



Sound System

Instructions for Use

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Introduction

This Sound System has been designed to mix up to 6 separate inputs (microphones or other sources such as tape machines or CD players) plus an internal CD player and tape machine. It has a built in amplifier with a 250 watt output.

The mixer desk, CD player and amplifier are all built into a robust cabinet mounted on casters which weighs 130kg. It is supplied with two speakers and stands which enable them to be mounted off the ground up to 20m away from the mixer desk.

It is ideal for use for musicians, conferences or any event that requires a high quality sound from several sources.

Village Outreach can also supply microphones (wired, radio, handheld or lapel), microphone stands and a turntable if required.

If you have any problems with setting it up which cannot be resolved by reading the instructions on the following pages then please call us on 01588 630097.

If you find any features don't work (e.g. faulty leads or switches) then please tell us when you return the equipment so we can fix them before hiring it out to another customer.



Within the robust unit are a mixer desk, CD player, tape machine and 250 watt amplifier. We also supply two speakers with stands and either 10m or 20m speaker cables.

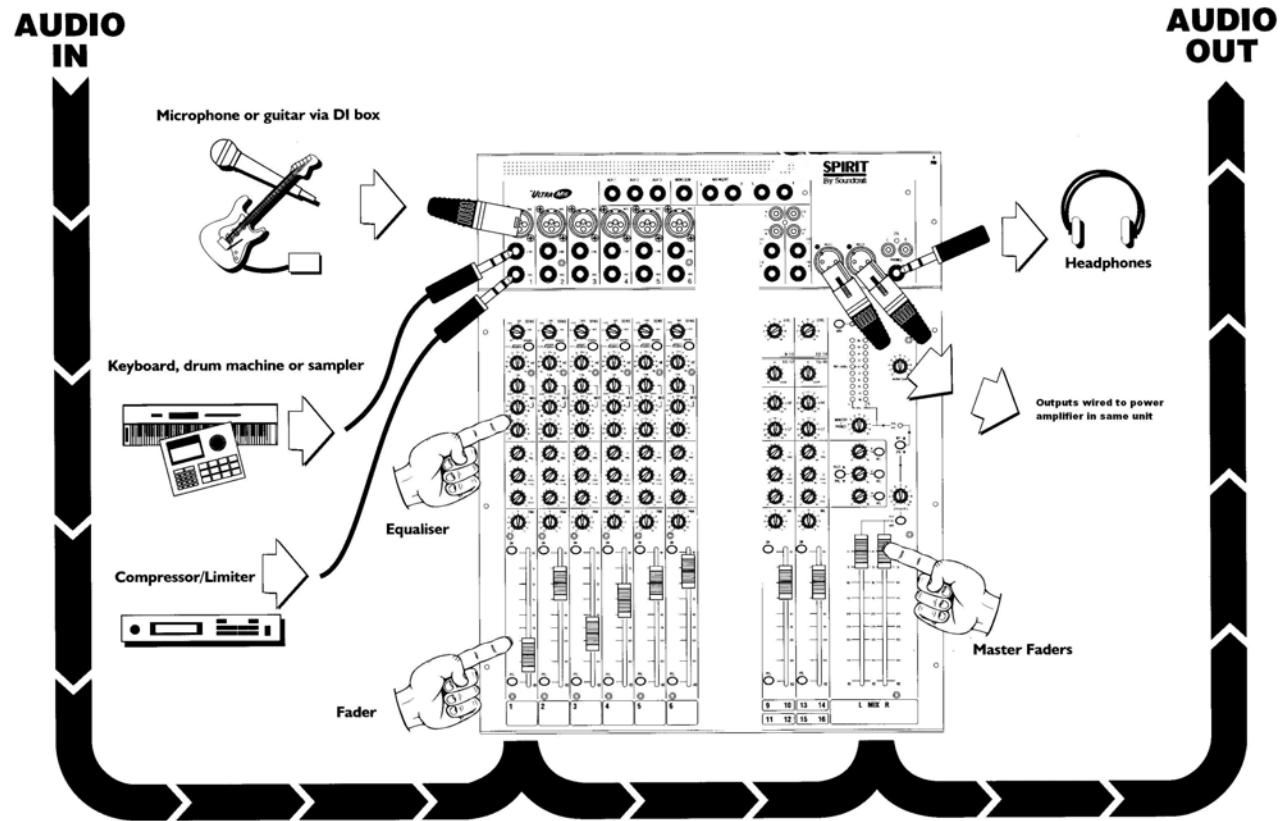


When ordering please let us know your requirements for microphones, microphone stands, turntables and lighting equipment.

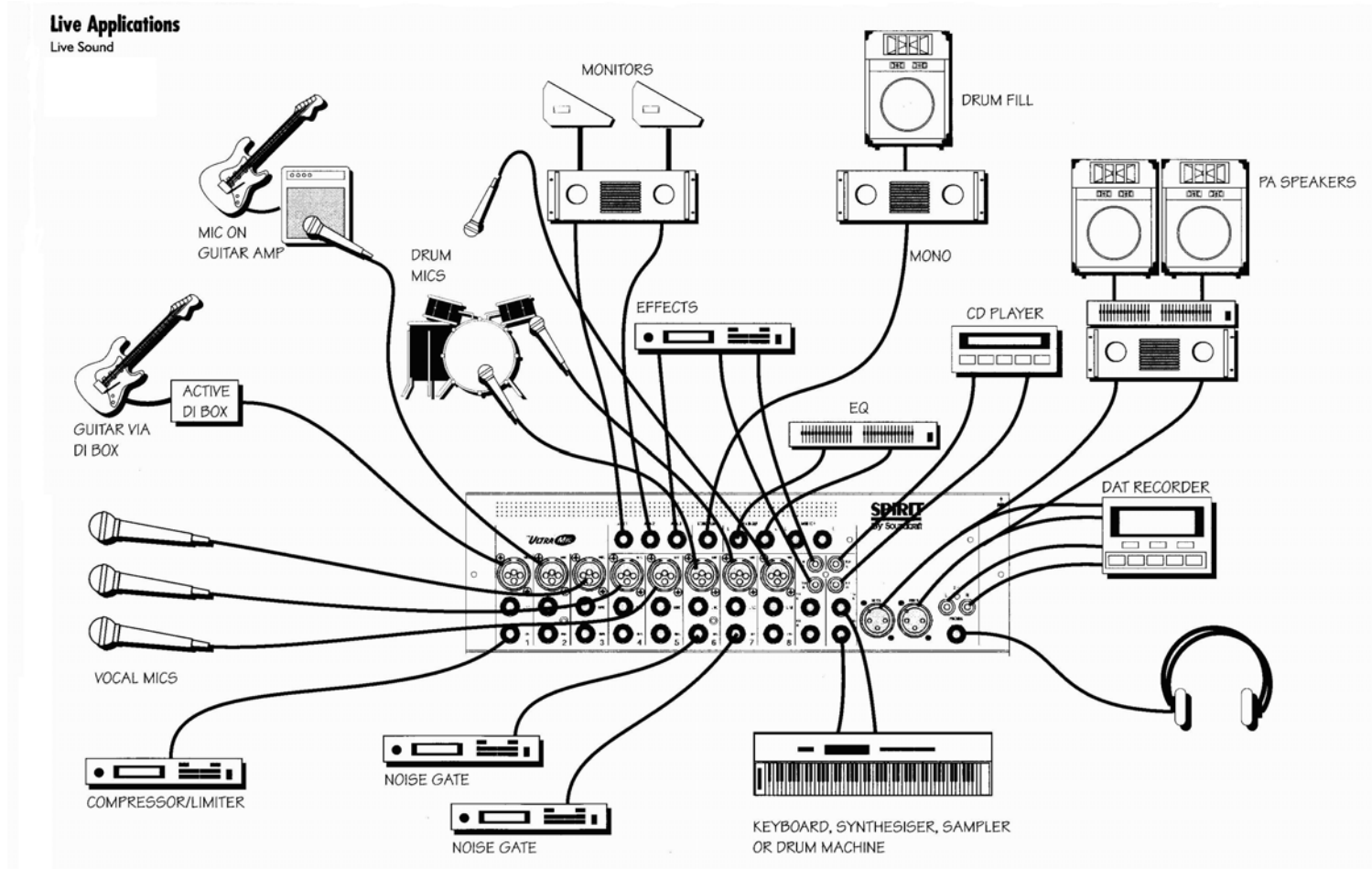
The diagram opposite shows typical connections.

Note that the Village Outreach system has;

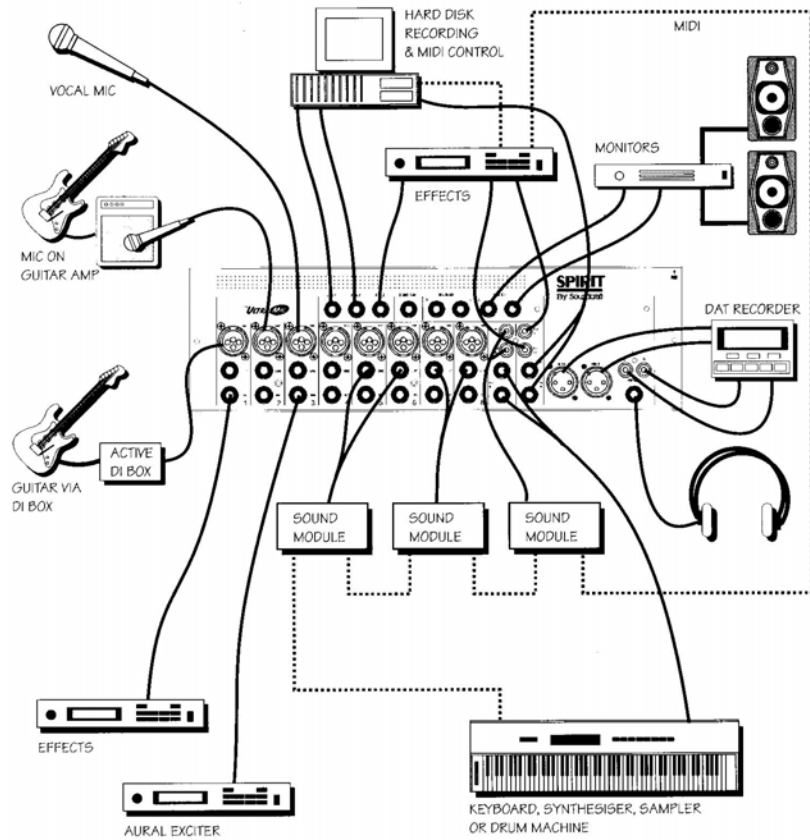
- 6 inputs for microphones etc
- CD player is mounted in the same unit and is already wired into the stereo input channel.
- The outputs are wired into the power amp in the same unit.
- We do not normally supply headphones, if you require these please ask



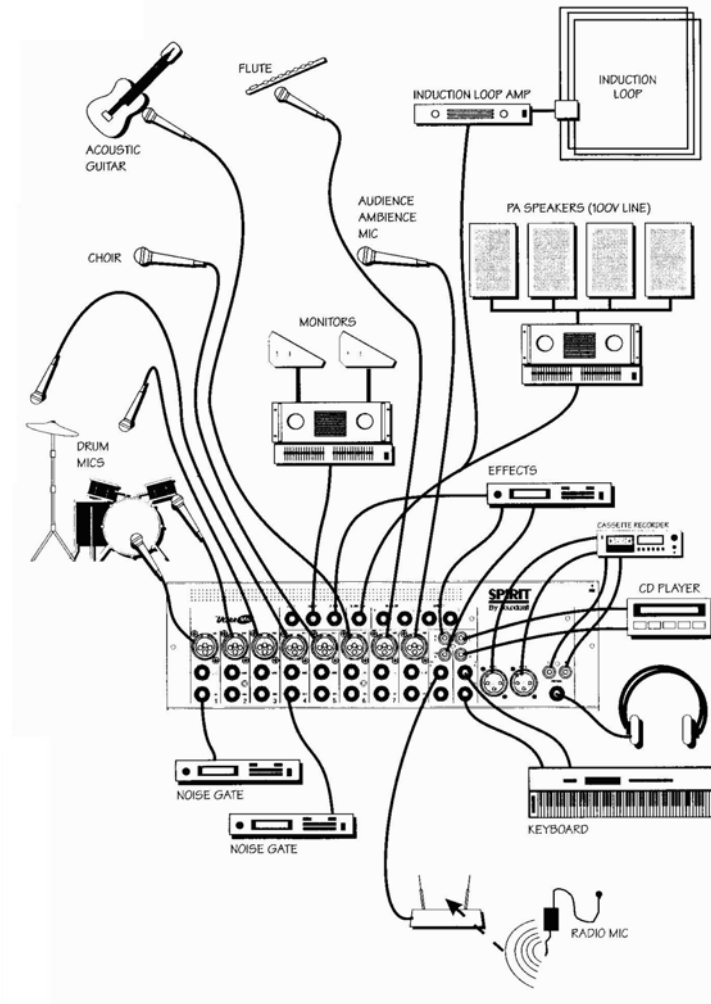
Typical Uses

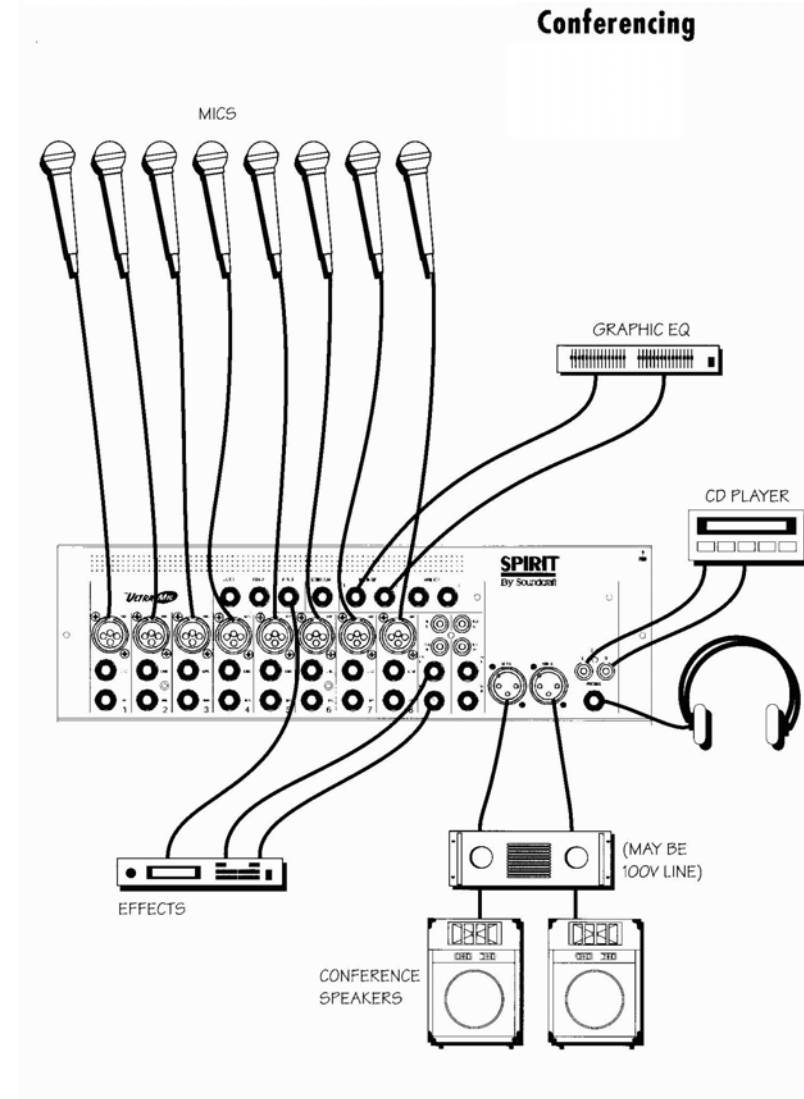
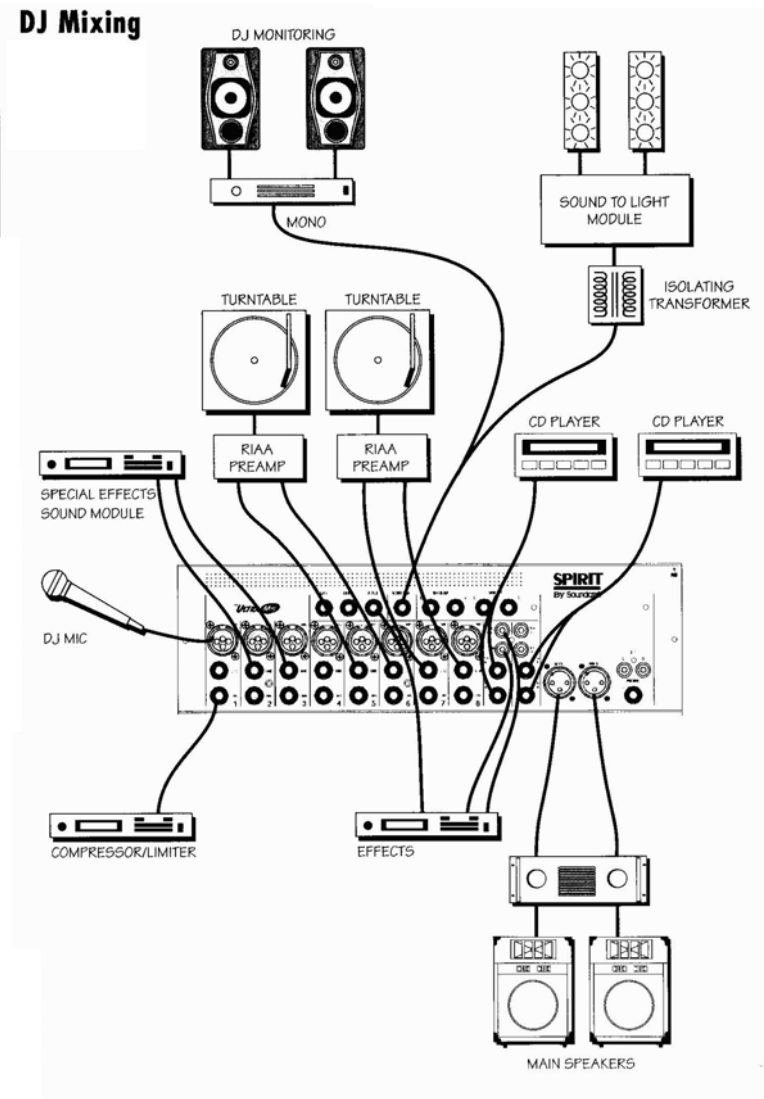


Multimedia



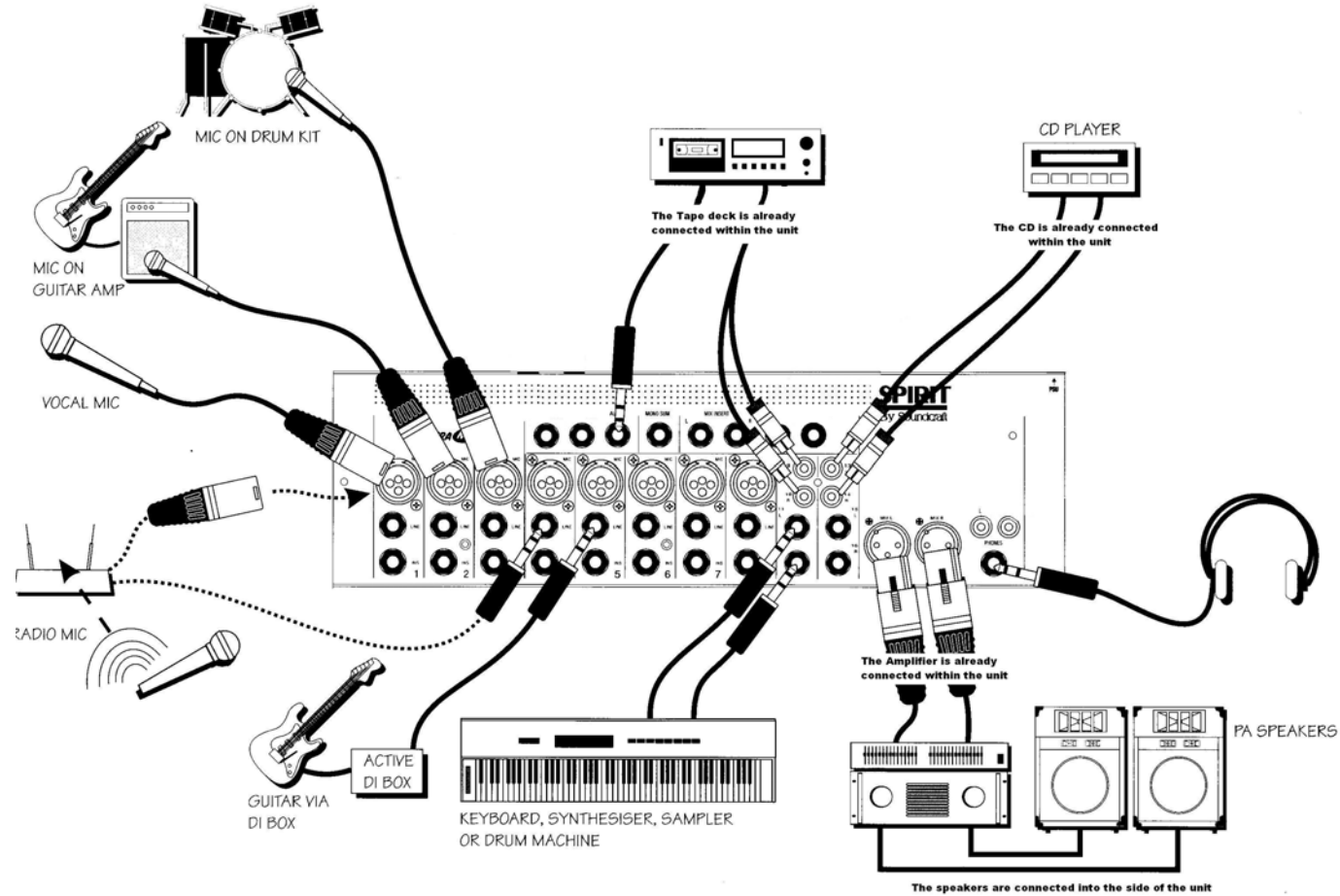
Places of Worship





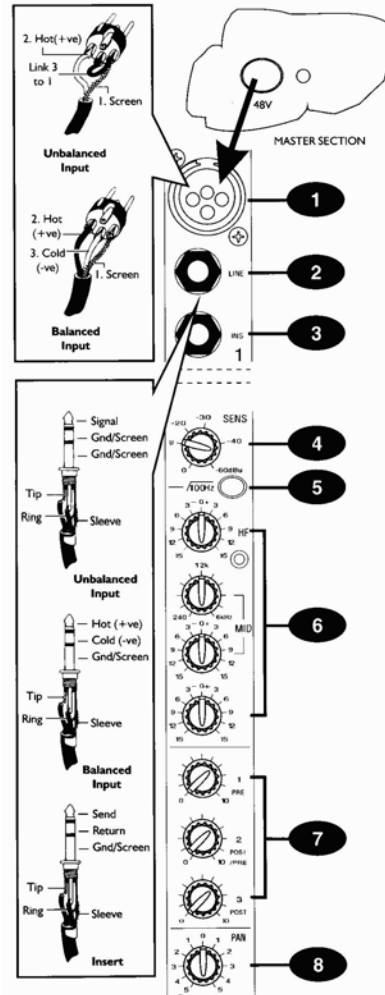
Connecting up the System

Connecting Up



The Village Outreach mixer has 6 identical mixers whose controls are described in the instructions opposite.

These mixers are **MONO**, so designed for individual microphones and instruments. Use the stereo channels for tape players, decks etc described on page 12.



USING THE FOLIO F1

Mono 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 48V switch down (top right-hand side of the mixer) the 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 INSERT POINT

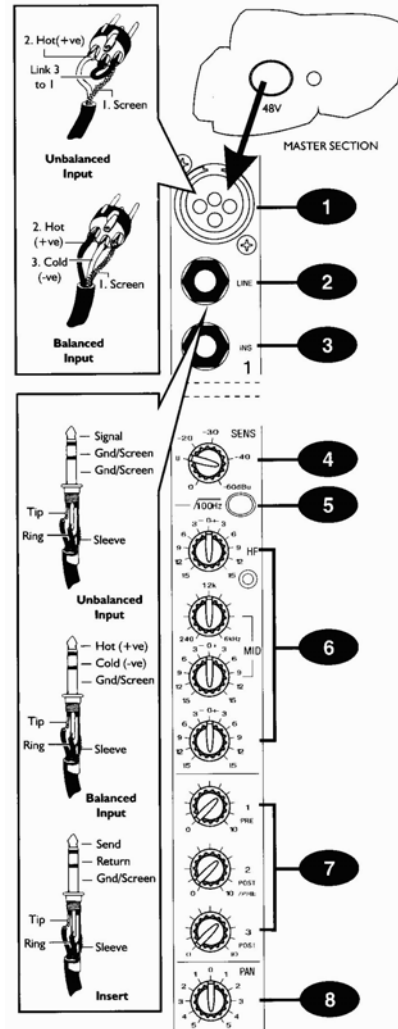
The unbalanced, pre-EQ insert point is a break in the channel signal path, allowing limiters, compressors, special EQ or other signal processing units to be added in the signal path. The Insert is a 3-pole 'A' gauge jack socket which is normally bypassed. When a jack is inserted, the signal path is broken, 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 (see left).

4 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 'U' mark gives 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 20 to learn how to set SENS correctly.



5 100Hz HI-PASS FILTER

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

6 EQUALISER

The 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 really make a difference to clarity. The EQ knobs can have a dramatic effect, so use them sparingly and listen carefully as you change any settings so that you get to know how they affect the sound.

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

There are two knobs which work together to form a SWEPT MID EQ. 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 this 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.

7 AUX SENDS

These are used to set up a 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 ON switch is released.

AUX SEND 1

This is always PRE-FADE, POST-EQ and therefore most appropriate for foldback or monitor mixes or external submix.

AUX SEND 2
This is normally POST-FADE, POST-EQ and would typically be used as an effects send, but may be switched globally to PRE-FADE, POST-EQ using the POST/PRE switch on the Master section, providing a second foldback or monitor send if required.

AUX SEND 3
This is always POST-FADE, POST-EQ for use as effects sends, external sub-mix (or for a Centre Voice speaker cluster or mono Tape mix).

8 PAN
This control sets the amount of the channel signal feeding the Left and Right MIX buses, 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.

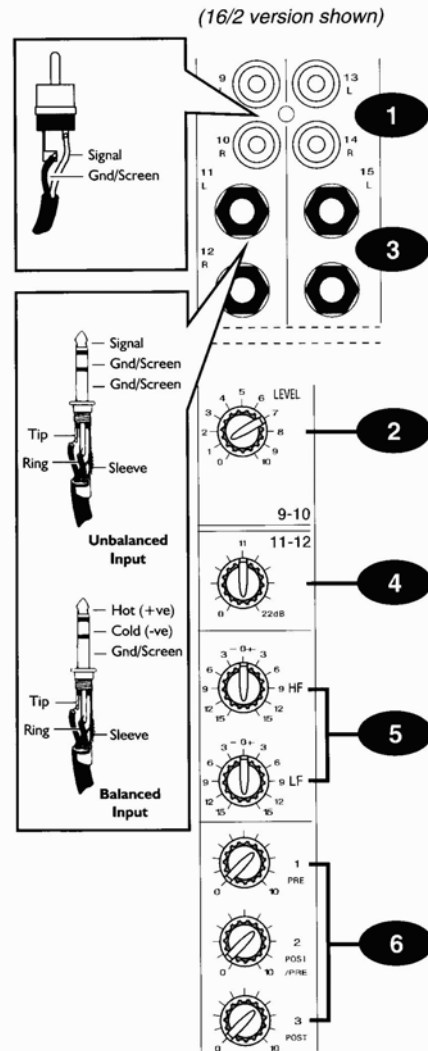
9 ON
All outputs from the channel except inserts are muted when the ON switch is released and enabled when the switch is down, allowing levels to be pre-set before the signal is required.

10 FADER
The **100mm FADER**, with a custom-designed law to give even smoother control of the overall signal level in the channel strip, allows precise balancing of the various source signals being mixed to the Master Section. 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 20 for help in setting a suitable signal level.

11 PFL
When the latching PFL 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 (MIX or 2TK). 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.

The two stereo input channels are used for the tape deck and CD player inputs.

They are already connected.



STEREO INPUT CHANNEL

Each stereo input channel comprises two pairs of inputs per channel strip:

1 UNBALANCED INPUTS (Upper)
 These high impedance inputs are unbalanced on RCA phono connectors, and are intended for use with CD players, DAT machines or Hi-Fi equipment. Alternatively they may be used as simple effects returns or stereo instrument inputs.

2 LEVEL (Unbalanced inputs)
 The LEVEL control sets the level of the channel signal to Mix.

3 BALANCED INPUTS (Lower)
 These high impedance inputs accept 3-pole 'A' gauge (TRS) jacks. Use these inputs for sources such as keyboards, drum machines, synths, tape machines or processing units. The inputs are BALANCED for low noise and top quality from professional equipment, but you can use UNBALANCED sources by wiring up the jacks as shown in the "Connecting Leads" section on page 28 in this manual, although you should then keep cable lengths as short as possible. Mono sources may be used by plugging into the left jack only.

4 GAIN (Balanced inputs)
 The GAIN control sets the input level to the channel, allowing matching to a wide range of line level sources.

5 EQUALISER

HF EQ

Turn clockwise to boost high (treble) frequencies, adding crispness to percussion from drum machines, synths and electronic instruments. Turn anticlockwise to cut these frequencies, reducing hiss or excessive brilliance. Set the knob in the centre-detented position when not required. The control has a shelving response giving 15dB of boost or cut at 12kHz and above.

LF EQ

Turn clockwise to boost low (bass) frequencies, adding extra punch to synths, guitars and drums. Turn anticlockwise to reduce hum, boominess or improve a mushy sound. Set the knob to the centre-detented position when not required. The control has a shelving response giving 15dB of boost or cut at 60Hz and below.

6 AUX SENDS

These are used to set up a 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). The Aux Sends are muted with the other channel outputs when the ON switch is released.

AUX SEND 1

This is always PRE-FADE, POST-EQ and therefore most appropriate for foldback or monitor mixes.

AUX SEND 2
This is normally POST-FADE, POST-EQ and would typically be used as an effects send, but may be switched globally to PRE-FADE, POST-EQ using the POST/PRE switch on the Master section, providing a second foldback or monitor send if required.

AUX SEND 3
This is always POST-FADE, POST-EQ.

7 BALANCE
This control sets the amount of the channel signal feeding the Left and Right MIX buses, allowing you to balance the source in the stereo image. When the control is turned fully right or left you feed only that side of the signal to the mix. Unity gain is provided by the control in the centre-detented position.

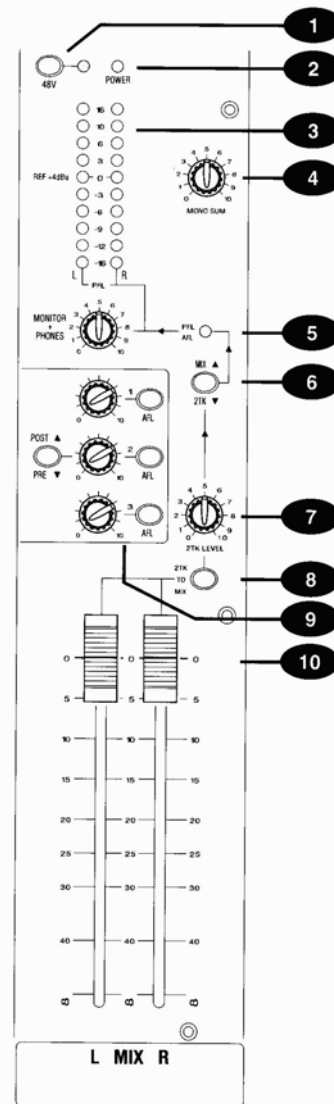
8 ON
All outputs from the channel except inserts are muted when the ON switch is released and enabled when the switch is down.

9 FADER
The 100mm FADER gives you smooth control of the overall signal level in the channel strip, allowing precise balancing of the various source signals being mixed to the Master Section. It is important that the input level is set correctly to give maximum travel on the fader which should normally be used at around the '0' mark. See the 'Setting Up & Troubleshooting' section on page 20 for help in setting the right level.

10 PFL
When the latching PFL switch is pressed, the pre-fade, post-EQ signal is fed in mono to the headphones, control room output and meters, where it replaces the selected monitor source (MIX or 2TK). The PFL/AFL LED on the Master section illuminates to warn that a PFL is active. The Left and Right meters display the PFL signal in mono. This is a useful way of listening to any required input signal without interrupting the main mix, for making adjustments or tracing problems.

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This section of the mixer controls the output to the power amplifier and hence the overall sound.



Master Section

1 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 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

2 POWER INDICATOR

This LED lights to show when power is connected to the console.

3 BARGRAPH METERS

The 3-colour peak reading BARGRAPH METERS normally follow the Monitor selection to show either the level of the MIX RIGHT and MIX LEFT outputs or the 2TK input if the MIX/2TK switch (6) is pressed, 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 PFL or AFL switch is pressed, the meters switch to show the selected PFL/AFL signal on both meters, in mono.

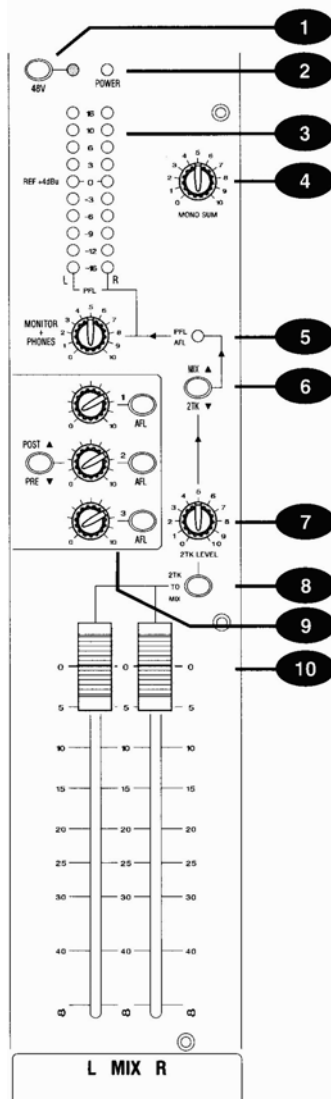
4 MONO SUM

The Mix Left and Right signals are summed to an impedance balanced MONO output on a 3 pole 'A' gauge jack. Output level is set by the dedicated rotary control. Monitoring of the Mono output can, if required, be done at the external equipment it feeds, or when the signal is brought back to a spare console input.

5 MONITOR + PHONES LEVEL

This control sets the output level to the MONITOR LEFT & RIGHT outputs. If HEADPHONES are plugged into the PHONES jack the Monitor outputs are cut off, and the knob then sets the headphone listening level. When the PHONES are unplugged the Monitor output is restored.

When any PFL or AFL switch is pressed the source for the Monitor outputs and Headphones is switched to the mono PFL/AFL signal without interrupting the other outputs from the mixer, to allow individual signals to be monitored. The PFL/AFL LED illuminates to show that PFL/AFL is the source for the monitors and meters. The original monitor source is restored when the PFL/AFL switches are released.



6 MIX/2TK

Pressing the 2TK switch selects the 2TK input as the monitor source, instead of the MIX.

7 2TK LEVEL

The rotary control sets the level of the 2 Track Tape input, which is routed to the headphones, monitor outputs and meters. These unbalanced inputs, on RCA phono connectors, are ideal to connect the playback of a tape machine for monitoring.

8 2TK TO MIX

Press this switch to add the 2TK signal to the stereo Mix, at a level set by the 2TK LEVEL control (7). The signal is added pre-insert, pre-fader, and is an ideal way of feeding pre-show music to the mix in live applications, or could be used as an alternative effects return or line level input if required.

9 AUX MASTERS

Each of the three Aux outputs has a master output level control and associated AFL switch.

AUX AFLs

Just like the PFL switches on the channels, you can monitor each AUX output by pressing the AFL switch. This routes the AUX output signal to the MONITOR or PHONES, replacing any existing signal (normally the Monitor receives either MIX, SUB or 2TK, see above). 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.

AUX 2 POST/PRE

The input channels provide both Pre- and Post-Fade AUX 2 sends which may be selected desk-wide on the Master Section. Press the POST/PRE switch to make all of the AUX 2 Sends on the channel strips PRE-FADE, POST-EQ. This means that they will all be unaffected by the position of the channel faders, making them ideal for FOLDBACK or MONITORING. When the switch is released the AUX 2 Sends are all POST-FADE, POST-EQ and will fade up and down with the channel faders. This is more suitable for effects sends which need to fade out with the associated source.

10 MASTER FADERS

The MASTER FADERS set the final level of the Left and Right MIX 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.

Troubleshooting

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 inside the rear cover 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 channel as follows:

- Connect your sources (microphone, keyboard etc.) to the required inputs and press the ON switches. Note: Phantom powered mics should be connected before the 48V is switched on.
- Set Master faders at 0, input faders at 0, and set power amplifier levels to about 70%.
- Provide a typical performance level signal and press the PFL button on the first channel, monitoring the level on the bargraph meters.

- 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).
- Repeat this procedure on other channels as required. As more channels are added to the mix, the meters may move into the red section. Adjust the overall level using the Master Faders if necessary.
- 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 Master Faders.

Troubleshooting

No Power

- Is the mains supply present? Check the mains outlet with another device.
- Is the power lead firmly connected?
- If appropriate, is the PortaPower unit connected correctly?

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?
- Are the Mix faders set at max., and are input faders set high enough?
- Are the relevant channels turned ON?
- If monitoring 2TK, is the Master Mix/2TK switch pressed to select the 2TK input?
- Is there a PFL/AFL pressed on another channel?

No Monitor output

- Is a headphone jack plugged in?
- Is the Monitor + Phones control set high enough?

Headphones Distorting

- Are the headphones greater than 200Ω impedance?
- Is the Monitor + Phones level set too high?