

OWNER'S MANUAL



Mixing Consoles Mixer

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Ultra low noise 12,16,24,32 - Channel Mic / Line Mixer

- ▲ 12, 16, 24, 32 Mono Input Channels with silver plated XLRs and balanced Line Inputs
- ▲ Ultra-low noise discrete Mic Preamps with +48 V Phantom Power
- ▲ 2 Stereo Input Channels with balanced TRS Jacks
- ▲ Balanced Inputs for highest signal integrity
- ▲ Ultra-musical 3-band EQ and FREQ on all channels
- ▲ Peak LEDs all Mono Channels
- ▲ 4 Aux Sends per channel for external effects and monitoring
- ▲ Separate master output, 4 group outputs, monitor output and headphone outputs
- ▲ Highly accurate 6X12 segment Bargraph Meters

SAFETY INSTRUCTIONS

CAUTION: To reduce the risk of electrical shock, do not remove the cover (or back). No user serviceable parts inside; refer servicing to qualified personnel.

WARNING: To reduce the risk of fire or electrical shock, do not expose this appliance to rain or moisture.

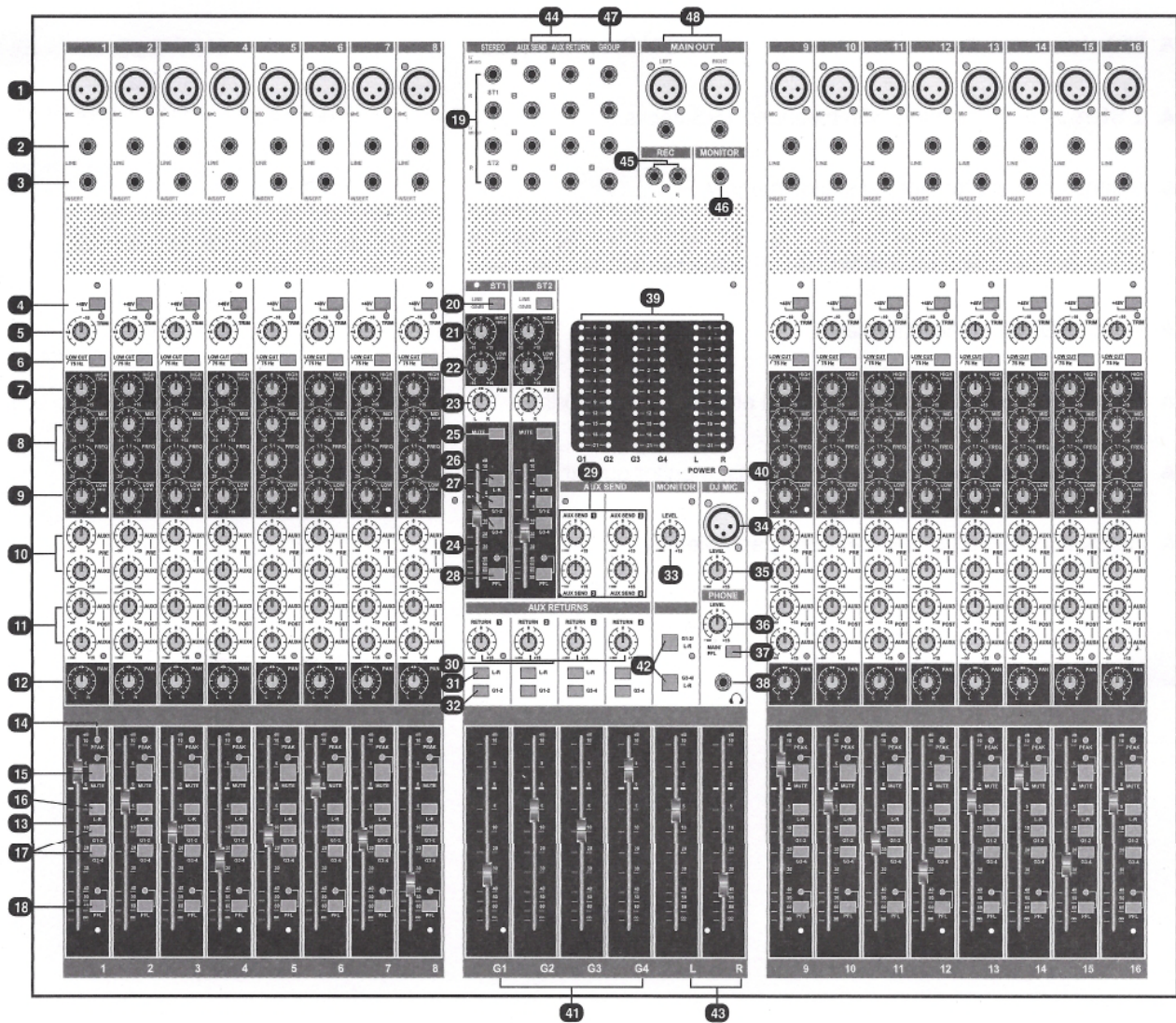


This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure - voltage that may be sufficient to constitute a risk of shock.



This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Read the manual.

A. USER GUIDE OVERVIEW



Here you can find quick information on any feature of the console, and a page reference where you can find a more detailed explanation.

B. INPUT CHANNEL SECTION

1. BALANCE INPUT (MIC)

Electronically Balanced inputs acceptable a standard XLR male connector.
+ 48V Phantom Power available on each input Mic socket.

2. LINE INPUT

The unbalanced Mic input is provided for the use of an unbalance mic and is designed to accept an unbalanced high impedance input signal.
(This use for connection Deck, Turntable, Keyboard etc..)

3. INSERT

The INSERT is a break point in the input channel signal path. It allows the signal to be taken out from the mixer, through an external equipment such as a compressor, and then back to the mixer to continue the final mix output.

4. PHANTOM POWER SWITCH

Depressing this switch for each channel applies 48V DC across all microphone input each channel connectors for remote powering of condenser microphones.
The LED will be turned on when strt working.



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

5. TRIM

This has a function which adjusts the input sensitivity of each channel in order to input the constant level of the signal.

6. LOW CUT

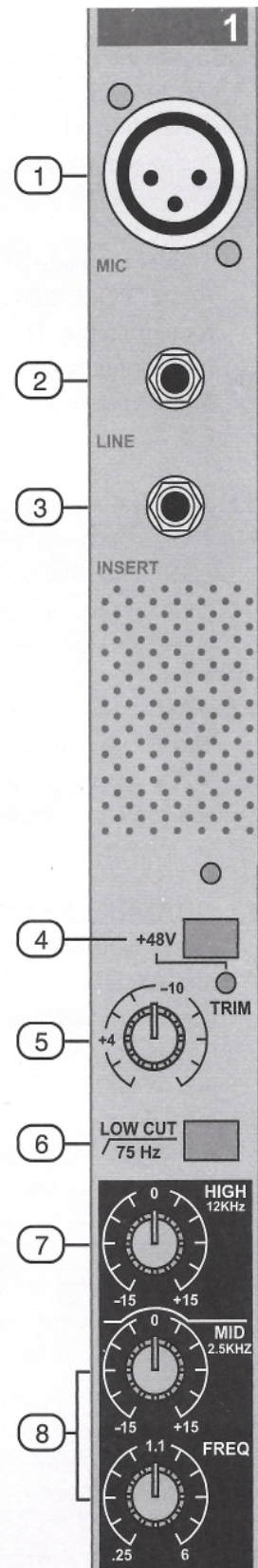
Slide down the slide-switch, insert the 18 dB per octave 75Hz low cut filter in the signal path. This low cut filter is useful on live vocals to reduce stage rumble or "popping" from microphones. It can also be used to cut off low frequency hum.

7. HIGH

Control the high frequency tone of each channel. Always set this control to the 12 o'clock position, but you can control the high frequency tone according to the speaker, the conditions of listening position and listener's taste. Clockwise rotation of the control increases level.

8. FREQUENCY + MID

This equalization has a "bell" response i.e. having reached maximum amplification or attenuation at the selected frequency, the amplitude response returns to zero either side of that frequency. The FREQ at which this occurs is variable between 250Hz. The GAIN is variable between ± 15 dB at the selected frequency with a fixed Q of 1.5Q is a factor a bandwidth.



9. LOW

Control the low frequency tone of each channel. Always set this control to the 12 o'clock position, but you can control the low frequency tone according to the speaker, the conditions of listening position and listener's taste. Clockwise rotation of the control increases the level.

10. AUX 1,2

This is normally derived after the EQ section and channel fader (PRE-FADE, POSE-EQ), and is therefore unaffected by the fader position and routing status. This makes the send particularly suitable for foldback or monitor feeds, which need to be controlled separately from the main P.A. Mix. All pre-fade sends may be selected internally to be PRE-FADE, PRE-EQ.

11. AUX 3,4

This is normally derived after the EQ and channel fader (POST FADE, POST EQ), and is therefore follow any changers in fader level. They are normally used to drive effects processing units which are fed back into the mixer and which must fade out with the input channel.

12. PAN

The pan control sends continuously variable amounts of the post fader signal to either the left or right and G1,G2,G3,G4 main busses. In the center position equal amounts of signal are sent to the left and right or G1,G2,G3, G4 busses.

13. CHANNEL FADER

This is function to adjust the volume of signal connection into each channel and adjust the volume of output, together with master fader. Normal operating position is at the "0" mark, providing 4dB of gain above that point, if required.

14. PEAK

A red LED indicates a signal level at the insert return point, premaster fader, It illuminates at approximately 5dB below clipping.

15. MUTE

All outputs from the channel are enabled when the MUTE switch is released and muted when the switch is down. The LED will be turned on when strt working.

16. STEREO L-R

Push the switch, can use ST L-R fader.

During the stereo L-R switch pushed, you can't use ST L-R fader.

17. GRPS 1-2, 3-4

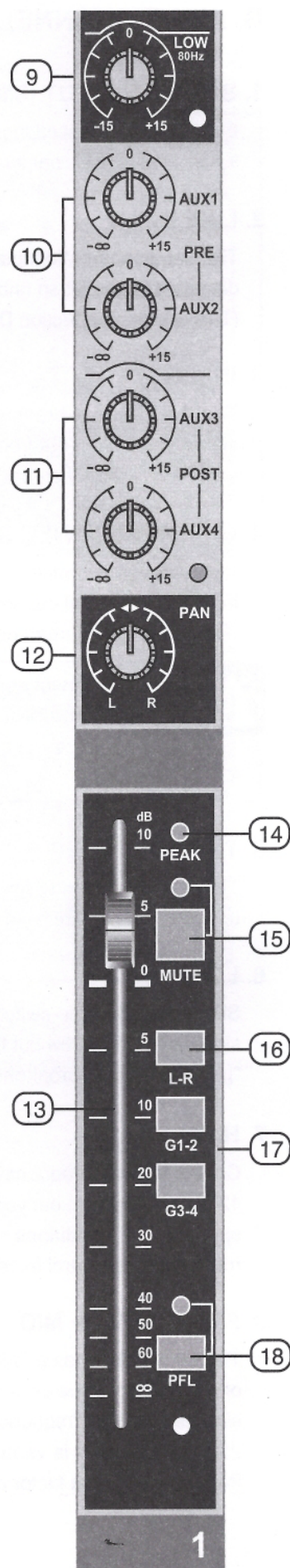
Push the switch, can use GRPS 1-2,3-4 fader.

During the G1-2, G3-4 switch pushed, you can't use stereo L-R fader.

18. PFL

You can monitor the signal of the only channel which PFL switch is turned "ON" using by headphone in useful. When PFL switch turned on, other channels or cut off automatically.

The LED will be turned on when strt working.



C. STEREO CHANNEL SECTION

19. LEFT (MONO) / RIGHT

Line with connection 1/4 jack as line input of L, R stereo and input the signal of balance line level. If the signal input into the input terminal of left side, output the mono output to left & right side. If the signal input the input terminal of right side, output into the right side only.

If each signal input the input terminal of left & right, output a stereo of left & right.

20. LINE PAD

When pushing this switch, attenuates the input signal -20dB.

21. HIGH

Control the high frequency tone of each channel. Always set this control to the 12 o'clock position, but you can control the high frequency tone according to the speaker, the conditions of listening position and listener's taste. Clockwise rotation of the control increase the level.

22. LOW

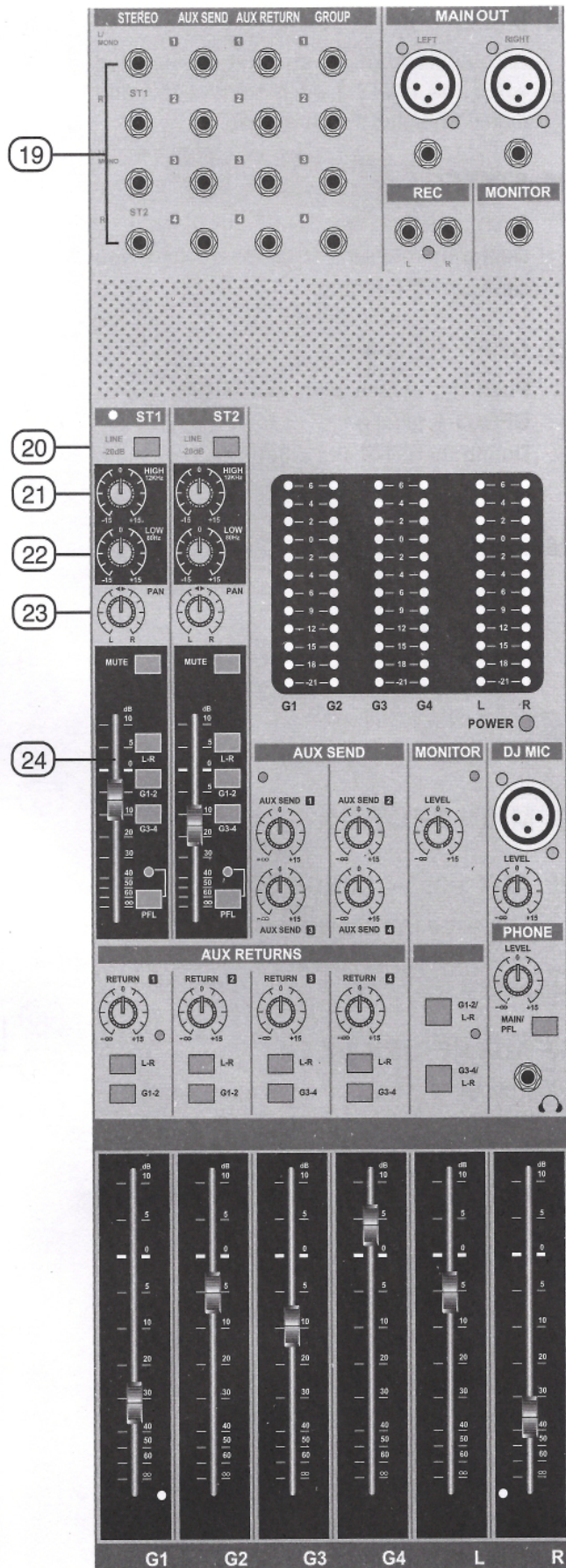
Control the low frequency tone of each channel. Always set this control to the 12 o'clock position, but you can control the low frequency tone according to the speaker, the conditions of listening position and listener's taste. Clockwise rotation of the control increase the level.

23. PAN

The PAN control sends continuously variable amounts of the post fader signal to either the left or right and G1,2,3,4 main busses. In the center position equal amounts of signal are sent to the left and right or G1,2,3,4 busses.

24. STEREO CHANNEL FADER

This is a function to adjust the volume of signal connection into each channel and adjust the volume of output, together with master fader. Normal operating position is at the "0" mark, providing 4dB of gain above that point, if required.



25. MUTE

All outputs from the channel are enabled when the MUTE switch is released and muted when the switch is down.

26. STEREO L-R

Push the switch, can use ST L-R fader.
During the stereo L-R switch pushed, you can't use ST L-R fader.

27. GRPS 1-2, 3-4

Push the switch, can use GRPS 1-2 or GPRS3-4 fader.
During the G1-2 and G3-4 switch pushed, you can't use stereo L-R fader.

28. PFL

You can stereo the signal of the only channel which PFL switch is turned "ON" using by headphone in useful.
When PFL switch is turned on other channel or cut off automatically.
The LED will be turned on when strt working.

D. MAIN SECTION

29. AUX 1-2, 3-4 SENDS

This is used for adjusting volume of AUX sound, when sending AUX signal to send jack.

30. AUX RETURN 1-2,3-4

Controls the level of return input signal.

31. ST L-R

When the switch is up, RETURN signal will be sent into STEREO busses.

32. G1-2 or G3-4

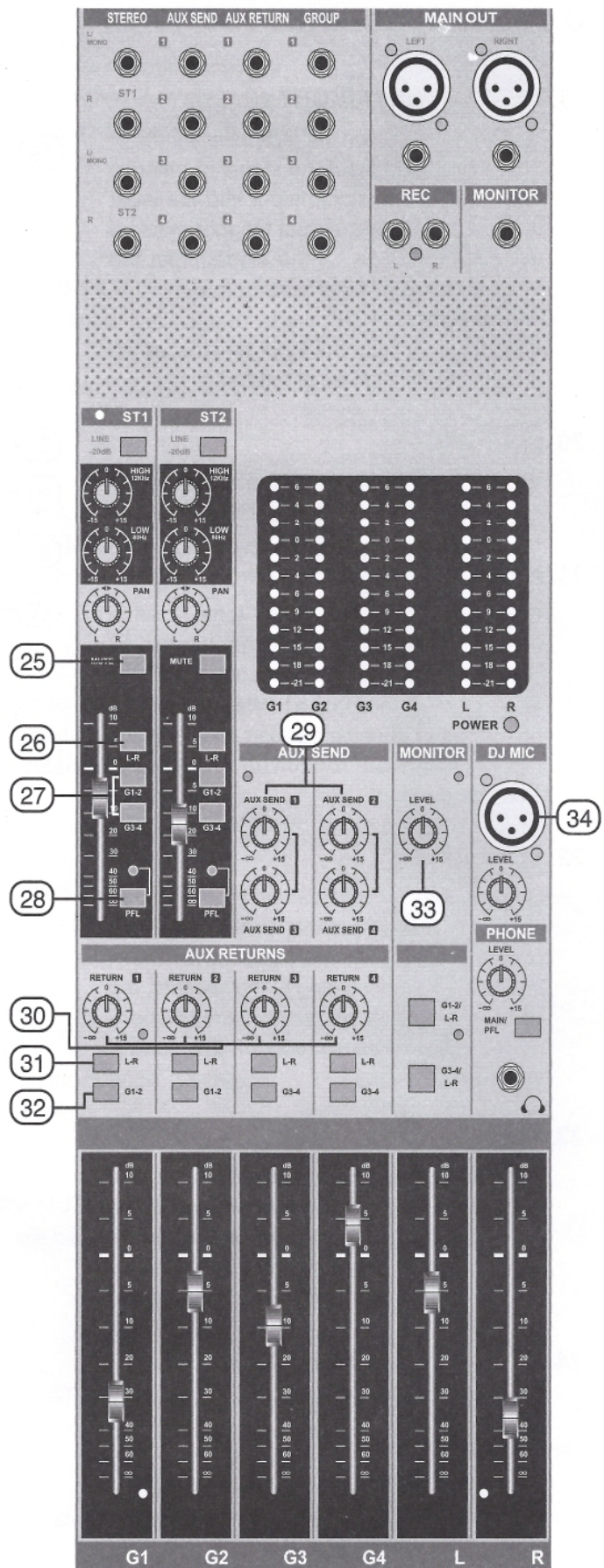
When the switch is up, RETURN signal will be sent into GROUP1-2 or 3-4 busses.

33. MONITOR LEVEL

This control sets the level to MONITOR outputs. If headphones are plugged into the PHONE jack, the headphone level will track the Monitor level.

34. DJ MIC JACK

Electronic balance inputs acceptable a standard XLR male connector. The Mic input socket is used by DJ only.



35. DJ MIC LEVEL

Adjusting the fader, it can make DJ MIC input signal, and up to what you need.

36. HEADPHONE LEVEL

This is a single volume control sends the level to the headphones and main monitors.

37. MAIN / PFL

This is a monitor convert switch, when the switch step up, you can monitor Main (L-R) output signal, when depressing the switch, you can monitor PFL busses signal.

38. PHONES JACK

This is used for monitoring the master signal and individually monitoring each channel with PFL, L/R busses signal.

39. OUTPUTS LEVEL INDICATOR

This is level meter which shows output levels of left & right channel, GRPS1-2, 3-4 busses. Therefore, you can see output condition thru this master and GROUPS level indication.

40. POWER LED

The POWER LED will be turned on when strt working.

41. OUTPUT GRPS 1-2 AND 3-4 FADERS

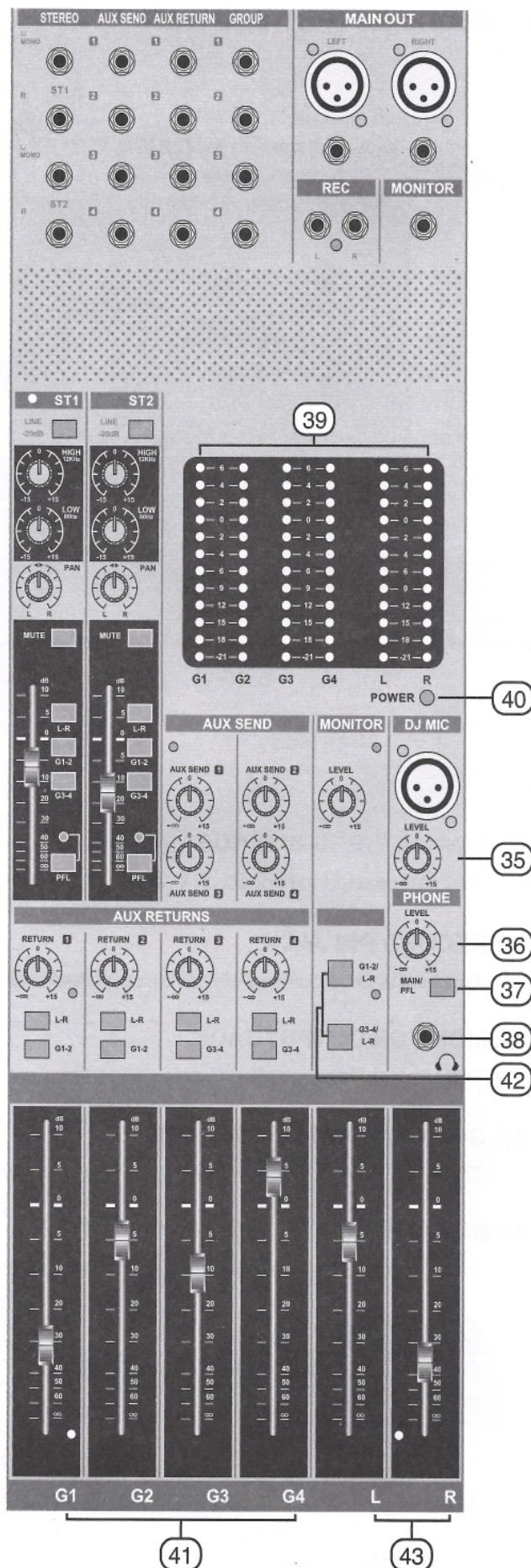
Using by this control, you can adjust G1-2 and G3-4 output level.

42. ST / G1-2 or G3-4

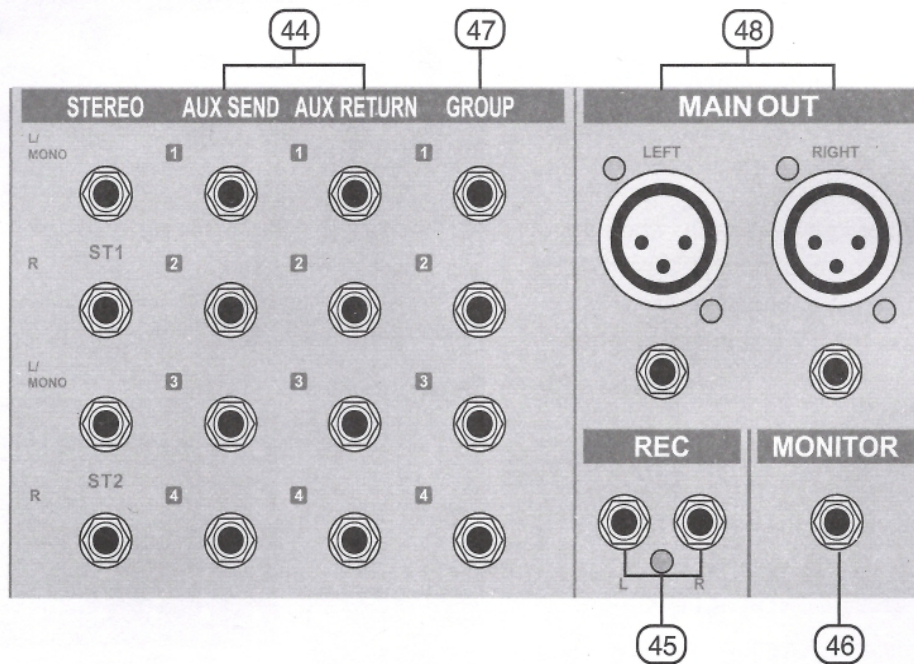
This switch routes the G1-2 or G3-4 Mix output to the STEREO (L-R) bus, allowing G1-2 or G3-4 bus to be used four mono subgroups mixed down to a single output, when stereo is not required.

43. OUTPUT MASTER FADER (LEFT/RIGHT)

This is a master fader for adjustment for volume of left/right output. Unity gain is the top their travel.



E. MIXER OUTPUT SECTION



44. AUX RETURNS & SENDS

This can be used to connect all kinds of effects from outside.

45. RECORD PIN JACK

This jack is to be connected with cassette deck when recording the mixer output.

46. MONITOR OUTPUT JACK

The Monitor Outputs are on 3-pole gauge jacks and are balanced connections.

47. GRPS 1-2, 3-4 OUTPUT JACK

There are to be output with the volume control against inputting signal into GRPS 1-2, 3-4 board.

48 MAIN OUTPUT JACK (LEFT / RIGHT)

In this product, the final confirmed sound can be send to main amplifier through XLR & 1/4 jack.

F. POWER SECTION

49. POWER SWITCH

Push marked (1), when you want to operate. The LED (SEE NO, 40) will be turned on when working.

50. POWER JACK

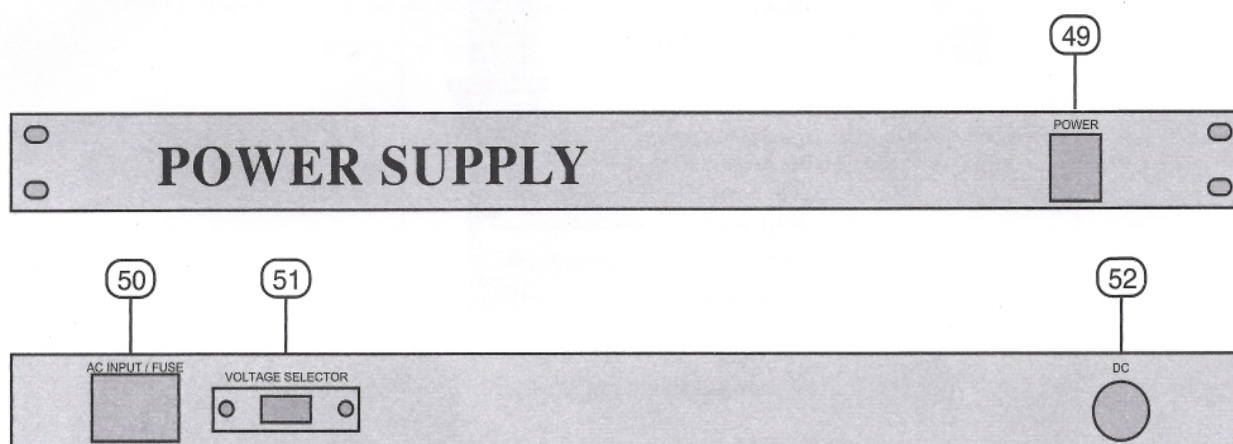
This is out of connect the power supply jack.

51. VOLTAGE SELECTOR

Push the switch, can select voltage you need.

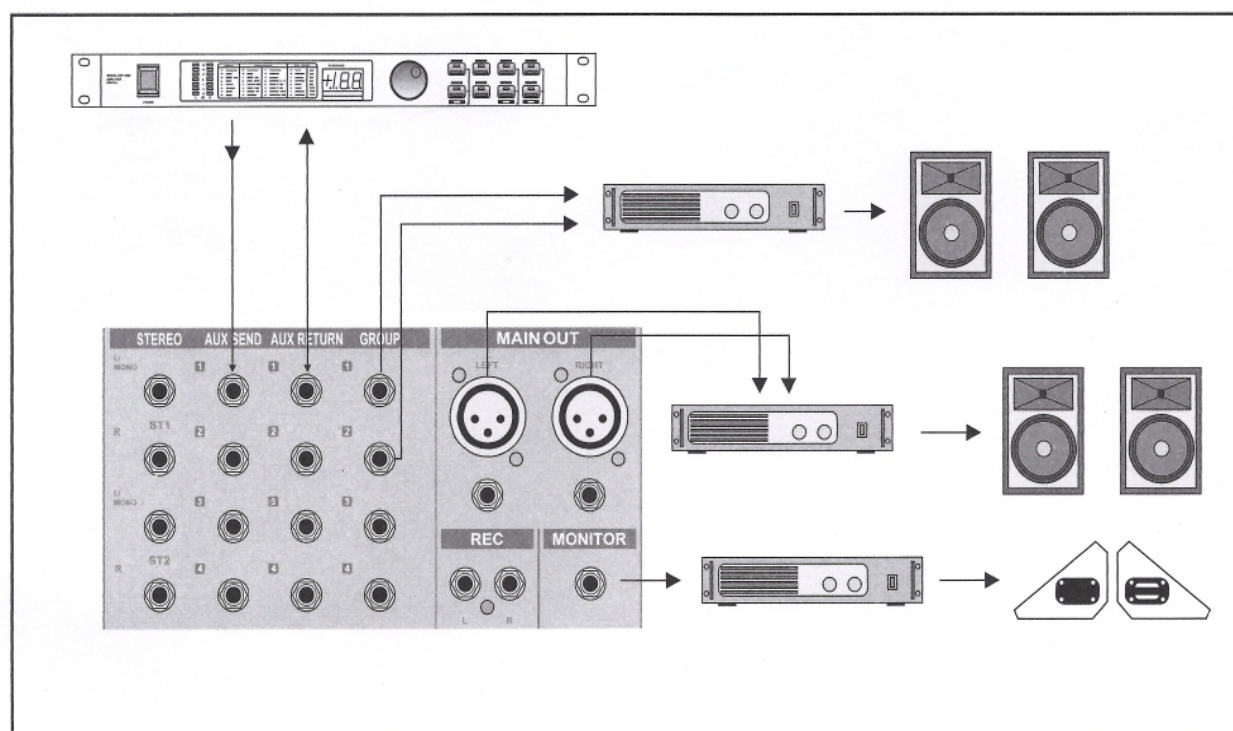
52. D.C JACK

Using a line connect with the D.C jack and Mixer Power Jack in order to let the Mixer work normally.



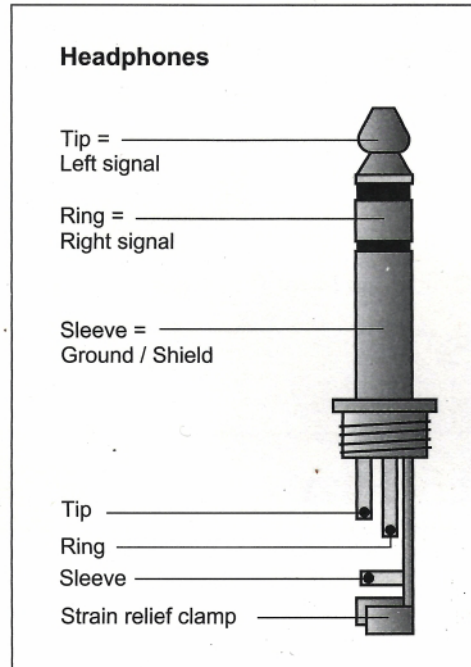
G. INSTALLATION

Experience tells us that the cables in a studio environment get tangled very quickly (inviting mistakes).

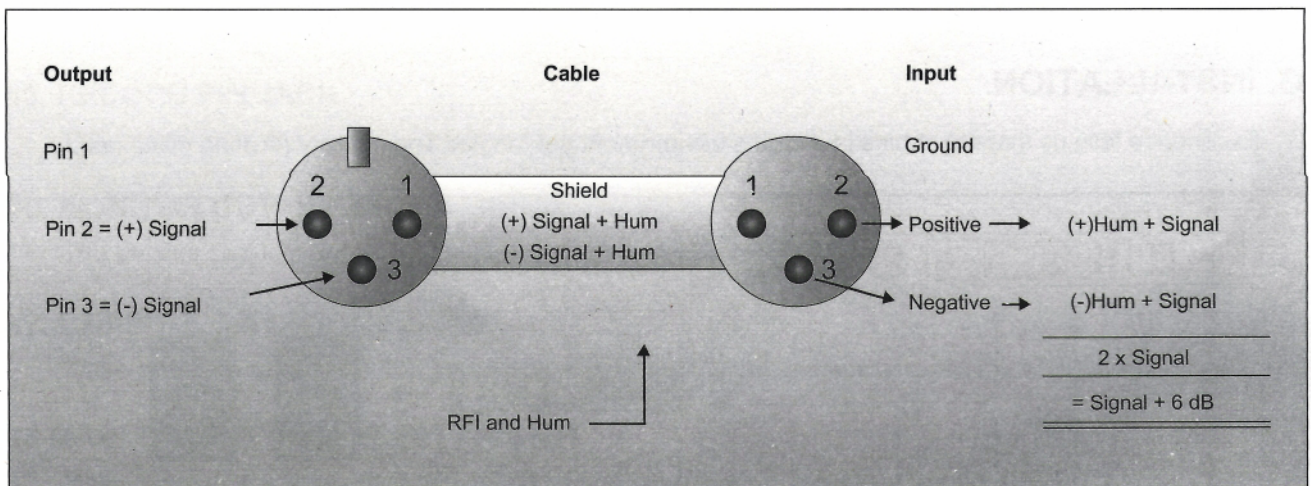


H. CONNECTIONS

You will need a lot of cables for different purposes - see the following figures to make sure you have got the right ones. Unbalanced equipment may be connected to balanced inputs/outputs. Either use mono 1/4" jacks or connect ring and sleeve of TRS jacks.



Headphone connection



Compensation of interference with balanced connections

Unbalanced use of mono 1/4" jack plugs

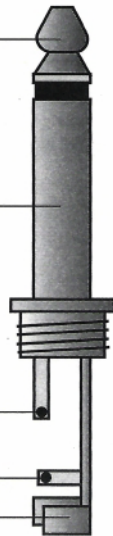
Tip =
Signal

Sleeve =
Ground / Shield

Tip

Sleeve

Strain relief clamp



Balanced use of stereo 1/4" jack plugs

Tip =
hot (+ve)

Ring =
cold (-ve)

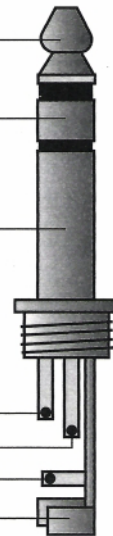
Sleeve =
Ground / Shield

Tip

Ring

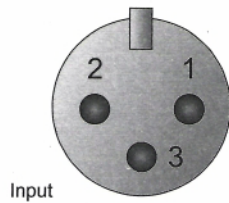
Sleeve

Strain relief clamp

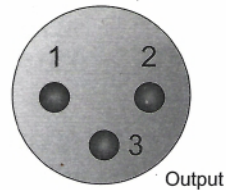


For connection of balanced and unbalanced plugs, ring and sleeve have to be bridged at the stereo plug.

Balanced use with XLR connectors



1 = Ground / Shield
2 = hot (+ve)
3 = cold (-ve)



For unbalanced use pin 1 and pin 3 have to be bridged

Different plug types

I. APPENDIX

Specifications

Mono Inputs

Mic Input	electronically balanced, discrete input configuration
Bandwidth	10 Hz to 60 kHz \pm 3 dB
Distortion (THD & N)	0.01% at +4 dBu, 1 kHz, Bandwidth 80 kHz
Mic E.I.N (22 Hz - 22 kHz)	-129.5 dBu, 150 Ohm source -117.3 dBq, 150 Ohm source -132.0 dBu, input shorted -122.0 dBq, input shorted +10dB to +60dB
TRIM range	
Line Input	electronically balanced
Bandwidth	10 Hz to 60 kHz \pm 3 dB
Distortion (THD&N)	0.01% at +4 dBu, 1 kHz, Bandwidth 80 kHz
Line level range	+10 dBu to -40 dBu
Equalization	
Hi Shelving	12 kHz \pm 15 dB
Mid Range	2.5 kHz \pm 15 dB
Lo Shelving	80 Hz \pm 15 dB

Stereo inputs

Line Input	unbalanced
Bandwidth	10 Hz to 55 kHz \pm 3 dB
Distortion (THD & N)	0.01% at +4 dBu, 1 kHz, bandwidth 80 kHz
Equalization	
Hi Shelving	12 kHz \pm 15 dB
Mid bell	100Hz -8KHz \pm 15dB, Q fixed at 1 oct
Lo Shelving	80 Hz \pm 15 dB, Q fixed 2 oct
Lo Cut (High Pass) filter	-3dB at 75Hz, 18dB / oct

Master Mix section

Max Output	+22 dBu balanced
Aux Send Max Out	+22 dBu unbalanced
Control Room Out	+22 dBu unbalanced
Signal-To-Noise Ratio	112 dB, all channels at Unity Gain

Power supply

Mains Voltages	USA/Canada	~ 115 V AC, 60 Hz
	U.K./Australia	~ 240 V AC, 50 Hz
	China	~ 220 V AC, 50 Hz
	Germany	~ 230 V AC, 50HZ