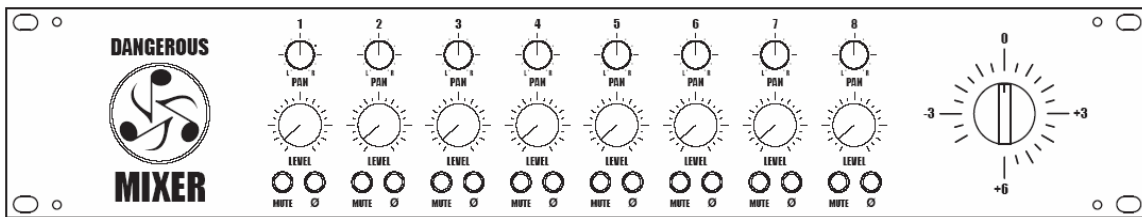


The Dangerous Mixer manual

The Dangerous Music **Mixer** was designed for discriminating engineers who need the cleanest 8x2 summing with hand built quality. We were asked to design a summing box like the **2Bus** but with level, pan, phase, and mute controls. The device needed easy expansion capability to hook up to a **2Bus** or **2Bus It** and in that capacity makes a perfect effects return and midi keyboard mixer. An expansion unit called **Sends** is now available that hooks up to **Mixer**, providing 4 auxiliary send feeds for each channel of the mixer. Live to mix engineers will appreciate the phase and mute switches. Everyone will love the stellar sound quality. This manual will explain the features, controls, connections, and internal adjustments of the unit. We tried to keep it short so please take a few minutes to look it over.



Overview.....	1
Safety review.....	2
Back panel connectors and hookup	3
Front panel controls	4
Balanced and Unbalanced connections.....	5
Internal jumpers and adjustments	6
Specifications and connector pinouts	7

Safety Review



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying this product.

Certain precautions should be taken when using electrical products. Please observe the safety hints by reading the manual and obtaining qualified help if necessary to adhere to the precautions.



1. Always use a properly grounded power supply cord with this product.

Please do not defeat the ground pin on the mains plug. This connection provides earth to the chassis and signal grounds inside the device for clean and quiet operation.



2. Avoid high temperature operation in equipment racks by providing air circulation.

The number one killer of electronic gear is HEAT. Vented rack panels may look like wasted space to an interior decorator, but they look like *beauty* to a technician or equipment designer! If the front panel is hot, it is roasting inside the box.



3. Avoid areas of high magnetic fields. The steel chassis of **Mixer** is designed to shield the circuits from EMI and RFI (magnetic and radio interference). When installing equipment in racks, it is prudent to put power amplifiers and large power supplies at least several rack spaces, if not in a different rack, away from equipment that deals with low level signals. Separation of high level and low level equipment can pre-empt trouble caused by heat and EMI.



4. Care should be taken to avoid liquid spills around equipment. If a spill occurs, please shut off the gear and disconnect the mains. A qualified technician should investigate accidents to prevent further equipment damage or personnel hazards caused by spills.



5. If one is uncomfortable with opening gear and changing jumpers or making adjustments, please seek qualified help if necessary.



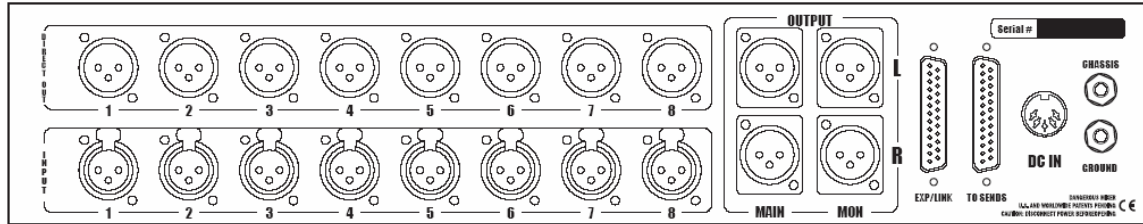
6. If adjustments or jumper changes are required, please disconnect the mains plug before opening the top. Dropped screws or tools on a live circuit board can ruin one's day and subsequent damage is not covered by the warranty.

Dangerous Music Incorporated reserves the right to change the specifications or modify the designs of its equipment. Sending in the registration card is our way of keeping in touch with users of our equipment should this become necessary. Registration information is always kept confidential and never disclosed to third parties for any reason. Company contact information is on the last page of this manual.



The CE sign on this product signifies the fact that the Mixer has been tested and verified to conform to the applicable standards of 89/336/EEC; EN55103-1 (emissions) EN55103-2 (immunity) and EN60065 (safety requirements)

Back Panel connectors and hook up



DANGEROUS MIXER REAR PANEL

Back panel, left to right (viewed from rear).

Inputs 1-8 The 8 female XLR jacks are the main inputs.

Direct Out Mixer can be fitted with a Direct Output board. These outputs are fed post channel level control. This option should be specified if desired upon ordering as it is a factory fit.

Main Outputs The first male XLR's are the main outputs to the mixdown A/D or tape machine. Left is on top, Right on bottom.

Monitor Outs The Monitor Outs feed the mixed signal to the Dangerous Music **Monitor** (or other monitor section).

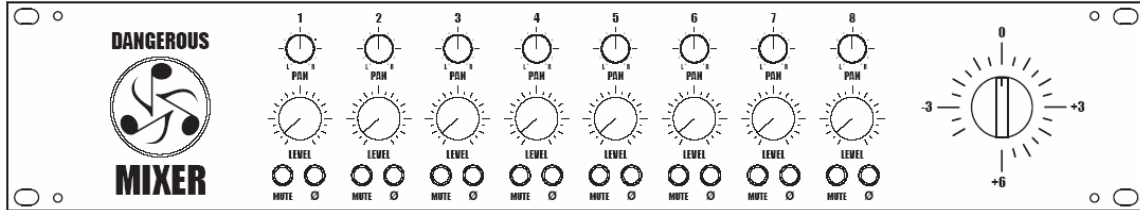
EXP/LINK This connector has a left and right buss inject for stacking capabilities. The pinout is on page 6.

To Sends Mixer can be fitted with the option to drive a Dangerous Sends unit. This option should also be specified upon ordering as the Mixer and Sends unit have to be fitted together for calibration and testing.

DC input Newer units have a 5 pin DIN that connects to an International Power supply. Please plug the DC connector into mixer before applying AC mains power to avoid arcing the contacts.

Ground lugs The ground lugs are strapped for normal use. Should it be necessary to isolate the chassis from the audio ground, the wire can be removed. The top lug is chassis and the bottom is audio ground.

Front Panel Controls

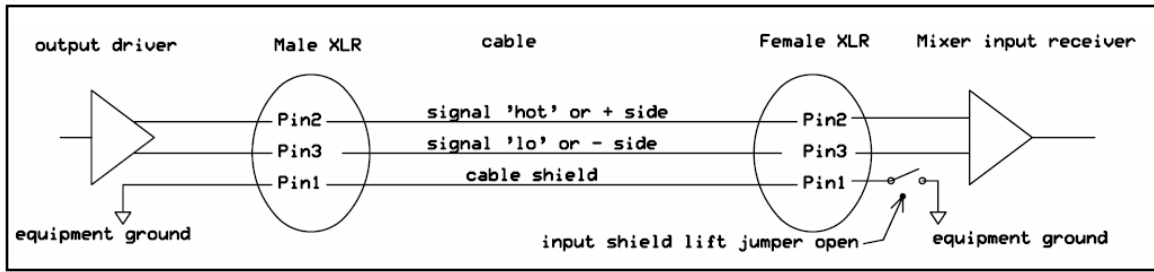


DANGEROUS MIXER FRONT PANEL

Front panel, left to right

- Channels* Each of the input channels has a Level and Pan control along with Phase and Mute switches. The pan controls are accurately adjusted at the factory for consistency from channel to channel. We didn't use a detented control for the panner because with every one we tested, the audio was not in the middle when the control was at the detent. We do carefully align the indexing line on the knob to coincide with center panning.
- Output Gain* The Output Gain control is a stepped attenuator with $\frac{1}{2}$ dB steps and a 10 dB range. The steps are matched to hundredths of a dB with low tempco resistors for unsurpassed sound quality, repeatability, and channel tracking accuracy.

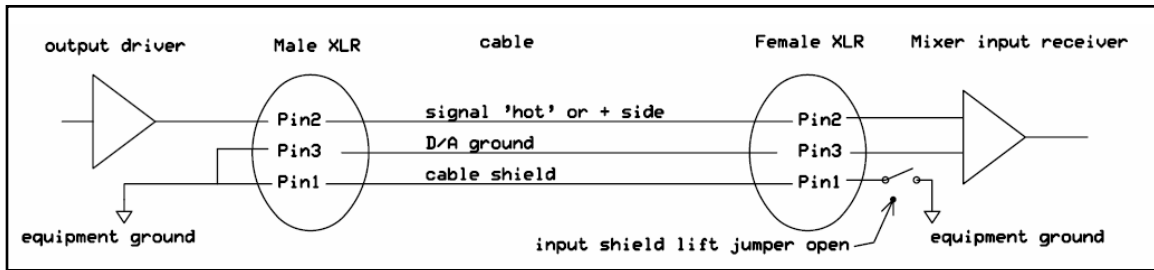
Balanced Audio Connections



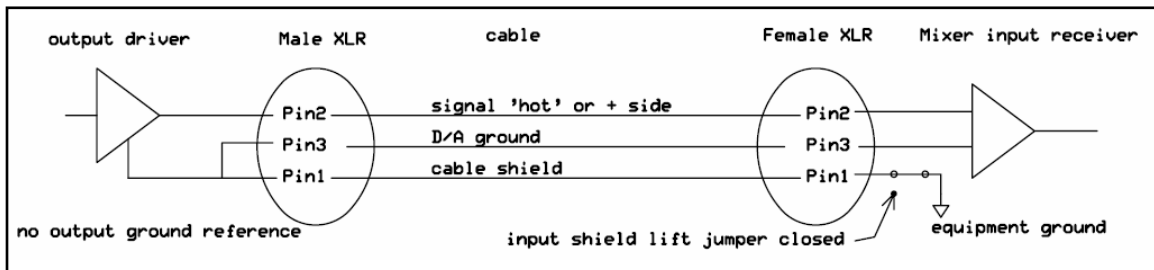
The beauty of balanced connections is that they promote the idea that current should be prevented from flowing down cable shields while letting the audio pass. Pins 2 and 3 carry a signal across them (transverse mode) and any interference that gets through the shield is picked up equally by the wires (common mode). The common mode noise is canceled by the differential action of the instrumentation amplifier in the first stage of the Mixer. Signal gets through and the grounds stay put inside their respective pieces of gear.

Unbalanced Audio Connections

An unbalanced source driving a Mixer input usually presents no problem because of the differential action of the input stage.



It is a good idea to use 3 wire cables even in an unbalanced situation because the Mixer input can keep stray noise away from the signal even without the benefit of common mode rejection. If an unbalanced source gives one trouble, then this is usually because the source doesn't have a proper ground reference. This is why there are **Input Shield Lift** jumpers inside the Mixer (and many other pieces of professional audio gear).



Internal adjustments and jumpers

There are input cable shield ground lift jumpers on all the inputs of Mixer. This is to facilitate proper studio grounding. All equipment in a recording studio that hooks up to the AC mains should be grounded. This is usually accomplished by the third pin of the mains power cord. Sometimes, buzzing noises can be heard in the speakers due to pieces of gear getting multiple ground paths and allowing currents other than **music** into the signal path. People have been known to cure ground hums by randomly lifting the AC mains grounds with “ground lift adapters” or by cutting the third pin off of a mains cable. This practice is frowned upon by the various safety agencies around the world. It is much better to use balanced audio lines and lift the audio cable screen at one end of the cable.

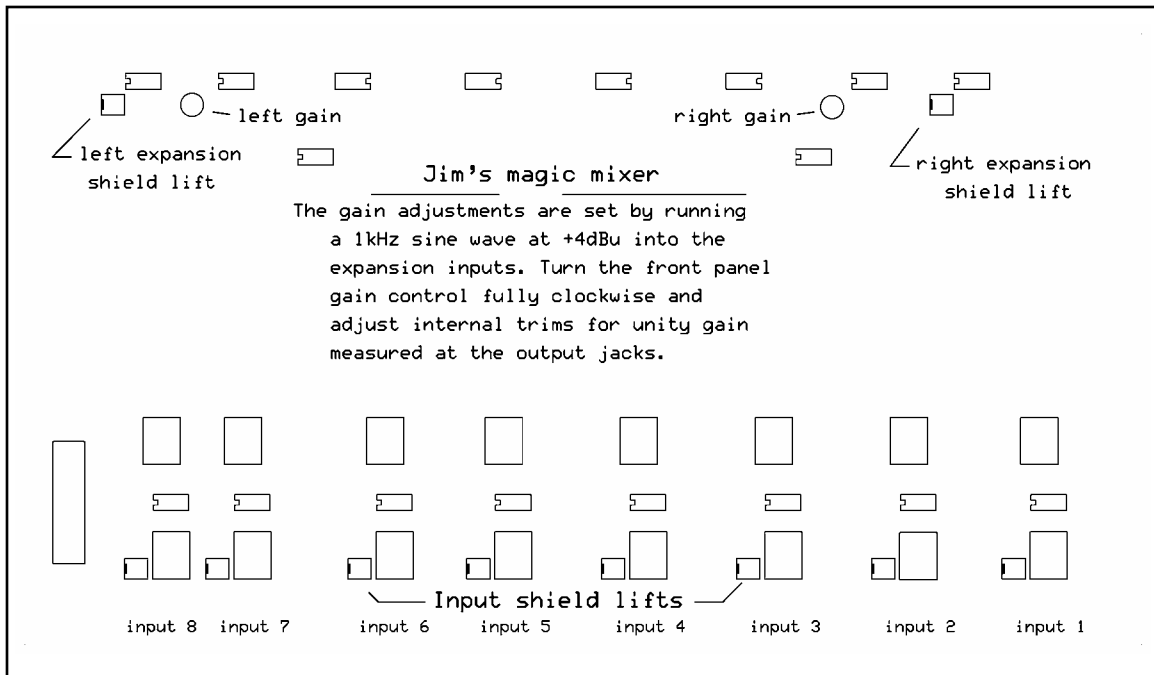
There are jumpers inside of Mixer to change the state of input shield grounding. If a buzz is encountered with an unbalanced input, connecting the jumper associated with that input will probably cure the problem. To do this, the top of the box has to come off.



If one is uncomfortable with opening gear and changing jumpers or making adjustments, please seek qualified help if necessary.



If adjustments or jumper changes are required, please disconnect the mains plug before opening the top. Dropped screws or tools on a live circuit board can ruin one’s day and subsequent damage is not covered by the warranty.



This is the view looking down on the circuit board, rear panel towards viewer.

Specifications and connector pinouts

Measurements made at nominal operating level of +4dBu

<i>Frequency response</i>	20Hz-100kHz within 0.1dB (-3dB @ 5Hz)
<i>THD+noise</i>	0.003% band limited 22Hz-22kHz
<i>IMD60 4:1</i>	0.004%
<i>Crosstalk @ 1kHz</i>	-87dB at panner. -104dB at expansion inputs
<i>Crosstalk @ 10kHz</i>	-85dB
<i>Residual noise</i>	-92dBu total energy in audio band
<i>Max output level</i>	+26dBu
<i>Input impedance</i>	25k ohms balanced
<i>Output impedance</i>	50 ohms balanced
<i>Attenuator gain accuracy</i>	better than 0.02dB
<i>Power consumption</i>	30 watts (40 watts with Sends and Direct Out)
<i>Warranty</i>	2 years parts and labor, subject to inspection. Does not include damage from abusive operation, shipping, or modifications/attempted repairs by unauthorized technicians

Connector pinouts

All XLR connectors

- Pin 1 shield
- Pin 2 +audio
- Pin 3 -audio

Expansion inputs 25 way 'D'

<i>Pin#</i>	<i>function</i>
10	right +
23	right -
11	right shield
24	left +
12	left -
25	shield

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