

**YAMAHA**

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**DRUM TRIGGER MODULE**

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**TMX**

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**OPERATION MANUAL**

# SPECIAL MESSAGE SECTION

This product utilizes batteries or an external power supply (adapter). **DO NOT** connect this product to any power supply or adapter other than one described in the manual, on the name plate, or specifically recommended by Yamaha.

**WARNING:** Do not place this product in a position where anyone could walk on, trip over, or roll anything over power or connecting cords of any kind. The use of an extension cord is not recommended! If you must use an extension cord, the minimum wire size for a 25' cord (or less) is 18 AWG. **NOTE:** The smaller the AWG number, the larger the current handling capacity. For longer extension cords, consult a local electrician.

This product should be used only with the components supplied or; a cart, rack, or stand that is recommended by Yamaha. If a cart, etc., is used, please observe all safety markings and instructions that accompany the accessory product.

**SPECIFICATIONS SUBJECT TO CHANGE:** The information contained in this manual is believed to be correct at the time of printing. However, Yamaha reserves the right to change or modify any of the specifications without notice or obligation to update existing units.

Do not attempt to service this product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

This product, either alone or in combination with an amplifier and headphones or speaker/s, may be capable of producing sound levels that could cause permanent hearing loss. **DO NOT** operate for long periods of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist. **IMPORTANT:** The louder the sound, the shorter the time period before damage occurs.

Some Yamaha products may have benches and/or accessory mounting fixtures that are either supplied with the product or as optional accessories. Some of these items are designed to be dealer assembled or installed. Please make sure that benches are stable and any optional fixtures (where applicable) are well secured **BEFORE** using. Benches supplied by Yamaha are designed for seating only. No other uses are recommended.

**NOTICE:** Service charges incurred due to lack of knowledge relating to how a function or effect works (when the unit is operating as designed) are not covered by the manufacturer's warranty, and are therefore the owners responsibility. Please study this manual carefully and consult your dealer before requesting service.

**ENVIRONMENTAL ISSUES:** Yamaha strives to produce products that are both user safe and environmentally friendly. We sincerely believe that our products and the production methods used to produce them, meet these goals. In keeping with both the letter and the spirit of the law, we want you to be aware of the following:

**Battery Notice:** This product **MAY** contain a small non-rechargeable battery which (if applicable) is soldered in place. The average life span of this type of battery is approximately five years. When replacement becomes necessary, contact a qualified service representative to perform the replacement.

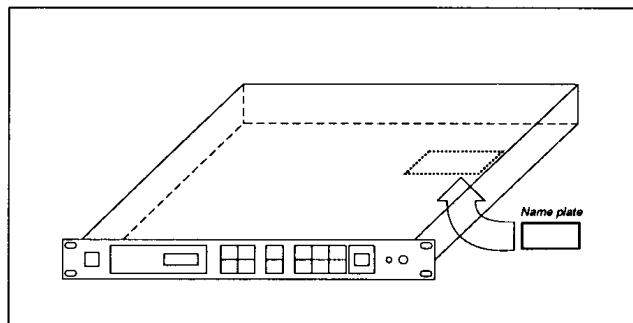
This product may also use "household" type batteries. Some of these may be rechargeable. Make sure that the battery being charged is a rechargeable type and that the charger is intended for the battery being charged.

When installing batteries, do not mix old batteries with new, or with batteries of a different type. Batteries **MUST** be installed correctly. Mismatches or incorrect installation may result in overheating and battery case rupture.

**Warning:** Do not attempt to disassemble, or incinerate any battery. Keep all batteries away from children. Dispose of used batteries promptly and as regulated by the laws in your area. Note: Check with any retailer of household type batteries in your area for battery disposal information.

**Disposal Notice:** Should this product become damaged beyond repair, or for some reason its useful life is considered to be at an end, please observe all local, state, and federal regulations that relate to the disposal of products that contain lead, batteries, plastics, etc. If your dealer is unable to assist you, please contact Yamaha directly.

**NAME PLATE LOCATION:** The graphic below indicates the location of the name plate for this model. The model number, serial number, power requirements, etc., are located on this plate. You should record the model number, serial number, and the date of purchase in the spaces provided below and retain this manual as a permanent record of your purchase.



Model \_\_\_\_\_

Serial No. \_\_\_\_\_

Purchase Date \_\_\_\_\_

## PLEASE KEEP THIS MANUAL

## FCC INFORMATION (U. S. A.)

**1. IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!**

This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.

**2. IMPORTANT:** When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product **MUST** be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.

**3. NOTE:** This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices. This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices. Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

Relocate either this product or the device that is being affected by the interference.

Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s.

In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to co-axial type cable.

If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Corporation of America, Electronic Service Division, 6600 Orangethorpe Ave, Buena Park, CA 90620

The above statements apply **ONLY** to those products distributed by Yamaha Corporation of America or its subsidiaries.

# YAMAHA TMX

## DRUM TRIGGER MODULE

**Welcome** to the Yamaha TMX—This is a highly advanced, dynamic triggering system with on-board cutting edge sound designs. As the most user friendly digital instrument in it's class, the TMX will provide you with years of musical enjoyment. We'd like to thank you for your purchase and congratulate you on a wise selection.

In order to take full advantage of the TMX, please read this manual carefully and try out all of the examples set forth.

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**Caution:** *This section is for drummers and percussionists that have had previous experience with sound systems and MIDI percussion. For all others, please, we strongly suggest skipping the 'Plug and Play'.*

This quick-guide should have you up and running with the TMX in 20 minutes or less!! With the proper size sound system, your neighbors are sure to enjoy witnessing your first test drive with the powerful new TMX Drum Trigger Module.

When you have finished your initial TMX run-through, please be sure to carefully study the rest of the manual. In this way, you will get the most performance power from your TMX. It is often very helpful to sit and read the manual away from the drum kit during the first few days with the instrument. Try to absorb and digest the TMX operating functions *before* you begin editing and customizing your drum kits. For those of you who just can't wait... as the title says—Plug and Play!!

## **Pad Set Up: Demo Set Up #1**

*If you are using all pads, plug them directly into the TMX inputs as follows— (We recommend 9 pads for sound plus 2 pads for program changes and 1 foot switch for the hi-hat mode).*

Using 1/4" audio cables, connect the pads to the TMX Inputs as follows: (the snare pad is the only one that will use 2 inputs).

Bass Drum .....	Input 1	Tom 2 .....	Input 4
Snare (Pad) .....	Input 2	Tom 3 .....	Input 5
Tom 1 .....	Input 3	Snare (Rim) .....	Input 6
		Additional Pads .....	Inputs 7, 8 & 9 (Left to Right)
		Hi-Hat Pad .....	Input 12

Pad Inputs 10 and 11 can be used for Increment/Decrement functions. Connect the pad that you wish to use as an increment (step up) to input 10. Connect the pad that you wish to use as a decrement pad (step down) to input 11. *These pads are optional—you can also step through kits by pressing +1/YES or -1/NO.*

The hi-hat pad will be connected to input 12. The foot switch will plug directly into the input labeled "Foot Sw.". You will now be able to achieve realistic hi-hat 'open' and 'close' effects by stepping on the foot switch while playing pad #12.

## Acoustic Drums with Pads: Demo Set Up #2

*This set up is based around a 5 piece acoustic kit and 5 pads (with 2 optional program change pads). If you are using acoustic drums, mount the triggers on the drums and connect pads as follows:*

For the Bass drum, place the trigger on batter head approximately 2" from the edge of the drum. Place the Snare trigger on the batterhead approximately 1" from the edge of the drum. The Tom triggers should be placed on the shell, just underneath the rim of each drum.

Using 1/4" cables, connect the acoustic drum triggers (Yamaha DT-10's) to the TMX as follows:

Bass Drum .....	Input 1	Tom 2 .....	Input 4
Snare .....	Input 2	Tom 3 .....	Input 5
Tom 1 .....	Input 3	Additional Pads .....	Inputs 6, 7, 8 & 9 (Left to Right)

Pad Inputs 10 and 11 can be used for Increment/Decrement functions. Connect the pad that you wish to use as an increment (step up) to input 10. Connect the pad that you wish to use as a decrement pad (step down) to input 11. *These pads are optional—you can also step through kits by pressing +1/YES or -1/NO.*

The hi-hat pad will be connected to input 12. The foot switch will plug directly into the input labeled "Foot Sw.". You will now be able to achieve realistic hi-hat 'open' and 'close' effects by stepping on the foot switch while playing pad #12.

**Note:** *Inputs 6 through 12 were designed for DEMO purposes, to be used strictly with pads for the factory preset kits. These can be changed at any time to suit your needs as you begin to create your own custom set-ups.*

## Power up the TMX!!

Connect the Main Outputs on the TMX back panel to your sound system, or plug in your headphones— then power up your sound system (or amplifier).

## Chain Mode

Press 'Chain'. Choose the chain name that corresponds to your set-up (all pads or acoustic triggers). Use pad inputs 10 and 11 to change kits, or cursor right till you are on Step: 01 of the song chain. Now use the +1/-1 keys to select performances and Play, Play, Play!

## SECTION 1

## TMX Overview

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The TMX drum trigger module is designed to accommodate any drummer who needs to trigger contemporary sounds from pads and/or acoustic drums. These sounds include kick drums, snares, percussion, special effects, cymbals, horns and bass (to mention just a few!). It is also designed to function as a drum sample module for use with sequencers in professional MIDI production and educational MIDI systems (see General MIDI Performance #25).

Here's an overview of some of the TMX's features:

- 245 on board "voices" featuring state of the art industrial, techno, jazz, dance, studio, metal and funk sound designs.
- Powerful, easy to use "ZAP" feature allows you to quickly and easily edit any voice in seconds.
- 12 trigger inputs ( for pads, acoustic triggers or triggering from tape).
- 32 Performance memories.
- 'Super' user friendly operating system.
- Automatic trigger "learn" function.
- Automatic MIDI "learn" function.
- MIDI In, MIDI Out.
- Total control over MIDI Velocity settings.
- Real-time trigger level readout.
- 4 audio outputs.
- Sophisticated rejection parameters to eliminate double or 'false' triggering.
- Start and Stop/Pause QY10/20 music sequencer from pads.
- Bypass feature (useful for live performance or studio).
- Large, clear LCD display.
- 16 Song 'Chains' with 16 'Steps' in each.
- System exclusive bulk storage.
- Compatible line of acoustic drum triggers (Yamaha DT-10 triggers) and electronic drum pads.
- Increment/Decrement pad inputs on back panel to access performances, and chain steps.
- Realistic Hi-Hat Mode.
- Convenient 1 rack space size.

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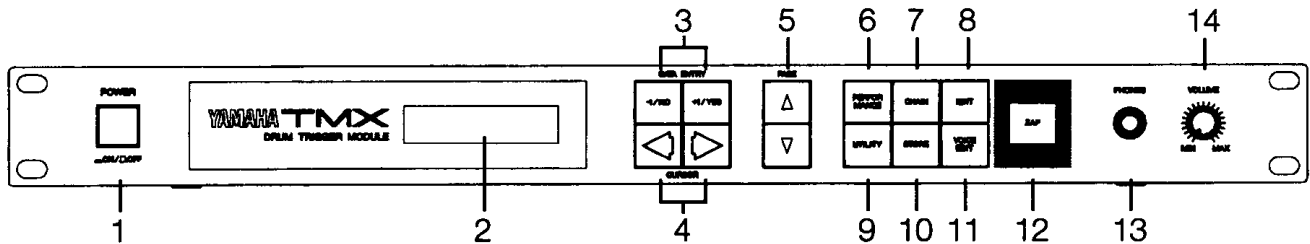
The next two pages illustrate and identify all the buttons, plugs, switches and displays on the front and back panels of the TMX.

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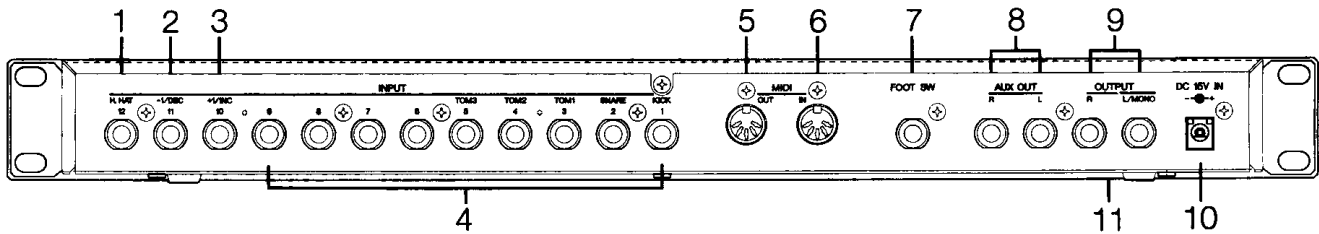
Following those pages is a diagram of the suggested set-up that we have designed to work specifically with Song Chain Number 2= Acoustic triggers with pads.

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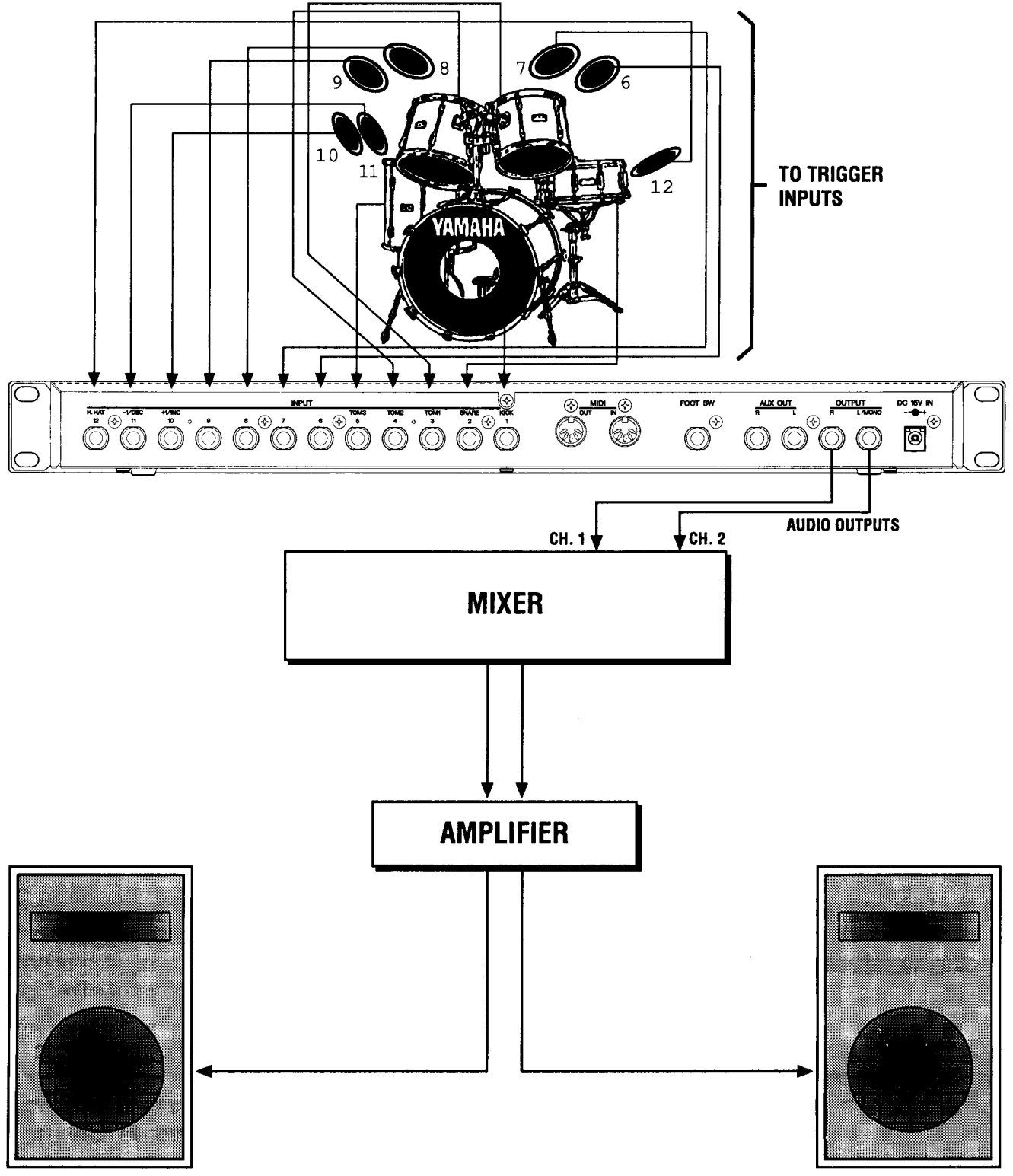
1. **Power** switch — This turns the **TMX** on and off. The LCD will light when the power is on. \*All **TMX** data is maintained in memory even when the power is off.
2. **LCD** (Liquid Crystal Display) — This display shows the various parameters available in all **TMX** modes. Actual displays are shown in the following chapters.
3. **Data Entry** (-1/No and +1/Yes) Buttons— Allow you to either increment or decrement a parameter value, change drum performances, step through chains or answer questions with either a 'yes' or a 'no'.
4. **Cursor LEFT** ← and **Cursor RIGHT** → — Allow you to move the cursor to the various parameters on each page.
5. **Page UP** ↑ and **Page DOWN** ↓ — Allow you to move from one edit page to another.
6. **Performance** — Selects Performance Play Mode.
7. **Chain** — Selects Chain Play Mode and Chain Edit Mode.
8. **Edit** — Selects Edit Mode.
9. **Utility** — Selects Utility mode.
10. **Store** — Selects Performance Store Mode or Chain Store Mode.
11. **Voice Edit** — Selects Voice Edit Mode. This is a 'Voice Monitor' Key as well.
12. **ZAP** — Quick access to Pitch/Modify feature in Voice Edit Mode.
13. **Phones** — Stereo Headphone jack.
14. **Volume** — Main volume control for **TMX** phones and rear panel outputs.



1. **Input 12** — 1/4" Jack for Hi-Hat pad input or triggers.
2. **Input 11** — 1/4" Jack for normal pad, function pad or triggers.
3. **Input 10** — 1/4" Jack for normal pad, function pad or triggers.
4. **Inputs 1–9** — For Pads or acoustic triggers.
5. **MIDI OUT** — For triggering external sound devices, Start/Stop QY10/20 Sequencer, or system exclusive storage.
6. **MIDI IN** — To receive note on/off information from sequencers, keyboards and system exclusive information.
7. **Foot Switch (FC 5)** — For Hi-hat mode pedal effects (open & close).
8. **Aux Out L & R** — For separate processing of designated sounds, which can be assigned while in Voice Edit mode.
9. **Main Outputs** — Primary audio outputs.
10. **DC 15V In** — AC Power supply input. Use the AC adaptor which comes with your TMX only.
11. **Chord Hook**

# Acoustic Drums with Pads: Demo Set Up #2

Designed to Work with Song Chain #2



## **SECTION 2**

# **Step by Step TMX**

## **...an out of the box set-up guide**

### **PLACEMENT**

The TMX is a sturdy, light, 1 rack space instrument that should be placed on a strong table top or mounted in a standard keyboard module/effects rack unit.

### **MONITORING SOUND**

If your TMX Set-up includes all Yamaha electronic pads and the TMX module, then a pair of headphones may be an ideal monitoring system for practicing (especially in small apartments or at home when other family members are around!!).

If your TMX set-up includes acoustic drums with Yamaha triggers, then we suggest the following options:

- a) You can use a full size stereo P.A. System with separate mixer, power amp and speakers (15" woofers with horns will translate the sounds nicely).
- b) Buy a 15" speaker with a built in power amp. This option will be a mono system that will function just fine for a home practicing applications and will also be loud enough for many small club situations.

### **AUDIO CONNECTIONS**

As a precaution, always make sure the volume is down on your speaker system before powering up this or any connected electronic gear.

Turn down the volume of your P.A. System and the Main volume on the TMX front panel.

Connect the TMX "Main Outputs" (not the Aux. Outs) to your P.A. System channels. You will need (2) 1/4" cables for stereo or (1) 1/4" cable from L/Mono out for a Mono system.

### **TMX SUGGESTED DRUM SET-UPS**

The TMX comes with 25 'preset' drum kits already programmed for your convenience. When we say programmed, we mean everything!! Each preset performance includes:

- a) 61 specially edited voices designed specifically for the given performance's musical style (metal, funk, techno etc.).
- b) All of the optimal sensitivity settings for the pads and/or acoustic drum triggers. The settings were designed for Yamaha electronic pads, EP75 and KP75, and Yamaha DT-10 acoustic triggers. In other words, all you need to do is wire up the triggers or pads and play!!

**NOTE:** *You can edit and 'customize' these performances at any time. The 25 drum performances provided are there to get you started.*

## **Set-up Number 1: Pads Only**

Using 1/4" audio cables, connect the pads to the TMX Inputs as follows: (the snare pad is the only one that will use 2 inputs).

Bass Drum .....	Input 1	Tom 2 .....	Input 4
Snare (Pad) .....	Input 2	Tom 3 .....	Input 5
Tom 1 .....	Input 3	Snare (Rim) .....	Input 6
		Additional .....	Inputs 7, 8 & 9
		Pads	(Left to Right)

Pad Inputs 10 and 11 can be used for Increment/Decrement functions. (Stepping through performance set-ups in chain mode). Connect the pad that you wish to use as an increment (step up) to input 10. Connect the pad that you wish to use as a decrement pad (step down) to input 11. The exact placement of these pads will vary according to your taste... wherever you feel comfortable.

The hi-hat pad will be connected to input 12. The foot switch will plug directly into the input labeled "Foot Sw.". Be sure and place pad #12 where you would ordinarily place your hi-hat, and place the foot switch directly beneath it (...like a hi-hat... get it?). You will now be able to achieve realistic hi-hat 'open' and 'close' effects by stepping on the foot switch. Place Pads 7, 8 and 9 from left to right respectively.

## **Set-up Number 2: Acoustic drums with triggers and pads**

This performance is designed for use with a five piece acoustic kit, 5 drum pads for triggering and 2 more pads for program changes. Before we discuss their connections, we need to examine trigger placement.

For the Bass drum, place the trigger on batter head approximately 2" from the edge of the drum. Place the Snare trigger on the batterhead approximately 1" from the edge of the drum. The Tom triggers should be placed on the shell, just underneath the rim of each drum (see Section 4 Triggering discussion).

Using 1/4" cables, connect the acoustic drum triggers (Yamaha DT-10's) to the TMX as follows:

Bass Drum .....	Input 1	Tom 2 .....	Input 4
Snare .....	Input 2	Tom 3 .....	Input 5
Tom 1 .....	Input 3	Additional Pad .....	Inputs 6, 7, 8 & 9
			(Left to Right)
Pad 12 .....	Input 12	FC5 (type) .....	Foot Sw. Input
		Foot switch	

Pad Inputs 10 and 11 can be used for Increment/Decrement functions. (Stepping through performance set-ups in chain mode). Connect the pad that you wish to use as an increment (step up) to input 10. Connect the pad that you wish to use as a decrement pad (step down) to input 11. The exact placement of these pads will vary according to your taste... wherever you feel comfortable.

The hi-hat pad will be connected to input 12. The foot switch will plug directly into the input labeled "Foot Sw.". Be sure and place pad #12 where you would ordinarily place your hi-hat, and place the foot switch directly beneath it (...like a hi-hat... get it?). You will now be able to achieve realistic hi-hat 'open' and 'close' effects by stepping on the foot switch. Place Pads 7, 8 and 9 from left to right respectively.

## **POWER SUPPLY**

**Note:** Use AC Power Adaptor which comes with your TMX only!!

Insert AC adaptor plug into the power jack on the TMX rear panel. The AC Adaptor should be plugged into a switched barrier strip (power strip). Always turn off the power strip when the TMX is not in use to preserve the life of the AC Adaptor. Use the Chord Hook for a secure connection.

Now... power up the TMX... Keeping the mixer and power amp volumes down, power up the P.A. System. Turn up the TMX volume, and then the Amp or P.A. volume (slowly) to find a comfortable playing level.

And now... you've been told a thousand times and here comes one thousand and one: A Note about hearing loss!!

All drummers should seriously consider hearing protection when playing. The drug store variety 'foam cylinder' earplugs are cheap and work wonderfully (25-35 decibel reduction!). However, they are not 'linear' in their reduction (meaning that 'bright' sound gets blocked more than 'boomy' sound, resulting in a 'muffled' sound). A visit to an audiologist for a hearing test and a custom fitted set of earplugs is a worthwhile investment. Custom fitted 'prescription' earplugs will offer you a much more 'linear' sound (you still hear brightness, but the overall volume of sound will be lower-but still sound natural).

There, that wasn't so bad.. was it? Let's move on!! I said *LET'S MOVE ON!!*

## **AUDITIONING DRUM PRESETS**

You can select TMX Performance presets by selecting the proper song chain for your set-up. Press **Chain**. Now press the +1/YES key to select either #1: Pad Kits or #2: Acoustic Triggers. By hitting your program pads (10 and 11) you will step through hundreds of exciting TMX sounds.

If you don't have pads plugged into 10 and 11, then simply press the +1/YES key to select new performances within a given Song Chain. To do this, use the cursor right button to place it at Step 1 of the Song Chain.

## **AUDITIONING TMX VOICES**

Each of the 245 TMX Voices has dozens of variations, which can be fully exploited by hitting the 'ZAP' button. To audition the 61 voices used in the current performance, simply press Voice Edit. By tapping this button you can play the TMX from the Front Panel. Now move the cursor over to the Note # section of the window and scroll through the voices (using the +1/Inc.-1/dec. keys). Be sure to put the Note # back to it's original assignment. If you have forgotten (which we fully expect you to), simply hit Performance then +1/YES followed by -1/NO to get back to the original kit. This works because unless you have saved a set-up (by hitting Store), the performance set-up will revert back to the last saved preset (in this case, the factory presets). More on the Store function later...

This concludes the "Out of the box" set-up guide. At this point you will have completed your initial TMX set-up. You're now ready to play factory presets at home, on a gig or in the studio.

Please move on to the Guided Tour of the TMX operations (Section 3) so that you can customize your drum performances and create your very own sound edits.

## **SECTION 3 Guided Tour/TMX Operations**

This section of the manual is designed to walk you through all of the TMX functions and features. At the end of this section you will have a solid understanding of all the TMX hardware and software operations. Pay special attention to this section. This is where you will gain command of your new instrument. After reading this section, please try the tutorial (Section 5). Now let's take a look at each edit page!

### **GETTING STARTED**

Turn on the TMX using the front panel power switch. The LCD display should look like this:

```

* Welcome to *
* YAMAHA TMX *
  
```

The display will immediately go to **Performance Play Mode**. The TMX will call up the last performance that you were working on. This is a nice feature if you ever experience a temporary power failure. Fresh out of the box, performance 01 will come up:

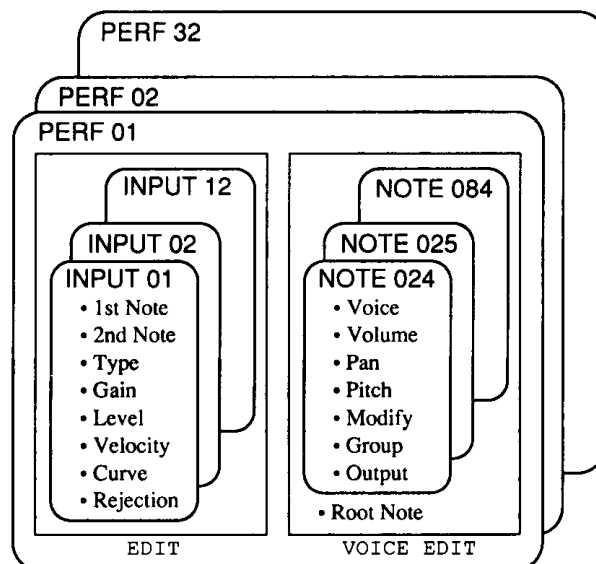
```

PERF 01:  ROCK
  
```

Now press the **Edit** button. You have entered the **Edit Mode**. These are 10 edit pages that allow you to choose sounds and adjust sensitivity settings for triggers and pads.

All the Edit and Voice Edit parameter setups can be kept in each of the 32 Performance memories.

By changing the Performance number using a footswitch or a pad, you can easily call up many different types of drum kits with your own parameter settings.



## Edit Mode

The display on each page in Edit mode works as follows: “iN” changes to “jN” when changes are made, meaning that information on this particular input has been affected, but not stored.

The TMX is capable of playing 1 or 2 internal sounds from each input. This is what we mean by 1st note and/or 2nd note in the section that follows.

### Pg1. Choosing the 1st note:

Use the +1/YES or -1/NO to change the sound (MIDI note number). The voice corresponding to each MIDI note number is set in the **Voice Edit** mode.

```
IN-01  1ST NOTE
Pg1 036:KikHal1B
```

- Trigger input number (“IN”) can be a value from 1 through 12
- MIDI Note number can be a value of “OFF” or corresponding MIDI note number.

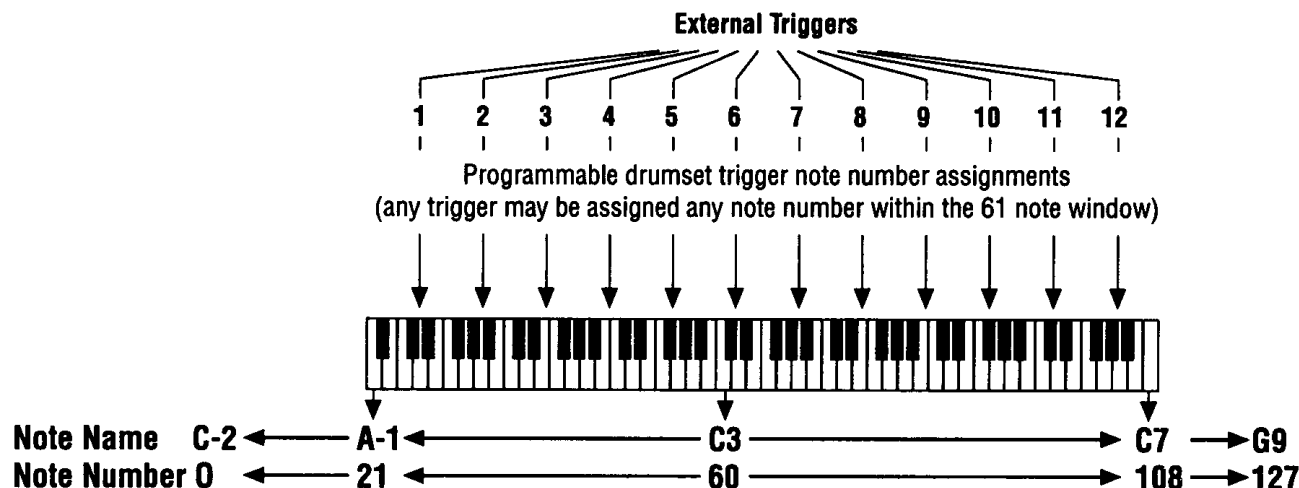
### Pg2. Choosing the 2nd note (a layered sound) :

Press the down ↵ cursor to check the 2nd note assignment. Set the MIDI note number for the 2nd note, following the procedure from above.

```
IN-01  2ND NOTE
Pg2 035:Kik24RTC
```

## Special Note on MIDI Notes:

### Correspondence Between Note Numbers, Note Names and Trigger Inputs





Each TMX Performance is composed of 61 MIDI Notes. It is important for you to visualize this even if you do not own a MIDI keyboard. Please note the synthesizer keyboard in the diagram above. Each note on the keyboard (when dealing with MIDI) is assigned not only a name (such as 'middle C' or the 'F below middle C'), but a **MIDI Note Number** as well. 'Middle C' is given the note number 60. C# above 'middle C' (or C#3) will be note number 61, and so on. We have assigned a different drum or percussion sample to each of the 61 MIDI notes in each performance. You will then assign a MIDI note to each pad or drum.

There are 32 separate drum performances in the TMX. Each has a new set of sampled voices assigned to the 61 note MIDI table. *Performances are completely independent from one another.* For example, 'Perf. 01:ROCK', Input#1 may have first note '36:KikHallB' assigned. If you check Perf. '02:STUDIO', first note '36' may read KikDryT1. I think you get the picture.

**Note:** Any time you change something in Performance Edit mode, the word "PERF" will change to "pERF" to remind you that you haven't yet saved the new edited version using the **Store** button.

### **Pg3. Choosing trigger type:**

Select the appropriate trigger type by using the **+1/YES** or **-1/NO** keys.

IN-01	TYPE
Pg3	PAD

- Input number can be a value of 1 through 12
- Trigger type can be Pad, Snare, Hi Tom, Lo Tom or Kick

This setting decides the time between initial triggering impact and the point that the TMX starts to read the input level and rejection value. Be sure to choose the correct trigger type before moving on to the **Auto Set** feature.

### **Pg4. Auto Set-Up:**

The **Auto Set-up** function lets the TMX analyze the signal characteristics of each input. Armed with what it has learned, the TMX then automatically sets optimum values for the parameters in the Performance Edit mode that control how it treats incoming trigger signals. Although slight fine-tuning of these parameters manually can sometimes improve the response time or triggering accuracy, the TMX's **Auto Set-up** functions should be all you need to establish excellent trigger response and accuracy.

IN-01	AUTO SET
Pg4	HIT 3 ON

- Input number can be a value from 1 through 12
- **Auto Set-up** can be "ON" or "OFF"

To turn the **Auto Set-up** function “ON” or “OFF”, use the **+1/YES** or **-1/NO** key. When this function is on “Hit 3”, the machine is waiting for you to strike the pad 3 times at your maximum volume. When you’re done with the three hits, **Auto Set** will automatically shut off indicating that the TMX has set all of the optimal sensitivity parameters. Repeat this process for every input *only if necessary*.

### **Pg5. Gain Control:**

You can adjust the gain level manually and monitor the input level. We recommend that the input level reaches approximately 90%-99% when you hit the pad/drum at your maximum volume. The gain setting is a way for you to modify or fine tune the incoming trigger signal, The gain setting can be adjusted using the **+1/YES** or **-1/NO** keys. As you raise the gain towards the maximum #63, you will increase the overall signal strength. As you lower the number towards 0, you will decrease the signal strength.

The right side of this display will show you incoming level as a percentage each time you hit a pad or drum. This is one way to gauge whether the **Gain** setting is correctly set, and whether your initial trigger setup is performing accurately—if all is set correctly, soft hits will show up as fairly low percentages in the display and loud hits will get you a 90–99% reading. If this isn’t happening, try raising or lowering the **Gain** setting.

IN-01	GAIN LEVEL
Pg5	50 %

- Input number can be a value from 1 through 12
- The **Gain** value can be from 00–63

### **Pg6. Level Range Settings:**

**Level** refers to incoming trigger level. The percentage on the left side of **Level** represents your minimum trigger level. The percentage on the right side represents maximum trigger level.

IN-01	LEVEL
Pg6	06%-99%

### **Pg7. Velocity Settings:**

**Velocity** refers to outgoing MIDI velocity levels. The percentage on the left side of **Velocity** represents the minimum outgoing MIDI velocity. The percentage on the right side represents the maximum outgoing MIDI velocity.

IN-01	VELOCITY
Pg7	050-127

Here’s how the four values relate:

The minimum incoming trigger level relates directly to the minimum outgoing MIDI velocity level. The maximum incoming trigger level relates directly to the maximum outgoing MIDI velocity level. Here’s what the default settings mean:

- At 6% of your maximum playing volume, the **TMX** will send out a MIDI velocity of 001.
- At 99% of your playing volume (the loudest you play), the **TMX** will send out a MIDI velocity of 127.

As an example of how to use these percentages and levels, let's say you don't even want to hear the sound until you're at about half of your maximum volume, and you want the sound to kick in at MIDI velocity 64 or halfway up the MIDI velocity scale. Once the sound kicks in, you want it to continue normally to full volume. Here's the edit procedure: (See diagram #2, Pg.17)

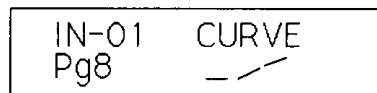
**Step 1:** Go back to Edit page 6 and put the cursor on the minimum level setting. Use the **+1/YES** key to increase this number to 50%.

**Step 2:** Go back to Edit page 7 and use the cursor right button to move the minimum outgoing velocity value. Use the **+1/YES** key to increase this number to 64.

### **Pg8. Velocity Curve:**

The TMX has four velocity curves. Each one will allow you to send out progressively larger velocities (MIDI volume). A curve is a pattern or preset shape of dynamics that defines how the TMX translates the strength of each hit on your pad or drum into outgoing MIDI velocity information. In other words, the TMX curves allow you to adjust the MIDI velocity information that is sent out relative to how hard you hit the pad or drum.

Hit a pad or drum to select it for editing. You will notice that the far right of the display shows a number every time you hit the drum. This is the **outgoing MIDI velocity** that was sent when you hit the pad or drum. It's basically the MIDI equivalent of the volume level that was received from your last hit. MIDI velocities range from 001–127, with 001 being as soft as it gets and 127 as loud as it gets.



- Input number (1–12)
- Select **Velocity Curve** (4 types).

Now let's look at each of the four velocity curves:

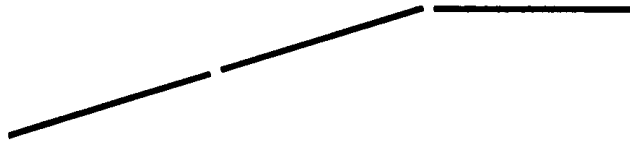
*Curve #1:* This curve sends fairly low MIDI velocities, until you start to play pretty hard. It then increases quickly, finally matching your loudest volume.



*Curve #2:* This curve does the best job of recreating normal 'acoustic' dynamics. When you play soft, it generates low MIDI output velocities. At medium playing volumes, it generates medium MIDI velocities, and playing loudly generates high MIDI velocities.



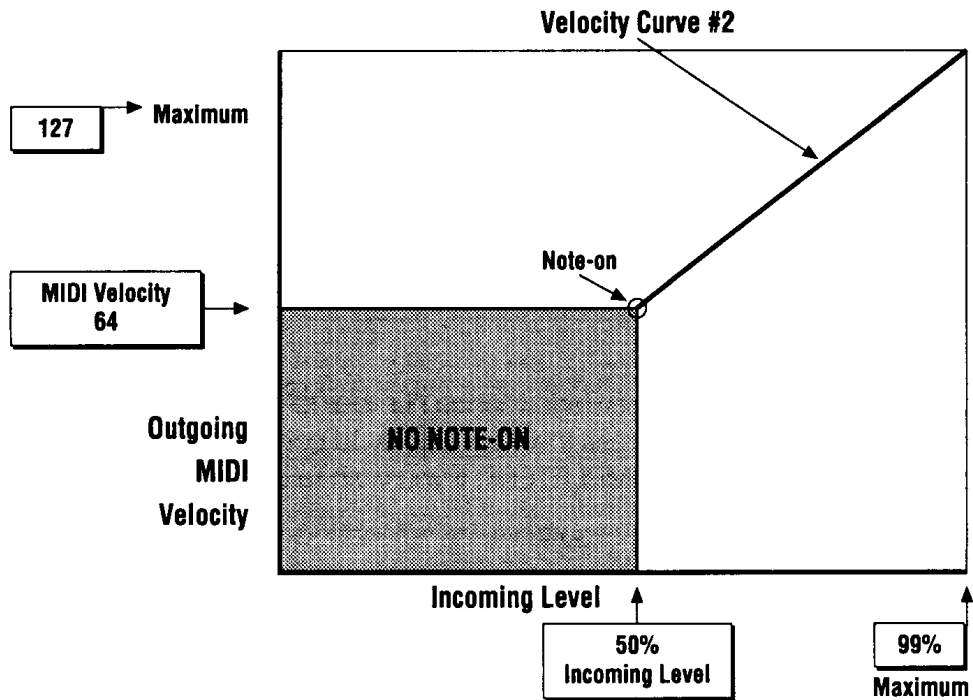
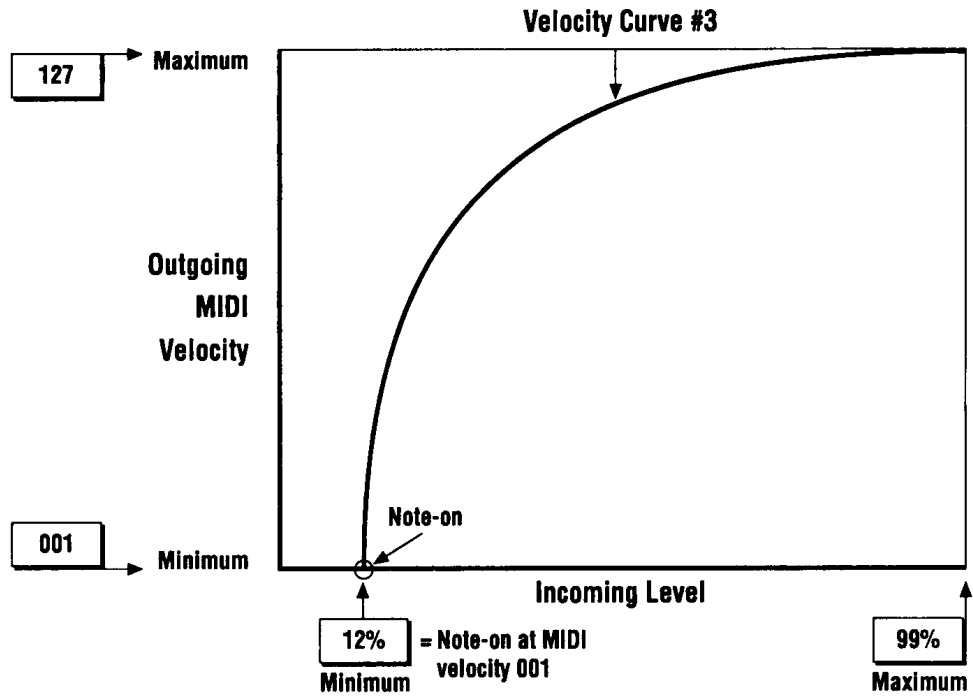
*Curve #3:* This curve functions the same as Curve #2, but will reach maximum velocity quicker and be less sensitive to lower velocities.



*Curve #4:* This curve gets loud quickly and stays loud. It's best suited for 'rock' style playing, or for someone who hits lightly, but wants a big sound.



The following two diagrams illustrate the principles of the TMX **Level/Velocity** settings, the second is the edit from page 15.



**Pg9. Rejection Control:**

IN-01 REJECTION
Pg9 2

The **Rejection Control** is the best defense you have to insure accurate triggering, especially if you are trying to avoid false and/or double triggering (cross talk).

The TMX rejection parameter is a combination of self rejection and other rejection. The **self rejection** gives you the ability to ignore hits on the same input for a preset amount of time, which can help eliminate double-triggering. The value is expressed in milliseconds (ms) in the chart below. Ideally, you want to keep this value as low as your double-triggering situation will allow. The values are pre-programmed accordingly:

The **other rejection** gives you the ability to avoid falsely triggering a sound just from hitting a drum or pad nearby (we call this crosstalk). The values are pre-programmed.

**Tips on avoiding false and double triggers:**

- Never keep your sound system or monitor system too close to your drum kit. Try different angles with your speakers. Direct, high volume can sometimes cause a pad or acoustic trigger to “do it's own thing” in a manner of speaking!
- Be sure that pads and/or drums are not physically touching each other, unless of course there is mutual consent. Transfer of excess vibration can cause a false trigger.

For more tips, see “Discussion of Triggering” (Section 4).

**Pg10. Trigger Copy:**

This page let's you copy the trigger input parameter values of one performance set-up to another. It copies all sensitivity settings, but not the sounds. This is a tremendous time saver if your drum set-up stays consistent. **This means that you need only set levels and velocity information once, and then enter new sounds to be triggered using new performance locations with different names.**

TRIGGER COPY:01
TO 01 : ROCK

- Performance No. (1–32) > Choose the Performance number to copy and press the **STORE** key. The display reads “Are you sure?”. Press the **+1/YES** key to complete this function. If you choose ‘YES’, the display will change to “COMPLETED!”. If you wish to cancel the procedure, press “No”.

**Voice Edit Mode**

Simply press the *Voice Edit* Key.

**Pg1. Voice Assign:**

When you touch the **Voice Edit** key, you will hear the sound that you are editing. Use the **+1/YES** key to change the data. Experimentation is the key to having fun in the voice edit mode. Go for it!! Use the cursor left and right to select the MIDI note number, voice number and sound bank. Use

the **+1/YES** key or the **-1/NO** key to change these values. Tap the voice edit key to monitor (play) the sounds, or just play the pad or drum that you are editing.

NOTE	VOICE
036	16K:KikHallB

- MIDI Note Number (Root Note-Root Note +60)
- Voice Number range from 00K-42K, 00S-59S, 00T-47T, 00C-18C, 00P-32P, 00E-41E, where K=Kicks, S=Snare, T=Toms, P=Percussion and E=Effects banks.

Many TMX voices are made up of more than one sample. In case of single layer voices, "=" is shown between the voice number and the voice name. In case of dual layer voices, ":" is shown.

### **Pg2. Volume and Panning:**

Use the cursor left and right keys to access note, volume and pan. Use the **+1/YES & -1/NO** keys to change the values.

Panning allows you to assign a voice to any of the seven positions in the stereo field.

NOTE	VOLUME	PAN
036	96	R1

- MIDI Note Number (Root Note-Root Note +60)
- Volume (00–99)
- Pan (L7-L1, C, R1-R7). This assigns a voice a definite place in the stereo image (Left to Right).

### **Pg3. Pitch Modify:**

NOTE	PITCH	MOD
036	+000¢	5

- The pitch can be varied from -700¢ to +700¢ in 10¢ steps.
- The Modify value can be from 1–9.

**Note:** 100¢=1 semitone. This is important for voices of definite pitch such as bass, horns, vibes, etc..

**Modify changes the timbre of the dual layer voices by changing the relative volume of each layered wave. In cases where single-layer voices are used, "-" is shown and the cursor doesn't move to this parameter. The cursor moves to Modify only in cases where dual-layer voices are used. Press ZAP in any mode except Store mode and Chain Store mode, and you can jump directly to this page. Hitting the ZAP button again will return you to the last page you were working on.**

**Pg4. Group:**

NOTE	GROUP
036	MONO

There are seven choices for grouping, that may be assigned by cursoring over to the **Group** portion of the display. They are:

- Poly ..... The voice sounds in polyphonic mode.
- Semi ..... The voice sounds in polyphonic mode up to two hits. When the third hit comes, the first hit is damped.
- Mono ..... The voice sounds in monophonic mode.
- Group 1 to 4 ..... If a voice in the group is hit, the prior voice in the same group is damped.

The **Group** principle is especially useful in the hi-hat mode. The hat pedal voice and the hat open voice are assigned to the same group (usually group 1). Try assigning a press roll voice and a bass drum voice to the same group. Experiment!!

**Pg5. Output:**

Assign voices that may need separate processing (reverb, equalization) to the Auxiliary outputs.

NOTE	OUTPUT
036	MAIN

- Use the **+1/YES** key or **-1/NO** key to change from main to aux outputs.

You can adjust panning assignments for the auxiliary outputs the same as you would for the main outputs. If you wish to use the aux outputs as an individual output assign a voice to L7 or R7.

**Pg6. Root Note (MIDI Note Range):**

The TMX sounds can be assigned to any MIDI note, within a five octave, 61 note range, from MIDI note #24 to #84. This range can be changed using the root note feature. For example, the bottom root note can be shifted to MIDI note 00, in which case the highest note would now be five octaves above that (MIDI note 60). Shifting the root note to the highest possible value (67) means that the highest note will end up being MIDI note #127.

PERF	ROOT NOTE
01	024:C 0



**Pg7. Voice Copy:**

This page let's you copy the voice parameter values from one performance to another.

```
VOICE COPY:01
TO 01 : ROCK
```

Choose the Performance number (1–32) to copy and press **Store**. The display reads “Are you sure?”. Press ‘YES’ to copy the parameter values. The display now changes to “Completed!”. If you wish to cancel the procedure, press ‘NO’.

**Pg8. Edit Recall:**

If you get out of the **Edit** mode in the middle of the editing process, the voice(s) in the **Edit** buffer are saved into a **Recall** buffer. This function allows you to restore the data from the recall buffer to the edit buffer so that you can safely store your work.

```
EDIT RECALL
01: ROCK
```

Press **Store** and the display reads “Are you Sure?”. Press “YES” and the display changes to “Completed!”. If you wish to cancel the procedure, press “NO”.

**Storing Performances**

In **Store** mode, you can save the edited performance in memory and choose a name for it. **You can duplicate performances by storing them with new names to other performance locations.** In store mode, the display shows as follows:

```
PERF STORE:01
NAME: [ROCK ]
```

- Performance number can be a value from 1–32
- Name the performance using a maximum of eight characters

The following characters are available for Performance name.

```
[space]!"#$%&'()*+,-./0123456789:;<=>?@
ABCDEFGHIJKLMNPOQRSTUVWXYZ[^\_`
abcdefghijklmnopqrstuvwxyz( )+*
```

Use the right cursor to the access performance name. To change the letters use the +1 and -1 keys. Use the ZAP key to leave a blank space when creating a name.

```
PERF STORE:01
Are you sure?
```

To store a performance, answer the “Are you sure?” prompt with a ‘YES’.

```
PERF STORE:01
Completed!
```

To abort the procedure press ‘NO’.

## **Chain Mode**

This mode allows you to step through a preset sequence of performances in any order you set. Each chain has a maximum of 16 steps. When the last step is reached, the chain will “wrap” around to Step 1 again.

In Chain mode, the display shows as follows:

```
CHAIN:01 STEP:01
PAD Kit PERF:01
```

- The Chain number can be a value from 1–16
- The Step number can be a value from 1–16

The Chain name and performance number corresponding to each step are also displayed.

## **Chain Edit Mode**

This mode allows you to assign one Performance for each step of the **Chain**. To edit a chain, first select a chain to be edited, and then enter **Chain Edit** mode by pressing the ‘Chain’ button.

In **Chain Edit** mode, you don’t edit a Chain itself, but a copy of it in an edit buffer. Therefore, store the edited chain in **Chain Store Mode** to keep it in memory.

In Chain Edit mode, the display on each page shows as follows:

### 1. Performance Number

```
STEP :01 02 03 04
PERF :01 02 03 04
```

- The Performance number can be a value from 1–32
- “STEP” changes to “sSTEP” in the process of Chain Editing.

### 2. Maximum Step Number:

```
CHAIN:01
STEP LENGTH:12
```

While playing in Chain Mode, after the fixed maximum number of Steps has been reached, it returns to Step 01.

### 3. Chain Store:

To access this, press Store while in **Chain Edit** mode.

In **Chain Store** mode, you can save the edited Chain in memory and choose a name for it. You can also copy the edited Chain data by storing it with a different chain number.

In Chain Store mode, the display is as follows:

```
CHAIN STORE:01
NAME:[PAD Kit ]
```

- Chain number can be a value from 1–16
- Name the Chain using a maximum of eight characters

To change the letters use the +1 and -1 keys. Use the ZAP key to leave a blank space when creating a name. Press **Store** and the display changes to:

```
CHAIN STORE :01
ARE YOU SURE?
```

Press "YES" key to store.

CHAIN STORE :01  
 COMPLETED!

Press "NO" to abort the procedure.

## **Utility Mode**

This mode lets you set and modify global parameters for the TMX's operating system.

Any changes made in the Utility Mode will have a direct impact on all 32 Performance memories collectively, as opposed to using Edit Mode where you can adjust Performance parameters individually. Settings you make in Utility Mode will always remain as you left them no matter which TMX mode you're using.

Press the **Utility** button. You will be on the **Learn Mode** page. Learn mode should say "ON". If it does not, please press the **+1/YES** key. When learn mode is on, the TMX automatically knows which input you are working on, just by listening to the last drum or pad you have hit. This is a definite time saver. It is also called **Trigger Learn**. In the same fashion, the TMX will "listen" for MIDI notes played on a keyboard connected to the TMX MIDI IN (from the keyboard MIDI OUT).

In Utility mode, the display on each page is shown as follows:

### **1. Learn Mode:**

UTIL-01  
 LEARN MODE:ON

When the **Learn** mode is on, the TMX works in the following way:

- When it receives a trigger signal

Edit Mode ..... Automatically sets the input number when you tap a pad.

Voice Edit Mode ..... Automatically sets the MIDI note number assigned to the triggered input .

- When it receives MIDI notes

Edit Mode ..... Automatically assigns the MIDI note number on the first or second note.

Voice Edit Mode ..... Automatically sets the MIDI note number from a MIDI keyboard.

## 2. Bypass Mode:

```
UTIL-02
BYPASS MODE:OFF
```

When the **Bypass** mode is on, the cursor changes to “\_” and MIDI note and voice outputs are temporarily disabled.

This means you will not hear or be able to play any internal TMX sounds or any externally triggered sounds.

Bypass can be turned on and off by using the footswitch or pad #10(if it is properly assigned to the Bypass function).

Bypass mode can be convenient for live or studio performance when you need to hear only acoustic drums.

By pressing the +1/YES key from this page, it can also be activated.

## 3. Interface Mode

You can decide how the TMX reacts to the receiving trigger signal.

```
UTIL-03
INTERFACE=NORMAL
```

Each mode works in the following way:

	<b>TMX Internal Sound</b>	<b>MIDI Signal Transmission</b>
<b>Normal</b>	YES	YES
<b>MIDI</b>	NO	YES
<b>Sound</b>	YES	NO

**\*Note:** To further clarify the 3 modes, you must understand the following:

1. When the TMX is in Normal mode, its internal processor is performing the task of accessing TMX sounds as well as transmitting MIDI to external sounds. TMX can handle both jobs simultaneously with very accurate trigger response.
2. In cases where you are only using the TMX to trigger external sounds, you should consider using MIDI mode which will allocate all of the TMX processing power to do only one job, not two. This may yeild a slightly faster trigger response.
3. If you are only using the TMX internal sounds, Sound mode will yeild the fastest possible trigger response.

Note: If you only wish to start/stop/pause an QY10/20 sequencer from a pad without sending any MIDI channel messages (without triggering the QY10/20 internal sounds), then set this page to Sound mode.

If you are only using the TMX Internal Sounds, then **Sound Mode** will yield the fastest possible trigger response.

Please refer to Section 6 for more tips on this function.

#### **4. Foot switch Function:**

This page allows you to set the **Foot switch** function.

```
UTIL-04 FOOT SW
FUNC=HI-HAT
```

- Foot Switch (Hi-hat, increment, bypass, start/stop)

Each function works in the following way:

- Hi-hat ..... activates the hi-hat mode assigned to input #12.
- Increment ..... increments (increasing to the next one up) through Performances or steps in Chain mode.
- Bypass ..... Switches bypass mode on and off.
- Start/Stop ..... Starts and Stops an external device (QY10 or QY20).

#### **5. Pedal Note:**

When you step on the foot switch while it is assigned to Hi-hat, the triggered note on this page will be any sound that you assign to it, most commonly, the hi-hat pedal sample (the sound of your foot closing a hi-hat).

```
UTIL-05 FOOT SW
PEDAL NOTE=044
```

#### **6. Closed Note:**

Leaving your foot down on the pedal will alter the voice assigned to pad #12. For example, if a closed hi-hat sample has been assigned, pressing down and lifting your foot will allow you to alternate between a closed hi-hat and an open hi-hat, or whatever samples you choose..

```
UTIL-06 FOOT SW
CLOSED NOTE=042
```

### **7. Pedal Velocity:**

You can set the output velocity (1–127) for the pedal note. This is where you set the volume for the sound you are playing with your foot switch.

```
UTIL-07 FOOT SW
PEDAL VEL=085
```

### **8. Monitor Velocity:**

You can set the monitor velocity (1–127) when the **Voice Edit** key is pressed in **Voice Edit** mode.

```
UTIL-08
MONITOR VEL=100
```

### **9. Pad Function (Input #10):**

This allows you to select the pad function for Pad #10.

```
UTIL-09 PADFUNC
IN-10=INCREMENT
```

Each function works in the following way:

- Normal ..... works as a regular input.
- Increment ..... increments (increasing to the next one up) through Performances or steps in Chain mode.
- Bypass ..... Switches bypass mode on and off.
- Pause ..... Pauses an external device such as QY10/20.

### **10. Pad Function (Input #11):**

This allows you to select the pad function for Pad #11.

```
UTIL-10 PAD FUNC
IN-11=DECREMENT
```

Each function works in the following way:

- Normal ..... works as a regular input.
- Decrement ..... decrements (decreasing to the next one down) through Performances or steps in Chain mode.

- Damp .....Damps the sounding voices.
- Start/Stop .....Starts and Stops an external device such as QY10/20.

### **11. MIDI Receive Channel:**

Allows you to choose channels 1–16 or Omni (Omni Receives on all channels).

If you are sending the TMX a program change message to call up a specific Performance or simply triggering the TMX voices from a sequencer, the MIDI channels must always match.

```
UTIL-11  
RECEIVE CH:10
```

### **12. MIDI Transmit Channel:**

Allows you to choose the Transmit channel (1–16) of the TMX.

```
UTIL-12  
TRANSMIT CH:10
```

### **13. Program Change:**

This page allows you to choose whether the TMX receives and transmits program changes or not.

```
UTIL-13  
PROGRAM CHNG:ON
```

### **14. Exclusive:**

Enables or Disables System Exclusive dump receiving. You cannot receive a new "Set" of performances and song chains if this is set to "Off".

```
UTIL-14  
EXCLUSIVE:ON
```

### **15. Device Number:**

Allows you to choose the device number (1–16). This number must match the number on the sending device to allow communication when you are sending and receiving Sys.EX Dumps.

```
UTIL-15  
DEVICE No.:01
```



**16. Bulk Dump:**

```
UTIL-16
BULK:PERF ALL
```

- You can choose to save (PERF. [ALL or 1–32], Chain, Utility, ALL).

Select the Chain number to be dumped and press Store. The display changes to:

```
UTIL-16
Are you ready?
```

Press 'YES' to bulk dump.

Press 'NO' to cancel the procedure.

```
UTIL-16
Transmit:P01
```

Please refer to Section 8, "Data Back-up" for a complete guide to using this function.

**17. Trigger Mute:**

This function allows you to temporarily mute any or all of the trigger inputs. This is helpful if you are trying to isolate your work on one particular input, *especially* the Rim input on a Snare pad.

```
ALL 123456789101112
CUST * * *
```

Each mode works in the following way using the data entry keys:

- THRU ..... receives signals from all the trigger inputs.
- CUST ..... mutes trigger inputs marked with an '\*' (using the +1/Yes key).
- MUTE ..... mutes all trigger inputs.

### 18. External Rhythm/Sequence Start-Stop-Pause:

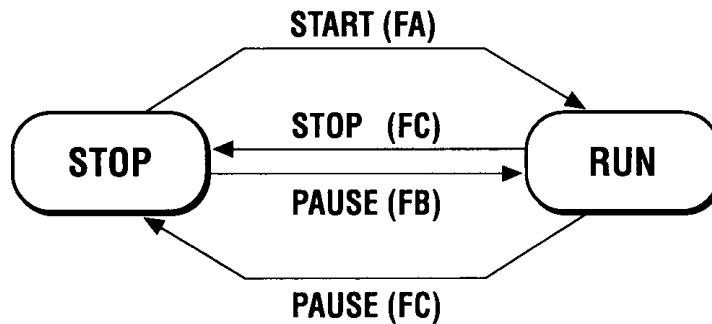
The TMX has the ability to start, stop and pause Yamaha QY10 or QY20 sequencer when using the function pads or footswitch.

1. To use this function, you must first check the Utility Mode page 3 and make sure that the Interface Mode is set to Sound.
2. Now connect a MIDI cable from the TMX MIDI out to the QY10/20 sequencer MIDI in.
3. Now choose the QY10/20 song or pattern that you would like to trigger from the TMX.
4. It's time to decide which TMX input will control the QY10/20 Let's try Utility Mode page 9, input 10, and set this to Pause. Now go to Utility Mode page 10 and set input 11 to start/stop. Remember these inputs can be used as function pads, not just for TMX sounds.
5. You can return to any TMX Performance and begin control the music in the QY10/20 from pads connected to the inputs #10 and #11. Experiment!

Note 1: If you set the Interface Mode to Normal or MIDI, TMX will send channel messages to the QY10/20 and you will hear the QY10/20 internal sounds, too.

Note 2: You can also assign your footswitch to control the QY10/20 sequencer.

Status of the external device when the TMX sends out START/STOP or PAUSE. (Transmitted MIDI code is shown in [ ]).



### 19. Factory Reset:

This function resets all the parameters of the TMX to their factory, "out-of-the-box" default values including the Performances #1~#25. All other Performances will not be restored.

Turn the unit on while pressing **UTILITY** and **STORE** simultaneously.

**WARNING!!!** Be sure that you have saved all of your drum kits/voice edits and song chains to an external storage device (such as the MDF 2 Datafiler) before using this function!!!! Using factory reset will essentially erase everything in the machine and replace it.

## **SECTION 4**

## **Triggering Discussion**

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This is a discussion of triggering principles and techniques. It is not intended to be the final and only word on the subject, but rather to bring up enough points to make you consider some things that otherwise might have slipped by unnoticed. The material covered here is accurate, but much of the “technique” of triggering is dependent on your ability to put the pieces of your own situation together. Experiment with the various aspects of your triggering set-up; because of the great numbers of variables involved, what works for someone else won’t always work for you.

### **General Triggering Observations**

Triggering is more experimentation and research than cold, hard scientific facts. No amount of scientific study or testing can change the fact that the objective is to obtain a clean, clear, consistent signal from something that’s giving you extraneous frequencies, strange signal peaks and many other variables! These include drum size, room acoustics, type of pickup, playing style, pickup mounting, the trigger reading device, the triggered tone generator, type of drumhead and drum tuning. Triggering from electronic pads is usually easier because you have a direct, somewhat less affected trigger signal.

### **Pickup Placement and Mounting for Snare Drums**

Placement and mounting of the pickup can make a big difference. The most sensible place is the outside edge of the drumhead, close to the bearing edge of the drum. Ideally, the pickup should be mounted on the drumhead, very close to where you hit the drum, but this would put the pickup in constant danger of being hit. Since the drumhead is the first thing to vibrate, mounting the pickup on it allows the triggering system to be as fast and accurate as possible. If the pickup is being mounted on a coated drumhead, scrape away the coating at the place where it is to be mounted. A pickup can be placed inside shell, outside the shell, on the counterhoop and a variety of other places.

**YAMAHA DT10** pickups are supplied with double-sided sticky tape. This works well. As an alternative to sticky tape, clear silicone sealant can be used to mount the pickup. A thin coating of sealant should be applied to the drumhead at the point of contact with the pickup. The pickup should then be lightly pressed into the sealant and allowed to dry in that position. Check various brands of silicone sealant since some dry more quickly than others. The ideal material for mounting a pickup provides cushioned flexibility for it, while allowing the accurate reading of dynamics.

Once the pickup is firmly mounted on the drumhead, a small piece of cloth duct tape should be applied over it. This adds further security for the pickup and protects it from flying objects (such as drum sticks). Plumber’s duct tape (often grey-colored) should not be used, because it contains metal, which can cause false or double triggering problems. When changing triggers or drumheads, the cloth duct tape can be carefully peeled away. If the pickup is mounted with double sticky tape, it can be carefully removed by hand. If the pickup is mounted with silicone, it can be carefully removed with a small knife or razor blade.

When deciding to mount the pickup, try to keep the trigger out of the line of fire and away from other drums. This will decrease the possibility of false triggering.

## ***Drums of Various Sizes and Types***

In general, smaller drums are easier to trigger from than larger drums. There is less of an expanse of drumhead to vibrate and the signal settles into something “readable” much more quickly. The larger the drum, the longer it takes to reach its peak signal, and the more bashing around of frequencies occurs. Tuning also plays an important role in triggering. The more evenly the head is tuned, the more even and accurate the triggered response will be.

The amount of force exerted on a bass drum head can be considerably more than on a drum hit with a stick. This makes it a special case for triggering. In general, the closer the pickup is mounted to the place where the beater hits, the quicker and more accurate the triggering will be. Snare drums have snares against the bottom head and this makes them another special case for triggering. As soon as you hit a snare drum, the snares snap back against the bottom head. This acts as a dampening factor and prevents the snare drum from ringing as long as the tom tom. This is a help for triggering. The shorter the decay of the drum, the less likelihood of a double trigger occurring.

## ***Electronic Pads***

Electronic pads generally send out one of the cleanest, clearest and easiest-to-read trigger signals. They incorporate a pickup that has been shock-mounted into a frame that resonates much less than an acoustic drum. Some pickups are inherently “hotter” than others (they output greater voltages with softer hits). This is not particularly an advantage, since the TMX will perform equally well with varying degrees of input levels. Some adjustment of the input level may be necessary, but all incoming pad signals should be fairly easy to use as a triggering source. One thing to watch out for is the pad mounting systems. Some mounting systems allow for too much vibration between pads. Try to develop a mounting system that allows the pads to be tightened securely in place, while still being isolated from external vibrations.

## ***Toms***

When triggering from acoustic toms, always place the trigger on the shell just below the rim of each drum. This will provide the most “maintenance free” and accurate trigger response. You won’t have to remove the trigger every time you change drumheads.

## SECTION 5

## Tutorial/ Helpful Tips

### Using the TMX Creatively

*This section is designed to walk you through the entire 'creative process' of designing your own drum kits and song chains. Let's create a possible scenario to demonstrate this 'process'.*

You are rehearsing with your band. You decide it would be really cool to switch to some heavy industrial/metal samples in the middle of the song, and then switch to a variation of the original set-up for the remainder of the song.

To achieve this musical objective, you are obviously going to need three different drum performances. Before we discuss how to chain these three kits together into a **Song Chain**, let's go ahead and design them first.

Since we are dealing with a 'pads only' type of set-up (for this example), we can make good use of the factory presets provided in memory. The factory presets are a great foundation for building custom kits, because all of the optimal sensitivity settings have already been programmed. We're only interested in changing the sounds assigned to each input. Let's start with PERF 01: ROCK. (If you're using acoustic drums, substitute PERF 13: T ROCK).

#### Step 1:

We're going to change the name from "ROCK" to "GRIZZL A", which is the name of the tune we're working on (and don't even ask what a 'GRIZZL' is!!). **Press Performance**, then the **+1/YES** or **-1/NO** key until you get to PERF 01: ROCK.

Now **press Store**, then the right cursor  $\rightarrow$ . The blinking cursor is now on the **Name** line. Using the data keys plus the cursor below them, change the name to "GRIZZL A". The 'A' will indicate to you that this is the first of the three kits for the song called 'GRIZZL'. To leave a blank space in a name (like between the 'L' in 'GRIZZL' and the 'A'), **press the ZAP** button. Since we really like the Rock kit (preset #1), let's store this new kit to user memory #30 by pressing the left cursor until we're blinking on '01'. Now **press the +1/YES key** until PERF 30:GRIZZL A appears. Now **press Store**. The TMX asks "Are you sure?" **Press +1/YES** and you will return to PERF. MODE KIT #30 GRIZZL A. You now have an exact replica of PERF.01: ROCK copied to PERF.30 with a new name. Get used to this short cut. You will use this many times. We are now at 'PERF. 30: GRIZZL A'.

#### Step 2: Edit Mode

**Press EDIT**. Be sure you are on edit page #1. To change the voice on your kick drum, simply play 1 hit on the kick pad- the TMX knows where you are. To change the kick drum voice or sound, simply **press +1/YES** until you find a kick sample that you like. When you find a sound that you are happy with, experiment a little and **ZAP** it. **Press the ZAP** button. You are now on the page that reads NOTE PITCH MOD (Modify). Use the data entry keys to change the modify parameter from 1-9 or anywhere in between. Play the kick drum as you change the values. That's what we call easy editing.

Now let's go a little further. Hit the left arrow and change the pitch. When you are satisfied, **press ZAP** once more, and it will return you right back to where you were (Edit page #1 PERF. Edit Mode). Want a really fat kick sound? Hit the page down cursor and check the 2nd note assign-

ment. Change that note number to anything! Experiment! Go ahead and **ZAP** that second note—we dare you!

### Step 3:

Repeat step #2 on all the remaining inputs and really go for it! Use your imagination. If at any point you wish to take a break or you're finished with the editing, simply **press Store**. Then **press Store again**, and at the "Are you sure?" prompt **press YES**.

### Step 4:

Creating the other two drum sets, based on PERF: 30 'GRIZZL A'- using the Store button.

**Press Performance**, making sure that you are on PERF: 30 'GRIZZL A'.

Now **press the Store** button and Store PERF: 30 to location 31 (using the **+1/YES** key).

Essentially you are copying 'PERF: 30 GRIZZL A' to 'PERF: 31. Rename it 'GRIZZL B', then copy #31 to PER: 32 and rename it 'GRIZZL C'. Now change PERF. 31 to an 'industrial' sounding kit [or any new sound that you prefer] and make 32 a variation on 30).

*Helpful Hint: IF you are editing PERF: 31 GRIZZL B and you can't find enough 'industrial' effects in the 61 notes given to you in Performance Edit, don't despair! While you're in Performance Edit Page 1 looking at MIDI Note 36 for the kick drum input (it may say 036: KIKHalB, use your Voice Edit skills. Immediately hit Voice Edit. Cursor up to page 1. Now you're looking at the MIDI Note with a sample assigned to it. Use the data entry keys and change the voice assigned to the MIDI note 36. Try the right arrow until it blinks on the 'K', then press +1/YES until it reads E for the 'Special EFX' bank. Now hit the left arrow then +1 or -1 to change EFX samples. Play the bass drum throughout this process to audition sounds or edits (you may also press the Voice Edit key to trigger the sound that you are working with). When your finished, hit the regular Edit button and repeat this process for all inputs.*

**Note:** Remember, when customizing your kits, staying in PERF. EDIT mode and changing the MIDI notes for each input will give you a choice of 61 different sounds (plus hundreds of variations using the ZAP mode). If you recall, we set up a note table of 61 notes/voices to choose from for each preset.

If you're not completely happy with the sounds in the note table, you can hit the Voice Edit button and have 245 sample choices for each input. In Voice Edit mode, you are essentially designing your own note table, which is cool!... but it may take a little longer.

### Step 5:

Putting the 3 kits into Song Chain mode.

Press **Chain**, then press **+1/YES** twice until you get to—

CHAIN:03	STEP: 01
Untitled	PERF: 30

Now press **Chain** again. You have entered **Chain Edit** mode. The cursor is on Step 1. Press +1/YES to assign performance #30. Use the right arrow (cursor) to move to Step 2 and change that to performance #31, and right arrow again to Step 3 assigning it performance #32. Using page down, change the Step Length value to 3. Press the **Store** button. Name the chain 'GRIZZL us-

ing data entry keys. Hit **Store** again, and the prompt 'Are you sure?' will come up. Hit the YES button. This will automatically put you back in **Chain Play** mode. You are now ready to play the chain, stepping through performances using your **Inc/Dec** pads (Pad inputs 10 & 11) or by cursoring over to the word **Step** and using the +1 or -1 keys. We recommend for live performance, using the **Inc/Dec** pads exclusively.

## SECTION 6

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### ***Playing External MIDI Sound Modules from the TMX***

The TMX can be used at any time as a Trigger-to-MIDI converter to trigger additional drum machines, digital samplers and/or keyboard synthesizers (or modules). There are three approaches to this:

#### **MIDI Connections:**

TMX MIDI out to the Sound Module MIDI in.

#### **Approach #1:**

If you wish to layer TMX sounds on each input with sounds from external devices, you must refer to the **Utility Mode** called **Interface Mode**. Switch to '**Normal**'. In this mode, the TMX allows you to hear it's internal voices, while sending trigger information over MIDI. With this approach, it is always best to turn the volume knob on the front panel all the way down or 'mute' all channels in utility mode. Next, choose the MIDI notes in **Edit** mode that correspond to the sounds on the external device that you are triggering. Be sure that the TMX's MIDI transmit channel matches the receive channel on the external device. MIDI transmit channel is found under the **Utility** functions.

Once you have established MIDI notes for each pad, go to **Voice Edit** mode and layer in a TMX sound by choosing the most musical 'voice' for that particular MIDI note number. At this point, you may want to turn up the volume on the front panel... this should help! (Eh hemm...) ...anyway...

#### **Approach #2:**

If you want to trigger external sounds without layering them with TMX sounds, then go to **Interface Mode** and set the TMX to '**MIDI**'. The TMX will transmit MIDI, but internal sounds will be muted.

#### **Approach #3:**

If you want to play the internal sounds of the TMX without sending MIDI trigger information out other unit, then you want to be in '**Sound**' mode.

This mode also allows you to start, stop and pause the QY10 or QY20 sequencer without sending channel messages.

**Hint:** *If you would like to transmit program changes to 'call up' a specific patch on your external sound module, please refer to **Utility Mode pg. 13** and set program change to 'ON'.*



## **SECTION 7**

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### ***Employing the TMX as a MIDI Sound Module***

The TMX internal sounds can be played and controlled from a MIDI sequencer and or a MIDI keyboard. Enter the **Utility** mode and be sure that the TMX receive channel matches the channel on which you are sending from the external MIDI device. By sending MIDI data from the keyboard or sequencer, you can access all of the sounds in a chosen TMX performance. Moreover, by changing patches in the course of a 'sequenced song', you can access any other TMX performances that you may need. Program changes range from 1 to 32 only. Be sure that Program change transmission/ reception reads 'ON' in **Utility** mode page 13.

#### **CONNECTIONS:**

MIDI Device (keyboard or sequencer) MIDI out to the TMX MIDI in.

## SECTION 8

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### **Data Backup Using System Exclusive Messages**

By employing MIDI exclusive messages, or 'Bulk Dump' in **Utility** mode, you can store the following information to a MIDI data filer such as a Yamaha MDF-2 or to another TMX:

- All Performance or Individual Performances
- All Chains
- Utility Settings
- All (Saving 'All' is most common)

To save "ALL DATA", you need to cursor right until it is blinking on 'ALL'. Now hit the Store button and answer "YES" to send the data.

**Note:** *For live and studio performing, it is very important to back up your TMX data. An investment in a MIDI data filer is strongly suggested. With each new bulk store, you have a clean slate to write a new set of 32 kits and 16 song chains. You could show up to a gig with 32,000 kits and 1,600 song chains. This would be suitable for very long gigs!*

To load a bulk dump back into the TMX, the device number of the sending unit must match the device number on the TMX. Also, 'Exclusive' must be enabled in the TMX (Utility page 12). How the data is sent back to the TMX will vary, depending on the unit sending the data. When TMX is receiving data, the display screen will read as follows:



Receive:P01

If any errors are detected while the TMX is receiving bulk data, the display will read as follows:



Receive Error!

If this is the case, simply send the bulk data one more time.

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**\*Warning! Warning!** *Be sure that you have saved anything you need to keep before loading System Exclusive back into the TMX, as a bulk load completely writes over all data already in the TMX.*

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## ***SECTION 9***

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### ***Recording into a Sequencer from Your TMX Drumset***

**Step 1:**

Make the correct MIDI connection- TMX MIDI out to sequencer MIDI in, and sequencer MIDI out to TMX MIDI in. Choose the correct MIDI transmit channel from the TMX and the correct receive channel on the sequencer.

**Step 2:**

Choose the performance you wish to record with.

**Step 3:**

Press record on your sequencer and play away!

**Step 4:**

Stop the sequencer.

**Step 5:**

Be sure that the TMX receive channel matches the sequencer transmit channel (or leave the TMX in OMNI mode).

**Step 6:**

Play the sequencer and listen back to your performance.

\*\*This is a very professional and musical way to record drum patterns. Use it to your advantage!

## ***SECTION 10***

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### ***Triggering from Tape***

Suppose you have just completed recording drums for your band, but you just aren't able to get the drum sounds you wanted (maybe the studio is small and doesn't have the equipment it takes, or maybe your drums just aren't translating well, or the engineer can't get the sound you want). No problem! All you need to do is feed the outputs of the tape machine to the trigger inputs on the TMX and adjust them as if you were setting up triggers for your acoustic kit. With your knowledge of the TMX, you should be able to get killer drum sounds.

For example, a 'rattle' noise from your kick drum is ruining the sound of the drum, but it's already been recorded and you're starting to mix! Simply connect the tape out of the multi-track tape recorder to the trigger input that you wish to work with. Next, adjust the sensitivity as you would for any drum, until you are satisfied with the result. Now, choose the bass drum of your dreams (possibly a layer) and either record it onto a clean track or let it run live from the TMX during the mix. This is a very common practice, and most engineers will be able to do this very easily. You may also wish to layer this new triggered drum with the original acoustic drum for a more natural effect. With this in mind, you can replace snares or add bizarre effects to your toms as an after thought—the possibilities are endless!

## SECTION 11

## TMX Diagnostics

### **Trouble Shooting or, “What to do if...”**

This section addresses some of the more common questions and problems regarding the use of the TMX. Check for answers to any problems here *before* calling your local music store or YAMAHA.

#### **The TMX isn't reading your playing at all/ there's no triggered sound.**

1. Be sure that the trigger or pad is plugged into the TMX input.
2. Make sure that the TMX isn't in '**Bypass**' mode.
3. Make sure that your MIDI connections are correct (only if you are triggering an external device).
4. Go to the **Performance Edit** page and see if any incoming level percentage is showing when you hit a drum or pad.
5. Check to see that the trigger hasn't slipped off the drum, or the 1/4" cable hasn't been disconnected from the pad or drum trigger or trigger input.
6. Check to see if there is a short in the pickup or in the cable itself.
7. The gain setting needs to be higher.
8. Try a different velocity curve.
9. Check Performance Edit mode pages 6 and 7. The minimum incoming level should be low enough to read most of your hits (between 4% and 20%). The maximum outgoing velocity should be high enough to give you audible sound (between 100 and 127).
10. Redo the **Auto-set** procedure and be sure you select the right type of drum to auto-set.
11. Make sure that you have a MIDI note with a voice assigned to the trigger input. (See Performance Edit window 1).
12. Check the volume knob on the front panel- it sounds silly, but it could be turned down for any number of reasons while you're working with the **TMX**.
13. Check the **Mute** page (the last page in **Utility** mode). Have you left any or all inputs muted?
14. Be sure that the given MIDI note is not assigned to an **auxiliary output** that you may not be monitoring.
15. Check the volume in **Voice Edit** mode of the given MIDI note/voice (0–99).
16. Check **Utility Mode** page 3—**Interface Mode**. If this reads 'MIDI', you will not hear the internal TMX sounds. If this reads 'Sound', then you will not be able to transmit MIDI to an external device.
17. Have you accidentally plugged in the **rim** input instead of the **pad** input?

#### **The Auto-set procedure doesn't work**

1. The pick-up or cable have worked their way loose and the pick-up is no longer able to sense velocity accurately.

2. The pick-up or pad has a bad cable.
3. Double check for a secure fit at the trigger input and the pad/trigger output of the TMX.
4. Redo the Auto-set procedure and select the correct trigger type.

### **The drum is 'double-triggering' itself**

1. Raise the rejection parameter.
2. Redo the Auto-set.
3. The pick-up or cable is faulty.

### **You are experiencing 'cross-talk' or 'false triggering'**

1. Raise the rejection parameter.
2. Make sure that no pads or drums are touching each other.
3. The pick-ups or cables are faulty.
4. Redo the Auto-set.

### **Inconsistent Tracking**

1. Check velocity curve on Edit page 8. Curves 2 and 3 should provide smoother tracking.
2. Check for group assignments in **Voice Edit** mode. Having 2 voices assigned to the same group will cause them to cut one another off.

### **Every hit is too loud**

1. Lower the gain setting.
2. Make sure the velocity settings on **Edit** page 7 are not both set to 127.
3. Don't use Curve #4. Try velocity Curve #1 or #2.

### **The TMX went into bypass mode all by itself**

1. Check **Utility** mode edit page 2.
2. Check to see that function pad 10 is not accidentally assigned to bypass (edit page 8).
3. Check the **Mute** page (the last page in **Utility** mode). Have you left any or all inputs muted?
4. Check the **Interface Mode** selection.

### **You just accidentally trashed all your work by switching to a new Performance before storing the one you were working on**

1. Don't panic—go to **Edit recall** (the last page in Voice edit mode). The Edit buffer can be a life-saver.

# Voice List

## Kicks

No.	Name	Mod.
00K	KikDryHv	-
01K	KikDryMp	○
02K	Kik18Dry	○
03K	Kik24Dry	-
04K	KikDryT1	○
05K	KikDryT2	○
06K	KikJazz1	○
07K	KikJazz2	○
08K	KikBBal	-
09K	KikNacid	-
10K	KikNstak	-
11K	KikRoom1	○
12K	KikRoom2	○
13K	Kik18RM	○
14K	Kik24RTC	○
15K	KikHailA	○
16K	KikHailB	○
17K	KikHailC	○
18K	KikLive	○
19K	KikGate1	○
20K	KikGate2	-
21K	KikPro1	-
22K	KikPro2	-
23K	Kik18Gat	○
24K	KikFarGt	○
25K	KikLitGt	○
26K	BD King	○
27K	KikTekno	○
28K	KikAnalg	-
29K	Kik18Amb	○
30K	KikDanc1	○
31K	KikDanc2	○
32K	KikAnalz	○
33K	KikJzTek	○
34K	KikNWooF	-
35K	KikAnaNZ	○
36K	KikANJng	○
37K	KikAnaRM	○
38K	KikChert	○
39K	KikHoror	○
40K	KikRadr	○
41K	KikTalkB	-
42K	KikScreen	-

## Snarres

No.	Name	Mod.
00S	Snr96SWd	○
01S	SnrWood	○
02S	SnrBrass	○
03S	SnrPicco	○
04S	SnrWdDry	-
05S	SnrRIDry	○
06S	SnrMIDry	-
07S	SnrPickL	○
08S	SnrSpank	○
09S	SnrWoody	○
10S	SnrBirch	○
11S	SnrJazz	○
12S	Snr137	○
13S	PunchStr	○
14S	PwrMplStr	○
15S	SnrHiPop	○
16S	SnrTrash	○
17S	SnrHiPMP	○
18S	GatePcSr	○
19S	SnrGate1	-
20S	SnrGate2	-
21S	SnrGate3	-
22S	SnrProc	○
23S	SnrVPic	○
24S	SnrRoom1	○
25S	SnrRoom2	○
26S	SnrRoom3	○
27S	SnrRoom4	-
28S	SnrRoom1	○
29S	SnrRev2	○
30S	SnrRev3	○
31S	SnrRev4	○
32S	AnlgPuSr	○
33S	AnlgAmbi	○
34S	SnrTekno	○
35S	SnrAna1	-
36S	SnrAna2	-
37S	SnrBgAna	○
38S	SnrWaaoo	○
39S	SnrAPing	○
40S	SnrAnaRv	○
41S	SnrRim1	○
42S	SnrRim2	○
43S	BrushSwp	-

## Snarres

No.	Name	Mod.
44S	BrushHit	-
45S	BrushTap	-
46S	SlideRev	○
47S	SlideStk	○
48S	W/outSnr	○
49S	BigMlStr	○
50S	DryMplStr	-
51S	MMetalStr	-
52S	SnrRofit	○
53S	SnrRol.it	○
54S	Snpr	○
55S	BMLeveSr	○
56S	PunchStr	○
57S	MetCupSr	○
58S	WalkSnrM	○
59S	SnrXtreem	○

## Toms

No.	Name	Mod.
00T	TomJazz1	-
01T	TomJazz2	-
02T	TomJazz3	-
03T	TomJazz4	-
04T	TomPwr1	-
05T	TomPwr2	-
06T	TomPwr3	-
07T	TomPwr4	-
08T	TomPwr5	-
09T	TomRM1	○
10T	TomRM2	○
11T	TomRM3	○
12T	TomRM4	○
13T	TomRM5	○
14T	TomMpl1	○
15T	TomMpl2	○
16T	TomMpl3	○
17T	TomDry1	-
18T	TomDry2	-
19T	TomDry3	-
20T	TomDry4	-
21T	BrushTom1	○
22T	BrushTom2	○
23T	BrushTom3	○
24T	EchoTom1	○

## Toms

No.	Name	Mod.
25T	EchoTom2	○
26T	EchoTom3	○
27T	ConTom1	○
28T	ConTom2	○
29T	ConTom3	○
30T	RevTom1	○
31T	RevTom2	○
32T	TomPW1	○
33T	TomPW2	○
34T	TomPW3	○
35T	TomPW4	○
36T	TomTek1	-
37T	TomTek2	-
38T	TomTek3	-
39T	TomTekB1	○
40T	TomTekB2	○
41T	TomTekB3	○
42T	SpaceTom	○
43T	TomElH	○
44T	TomElL	○
45T	ElecTom1	-
46T	ElecTom2	-
47T	ElecTom3	-

## Cymbals

No.	Name	Mod.
00C	HatClk1	-
01C	HatClk2	-
02C	HatDual	○
03C	HatQtr	-
04C	HatHf	○
05C	HatOpn	-
06C	HatPdL	○
07C	AnalgClk	○
08C	AnalgOpn	-
09C	Crash1	-
10C	Crash2	-
11C	CrashFX	-
12C	ChokeFX	-
13C	Splash	-
14C	Ride1	-
15C	Ride2	○
16C	EdgeCup	-
17C	RideCup	-
18C	China	-

## Percussions

No.	Name	Mod.
00P	AgogoHi	○
01P	AgogoLo	○
02P	Clap	-
03P	BongoHi	-
04P	BongoLo	-
05P	Cabasa	○
06P	Claves	-
07P	CongaHi	○
08P	CongaLo	○
09P	CongMute	-
10P	CongSlap	-
11P	CongHeel	-
12P	Cowbell	-
13P	Cowbel2	-
14P	Guero	-
15P	ShortGui	-
16P	Shaker	-
17P	Tambrine	○
18P	TimbHi	-
19P	TimbLo	-
20P	Triangle	-
21P	WhistHi	-
22P	WhistLo	-
23P	WBlock	-
24P	PCTalkDr	-
25P	PCTalkUp	○
26P	PCTalkDn	-
27P	Cuicalo	-
28P	Cuicahi	○
29P	TimpaniH	-
30P	TimpaniL	-
31P	Suck	-
32P	PC Fngrs	-

## Effects

No.	Name	Mod.
00E	IronMnSr	○
01E	ElecAnvl	-
02E	WaterNet	○
03E	BellSizz	○
04E	CmchKik	○
05E	SFXAfro	○
06E	SFXAfroU	○
07E	EFBongo	○
08E	BuckChoo	○
09E	CasiaCiv	-
10E	Echo	-
11E	GuitRevL	-
12E	MetRysm	-
13E	OrchHit1	-
14E	OrchHit2	-
15E	ShortRol	-
16E	RevrSnr	-
17E	Revit	-
18E	PressRol	-
19E	WaterGng	-
20E	EFTube	-
21E	Scratch	-
22E	ScraRezz	-
23E	TypeWrit	-
24E	EFBDJct	○
25E	Drips	○
26E	Galon	○
27E	Junk	○
28E	Krash	○
29E	LoZip	○
30E	MerTM	○
31E	SDJct	○
32E	Splat	○
33E	EFTalk	○
34E	Tublr	○
35E	Wire	○
36E	SqreWv	-
37E	SynBass	-
38E	ThmBass	-
39E	Vib C4	-
40E	Brass	-
41E	BrassEns	○























Input	1st Note	1st Voice	2nd Note	2nd Voice	Type	Gain	Level	Velocity	Curve	Reject
1							% - %	-		
2							% - %	-		
3							% - %	-		
4							% - %	-		
5							% - %	-		
6							% - %	-		
7							% - %	-		
8							% - %	-		
9							% - %	-		
10							% - %	-		
11							% - %	-		
12							% - %	-		

Function	Transmitted	Recongized	Remarks
:Basic Default	: 1-16	: 1-16	: memorized
:Channel Changed	: 1-16	: 1-16	:
:Mode Default	: 3	: 1,3	: memorized
:Mode Messages	: X	: X	:
:Mode Altered	: *****	: X	:
:Note Number : True voice	: 24-84 *****	: 24-84 X	: *1
:Velocity Note on	: O 9nH,v=1-127	: O v=1-127	:
:Velocity Note off	: X 9nH,v=0	: X	:
:After Key's	: X	: X	:
:Touch Ch's	: X	: X	:
:Pitch Bender	: X	: X	:
:Control 7	: X	: O	: Volume
:Change	:	:	:
:Program Change : True #	: O 0-31 *****	: O 0-31	:
:System Exclusive	: O	: O	:
:System : Song Pos	: X	: X	:
:System : Song Sel	: X	: X	:
:Common : Tune	: X	: X	:
:System :Clock	: X	: X	:
:Real Time:Commands	: O	: X	:
:Aux :Local ON/OFF	: X	: X	:
:Aux :All Notes OFF	: O	: O	:
:Mes- :Active Sense	: O	: O	:
:sages:Reset	: X	: X	:
:Notes	: *1: from ROOT NOTE to ROOT NOTE+60. (ROOT NOTE range: 0-67)		

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