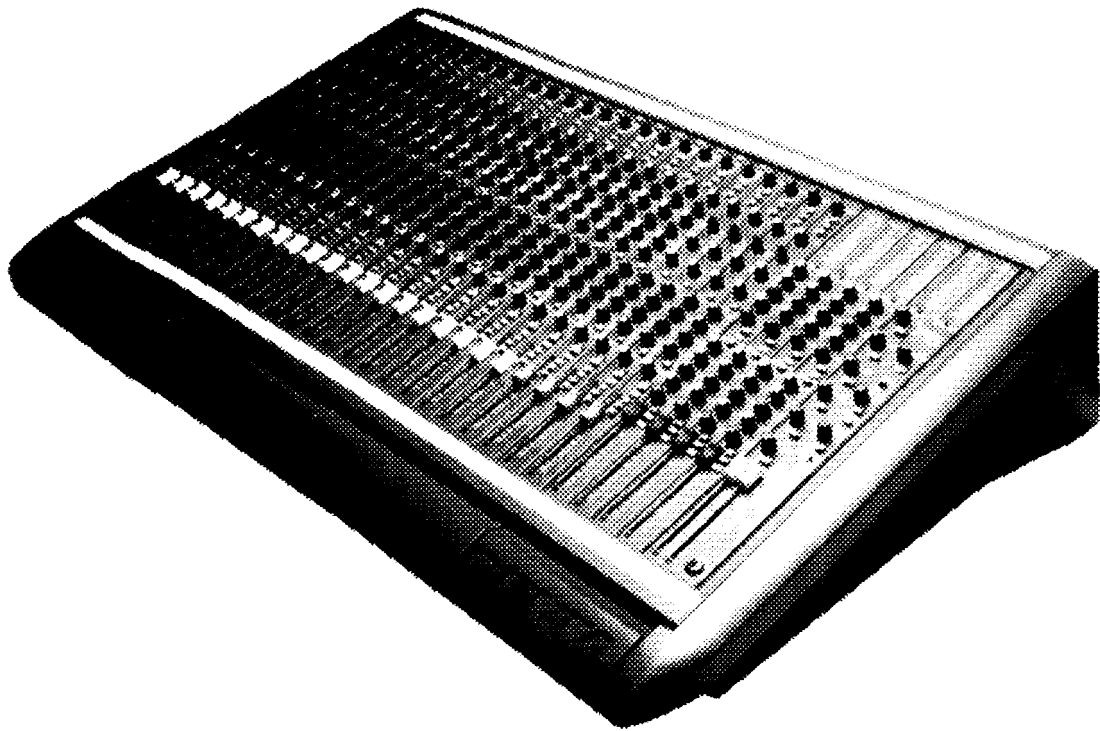


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# USER GUIDE



Soundcraft

200 **DELTA**

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# Introduction



## Introducing the 200 Delta

The 200 Delta series comprises a range of input module, output module and frame options that lets you configure the console for a wide variety of applications. The only constraint on the selection and positioning of modules is that any console must have a master module (2 channels width) which must be fitted at the right hand side of the console, and that any group output modules fitted have to be positioned immediately to the left of this.

**▲ Should you wish to replace or add extra modules, please contact your authorised Soundcraft dealer, who can supply the modules and change the configuration without voiding warranty.**

The system has four group mixing buses, allowing the inclusion of up to four group output modules, together with the main stereo mix bus, which gives the L+R outputs from the master section. Six Auxiliary send buses are provided, giving six independent outputs with master level controls. The master section also contains a monitor switcher which lets you monitor the desk output, an external (stereo) 2-Track return, or a Pre Fade Listen (solo) signal accessing all inputs and groups.

## Precautions and safety instructions

### General precautions

Avoid storing or using the mixing console in conditions of excessive heat or cold, or in positions where it is likely to be subject to vibration, dust or moisture. Do not use any liquids to clean the fascia of the unit: a soft dry brush is ideal. Use only water or ethyl alcohol to clean the trim and scribble strips. Other solvents may cause damage to paint or plastic parts.

Avoid using the console close to strong sources of electromagnetic radiation (e.g. video monitors, high power electric cabling): this may cause degradation of the audio quality due to induced voltages in connecting leads and chassis. For the same reason, always site the console power supply away from the unit.

In all cases, refer servicing to qualified personnel.

### Handling and transport

The console is supplied in a rugged cardboard box. If it is necessary to move it any distance after installation it is recommended that this packing is used to protect it. Be sure to disconnect all cabling before moving. If the console is to be regularly moved (e.g. for touring) we recommend that it is installed in a foam lined flight case. At all times avoid applying excessive force to any knobs, switches or connectors.

### Power supplies and cabling

**△ Always make sure that the power supply has been set to the same source voltage as the mains supply.**

Consoles with up to 28 channel slots (up to 24 input) are powered by the Soundcraft CPS150 PSU, and are fitted with a 5 way SRC DC power input connector.

Consoles with 36 channel slots (32 input), and 24 input consoles with 16 or more stereo inputs are powered by the Soundcraft CPS450 PSU, and are fitted with a 10 way SRC DC power input connector.

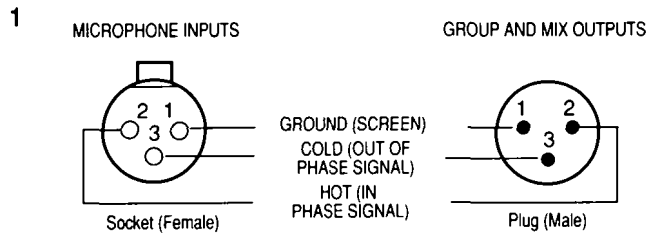
Always use the power supply and power cable supplied with the mixer: the use of alternative supplies may cause damage and voids the warranty; the extension of power cables may result in malfunction of the mixing console.

**△ Always switch the power supply off before connecting or disconnecting the console power cable, removing or installing modules, and servicing. In the event of an electrical storm, or large mains voltage fluctuations, immediately switch off the PSU and unplug from the mains.**

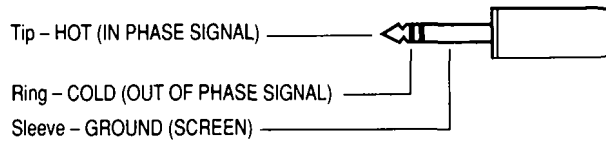
## Connections

### Wiring conventions

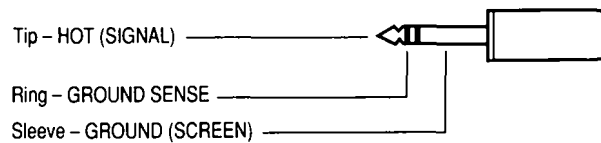
The standard 200 Delta console uses two different types of audio connector, 3 pin XLR (diagram 1) and 1/4" three pole (A gauge or stereo) jacks. The latter are used in two different configurations, see diagrams 2 and 3. The rear frame of the console has standard apertures fitted with blanking panels. Your Soundcraft dealer can supply a variety of mounting plates to fit these, with EDAC (ELCO) multiway connectors, together with looms to link them to the modules. Refer to options list on page 26 for details and part numbers.



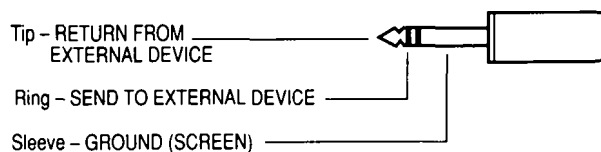
**2a** 1/4" Stereo Jack Plug used as balanced input: line inputs and tape returns



**2b** 1/4" Stereo Jack Plug used as ground compensated or unbalanced output: direct outputs, auxiliary send outputs and control room monitor outputs



**3** 1/4" Stereo Jack Plug used as insert send/return



## Connections

### Signal levels

It is important to supply the correct input levels to the console, otherwise signal-to-noise ratio or distortion performance may be degraded; and in extreme cases damage to the internal circuitry may result. Likewise, on all balanced inputs avoid sources with large common mode DC, AC or RF voltages, as these will reduce the available signal range on the inputs. Note that 0dBu = 0.775V RMS.

The microphone input is designed for use with balanced low impedance (150 or 200 ohm) microphones.

**⚠ DO NOT use unbalanced microphones or battery powered condenser microphones with the +48V phantom power switched on: degraded performance or damage to the microphone may result.**

The sensitivity of the microphone input is variable from -2dBu to -70dBu (for +4dBu at the Stereo Mix outputs), and the maximum input level (balanced) is 20dB above the set sensitivity—that is, with the gain control at minimum, the maximum input level is +18dBu. Although the microphone input can thus handle some line level signals, we don't recommend this, since the source may be unduly loaded by the low (2Kohm) input impedance, or be damaged by the +48V phantom power.

The line input has a sensitivity variable between -20dBu and +10dBu, and can also handle a maximum input level up to 20dB above the set value. Note that the maximum input level for unbalanced inputs is 4 or 5 dB less than that for balanced signals, so very high level unbalanced signals (e.g. loudspeaker outputs of power amplifiers) may cause distortion. The input impedance is approximately 20Kohms, and thus high impedance sources (e.g. electric guitars) may be loaded too heavily. Such sources are best fed through an external DI (Direct Inject) box to the microphone input.

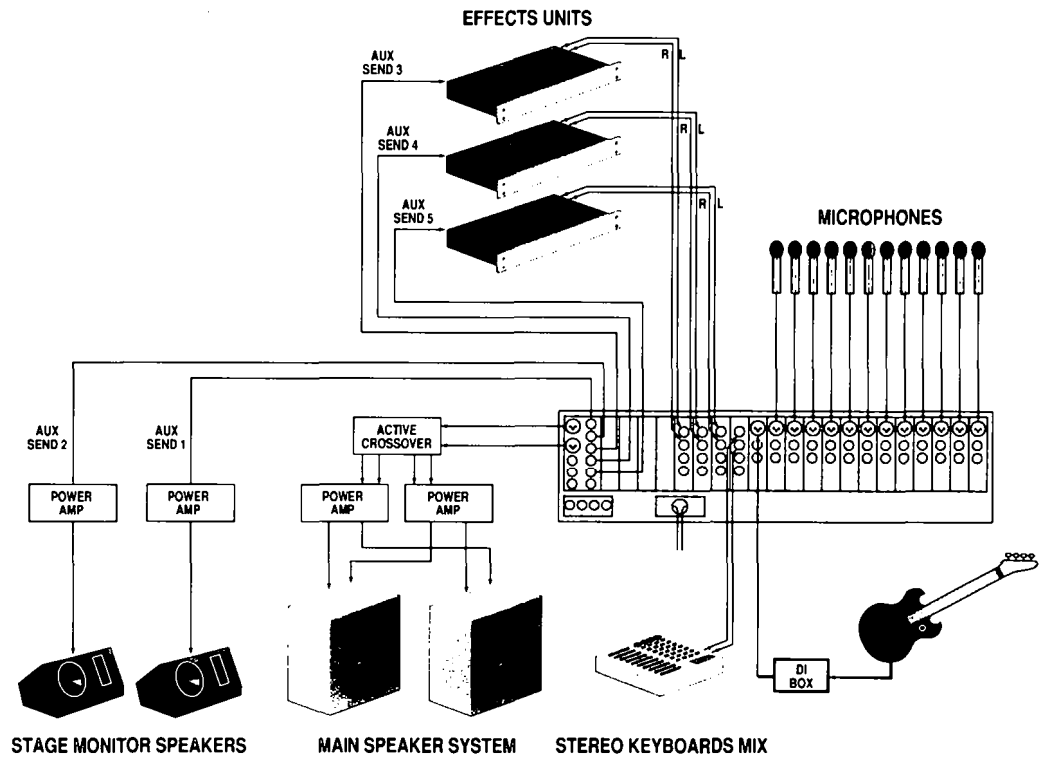
The main outputs of the console (e.g. Stereo mix, group outputs, aux sends) have a nominal output level of +4dBu, and an impedance of 75ohms. The Stereo mix and Group outputs also have the facility to switch the operating level to -10dBV to allow easy interface to domestic and semi professional equipment. These outputs will deliver full level (+21dBu unbalanced, +27dBu balanced) into loads of greater than 600ohms. Secondary outputs, such as channel insert sends and channel direct outputs (all unbalanced) have a nominal output level of -2dBu and a slightly higher output impedance of 200ohms, and will only deliver the full output level of +21dBu into load impedances of greater than 5Kohms.

## Installation

### Examples of use

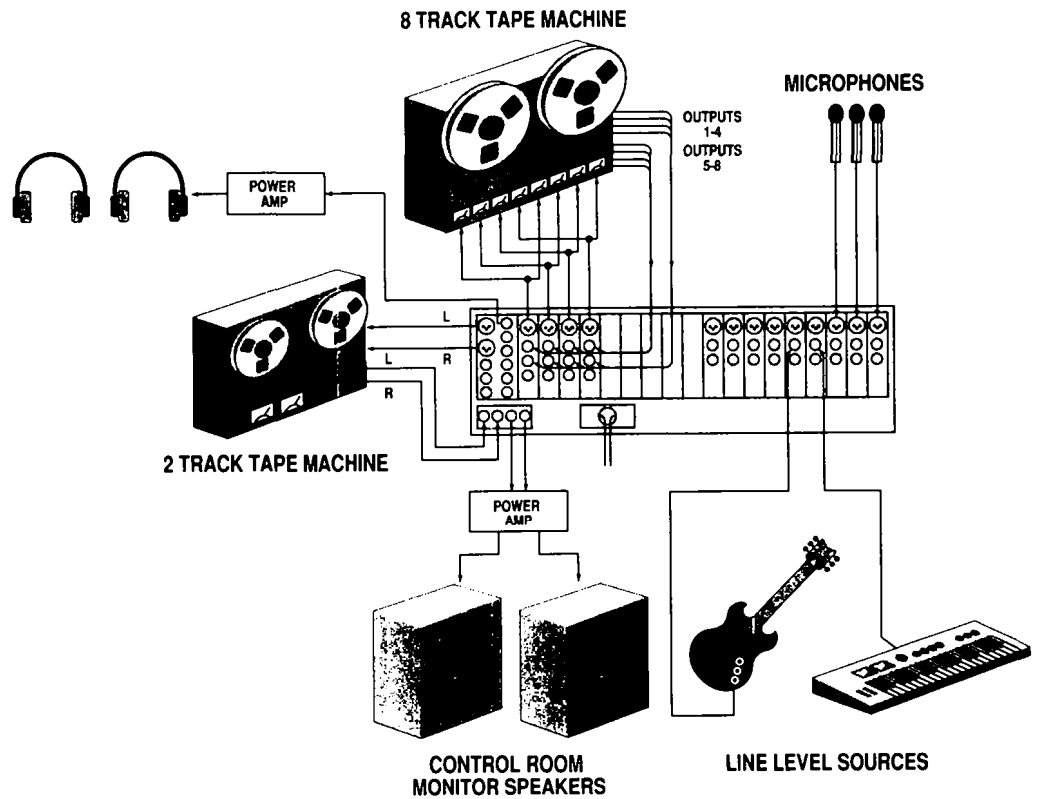
The diagrams opposite and overleaf show typical applications of a 16 input 200 Delta in PA, recording and keyboard mixing situations. Such examples are of course only an indication of possible systems, the exact setup being determined by your own system requirements and the configuration of the console.

Use as the front-of-house console in a sound reinforcement system. Microphones covering drums, guitars, vocals and a DI box for the bass guitar are fed to mic inputs 1 to 12. Stereo input modules are fitted to positions 13 to 16, and receive the outputs from an on-stage keyboard mixer and three stereo effects devices. The output from AUX 1 and AUX 2 feed power amplifiers to provide on-stage monitoring, whereas the outputs from AUX 3 through AUX 5 feed effects processors. The stereo mix outputs feed the main power amplifiers for the house speaker system.

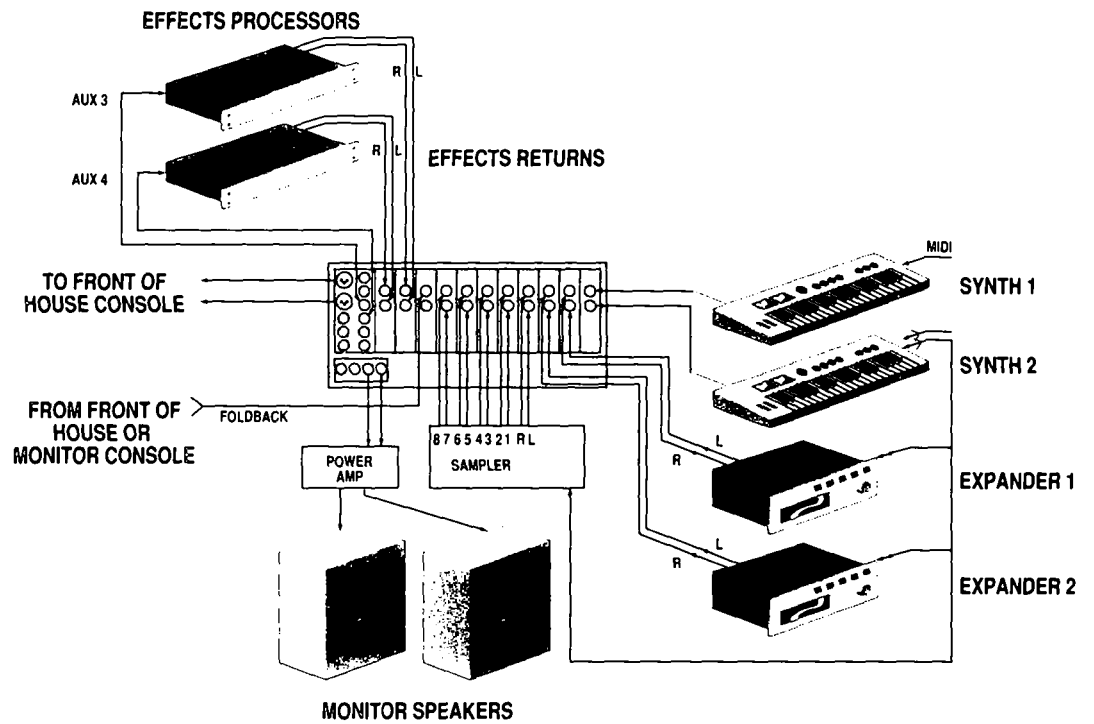


## Eight Track Recording

Mixer in an eight-track recording system. Microphones and line sources (keyboards, Direct Injected instruments, etc) are fed to the input channels, which are routed to group outputs 1...4 as required. The group outputs feed tracks 1 to 4 and 5 to 8 in parallel, and the outputs from the multitrack machine are monitored through the returns on the groups. The stereo mix outputs feed the 2-track mastering recorder, which can be monitored through the 2-track return. AUX 1 feeds an amplifier driving artistes headphones, whilst AUX 3 to 6 are used as effects sends.

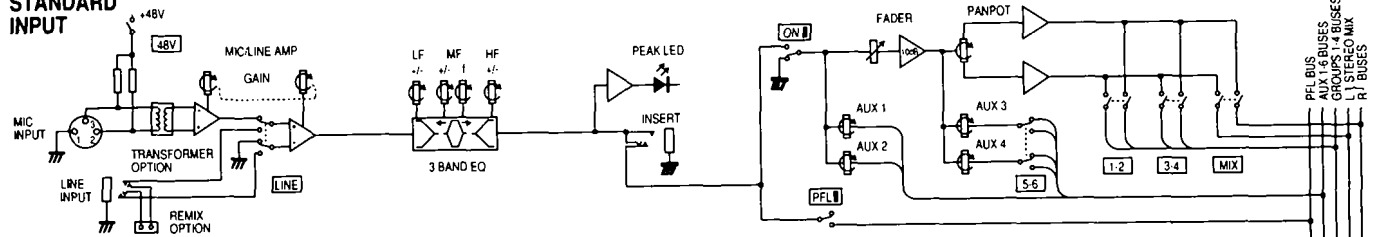


On-stage rack mounting keyboard mixer. Two synthesisers, two expanders, a sampler, a foldback send from the main PA and two stereo effects processors are connected to the inputs. AUX 3 and AUX 4 outputs feed the inputs of the effects devices. The stereo MIX outputs are fed to the front of house console, the control room outputs feeding the local monitor amplifiers.

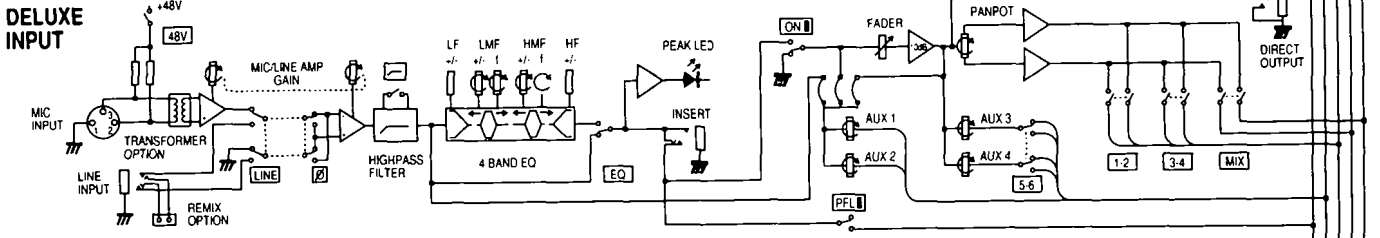


# Module block diagrams

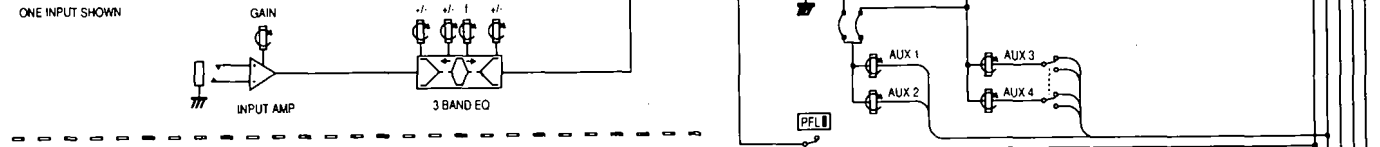
## STANDARD INPUT



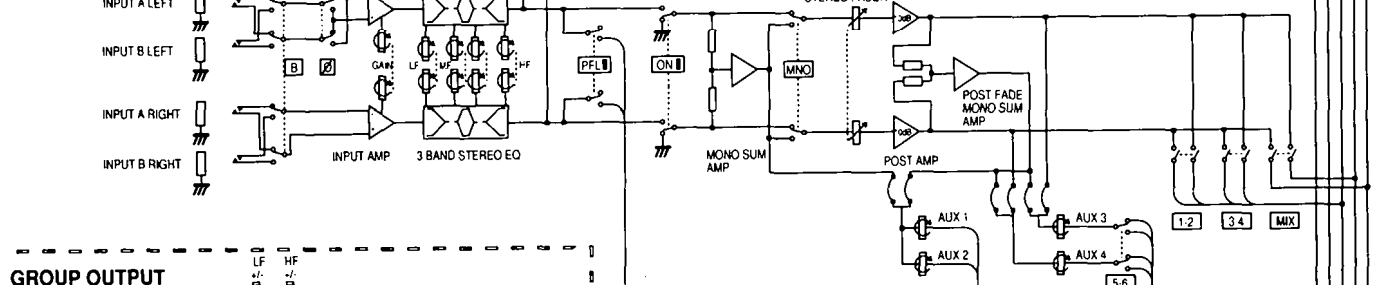
## DELUXE INPUT



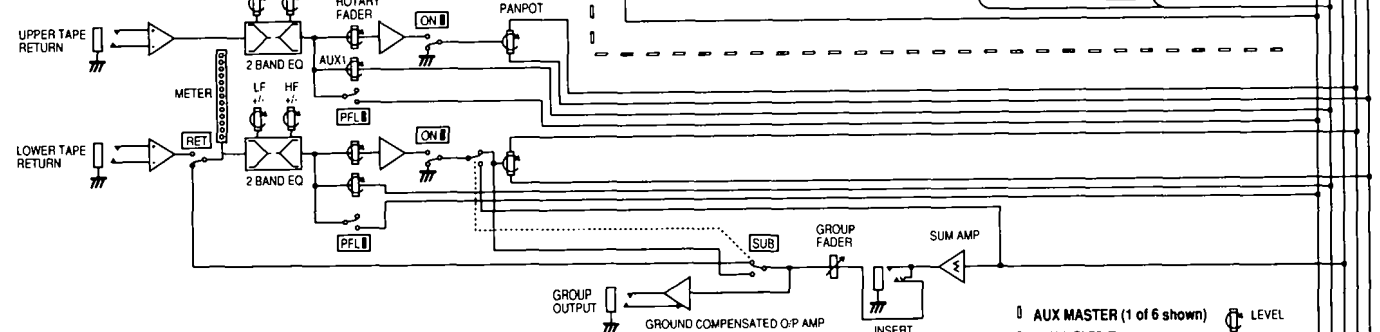
## DUAL LINE INPUT



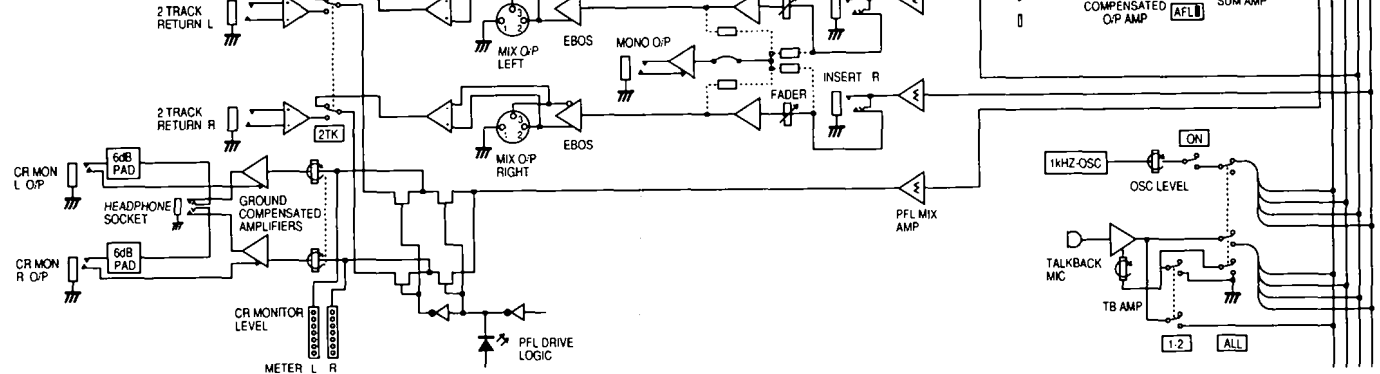
## STEREO LINE INPUT



## GROUP OUTPUT

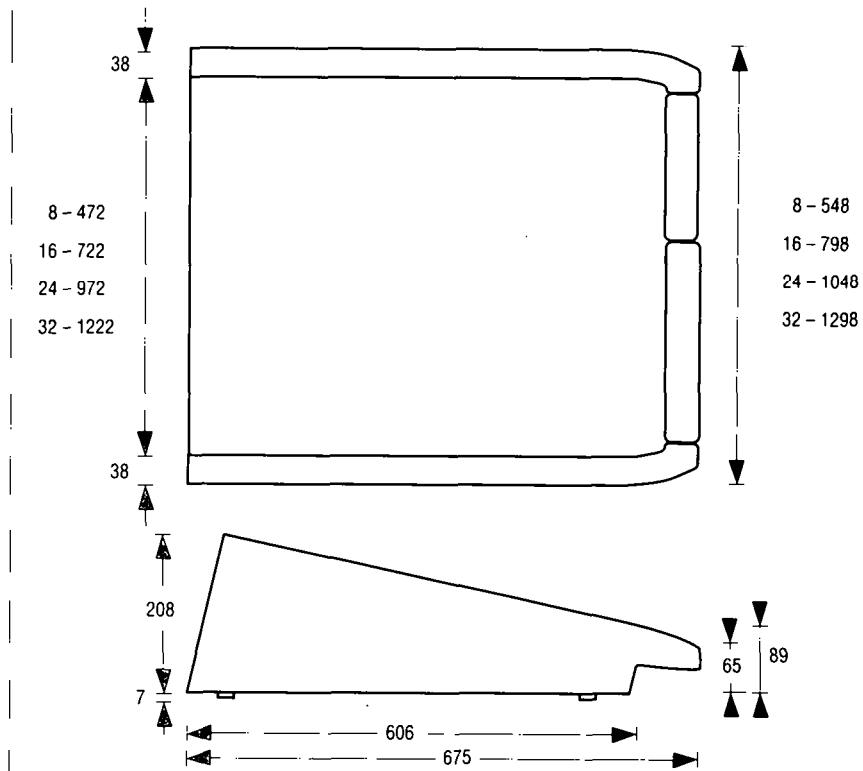


## MASTER

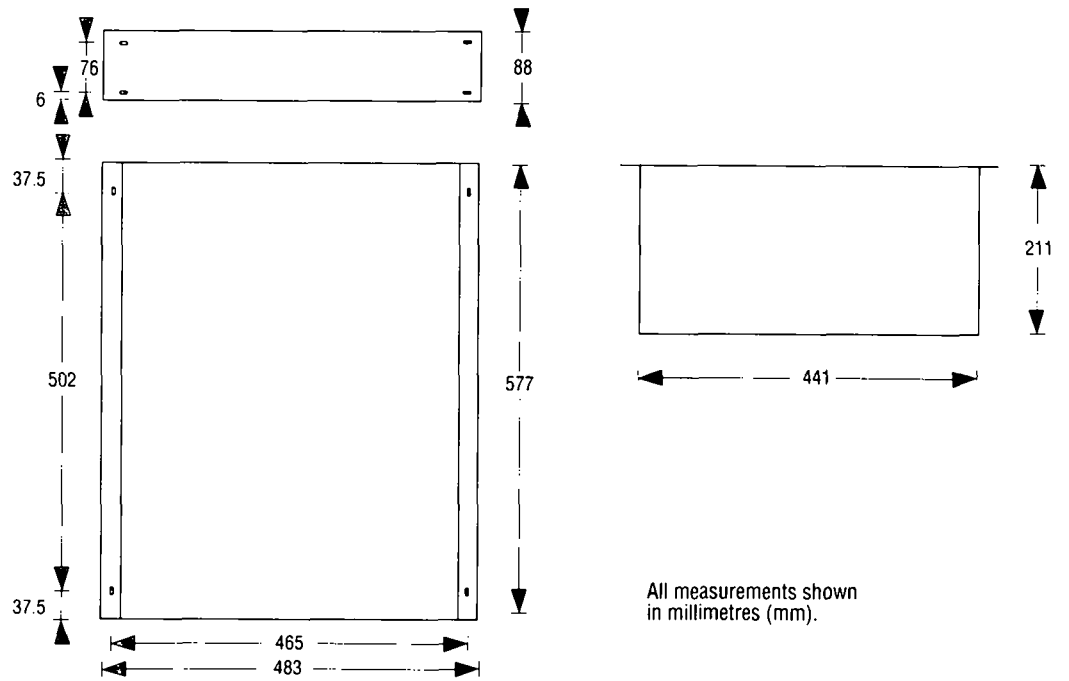


Dimensions

Delta Desk Outline Dimensions



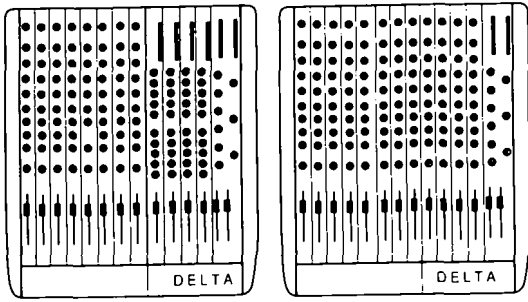
Delta Rack Outline Dimensions



All measurements shown in millimetres (mm).

# Configurations

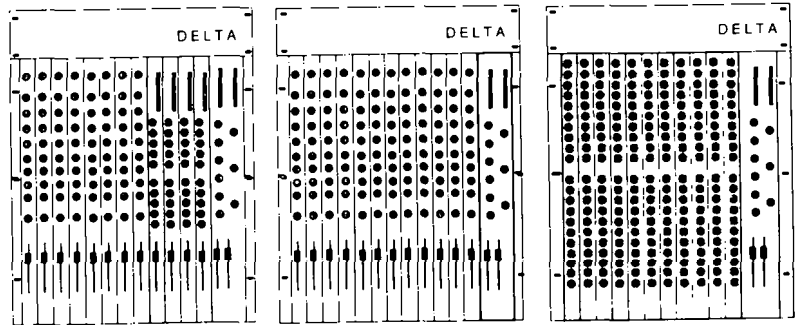
## 8 Input Frame



8.4.2

12.2

## 8 Input Rack Frame

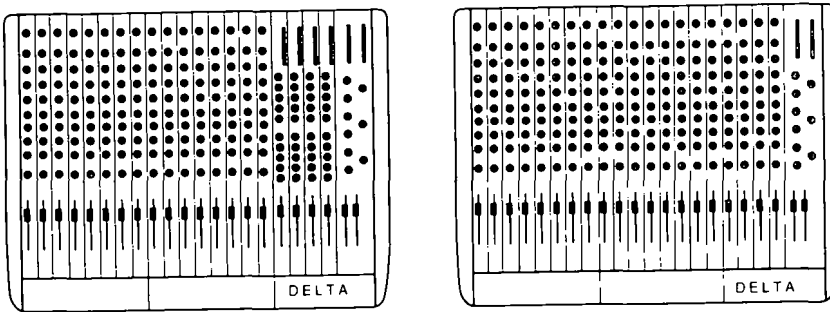


8.4.2 Rack

12.2 Rack

24.2 Rack

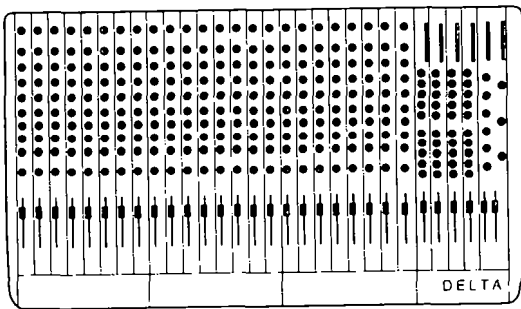
## 16 Input Frame



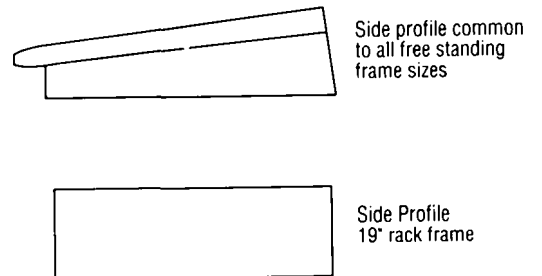
16.4.2

20.2

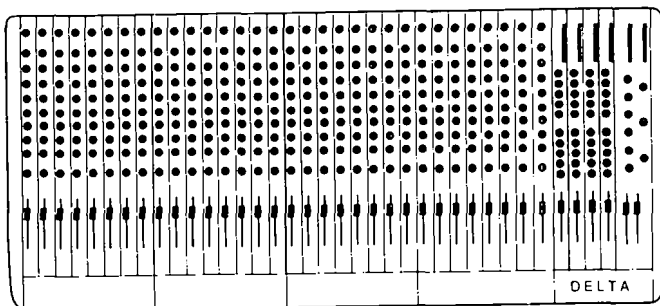
## 24 Input Frame



24.4.2



## 32 Input Frame



32.4.2

### KEY



Standard Deluxe Stereo Inputs



Dual Line Inputs



Group Outputs



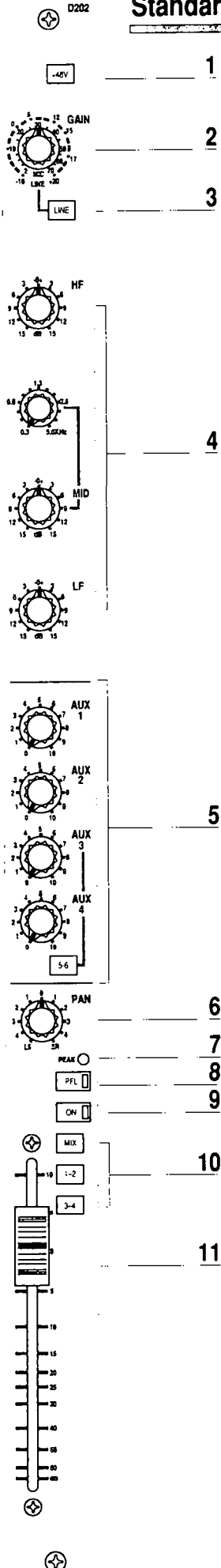
Master

Above only shows samples of most popular options – there are no practical restrictions to potential configurations in any 4 frames, using the individual group modules and separate master module.

# Module descriptions, specifications and operation



# Standard input module



## Channel input

**1** The **+48V** switch switches 48V phantom power to the microphone input, for use with phantom powered condenser microphones and DI boxes.

**2** The **GAIN** control adjusts the sensitivity of both the mic and line inputs. The microphone input is adjustable from -2dBu to -70dBu, and the line from +10dBu to -20dBu.

**3** The **LINE** switch selects the line input to the channel; the default is MIC.

## Equaliser

**4** The standard input channel is provided with a 3 band equaliser comprising shelving **HF** and **LF** controls, and a peaking **MID** control, with a frequency control that allows the selection of centre frequencies between 300Hz and 5KHz. Centre detents on the controls indicate the positions for a flat response. Immediately after the EQ section in the signal path is the insert point. This jack on the rear connector panel allows the routing of the channel signal through an external processing device.

## Auxiliaries

**5** Four auxiliary send controls are provided. **AUX 1** and **AUX 2** are fed from a post EQ, pre fader signal, so that the send level is not affected by the channel fader, allowing the easy creation of for example foldback mixes unaffected by changes in the main mix. **AUX 3** and **AUX 4** are fed post EQ, post fader, so their level follows the channel output level set by the fader. Their output can be routed to Aux sends 5 and 6 instead of 3 and 4, by using the **5-6** switch.

## Routing

**6** The **PAN** control determines the relative levels sent to the L/group1/group3 and R/group2/group4 buses. In the centre, equal levels are sent to both sides (with a 4.5dB level drop relative to fully clockwise or anticlockwise). Rotation fully anticlockwise sends full level to the left/odd buses, cutting the send to the right/even buses; rotation fully clockwise does the opposite.

**10** The routing switches select which buses the post fade, post pan signal is fed to. Each switch enables one Left/Right pair of buses, hence the **1-2** switch sends the signal to groups 1 and 2, the **3-4** switch to groups 3 and 4, and the **MIX** switch to the stereo mix outputs. We recommend that any unused channels are unrouted to maximise the audio performance of the console.

## Frequency Response Curves of the Equaliser

