ADA DEPOT

TRITUBE 75M

OWNER'S MANUAL (version 1)

CONTENTS

CHAPTER 1 INTRODUCTION

Congratulations on your purchase of the ADA TRITUBE 75M MIDI Programmable Tube Combo Guitar Amplifier. The TRITUBE 75M uses ADA's advanced guitar amplification technology, and contains more gain, tube voicings, processing options, MIDI functions, and professional features than any other combo amplifier currently available.

IMPORTANT: Please check package contents to be certain that everything is included. Report any missing items to ADA CUSTOMER SERVICE: (510) 532-1152

PACKAGE CONTENTS
1   TRITUBE 75M
1   4x4 MIDI Program Changer
1   7 pin MIDI Phantom Power Cable
1   Vinyl Cover
4   Swivel Casters
1   TRITUBE 75M User's Manual
1   Warranty Registration Card
1   Extended Warranty Application
1   Rack Holster
4   Rack mount screws & Washers

IMPORTANT: Please take the time to fill out and return the enclosed warranty card so that we may provide you with information on future software updates.

 This manual provides complete information on the TRITUBE 75M's features and the procedures for using them. The TRITUBE 75M is a sophisticated programmable device with easy and intuitive operation. You will want to familiarize, yourself with this manual to take full advantage of the TRITUBE 75M's considerable features.

The factory default values and programs are always reloadable, so have no fear when experimenting. There is a **Quick Setup** section following and a **Detailed Operation** section. The **Tutorial** section takes you on a guided tour through the **TRITUBE** 75M, showing the most important features and giving you an idea how to work with the unit. As you become more experienced with the **TRITUBE** 75M you will probably need to use the **Reference** chapter to find out details about specific features. ,

> **NOTE:** Information crucial to understanding the **TRITUBE** 75M is always encased in a box such as this one. Always read this information.

ABOUT THIS MANUAL

The body of the manual is divided into five chapters:
1. **Introduction:** Describes the manual and lists the **TRITUBE** 75M's features.

2. **Quick Setup:**   Gives a brief procedure for immediate use of the **TRITUBE** 75M. If you need to jump right into using the **TRITUBE** 75M without first reading the entire manual, turn to the Quick Start chapter which immediately follows this introduction.

3. **Detailed Operation:** Explains all of the **TRITUBE** 75M's controls and connections.

4. **Tutorial:** Gives a guided tour of the **TRITUBE** 75M's basic functions in a series of lessons. Read this chapter to familiarize yourself with operating the **TRITUBE** 75M.

The first time a new term is introduced in the Tutorial it appears in bold and underline: **new term.**

5. **Reference:** Contains detailed explanations of every **TRITUBE** 75M function. Use this chapter when you want information on a specific feature.

   Appendices: Found at the end of the manual, gives helpful information and further explanations on a number of topics relating to using the **TRITUBE** 75M.

TRITUBE 75M FEATURES

- Complete digital control of an all-analog signal path.
- 128 User programs plus 39 factory Preset programs.
- Three low-noise 12AX7A tubes with 10 tube Voicing options and Overdrive.
- Onboard Compressor for maximum sustain and funk squeeze.
- Four-band Tone Controls for basic tone shaping.
- Nine-band Graphic Equalizer for detailed tone adjustments.
- Powerful effects, including VariCab (programmable cabinet emulation), Tremolo, and Chorus.
- Noise Reduction circuitry.
- Effects Loop with programmable mix control. Side-chain design keeps dry signal within **TRITUBE** 75M, preserving dynamics and signal-to-noise ratio.
- Front panel Volume control and Room Compensation EQ.
- Cabinet-emulated, balanced XLR output with ground lift, as well as unbalanced 1/4" phone output for recording.
- Independent unbalanced 1/4" phone output for stage use.
- Complete MIDI implementation, including Real-Time MIDI for changing parameters "on the fly," and ADA System Exclusive.
- Highly responsive, low damping-factor power amp with a 12AX7A driver delivering 75 watts RMS.
- Internal phantom power supply provided for all ADA MIDI controllers (use the ADA 7-pin MIDI cable supplied with the unit).
- Celestion 75 watt 12" speaker.
- Convenient Rack Holster for mounting a single-space rack unit to the back of the **TRITUBE** 75M, allowing the user to keep the rack unit plugged into the Effects Loop of the **TRITUBE** 75M for fast set-up.
- High-quality amp cover with utility pouch to protect the unit and to hold accessories.
- **ADA 4x4 MIDI Controller** which provides instant single-button access to any four of 128 MIDI programs for fast on stage control.
- Optional MIDI Controller Pedal Pack provides instant access to any program plus real-time MIDI continuous control.
- Casters for ease of mobility.

ADA AMPLIFICATION SYSTEMS

Flow Chart TriTube 75M

Input

Tuner Output

Input Sensitivity Switch High/Low

Compressor
Ratio
Threshold
Volume

Bypass

Four stage 12AX7A class A amplifier
Voicing
Drive
Overdrive

Master Level

Tremolo
Rate
Depth
Waveform

Bypass

Tone Controls
Bass
Mid
Treble
Presence

Graphic EQ
100
170
280
470
800
1.3K
2.2K
3.6K
6.3K

Noise Reduction
Mode: Gate/Fader
Threshold

Bypass

Chorus
Rate
Depth
Mode

VariCab Cabinet Emulator
Mode
Low Boost
Hi Cut

Output Level Knob

Room EQ Knob

Preamp Output

Power Amp Insert

Effects Loop B

Effects Loop A

Line/ Inst. Level

Line/ Inst. Level

Phase Invert

Effects Mix

Effects Mode

Global Volume

Recording Output Compensation

Mic/Line Level

Single-ended Output

Ground Lift

Balanced Output

Recording Outputs

Power Amp

Speaker

CHAPTER 2   QUICK SETUP

So you can't wait to plug in your new **TRITUBE** 75M and get some sounds. That's perfectly understandable, so here is the way to jump right in and get started. Once you get that far, you'll probably want to explore further.

1) Be sure Power and Standby switches are turned off.
2) Connect the **TRITUBE** 75M to AC power.
3) Connect your instrument to the **TRITUBE** 75M's Input on the front panel.
4) Be sure the Volume control on the left of the front panel is turned all the way down (counter clockwise), and the Room EQ control is set to Normal (12 o'clock).
5) Turn on the **TRITUBE** 75M. When the **TRITUBE** 75M is first turned on, it will take a few moments for the tubes to warm up. After warming up, the **TRITUBE** 75M will enter Play mode running User program 1. Now turn the Standby switch to ON.
6) Slowly raise the Volume control and play. Adjust the Volume control to a comfortable listening level.
7) Use the Up and Down arrow keys to recall programs. The first 39 User programs are the same as the factory Preset programs.

*IMPORTANT: The **TRITUBE** 75M is designed to operate only at the voltage printed on the back panel. It is not possible to change over or adapt the **TRITUBE** 75M to operate at any other voltage. Please use an appropriate external voltage converter when attempting to operate the **TRITUBE** 75M in a country with a different AC line voltage.*

CHAPTER 3   DETAILED OPERATION

CONTROLS AND CONNECTORS

FRONTPANEL, (LEFT to RIGHT, see diagram on page TO DO)

Input	Accepts unbalanced 1/4" phone instrument inputs. Maximum level: + 12.2 dBV (3.4 volts RMS).
Input Sensitivity Switch	Sets the input sensitivity of the TRITUBE 75M. If you see the Input Clip LED coming on when you play hard, then switch to LOW.
Volume control	Final adjustment of output level. Follows all programmed level controls.
Input Clip LED	Indicates overload of input stage. Switch the Input Sensitivity to LOW if LED is lighting.
Room EQ control	Applies tone shaping to compensate for the acoustic effects of different performing venues. Normal setting is straight up (12 o'clock).
Signal LEDs	When glowing green: indicates the signal present in that section is 30 dB below clip level. When glowing red, indicates signal present in that section in 3 dB below clip level.

NOTE: The Signal LEDs will illuminate regardless of that section's Status (i.e. switched in or out.)

Character display	2-rows by 16-characters LCD. Shows status and error messages. Local Panel Mode: shows either "USER:" or "PRESET:" register, name, bank and number of current program. **Controller Panel Mode:** shows mapping of MIDI program change number to **TRITUBE** 75M User program number. **Program and System Edit Modes:** shows editing information.
Arrow buttons	Left/Right arrows: "<" and ">" used to move cursor between parameters and screens in Program and System Edit modes. Up (Yes)/Down (No) arrows: "^{A}" and "^{v}" used to adjust the value of the currently selected parameter, execute a function, or answer a query.
Bank Select buttons	In Play mode, increases (Bank Up) or decreases (Bank Down) the bank number from which a program may be called.
Number buttons (0-9)	In Play mode, selects which program in a bank will be recalled.
Preset/User button	In Play mode, switches between factory Preset program banks and User program banks.
Program Edit button	Enters and exits Program Edit mode. Initiates Store function when exiting Program Edit mode. LED is lit when in Program Edit mode.
System Edit button	Enters and exits System Edit mode. LED is lit when in System Edit mode.
Standby Switch	Puts the power amp on standby while the tubes warm up.
Power Switch	Switches **TRITUBE** 75M on and off.
Edit functions	When in Program Edit mode, the Bank Select, Number, and Preset/Us buttons select the parameter sections indicated in the blue field above them.

REAR PANEL Tuner Output

Tuner Out	Buffered output for connecting to a tuner.

Effects Loops

Effects Loops	Effects Loop A and Effects Loop B are fed the same signal. Their Return signals are mixed in various ways.
Level Switch	This switch optimizes the signal level for the Effects Loop.
Send	The signal following the Noise Reduction is sent to this jack to be connected to the input of your external effects device.
Return (Insert)	Carries return signal from external effects units. Must be switched on in software to be active. FX Mix is adjustable in software.

Pre/Power Amp Inserts

Preamp Output	Unbalanced 1/4" phone output. Intended for use as output to external power amps for powering other speaker cabinets. Plugging into this output does not mute the internal speakers. Maximum output level: + 17.1 dBV

Power Amp Input Unbalanced 1/4" phone inputs. This interrupts the internal preamp signal and inserts a signal directly into the power amp. Power amp input sensitivity: 1.1VRMS

Recording Outputs

1/4" Unbalanced	Unbalanced 1/4" phone output which are tailored to go straight into a recording console or full-frequency PA system. Maximum output level: + 17.1 dBV
XLR Level Switch	Sets the output level from the (Line/Mic) balanced (XLR) output.
Balanced Output	Balanced XLR output which is tailored to go straight into a recording console or full-frequency PA system. The signal from this output is identical to the Unbalanced Recording Output. Maximum output level is determined by position of XLR Level switch: +12 dBV (Line), -16 dBV (Mic).
Pin 1 (Ground)	Used to eliminate hum from Lift switch grounding Problems when connecting to mixing consoles, etc. In the GND (normal) position, pin 1 of the balanced output is connected to circuit ground. In the LIFT position, pin 1 of the balanced output is disconnected from circuit ground.

MIDI Connectors

MIDI In	When connected with a standard MIDI cable, receives data from a MIDI controller. By using an ADA 7-pin DIN phantom power cable for this jack to an ADA MIDI foot-controller, power is supplied from this jack to the controller through the cable.
MIDI Out	Carries MIDI data output by the TRITUBE 75M.
MIDI Thru	Carries an exact copy of data received at MIDI In.

AC Connections

AC power cord	Plugs into a normal wall outlet.
Fuse	Use a 2 Amp (for 117V US models) or 1 Amp (for 230V export models) Slo-Blo type fuse.
Courtesy Outlet	Unswitched AC outlet.

HOOKUP

Audio

Input

- Use a shielded guitar cable to connect the guitar to the TRITUBE 75M's front panel input jack. If you are using a tuner for your instrument, plug the tuner into the TUNER OUT jack on the rear panel.

Output (optional)

- Connect the 1/4" phone (unbalanced) Recording Output to the mixing console or recorder's unbalanced 1/4" phone Line input.
- Connect the preamp output to the input of an external power amp to power additional speaker cabinets.

— Or —

- Connect the balanced Recording Output to the mixing console or recorder's balanced XLR Mic or Line input. Use the XLR Level switch to set optimum signal level.
- If there is a ground loop causing AC hum in the signal use the GROUND LIFT switch to disconnect the cable ground shield from the TRITUBE 75M's local ground.

NOTE: The TRITUBE 75M's outputs are independently buffered. They may all be used simultaneously, if so desired.

Effects Loops

The TRITUBE 75M has two programmable mono effects loops and a non-programmable power-amp insert. The non-programmable power-amp insert (PREAMP OUT and POWER-AMP IN jacks) allows a device to be "hard-wired" and always in the signal path between the preamp and power-amp of the TRITUBE. The programmable effects loops A & B are described below. Also see the "Effects Loop" chapter in the Reference section on page 54, and "Using the Effects Loop" on page 38 for more detail.

Mono effects device

- Connect Effects Loop A Send to the unbalanced 1/4" phone input of the mono effects device.

- Connect Effects Loop A Return to the unbalanced 1/4" phone output of the mono effects device.

- If there is an output mix control on the mono effects device, set it to 100% wet, since it is going to be used in a side chained mode.

- Set the Effects Loop A Level switch to the optimum Send and Return levels to match the external device. Most "stomp" boxes are INSTRUMENT level devices, and most rack-mount devices are LINE level.

- On the TRITUBE, set the Effects Loop Status to "IN", the Mode to "DRY & A", and bring up the Mix to taste. In this DRY & A mode, the FX Mix control acts as the wet/dry mix for Effects Loop A, and Loop B is totally out of the circuit.

Two Mono effects devices

- Connect Effects Loop A & B Sends to the unbalanced 1/4" phone input of each mono effects device.

- Connect Effects Loop A & B Returns to the respective unbalanced 1/4" phone output of each mono effects device.

- Set the Effects Loop A Level switch to the optimum Send and Return levels to match the external device. Most "stomp" boxes are INSTRUMENT level devices, and most rack-mount devices are LINE level.

- On the TRITUBE, set the Effects Loop Status to "IN", the Mode to "A & B", and set the Mix to taste. In this A & B mode, the Mix control acts as the Loop A/Loop B

balance mix (0% is all A, 100% is all B). If you find that the Loop A and Loop B signals are out of phase and are canceling when the Mix is near 50%, set the FX B PHASE to "OUT".

- The two mono effects devices are now wired in parallel effects loops and being mixed at the TRITUBE. Since the "A & B" mode is not a side-chained mode (the dry signal goes through the effects devices), set the wet mix on the effects devices accordingly.

Stereo effects device

- Connect Effects Loop A & B Sends to the unbalanced Left and Right 1/4" phone inputs of the stereo effects device.

- Connect Effects Loop A & B Returns to the unbalanced Left and Right 1/4" phone outputs of the stereo effects device.

- Set the Effects Loop Level switches to the optimum Send and Return levels to match the external device. Most rack mount devices are LINE level.

- On the TRITUBE, set the Effects Loop Status to "IN," the Mode to "A & B," and set the Mix to taste. In this A & B mode, the Mix control acts as the Loop A/Loop B balance mix (0% is all A, 100% is all B). If you find that the Loop A (Left) and Loop B (Right) signals are out of phase and are canceling when the Mix is near 50%, set the FX B PHASE to "OUT."

- The Left and Right channels of the stereo effects device are now wired in parallel effects loops and being mixed at the TRITUBE. Since the "A & B" mode is not a side-chained mode (the dry signal goes through the effects devices), set the wet mix on the effects devices accordingly.

NOTE: Status for the Effects Loop must be set to "In" and the Wet Mix parameter set greater than 0% for the Effects Returns to be heard. See section "Using the Effects Loops" on page 38.

MIDI

The **TRITUBE** 75M is capable of responding to MIDI program change and continuous controller messages. The **TRITUBE** 75M comes standard with the ADA 4x4 programmable MIDI footswitch for program changes. See the 4x4 section on page 17 for an explanation of its features. ADA also offers the MIDI expandable controller pedal pack (800218) for real time MIDI control of the **TRITUBE** 75M.

- Connect MIDI In to MIDI Out of ADA 4x4 or other MIDI controller. The   **TRITUBE** 75M features an internal phantom MIDI supply for powering all   ADA   foot controllers using a 7-pin MIDI cable.

- Connect MIDI Thru to MIDI In of other devices, such as MIDI-controlled effects processors, you wish to receive the same data from your MIDI controller which the **TRITUBE** 75M receives.

- Connect MIDI Out to MIDI In of other MIDI devices you wish to control from the **TRITUBE** 75M front panel.

Sending and Receiving Libraries and Programs

The TRITUBE 75M can send or receive one or all of its User programs to another **TRITUBE** 75M or a personal computer running an appropriate librarian or sequencing program. This information is sent over MIDI as System Exclusive Data.

Connections for sending/receiving a library or program to/from another TRITUBE 75M

- Connect MIDI Out from the **TRITUBE** 75M that is sending the data to MIDI In of the **TRITUBE** 75M that is receiving.

Connections for sending a library or program to a personal computer

- Connect the **TRITUBE** 75M's MIDI Out to MIDI In of the computer's MIDI interface.

Connections for receiving a library or program from a personal computer

- Connect the **TRITUBE** 75M's MIDI In to MIDI Out of the computer's MIDI interface.

> *NOTE:*   *Some librarian programs may require two-way communication with the **TRITUBE** 75M. In this case it is necessary to connect both the **TRITUBE** 75M's MIDI Out to the computer's MIDI In and the computer's MIDI Out to the **TRITUBE** 75M's MIDI In. When you do so, make sure MIDI THRU or MIDI ECHO option is turned OFF.*

USING THE 4x4 MIDI PROGRAM CHANGER

The 4x4 is a universal MIDI controller included with the **TRITUBE** 75M combo amp. The pedal features an ergonomic design for easy, consistent foot-switching in a compact package, using four buttons that can each be programmed to send any MIDI Program number to the **TRITUBE** 75M. There are 4 GROUPS to choose from, allowing a different set of 4 MIDI Program numbers for each GROUP. The 4x4 sends MIDI Program changes on any one of 16 MIDI Channels.

SETUP

1) Before powering up the 4x4, connect one end of the 7 pin Phantom power MIDI cable into the MIDI jack of the 4x4, and the other end into the MIDI IN jack of the **TRITUBE** 75M.

2) Turn on the **TRITUBE** 75M. The 4x4 will display the number "8" across the screen, then the MIDI channel number ("cOl" for channel 1), then the GROUP number ("b-1" for GROUP 1, "b-2" for GROUP 2, etc.), then the program number ("01" for program number 1).

3) Make sure that the 4x4 and the **TRITUBE** 75M are on the same MIDI Channel. There are 16 MIDI Channels, and the factory default for the 4x4 and the **TRITUBE** 75M is Channel 1.

4) Hit a few buttons on me'4x4 and the **TRITUBE** 75M should be switching programs. If not, see "Checking the MIDI Channel," and "Setting the MIDI Channel."

The 4x4 sends MIDI Program numbers from 1 to 128- a total of 16 preselected programs (4 buttons and 4 switch group positions) of the 128 programs available in a MIDI system. To change GROUPS, simply slide the GROUP SELECT SWITCH to a number (1-4). The display will not change and no new MIDI messages will be sent until one of the buttons is pressed.

SETTING UP THE BUTTONS

To setup (program) a button to send a different MIDI Program number, press and hold down that button. The display will immediately show the number that is currently stored for that button (" 01" for program number 1). Keep holding the button down for a few seconds, and the display will begin to scroll (" 02", " 03", etc. — after it has scrolled through 10 numbers, the scroll speed will increase). When the display gets to the desired MIDI Program number, simply release the button. The new MIDI Program change number is sent out and is stored in the permanent memory of the 4x4 and will not be lost when the power is turned off. Keep in mind that the programming is for the GROUP that is currently selected by the GROUP switch.

CHECKING THE MIDI CHANNEL

To display the current MIDI Channel, press Buttons A & D at the same time. For example, the display will show "cOl" for MIDI Channel 1. Checking the MIDI Channel does not cause the unit to send any MIDI messages. Pressing any button gets out of the MIDI Channel display mode.

SETTING THE MIDI CHANNEL

To send the MIDI Program changes on a different MIDI Channel, press and hold down buttons A & D. The display will immediately show the current MIDI Channel ("c01", for channel 1). Keep holding buttons A & D down for a few seconds, and the display will begin to scroll ("c02", "c03", etc.). Release the buttons at the desired MIDI Channel. The 4x4 automatically stores the new MIDI Channel in its permanent memory.

RESETTING TO DEFAULT VALUES

To reset the unit to the default values that it originally came with, unplug power from the 7-pin MIDI cable at the 4x4 pedal while the TriTube 75M is on. Press and hold buttons A & D down while reconnecting the MIDI cable. The display will flash r, S, t, for reset, instead of 8, 8, 8 when powered up. The default MIDI Channel is 1. The buttons have the following defaults:

GRP#>	1	2	3	4
BUTTON	PRGM	PRGM	PRGM	PRGM
A	1	5	9	13
B	2	6	10	14
C	3	7	11	15
D	4	8	12	16

CHAPTER 4   TUTORIAL

The following step-by-step tutorial covers the basics and most important functions of the **TRITUBE** 75M. You will be able to use the factory Preset programs, create and store your own programs, and use MIDI to control the **TRITUBE** 75M. For information on additional and more advanced feature, see the Reference chapter. For a Tutorial on the Real Time MIDI functions of the **TRITUBE** 75M, see **Appendix D** on page 88.

Basics of the TRITUBE 75M

Programs

The **TRITUBE** 75M has two different kinds of settings that can be adjusted and stored: those that affect individual sounds, and those that affect the whole **TRITUBE** 75M and don't change when a program is changed.

All of the settings that define an individual sound are stored collectively as a **program.** Programs can be recalled from the front panel or by MIDI messages from a MIDI controller such as the ADA 4x4. Programs are edited in Program Edit mode.

Settings that affect the whole **TRITUBE** 75M are not stored as part of a program, but as **global** settings and edited in System Edit mode. Global settings, most notably the MIDI functions in System Edit, are effective all the time, regardless of what the current program is selected.

There are two kinds of programs: **Preset** and **User.** Preset programs were created by ADA and the artists we work with. They can be recalled, played, and even edited, but <u>no program can be stored to a Preset program location.</u> A modified Preset program can be stored to a User program location. There are 39 Presets in the **TRITUBE** 75M.

User programs are those created by you, the user, usually by modifying Presets or User programs previously created. There are 128 User programs, and these can be both recalled, edited, and stored. <u>If a Preset program is edited, it can only be stored as a User program.</u> The factory presets are copied into the first 39 locations of the User memory at the factory initially, so User 1-39 is the same as Preset 1-39.

User programs can be transferred over MIDI from one **TRITUBE** 75M to another, or from a **TRITUBE** 75M to a personal computer running librarian software. This means that, when all the User program locations are filled, they can be dumped, or "off-loaded" to the computer through MIDI System Exclusive messages to prevent having to write over User programs and make room for new ones.

TRITUBE 75M Modes

The TRITUBE 75M has three operating modes: **Play. Program Edit, and System Edit.**

In Play mode, programs may be recalled for performance from the front panel or through MIDI. The **TRITUBE** 75M is in Play mode whenever it is in neither Program Edit nor System Edit mode. When neither the PRGM EDIT nor SYSTEM EDIT buttons are lit, the **TRITUBE** 75M is in Play mode.

In Program Edit mode, all of the settings (also called **parameters)** for that a program can be adjusted. The **TRITUBE** 75M is in Program Edit mode when the PRGM EDIT button is lit. (See page 45 in Chapter 5, **REFERENCE,** under PROGRAM EDIT MODE .)

In System Edit, parameters that affect the entire **TRITUBE** 75M (and are not stored as part of a program) are adjusted. There is only one location for these settings, so they are not stored and recalled as programs are. System Edit mode also contains utilities that allow copying and swapping of programs between locations and other useful functions. The **TRITUBE** 75M is in System Edit mode when the SYSTEM EDIT button is lit. (See page 67 inside Chapter 5, **REFERENCE,** see SYSTEM EDIT MODE.)

TRITUBE 75M Display
**The TRITUBE** 75M conveys messages, questions, and parameter information through the display.

Play Mode
In Play mode, the display shows whether the **TRITUBE** 75M is running a User or Preset program, the program bank and number, and its name.

Program Edit Mode

In Program Edit mode, the display shows one or more parameters in the currently selected section along with their values. Arrows in the upper left and/or lower right corners indicate that there are other parameter screens in that section. Parameter screens are explained on page 28 in the Editing Basics discussion.

Parameter   Value

STATUS: IN
RATIO→ 30:1

Cursor   Indicates presence of another screen
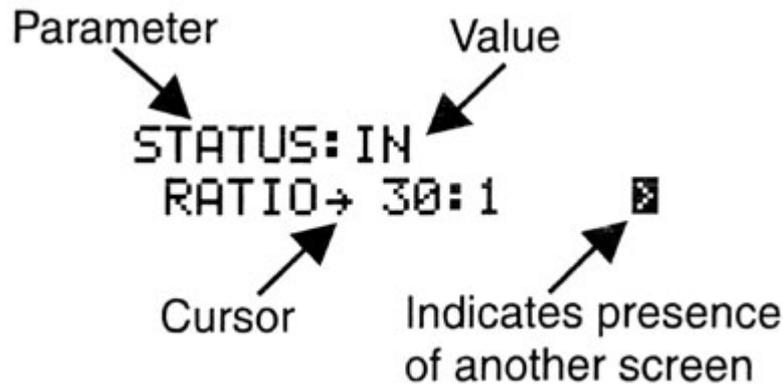
System Edit Mode

The System Edit mode display is essentially the same as the Program Edit mode display, but in many cases the parameters take the form of a question, asking if you wish to execute the named System function. These questions are answered by pressing the "^" ("Yes") or "ˇ" ("No") button, indicated by an arrow pointing up.

These up-facing arrows also sometimes indicate submenus or steps in a procedure.

System function name

COPY SINGLE
PROGRAMS?

Indicates that procedure is continued by pressing "Yes" ("^") button
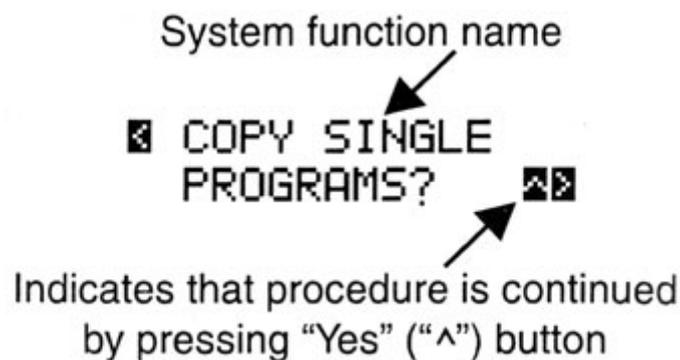
Powering Up

- After connecting the TRITUBE 75M as described previously, turn on the powerswitch on the front panel. Be sure the Volume control is turned all the way down and the Room EQ control is set to Normal.

When switched on, the **TRITUBE** 75M will first display a screen with ADA's name, then a screen identifying the unit as a **TRITUBE** 75M and showing the software version installed:

Software Version #

TRITUBE: V1.00
COPYRIGHT 1994

The TRITUBE 75M has 3 vacuum tubes and they take a few moments to warm up when they are first switched on. During this period, the **TRITUBE** 75M's display will show this message:

STAND BY...
Tubes Warming Up

- After this message, turn the Standby switch to ON, and slowly raise the Volume control until the volume is comfortable.

After the tubes have warmed up, the display will say something like this:

USER→01
LOS ANGELES

Notice that the PRGM EDIT and SYSTEM EDIT buttons are both unlit. The **TRITUBE** 75M is now in Play mode. The top line indicates that the **TRITUBE** 75M is currently running User program 1, while the bottom line is the program's name.

Recalling Programs

Recalling programs in Play mode is as simple as could be:

1. Select User or Preset programs.

2. Select the desired bank.

3. Chose the desired program in the selected bank.

Stepping through programs

- Press the "^" and "ˇ" (up and down arrow) buttons to increment and decrement the program number. When the arrow button is released, the new program is recalled.
- Try pressing the "^" button a few times and watch the User program number increase. Play through a few of the User programs to see that the programs are actually changing.
- Press the "ˇ" button until you reach User program 1, then press it one more time.

Note that the **TRITUBE 75M** "wraps around" to the highest number, User 128.
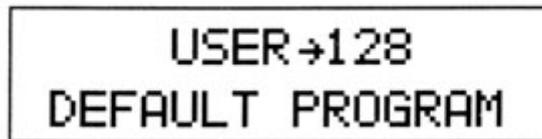
```
USER→128
DEFAULT PROGRAM
```

Right now, the first 39 User programs contain the same settings as the 39 Preset programs. Of course, these User programs can be replaced at any time with modified versions, or other programs that have been copied to them or swapped with them. The Preset programs can be altered, but the Preset program locations cannot be stored to, so they always remain unchanged.

Switching between User and Preset Programs

- Press the PRESET/USER button on the right side of the front panel. The **TRITUBE 75M** switches to Preset program 1.
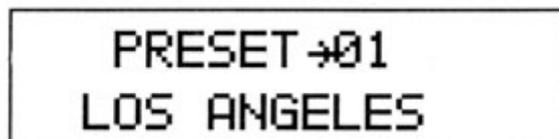
```
PRESET→01
LOS ANGELES
```

- Use the "^" and "ˇ" buttons to step through the Preset programs.

Program Edit mode

- Press the PRGM EDIT button to enter Program Edit mode. The button will go light and the display will say:
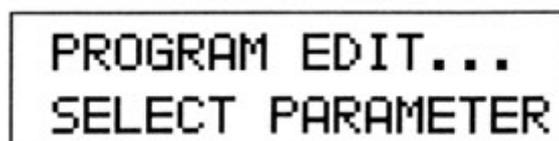
```
PROGRAM EDIT...
SELECT PARAMETER
```

Editing Basics

When an instrument is plugged into the **TRITUBE** 75M, its signal passes through a number of different **sections,** each of which has a different function. The sections are indicated in the blue field above the Bank Select, Number, and Preset/User buttons.

Each section has several parameters that can be adjusted. A program is simply a stored complete set of all the parameters in all the sections. The **cursor** always indicates which parameter is currently selected for editing.

Some sections have more parameters than can fit in the display at one time. In that case, there may be more than one **screen** of parameters. The presence of additional screens is indicated by an arrow symbol in the lower right corner of the display (meaning there is one or more following screens) or the upper left corner (meaning there is one or more preceding screens).

Selecting a parameter for editing

- Use the "<" and ">" buttons (left and right arrow) to move the cursor from parameter to parameter.

The parameter that is currently selected for editing is always indicated by the **cursor,** which is an arrow symbol ($\rightarrow$) found between the parameter name and its value on each screen.

Moving between parameter screens

- Press the ">" button repeatedly to reach a following screen; after stepping through all the parameters on the current screen, the next button press will step to the next screen.

- Similarly, the left arrow button is pressed repeatedly to reach preceding screens.

Adjusting the value of the selected parameter

- Use the "ᶺ" and "ᵛ" buttons (up and down arrow) to modify the value of the selected parameter.

Each time one of these buttons is pressed, the value is increased or decreased by one. If the parameter is not a number but a **toggle,** or switch-type of setting that only has two values, the up and down arrow buttons are used to change from one value to the other. These buttons are also used to answer Yes/No questions the **TRITUBE** 75M sometimes displays.

- Hold down either button to cause the selected parameter to **scroll,** or automatically count, up or down through its entire range of available values.

NOTE: Pressing the "ᶺ" and "ᵛ" buttons simultaneously sets the selected parameter to the factory default value.

Editing a program in Program Edit mode

1) Press the button of the section you wish to edit. The button will illuminate.

2) Use the < and > (left and right arrow) buttons to move the cursor to the parameter to be adjusted.

3) Use the ^ and ˅ (up and down arrow) buttons to change the value of the parameter. Changes made to a parameter are heard immediately.

4) Repeat steps 1 through 3 until all parameters have been adjusted as desired.

5) Store the program by pressing the PRGM EDIT button to exit Program Edit mode. Follow the screen prompts to store the program.

Selecting and Editing Parameters

Go to User Program number 20, "BLUE" to follow the following step-by-step editing session.

• Press the PRGM EDIT button to enter the PROGRAM EDIT mode.

• Press the Tube Voicing button to select the Tube Voicing section. The button will light up and the display will show one of ten voices:
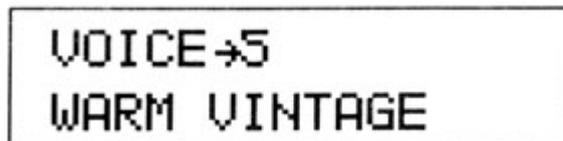
```
VOICE→5
WARM VINTAGE
```

There are no arrows in the upper left or lower right corner; the Tube Voicing section has only one screen of parameters.

• Press the "^" button twice to change the Tube Voicing value. The display shows:
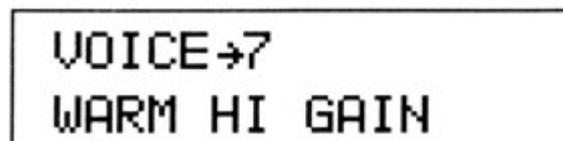
```
VOICE→7
WARM HI GAIN
```

• Press the Drive & Master Level button to select the Drive & Master Level section. Now the display shows:
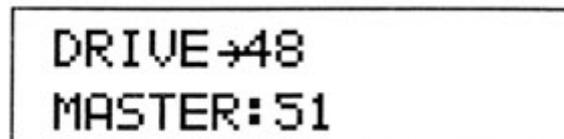
```
DRIVE→48
MASTER:51
```

• Press and hold the "^" button. The Drive value will increase. Set its value to 75.

Because the value will scroll quickly, it is difficult to stop at precisely the right value. Lift your finger from the arrow button when the value is close to the desired setting, then use individual button presses to step it to the exact desired value.

- Press the Chorus button to select the Chorus section. Notice the arrow indicating a following screen:

```
STATUS→OUT
MODE:NORMAL        ▓
```
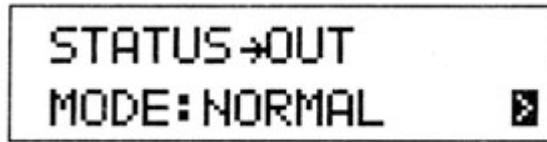
- Press the "^" button to change the STATUS to "IN".
- Press the ">" button twice to step to the next screen of parameters.
- Press the ">" button one more time to move the cursor to the Rate parameter.
- Press the "^" button three times to increase the Rate to 0.5 Hz.

```
▓ DEPTH:50 %
   RATE→0.3   Hz
```
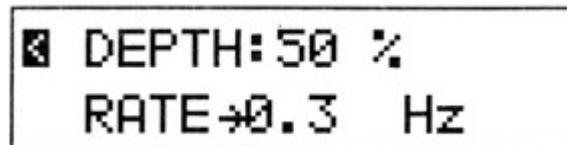
Editing the Graphic EQ

The Graphic EQ display is a little different from most of the other sections. Instead of using letters or numbers to show the value of a parameter, the Graphic EQ gives a simple visual plot that clearly indicates the whole equalization curve.

- Press the Graphic EQ button to select the Graphic EQ section.

```
_--_ ---_      100Hz
            _
□          -     -6dB
```
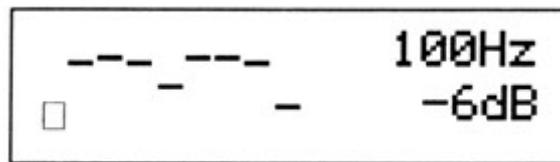
The horizontal lines represent the boost/cut settings of each of the nine bands of the Graphic EQ, with the band currently selected having a double line (in this case, on the far left). (Bands set to 0dB of boost/cut also have double lines, but the lines are more widely spaced and easily distinguished from the selected band.) On the right side of the display, the frequency of the currently selected band is shown on top, and the amount of boost/cut applied on the bottom.

The "<" and ">" buttons move the cursor to the band to be adjusted, and the "^" and "ᵛ" buttons change the amount of boost/cut applied at that band in two dB steps up to ±12 dB.

- Press the ">" button until the upper right corner of the display shows "2.2KHz."
- Press the "^" button to change the amount of boost/cut to +6 dB.

```
_--_ -=_    2.2KHz
_     -     -    +6dB
```
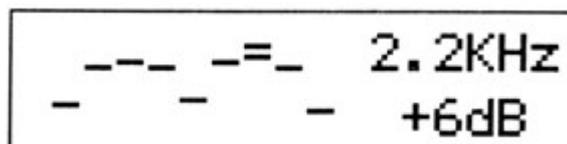
Comparing Edited Programs to Stored Versions

When editing a program it is desirable to be able to compare the current version with the original, stored version without leaving the edit mode.

- Press the COMPARE button to engage the Compare function. The display will tell you that you are now listening to the stored version. Note that the parameters can not be edited in the INITIAL SETTINGS mode. Return to the MODIFIED SETTINGS mode to edit parameters.

```
┌─────────────────────────┐
│        INITIAL          │
│       SETTINGS          │
└─────────────────────────┘
```

Parameters can not be edited in the "INITIAL SETTINGS" mode. Return to the "MODIFIED SETTINGS" mode.

- Press the COMPARE button again and the **TRITUBE** 75M toggles back to the edited version:

```
┌─────────────────────────┐
│       MODIFIED          │
│       SETTINGS          │
└─────────────────────────┘
```
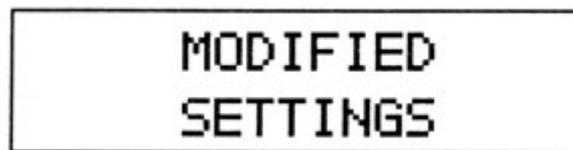
Each press of this button causes the **TRITUBE** 75M to toggle between these two screens.

Naming User Programs

At this point, it would be good to give this program a different name to distinguish it from the Preset it started out as.

- Press the PROGRAM TITLE button to select the Program Title section.

Editing in this section can be thought of in the same way as in other sections if you consider each character in the name as a parameter, the underline at the bottom as the cursor, and the choice of letters, numbers, and symbols as the available values.

The "<" and ">" buttons move the cursor from character to character in the name, while the "^" and " ˅" buttons choose the desired letter, number, or symbol for the selected character. Pressing the "^" and "˅" buttons at the same time clears the entire name.

- Press the ">" button until the underline is at the space to the right of the word "BLUE."

```
┌─────────────────────────┐
│  PROGRAM TITLE          │
│        BLUE_            │
└─────────────────────────┘
```

- Hold the "^" button down and scroll through until the number "2" comes up. (The numbers follow the lower case letters, which are after the upper case letters.)

Storing Programs

Since enough changes have been made at this point that it would be annoying to lose them, our modified and renamed program should now be stored before continuing. The **TRITUBE** 75M asks if you wish to store whenever you attempt to exit Program Edit mode after having altered any of a program's parameters.

- Press the PRGM EDIT button to exit Program Edit mode. The display will briefly show:

```
PROGRAM DATA HAS
BEEN MODIFIED
```

then change to:

```
STORE IN USER
PROGRAM→128? Y/N
```

To store a program in the User program shown:

- Press the "^" button to answer "Yes."

To select a different User program in which to store a program:

- Use the BANK UP, BANK DOWN, and number buttons in the same fashion as recalling a program in Play mode to select the desired User program.
- Press the "^" button to answer "Yes."

After answering "Yes," the **TRITUBE** 75M will ask for confirmation:

```
ARE YOU SURE?
PROGRAM:128 Y/N
```

- Press the "^" button again to answer "Yes" and complete the store.

To abort the store process and return to editing:

- Press the PRGM EDIT button to reenter Program Edit mode. Select a section and continue editing. All parameters will be as they were when you first attempted to exit Program Edit mode.

To abort the store process and discard the changes to the program:

- Press the "ᵛ" button when the "Store in User Program 128? Y/N" message appears to answer "No."

```
ABANDON EDITS?
            Y/N
```

- Press the "^" button to answer "Yes" when the above message appears.

```
+------------------------------------------+
|  ABANDONING EDIT                         |
|  SESSION                                 |
+------------------------------------------+
```

After the above message appears, the **TRITUBE** 75M will be in Play mode. Pressing the "ᵛ" button to answer "No" to the abandon message will return you to the store message.

Memory Protection

The TRITUBE 75M has a memory protection feature in the System Edit mode (discussed later) which prevents any User program from being stored to. The factory default setting for this feature is "Off," however, should memory protection be turned on, it adds an additional confirmation message to the store process.

After responding "Yes" to the confirmation ("Are You Sure?") message, the **TRITUBE** 75M , when Memory Protect is set to "On," will briefly show this message:
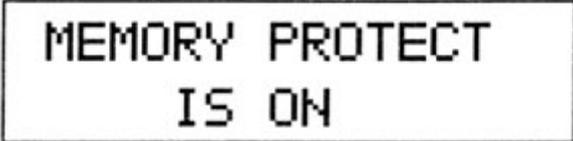
```
+------------------------------------------+
|  MEMORY PROTECT                          |
|        IS ON                             |
+------------------------------------------+
```

then offer the chance to turn off memory protection:
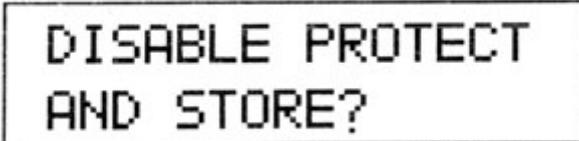
```
+------------------------------------------+
|  DISABLE PROTECT                         |
|  AND STORE?                              |
+------------------------------------------+
```

- Press the "∧" button to answer "Yes" to turn off memory protection. The display will return to the confirmation message, only now it will allow the store to be completed.

NOTE: Once Memory Protect has been disabled in this fashion, it is no longer active unless re-enabled in the System Edit mode.

- Pressing the "ᵛ" button to answer "No" to the disable message returns you to the abandon message.

Setting Input and Output Levels

The **TRITUBE** 75M contains a number of level controls that serve different purposes. Getting the best sound requires that the **TRITUBE** 75M's input and output levels be properly adjusted. Here are a few hints:

1) Modifying an existing preset is the best way to optimize the signal-to-noise ratio.

2) Use the signal indicators on the front panel to insure that the **TRITUBE** 75M is being driven with an adequate amount of signal, and not overloaded undesirably. Try to set signal level so that the LEDs are lighting green on a regular basis. Remember that too little signal degrades the signal-to-noise ratio.

3) Avoid clipping the **TRITUBE** 75M's internal circuitry; watch for signal LEDs that are frequently lighting red or for frequent lighting of the Input Clip LED. Some common causes of internal overload are large amounts of boost in the

EQ sections, Master Level set too high, or excessive Volume in the Compressor section.

4) The Drive parameter in the Drive and Master Level section controls the amount of gain applied by the tube preamp. High gain Tube Voicings also have an Overdrive parameter in this section for even more gain.

5) The Master parameter in the Drive and Master Level section controls the amount of signal fed from the tube preamp to the rest of the **TRITUBE** 75M. It is useful for balancing relative volume between your User programs.

6) The overall level ("room volume") is controlled by the front panel Volume control.

Using the Effects Loop

The **TRITUBE** 75M's Effects Loop provides a way to use the **TRITUBE** 75M with additional effects without requiring an external mixer. The side-chain design keeps the original ("dry") signal within the **TRITUBE** 75M, and each channel has the capability of mixing the Effects Return ("wet") signal with the original or the other channel.

Connect the effects device of choice to the TRITUBE 75M by following the instructions in the "Effects Loops" section on page 13. This tutorial will assume you have a mono effects device plugged into Effects Loop A.

- Set up a reverb or some other easily distinguishable effect on the external signal processor with its mix to 100% wet.

- Enter Program Edit mode and press the Effects Loop button to select the   Effects Loop section. The Status parameter should be set to "In."

```
STATUS→IN
                    ▶
```
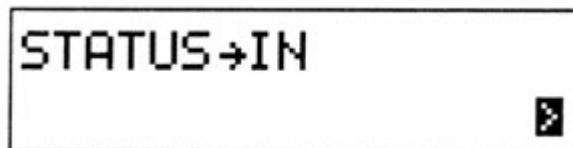
- Press the "> " button to step to the next screen.
- Press the "> " button again to step to the FX Mix screen.
- Hold down the "∧" button until FX Mix is set to 75%

```
◀ MODE: DRY & A
  FX MIX→ 75 %   ▶
```
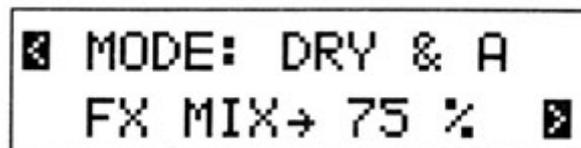
This should make the effects very noticeable. If you are using a stereo effects device, plug the second channel of the device into the B Effects Loop of the MP1 Classic.

- Set the MODE to A & B.
- Press the ">" to step forward to the next screen. The signal phase of the B Effects Loop is displayed. Inverting the phase corrects the out of phase signals coming from pseudo stereo
effects devices which can cancel the effect signal when summed together in the **TRITUBE** 75M.

```
⊠ FX B PHASE→ IN
```

- Press the "<" three times to step back to the first screen.
- Press the "ᵛ" button to change the Status to "Out."

The effects should disappear, as the effects return is disconnected.

- Press the PRGM EDIT button to exit Program Edit mode and store the program if you wish.

System Edit Mode

- Press the SYSTEM EDIT button to enter System Edit mode.

The display will show:

```
⊠ MIDI FUNCTION
        MENU?      ⊠⊠
```

You must be in Play Mode in order to enter System Edit Mode. System Edit mode contains all the **TRITUBE** 75M's MIDI functions (except Real-Time MIDI) and system utilities such as the **Copy and Swap Program** features, **Memory Protect, Program Change Speed,** and **Panel Mode.**

It is organized as a main menu which is navigated in the same way as the parameter screens in Program Edit mode. Some menu selections have submenus or additional screens.

Copying Programs

It is useful to copy programs when you want to modify an existing program and store the edited version, especially if the original is a Preset which cannot be stored into its original location. Programs can only be copied to User locations.

- Press the ">" button twice until this display shows:
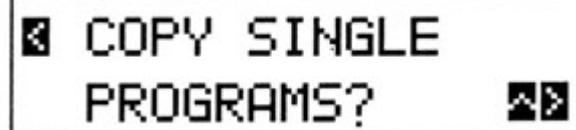
```
⊠ COPY SINGLE
   PROGRAMS?     ⊠⊠
```

Notice that there are three arrows. This indicates that there are both preceding and following menu selections, as well as additional screens.

- Press the "∧" "Yes" button once to get to the 2nd screen.
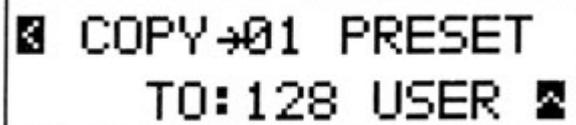
```
⊠ COPY→01 PRESET
      TO:128 USER ⊠
```

Note that there is still an up arrow in the lower right corner, indicating that a confirmation is necessary to execute the Copy command. The source and destination locations are selected just as if they were being recalled in Play mode: using the BANK UP, BANK DOWN, and number buttons.
- Press the BANK UP button and then the "2" button to select Preset 12 as the source location.
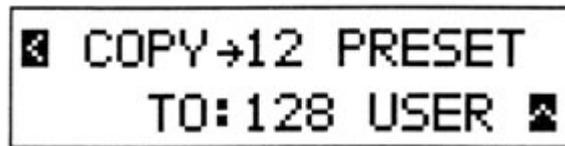
```
▣ COPY→12 PRESET
      TO:128 USER ☎
```

- Press the ">" button to move the cursor to the bottom row.
- Press the BANK UP button and then the "5" button to select User 5 as the destination location.
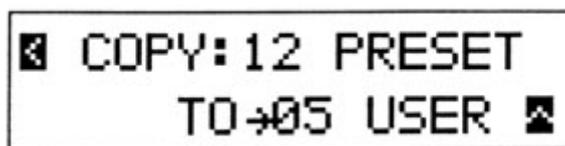
```
▣ COPY:12 PRESET
      TO→05 USER ☎
```

- Press the "∧" button to continue the copy operation. The display will show a confirmation message:
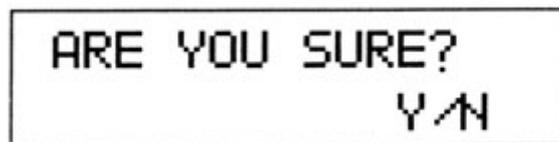
```
ARE YOU SURE?
            Y∕N
```

- Press the "∧" button to answer "Yes."
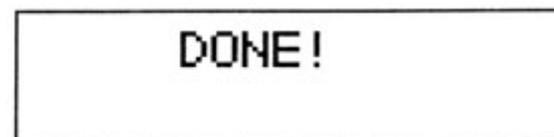
```
DONE!
```

Preset program 12 has now been copied into User program 5.

MIDI Parameters

Setting the MIDI Channel

The most basic MIDI parameter is the channel over which the **TRITUBE** 75M will send and receive MIDI data.
- Press the "<" button twice (or press the System Edit button twice) so that the display shows:
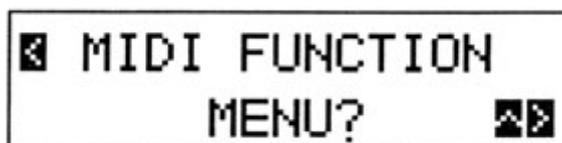
```
▣ MIDI FUNCTION
      MENU?      ☎▣
```

- Press the "∧" button to access the MIDI Function submenu. The display will show:

```
◪ SET MIDI
  CHANNEL →1        ◪
```

Pressing "∧" or "ᵛ" buttons changes the MIDI channel. For now, leave it on channel 1.

Making a MIDI Program Change Map

The TRITUBE 75M's MIDI Program Change Map lets any User program be recalled by any MIDI program change message. The map is simply a list of MIDI program change numbers, with each one assigned to an **TRITUBE** 75M User program.

• Press the ">" button once so that the display shows:

```
◪ EDIT MIDI
  MAPPING?          ◪◪
```
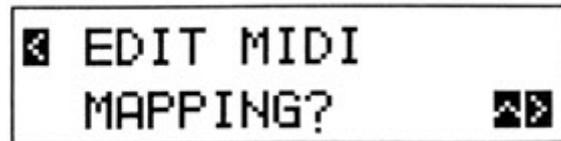
• Press the "∧" "Yes" button to access the MIDI Program Change Map.
• Press the "∧" or "v" button (whichever is appropriate) until MIDI program number 10 is selected.

As you step through the map, notice that the mapped User program is shown for each MIDI program change number.

```
◪    MIDI IN→10
  MAP TO USER:10    ◪
```
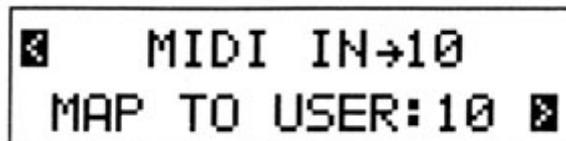
• Press the ">" button to move the cursor to the bottom line.
• Press the "v" button until User program 6 is selected.

```
◪    MIDI IN:10
  MAP TO USER→06    ◪
```
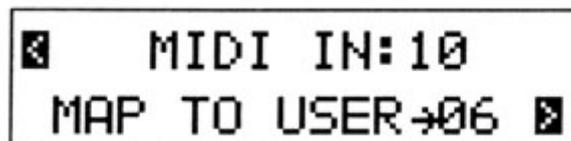
• Press the System Edit button to exit. There is no store procedure. Now try sending program change #10 from a MIDI pedal. User Program 6 will be recalled.

CHAPTER 5 REFERENCE

Play Mode

In Play mode Preset and User programs can be recalled, and real-time MIDI control is active.

To select a Preset program:
- Be sure the Led's in all panel buttons are off. If the PRGM EDIT or SYSTEM EDIT buttons are lit, press the button to exit the edit mode and extinguish the LED.
- If the top line of the display says "USER," press the PRESET/USER button to make it say "PRESET."
- Use the BANK UP or BANK DOWN button to select the desired bank (0-3).
- Press one of the number buttons (0-9) to select the Preset program within the selected bank.
- The available range of numbers is 01-39.
                   -OR-
- Use the "∧" and "∨" (up and down arrow) buttons to step through the Preset programs.

To select a User program:
- Be sure the Led's in all panel buttons are off. If the PRGM EDIT or SYSTEM EDIT buttons are lit, press the button to exit the edit mode and extinguish the LED.
- If the top line of the display says "PRESET," press the PRESET/USER button to make it say "USER."
- Use the BANK UP and BANK DOWN buttons to select the desired bank (0-12).
- Press one of the number buttons to select the User program within the selected bank (0-9).
- The available range of numbers is 01-128.
                   -OR-
- Use the "∧" and "∨" (up and down arrow) buttons to step through the User programs.

Real-Time MIDI (RTM) lets the user have dynamic, real-time control of up to sixteen **TRITUBE** 75M parameters for every User program (plus global volume and tuner mute under system edit). The assignment of MIDI controllers to parameters is done in the Real-Time MIDI section in Program Edit mode. After programming is finished, RTM is operated in Play mode. See Real Time MIDI section and the Appendix D for tutorial.

Program Edit Mode

In Program Edit mode, all sound parameters and MIDI parameters that are specific to each program are set. To enter Program Edit mode:

- Press the PRGM EDIT button. It will light.

To select and adjust a parameter:

- Press the button corresponding to the section containing the parameter to be adjusted (for example, Tube Voicing, Graphic EQ, Effects Loop, etc.).

- Use the "<" and ">" (left and right arrow) buttons to move the cursor (indicated by "→") to the parameter to be adjusted.

- Some sections have more than one screen of parameters, indicated by an arrow in the lower right corner:

- After stepping through all parameters in a screen, pressing the ">" button will step the display to the following screen, if there is one.
- Similarly, previous screens are reached by pressing the "<" button to reach the first parameter on a screen, then once more to step to the preceding screen.
- Once the desired parameter is selected, use the "∧" and "∨" (up and down arrow) buttons to adjust the value. Pressing the button once increments or decrements the value by one; holding the button down causes the value to scroll.

To exit Program Edit mode:

- Press the PRGM EDIT button. If any parameters have been changed, this initiates the Store sequence described below. When that sequence is complete the **TRITUBE** 75M will be in Play mode.

Storing, Abandoning, and Resuming Edits

The TRITUBE 75M asks if you wish to store whenever you attempt to exit Program Edit mode after having altered any of a program's parameters.

- Press the PRGM EDIT button to exit Program Edit mode. The display will briefly show:

```
PROGRAM DATA HAS
BEEN MODIFIED
```

then change to:

```
STORE IN USER
PROGRAM→128? Y/N
```

The User program value shown is the last User program used by the **TRITUBE** 75M. Note that only User program slots are available for storing.

- Use the BANK UP, BANK DOWN, and number buttons in the same fashion as recalling a program in Play mode to select a User program other than the one shown.

- When the desired User program is selected, press the "∧" button to answer "Yes" to the query. The **TRITUBE** 75M will ask for confirmation:

```
ARE YOU SURE?
PROGRAM:128   Y/N
```

- Press the "∧" button again to answer "Yes" and complete the store.

To abort the store process and return to editing:

- Press the PRGM EDIT button to reenter Program Edit mode. Select a section and continue editing. All parameters will be as they were when you first attempted to exit Program Edit mode.

To abort the store process and discard the changes to the program:

- Press the "ˇ" button when the "Store in User Program 128? Y/N" message appears to answer "No."

```
 ABANDON EDITS?
              Y/N
```

- Press the "∧" button to answer "Yes" when the above message appears.

```
 ABANDONING EDIT
 SESSION
```

After the above message appears, the **TRITUBE** 75M will be in Play mode.

- Pressing the "ˇ" button to answer "No" to the abandon message will return you to the store message.

NOTE: It may helpful to refer to the signal flow diagram at the front of the manual to understand the position of the following functions.

Tube Voicing

Selects basic character of tube sound by configuring the four tube stages and biasing them for the proper gain and interstage EQ. There are ten **Voicings** available:

Table 1: Tube Voicings

1	Crystal Clean	6	Dynamic Vintage
2	Spanky Clean	7	Warm Hi Gain
3	Fat Clean	8	Dynamic Hi Gain
4	Vintage Brown	9	Ultimate Hi Gain
5	Warm Vintage	10	Fat Hi Gain

Drive & Master Level

Drive controls amount of signal fed to tube preamp. Use Master Level to balance relative volumes of different User programs.

Drive (0/100)   Determines the amount of gain in the tube preamp.

Master (0/100)	Sets output level from tube preamp into other sections.
OD [Overdrive] (0/100)	Available only when Hi Gain tube Voicings (7-10, see above) are selected. Determines how extreme distortion generated in the preamp is.

Compressor

The Compressor is the first stage a signal reaches from the input jack, preceding the tube preamp.

Status (In/Out)	Switches **Compressor** in and out of the signal path.
Ratio (2:1 / 30:1)	Sets compression ratio (increase in output for a given increase in input). Available values are: 2:1, 3:1, 4:1, 6:1, 8:1, 10:1, 15:1, and 30:1. The higher the compression ratio, the more "squeeze" (gain reduction) is applied to the signal.
Threshold (0/100)	<u>Found on screen 2.</u> The **Compressor** reduces gain (squeezes) signals exceeding the Threshold value, and increases gain (amplifies) signals below the **Threshold.**
Volume (0 /100)	<u>Found on screen 2.</u> Sets the amount of gain applied to the compressor output to make up for level excessive or deficient volume as a side effect of compression. Lower **Thresholds** and higher **Ratios** will generally necessitate higher **Volume** settings. It is recommended that **Volume** be adjusted until the basic signal level does not appear to change when the **Compressor** is switched in and out.

Tone Controls

The Tone controls give fast access to tonal shaping. Use the **Tone** controls to get a basic tonal sound and the **Graphic EQ** for more specific shaping needs. The actual frequencies affected by the Tone controls sometimes change with different tube **Voicings** to give the best sound.

NOTE: *Simultaneously pressing the "∧" and "∨" buttons resets the **Tone Controls** to flat response (all bands to 0 dB).*

Lo(+12/-12)	Shapes the amount of low (bass) frequencies in the signal in 2 dB steps.
Mid (+127-12)	Shapes the amount of midrange frequencies in the signal in 2 dB steps.
Hi(+12/-12)	Shapes the amount of hi (treble) frequencies in he signal in 2 dB steps.
Presence (+12*1*-12)	Shapes the amount of presence (upper mid) range frequencies in the signal in 2 dB steps.

Graphic EQ

Graphic EQ provides fine tonal shaping by allowing adjustment of nine specific frequencies. Up to 12 dB of boost or cut can be applied in two dB steps at any of the frequencies. The display gives a graphic indication of the frequency currently selected and the complete EQ curve. The upper right corner of the display always shows the frequency currently being edited, with the amount of boost or cut at that frequency shown directly below it.

NOTE: *Simultaneously pressing the "∧" and "∨" buttons resets the **Graphic EQ** to flat response (all bands to 0 dB).*

The frequencies are:

Table 2: EQ Frequency Centers

100 Hz	170 Hz	280 Hz	470 Hz	800 Hz
1.3kHz	2.2 kHz	3.8 kHz	6.3KhZ	

Chorus

The Chorus is the point at which the input signal first becomes.

Status (In/Out)	Switches the Chorus in and out of the signal path.
Mode	Selects the chorus MODE from the list below:

Normal	Dry + Wet
Dynamic 1	Dry + Wet*
Dynamic 2	Dry + Wet**

* The chorus rate is slightly modulated by the guitar input (i.e. the harder you play, the faster the chorus LFO). This makes for a chorus effect that is very dynamic and alive.
** Same as above, but with twice the modulation amount.

Depth (0%-100%)	Found on screen 2. Sets the intensity of the Chorus effect.
Rate (0 Hz-10 Hz)	Found on screen 2. Adjusts the rate of the Chorus effect in 1/10 Hz steps.

Tremolo

Tremolo is a pulsating volume effect controlled by an onboard sweep oscillator.

Status (In/Out)	Switches Tremolo in and out of the signal path.
Waveform (Sin/Tri/Surf)	Selects a sine, triangle, or "surf shape for the LFO that modulates the signal to create the tremolo effect.

LFO WAVESHAPES

SINE WAVE

TRIANGLE WAVE

SURF WAVEFORM
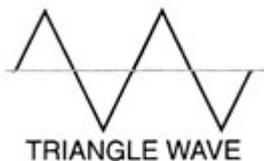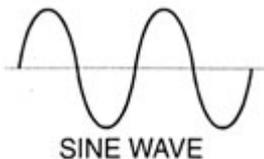
Depth (0%-100%)	Found on screen 2. Sets the intensity of the tremolo effect.
Rate (0 Hz-10 Hz)	Found on screen 2. Adjusts the rate of the tremolo effect in 1/10 Hz steps.

Noise Reduction

Some amount of noise is unavoidable in guitar amplification, especially when applying high gain, but it is usually only noticeable when nothing is being played. The **Noise Reduction** section offers tools to eliminate noise when there is no signal. The **Fader** mode fades sound slowly when the signal falls below the **Threshold,** while the **Gate** mode turns the signal off instantly and completely. In general, **Fader** mode is recommended for lower gain programs, and **Gate** mode for high gain programs.

Status (In/Out)   Switches Noise **Reduction** in and out of the signal path.

Mode (Fader/Gate)   Selects the **Noise Reduction** operating mode.

Threshold (0-100)   Found on screen 2. Signals exceeding **the Threshold** are heard unaltered, while signals below the **Threshold** are faded or gated to silence. In general, the more noise you have in the program, the higher you need to set the **Threshold.**

Effects Loops

Following the Noise Reduction, each channel of the signal feeds the Effects Loop. The loops are in a send/return configuration and the Returns are only active when Effects Loop Status is set to IN.

Status (IN/OUT)   Switches the Effects Loop Returns in and out of the signal path according to the Mode and FX Mix selected.

Mode (see below):   Found on screen 2.   Sets up how the effects loop return signals will be mixed:

DRY & A   Loop A side-chain mode: FX Mix 0% = all DRY, FX Mix 100% - all Loop A WET.

DRY & B   Loop B side-chain mode: FX Mix 0% = all DRY, FX Mix 100% = all Loop BWET.

A & B   Loop A/Loop B pan mode: FX Mix 0% = all Loop A Wet, FX Mix 100% = all Loop B WET.

FX Mix (0-100%)   Varies the FX mix continuously from 0 - 100%, according to the Mode described above.

FX B Phase (IN/OUT)   Sets the phase of the Loop B Return signal.   When set to OUT, the phase of the signal is inverted with respect to Loop A. This feature cures the problem of the return signals from Loop A and Loop B canceling each other out because they are out of phase.

VariCAB

The VariCAB circuit follows the Effects Loop and provides a miked-cabinet emulation to all of the outputs using a simulated close-miked SM57 microphone as a reference. The purpose of the VariCAB is to emulate the complex physical and psychoacoustic effects of much larger cabinets by adding the subtle comb-filter effects of soundwaves arriving from multiple sources. This allows the compact 1x12 configuration of the TRiTUBE TUBE Combo to have all the complexity and "depth" of a large, multiple-speaker "stack" set-up. Having fewer speakers yields a more directional and tightly focused sound, and the more speakers you add, the richer and more ambient the sound. This effect is much more prominent with sound having a complex harmonic structure, like a heavily distorted tone. The nature of the emulation is much like that in the ADA MicroCAB, but in addition, the VariCAB is programmable. It has the following parameters:

Status (In/Out)   Switches VariCAB in and out of the signal path.
Mode   Selects the emulation mode from the following:

- Bypass —no cabinet emulation.

- 2x12 Vintage - 2x12 cabinet loaded with vintage 12" speakers.

- 2x12 Bright - 2x12 cabinet loaded with more modern-voiced 12" speakers.

- 4x12 Vintage - 4x12 cabinet loaded with vintage 12" speakers.

- 4x12 Bright - 4x12 cabinet loaded with more modern-voiced 12" speakers.

Lo Boost (In/Out)   Sets the lo-boost function in or out. This emulates the "thump" of a close-miked guitar cabinet. This is especially useful when playing at low-volume.

Hi Cut (In/Out)   Sets the hi-cut function in or out. This emulates the angle of miking (on-axis vs. off-axis). When the hi-cut is in, the mike is off-axis (less highs).

Program Title

This is where the user can create his/her own name for a program before storing it. Upper and lowercase letters, numbers 1 through 0, and various symbols are available for naming. A name can have up to 16 characters or spaces. The "<" and ">" buttons move the cursor from character to character, while the "∧" and "∨" buttons select the letter, number or symbol. The blank space character can be found between the "?" and "A" characters.

NOTE: *Simultaneously pressing the "∧" and "∨" buttons clears the Program Title (all characters blank).*

The name is kept as long as the **TRITUBE** 75M is in Program Edit mode, but is not permanent until the program is stored.

Real-Time MIDI (RTM)

In this section, MIDI continuous controller messages received by the **TRITUBE** 75M can be assigned to control parameters in real time. To use this feature, a MIDI continuous controller pedal such as the ADA MXC with a CCP foot pedal is needed. Up to sixteen assignments (sometimes called "mappings") can be made; each assignment is called a "slot." A single controller can be mapped to control a number of different parameters, but each parameter can be only be mapped to one controller. For this reason, once a parameter has been mapped to a controller, it disappears from the picklist of parameters which can be controlled.

Table 3:	RTM Parameter Picklist	
Unassigned	Graphic: Band 4	VariCAB Status
Drive	Graphic: Band 5	Lo-Boost
OD (Overdrive)	Graphic: Band 6	Hi-Cut
Master	Graphic: Band 7	Chorus Status
Comp. (Compressor) Status	Graphic: Band 8	Chorus Depth
Tone: Lo (Bass)	Graphic: Band 9	Chorus Rate
Tone: Mid	N-R (Noise Reduction) Status	Loop Status
Tone: Hi (Treble)	Gate Threshold	FXMix
Tone: Pres (Presence)	Fader Threshold	FX B Phase
Graphic: Band 1	Tremolo Status	V-Curve*
Graphic: Band 2	Tremolo Depth	Grind*
Graphic: Band 3	Tremolo Rate	Sustainer*
		Modulation*

Note: Macros (indicated with an asterisk) are only available in Quick Mode. In Quick mode, the picklist contains only switch functions or pedal functions, depending on the MIDI controller used.

Real-Time MIDI (RTM) is edited in this section using either of two modes, Quick or Expert, and used in Play mode. (Which edit mode is used has no effect on RTM operation in Play mode.) In Quick mode, assignment of MIDI controllers to **TRITUBE** 75M parameters is simplified to make the process as fast and easy as possible, allowing only the parameter being controlled to be set. Expert mode involves a few extra steps which allow direct selection and viewing of slot number, controller number, controller sense and minimum and maximum parameter values.

The Real-Time MIDI Preview feature enables the effect of RTM assignments to be auditioned without leaving the RTM section or Program Edit mode.

NOTE: Be sure a MIDI controller is properly connected to and set up to communicate with the TRITUBE 75M before attempting to work with RTM.

RTM Edit Mode	Sets edit level for programming
(Quick/Expert):	RTM. This is a global setting. See **Appendix D** for a Tutorial on Real Time MIDI in Quick Mode.

Macros

In Quick mode, four additional entries appear in the parameter picklist for continuous controllers. These are **Macros,** factory-programmed groups of parameters that are all changed simultaneously by the controller assigned to that slot. Macros use up multiple slots. Table 4 is a list of Macros and descriptions:

Table 4: Macro Descriptions

V-CURVE	Goes from mid-rangy EQ to extreme V-shaped curve with only a slight level change.
GRIND	Goes from barely distorted (pedal back) to heavy grind (pedal forward). Tweaked for use with high gain voices.
SUSTAINER	Great for going from rhythm to lead, but continuously variable. Brings in more gain, fat mids, and overall volume, while taking out the noise gate for infinite sustain with no gate "chatter". Designed for high-gain voices.
MODULATION	An organ modulation sound. Tremolo Status and Chorus Status must both be set to "On" in the program.

Macros may be examined and altered in Expert mode, and the resulting, altered RTM assignments may be stored, but user-altered-or -created assignments are not stored as Macros, that is, they cannot be titled and do not appear in the picklist. Once a macro has been altered in Expert Mode, it is no longer recognized as a macro in Quick Mode, therefore, it cannot be <u>unassigned</u> in Quick Mode.

To examine the components of a Macro:

- Set RTM Edit Mode to "Expert".

- Use the Slot parameter to view the parameter assigned to any slot.

- Move the cursor to the Parameter setting. The display will briefly show the message, "THIS SLOT IS PART OF A MACRO" if it is a component of the macro. After the message disappears, the **TRITUBE** 75M will allow editing of the setting as usual.

- Repeat steps 2 and 3 for each slot.

Real-Time MIDI Preview

This feature, available in Quick and Expert modes, lets you evaluate the effect of an RTM assignment without leaving the RTM section. This not only simplifies auditioning, but also makes it unnecessary to store the program before hearing the effect of the assignment. Here are a few notes about **RTM Preview:**

1) To activate the MIDI controller's link to a parameter, the controller pedal must be moved past the position that corresponds to the current value of the parameter. Moving the controller past this point "activates" the parameter. When there are multiple parameters assigned to a single controller, the controller will usually need to be "swept", or moved through its entire range, to capture all parameters. (This is also true when using RTM in Play mode.)The exceptions to this are the two Global audio parameters, **Global Volume Controller, and Tuner Mute,** which are always active, and do not need to be captured.

2) The **Compare** function operates in RTM Preview. "INITIAL SETTINGS" resets the parameter in question to the stored value. The controller will need to be swept to hear the difference in the effect.

Making RTM Assignments in Quick Mode

Parameter	Found on screen 2. Selects the parameter for real-time control. The parameter name will be shown on the bottom line of the display. See above for the list of parameters which can be controlled.
Real Time MIDI Preview	Found on screen 3; active only when Parameter is not "Unassigned". Allows operation of an RTM assignment to be checked without having to leave Program Edit mode and store the program by moving controller and listening to the result.

General procedure for making RTM Assignments in Quick mode

This is an abbreviated version of the procedure given in the RTM Tutorial in the appendix, reproduced here for convenience.

- Press the REAL-TIME MIDI button to enter the section if it is not already selected.

- Set the RTM Edit Mode to "Quick". Press the ">" button to step to the next screen.

```
 ▣ MOVE PEDAL OR
   PRESS SWITCH
```
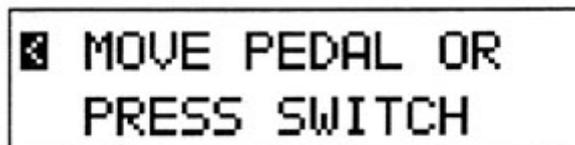
- Move the MIDI controller slightly. The **TRITUBE** 75M will detect the MIDI controller number and whether it is a switch-type or continuous controller, then assign it to the slot. The display will then show the parameter, if any, currently assigned to that controller.
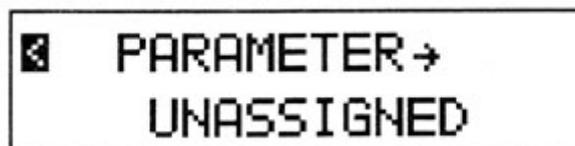
```
 ▣  PARAMETER→
     UNASSIGNED
```

- Choose the parameter you wish to control from the picklist of available choices. Notice that only toggle parameters are available when a switch-type controller is detected, and only variable parameters are available when a continuous controller is detected.

- Press the ">" arrow once to step to the next screen, which is the RTM Preview function.
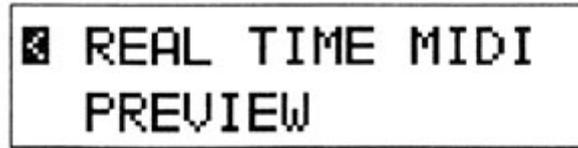
```
█ REAL TIME MIDI
  PREVIEW
```

- Operate the controller and check that the effect is satisfactory.
- Press the "<" button when you are finished previewing and the display will return to the "Move Pedal or Press Switch" message. You are ready to make your next assignment.

Making RTM Assignments in Expert Mode

NOTE: Real-Time MIDI control of parameters does not function in Program Edit mode, except in Real-Time MIDI Preview. Also, remote parameter editing through MIDI does not function when the Real-Time MIDI section is active, except for Sense, Min and Max.

|	
Slot (1-16)	Found on screen 2. Chooses one of the 16 slots for editing. Simultaneously pressing the "∧" and "∨" buttons clears all RTM slots at once.
Parameter	Found on screen 2. Selects the parameter for real-time control. The parameter name will be shown on the bottom line of the display. See above table 3 for the list of real-time parameters.
Controller# (0-127)	Found on screen 3; active only when Parameter is not "Unassigned". Selects the MIDI controller number that will affect the selected parameter. The controller number can be selected using the ∧ and ∨ buttons or by operating the controller while it is connected to the TRITUBE 75M and this parameter is selected. When the controller is operated, its number will appear in the parameter value.

NOTE: If the controller is operated and its number does not appear next to the Controller # check MIDI connections and verify that the controller and the TRITUBE 75M are set to the same channel. The MIDI Monitor function found later in this chapter is very helpful for this type of troubleshooting.

Sense (Forward/Reverse)	Found on screen 3; active only when Parameter is not "Unassigned" and controller is continuous (not switch). When set to Forward, the selected parameter increases in value when the incoming MIDI controller values increase (pedal is pushed down), and decrease as the controller values decrease (pedal is pulled back). When set to Reverse, the parameter value decreases when the controller value increases (pedal is pushed down), and increases as the controller values decrease (pedal is pulled back).

Minimum Value	Found on screen 4; active only when Parameter is not "Unassigned" and controller is continuous (not switch). Sets the value of the selected parameter when the controller is at its minimum value.
Maximum Value	Found on screen 4; active only when Parameter is not "Unassigned" and controller is continuous (not switch). Sets the value of the selected parameter when the controller is at its maximum value.
Real Time MIDI Preview	Found on screen 5; active only when parameter is not "Unassigned". Allows operation of RTM assignment to be checked by moving controller and listening to the result.

NOTES on Real-Time MIDI:

*1) The range and units of the **Minimum or Maximum** value will depend on the parameter. For example, when **Drive** is the selected parameter, **Minimum** can vary from 0 to 100, but when **Graphic EQ Band 1 (100 Hz)** is selected, the minimum can vary from -12 dB to +12 dB.*

*2) When **Sense** is set to "Reverse ", the relationship between controller value and parameter value is inverted, that is, the lowest controller value (pedal pulled all the way back) will set the parameter to **Maximum,** and the highest controller value (pedal pushed all the way down) will set the parameter to **Minimum.***

*3) The Min and Max values can never exceed the existing value of the parameter. If, for example, the **Drive** parameter is set to 30, any attempt to set Min higher or Max lower than 30 will result in the error message, "MIN. (or MAX) IS NOW EQUAL TO PARAM. VALUE." 4) **Min, Max,** and Sense are not available for Status parameters, as these are switches with only two values (In and Out).*

General procedure for making RTM assignments in Expert Mode:

• Press the REAL-TIME MIDI button to enter the section if it is not already selected.

• Set RTM Edit Mode to "Expert".

```
SELECT RTM EDIT
MODE →EXPERT      ▶
```

• Select Slot to be programmed (generally, scroll through the slots until an "unassigned" slot is found).

```
◀ SLOT →1   PARAM:
TREMOLO STATUS ▶
```
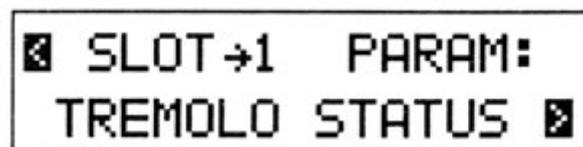
• Select Parameter to be controlled.

```
◄ SLOT:1   PARAM→
      DRIVE        ▶
```
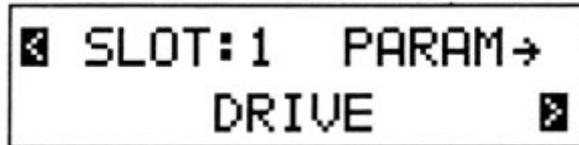
- Select MIDI Controller number.
- Set the controller Sense.

```
◄ CONTROLLER#→65
  SENSE:FORWARD  ▶
```
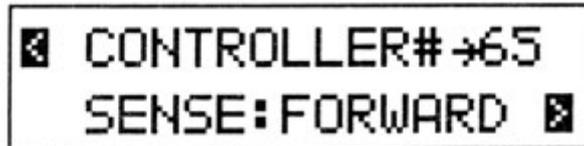
- Set the Minimum and Maximum allowable values for the parameter under control.

```
◄ MIN→0
  MAX:100        ▶
```
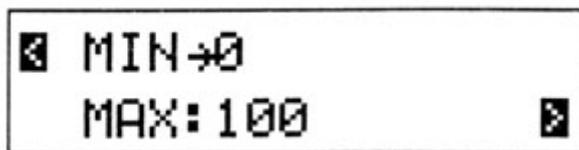
- Check the operation of the mapping in Real-Time MIDI Preview.

Compare   This feature allows comparison, without leaving Program
                   edit mode, between an edited (Modified) version
                   of a program and the stored version (Initial).   Each
                   time the Compare button is pressed, the TRITUBE 75M
                   switches between the versions allowing each to be
                   heard. The display indicates whether it is switching to
                   the edited version ("MODIFIED SETTINGS") or the
                   stored version ("INITIAL SETTINGS").

System Edit Mode

Utility functions and MIDI parameters which are global (in effect for all programs) are
found in System Edit mode. Many functions in this mode have procedures of several
steps which are entered with the up arrow.

MIDI Function Menu

The TRITUBE 75M's basic MIDI functions, as well as some of its most advanced
ones, are accessed through the MIDI function menu. Unlike the other selections in
the System Edit mode, the MIDI Function menu is not a single function, but a
submenu of a number of functions.

MIDI Function Menu Chart

Returns to other non-MIDI System Edit screens...

```
MIDI FUNCTION
   MENU?              → Moves into other non-MIDI System Edit screens...
```

```
SET MIDI
CHANNEL →ALL
```

```
EDIT MIDI          ←    MIDI IN→01      ←    RESET MIDI
MAPPING?                MAP TO USER:01       MAPPING?
```

```
                                            ARE YOU SURE?
MIDI MISMATCH                                          Y/N
WARNING →ON
```

```
ENABLE MIDI        ←    AWAITING MIDI
MONITOR?                RECEPTION
```

```
SEND LIBRARY?      ←       SENDING...
                        WAIT 15 SECONDS
```

```
SEND CURRENT       ←       DONE!
PROGRAM?
```

```
 PEDAL EDIT        ←    STEREO VOLUME    ←    TUNER MUTE
CONT  #→31             CONT. #→OUT           CONT  #→64
```

The TRITUBE 75M can send and receive the following kinds of MIDI messages: Program Change (which can also be remapped), Continuous Controller (used for both Global and RTM functions), and System Exclusive (which can contain the settings for a single program or all User programs).

To access the MIDI Function menu:

• Press the "∧" button when the display shows the message "MIDI FUNCTION MENU?"

To move through the MIDI Function menu:

• Press the ">" button from any main menu entry to step to the next entry. Many entries have additional screens. It is usually necessary to use the "<" button to "back out" of these screens and return to the main menu.

To exit the MIDI Function menu:
• Press the "<" until the display again shows the message "MIDI FUNCTION MENU?"

About Global MIDI Parameters

Global parameters are settings that apply no matter what program is running. The MIDI channel and program map, for example, do not change when the program is changed. Nor do the **Pedal Edit Controller, Global Volume Controller,** or **Tuner Mute.** This is most important for the last two. The fact that the **Global Volume Controller** is Global means that it can be set to achieve a good mix level that blends with the band, which is <u>maintained</u> when a new program is recalled. And if you step on a program change footswitch while tuning with the **Tuner Mute** engaged, the outputs will **stay muted** when the new program is recalled.

Set MIDI Channel

This parameter sets the MIDI channel over which the **TRITUBE** 75M will transmit and receive. It can be set to any of the 16 MIDI channels, ALL for Omni mode (responds to MIDI information arriving on any channel), or OFF to disable MIDI reception.

> *NOTE: When the **TRITUBE** 75M's MIDI Channel is set to "All" or "Off", program changes are transmitted on channel 1.*

Edit MIDI Mapping

The **TRITUBE** 75M can map (assign) each incoming MIDI program change number to recall any User program. A single User program may be mapped to many MIDI program change numbers.

> *NOTE: Preset programs can be recalled only from the front panel, not through MIDI.*

To create a MIDI Program Change map:
- Press the "^{A}" button when the display shows the message "EDIT MIDI MAPPING?" to access the map.
- Use the "$\wedge$" , "$^\vee$", Bank Up, Bank Down, or 0-9 buttons to select the MIDI program change number you wish to map.
- Press the ">" button to move the cursor to the User program value.
- Use the "$\wedge$" , "$^\vee$", Bank Up, Bank Down, or 0-9 buttons to select the User program you want recalled when the selected MIDI program change number is received.
- Press the "<" button to move the cursor back up to the MIDI program change value and repeat steps 2-5 as many times as necessary until program changes have been mapped as desired. It is not necessary to map every program change; the default mapping will call the User program with the same number as the MIDI program change.

- When mapping is complete, press the "<" button to return to the MIDI Function menu. There is no "STORE" function for MIDI mapping.

To restore the default map (1 to 1 mapping, User program # = MIDI program #):

- Press the ">" button while in the mapping screen until the display shows the message "RESET MIDI MAPPING?"

- ask for confirmation.

- Press the "∧" ("Yes") button to restore the default map. To abandon restoring the default map.

- When the display asks for confirmation, press the "∨" ("No") button. The display will return to the Reset screen.

- Press the left arrow to exit the Reset function and return to the mapping screen.

MIDI Mismatch Warning (On/Off)

The most common cause of MIDI problems is not having the MIDI controller and the MIDI "slave" device (in this case, the **TRITUBE** 75M) set to the same channel. When MIDI Mismatch Warning is set to "On," the **TRITUBE** 75M will warn you if it receives MIDI messages on a channel other than the one to which it is set.

On	The **TRITUBE** 75M will display the messages, "MIDI CHANNEL MISMATCH," "CHECK MIDI SETTINGS" if it receives MIDI messages on a different channel than its own.
Off	No warning messages are given.

Enable MIDI Monitor

When troubleshooting MIDI problems it is often helpful to be able to see what MIDI messages the **TRITUBE** 75M is receiving. This ability can also be useful simply to see what kinds of messages another MIDI device is transmitting. The MIDI monitor displays, in real time, all MIDI controller and program change messages being received by the **TRITUBE** 75M. To enable MIDI monitoring:

- Press the "∧" button when the display shows the "ENABLE MIDI MONITOR?" message.

To exit MIDI monitoring:

- Press the "<" button to return to the MIDI Function menu.

Send Library

The TRITUBE 7SM can transmit or receive all User programs and MIDI Map assignments over MIDI (as System Exclusive messages) to a librarian or sequencer program or another **TRITUBE 75M.**

To send all User programs over MIDI:

- Connect MIDI Out of the **TRITUBE** 75M to MIDI In of another **TRITUBE** 75M or a MIDI interface connected to a computer running a librarian or sequencer program.

- Press the "∧" button when the display shows the "SEND LIBRARY?" message. The display will prompt you to wait 15 seconds.   Do not push any buttons on either unit for 15 seconds while the transfer takes place.   The receiving unit will acknowledge when the library transfer has finished.

NOTE: In order to receive a program or other System Exclusive messages, the TRITUBE 75M must be in Play mode.

Send Current Program

The TRITUBE 75M can transmit the contents of the program currently being edited over MIDI (as System Exclusive messages) to a librarian or sequencer program, or receive a program from another **TRITUBE 75M.**

To send the current program over MIDI:

- Connect MIDI Out of the **TRITUBE** 75M to MIDI In of another **TRITUBE** 75M or a MIDI interface hooked up to a computer running a librarian or sequencer program.

- Press the "∧" button when the display shows the "SEND CURRENT PROGRAM?" message. The display will verify that the operation has been completed.

NOTE: In order to receive a program or other System Exclusive messages, the TRITUBE 75M must be in Play mode.

Pedal Edit Controller

It is possible to edit the TRITUBE 75M's parameters remotely from a MIDI continuous controller. The designated controller will vary the value of the <u>currently selected parameter</u> (where the cursor is) in Program Edit mode, making possible hands-free parameter editing. This should not be confused with real-time MIDI operation, which does not alter the value in the TRITUBE 75M's working memory and is only active in Play mode.

The controller number can be selected using the ∧ and ˅ buttons or by operating the controller while it is connected to the TRITUBE 75M and this parameter is selected. When the controller is operated, the number will appear in the parameter value.

NOTES:

1) *If the controller is operated and its number does not appear in the Controller # parameter value check MIDI connections and verify that the controller and the TRITVBE 75M are set to the same channel. The MIDI Monitor function is very helpful for this type of troubleshooting.*

2) *The Pedal Edit Controller does not function in all of the screens in the Real-Time MIDI section.*

Global Volume Controller

In addition to any volume parameters under control of RTM, the TRITUBE 75M offers Global control of volume through MIDI. This volume control follows everything else in the signal path except the front panel Volume pot.

The controller number can be selected using the "∧" and "∨" buttons or by operating the controller while it is connected to the TRITUBE 75M and this parameter is selected. When the controller is operated, the number will appear in the parameter value. When set to "Out", no MIDI volume control is enabled.

Tuner Mute Control

If is often desirable to tune while on stage without the audience listening. The Tuner Mute, when activated by a selected MIDI controller, mutes all of the TRITUBE 75M's outputs, allowing a tuner, connected between the instrument and the TRITUBE 75M, to be used silently. It is a Global parameter which remains in effect regardless of the program running.

The controller number with the "∧" and "∨" buttons or by operating the controller while it is connected to the TRITUBE 75M and this parameter is selected. When the controller is operated, the number will appear in the parameter value. When set to "Out", no mute control is enabled.

OTHER NON-MIDI SYSTEM EDIT FUNCTIONS

Copy Presets to User

The factory Preset programs can be reloaded into User programs at any time.

To reload Preset programs:

- Press the "∧" ("Yes") button when the display shows the message "COPY PRESETS TO USER?" The display will ask for confirmation.
- Press the "∧" button to reload the Preset programs or the down arrow to abandon the reload.

WARNING!   Loading the Preset programs will overwrite the contents of User memories 1-39.

Copy Single Programs

Programs may be copied from any location, Preset or User, into any User program.

To copy a program:

- Press the "∧" ("Yes") button to access the second screen.
- Use the BANK UP, BANK DOWN, and number (0-9) buttons to select the source location. The Bank buttons will step first through all User banks, then through the Preset banks.
- Use the right arrow to move the cursor to the destination (TO:) parameter.
- Use the BANK UP, BANK DOWN, and number (0-9) buttons to select the destination User location. Programs can only be stored in User memories.
- Press the up arrow when the source and destination memories have been selected. The display will ask for confirmation.

- Press the up arrow to complete the copy. The display will show the message, "DONE!" to verify that the procedure is complete.

To abandon a copy procedure:

- When the confirmation message appears, press the down arrow to abandon the copy. The display will return to the selection screen.

- Press the left arrow to exit the copy function or select new source and destination values and continue with the copy.

Swap Programs

Programs may be swapped between any two User memories.

To swap a program:

- Press the up arrow to access the second screen.

- Use the BANK UP, BANK DOWN, and number (0-9) buttons to select the source (SWAP:) location.

- Use the right arrow to move the cursor to the destination (WITH:) parameter.

- Use the BANK UP, BANK DOWN, and number (0-9) buttons to select the destination location.

- Press the up arrow when the source and destination memories have been selected. The display will ask for confirmation.

- Press the up arrow to complete the swap. The display will show the message, "DONE!" to verify that the procedure is complete.

To abandon a swap procedure:

- When the confirmation message appears, press the down arrow to abandon the copy. The display will return to the selection screen.

- Press the left arrow to exit the swap function or select new source and destination values and continue with the swap.

Panel Mode

Panel Mode offers the ability to make the **TRITUBE** 75M's front panel act like a MIDI controller when recalling programs. This is useful if you are accustomed to using a MIDI controller and are more familiar with the MIDI program change numbers associated with a program than with the **TRITUBE** 75M User program number or if your MIDI program change footswitch fails on-stage. (In that situation, you would simply move the cable plugged into MIDI Thru to MIDI Out and use the front panel to send program changes to the rest of your MIDI gear.)

Local	Normal operation.
Controller	Front panel program selection. in Play mode uses the MIDI Program Change Map; in other words, the front panel buttons act like a MIDI controller when recalling programs, including transmitting the number entered from the front panel as a MIDI Program Change message. When this mode is selected, the

display in Play mode will show the MIDI program change number and the User program to which it is mapped, but the map is not editable from this screen. Editing of the map can only be done in the MIDI Function menu.

Program Change Speed

This parameter changes how fast the **TRITUBE** 75M changes its audio parameters when you send a program change from a MIDI footswitch or the front panel.

Normal   Changes programs with very little popping between sounds. There is a short delay to allow for the quiet switching.

Fast   Changes programs very rapidly, but may cause a pop during the change. The amount of pop is dependent on the parameters of the programs you are switching between. <u>It is not recommended that a note be played through a program change so as to minimize popping.</u>

Restore System Defaults

The default values for the System parameters listed below and can be restored at *any* time:

Table 5: System Default Values	
MEMORY PROTECT	Off
PANEL MODE	Local
PROGRAM CHANGE SPEED	Normal
MIDI CHANNEL	All (Omni)
MIDI MISMATCH WARNING	On
PEDAL EDIT CONTROLLER	#31
GLOBAL VOLUME CCNTROLLER	#31
TUNER MUTE CONTROLLER	#64

Restoring the System defaults also resets (unmutes) the Tuner Mute, and resets the Volume to full on (100%).

To restore factory System default values:

• Press the up arrow when the display shows the "RESTORE SYSTEM DEFAULTS?" message. The display will verify that the operation has been completed.

Memory Protect

The memory protect function, when engaged, disables the ability to store edited programs.

Off   Normal operation; edited programs may be stored into User memories.
On   Store function disabled. Protects memory from being erased or overwritten.

Tubes

The incomparable sound *of* tube amplification comes with the need for a small amount of simple maintenance to accommodate the nature of tubes.

NOTE: *To preserve tube life, allow time for the tubes to cool after shutting down the* **TRITUBE** *75M before moving. Tube elements are more fragile when hot.*

Tubes have a limited life span; it is recommended that the **TRITUBE** 75M's tubes be replaced about once every 2 years, or if they show signs of wearing out. Some signs of degrading tube life are:

    Excess noise on high gain programs

"Ringing," squealing or feedback

Microphonic effects (tapping on the **TRITUBE** 75M causes audible thumps through speakers).

- Lack of punch and power, "weak" distortion, or sputtering.

Replace the **TRITUBE** 75M's tubes only with high-quality, low-noise 12AX7A-7025 tubes. If desired, these can be purchased from ADA (ADA part # 220020). There are a total of three tubes in the **TRITUBE** 75M: two in the preamp and one in the power amp.

Appendix A SPECIFICATIONS

Input

Connectors	Unbalanced (TS) 1/4" phone.
Max. Input Level (before input slip)	
High Sensitivity	2.57V RMS
Low Sensitivity	9.90V RMS
Input Impedance:	390 kilo ohms

Preamp Output

Connectors	Unbalanced (TS) 1/4" phone
Max. Output Level	+11.1 dBV (3.6V RMS) into 600 ohms
	+17.1 dBV (7.2V RMS) into 50 kilo ohms
	Output Impedance 2300 ohms

Power Amp Input

Connectors	Unbalanced (TS) 1/4" phone
Input Sensitivity	1.1V RMS

Recording Outputs

Frequency Response	Bandwidth limited to approximately 50 Hz-3 kHz
Connectors	Balanced 3-pin XLR (pin 3 hot) Unbalanced (TS) 1/4" phone Max.
Output Level	Unbalanced +11.1 dBV (3.6V RMS) into 600 ohms
	+17.1 dBV (7.2V RMS) into 50 kilo ohms
Balanced (Line)	+12 dBV (4V RMS) into 600 ohms
Balanced (Mic)	-16 dBV (.15V RMS) into 200 ohms
Output Impedance	500 ohms

Effects Loop Sends

Connectors	Unbalanced (TS) 1/4" phone
Max. Output Level	
Line	+11.1 dBV (3.6V RMS) into 600 ohms
	+17.1 dBV (7.2V RMS) into 50 kilo ohms
Instrument	-8.9 dBV (.36V RMS) into 600 ohms
	-2.9 dBV (.72V RMS) into 50 kilo ohms

Effects Loop Returns

Connectors	Unbalanced (TS) 1/4" phone
Max. Input Level	
Line	+20 dBV (10V RMS)
Instrument	0 dBV (1V RMS)
Input Impedance	10 kilohms

Physical Specs

Size	H=.20"W = 20-1/2"D = 15
Weight	54 lbs
Shipping Weight	66 lbs
Power Consumption	250 watts max,

4x4 MIDI Program Changer

Size:	9"Lx2-1/8"Hx3-7/8" D
Weight	1.22 lbs.

Appendix B

MIDI and the TRITUBE75M

A brief discussion of the MIDI specification and the portions of it used by the **TRITUBE** 75M. MIDI (Musical Instrument Digital Interface) is the means by which computer-based electronic musical instruments, such as synthesizers and samplers, and other related equipment can exchange information. MIDI is a specification agreed upon by the manufacturers of this equipment, and consists mostly of the definition of a number of software messages that, taken collectively, comprise something that is part communications protocol, part computer language, part file format Technically, it is a one-way serial interface operating at a speed of 31.25 kilo baud. (Two-way MIDI communication is possible, it just entails using two cables between the devices.)

MIDI messages convey information about a musical performance, though they do not actually carry sound. Think of the modern equivalent of a player piano: the holes are MIDI note messages (which specify which note was played and how hard), while the player piano actually producing the sound is a synthesizer or sampler. A sequencer is a recorder of MIDI data, like a tape recorder, except that it doesn't use tape and it records MIDI data, not sound. In other words, the sequencer is what takes an actual performance and makes a MIDI "piano roll."

In order to allow multiple devices to be simultaneously but independently addressed, MIDI uses a channel system similar in concept to television. When a device is set to one of the 16 MIDI channels, it will respond only to messages carrying that channel number. Note messages are the most commonly used, but the **TRITUBE** 75M has no need of these. The next most common messages are program change messages. These tell the receiving device to recall a specific program, or collection of settings, from its memory. When the **TRITUBE** 75M receives a program change message, it recalls one of the User programs; it is also capable of transmitting a program change message when a program is selected from the front panel. MIDI is capable of specifying up to 128 different program change numbers. The **TRITUBE** 75M's MIDI Mapping feature lets you assign each MIDI program change number to call up any User program you desire.

The **TRITUBE** 75M's Panel Mode is a special feature that allows the **TRITUBE** 75M's front panel to act as if it were a MIDI controller plugged into MIDI In. In this case, you press the MIDI program number on the front panel, and the **TRITUBE** 75M recalls the current User program currently mapped to that MIDI number. It will also show that mapping.

Many MIDI systems consist of a number of components. In order to achieve the maximum flexibility with the least effort, it was necessary to devise a system wherein a single program change message from a source could call up desired programs in all the components simultaneously, without having to constantly shuffle programs around in

memory to match a program change number. This is the purpose of the **TRITUBE** 75M's program change mapping capability.

Another common type of MIDI message is Continuous Control messages. These are generally used to gestural controllers like Modulation Wheel and Volume. Interestingly, switch-type controllers, like Sustain Pedal, are also in this category, even though they are not actually continuous. The MIDI specification originally defined 124 different controllers, but later enhancements to the spec allow many more to be defined. A few very important controllers, notably pitchbend and aftertouch, have their own messages defined and are not considered part of the Continuous Controller class. The **TRITUBE** 75M can use Continuous Controller messages to control virtually any of the parameters available in Program Edit mode, but it does not recognize pitchbend or aftertouch.

The last type of MIDI message used by the **TRITUBE** 75M is System Exclusive. This type of message was originally intended as a "trap door" to allow both expansion of the MIDI spec and use by manufacturers of features unique to their devices. The definition of the basic System Exclusive is quite sparse and open-ended to give manufacturers the greatest latitude. Each manufacturer uses their own format for these messages, and only their devices or computer software specifically designed to work with those devices will recognize them. There have been several more structured additions to the MIDI spec that are defined as types of System Exclusive messages, but it is the original use that the **TRITUBE** 75M employs. It is the **TRITUBE** 75M's System Exclusive implementation that lets libraries or programs be sent and received by the **TRITUBE** 75M. Computer software programs called librarians store and retrieve this kind of information.

There are numerous other types of MIDI messages that are not covered in this extremely brief discussion because they are not appropriate to the job the **TRITUBE** 75M performs. For more information on MIDI, there are several magazines that focus heavily on MIDI and its applications, and a number of books on the subject.

Appendix C

Troubleshooting

Some hints to aid in correcting problems.

Problems happen, always at a critical moment when they can least be afforded. Fortunately, the overwhelming majority of problems are simple in nature and usually involve no more than finding and correcting some oversight.

Troubleshooting Tips

The difference between quickly fixing a problem and becoming angry and frustrated lies mostly in the approach taken in troubleshooting. Here are a few rules that can be applied to any troubleshooting situation:

1)   Stay calm!

It is easy to become upset when a problem crops up, especially in a high-pressure situation such as in the "heat of the battle" on-stage, but panic tends to close the mind, making it more likely that the fault will be overlooked. It may take a lot of effort to remain calm, but this is the single most important troubleshooting technique.

2)   Be methodical. Use the process of elimination to isolate the

cause.

Time is frequently wasted in troubleshooting situations by attacking the problem randomly. The most potent technique for finding the cause of a problem is the process of elimination. The first thing to try is eliminating everything in the middle of a signal chain

and see if the problem still exists. Use any indicators or meters in the signal chain to help isolate where the signal exists and where it does not.

If you are getting no sound from the **TRITUBE** 75M, for example, try setting all Status parameters to "Out" and disabling the Volume Control. If there is still no sound, the problem is either elsewhere or a truly serious one that cannot be dealt with on the spot (which does happen on occasion). If the problem disappears, you have isolated the cause as being something to do with the sections you removed. The next step is to add them back in one at a time, testing as you add each stage. In this way, you will quickly identify the culprit, allowing you to then focus on that area in the same way and find the specific cause.

This may sound like a procedure too time-consuming for a performance situation, but, in fact, it can be done very quickly once the process is familiar, and it offers the best chance of actually finding and correcting the problem.

3)   Don't overlook the obvious. Check simple mechanical things first.

When a problem occurs, don't immediately assume it is a complex MIDI mishap or some other arcane thing; most often it is the simplest possible explanation that is the right one. Did the unit become unplugged? Is it switched on? Are the connections correct and complete? (It is easy for a cable to be half-plugged in, which can cause very puzzling behavior.) Is there a bad cable?

Even once basic mechanical causes have been explored, continue thinking of the simplest explanation. If the **TRITUBE** 75M is not responding to MIDI, check the channel settings after checking the cabling connections.

Audio Problems

Aside from the general suggestions given above, here are a few specific things to check for:

Symptom	Possible Cause
Unit does not power up	Not plugged in
	Not switched on
	Fuse is blown in unit
	Wall power is bad
No sound, no signal LEDs	Problem with instrument
	Bad cable or connection going to **TRITUBE 75M**
No sound, some signal	Some level parameter is set to zero.
LEDs lighting	Check: **Master, Drive, OD Standby switch**
No sound, LEDs	Global Volume Control is set to zero
lighting OK	Gate Threshold is too high
	Volume control set to zero
	Tuner Mute is engaged
	Some level parameter is set to zero. (see list above)
Unwanted distortion/noise	Bad cable going to the **TRITUBE** 75M
	Problem in the instrument Effects Loop or XLR Level
	switches set incorrectly

	Too much level within **TRITUBE** 75M (indicated by signal LEDs glowing red).
	Bad 12AX7 tube(s)
Hum	Bad cable
	Problem in instrument or amplifier/monitor system Ground loop

MIDI Problems

No response to controller	Incorrect or faulty MIDI cabling
	MIDI channel not set to match controller MIDI channel set to "Off
No response to	Incorrect RTM assignment
continuous controllers	Parameters under control not "activated"
Incorrect program changes	MIDI map improperly set up
Does not receive	Incorrect or faulty
library or program	MIDI cabling.
	MIDI channel not set to match source.
	MIDI channel set to "Off."
	Memory protect "ON."

The MIDI Monitor function found in System Edit mode displays incoming controller and program change messages. This can be very helpful in trying to isolate MIDI problems. The MIDI Mismatch Warning function, also found in System Edit mode, when enabled, displays a warning when the **TRITUBE** 75M receives MIDI messages on a different channel than that to which it is currently set. This, too, can be useful in troubleshooting.

Appendix D

Real Time MIDI Tutorial

NOTE: *For the rest of the Tutorial, it is necessary to have a MIDI controller capable of sending program change and continuous controller messages connected to the **TR1TUBE 75M.***

Using a MIDI Continuous Controller for Remote Editing

The **TRITUBE** 75M has the ability to be remotely programmed through MIDI. With the Pedal Edit feature, it is not necessary to be within reach of the **TRITUBE** 75M to adjust a parameter value in Program Edit mode; the pedal is used in place of the "ᵛ" and "∧" buttons. When in Program Edit mode, the controller assigned to Pedal Edit will change the value of whatever parameter is currently selected.

NOTE: *When the Real-Time MIDI section of Program Edit mode is selected, the Pedal Edit feature is only active for the Sense, Min and Max parameters.*

• Press the ">" button until the display shows:
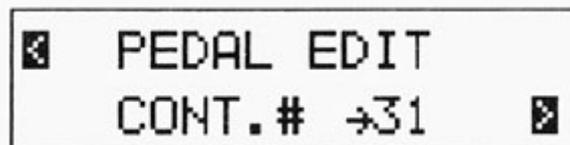
```
▧   PEDAL EDIT
    CONT.# →31      ▧
```

- Connect a MIDI Continuous Controller, such as the ADA CCP/MXC combination, to the **TRITUBE** 75M's MIDI In. Be sure that the controller is set to (he same MIDI channel as the **TRITUBE** 75M.

*NOTE: If the MIDI Mismatch Warning feature in System Edit is set to "ON," the **TRITUBE** 75M will display the error messages below if it receives MIDI data on a channel other than its own.*

```
┌────────────────────────┐
│   MIDI CHANNEL         │
│     MISMATCH           │
└────────────────────────┘
```
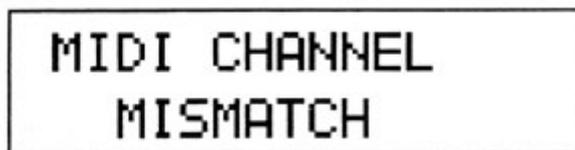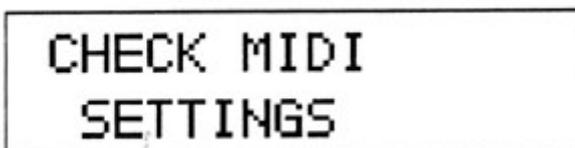
```
┌────────────────────────┐
│   CHECK MIDI           │
│     SETTINGS           │
└────────────────────────┘
```

- Move the controller slightly. The **TRITUBE** 75M will detect the MIDI Continuous Controller number and change the Pedal Edit value to match it.

- The Pedal Edit value can also be set with the "ᵛ" and "∧" buttons.

The assigned controller will now perform remote editing when the **TRITUBE** 75M is in Program Edit mode.

Programming MIDI Control of Global Volume

The TRITUBE 75M's output volume can be controlled through MIDI. This is a <u>global</u> controller which affects all programs and does not change value when a program is changed. If, for example, overall Volume is set to 50% and the program changed, the Volume Controller will remain at 50% regardless of any settings in the new program. This is useful for maintaining your overall balance level in a band situation. The other global parameter is Tuner Mute, and is assigned the same way as the Volume controller. It is useful for tuning on stage while tuning off the signal to your speakers.

NOTE: The   Global Volume and Tuner Mute Controllers
are both <u>global</u> Real Time MIDI settings. Some confusion or problems (such as no output) may arise if this is not fully understood, and kept in mind. For a complete explanation of global settings, see the System Edit portion of the Reference chapter.

- Press the ">" button once so that the display shows:
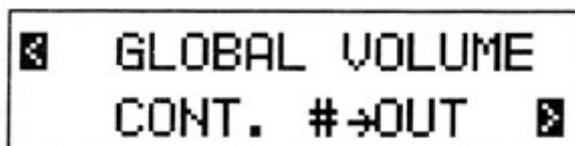
```
┌────────────────────────┐
│ ▣   GLOBAL VOLUME      │
│    CONT. #→OUT    ▣    │
└────────────────────────┘
```

- Connect a MIDI continuous controller, such as the ADA CCP/MXC combination, to the **TRITUBE** 75M's MIDI In. Be sure that the controller is set to the same MIDI channel as the **TRITUBE** 75M.

*NOTE: If the MIDI Mismatch Warning feature in System Edit is set to "ON," the **TRITUBE** 75M will display the previously shown error message if it receives MIDI data on a channel other than its own.*

- Move the controller slightly. The **TRITUBE** 75M will detect the MIDI continuous controller number and change the **Global Volume** Controller value to match it.

```
┌──────────────────────────────┐
│ ◧  GLOBAL VOLUME             │
│                              │
│    CONT. #→7            ▶    │
└──────────────────────────────┘
```
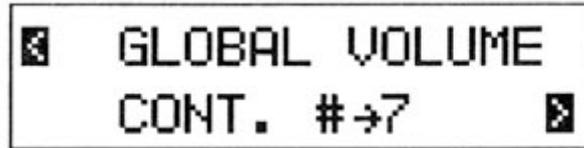
•   The Global Volume Control value can also be set with the "ˇ" and "∧" buttons. Press the SYSTEM EDIT button to exit System Edit mode.

Editing Real-Time MIDI (RTM) Parameters

Real-Time MIDI (RTM) allows control of virtually any **TRITUBE** 75M program parameter in performance through MIDI. The **TRITUBE** 75M can make up to sixteen assignments of MIDI trailers to **TRITUBE** 75M parameters for each program. Each alignment is called a **slot.** RTM assignments are made in Program Edit mode and used in Play mode.

There are two ways or modes for making RTM assignments: Quick and Expert. Expert mode allows more detailed programming at the expense of taking a little more time. Quick mode is an extremely fast method of making assignments but does not allow fine tailoring. See page in the Reference chapter for complete information on programming RTM assignments in Expert mode.

```
┌────────────┐        ┌──────────┐        ┌────────────┐
│ Parameter  │        │   Slot   │        │ Continuous │
│            │   →    │          │   ←    │ Controller │
│  Number    │        │  Number  │        │   Number   │
└────────────┘        └──────────┘        └────────────┘
```
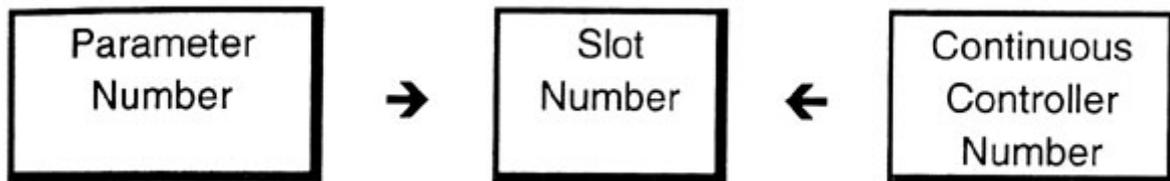
•   Connect a MIDI continuous controller, such as the ADA MXC with CCP combination, to the **TRITUBE** 75M's MIDI In. Be sure that the controller is set to the same MIDI channel as the **TRITUBE** 75M.

NOTE: *If the MIDI Mismatch Warning feature in System Edit is set to "ON," the **TRITUBE** 75M will display the error message previously shown in this chapter if it receives MIDI data on a channel other than its own.*

•   Press the PRGM EDIT button to enter Program Edit mode.

•   Press the "REAL-TIME MIDI" button to select the RTM section. The first screen sets the edit mode.

Making RTM Assignments in Quick Mode

•   If RTM Edit Mode is not set to "Quick", press the "ˇ" button once to toggle it from "Expert" to "Quick."

```
┌──────────────────────────────┐
│  SELECT RTM EDIT             │
│                              │
│  MODE→QUICK            ◧     │
└──────────────────────────────┘
```
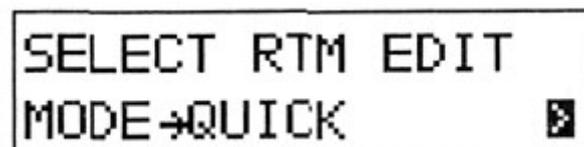
•   Press the ">" button to step to the next screen.
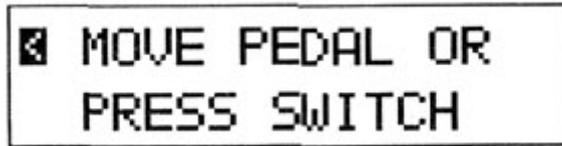
```
☒ MOVE PEDAL OR
  PRESS SWITCH
```

• Move the controller slightly. The **TRITUBE** 75M will detect the MIDI controller number and whether it is a switch-type or continuous controller, then assign it to a slot, although it will not display the number. (Viewing controller number assignments can be done in Expert mode.)

• The display will show the parameter, if any, currently assigned to that controller. If there is no current assignment, the display will show:
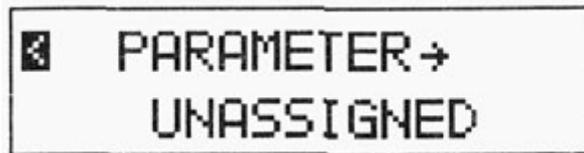
```
☒  PARAMETER→
   UNASSIGNED
```

• Use the "ᵛ" and "∧" buttons to choose the parameter you wish to control from the picklist of available choices. Notice that only **toggle** parameters are available when a switch-type controller is detected, and only **variable** parameters are available when a continuous controller is detected.

• Press the ">" arrow once to step to the next screen. This is the RTM Preview function.
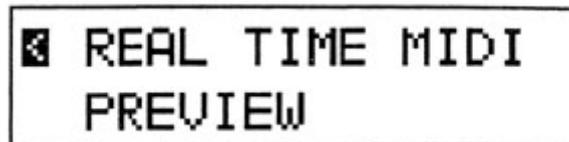
```
☒ REAL TIME MIDI
  PREVIEW
```

• Operate the controller and check that the effect is satisfactory.
• Press the "<" button when you are finished previewing and the display will return to the "Move Pedal or Press Switch" message. You are ready to make your next assignment.

Note: To activate a MIDI controller's link to a parameter, the controller must be moved past the position that corresponds to the current value of the parameter. Moving the controller past this point "activates" the parameter. When there are multiple parameters assigned to a single controller, the controller will usually need to be "swept", or moved through its entire range, to activate all parameters. (This is also true when using RTM Preview in Program Edit mode.)

For editing in RTM in Expert Mode, see section "Making RTM assignments in Expert Mode."