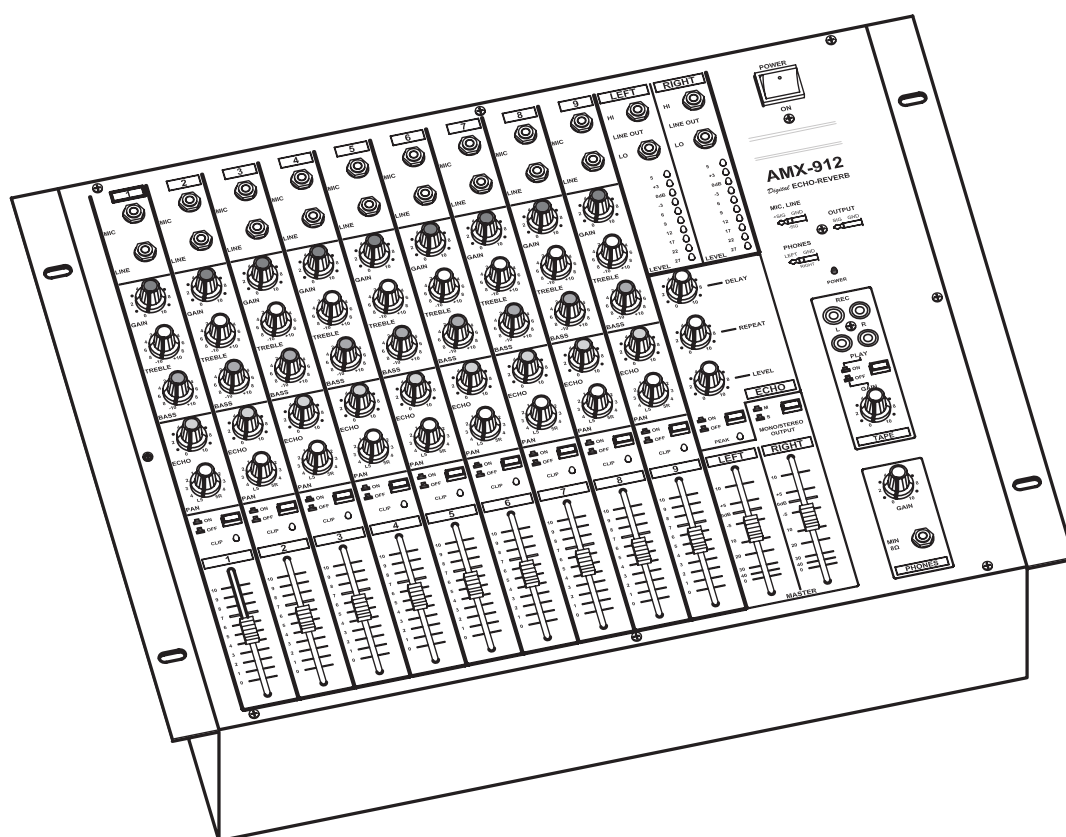


AMX-912

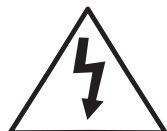


Please read this manual thoroughly before making connections and turning on the power.
Following the instructions in this manual will enable you to obtain optimum performance from your new PA Audio Mixer
Please retain this manual for future reference.

• **Safety Instructions**

CAUTION: To reduce the risk of electric shock, do not remove the top cover. No user serviceable parts inside. Refer servicing to qualified personnel only.

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



This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure, 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.

Detailed Safety Instructions: All the safety instructions in this manual should be read before operating this equipment.

Retain Instructions: The operation manual should be kept for future reference.

Follow Instructions: All operation and safety instructions should be followed.

Water and Moisture: In order to prevent any fire or shock hazard, do not expose this equipment to rain or moisture.

Power Source: The equipment should be connected to a 230V 50Hz AC or 2 × 12V DC power source.

Power-cord Protection: Do not cut, kink, damage or modify the power supply cord supplied with the equipment. Keep the power supply cord away from heaters & harmful chemicals. Do not place heavy objects on the power cord.

Operation on Generator: When operating the equipment on a generator, make sure it is switched 'OFF' till the generator voltage has stabilized and then only switch the equipment 'ON'.

Grounding or Earthing: The equipment must be earthed properly before operating it to avoid electric shock. A wire from the Earth Terminal must be connected to either water pipe or to electrical earth for safe operation.

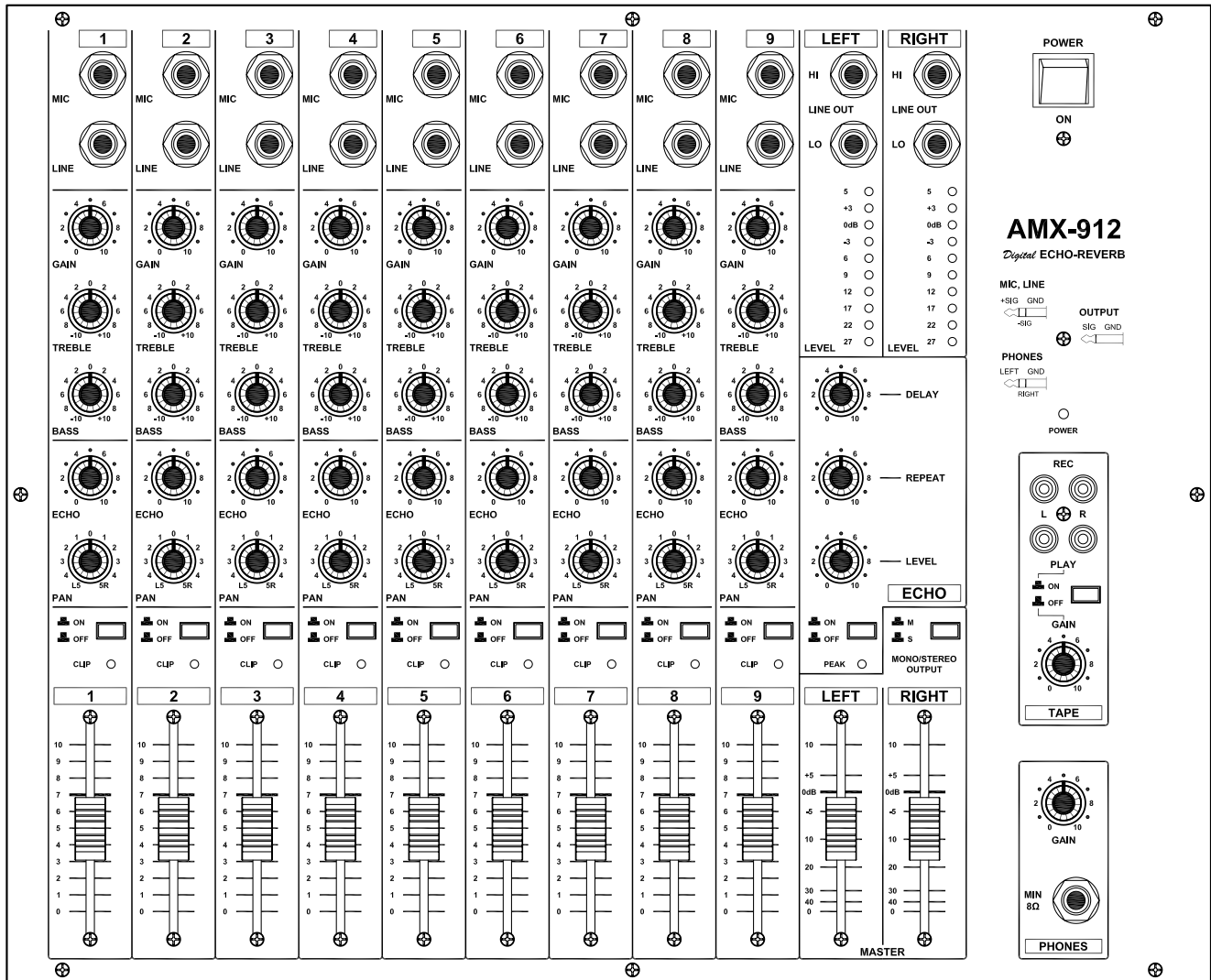
Replacing AC Mains Fuse: After disconnecting the AC mains and rectifying the defect in the equipment, change the fuse with another of the specified rating only. Insert and tighten the fuse holder completely to avoid any loose contact.

Contents	Page No.
● Introduction	4
● Front and Rear Panel.....	5
● The Input Section.....	6
● The Output Section.....	7
● The Echo Section.....	8
● The Tape Section	9
● The Headphone Section	9
● Power Supply Section.....	10
● Rack Mounting.....	11
● Applications.....	12
● Operation	14
● Plugs Wiring.....	15
● Specifications.....	16

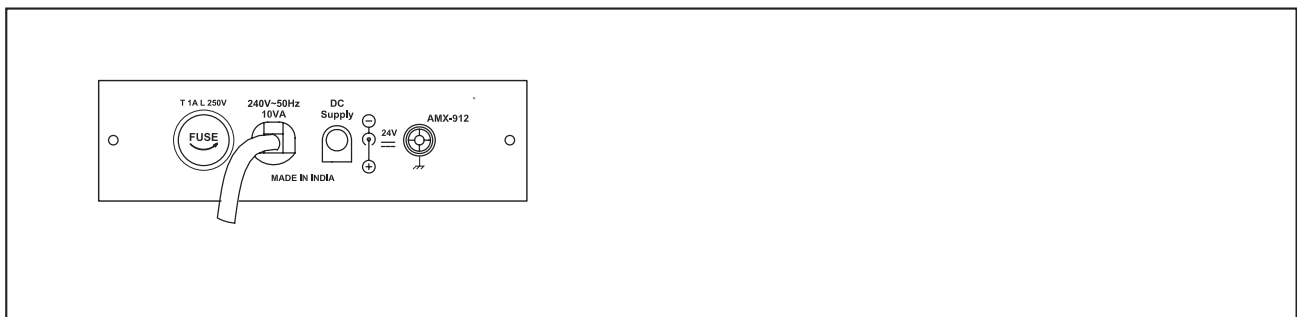
● **Introduction**

The AMX-912 is 9 CHANNEL PA Mixer with Echo, Reverb & Chorus Effects. The 9 Inputs, Mic / Line, have individual Gain controls, Bass & Treble controls, Echo controls, Pan controls, Channel On/Off switches, Channel faders. It has a separate TAPE SECTION for Recording and Playback. With a Dual Gain control and On/Off switch for tape playback provided, effectively this mixer has 11 INPUT CHANNELS.

- 9 Mic inputs for balanced/unbalanced low impedance microphones.
- 9 Line inputs, balanced/unbalanced for connecting CD/Cassette Players, Keyboards etc.
- Gain controls for each input channel .
- Bass & Treble controls for each input channel.
- Echo mix level controls for each input.
- Pan controls for each input channel for adjusting the routing of the input channel signal to the Left or Right outputs.
- On/Off switch for each input channel.
- Fader control is provided for each input channel.
- Digital signal processing used for Echo, Reverb and Chorus effects.
- Echo section for Echo , Reverb and Chorus effects through Repeat, Delay and Level controls. Echo On/Off switch available.
- A separate Tape Section for connecting a Cassette Recorder for recording /playback.
- Master faders for left and right output .
- High and Low unbalanced Line Outputs provided for the Left and Right channels.
- Mono/Stereo output switch.
- 10 LED arrays for indicating output levels.
- Headphone stereo output with gain control.
- AC Mains / 24V DC (Car Battery) Operation.
- Standard 19" Rack mounting.



FRONT PANEL



REAR PANEL

• The Input Section

1. MIC INPUT

Input through balanced 1/4" phone jacks for accepting both balanced and unbalanced signals (plugs). For low impedance microphones, 200 ohms to 1K ohms.

Wiring: Tip Hot (+ve phase)
Ring Cold (-ve phase)
Sleeve Ground

2. LINE INPUT

Input through balanced 1/4" phone jacks and accepts both balanced and unbalanced signals (plugs) from sources such as Cassette Players, CD Players, Keyboards, Drum Machines etc.

Wiring: Tip Hot (+ve phase)
Ring Cold (-ve phase)
Sleeve Ground

3. GAIN CONTROL

The gain control sets the signal level for the Mic. and Line inputs. The Clip LED indicates the Max. level of gain control settings.

4. TREBLE CONTROL

The Treble control gives 12 dB of boost or cut at 10 kHz. High boost livens up a "dead" room acoustics imbalance.

5. BASS CONTROL

The Bass control gives 12 dB of boost or cut at 100Hz. Low cut avoids boominess in some rooms.

6. ECHO CONTROL

Echo level control is for deciding the level of that channel in the final Echo Mix. This is post-Equalizer (Bass & Treble) and post-Fader. Therefore, the level will be affected by the setting of the Fader.

7. PAN CONTROL

This control routes the channel to either Left or Right Output. Centering the control positions the signal equally in both the outputs. This is usable when the mixer output is connected in the Stereo mode. In Mono mode, the setting of this control is ineffective.

8. ON/OFF SWITCH

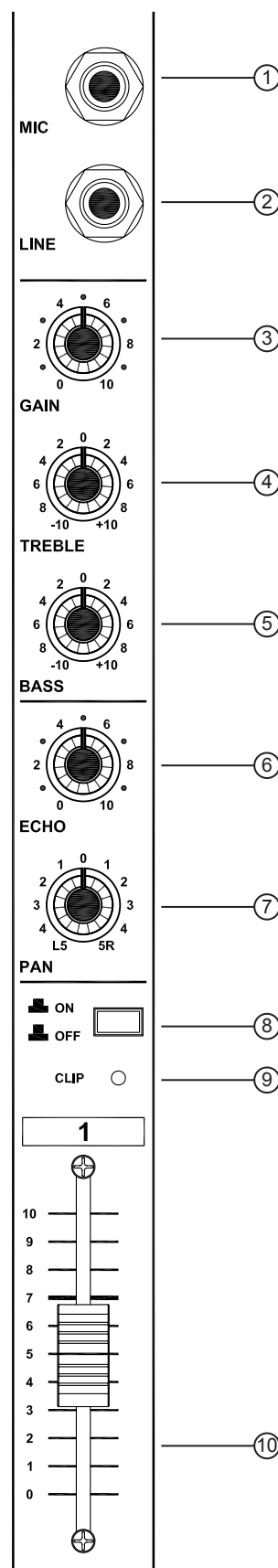
This switch is provided for switching OFF of the input channel without disturbing the control settings.

9. CLIP

The Clip LED lights up when the signal in the channel is approaching overload (clip) level. Setting this correctly ensures maximum "Signal to Noise ratio", that is the best signal level with the minimum amount of background noise. It should be set just before the overload level. Occasional flashing of the LED during loud sounds is OK.

10. CHANNEL FADER

The Fader "slider" control determines the output level of the channel in the overall mix.



• The Output Section

1. LINE OUTPUT HI

Unbalanced High Line Outputs have been provided for the Left and Right channels through 1/4" phone jacks. These are for connecting to the LINE INPUT of the Power Amplifier. The Line Output levels (0mV to 775mV) can be adjusted by Master Faders.

Wiring: Tip Signal
Sleeve Ground

2. LINE OUTPUT LO

Unbalanced Low Line Output have been provided for the Left and Right channels through 1/4" phone jacks. This output is for connecting to the AUX INPUT of a Monitor/Power Amplifier. The Preamplifier Output (0mV to 250mV) can be adjusted by Master Faders. This lower signal output has been given in addition to the Line Output as many amplifiers have only an Aux Input. This can also be used for connecting to a monitor amplifier while the Line Output is connected to the main power amplifier.

3. LED BARGRAPH

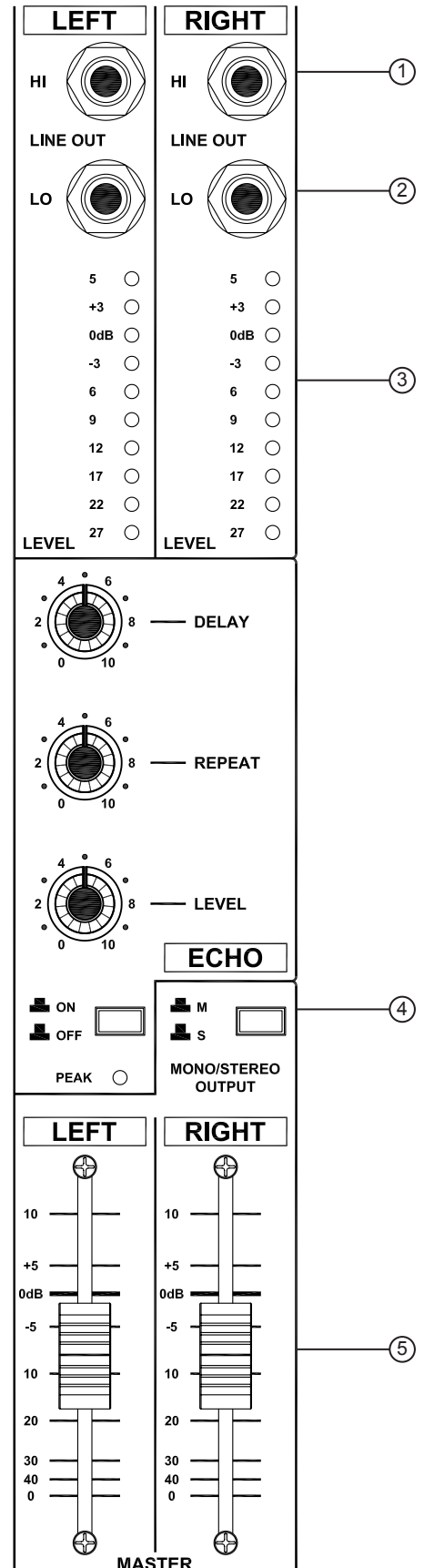
There are 2 colour , 10 segment LED Arrays which display the Left & Right output levels. The 0dB LEDs correspond to 250mV (LO Line output) and 775mV (HI Line output).

4. MONO / STEREO OUTPUT SWITCH

Mono or Stereo Output mode can be selected through this switch. In case of Mono, the same mixed mono output is available through any of the Left or Right output jacks. If the Left Output jack is used, then the signal level can be set by the Left Master Fader. Similarly, the mono signal from the Right Output jack can be set by the Right Master Fader.

5. LEFT / RIGHT MASTER FADERS

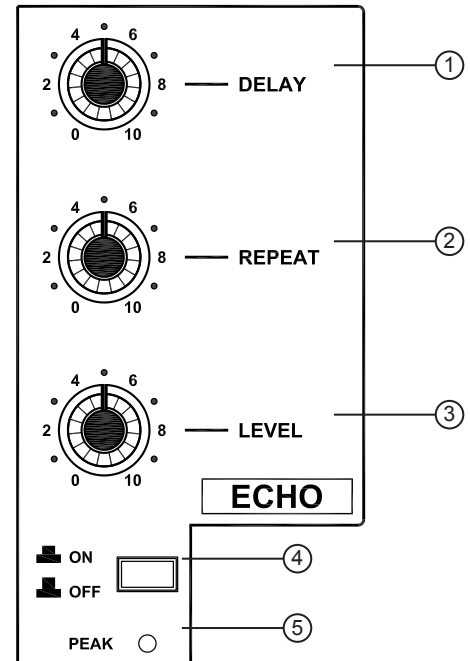
The Left & Right faders are the master output level controls. These determine the level of all the signals (mix) sent by the Channel Faders and Tape Playback, to the L/R Line Outputs High and Low Output jacks.



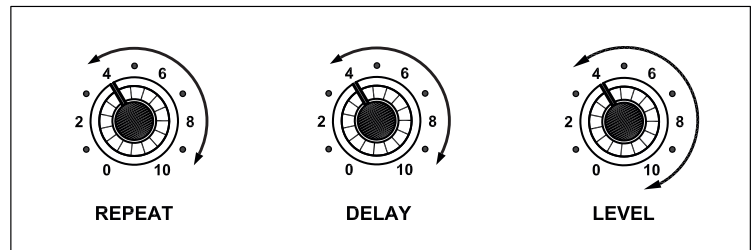
• The Echo Section

The ECHO section provides ECHO, REVERB and CHORUS effects to all the Input channels. These Effects can be obtained by different settings of Delay Control, Repeat Control and Level Control. The Echo Section can be switched Off through a On/Off switch.

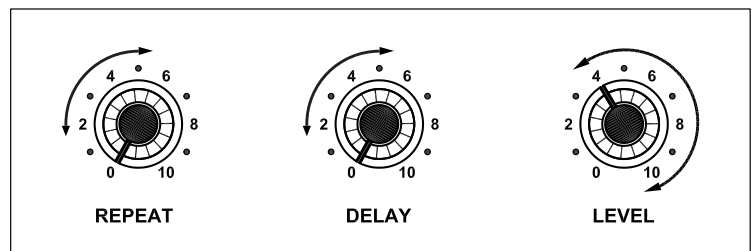
- 1. DELAY Control**
For setting the time between ECHO repetitions.
- 2. REPEAT Control**
This controls the number of repetitions of ECHO. The higher the setting, the more repetitions.
- 3. LEVEL Control**
For setting the ECHO level .
- 4. ECHO ON/OFF Switch**
When this switch is in OFF position, AMX-912 operates as Mixer only without Echo/Effects on all the inputs irrespective of the settings of the Echo controls of individual channels.
- 5. PEAK LED**
The Echo Controls & Fader Controls of each channel and Level Control of Echo Section should be set at a level just below the flickering level of this Peak LED. This LED is for optimizing the Inputs and Echo levels. The settings of the Channel Faders & Master Faders have no effect on this LED.



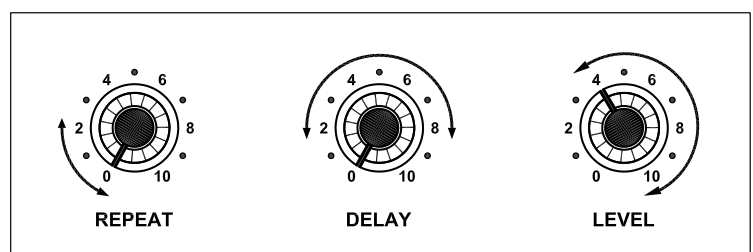
ECHO - Echo Effect is used to repeat the original sound many times to give multiple voice effect and is used for vocals. The Control settings for Echo are as shown in the diag.



REVERB - Reverb is used for giving Hall Effect to the original sound as repeated reflecting sound raises overall level of the signal. This is also used for public announcement in Stadia and Open Air Performances. The Control settings for Reverb are as shown in the diag.



CHORUS - Chorus Effect is used by a singer to create an effect as if a Group is performing. The control settings for Chorus are as shown in the diag.



• The Tape Section

A 4 way RCA connector has been provided for connecting a Stereo Cassette Recorder to this audio mixer for Playback / Recording. Alternatively, a separate Stereo Cassette Recorder and a Stereo Cassette Player can be simultaneously connected for Recording and Playback respectively. This facility allows use of the other 9 input channels for connecting input sources other than a Stereo Cassette Player.

1. RECORDING Outputs

The Left & Right RCA Sockets marked "REC" carry the stereo mix signal for connecting to the inputs of a stereo cassette recorder for Recording the program. These can also be connected to the Aux Input of an additional Monitor / Power Amplifier for driving them. The recording output level from AMX-912 is fixed (240mV) and is not affected by the settings of Master Faders and Tape Gain Controls.

2. PLAYBACK Inputs

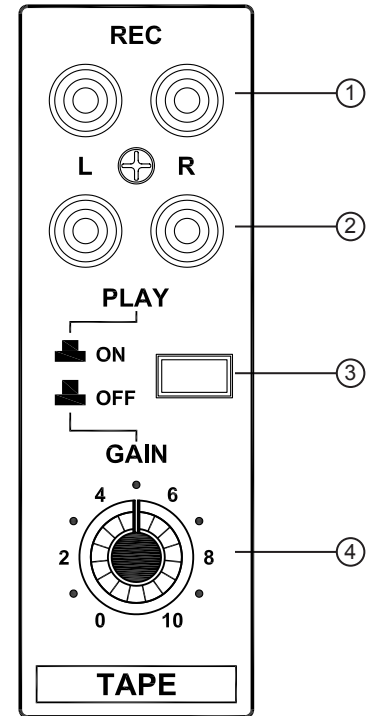
The Left & Right RCA Sockets marked "PLAY" are for connecting to the Play Output of a stereo cassette player or the same cassette recorder being used for recording. The playback signals are routed to the main stereo mix of which the level is set by the Master Faders. However, the level of the playback mix into the main mix is set by the Gain Control. The input sensitivity of the Playback Inputs is 50mV. It can be adjusted from 50mV to 1V by the Gain Control to accept input signal from other sources such as a **CD Player, Electronic Keyboard, Drum Machine, Electronic Guitars** etc., to this mixer.

3. PLAY ON/OFF Switch

A Switch has been provided for switching OFF the playback music source connected to the mixer.

4. PLAY GAIN Control

A Gain Control is provided to set the Level of playback program to the overall program mix.



THE HEADPHONES SECTION

A Stereo Headphone Output is available through a 1/4" stereo jack for program monitoring.

Wiring:	Tip	Left Signal
	Ring	Right Signal
	Sleeve	Ground

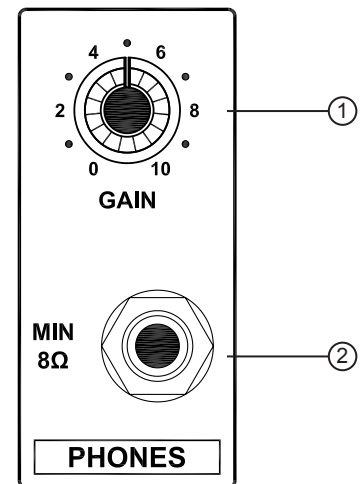
Do not use Headphones of less than 8 Ohms Impedance.

1. GAIN Control

A Dual Gain Control has been provided for setting the level of the Headphone Output.

2. HEADPHONE Output

An Output has been provided through a 1/4" stereo jack for connecting a Headphone for monitoring the overall program



● Power Supply Section

1. AC FUSE 1 Amps. 250V

This protects the Mixer from damage in case of excessive current flow. In case the fuse blows, replace with another one of the same rating.

2. AC MAINS CORD

This is for connecting to AC mains supply. The Mixer is connected for 230V / 50Hz operation and will perform satisfactorily even when the AC Mains voltage drops to 200 V.

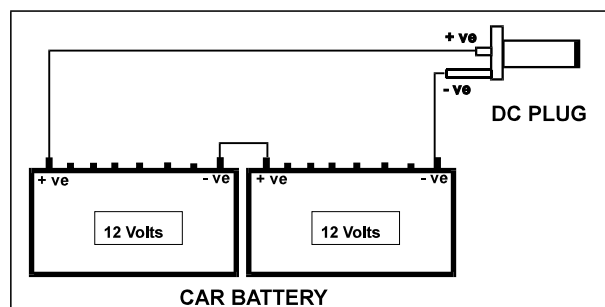
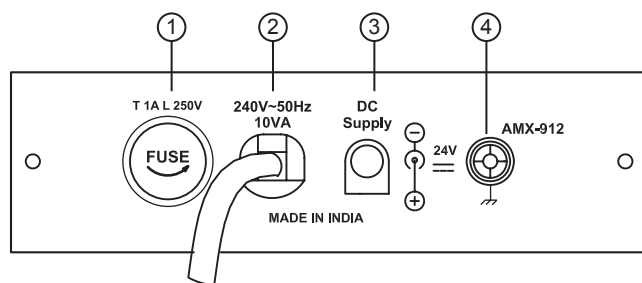
3. STANDBY 24V CAR BATTERY OPERATION

2 x 12V Car Batteries can be connected through the DC Plug (supplied as an accessory) to the DC Socket as shown in the diag. In case of power failure, the Mixer continues to operate uninterrupted through the standby 24V DC Supply. Make sure the battery polarity is connected correctly.

4. EARTH TERMINAL

Before operating, the Mixer should be grounded by connecting a wire from this Earth Terminal to a water pipe or an electrical earth.

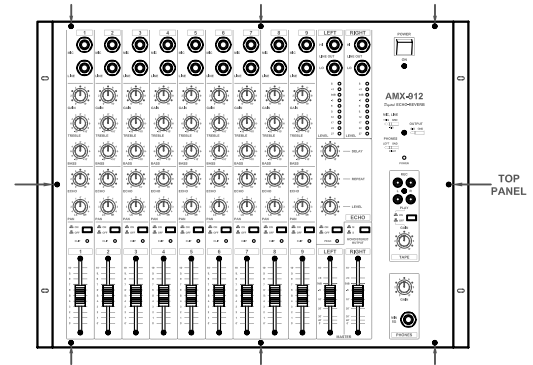
- Use 2x12V car batteries exclusively for this equipment and do not connect any other equipment to these car batteries.
- Connect car batteries only through pre wired DC plug supplied With this equipment.
- Do not connect negative car. Car battery to earth terminal.
- This equipment operates on floating 24V DC.



● Rack Mounting

The Mixer has been designed for free standing as well as for standard 19" Rack Mounting. The procedure to be followed for rack mounting is given below.

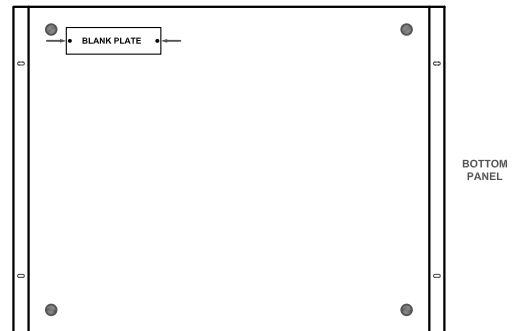
1. Remove the Top Panel by unscrewing the mounting screws (8 Nos.) and place the Top Panel on the right side of the cabinet. The Top Panel can be placed on a Soft Surface (a cushion or foam piece) to avoid damage to the controls on the Top Panel.



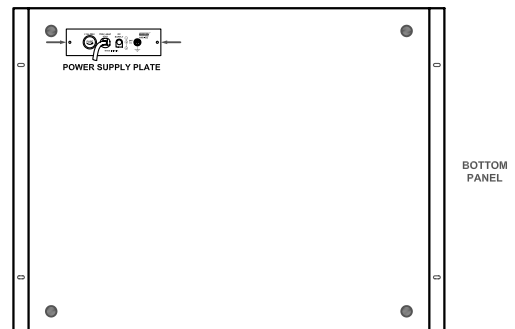
2. Remove the Power Supply Plate by unscrewing the mounting screws (2 Nos.) on the Rear Panel. Pull in the Power Supply Plate with the AC Mains cord.



3. Tilt the Bottom Panel (Cabinet) towards the right side and remove the Blank Plate from the Bottom Panel by unscrewing the mounting screws (2 Nos.).



4. Pull out the AC Mains cord attached to the Power Supply Plate through the opening on the Bottom Panel. Now fix the Power Supply Plate on the Bottom Panel using the mounting screws (2 Nos.).



5. Fix the Blank Plate on the Rear Panel of the Mixer using the mounting screws (2 Nos.).

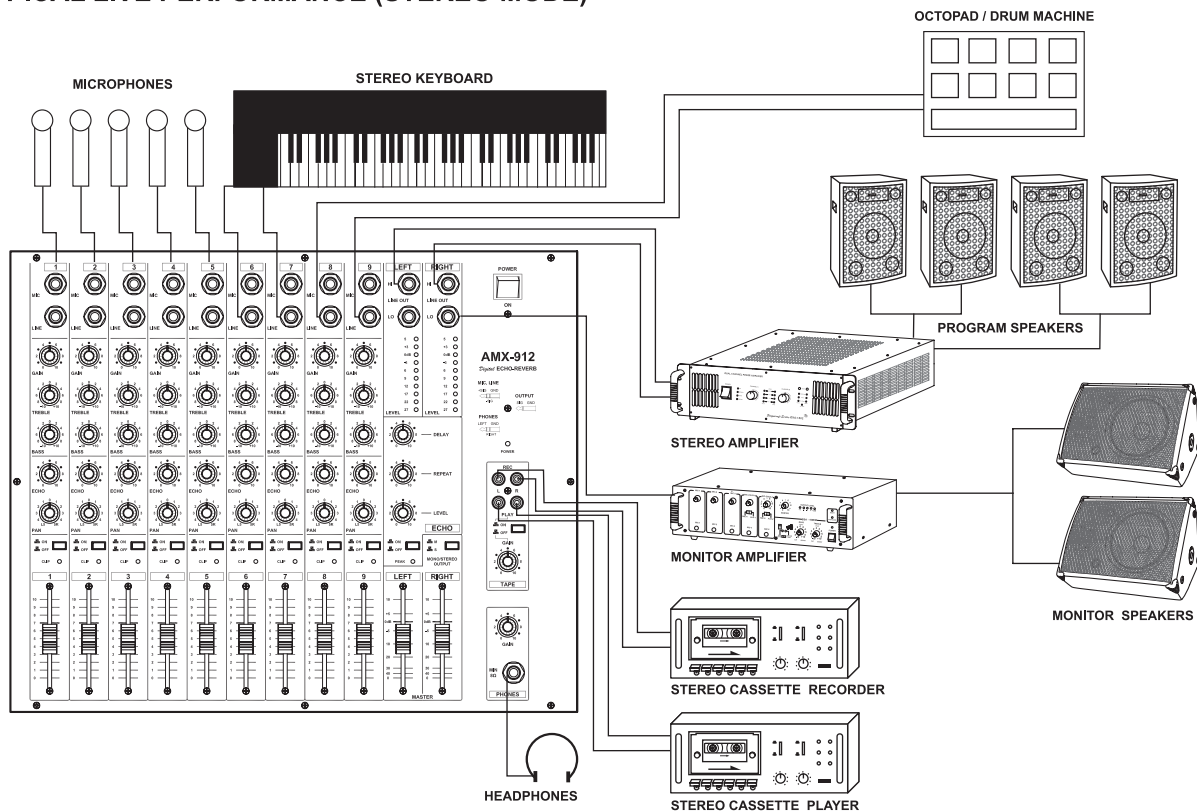


6. Next fix the Top Panel back on to the cabinet using the mounting screws (8 Nos.).

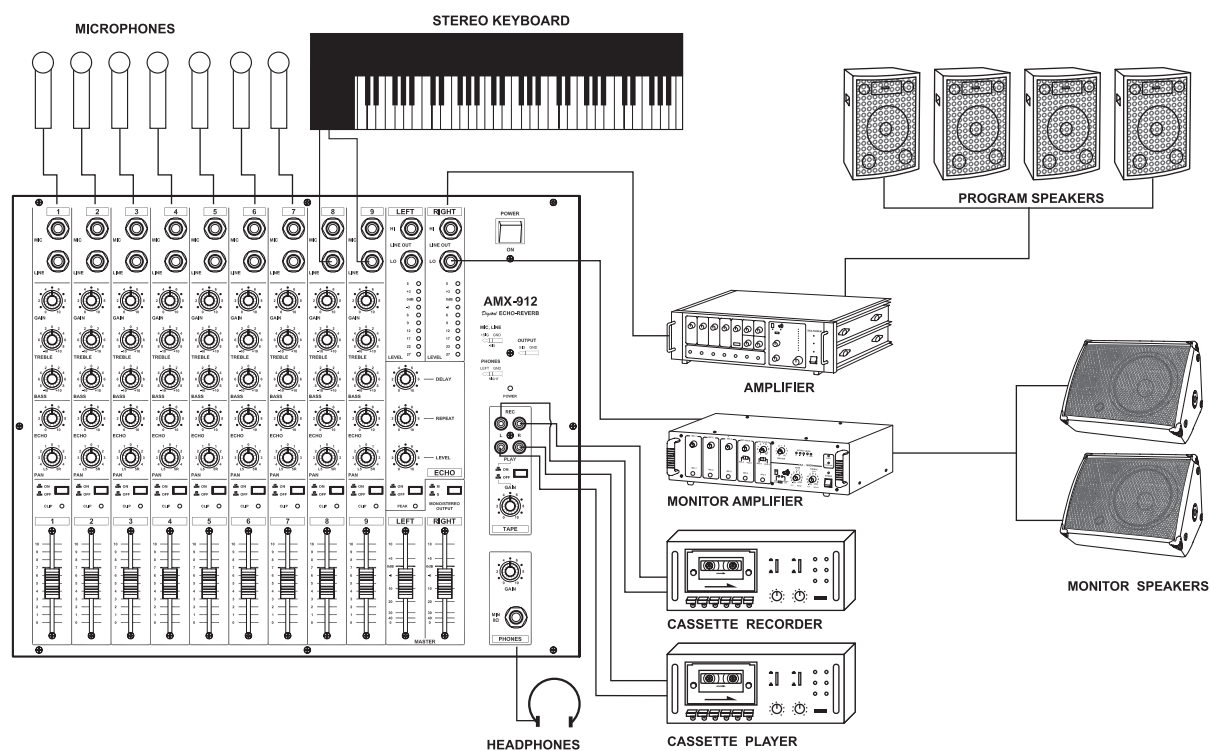
7. Mount the Mixer on to a rack through the slotted holes on the side flanges.

• Applications

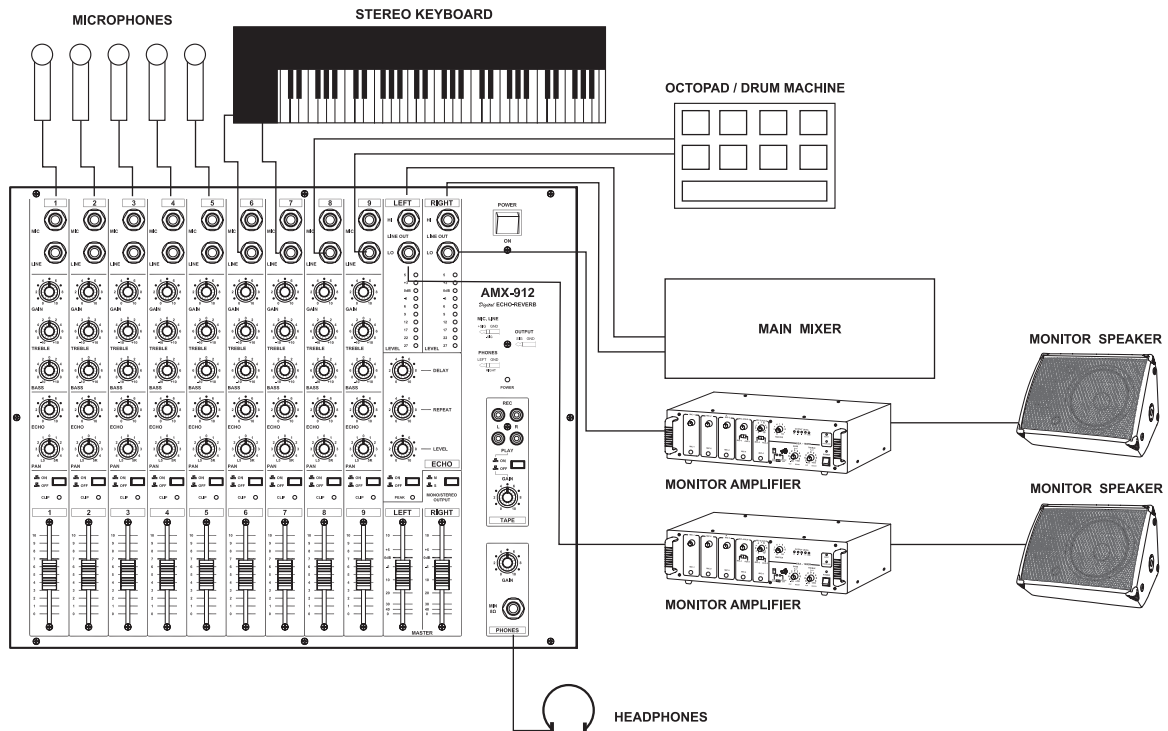
TYPICAL LIVE PERFORMANCE (STEREO MODE)



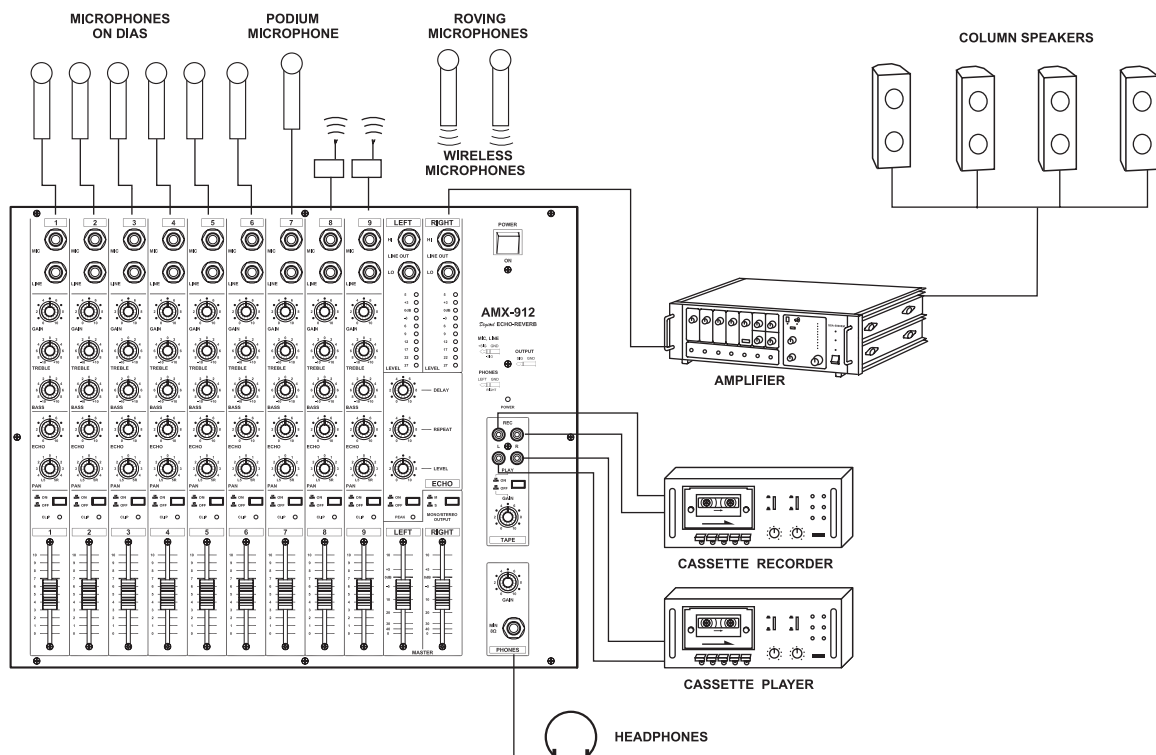
TYPICAL LIVE PERFORMANCE (MONO MODE)



TYPICAL SUBMIXING SETUP



TYPICAL CONFERENCE / CONVENTION SETUP

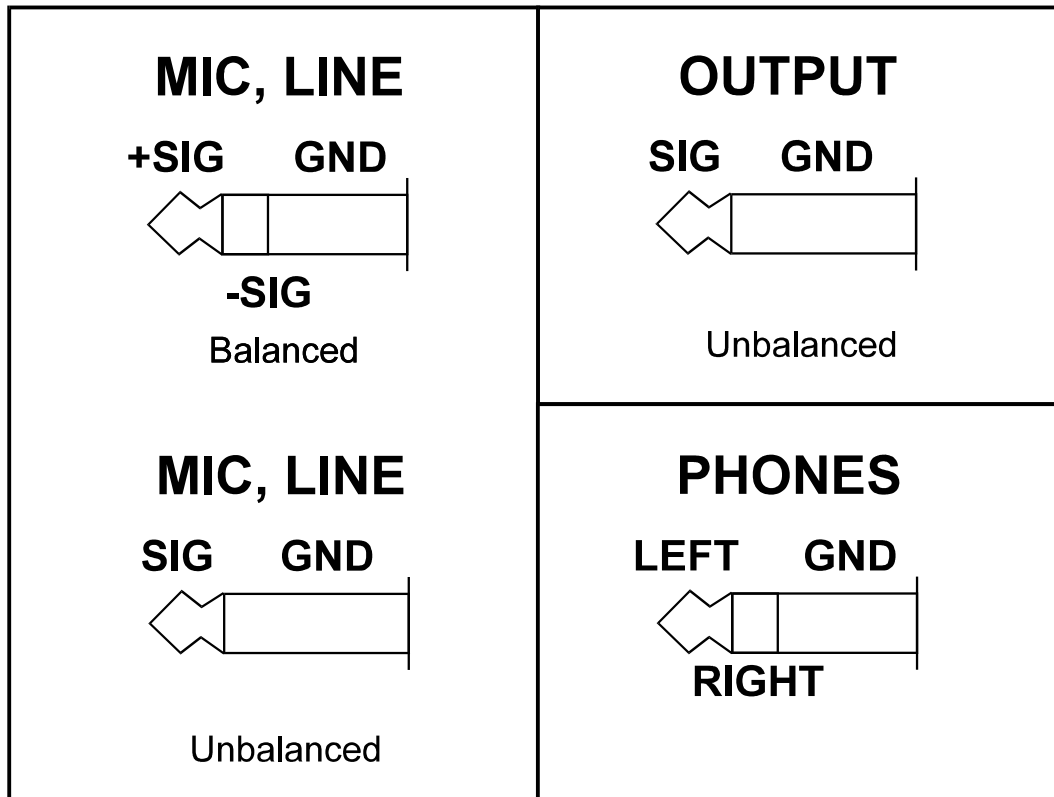


● **Operation**

1. Connect the microphones or line input sources like a CD player or Keyboard to the input jacks. *Do not connect both Mic and Line to any one channel simultaneously.* Connect the output jacks to the desired equipment. Refer APPLICATIONS Section, page # 12, 13.
2. Keep all the rotary control settings of the mixer at '0' position.
3. Keep all the Channel Faders at '0' position and the Left/Right Master Faders at minimum position.
4. Keep all the channel ON/OFF switches and Tape Play Switch at OFF positions.
5. Connect the AC Lead of the mixer to the nearest mains socket and connect the battery lead to car battery for interruption free operation. Refer Power Supply Section, page # 10.
6. Now switch 'On' the Mixer and the Input Sources.
7. Switch 'On' **Channel-1 only**, through its Channel On/Off Switch.
8. Connect the Headphones and position the Headphone Gain Control for a comfortable audible level.
9. Increase the Gain Control of **Channel-1 only** till the Clip LED lights up. Now decrease the gain control so that the Clip LED just flickers. This is the ideal setting of the gain control.
10. Set the Bass & Treble Controls to the desired levels. Changing the settings of the Bass & Treble Controls may effect the overall gain. Therefore the Gain Control should be subsequently adjusted to bring the Clip LED to the correct level.
11. Now move the Slider Fader control of **Channel-1 only** to position '7'.
12. In case **Echo Effect** is desired on **Channel-1** move the Echo Control of **Channel-1** to position '7'.
13. Switch 'On' the Echo Section and set the Echo Section (Delay, Repeat, & Level Controls) for the desired effects. Refer to the Echo Section for the settings of the Delay, Repeat, & Level Controls, page # 8.
14. Adjust the **Pan Control** to set the level of the signal in the Left & Right Outputs. Turning the control fully anti-clockwise will send the signal only to the Left Output of the mixer, and turning it clockwise will send it to the Right Output.
15. Once **Channel-1** is set, do not disturb the control settings of this channel. Then switch 'Off' this channel through the Channel On/Off Switch.
16. Repeat the above procedure for setting the remaining 8 channels.
17. After all the input channels have been set and switched 'On', the Peak LED of the Echo Section may start glowing continuously. Reduce the Echo Control level of individual channels and Echo Section simultaneously so that the Peak LED of the Echo Section goes below the flickering level.
18. After all the channels are set adjust the individual Channel Faders to obtain the desired MIX at the outputs.
19. Now adjust the Master Faders for desired output levels. However take care that the red LEDs of the LED Bargraph Array do not glow continuously. Refer Output Section, page # 7.
20. For Recording and Playback refer to the Tape Section, page # 9.

PLUGS WIRING

The wiring for various jacks (Input & Output Devices) is as shown below:



● Specifications

MIC INPUT Impedance / Gain	2K ohms / 62 dB
LINE INPUT Impedance / Gain	20K ohms Balanced / 42 dB 10K ohms Unbalanced / 42 dB
THD	< 0.08 %
FREQUENCY RESPONSE L/R Line Output High L/R Line Output Low	30 Hz - 20 KHz (+0, -1 dB) 30 Hz - 20 KHz (+0, -1 dB)
EQUALIZATION Bass / Treble	± 12 dB at 100 Hz / 10KHz
CLIP LED INDICATION	4 dB prior to true clip
OUTPUTS Line Output LO L/R Nominal / Max. Level	-10 dBm / +2 dBm (200mV / 1 V)
Line Output HI L/R Nominal / Max.Level	0 dBm / +17 dBm (775mV / 5.5 V)
LO/Hi Impedance	600 ohms
MAXIMUM GAIN Mic input to Line Outputs Line input to Line Outputs	76 dB 55 dB
TAPE Record Output Playback Input	240mV RMS / 600 ohms 50mV - 1V RMS/1K ohms, variable thru' GAIN control
HEADPHONE Output	150 mV at 8 ohms, THD < 1%
ECHO Distortion Echo System Delay Time	< 1% Digital Signal Processing 20 ms to 600 ms
S / N RATIO Line Output Level	>70 dB (0dBm, 0.775V)
POWER SUPPLY	AC: 240V, 50Hz DC: 24V
DIMENSIONS	W 483 x H 93 x D 366 mm
WEIGHT	6.75 kg