

# MODEL G612

## Guitar Rack Mixer

### INSTRUCTION MANUAL



## **INTRODUCTION**

The Rocktron Guitar Rack Series Model G612 is a single rack space line mixer allowing its user to mix 12 mono inputs down to a stereo output signal. The G612 also features a "Configuration" switch which transforms the unit into a dual 6-channel mixer with stereo outputs for each mixer. Each channel features individual level and pan controls along with 2 send controls for the governing of effects in the effects loops. Capable of matching both -10 and +4dB signal levels, the G612 was originally designed with the guitarist in mind but can also be especially useful for keyboard players, drum machines and many more signal mixing applications.

## **POWER REQUIREMENTS**

The G612 accepts power from the 9VAC/1500mA adaptor supplied with the unit. This 9v RMS AC voltage is internally processed by a voltage doubler, thus generating a bi-polar  $\pm 15V$  to maintain the headroom and sound quality of professional, studio quality equipment. Using an external power source such as this minimizes excessive noise and hum problems often associated with internal transformers, giving the user optimal performance.

## **PRECAUTIONS**

**NOTE: IT IS VERY IMPORTANT THAT YOU READ THIS SECTION TO PROVIDE YEARS OF TROUBLE FREE USE. THIS UNIT REQUIRES CAREFUL HANDLING.**

All warnings on this equipment and in the operating instructions should be adhered to and all operating instructions should be followed.

Do not use this equipment near water. Care should be taken so that objects do not fall and liquids are not spilled into the unit through any openings.

**DO NOT ATTEMPT TO SERVICE THIS EQUIPMENT. THIS EQUIPMENT SHOULD BE SERVICED BY QUALIFIED SERVICE PERSONNEL ONLY. DO NOT REMOVE THE COVER FROM THIS EQUIPMENT AT ANY TIME. DO NOT MAKE ANY INTERNAL ADJUSTMENTS OR ADDITIONS TO THIS EQUIPMENT AT ANY TIME. DO NOT TAMPER WITH INTERNAL ELECTRONIC COMPONENTS AT ANY TIME. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY VOID THE WARRANTY OF THIS EQUIPMENT AS WELL AS CAUSING SHOCK HAZARD.**

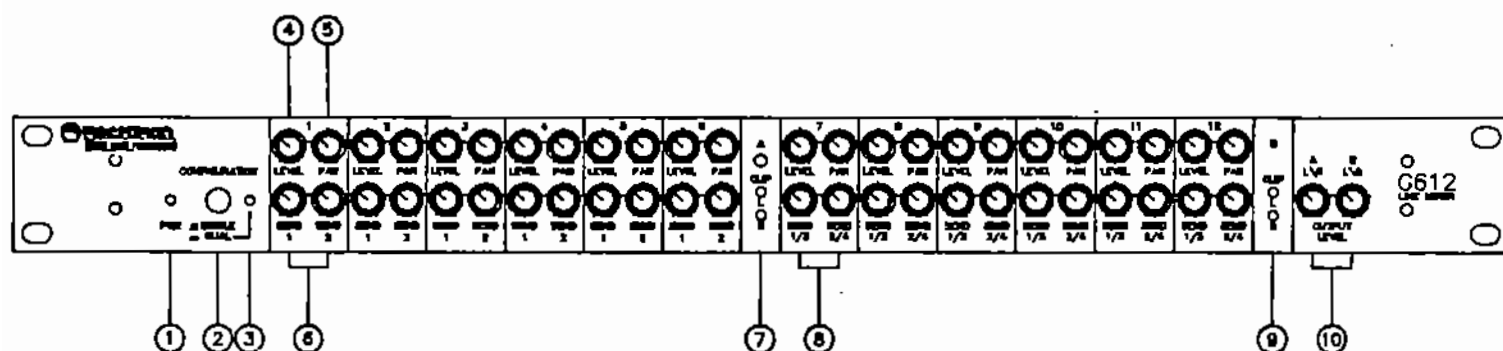
## **OPERATING TEMPERATURE**

Do not expose this unit to excessive heat. This unit is designed to operate between 32F and 104F (0 C and 40 C). This unit may not function properly under extreme temperatures.

## **CLEANING INSTRUCTIONS**

Do not use cleaners such as Benzine to clean the exterior. Use a soft dry cloth to remove dust, dirt or fingermarks. Internal cleaning should only be performed by authorized technicians.

## FRONT PANEL DESCRIPTION



(1). . **POWER LED:**

When lit, indicates the unit is powered and ready for operation.

(2). . **CONFIGURATION SWITCH:**

When switched in, divides the G612 into 2 separate 6-channel mixers with 2 sends and a left and right return each. When switched out, the unit functions as a single 12-channel mixer with 2 left and 2 right returns.

(3). . **CONFIGURATION LED:**

When lit, indicates unit is operating as two separate 6-channel mixers.

(4). . **LEVEL CONTROL (CHANNELS 1-12):**

This control varies the level of the signal entering the unit at its corresponding input jack on the rear panel of the unit. It is adjustable from "off" to +12dB. Each level control is post-send, so any adjustments made to each channel's signal level will have no effect on its send levels.

(5). . **PAN CONTROL:**

This control allows the user to favor each channel's input signal to the left or right output of the unit, adjustable from 100% left to "center" to 100% right.

(6). . **"SEND 1" AND "SEND 2" CONTROLS (MIXER A):**

These controls allow you to vary the level of the signal being sent through each of the SEND jacks to external effects devices. You may also monitor the effect itself by turning down the dry signal level and leaving the SEND control at its normal setting, as each send control is pre-level.

(7). . **LEFT AND RIGHT CLIP LEDs:**

When lit, these LEDs indicate that signal levels in Mixer A are too high and could potentially cause audible distortion. When this occurs, decrease level controls until these LEDs do not light during normal operation.

(8). . **"SEND 1/3" AND "SEND 2/4" CONTROLS (MIXER B):**

When no connection is made to the "SEND 3" and "SEND 4" jacks on the rear panel, these controls will function as "SEND 1" and "SEND 2", respectively, just as they do in Mixer A. When connections are made to the "SEND 3" and "SEND 4" jacks on the rear panel, they will then function as the "SEND 3" and "SEND 4" controls, performing the same function as sends 1 and 2, only using different effects.

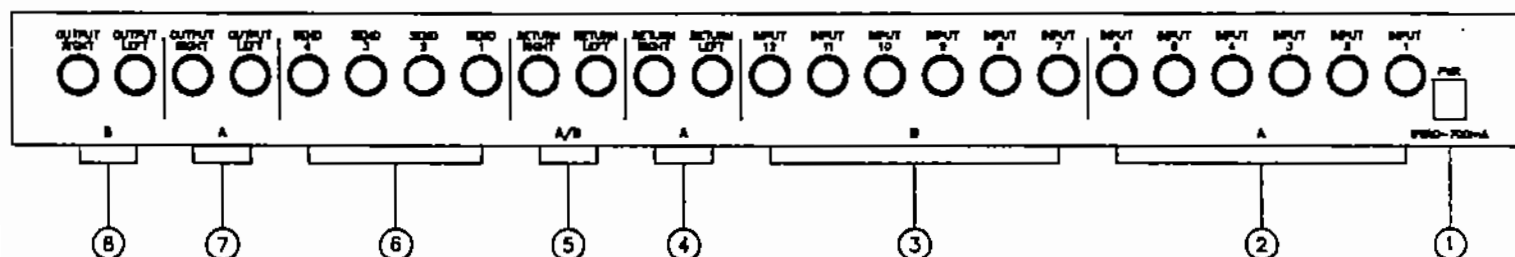
(9). . **LEFT AND RIGHT CLIP LEDS (MIXER B):**

When lit, these LEDs indicate that signal levels in MIXER B are too high and could potentially cause audible distortion. When this occurs, decrease level controls until these LEDs do not light during normal operation.

(10). . **MIXER A AND B OUTPUT LEVEL CONTROLS:**

Each of these controls adjust both the left and right outputs of each mixer simultaneously. When used as a single 12-channel mixer, MIXER B's output level control becomes inoperable.

## REAR PANEL DESCRIPTION



(1). . **POWER JACK:**

This unit accepts power from the 9VAC/1500mA adaptor supplied with the unit. This 9V RMS AC voltage is internally processed by a voltage doubler, thus generating a bi polar  $\pm 15$  volts to maintain the headroom and sound quality of professional, studio quality equipment. Using an external power source such as this minimizes excessive noise and hum problems often associated with internal transformers, giving the user optimal performance.

(2). . **"INPUT 1" THROUGH "INPUT 6" JACKS:**

These standard 1/4" mono jacks accept mono input signals to be mixed by the unit. Each may be altered individually by its corresponding controls on the front panel. These 6 input jacks all correspond to MIXER A. Read the specifications section to determine the maximum input level. These jacks may also be used as effect returns, allowing the user the ability to pan the signal left, right or center.

(3). . **"INPUT 7" THROUGH "INPUT 12" JACKS:**

These standard 1/4" mono jacks accept mono input signals to be mixed by the unit. Each may be altered individually by its corresponding controls on the front panel. These 6 input jacks all correspond to Mixer B. Read the specifications section to determine the maximum input level. These jacks may also be used as effects returns, allowing the user to pan the signal left, right, or center.

(4). . **MIXER A LEFT AND RIGHT RETURN JACKS:**

These standard 1/4" mono jacks provide returns from effects devices sent from "SEND 1" and "SEND 2". If the unit is used as a 12 channel stereo mixer and the effect being sent from "SEND 1" has stereo outputs, both outputs should be connected here. Then the outputs from the effect being sent from "SEND 2" would be connected to the MIXER A/B left and right returns (see #5). If the unit is used as a dual 6-channel mixer, the output of the effects from "SEND 1" and "SEND 2" should be mono and connected to the MIXER A left and right returns (unless there are unused MIXER A inputs, which may be used as effect returns).

(5). . **MIXER A/B LEFT AND RIGHT RETURN JACKS:**

These standard 1/4" mono jacks provide returns from effects devices sent from either "SEND 2" for 12-channel mixer applications or "SEND 3" and "SEND 4" for dual 6-channel applications. The output from effects sent from "SEND 3" and "SEND 4" should be mono and connected to the MIXER A/B left and right return jacks (unless there are unused MIXER B inputs, which may be used as effect returns).

(6). . **SEND 1 THROUGH SEND 4 JACKS:**

These standard 1/4" mono jacks provide sends to external effects devices which can be mixed with the dry input signals via the "SEND" controls on the front panel. Whether used as a single 12-channel or a dual 6-channel mixer, all 4 sends can be used at any time. It should be noted that when used as a dual 6-channel mixer, dummy 1/4" plugs should be inserted into the "SEND 3" and "SEND 4" jacks if they are not being used. Otherwise, signals from MIXER B will be bussed to MIXER A via the MIXER B send controls. The reason for this being that the "SEND 3 and 4" jacks are "normaled" to the "SEND 1 and 2" bus, respectively, meaning the "SENDS 3 and 4" are connected to "SENDS 1 and 2" at all times unless a 1/4" plug is inserted to break the connection. This is done so that "SENDS 1 and 2" can be accessed through all 12 channels in a single 12-channel mixer application. This situation may also be avoided by ensuring that all send controls in MIXER B are turned fully counterclockwise at all times when connected in this manner.

(7). . **MIXER A LEFT AND RIGHT OUTPUT JACKS:**

These standard 1/4" jacks provide stereo output signals for MIXER A. In a 12-channel mixer application, these jacks will provide stereo output for the entire unit.

(8). . **MIXER B LEFT AND RIGHT OUTPUT JACKS:**

These standard 1/4" jacks provide stereo output signals for MIXER B when the unit is used as a dual 6-channel mixer

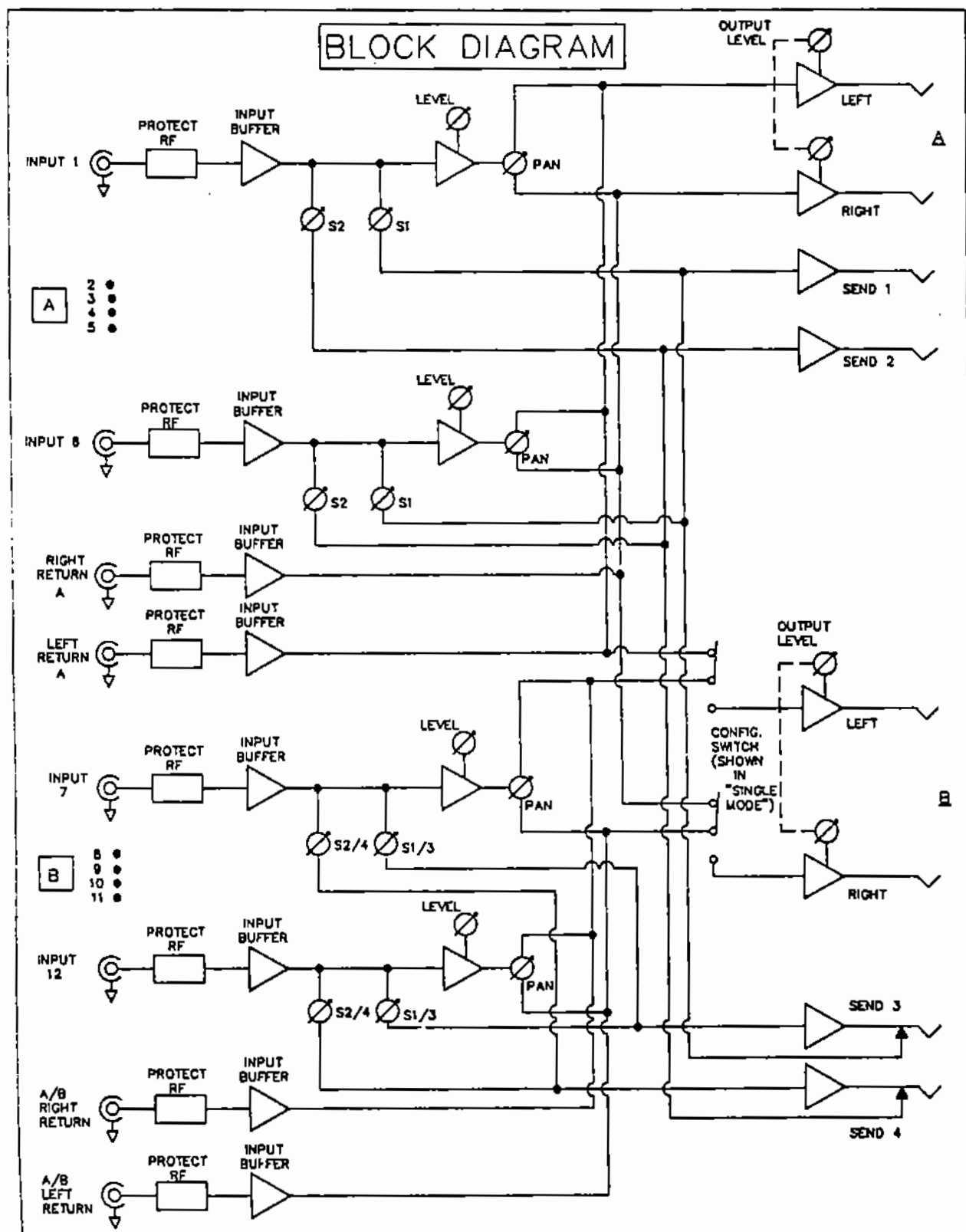
## **BLOCK DIAGRAM AND OPERATION**

An input signal is applied to an RF protection circuit and fed to an input buffer at each of the unit's 12 inputs. The input signal runs through the send controls before reaching the level control. This allows for monitoring of the send signals when the level control is turned completely down. It then runs to the level control where the signal level can be adjusted from "off" to +12dB. It leaves here and travels to the pan control where it can be favored to the mixer's left or right output, from 100% left to "center" to 100% right. From there it reaches the output stage where, via a dual master output control, both the left and right outputs are simultaneously adjusted from "off" to +2dB.

Each effect return also runs through an RF protection circuit and input buffer before reaching its respective left or right mix bus.

The Configuration switch allows for the left and right mix busses of MIXER B to be switched either to its own output stage or, when switched out ("single mode"), connects to MIXER A's left and right mix busses, at which point MIXER B's output jacks become inoperable.

Also note that the outputs of "SEND 3" and "SEND 4" are always connected to the "SEND 1" and "SEND 2" busses, respectively, unless a 1/4" plug is connected to the "SEND 3 and 4" jacks to break this connection. Therefore, when in "dual" mode, any signal in MIXER B that is allowed to pass through its send controls will be sent through "SENDS 1 and 2", eventually returning to MIXER A, which may not be desirable when it is necessary to keep signals in MIXER A and MIXER B separate. This explains the need for inserting 1/4" dummy plugs or ensuring MIXER B's send controls are turned fully down when the G612 is used in this manner.

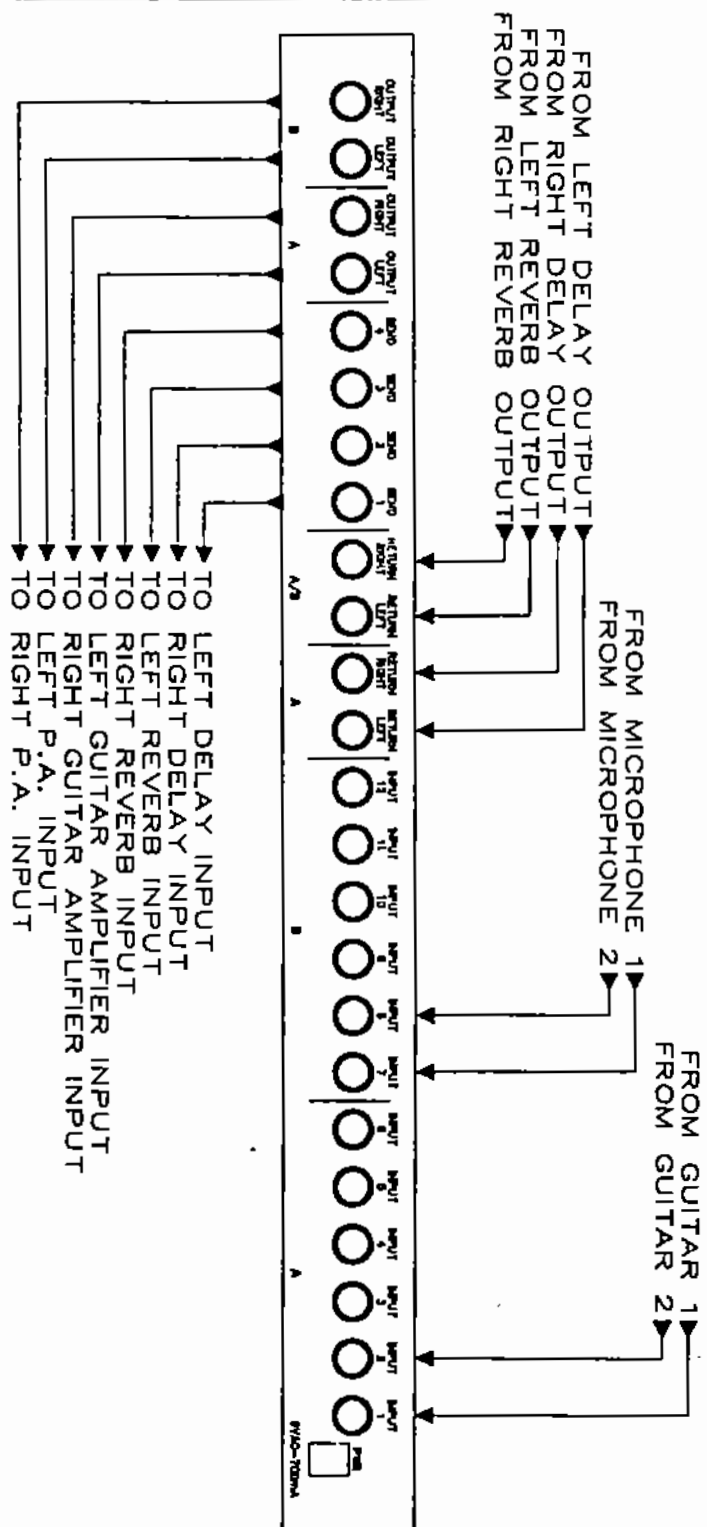


## APPLICATIONS AND CONNECTIONS

The list of applications for the G612 mixer is endless. The illustrations on the following pages are merely examples of only a few of the various ways in which the G612 can be used. Use them as a guide to help you to better understand what connections should be made for your own mixing situations.

### EXAMPLE G612 APPLICATIONS AND CONNECTIONS

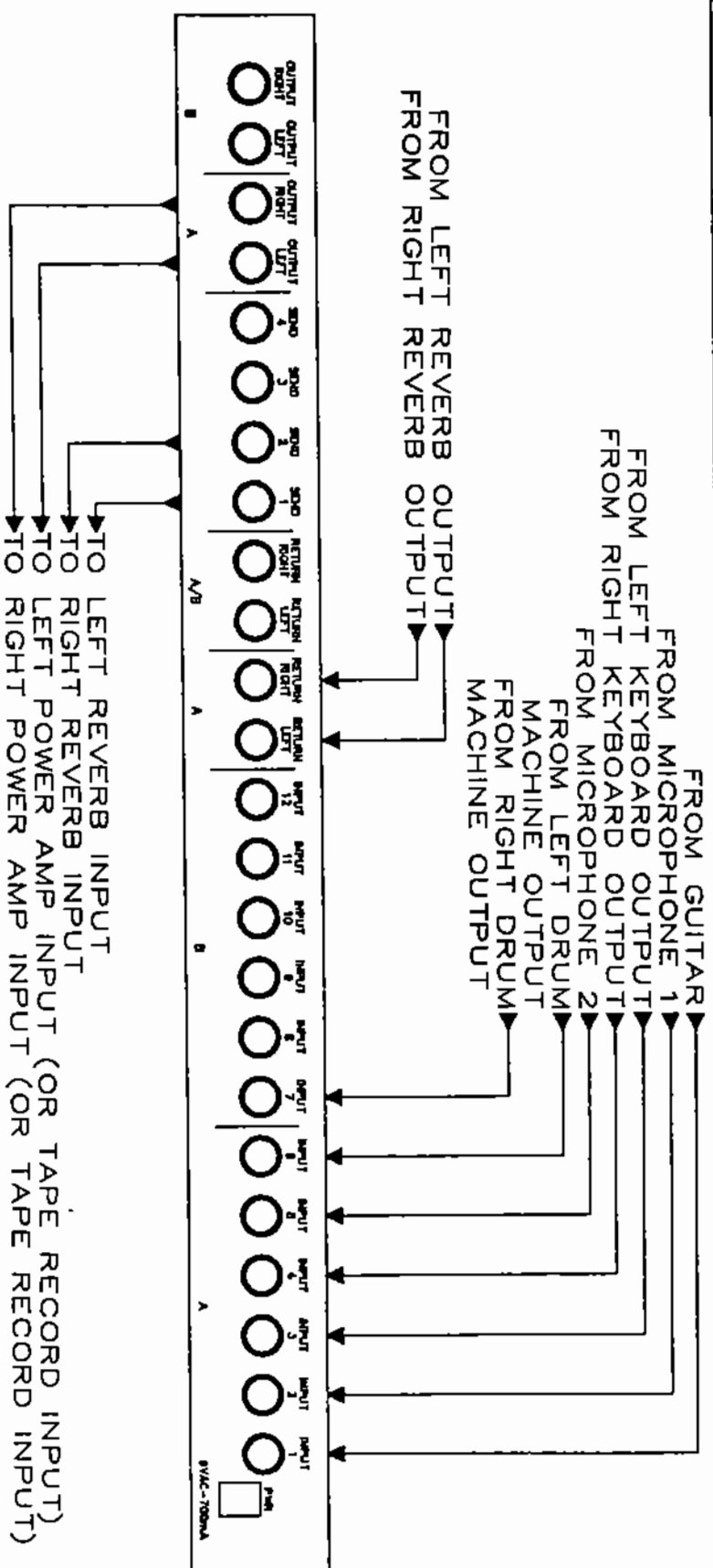
1. DUAL 6 CHANNEL MIXER WITH INDIVIDUAL SEND/RETURN EFFECTS FOR EACH CHANNEL.



\* NOTE: FRONT PANEL "CONFIGURATION" SWITCH MUST BE IN "DUAL" MODE.

## EXAMPLE G612 APPLICATIONS AND CONNECTIONS

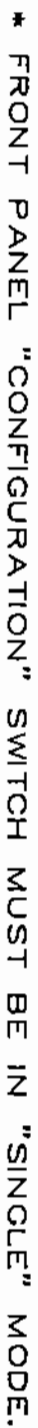
2. SINGLE 12 CHANNEL MIXER WITH 1 SEND/RETURN EFFECT ON ALL CHANNELS.



\* FRONT PANEL "CONFIGURATION" SWITCH MUST BE IN "SINGLE" MODE.

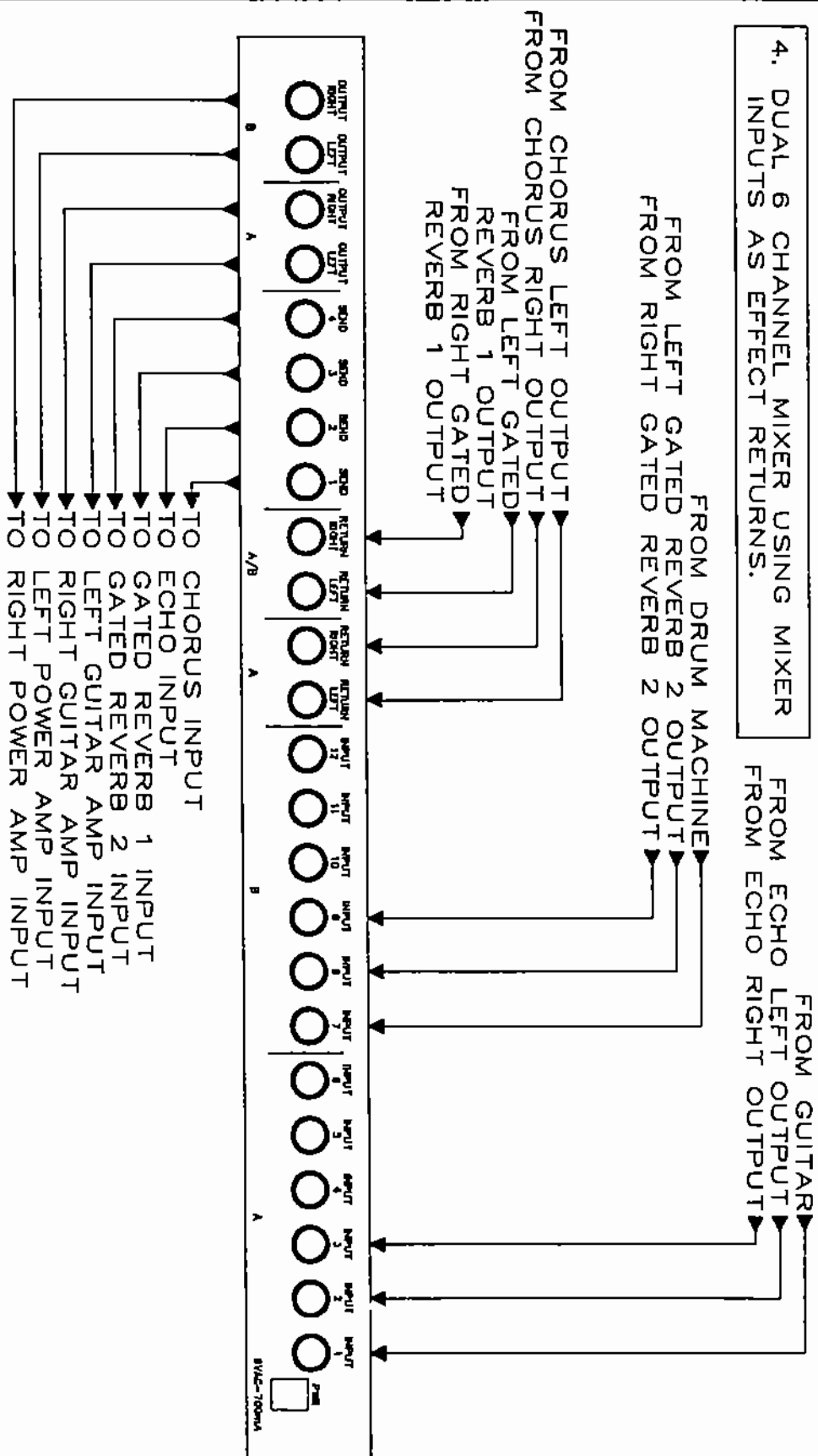


3. SINGLE 12 CHANNEL MIXER WITH 1 SEND/RETURN EFFECT ON ALL CHANNELS.



## EXAMPLE G612 APPLICATIONS AND CONNECTIONS

### 4. DUAL 6 CHANNEL MIXER USING MIXER INPUTS AS EFFECT RETURNS.



\* FRONT PANEL "CONFIGURATION" SWITCH MUST BE IN "DUAL" MODE.

## **SPECIFICATIONS**

### **INPUT**

Input Impedance	470K Ohms
Maximum Input Level	+20dBu
Input Jacks	1/4 mono

### **NOISE FLOOR**

-88dBu (A-weighted)  
(All 12 channels at unity gain)

### **DYNAMIC RANGE**

108dBu

### **OUTPUT**

Output Impedance	less than 150 Ohms
Maximum Output Level	+20dBu
Output Jacks	1/4" mono

### **DISTORTION**

.01% @ 1KHz  
(All 12 channels at unity gain)

### **FREQUENCY RESPONSE**

0, -1/4dB 20Hz - 20KHz

### **POWER REQUIREMENTS**

9VAC/1500mA Adaptor

### **DIMENSIONS**

19" x 6" x 1 3/4"

Note: 0dBu = 0.775V RMS

## **MAINTENANCE**

This unit is designed to provide years of trouble-free service but requires careful handling. To maintain this unit in proper working condition read the Safety Instructions. If any problem is encountered do not return the unit to your Dealer. Rocktron will accept full responsibility for all warranty repairs.

## **WARRANTY**

All parts and workmanship of this Rocktron product are fully guaranteed to be free of defects under normal use and service for a period of THREE years from date of purchase.

The warranty will remain in effect until the original expiration date, regardless of whether or not the product is re-sold in the interim.

It is not required that you fill out a form for warranty registration. We would, however, recommend that the dated proof of purchase be retained throughout the warranty period.

Any damage resulting from mis-use or failure to follow instructions and precautions as stated in the product manual will void this warranty.

Should this Rocktron product require repair, Rocktron will assume responsibility for repair service. Do not return the product to the dealer. Simply repack the unit, sending along a description of the problem to: Rocktron Corporation, 2870 Technology Drive, Rochester Hills, MI 48309. All shipping charges must be fully prepaid.

This warranty is void if the original Serial Number has been altered or removed, or if this unit has been altered in any way.

Rocktron Corporation reserves the right to make changes in design and/or improvements upon their products without any obligation to include those changes in any products previously manufactured.

There is no other express warranty on goods covered by this agreement.