

Carvin

MX1202 (EQ) MX1602 (EQ)

Pro Line Professional Mixers

Please Read Before Operating Your Carvin Mixer

UNPACKING

Carefully remove the mixer by opening the carton and holding the carton flaps out. Turn the mixer upside down and lift the carton off. Now turn the mixer right-side up. In the event the mixer is moved or re-shipped "ALWAYS" use the original carton and packing material. If not, structural damage could deface the unit. Carvin or the Shipping Company will not be liable. **SAVE ALL PACKING MATERIALS!**

INSPECTION

Inspect the unit for damage that may have occurred in transit. If damage is found, notify the transportation company immediately, and file a damage claim. The Claim must be instituted by yourself, the consignee. Save all cartons for proof of damage. Please notify Carvin of any damage done.

MIXER SET-UP — Do Not Turn On Yet!

The information supplied within this manual is intended to explain the operation of your mixer as clearly and concisely as possible. However, no attempt has been made to instruct an operator on the basic principles of sound reinforcement or recording techniques. A number of books are available on these subjects.

TO SET-UP, develop and adhere to a standard procedure of setting all Faders to their lowest position. Set all Channel Equalizers to the "Flat" mid-position. Set the Graphic Equalizer (if equipped) to the center "0" mid-position. Set Pan controls to mid-position. Turn all remaining controls fully counter-clockwise to the off position. Now, check that the AC line voltage in your area matches the input requirements of your board. The voltage can vary $\pm 10\%$ of rated input. Make all the necessary connections to the Board and you should be ready to start by following the detailed instructions of this manual.

MIXER INTRODUCTION

Your new Carvin Mixer has been designed and built using the most modern and innovative circuits available, in order to bring to you a state-of-the-art professional mixer. Our constant research into audio circuitry as well as attention to the latest methods of electronic packaging combine to produce the basic concept of our mixer. We talked with, and received, extensive feedback from sound contractors as well as sound people, involved with sound reinforcement, about the real needs and requirements of a mixer before actually beginning our design.

Even though you paid a very reasonable price for your board, it is actually constructed better than many more expensive ones. As an example, your board is wired with a military-type wiring harness. The steel chassis is precision formed and assembled in a modular fashion designed to eliminate strong RF fields. All P.C. Boards are G-10 epoxy fiberglass. Only the best of components like — Switchcraft connectors, Centralab switches, CTS sealed controls, low noise/high slew rate Op-Amps and discrete amplifiers are used. These quality components and our reasonable price is made possible because we sell direct to you, eliminating retail commissions.

Your Carvin mixer is designed to give years of trouble free service. If you have further questions, please call or write.

Carvin

1155 Industrial Ave., Escondido, Calif. 92025

MX1202 and MX1602 Specifications

Number of Inputs	Channel Equalization
12 or 16 Bal Input Channels, 1 Bal Talk-back, XLR connectors.	Main Equalization
Input Circuitry Lo Impedance Bal 150 to 600 Ohms. Bipolar differential circuits utilizing selected, low-noise discrete devices. 12 or 16 Separate Hi Inputs.	Main Outputs Effects/Reverb
Common Mode Rejection Attenuation Typically better than 80 dB. Variable to -56 dB for input voltages up to 15 VAC without input distortion.	Talkback System
Hum & Noise S/N Ratio Main Output Voltages -125 dBV Equivalent Input Noise (E.I.N.). 72 dB Master Fader at nominal level. 10 VRMS Maximum into 600 Ohms (+22 dBm).	Headphone Amps
Output Headroom Frequency Response Distortion (THD) Voltage Gain Level Indicators 18 dB above nominal level (+4 dBm). ± 2 dB 10 Hz to 30 Hz at +10 dBm. Less than .015% nominal. All Main Outputs 70 dB. Individual Peak Level LED's per channel. Professional illuminated V.U. meters for A & B Monitors 1 and 2 Main Outputs. 0 VU = +4 dBm.	Power Requirements Power Supply Construction Dimensions WARRANTY
Sub Inputs A & B Playback inputs for Cascading mixers or for tape line inputs.	
Channel Interrupt Channel Assign 12 or 16 outputs for multi-channel recordings plus break-in for effects. Channels can be assigned to A or B or Both by Pan Control.	

LIMITED WARRANTY

Your Carvin Professional Series Product is protected against failure for 1 YEAR. Carvin will service the unit, supply all parts, and pay the RETURN shipping charges at no charge to the customer providing the unit is under warranty. At no time will Carvin pay for Servicing or Parts except our own.

This warranty is extended to the original purchaser only (not transferable) and does not cover failures by incorrect use, inadequate care of unit, or natural disasters.

Carvin takes no responsibility for any horn driver or speaker damaged by this unit.

This warranty is in lieu of all other warranties, expressed or implied, and no representative or person is authorized to represent or assume for Carvin any liability in connection with the sale or servicing of Carvin products.

FACTORY SERVICING

We highly recommend utilizing our specialized servicing staff to bring your unit up to factory specifications. For Factory servicing "In" or "Out" of Warranty follow these requirements:

1. Call us TOLL-FREE 800-854-2235 for a return authorization number. Write this number on the shipping carton.
2. Include a full description of the malfunction. State whether or not the unit is under warranty.
3. Return the amp in its original carton. Neither Carvin nor the Shipping Co. is liable for damage caused by improper packing. Ship by United Parcel Service if possible. The shipment must be pre-paid by the customer.
4. Allow 5 working days for servicing plus shipping time to and from destination.
5. Carvin will pre-pay the shipping (by United Parcel) back to you providing the unit is under warranty. If you wish return shipment by AIR, you will be required to pay the difference COD.
6. If your unit is out of warranty, you will be charged a modest fee (generally lower than repair shops). You will also be required to pay the return shipping charges. These charges will be collected COD.

SERVICING IN YOUR AREA

You may select your own service center or have your qualified technician work on the unit at your own expense. This will not void the warranty for future repairs by us unless damage was done because of improper servicing or components. If damage was done, a normal fee for parts and servicing will be charged.

Under the 1 Year Warranty, Carvin will ship parts pre-paid to you or your technician providing the defective part(s) are returned first for our inspection.

If you do not have a qualified service person, we ask that you don't involve yourself in servicing the unit. By sending the unit back to us, you may save time and money in the long run, plus your unit will be factory serviced.

Reminder: Carvin Does Not Pay for other Servicing or Parts except our own — No Exceptions. If you elect to have your own servicing done, these bills must be paid by you.

Peak Level Indicator utilizes a LED to show at what point the pre-amp is being overloaded.

Large professional V.U. Meters with illuminated scales.

20 dB mic pad prevents pre-amp overloading caused by high input levels.

36 dB feedback type pad optimizes each channel for proper attenuation, especially high input levels.

3 Band EQ utilizes Active Filters with feedback design for optimum performance and lowest possible distortion. A wide range of ± 16 dB gives tremendous boost or cut without adding coloration to your sound. Optimum center frequencies are set at 100 Hz, 2.5 K, and 10 kHz.

The Monitor 1 level control sends a pre fader and pre EQ signal to the Monitor 1 main fader.

The Monitor 2 level control sends a pre fader and pre EQ signal to the Monitor 2 main fader.

The Effects/Reverb send level control delivers a -10 dBm signal to a 1/4 output jack for external effects. This same level control also delivers a signal to the built-in Hammond Reverberation System. This control is post fader.

Pan Pots assign the channel into A or B Main Outputs. Log panning circuits give a true panning affect.

Channel marking area enabling you to write in your own identifications.

Solo Switch locks on to listen to one or more channels, excluding all other signals.

Large 90mm Faders with 10% log taper for professional fade-outs with built-in dust covers for long life.

1" Thick Solid Walnut sides (not veneered).

The Carvin name backs the MX boards for one solid year against any defects or failures, plus we prepay the return shipping to the customers under warranty repairs or supply parts at no charge. For further information, see page 60. There is no better board at twice the price with the same features!

Mixer Functions

23. OPTIONAL GRAPHIC EQUALIZERS. If you purchased your board with the Four optional graphic equalizers, you will have the ability to change the complete audio spectrum. Each Nine Band Graphic Equalizer is pre-assigned to the boards main outputs with one graphic each for A and B Mains and Monitors 1 and 2. We will discuss later the "Equalizer Defeat Switch Section" which can be used to re-assign the Equalizers to another function.

Equalizer Function: Each 9 Band Graphic Equalizer has been optimized for sound reinforcement which includes the tuning of all frequencies from 60 to 16K Hz. Precise 1 octave bands are set at 60, 125, 250, 500, 1K, 2K, 4K, 8K, and 16K Hz. The Boost and Cut is capable of a minimum 15dB which is more than enough for average adjustments.

Equalizer Operation: When all slider knobs are centered along the "zero line", the equalizer has no effect. By raising any slider off the zero line, that portion of the audio spectrum (1 octave wide) is boosted. Likewise, lowering the slider from the zero line reduces the gain in that particular band. The left hand sliders control the lower frequencies (bass) and the right hand sliders control the high frequencies (treble). The middle sliders control the mid-frequencies.

NOTE: If your board does not have the four 9 Band Equalizers, the EQ Defeat Switches must be left in the "Out Position" or the Main Faders will be disconnected from the boards main outputs.

24. The EQ DEFEAT SWITCHES can be used for several purposes. First, for comparing the equalized signal to the original signal. Secondly, you can re-assign the EQ for other purposes. This is accomplished by pushing the desired EQ button to be used to the "OUT" position and connecting two 1/4" phone patch cords as follows: (To use an EQ for a particular Channel), plug one end of one cord to the desired channel "SEND" jack. Plug the other end into the desired EQ's "IN" jack. Now take the other cord and plug one end into the EQ's "OUT" jack and plug the other end into the Channel's "RECEIVE" jack. You have now created the in-out loop to isolate the EQ from the rest of the board.

If you wish to EQ the SUM A + B Main Output, you must push the desired EQ to be used to the "Out Position" and plug one end of a patch cord into the SUM A + B "OUTPUT" jack and the other end into the EQ "IN" jack. You must now use the EQ "OUT" jack as the Main SUM A + B Output. These outputs are designed for 600 Ohms or higher impedances which are fine for cable runs of under 50'. However, for longer runs, a 600 Ohm Bal. Line Transformer (not a Mic Transformer) will be required to convert the EQ output into a Balanced output.

The Board's Equalizers can also be used for accessories outside the board as long as your accessory can be loaded to 10K Ohms or less.

NOTE: When using the Equalizers for other purposes (except for the main outputs) make certain that the EQUALIZER DEFEAT SWITCH is in the "OUT" position.

REAR PANEL DESCRIPTION

25. The MAIN OUTPUTS of A & B and Monitors 1 and 2 plus the SUM A + B all featured Balanced D3F connectors and Unbalanced Phone jacks. These outputs are designed for a minimum impedance of 600 Ohms. Both type of outputs can be used at the same time providing that the total impedance is not below 600 Ohms.

Likewise the CONTROL ROOM Outputs and the EFFECTS SEND can be used with a minimum load impedance of 600 Ohms.

26. The CHANNEL SEND & RECEIVE Jacks are designed for individual channel interruption for accessories or as Direct Outs for recording. The SEND jack is designed for any loads down to 600 Ohms for sending the channel signal to your accessory or recorder. This jack does not interrupt the signal to the main fader when used.

The CHANNEL RECEIVE jack is designed to receive your signal back into the channel. The input impedance of this jack is also 600 Ohms in which your device should be capable of delivering a signal into a 600 Ohm load. This jack interrupts the channel output to the Main Fader which enables the entire signal to go through your device before returning to the board.

NOTE: Both the CHANNEL SEND & RECEIVE are pre-fader (not affected by the fader). The Output of the SEND jack is -10dBm with a -50dBm input reference. The 40dB amplification should be more than ample for professional recorder requirements.

27. The AC LINE CORD is a three wire grounding type which features a European-style connector for easy removal. Use care when connecting as this can be subject to damage. For proper mixer grounding, always plug into a 3 prong grounded outlet.

28. The PRIMARY FUSE is designed to protect your boards power supply should there be any malfunction. The proper fuse value is 1AGC. Never use a different value or permanent damage may result to the boards power supply.

29. The 110-220 VOLT OPERATION SWITCH is located under the AC power socket and is covered by a protective cap. All boards are pre-set for 110/120 volt operation from the factory. Please check the power in your area. If your area is using 220 volts, please remove the cap and visually select the internal switch to 220. The wrong input voltage will damage the power supply which will not be covered under warranty.

DISASSEMBLY FOR SERVICING. All servicing can be accomplished by removing the bottom cover plate only. This is done by removing 12 screws from the bottom plate (4 from each front and back and 2 screws from each wood end piece). The plate should now lift off.

To re-assemble, always put the screws back into the wood end pieces first. **NOTE:** Do not take the wood end pieces off as you might experience difficulty in re-aligning your board back together again. **CAUTION:** Do Not Cross-thread or use excessive force on the "Pern-Nuts" that hold the screws to the metal as they can be pushed-out or damaged.

KEEPING YOUR BOARD LOOKING GOOD. The Solid Walnut ends are of fine furniture quality. To keep the hardwood from drying out, we recommend using Lemon Oil on a soft polishing cloth. Be careful not to get the oil on the panel. Also use a soft paint brush occasionally to dust your board off. If your board is dirty, dampen a soft cloth and wipe the board clean.

Equalizer defeat switches allows you to compare equalized and unequalized signals.

Phantom Power Supply Switch delivering +48V for condenser mic's with LED light indicator.

Heavy-Duty Power Switch with LED light indicator.

Optional 4 independent **9 Band Graphic Equalizers** with precision 1 octave increments at 30, 60, 120, 250, 500, 1k, 2K, 4K, 8K, and 16K Hz with ± 15 dB. These equalizers are featured for the A & B Mains and Monitor 1 & 2 Mains. They can also be re-assigned for other purposes.

A and B Playback levels for tape deck playback into the board.

Talk Back System for communicating back to A and B Main or 1 and 2 Monitor or all 4 simultaneously. Features its own level control and balance D3F mic connector.

VU Calibration Controls for independently adjusting the VU meters.

Control Room level control and selector allows listening to the A and B mains (in stereo), A and B summed, Monitor 1, Monitor 2, and the Effect-Reverb Buss. Right and left jacks for control room output are featured along with a stereo headphone jack.

The "Solo" system is automatically switched into the control room system.

Separate **Panning Controls** allow the Effects and Reverb to be assigned into the A or B main outputs.

Separate **Effects and Reverb Receive Levels** for inserting the right amount of effects and reverb into the A and B main outs.

Separate **Effects and Reverb Level Sends** for properly adjusting your drive to prevent overloading the effects systems. The effects send can also be used as a separate sub-mixer if not used for effects.

The "Solo" level gives you the desired listening level while the solo LED indicates that the solo system has been automatically switched into the control room outputs.

The **Sum Level Control** of A and B Main Buss mixed together to give you a separate monoaural output which is completely independent.

MX1202 and MX1602 Specifications

Number of Inputs	Channel Equalization
12 or 16 Bal Input Channels, 1 Bal Talk-back, XLR connectors.	Main Equalization
Input Circuitry Lo Impedance Bal 150 to 600 Ohms. Bipolar differential circuits utilizing selected, low-noise discrete devices. 12 or 16 Separate Hi inputs.	Main Outputs Effects/Reverb
Common Mode Rejection Attenuation Typically better than 80 dB. Variable to -56 dB for input voltages up to 15 VAC without input distortion.	Talkback System
Hum & Noise S/N Ratio Main Output Voltages -125 dBV Equivalent Input Noise (E.I.N.) 72 dB Master Fader at nominal level. 10 VRMS Maximum into 600 Ohms (+22 dBm).	Headphone Amps
Output Headroom Frequency Response Distortion (THD) Voltage Gain Level Indicators 18 dB above nominal level (+4 dBm). ± 2 dB 10 Hz to 30 Hz at +10 dBm. Less than .015% nominal. All Main Outputs 70 dB. Individual Peak Level LED's per channel. Professional illuminated V.U. meters for A & B Monitors 1 and 2 Main Outputs. 0 VU = +4 dBm.	Power Requirements
Sub Inputs A & B Playback inputs for Cascading mixers or for tape line inputs.	Power Supply Self-contained bipolar power supply, fully regulated and fused.
Channel Interrupt 12 or 16 outputs for multi-channel recordings plus break-in for effects.	Construction 18 Gauge Steel chassis Black Epoxy finished. 1" Solid Walnut Sides.
Channel Assign Channels can be assigned to A or B or Both by Pan Control.	Dimensions MX1202 Width 35 1/4", Depth 25 1/2", Height 7". MX1602 Width 42 1/4", Depth 25 1/2", Height 7". WARRANTY 1 YEAR Parts and Labor.

LIMITED WARRANTY

Your Carvin Professional Series Product is protected against failure for 1 YEAR. Carvin will service the unit, supply all parts, and pay the RETURN shipping charges at no charge to the customer providing the unit is under warranty. At no time will Carvin pay for Servicing or Parts except our own.

This warranty is extended to the original purchaser only (not transferable) and does not cover failures by incorrect use, inadequate care of unit, or natural disasters.

Carvin takes no responsibility for any horn driver or speaker damaged by this unit.

This warranty is in lieu of all other warranties, expressed or implied, and no representative or person is authorized to represent or assume for Carvin any liability in connection with the sale or servicing of Carvin products.

FACTORY SERVICING

We highly recommend utilizing our specialized servicing staff to bring your unit up to factory specifications. For Factory servicing "In" or "Out" of Warranty follow these requirements:

1. Call us TOLL-FREE 800-854-2235 for a return authorization number. Write this number on the shipping carton.
2. Include a full description of the malfunction. State whether or not the unit is under warranty.
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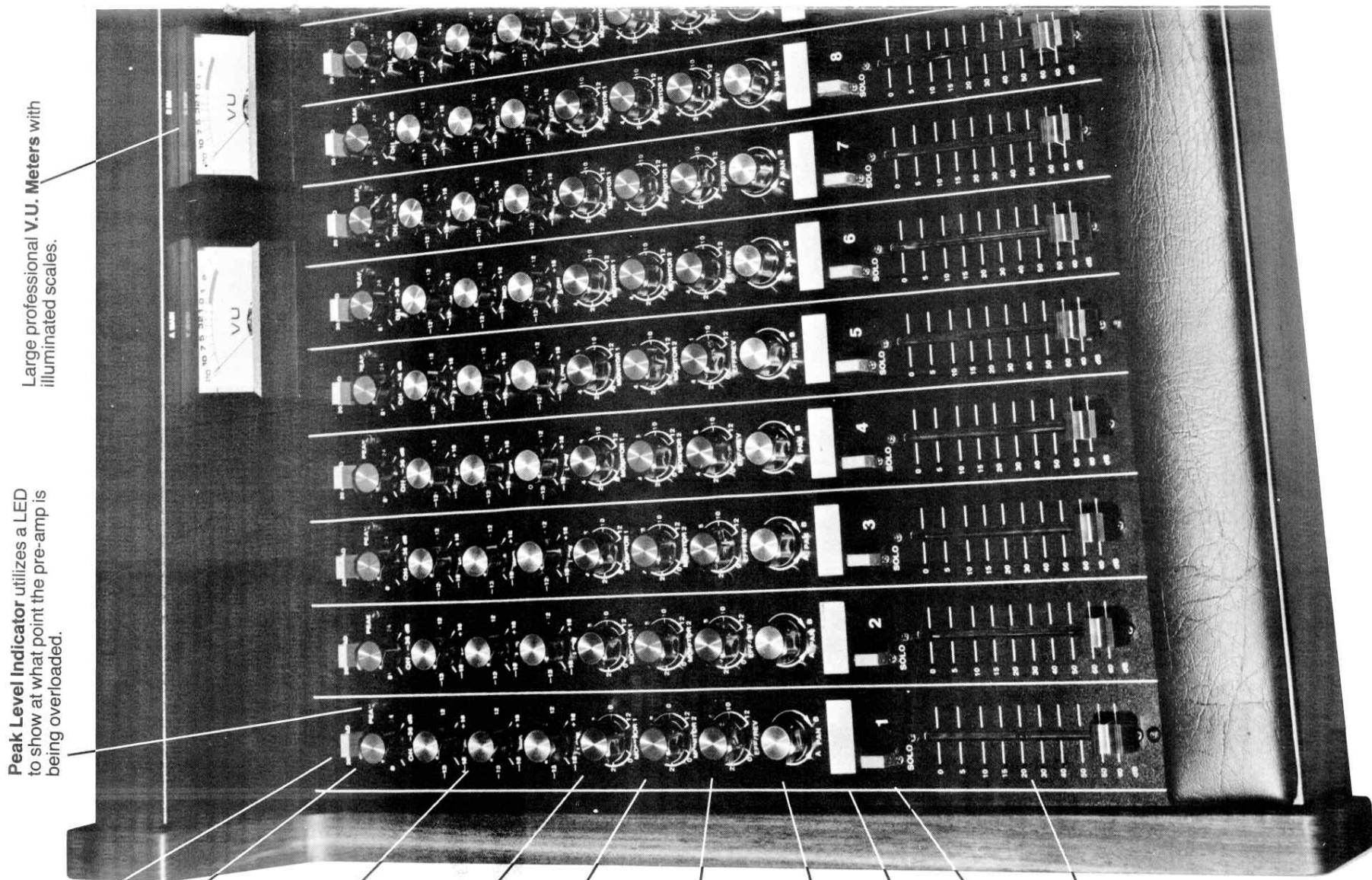
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The Monitor 2 level control sends a pre fader and pre EQ signal to the Monitor 2 main fader.

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Pan Pots assign the channel into A or B Main Outputs. Log panning circuits give a true panning affect.

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