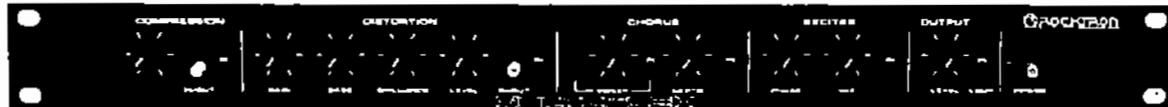


MULTIPLY

INSTRUCTIONS



U.S. Patents # 4538297.
Other pats. pend.

 **ROCKTRON**
CORPORATION

INTRODUCTION:

The Rocktron Multiplex is a single rackspace multi-effects unit specifically designed to provide diverse sound combinations in an efficient package. Internal automatic noise reduction provides noise free performance whether the Multiplex is used in live performance situations or in recording studio settings. The Multiplex is equipped for optional external footswitching.

This operating manual will introduce you to the Multiplex and its various functions. After reading this manual carefully, keep it for future reference.

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 the 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 THE 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 WARRANTY SERVICE TO THIS EQUIPMENT, AS WELL AS CAUSING SHOCK HAZARD.

VOLTAGE RATINGS:

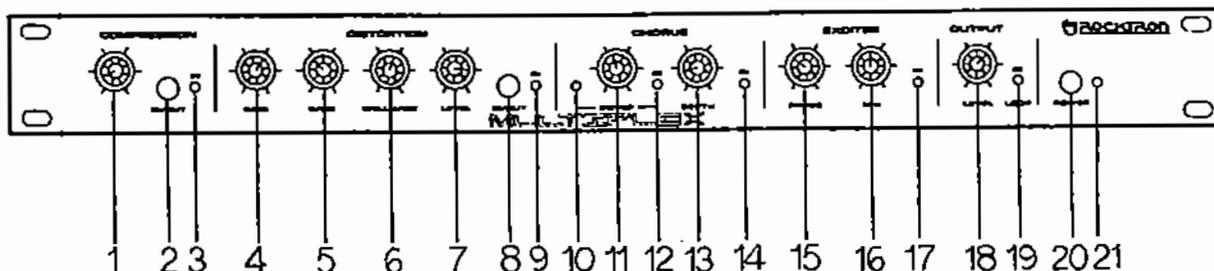
Make sure your AC outlet satisfies the voltage rating to avoid damage to this unit. The back of this unit will be rated one of the following:

| | |
|-------------------------|--------------------|
| JAPAN: | 100 V 50/60 Hz |
| US/CANADIAN: | 115 V 50/60 Hz |
| GERMANY/France/FINLAND: | 220-240 V 50/60 Hz |

OPERATING TEMPERATURE:

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

FRONT PANEL DESCRIPTION



(1) . . . COMPRESSION CONTROL: Variable

The Compression Control simultaneously controls the threshold of compression and the input level to maintain a constant output level independent of the amount of gain reduction used.

(2) . . . COMPRESSION IN/OUT: Switch

The switch provides In/Out switching of the Compressor. The switch is by-passed with the use of an optional external footswitch accessible via the rear panel. Note: The compression circuit is by-passed in the Distortion mode.

(3) . . . COMPRESSION IN/OUT LED:

The Led indicates IN/OUT switching of the front panel IN/OUT Compression switch or of an optional external footswitch.

(4) . . . DISTORTION GAIN CONTROL: Variable

The Gain Control allows control of the distortion gain ratio or overdrive. The Gain Control allows adjustment from a subtle distortion to an extreme high gain distortion sound.

(5) . . . DISTORTION BASS CONTROL: Variable

The Bass Control allows adjustment of the low frequency information in the distortion.

(6) . . . DISTORTION BRILLIANCE CONTROL: Variable

The Brilliance Control allows control over the high frequency content of the distortion sound.

(7) . . . DISTORTION LEVEL CONTROL: Variable

The Level Control adjusts the output level of the Distortion sound relative to the clean sound.

(8) . . . DISTORTION IN/OUT: Switch

The switch provides In/Out switching of the Distortion section. The switch is by-passed with the use of an optional external footswitch accessible via the rear panel.

(9). . . DISTORTION IN/OUT LED:

The Led indicates In/Out switching of the front panel In/Out Distortion switch or of an optional external footswitch.

(10). . . CHORUS SWEEP RATE LED:

The Led indicates the speed of the sweep in the chorus section as determined by the Sweep control.

(11). . . CHORUS SWEEP CONTROL: Variable

The Sweep control adjusts the speed of the sweep circuit and modulation of the audio signal.

(12). . . CHORUS SWEEP IN/OUT LED:

The Led indicates the In/Out Switching of the Sweep Control. The Sweep may be switched In/Out by an optional external footswitch accessible via the rear panel.

(13). . . CHORUS DEPTH CONTROL: Variable

The Depth Control adjusts the amount of modulation of the delayed signal.

(14). . . CHORUS DEPTH IN/OUT LED:

The Led indicates the In/Out switching of the Depth Control. The Depth may be switched In/Out by an optional external footswitch accessible via the rear panel.

(15). . . EXCITER PHASE CONTROL: Variable

The Exciter Phase Control selects the frequency at which the enhancement of the audio spectrum takes place.

(16). . . EXCITER MIX CONTROL: Variable

The Mix Control mixes in the desired amount of excited signal with the original signal and alters the depth of the phase notch. Full turn counter-clockwise of the Mix Control will mix no excited signal in with the original signal.

(17). . . EXCITER IN/OUT LED:

The Led indicates the In/Out switching of the Exciter. The Exciter may be switched In/Out with an optional external footswitch accessible via the rear panel.

(18). . . OUTPUT CONTROL: Variable

An Output Control is provided to adjust the master output level of the Multiplex for the required signal level of the equipment it is being interfaced with.

(19). . LOOP IN/OUT LED:

The Led indicates In/Out switching of the External Loop, which is only controllable by an optional external footswitch. In absence of any external device, the Loop footswitch can be used for a muting switch.

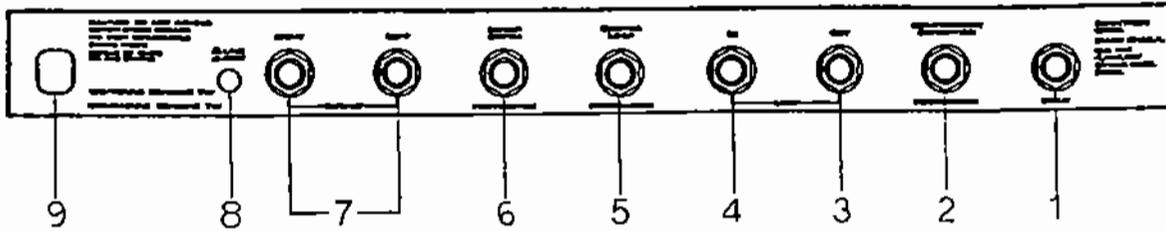
(20). . POWER SWITCH:

The Power On/Off Switch turns the power On or Off for the unit. NOTE: READ PRECAUTIONS, BASIC OPERATIONS, AND SPECIFICATIONS BEFORE TURNING THE POWER ON.

(21). . POWER LED:

The Led indicates Power On/Off for the unit.

REAR PANEL DESCRIPTION



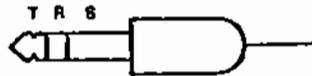
(1) . . INPUT JACK:

This standard unbalanced mono 1/4" jack is used to provide input to the unit. The input is high impedance. Read the specifications to determine the maximum input level. Failure to do so will overdrive the unit and may damage the internal circuitry.

(2) . . COMPRESSION/DISTORTION FOOTSWITCH JACK:

This standard stereo 1/4" jack accepts a dual function optional external footswitch for Compression I/O and Distortion I/O. The use of the external footswitch renders the front panel Compression In/Out switch and the Distortion In/Out switch non-functional.

T Distortion
R Compression
S Ground



NOTE: THE FOOTSWITCHES ARE OPTIONAL AND MAY BE PURCHASED SEPARATELY AT ANY ROCKTRON DEALER.

(3) . . LOOP OUT JACK:

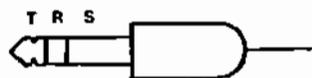
This standard 1/4" mono jack provides mono output, which may be used as an input for any external effect or signal processor or multiple daisy-chained combinations. Read applications for more information.

(4) . . LOOP/EXCITER FOOTSWITCH JACK:

This standard 1/4" stereo jack accepts a dual function optional external footswitch for Loop I/O and Exciter I/O functions.

In the absence of any external device in the Loop, the Loop footswitch can be used for muting. The Loop and Exciter cannot be switched In/Out without the use of an external footswitch.

T Exciter
R Loop
S Ground



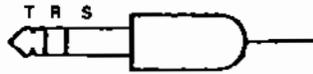
(5) . . LOOP IN JACK:

This standard 1/4" mono jack accepts the output of any external effect device to insert it in the loop.

(6) . . SWEEP/DEPTH FOOTSWITCH JACK:

This standard 1/4" stereo jack accepts a dual function optional external footswitch for In/Out switching of Sweep and Depth Controls.

T Depth
R Sweep
S Ground



(7) . . RIGHT AND LEFT OUTPUT JACKS:

These two standard 1/4" mono jacks provide the Right and Left Outputs of the unit. The output level is variable via the Output Control on the front panel. Read Input and Output specifications to avoid overdriving the unit.

NOTE: The chorus is panned primarily left. If the Multiplex is being used in a mono set up, use the LEFT output for optional chorusing effect. DO NOT TIE THE OUTPUTS TOGETHER.

(8) . . INSTRUMENT/LINE LEVEL: Switch

This switch is used to adjust the output level of the unit to line or instrument level.

PRECAUTION: READ OUTPUT SPECIFICATIONS AND BASIC OPERATION FOR PROPER USE.

(9) . . POWER CORD:

NOTE: VERIFY YOUR AC WALL OUTLETS VOLTAGE RATING AGREES WITH THAT OF THE UNIT.

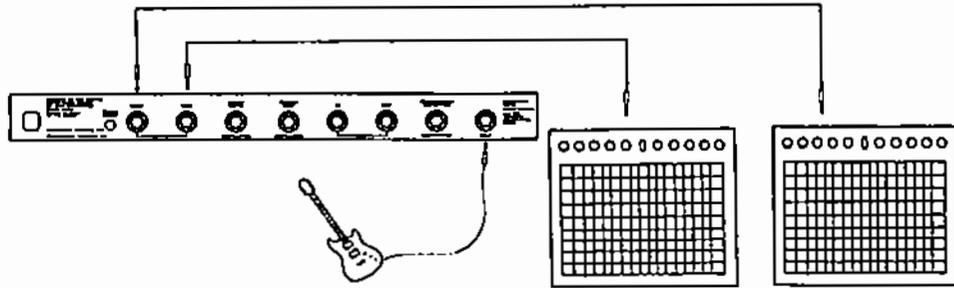
This cord is provided to connect the unit to your AC wall outlet. DO NOT RUN THIS UNIT FROM CAR BATTERIES OR ANY OTHER EXTERNAL POWER SOURCE.

CONNECTIONS AND APPLICATIONS

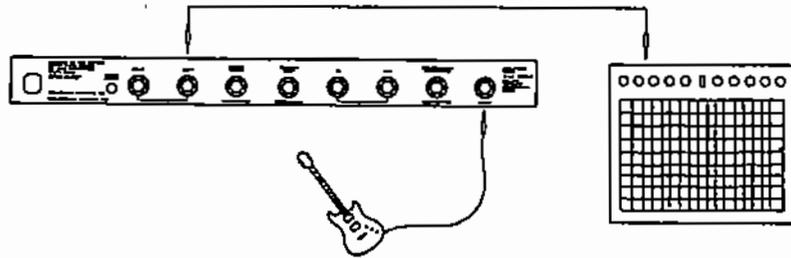
The Multiplex is designed to be used in either the line or instrument level. Make the appropriate connections as shown below. (Make a habit of turning ON the power of the Multiplex before turning on the power of the output amplifier or mixing board, etc.)

Instrument Mode:

Instrument with 2 amplifiers use both left and right out for stereo.

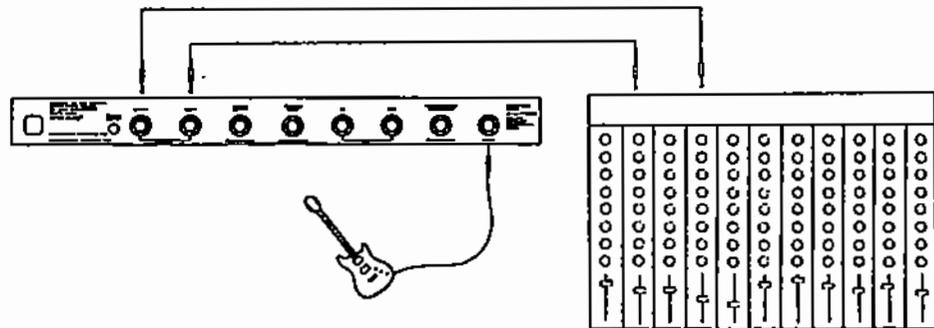


Instrument with one amp use LEFT out.

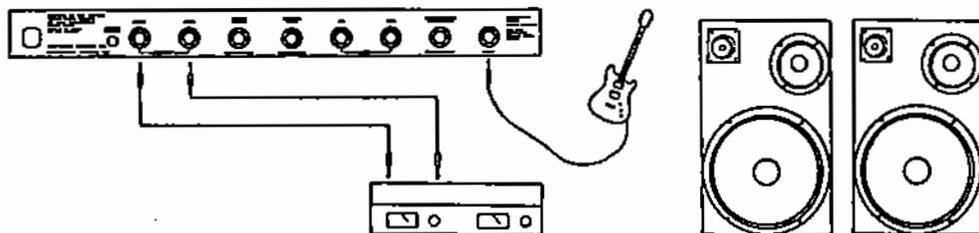


Line Mode:

Direct into mixing board.

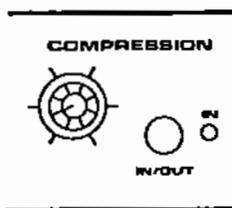


Into a stereo amp and a full range system.



OPERATION

The basic operation for the Multiplex has been divided into different categories. In order to obtain the best performance from your unit, read and understand each of them.



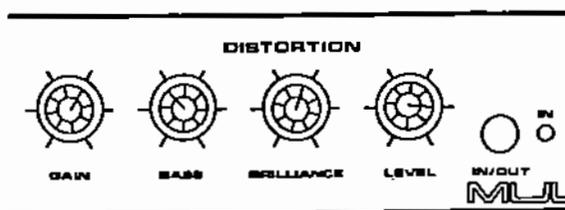
COMPRESSOR:

The Compressor provides program dependent logarithmic compression. With a program dependent attack and release time, it offers an extremely smooth transition into compression.

The amount of compression desired is based primarily on personal preference, and will vary according to various playing styles. The Compression Control gives only high signal level compression in the first half of the control setting, giving a level controlling effect. The second half gives low and high signal level compression, giving a highly compressed sound. All the way clockwise the control provides maximum compression.

Adjust the Compression Control for the desired amount of compression and switch the Compressor In and Out to hear the effect of the compression.

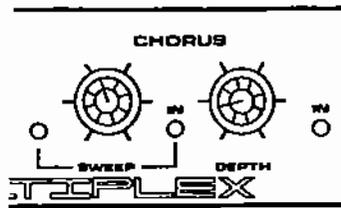
NOTE: MAKE SURE THE DISTORTION IN/OUT IS SWITCHED OUT BEFORE ADJUSTING THE COMPRESSOR. THE COMPRESSOR IS DEFEATED WHEN THE DISTORTION SWITCH IS IN.



DISTORTION:

The Distortion section allows control over Gain Ratio, Bass, Brilliance, and Output Level.

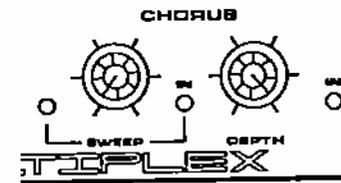
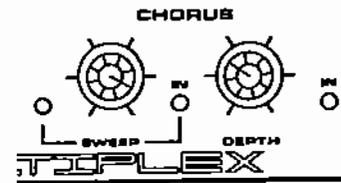
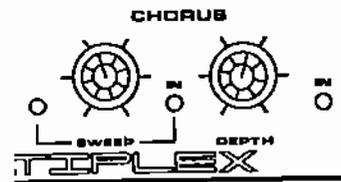
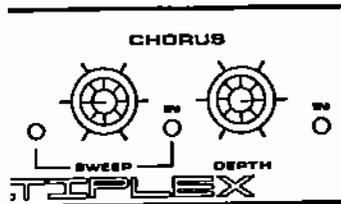
Start by switching the Distortion In. Adjust the Gain Control for the desired distortion sound. The gain can be adjusted from a subtle to an extreme high gain distortion sound. Adjust the Bass Control to obtain the desired amount of the bass content of the distortion sound. Adjust the Brilliance for the desired high frequency content of the distortion. The output level control allows the user to adjust the output level of the distortion sound relative to the clean sound.

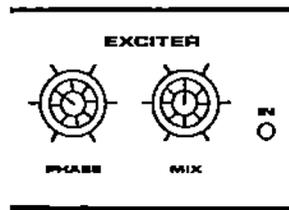


CHORUS:

The Multiplex Chorus provides spaciousness and fullness to the signal, and also provides a stereo processing chorus. The Chorus provides pitch shifting similar in sound to a harmonizing type device with extremely pure effects. The Sweep Control allows the modulation of the audio signal and adjusts the speed of the sweep. The Depth Control adjusts the amount of modulation of the delayed signal.

By adjusting the Depth control full counter-clockwise, the Sweep control is inoperative, leaving only the delay, creating a doubling effect. With the insertion of an optional external dual footswitch, both the sweep circuit and the chorus/doubling circuit can be by-passed completely, allowing the Depth control to remain at any desired setting, while being switched in and out. A commonly used chorus sound can be created by adjusting the sweep and depth control "opposite" to each other as shown below in the first setting. Some other common chorus settings are also shown below.





EXCITER:

The Exciter section provides enhancement of the audio spectrum. The Phase Control selects the frequency at which enhancement takes place and the Mix Control mixes in the desired amount of the excited signal with the original signal and also alters the depth of the phase notch.

With the Mix Control set full counter-clockwise, the Phase Control is non-functional. All the way counter-clockwise, the Phase Control provides enhancement of the low frequency content of the audio spectrum, while all the way clockwise it provides enhancement of the high frequency content of the audio spectrum.

Adjust the Mix Control for the desired amount of mixing of the excited signal with the original signal. Adjust the Phase Control until the desired enhancement of the audio spectrum is obtained.



OUTPUT:

The Output Control is provided as a master output for the Multiplex. Once the line or instrument reference level has been selected to match the interfacing requirements, adjust the output level for the overall system gain.

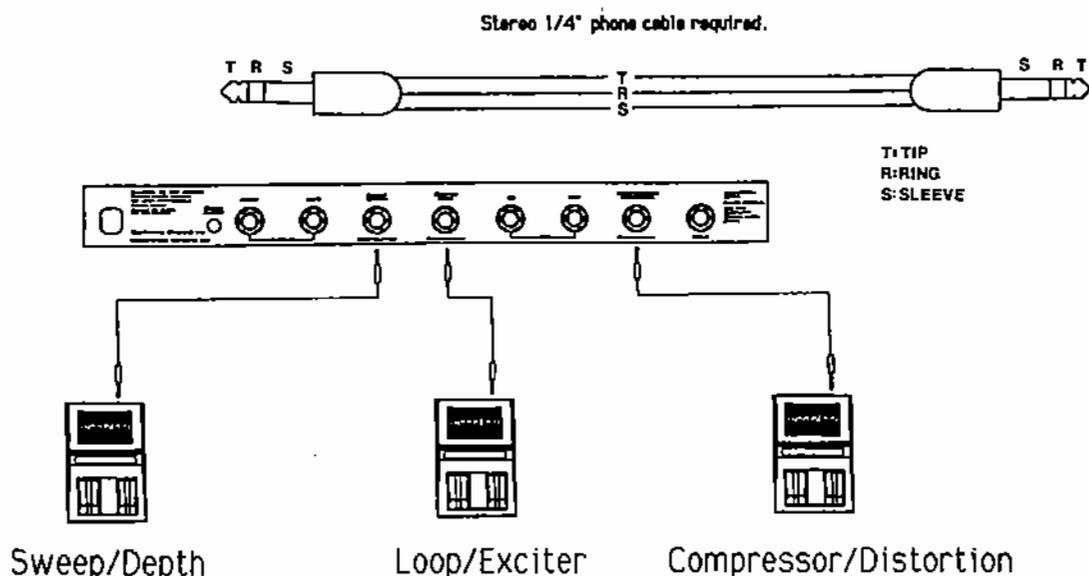
NOTE: A BLANK SETTING CHART IS LOCATED AT THE BACK OF THE MANUAL FOR RECORDING CONTROL SELECTIONS.

NOISE REDUCTION:

The dynamic filtering portion of the HUSH circuitry is provided in the Multiplex. This dynamically controlled low pass filter opens and closes the bandwidth dependent on the amount of high frequency information present in the audio signal. This circuitry functions in all modes of operation automatically providing the Multiplex with optimal noise reduction.

LOOP FUNCTION:

An External Loop is provided in the Multiplex that allows the addition of external devices. Virtually any effect or external signal processor or multiple daisy-chained combinations may be inserted in the loop. The addition of an optional external footswitch is necessary to provide In/Out switching or in the absence of any external device, the loop footswitch can be used as a mute switch.



FOOTSWITCHES:

The Multiplex provides In/Out footswitching capabilities for Compression, Distortion, Chorus, Sweep, Chorus Depth, Exciter, and Loop functions. The footswitch jacks are 1/4" stereo jacks, thus allowing the control of two functions with one footswitch. (Compression/Distortion, Chorus Sweep/Chorus Depth, and Exciter/Loop)

The Multiplex requires three dual stereo footswitches for complete footswitching capabilities. These footswitches are optional and can be purchased at your nearest Rocktron Dealer.

The front by-pass switches are non-functional when the unit is under external footswitch control.

NOTE: DO NOT USE MONO FOOTSWITCHES. USE OF SUCH A FOOTSWITCH MAY RENDER PART OF THE INTERNAL CIRCUITRY NON-FUNCTIONAL.

SPECIFICATIONS

INPUT

| | |
|-----------------|-----------|
| Input Impedance | 470 kohm |
| Max. Input | +9.5 dB |
| Input Jack | 1/4" Mono |
| Max. Loop Input | +19 dB |

COMPRESSION

| | |
|-------------------------|---------------------------------------|
| Level Detection | RMS |
| Compressor Threshold | VAR. -10 to -44 dBV |
| Compressor Attack Time | Less Than 1 msec |
| Compressor Release Time | 0.35 sec/20 dB (Program Dependent) |
| Max. Compression | 25.5 dB |
| Max. Compression Gain | 19 dB |

CHORUS

| | |
|------------|-----------------------|
| Sweep Rate | VAR. From 0.1 to 5 Hz |
| Delay Time | 18 msec |

DYNAMIC RANGE 93 dB

EFFECTIVE NOISE REDUCTION 20 dB

OUTPUT

| | |
|------------------------------|-------------------|
| Max. Line Output Level | +19 dB |
| Max. Instrument Output Level | +11 dB |
| Output Impedance | Less Than 100 ohm |
| Output Gain Control | VAR. +19 dB |
| Max. Loop Output | +19 dB |

POWER REQUIREMENTS 110/120 VAC @ 50/60 Hz

DIMENSIONS 19" x 6" x 1 3/4"

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.

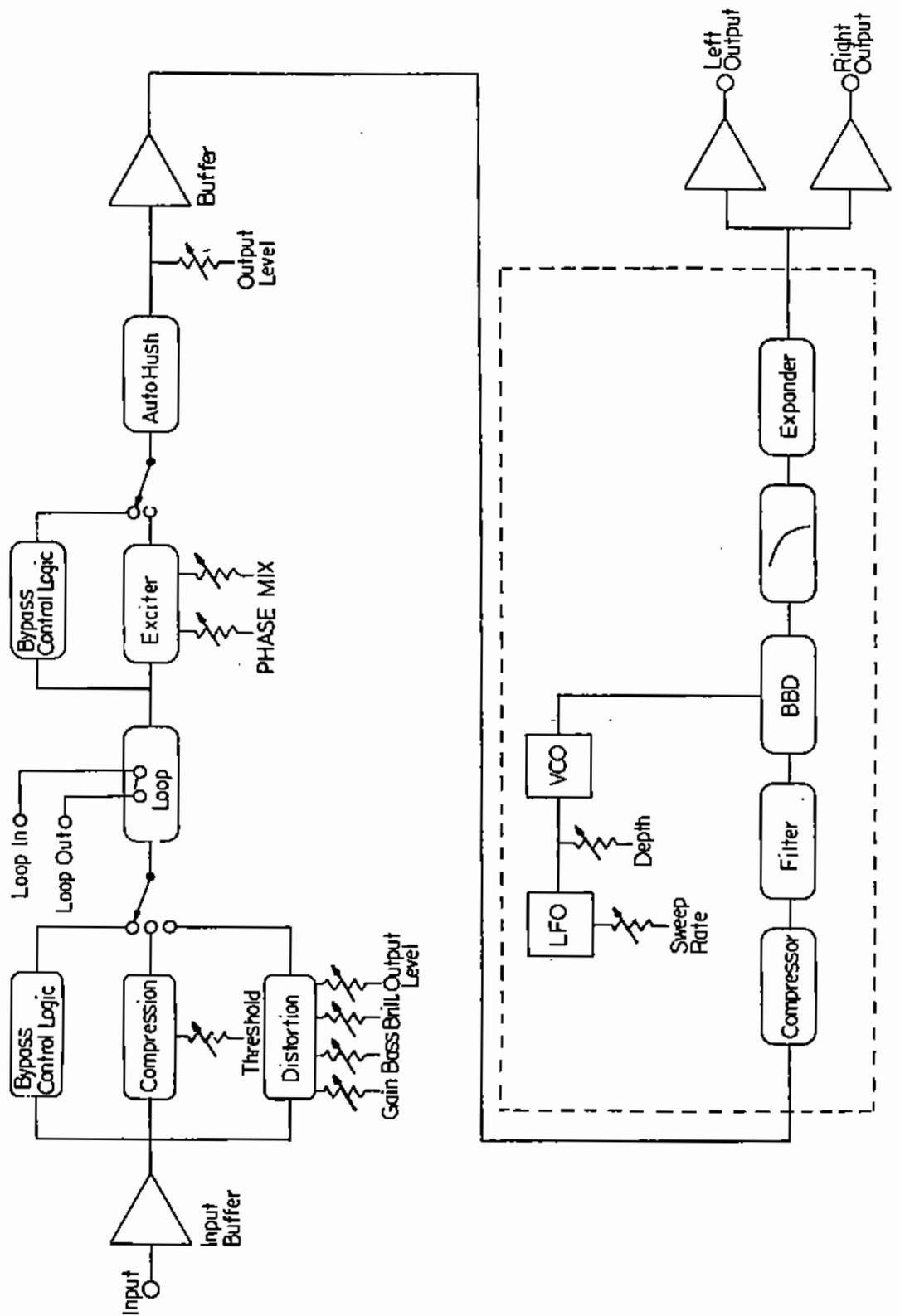
Should this Rocktron product require repair, Rocktron will assume responsibility for repair service. Do not return the product to the dealer. Simply repack the unit, sending along a description of the problem to: Rocktron Corporation, 1633 Star Batt Drive, Rochester, MI 48309. All Shipping charges must be fully prepaid.

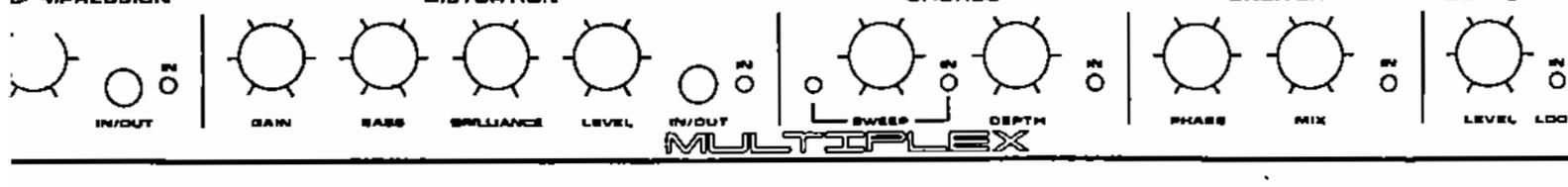
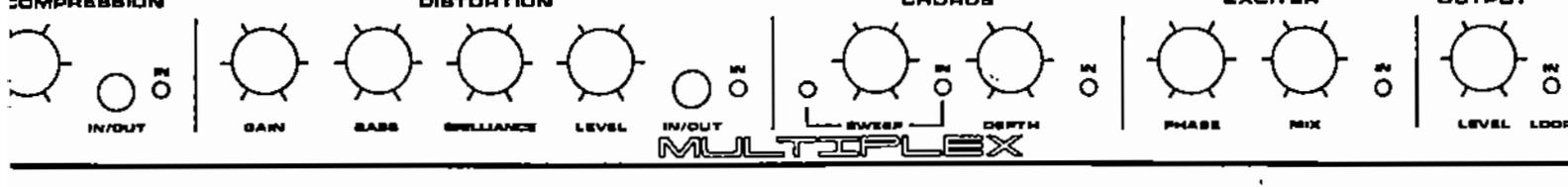
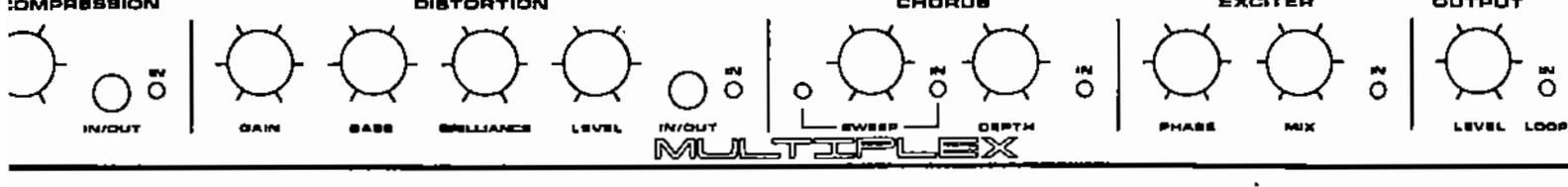
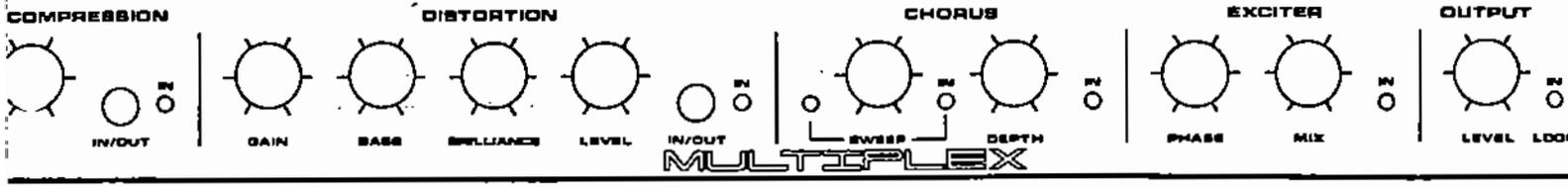
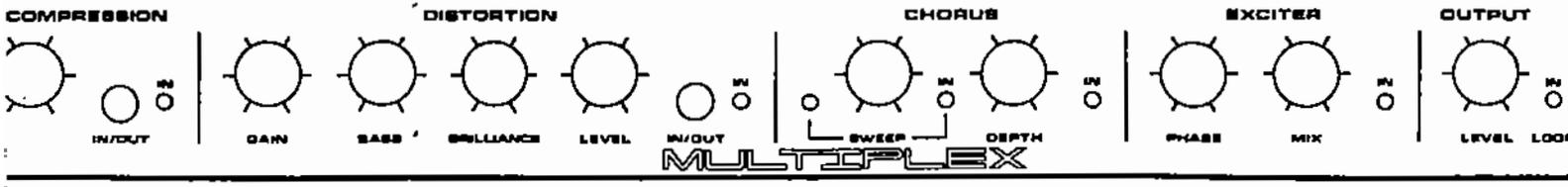
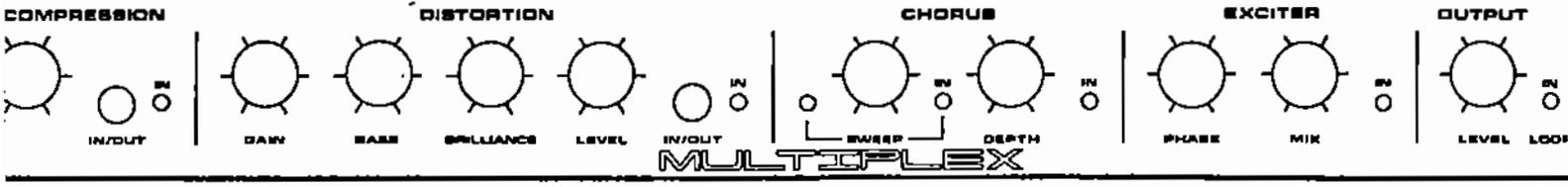
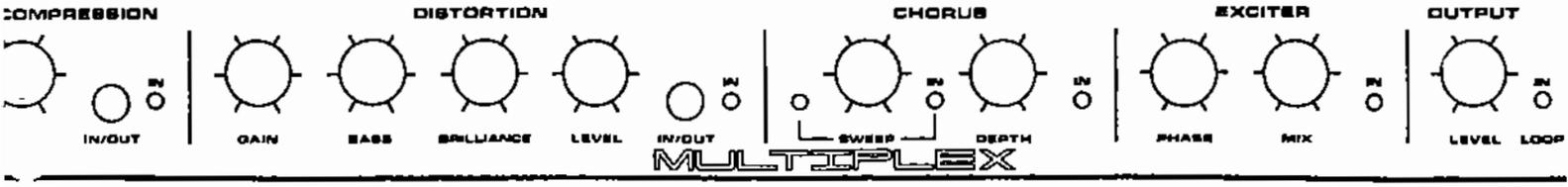
This warranty is void if the original Serial Number has been altered or removed, or if this unit has been altered in any way.

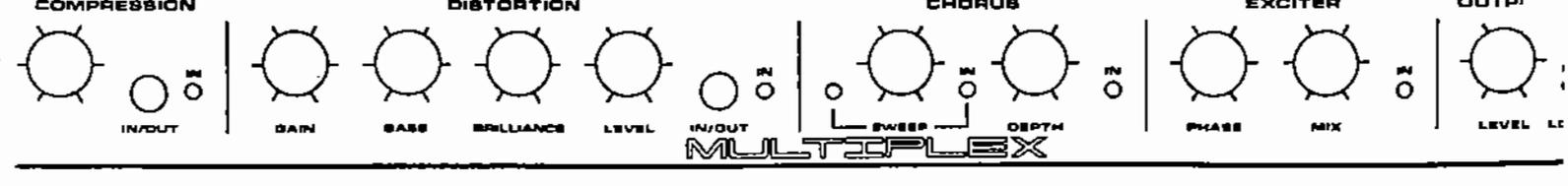
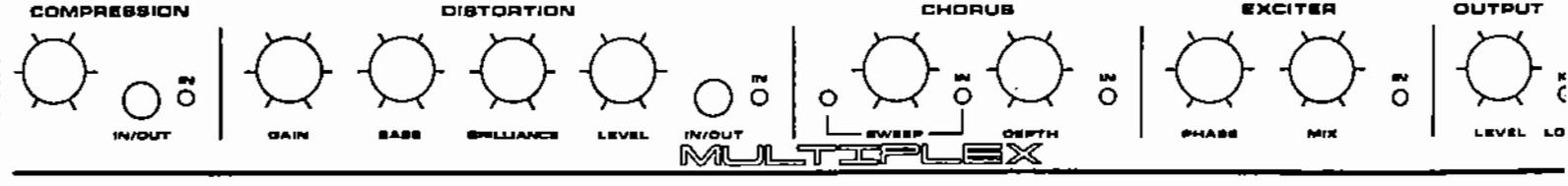
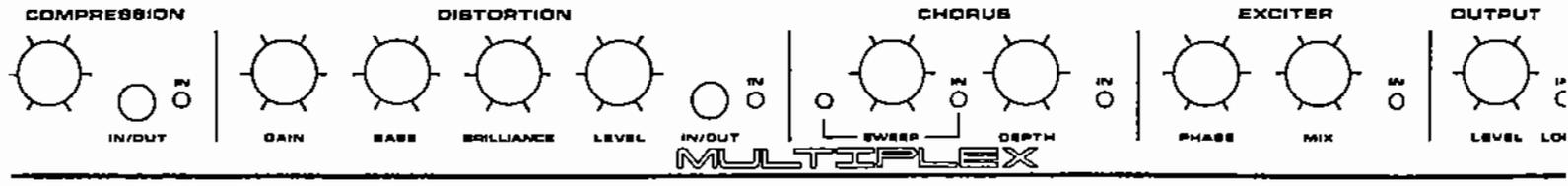
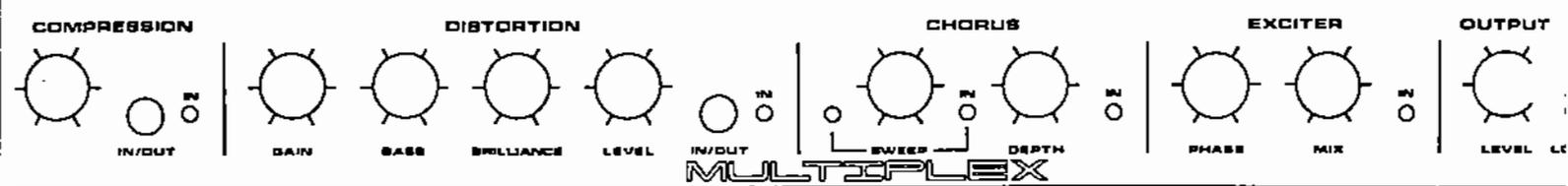
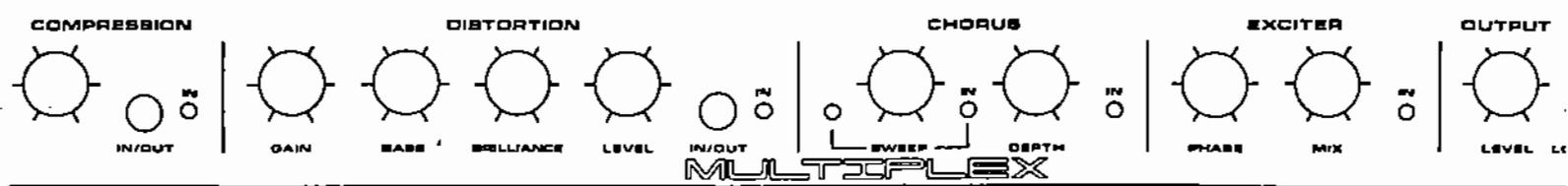
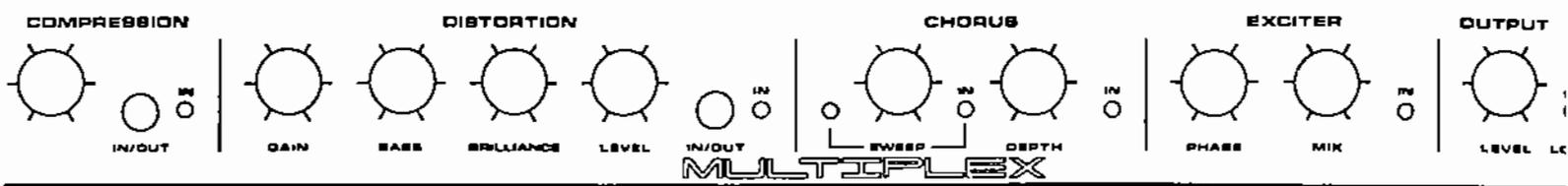
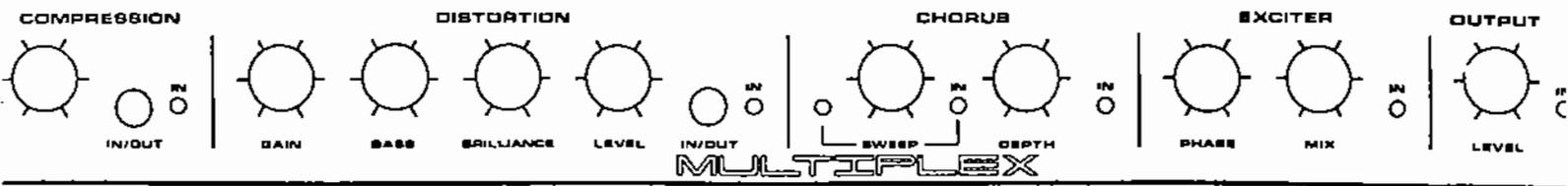
Rocktron Corporation reserves the right to make changes in design and/or improvements upon their products without any obligation to include those changes in any products previously manufactured.

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

MULTIPLY BLOCK DIAGRAM









1633 STAR BATT DRIVE
ROCHESTER, MI 48309
(313) 853-3055