the first channel, monitoring the level on the bargraph meters (make sure that PFL Mode is selected on the Master section).
- Adjust the input gain until the meter display is in the amber section, with occasional peaks to the first red LED at a typical maximum source level. This allows sufficient headroom to accommodate peaks and establishes the maximum level for normal operation (but see note below).
- Release the SOLO button.
- Repeat this procedure on other channels as required.
- Listen carefully for the characteristic sound of 'feedback'. If you cannot achieve satisfactory input level setting without feedback, check microphone and speaker placement and repeat the exercise. If feedback persists, it may be necessary to use a Graphic Equaliser to reduce the system response at particular resonant frequencies.

*Note: The initial settings should only be regarded as a starting point for your mix. It is important to remember that many factors affect the sound during a live performance, for instance the channel EQ settings or even the size of the audience!*

You are now ready to start building the mix and this should be done progressively, listening carefully for each component in the mix and watching the meters for any hint of overload. If this occurs, back off the appropriate Channel Fader slightly until the level is out of the red segments, or adjust the Mix Master Faders. This procedure will ensure that the mixer is set up correctly, with adequate headroom. If more amplification is needed, adjust the power amplifier level controls.

## Troubleshooting

*Note: It is normal for the right-hand side of the mixer to become warm in normal use..*

*No Power*

- Is the mains supply present? Check that mains voltage selection is correct for your country.
- Is the power lead firmly connected?
- Check the mains fusing
- If you have checked all the points above and the power indicator is still not illuminated, consult your Spirit dealer

*Condenser Mic Not Working*

- Is the 48V turned on?
- Is the mic plugged into the Mic input?
- Is the mic cable a balanced 3-wire type?

*Meters not showing any signal*

- Has the input gain been set correctly? (see above.)
- Is the source connected to the appropriate input socket for the level of signal?
- Do you have something connected on the Inserts, and is that external device switched on?
- Are the Master faders set at max., are input faders set high enough and is the channel routed to the output being monitored?
- Is the MUTE switch released on the relevant channels?
- Is the appropriate monitor select switch pressed?
- Is there a SOLO or AFL pressed on another channel?

*No Mix output*

- Check that the Mix Master Fader is up.
- Do you have something connected on the Mix Inserts, and is that external device switched on?

*No Monitor output*

- Is the Monitor control set high enough?
- Is the appropriate monitor select switch pressed?

*Headphones Distorting*

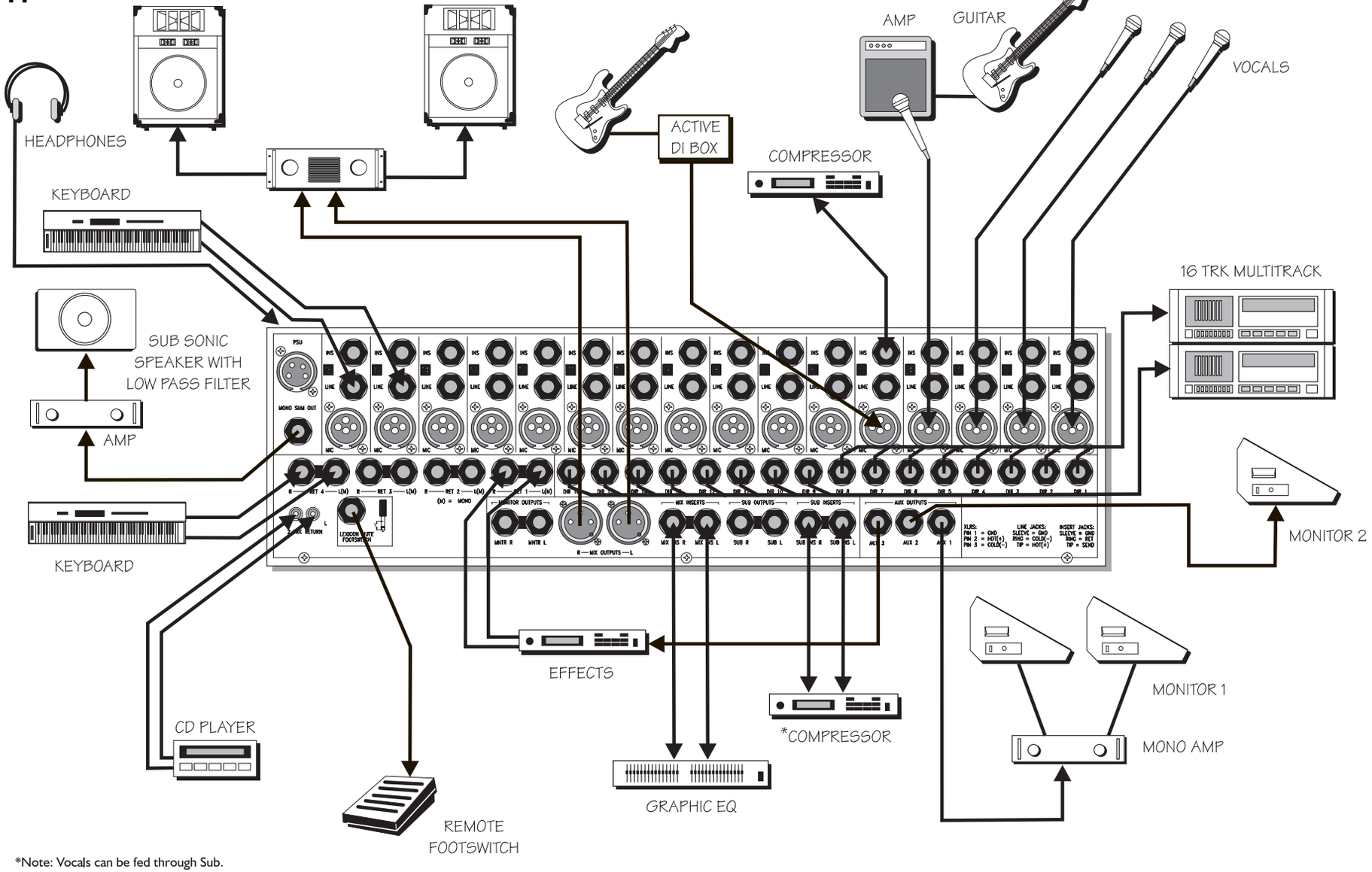
- Are the headphones less than 200Ω impedance?
- Is the Phones level set too high?

*Lexicon Effects Level too high*

- Ensure that the Input to the Lexicon processor is setup correctly. If the input is too high the signal will distort. If the level is too low the level of noise may be excessive. Use the Lex FX AFL button to monitor the input level to the Lexicon processor in the same way as you set up input channel gain levels (see 'Initial Set Up'), adjusting the LEX FX level until the meters are just reaching the amber sections.
- Once the Lexicon input level has been set correctly the LEXICON RET controls can be used to set the required effects level.

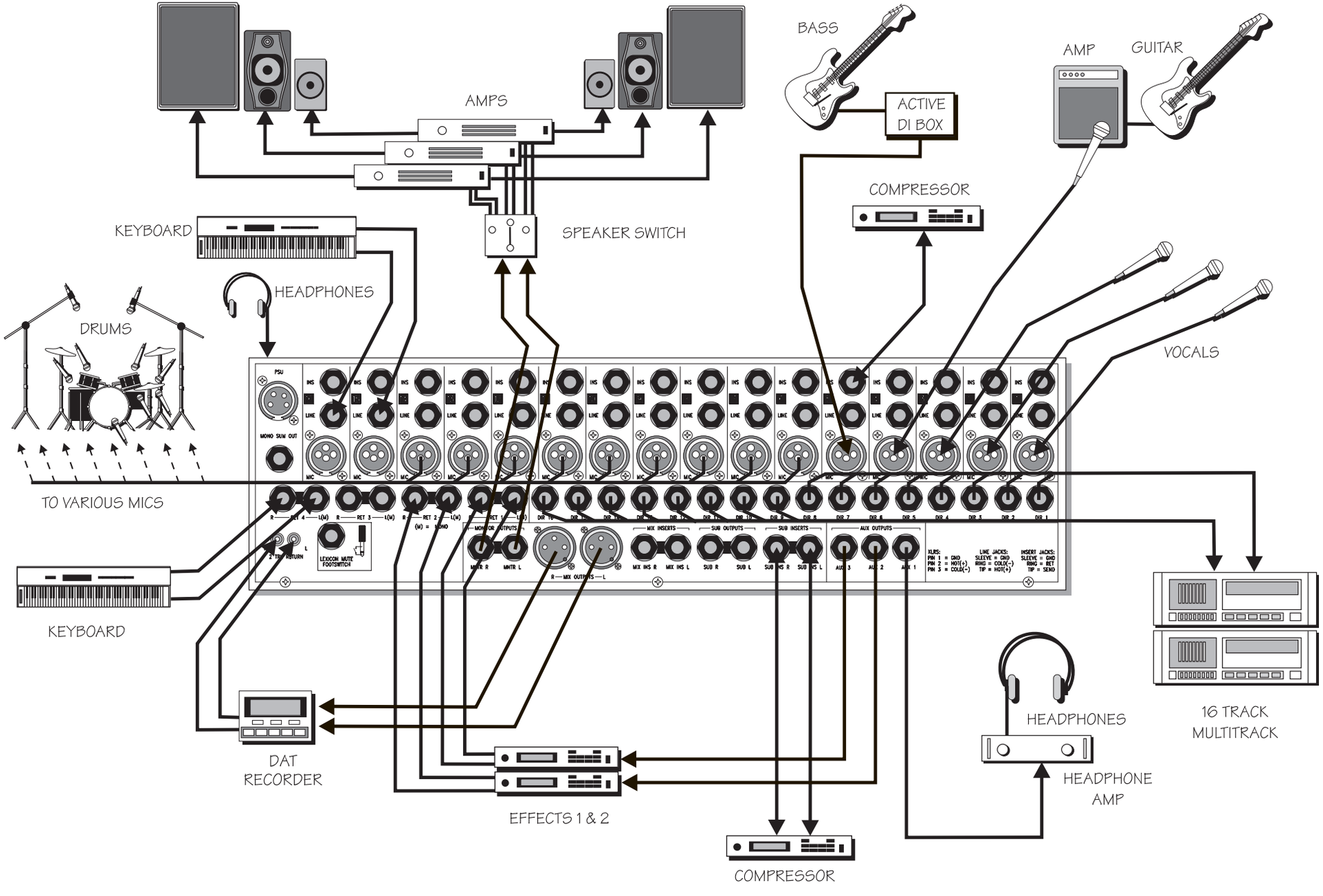
# APPLICATIONS

## Live Applications

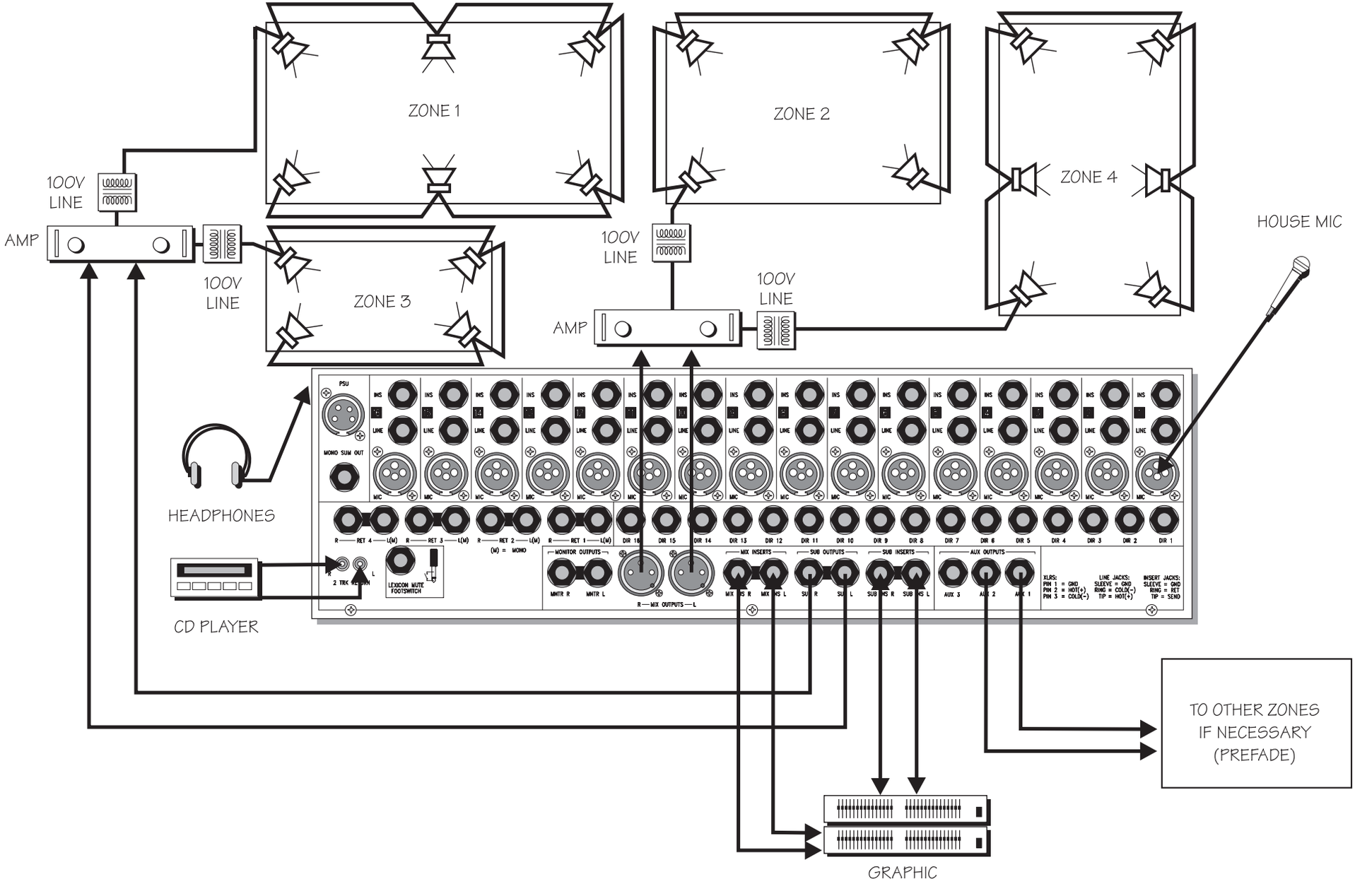


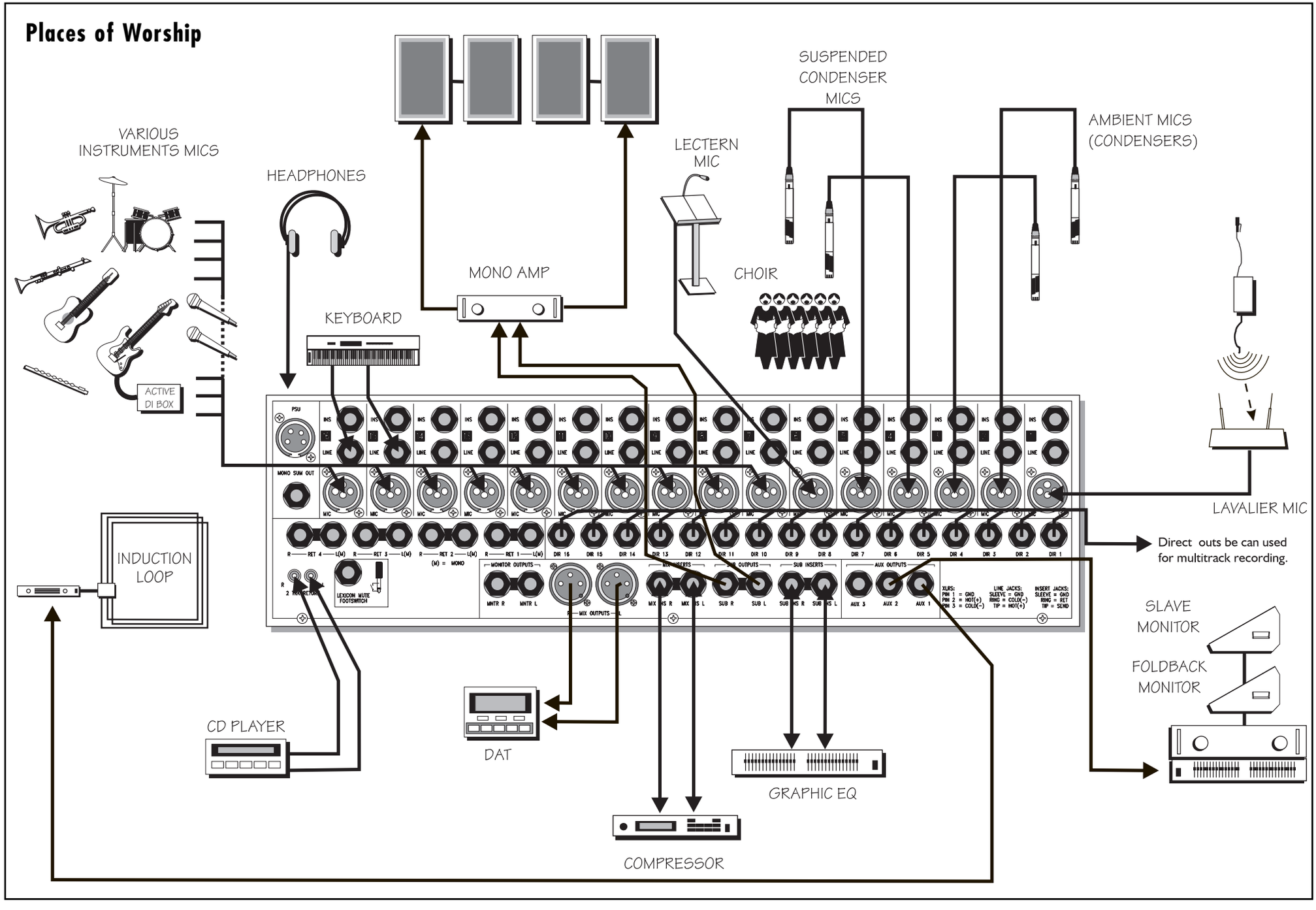

*Note: Vocals can be fed through Sub. Compressor on Sub Inserts affect all vocals that are routed.

# Recording

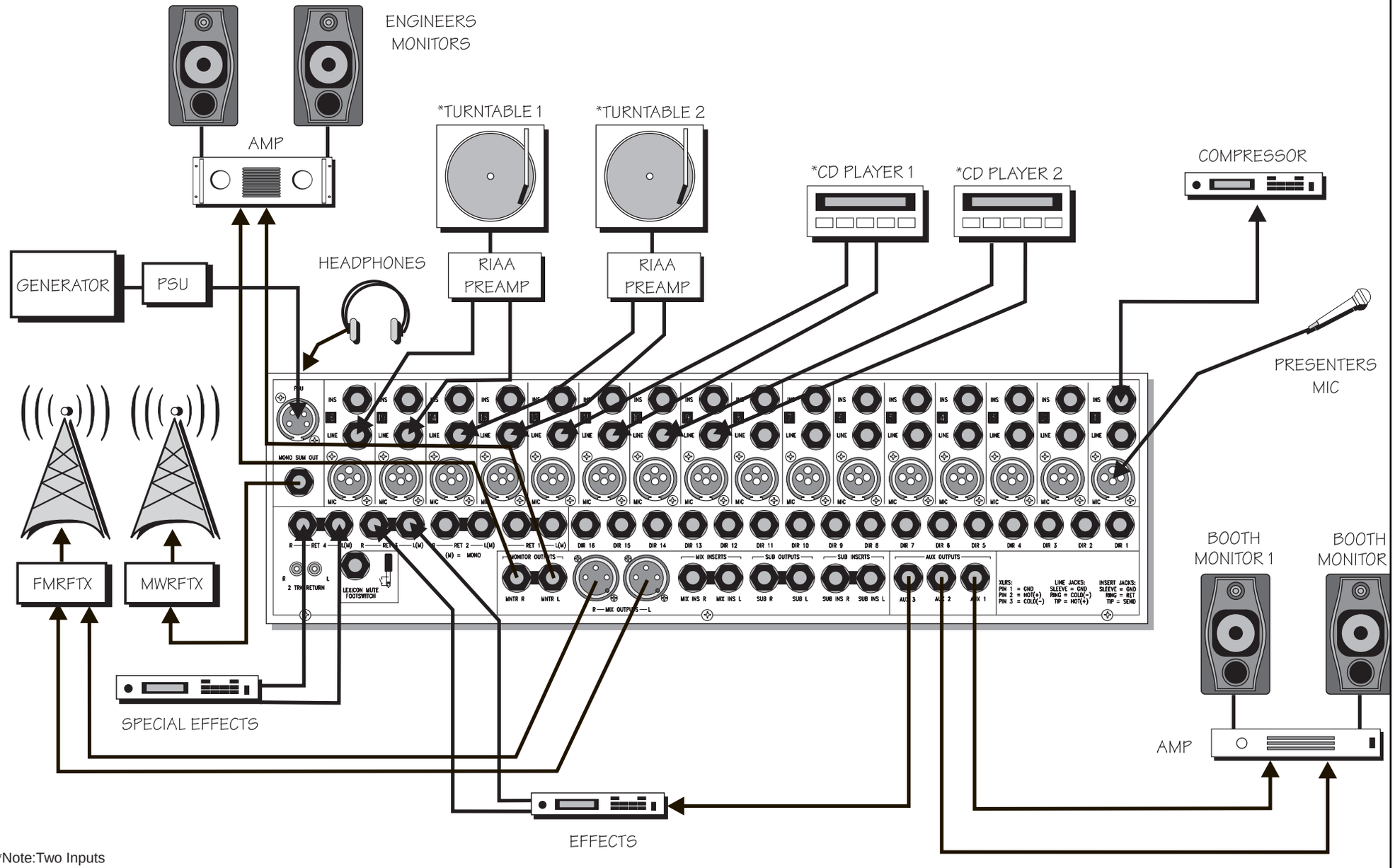

AMPS
BASS
ACTIVE
DI BOX
AMP
GUITAR
COMPRESSOR
KEYBOARD
SPEAKER SWITCH
HEADPHONES
DRUMS
VOCALS
TO VARIOUS MICS
KEYBOARD
DAT
RECORDER
EFFECTS 1 & 2
COMPRESSOR
HEADPHONES
HEADPHONE
AMP
16 TRACK
MULTITRACK

## Installation



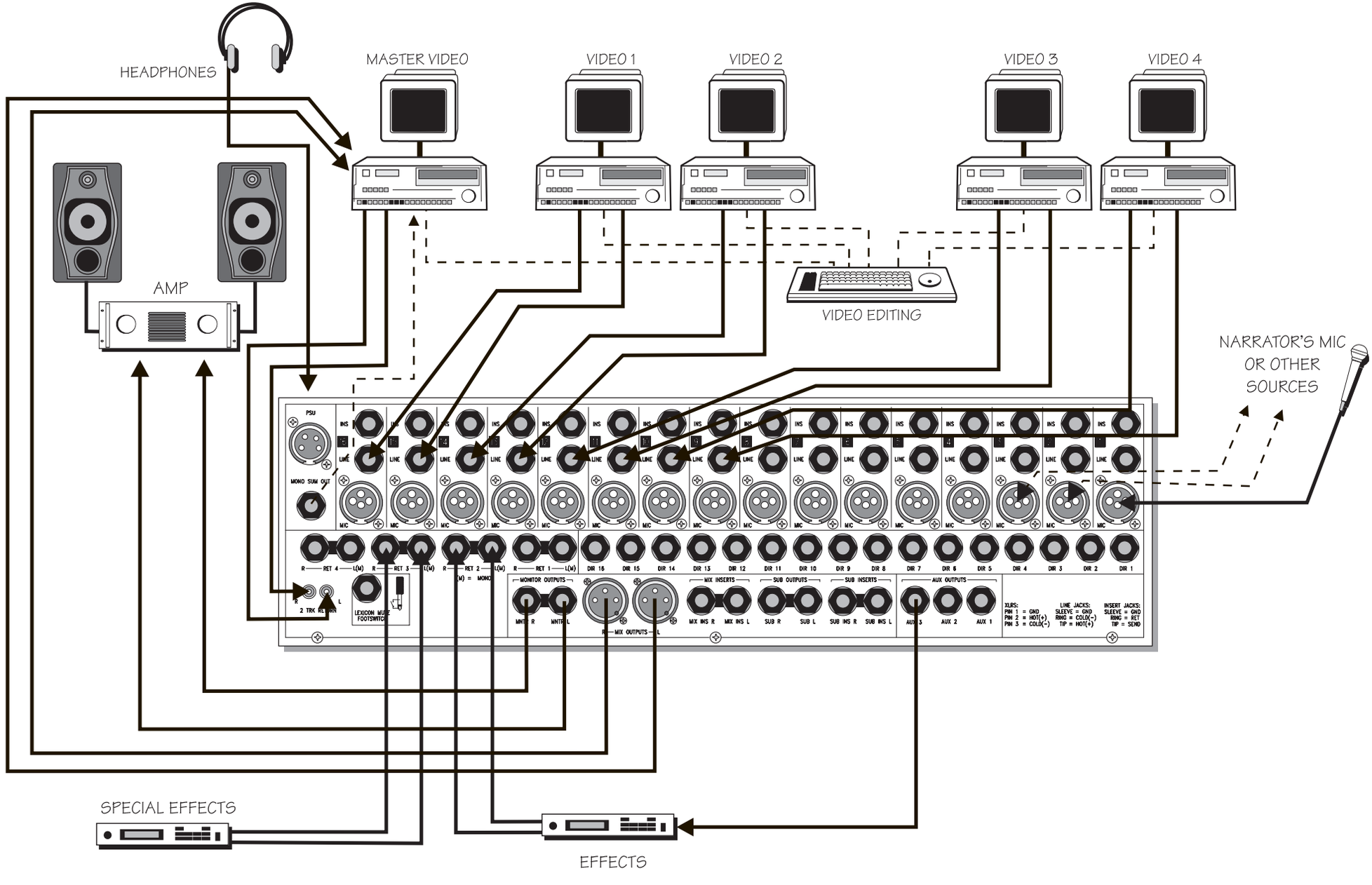

Places of Worship
VARIOUS INSTRUMENTS MICS
HEADPHONES
SUSPENDED CONDENSER MICS
AMBIENT MICS (CONDENSERS)
LECTERN MIC
MONO AMP
CHOIR
KEYBOARD
ACTIVE DI BOX
LAVALIER MIC
Direct outs be can used for multitrack recording.
INDUCTION LOOP
SLAVE MONITOR
FOLDBACK MONITOR
CD PLAYER
DAT
GRAPHIC EQ
COMPRESSOR

## On Location Broadcasting

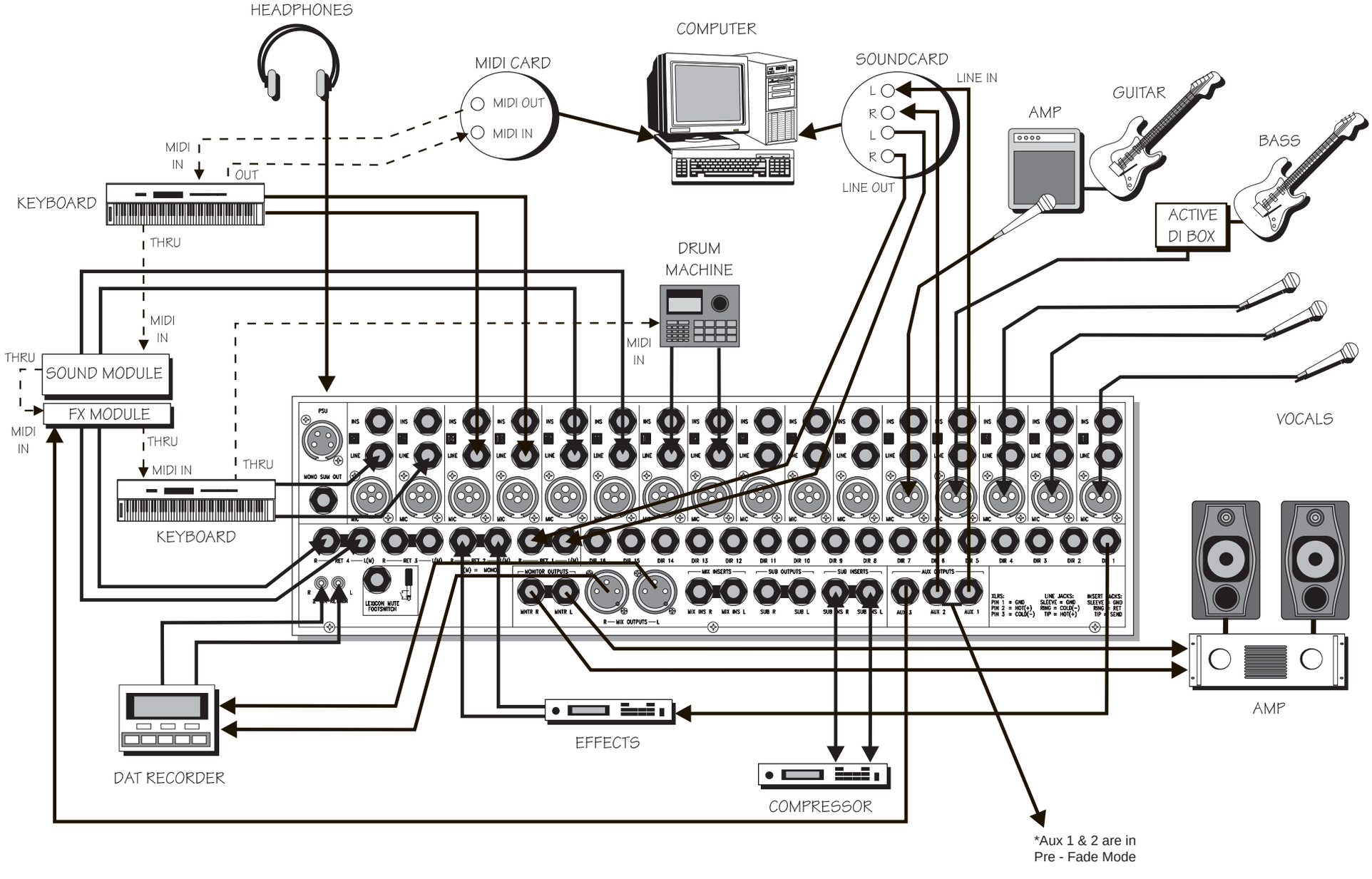



*Note:Two Inputs used as Stereo pair

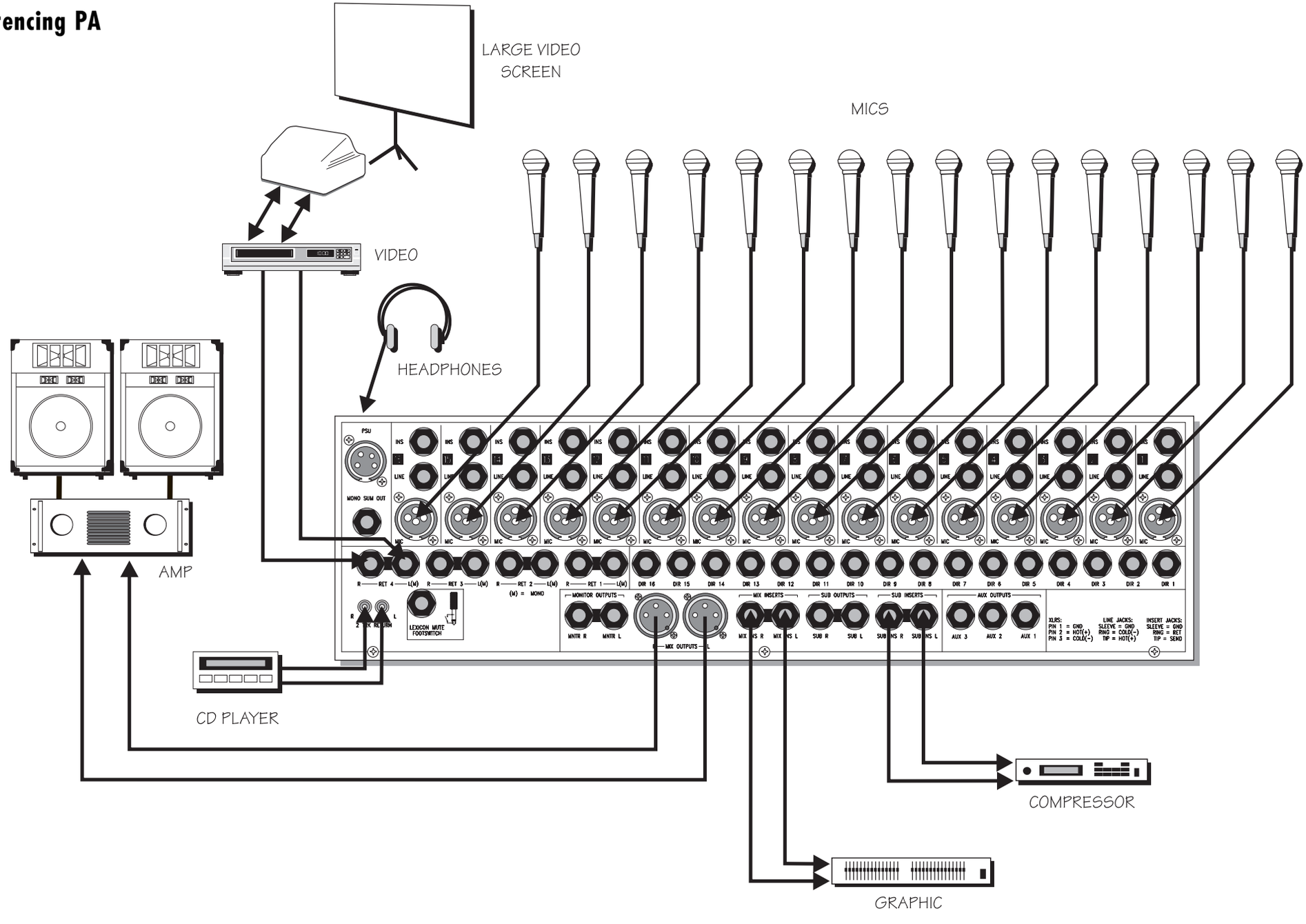
## Post Production Video Editing



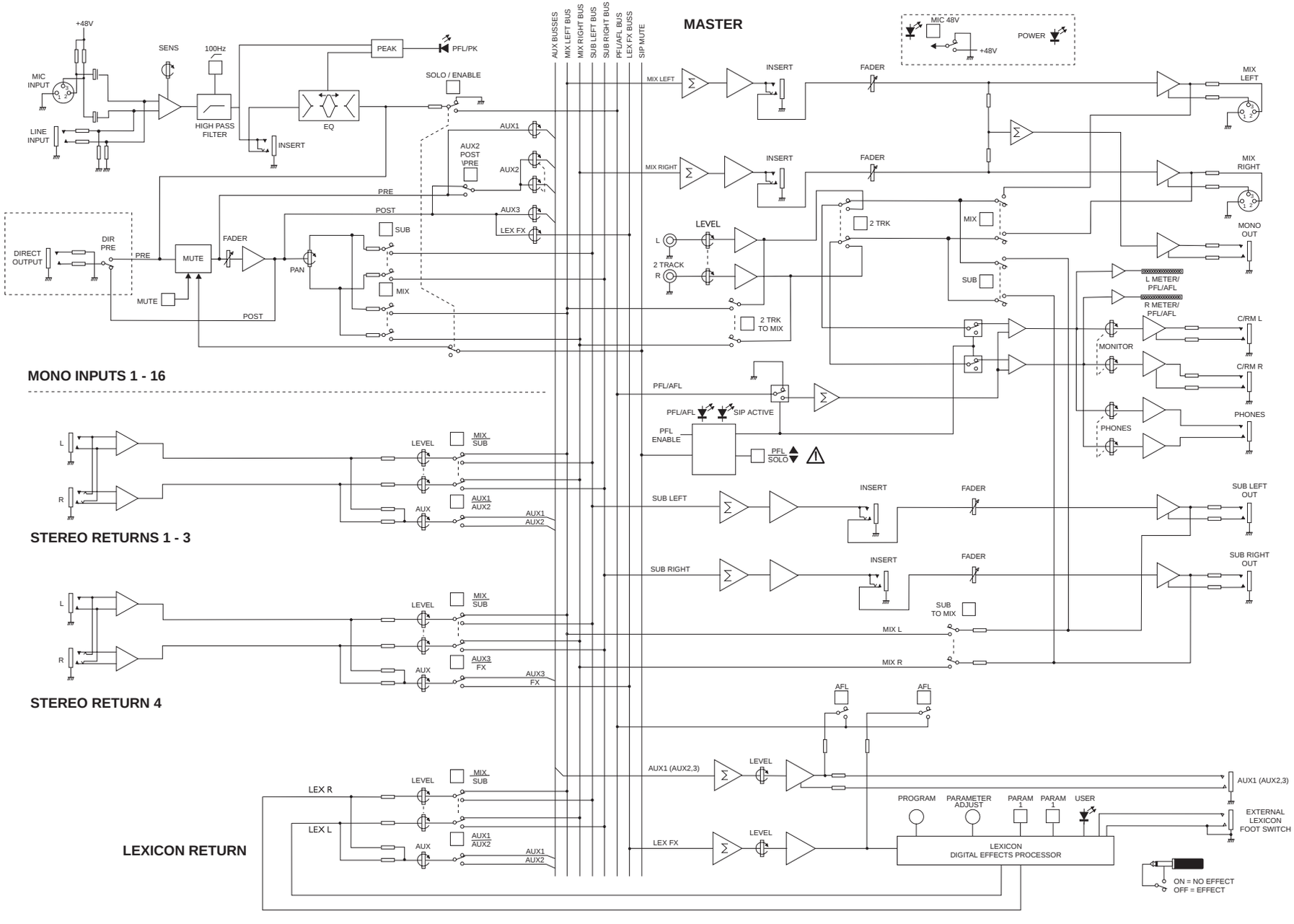
# Multimedia/Hard Disk Recording



# Conferencing PA

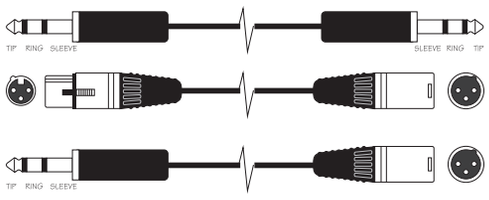


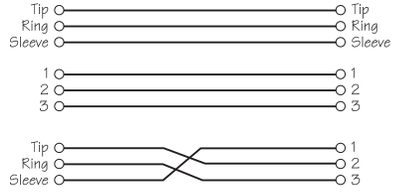
# System Block Diagram



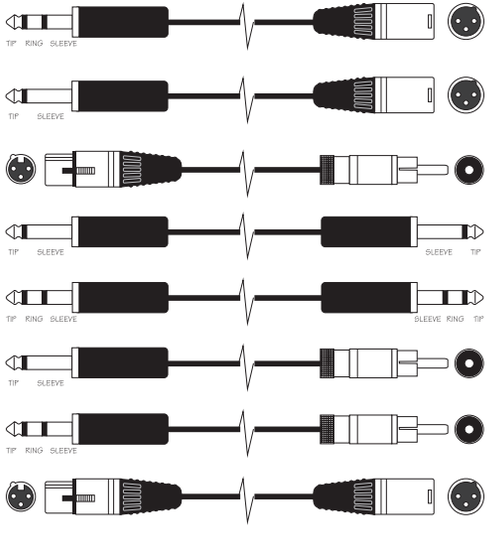
# Connecting Leads

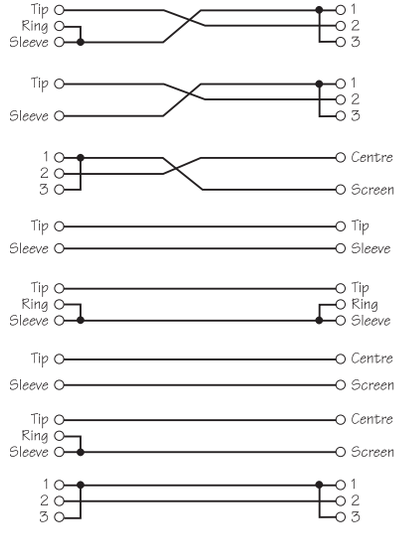
## Balanced



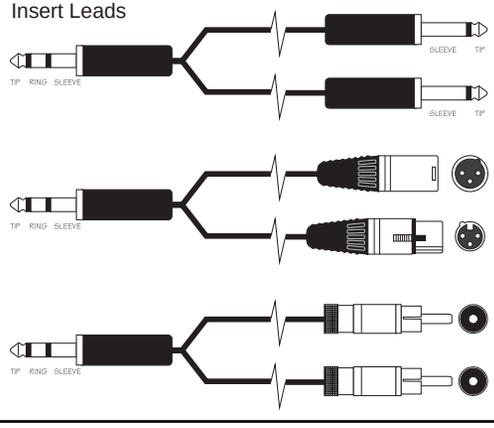



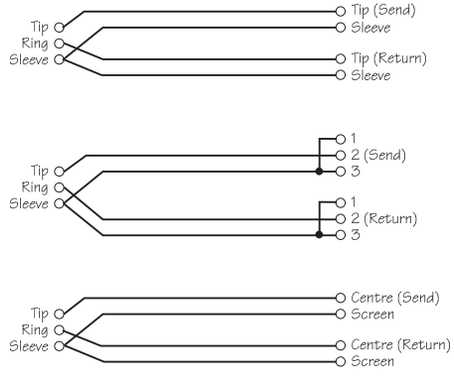

## Unbalanced



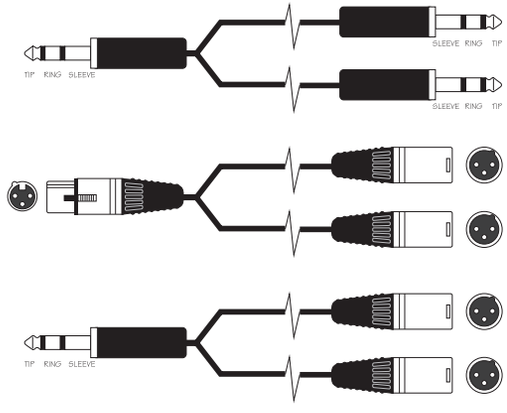

## Insert Leads

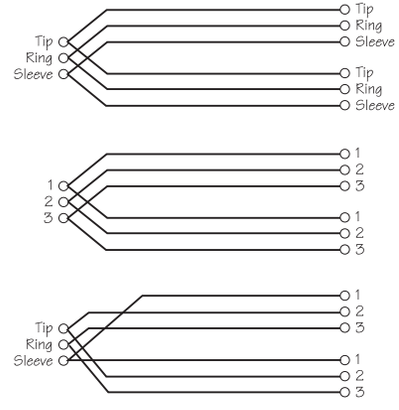


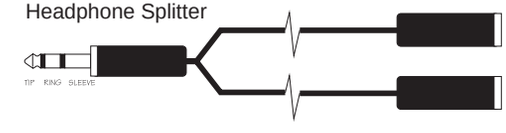

## 'Y' Leads (Balanced)

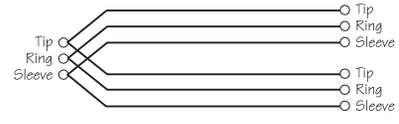
Where used....Aux, Mix outputs



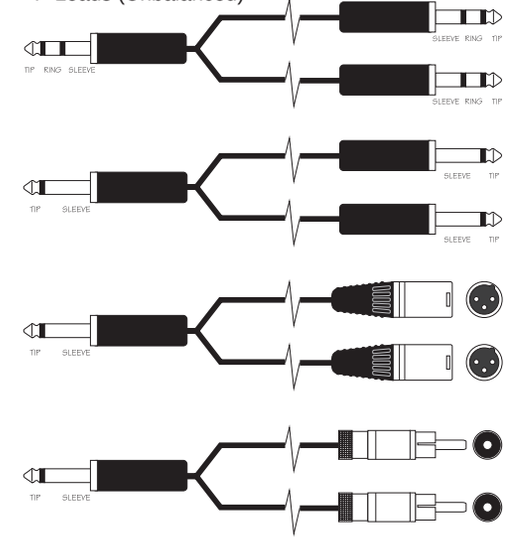



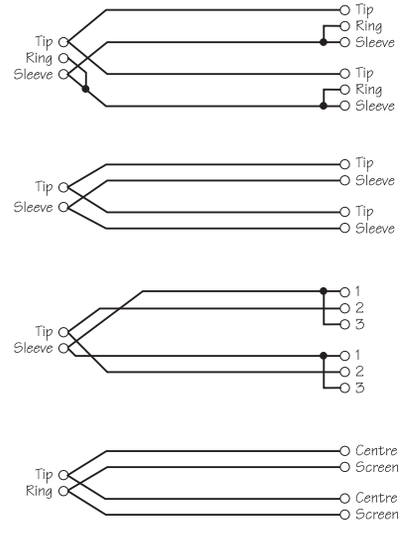

## Headphone Splitter



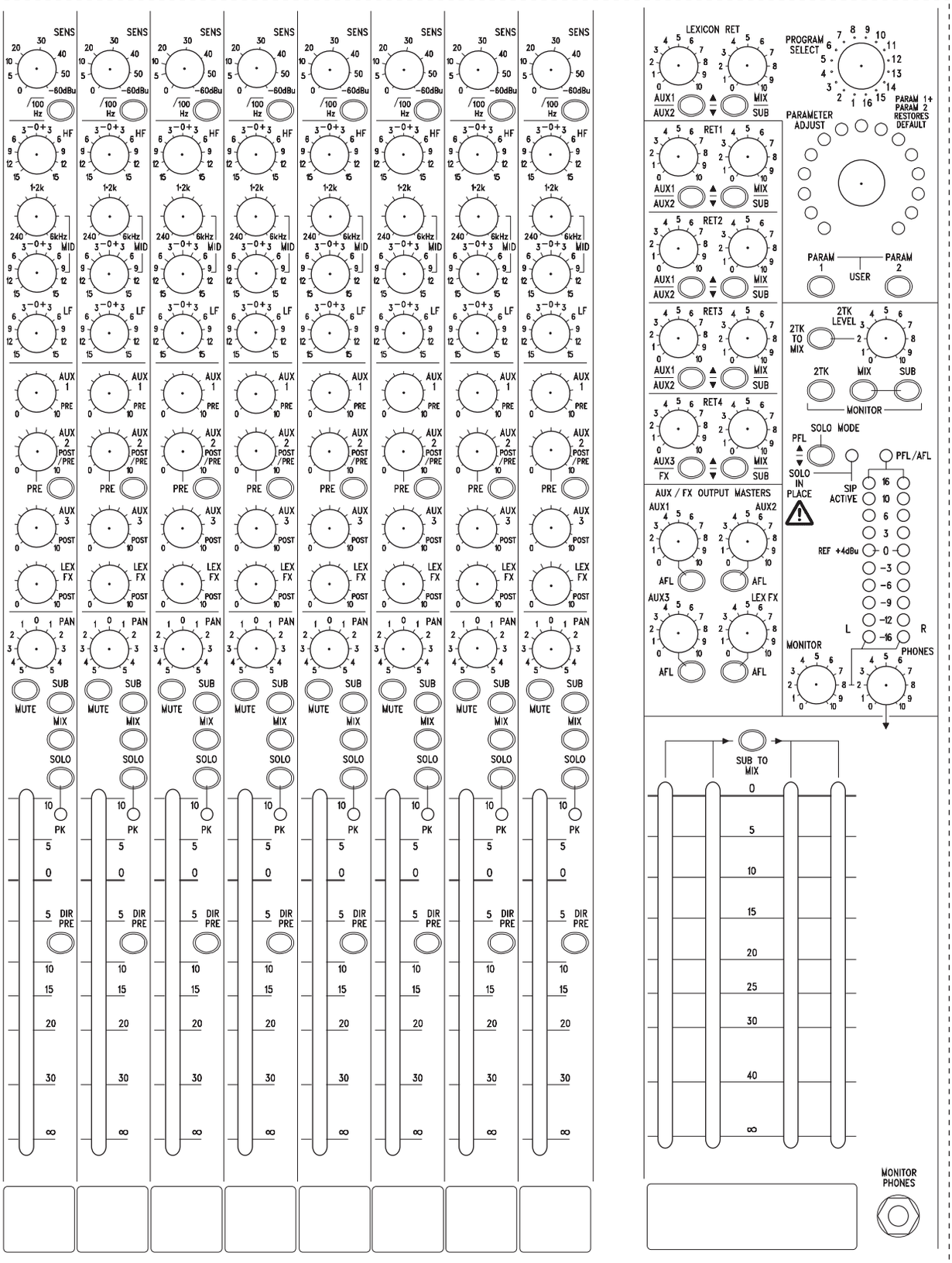

## 'Y' Leads (Unbalanced)



**Gig :** ..... **Date :** .....

**Engineer :** .....




## Control Position Sheet

You may freely copy this page to mark control positions to assist in resetting the desk between performances.

Sheet Title:

Sheet Title:

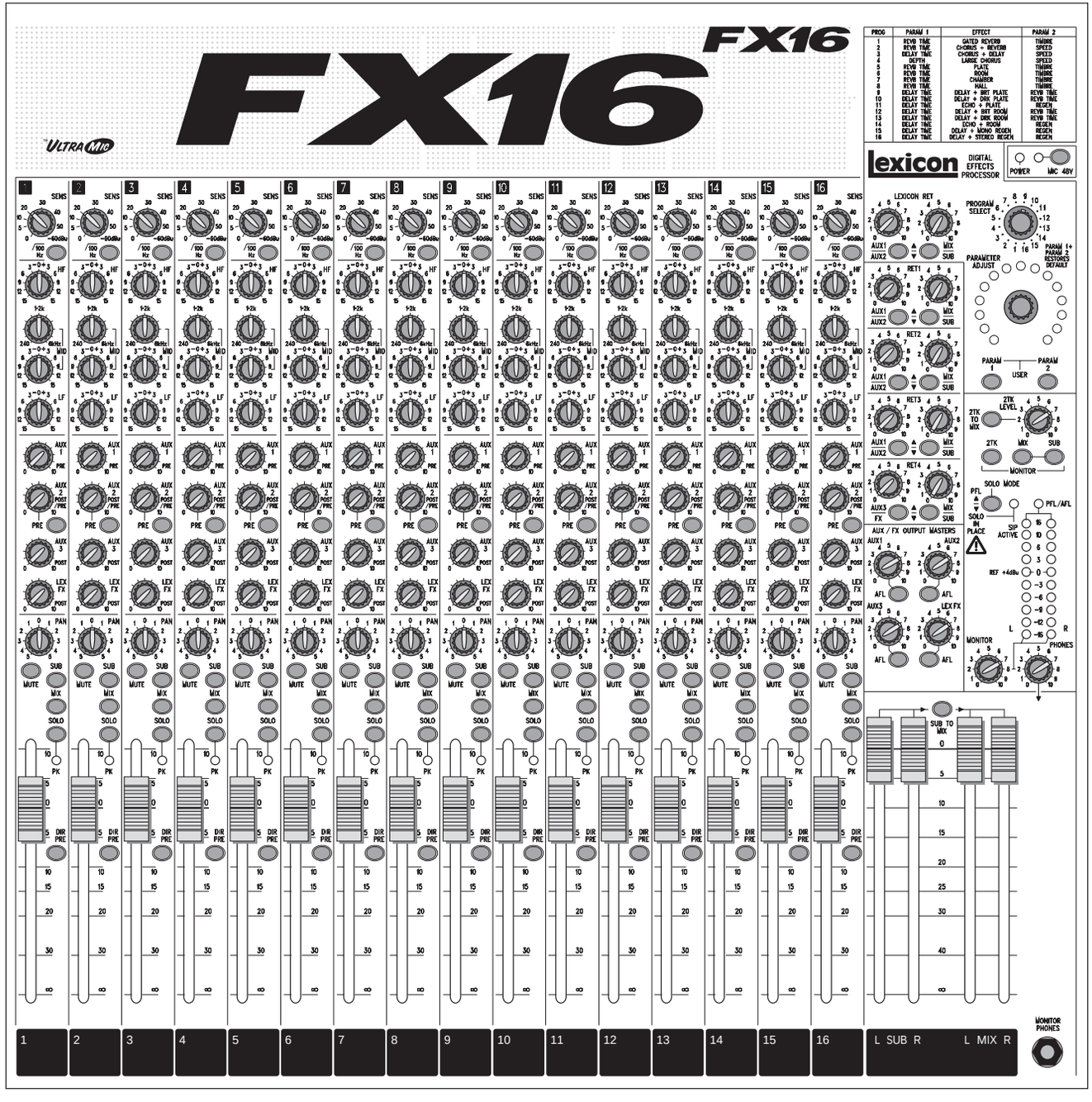
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Sheet Title:

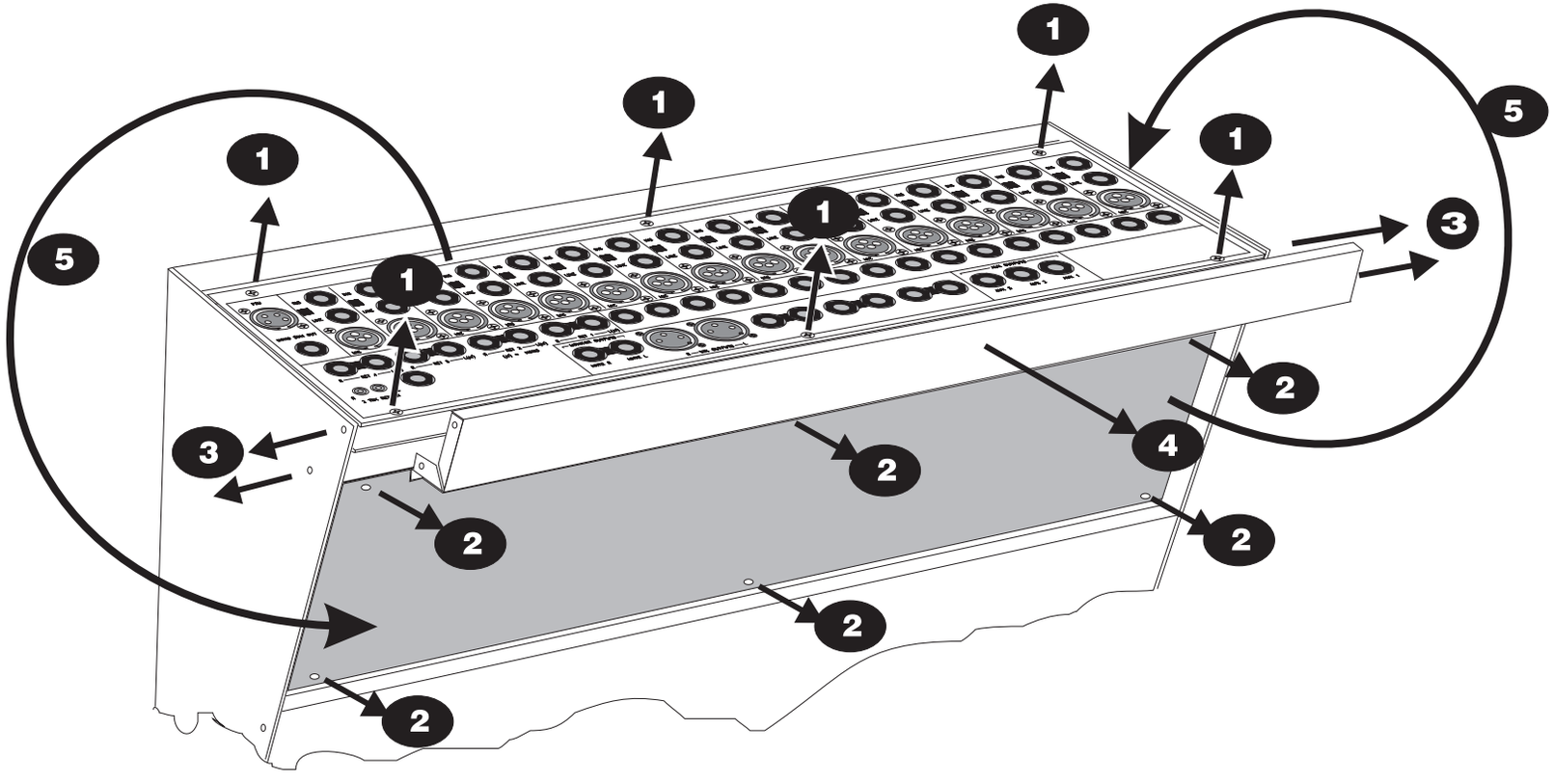
Sheet Title:

Sheet Title:

**FX16 Console - Typical Starting Out Control Positions**

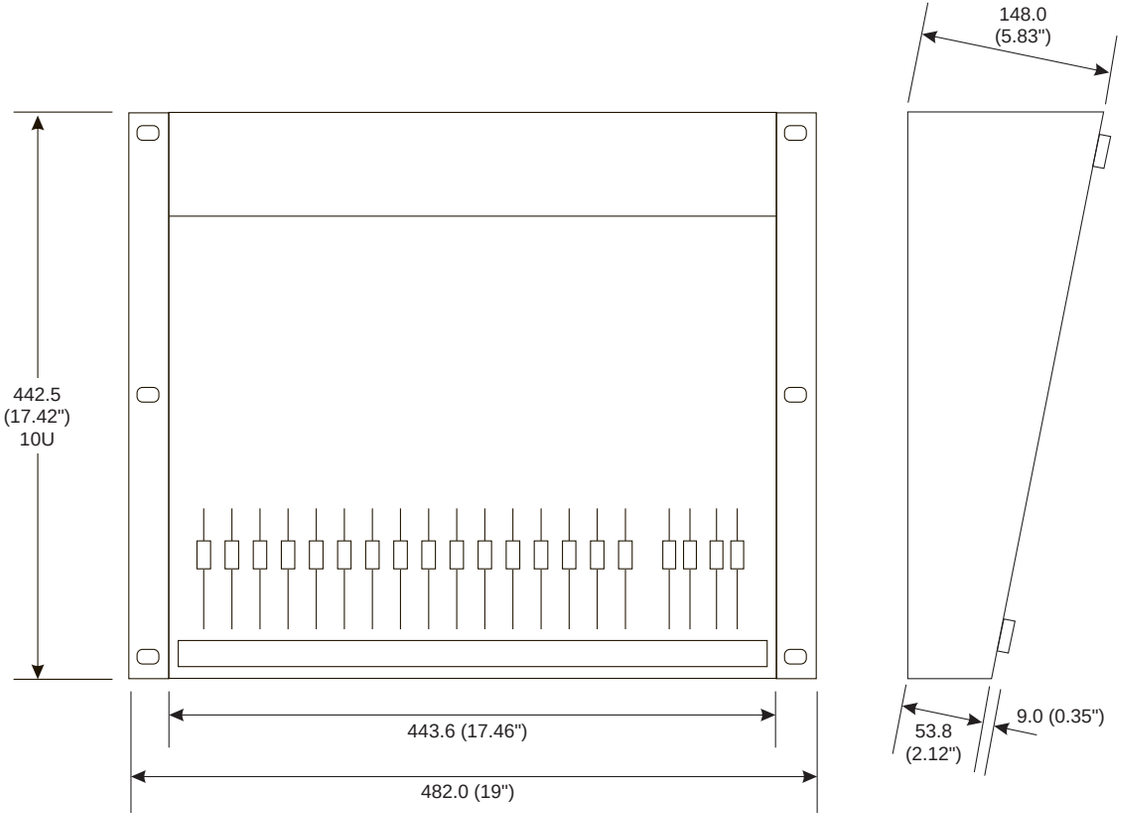


## Repositionning the Connector Panel for Rackmounting




1. Remove Connector Panel fixing Screws (6).
2. Remove Cover Panel fixing screws (6).
3. Remove Frame Section fixing screws (4).
4. Remove Frame Section.
5. Swap Connector Panel and Cover Panel, leaving all cables connected.
6. Refit all items in reverse sequence, taking care that no cables are trapped beneath the panels.

## Dimensions




## Specifications

### Noise

| | |
|---|---|
| Measured RMS, 20Hz to 20kHz Bandwidth | |
| Mic E.I.N. @ max gain,150Ω source impedance | -129dBu |
| Aux, Mix & masters @ max., | |
| 16 inputs routed with faders, pots down | <-80dBu |

### Crosstalk (@1kHz, typical)

| | |
|---|---|
| Channel Mute | >96dB |
| Fader cut-off (rel. 0 mark) | >90dB |
| Routing Isolation | >90dB |
| Aux Send pots offness | >84dB |

### Frequency Response

| | |
|---|---|
| Mic/Line Input to any output, 20Hz - 30kHz | <0.5dB |

### THD + N

| | |
|---|---|
| Mic sens. -30dBu, +14dBu at all outputs @1kHz | <0.009% |

### Input & Output Impedance

| | |
|---|---|
| Mic Input | 1.8kΩ |
| Line Input | 10kΩ |
| Stereo Return Input (Balanced jack) | 10kΩ |
| 2TK Return (Unbalanced RCA Phono) | 12kΩ |
| Mix, Aux, Direct Outputs, and Insert Sends | 75Ω |

### Input & Output Levels

| | |
|---|---|
| Mic Input max. level | +22dBu |
| Line Input max. level | >+30dBu |
| Stereo Return Input max. level | >+30dBu |
| Headphones (@ 200Ω) | 150mW |

### Weight

| | |
|---|---|
| Excluding packing | |
| Mixer | 7.22kg (15.91lbs) |
| Power Supply | 1.08kg (2.38lbs) |

SPIRIT
By Soundcraft

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CE

This equipment complies
with the EMC Directive
89/336/EEC
and LVD 73/23/EEC
and 93/68/EEC

For further details contact the address on the left

Part No: ZM0221