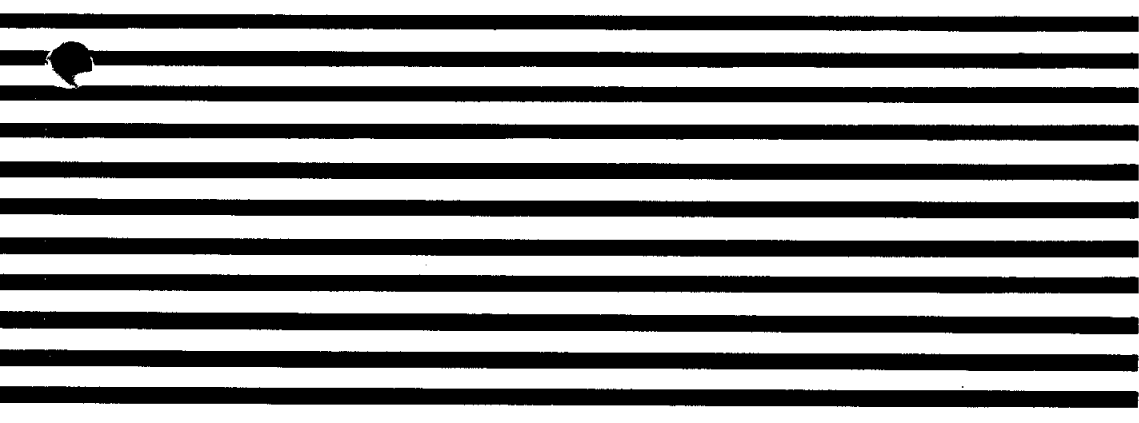


# YAMAHA

TONE GENERATOR

# TG33



**OPERATING 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

\* This applies only to products distributed by YAMAHA CORPORATION OF AMERICA.

Dette apparat overholder det gældende EF-direktiv vedrørende radiostøj.

Cet appareil est conforme aux prescriptions de la directive communautaire 87/308/CEE.

Diese Geräte entsprechen der EG-Richtlinie 82/499/EWG und/oder 87/308/EWG.

This product complies with the radio frequency interference requirements of the Council Directive 82/499/EEC and/or 87/308/EEC.

Questo apparecchio è conforme al D.M.13 aprile 1989 (Direttiva CEE/87/308) sulla soppressione dei radio-disturbi.

Este producto está de acuerdo con los requisitos sobre interferencias de radio frecuencia fijados por el Consejo Directivo 87/308/CEE.

**YAMAHA CORPORATION**

### CANADA

THIS DIGITAL APPARATUS DOES NOT EXCEED THE "CLASS B" LIMITS FOR RADIO NOISE EMISSIONS FROM DIGITAL APPARATUS SET OUT IN THE RADIO INTERFERENCE REGULATION OF THE CANADIAN DEPARTMENT OF COMMUNICATIONS.

LE PRESENT APPAREIL NUMERIQUE N'EMET PAS DE BRUITS RADIOELECTRIQUES DEPASSANT LES LIMITES APPLICABLES AUX APPAREILS NUMERIQUES DE LA "CLASSE B" PRESCRITES DANS LE REGLEMENT SUR LE BROUILLAGE RADIOELECTRIQUE EDICTE PAR LE MINISTERE DES COMMUNICATIONS DU CANADA.

\* This applies only to products distributed by YAMAHA CANADA MUSIC LTD.

Litiumbatteri!  
Bör endast bytas av servicepersonal.  
Explosionsfara vid felaktig hantering.

VAROITUS!  
Lithiumparisto, Räjähdyksvaara.  
Pariston saa vaihtaa ainoastaan alan ammattimies.

ADVARSEL!  
Lithiumbatteri!  
Eksplosionsfare. Udskiftning må kun foretages af en sagkyndig, - og som beskrevet i servicemanualen.

## 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 1 cm) 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 MMM 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 MMM **BEFORE** using. Benches supplied by Yamaha are designed for MMM 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.

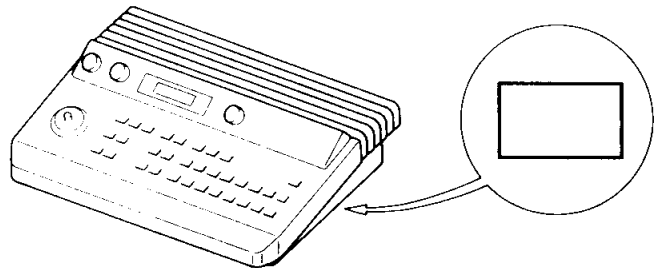
This product may also use "household" type batteries. Some of these may be rechargeable. Make sure that the battery being charged is a rechargeable type and that the charger is intended for the battery being charged.

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

## Congratulations!

You're about to enter an exciting new world of vector synthesis combining Yamaha's advanced AWM sample playback technology with high-performance FM tone generation. Vector synthesis allows you to create and control synthesized sound with unprecedented ease — in a very intimate, “human” way, putting you more closely in touch with your music. The vector control lets you blend sounds manually in real time, and dynamic vectors let you “record” dynamic vector sweeps that will play automatically whenever you play a note.

The TG33 also provides plenty of versatility for even complex sequenced compositions. Its MULTI mode allows up to 16 different “instruments” to be controlled simultaneously on different MIDI channels — with up to 32-note polyphony!

The more you use the TG33, the more you'll find that “vectors” will become an indispensable part of your musical repertoire.

- Yamaha AWM and FM tone generators for superior sound and tonal versatility.
- Fully programmable 16-channel multi-play mode with 32-note polyphony provides extraordinary versatility for sequencer-driven applications.
- 16 memory locations for multi-play setups.
- 2-element or 4-element voice architecture allows AWM and FM waveforms to be used in a single voice.
- Vector control for 2-axis control of element level and detuning.
- Dynamic level and detune vectors can be easily recorded in real time.
- 128 preset AWM waveforms and 256 preset FM waveforms provide an extensive library of sonic “building blocks” from which to create new voices.
- 128 preset voices and 64 user voice memory locations.
- External memory cards provide limitless backup and storage capability.
- Easy-edit features make creating new voices quick and virtually programming-free.
- When necessary, detailed, in-depth programming parameters are available.
- 16 internal digital effects including reverb, delay and distortion.
- Dual stereo outputs.
- Desk-top or rack-mount use — rack-mount adapters provided.

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# HOW TO USE THIS OPERATIONAL MANUAL

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This operation manual is broadly divided into two main sections — **TUTORIALS** and **REFERENCE**.

## **What's In the TUTORIALS Section**

The **TUTORIALS** section contains five separate tutorials that take you step-by-step through the main procedures you will need to know to become familiar with your TG33:

1. **SETTING UP YOUR SYSTEM** [Page 11]  
Basic system connections.
2. **SELECTING AND PLAYING VOICES** [Page 13]  
Selecting and playing voices from the **PRESET**, **INTERNAL** and **CARD** voice banks.
3. **VECTORS** [Page 17]  
Understanding and using manual and dynamic vectors.
4. **INSTANT VOICE PROGRAMMING** [Page 31]  
The fast way to create an unlimited range of new voices for the TG33.
5. **THE MULTI PLAY & EDIT MODES** [Page 33]  
How to set up and use the TG33's extensive "MULTI PLAY" capabilities with a sequencer or music computer.

We recommend that you go through the tutorials in sequence, while actually carrying out the procedures on your TG33. Once you've gone through the entire **TUTORIALS** section in this way, you should be familiar enough with the TG33 to need only the **REFERENCE** section in future.

## **What's In the REFERENCE Section**

The **REFERENCE** section is the "nuts and bolts" section of the manual, individually describing each of the TG33's many functions in detail. The **REFERENCE** section is divided into eight sub-sections, each describing the various functions within a particular TG33 edit or utility mode.

1. **VOICE COMMON** [Page 43]
2. **VOICE VECTOR** [Page 51]
3. **ELEMENT TONE** [Page 57]
4. **ELEMENT ENVELOPE** [Page 67]
5. **MULTI** [Page 75]
6. **UTILITY SYSTEM** [Page 83]
7. **UTILITY MIDI** [Page 87]
8. **UTILITY CARD** [Page 93]

Once you have become familiar with the way the TG33 works by going through the **TUTORIALS** section, you should only need to refer to the **REFERENCE** section from time to time to get details on functions you've never used before, or refresh your memory about functions that you don't use very often.

Each sub-section has its own table of contents, so you can locate any particular function quickly and easily. Functions and references can also be located by referring to the **INDEX** at the back of the manual.

# PRECAUTIONS

**!! PLEASE READ THIS BEFORE PROCEEDING !!**

- 1. Avoid Excessive Heat, Humidity, Dust and Vibration**

Keep the unit away from locations where it is likely to be exposed to high temperatures or humidity — such as near radiators, stoves, etc. Also avoid locations which are subject to excessive dust accumulation or vibration which could cause mechanical damage.
- 2. Avoid Physical Shocks**

Strong physical shocks to the unit can cause damage. Handle it with care.
- 3. Do Not Open The Case Or Attempt Repairs Or Modifications Yourself**

This product contains no user-serviceable parts. Refer all maintenance to qualified Yamaha service personnel. Opening the case and/or tampering with the internal circuitry will void the warranty.
- 4. Make Sure Power Is Off Before Making Or Removing Connections**

Always turn the power OFF prior to connecting or disconnecting cables.
- 5. Handle Cables Carefully**

Always plug and unplug cables by gripping the connector, not the cord.
- 6. Clean With a Soft Dry Cloth**

Never use solvents such as benzine or thinner to clean the unit. Wipe clean with a soft, dry cloth.
- 7. Always Use the Correct Power Supply**

Always use the supplied AC Adaptor to power your TG33 or, if the original adaptor is lost or broken, a replacement or equivalent type obtained from your Yamaha dealer. Also, make sure that the adaptor you have is appropriate for the AC mains supply voltage in the area where you intend to use the TG33 (the correct INPUT voltage is marked on the adaptor).
- 8. Electrical Interference**

Since the TG33 contains digital circuitry, it may cause interference and noise if placed too close to TV sets, radios or similar equipment. If such a problem does occur, move the TG33 further away from the affected equipment.
- 9. Memory Backup**

The TG33 contains a special backup battery that retains the contents of the internal RAM memory even when the power is turned off. Under normal conditions, the backup battery should last for approximately 5 years.

When the backup battery voltage drops below the safe level, the “Change int bat!” display will appear on the TG33 LCD. When this occurs, have the internal battery replaced *by qualified Yamaha service personnel*. Do not attempt to replace the battery yourself, as opening the TG33 cabinet and tampering with the internal circuitry will *void the warranty!*
- 10. Third-party Software**

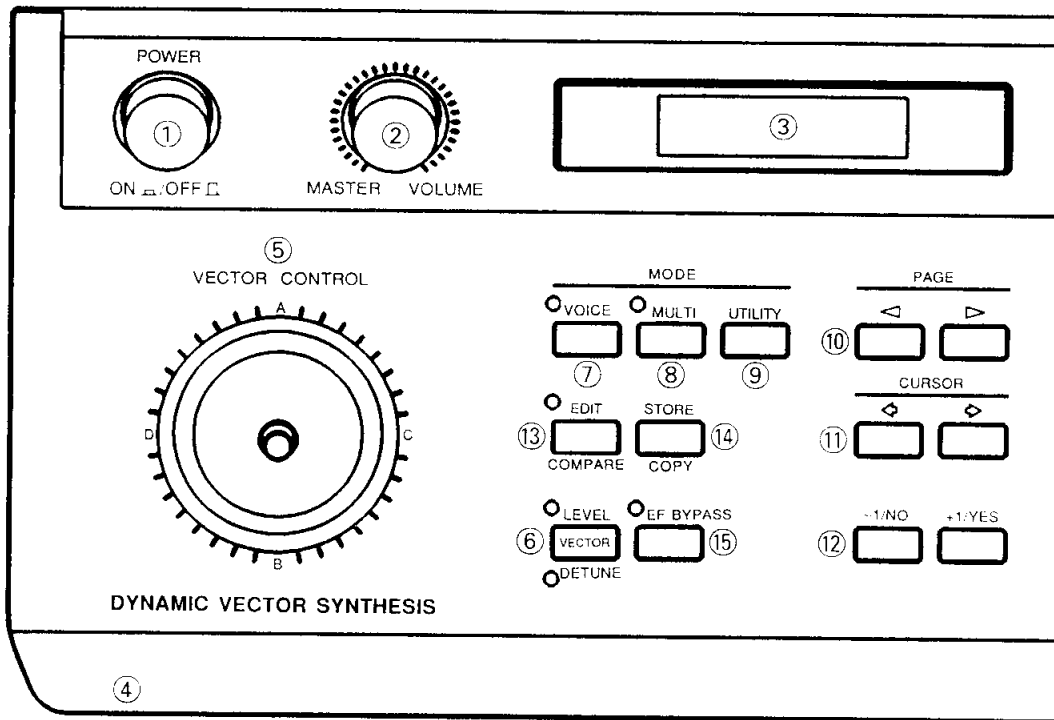
Yamaha can not take any responsibility for software produced for this product by third-party manufacturers.

Please direct any questions or comments about such software to the manufacturer or their agents.



# THE CONTROLS & CONNECTORS

## ■ FRONT PANEL



### ① [POWER] Switch

Press to turn the TG33 power ON or OFF.

### ② [MASTER VOLUME] Control

The [MASTER VOLUME] control adjusts the volume of the sound delivered via the rear-panel OUTPUT 1 jack and the front-panel PHONES jack. The [MASTER VOLUME] control does not affect the output level of the rear-panel OUTPUT 2 jack.

### ③ Liquid Crystal Display Panel (LCD)

This 16-character × 2-line backlit liquid crystal display panel shows the selected voice or multi-play setup name in the voice or multi-play modes, as well as function names and parameters in the utility and edit modes.

### ④ PHONES Jack

Accepts a standard pair of stereo headphones (1/4" stereo phone plug) for headphone monitoring of the TG33 sound without the need for external amplification equipment.

### ⑤ [VECTOR CONTROL]

This is the key to TG33's remarkable vector synthesis system. The [VECTOR CONTROL] allows manual control of level or detune for 2 or 4 voice "elements" simultaneously. It also allows realtime recording of dynamic level and detune vectors.

### ⑥ [VECTOR] Key & LEVEL/DETUNE Indicators

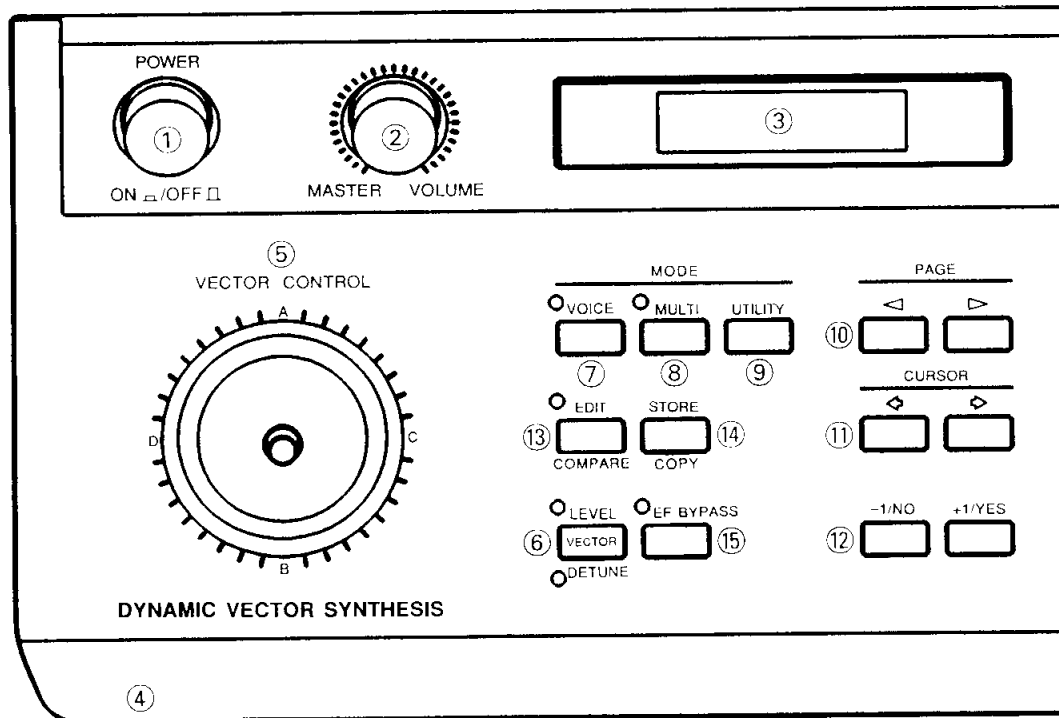
The [VECTOR] key selects level or detune vector control, or turns vector operation off.

### ⑦ [VOICE] Key & Indicator

Selects the normal voice play mode in which any of the TG33's preset, internal or card voices can be played via a master keyboard or other controller connected to the MIDI IN connector.

### ⑧ [MULTI] Key & Indicator

Selects the multi-play mode in which up to 16 voices can be played simultaneously via different MIDI channels.



⑨ [UTILITY] Key

Selects the UTILITY mode which provides access to all system, MIDI, and card utility functions.

⑩ PAGE [◀] and [▶] Keys

Select the various functions in the VOICE EDIT, MULTI EDIT or UTILITY modes. The PAGE [▶] key steps forward through the functions while the PAGE [◀] key steps in the reverse direction.

⑪ CURSOR [◀] and [▶] Keys

Moves the screen cursor from parameter to parameter in many of the TG33 editing and utility functions.

⑫ [-1/NO] and [+1/YES] Keys

Can be used to select voices and multi-play setups, and are used in conjunction with the DATA ENTRY control to edit parameter values in any of the TG33 edit modes. Either key can be pressed briefly for single stepping in the specified direction, or held for continuous scrolling. These keys are also used to answer the "Are you sure?" confirmation prompt when saving or initializing data.

⑬ [EDIT/COMPARE] Key & Indicator

Accesses the TG33's VOICE EDIT or MULTI EDIT modes. Also activates the compare function when in any edit mode, allowing quick comparison of the original and edited voice or multi-play setup.

⑭ [STORE/COPY] Key

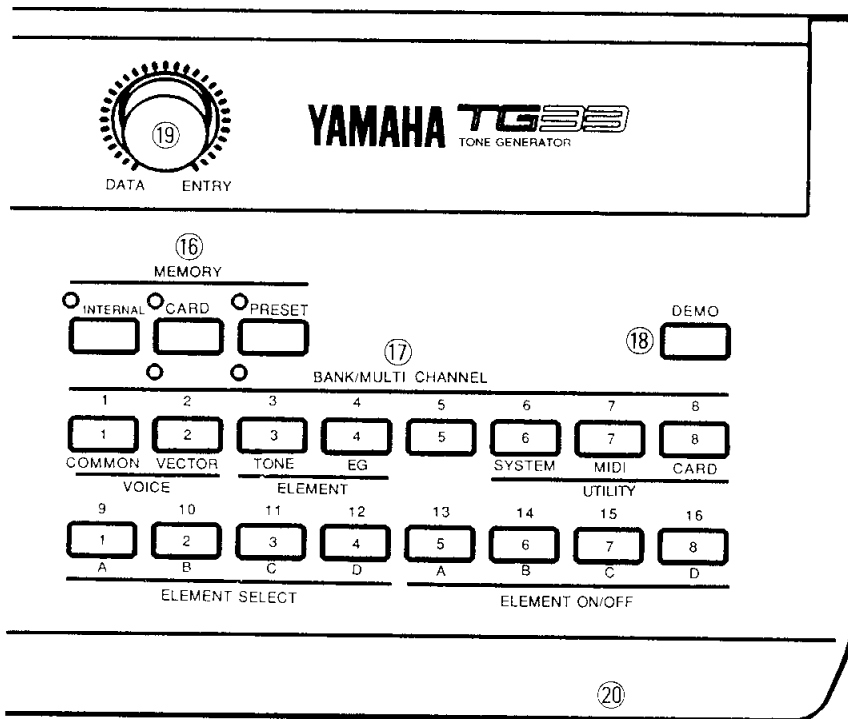
Used to store edited data to an internal or card memory location, and to access a range of useful copy functions in the voice and multi edit modes.

⑮ [EF BYPASS] Key & Indicator

When this key is pressed and its indicator is lit, all internal TG33 effects are bypassed and the direct sound of the voices will be heard. Press again to turn the indicator off and restore normal effect operation.

⑯ [INTERNAL], [CARD], and [PRESET] Keys & Indicators

Select the data bank — preset 1 or 2, internal, or card — from which voices or multi-play setups will be selected.



**17 [BANK/MULTI CHANNEL] Select, Edit/Utility Mode Access, and Element Control Keys**

In the VOICE PLAY or MULTI PLAY mode, the keys in the top row— [1] through [8] — are used to select the bank of the voice or multi-play setup to be selected, while the bottom-row keys — also [1] through [8] — are used to select the number of the voice or multi-play setup to be selected.

In the VOICE EDIT or UTILITY mode, the keys in the top row are used to select the desired edit or utility function group (refer to the green labels below the keys).

In the ELEMENT TONE or ELEMENT ENVELOPE edit mode the keys in the bottom row are used to select individual elements and turn individual elements on and off for editing (green labels below the keys).

In the MULTI EDIT mode, the small white numbers above the keys [1] through [16] refer to MIDI channel numbers, and the keys are used to select the MIDI channel data to be edited.

**18 [DEMO] Key**

Activates the TG33 built-in demonstration — a great way to hear what the TG33 can do after you set up your system.

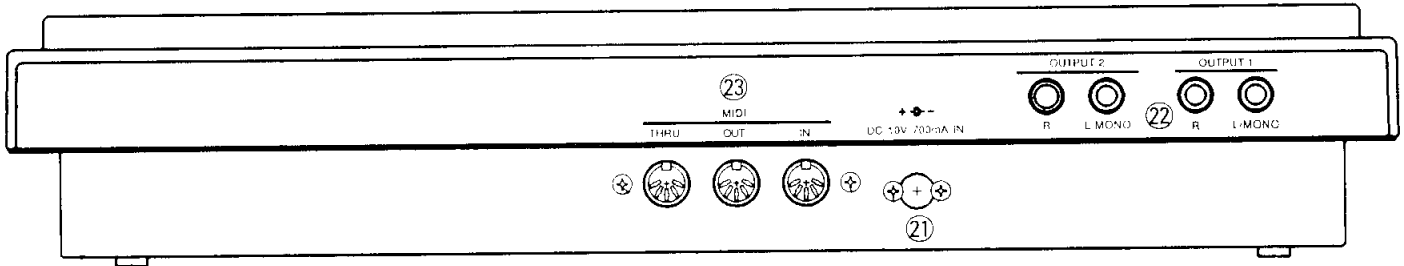
**19 [DATA ENTRY] Control**

The fast, easy way to make coarse value changes in the VOICE or MULTI EDIT mode, as well as the UTILITY mode. In general, rotating the [DATA ENTRY] control clockwise increases the value of the selected parameter, while counterclockwise rotation decreases the value. Fine single-step adjustments can be carried out using the [-1/NO] and [+1/YES] keys.

**20 Card Slot**

The Card slot accepts Yamaha MCD64 or MCD32 Memory Cards for storage and retrieval of TG33 voices and multi-play data.

## ■ REAR PANEL



### ②① DC 10V 700mA IN Jack

The DC output cable from the supplied AC adaptor should be connected here. When connecting the power supply, make sure that the TG33 POWER switch is in the OFF position (extended), then plug the AC adaptor output cable into the DC 10V 700mA IN jack, and finally the adaptor's AC plug into a convenient AC wall outlet.

### CAUTION!

Do not attempt to use a different AC adaptor to power the TG33. The use of an incompatible adaptor may cause irreparable damage to the TG33, and might pose a serious shock hazard!

### ②② OUTPUT 1 and OUTPUT 2 (R and L/MONO) Jacks

The TG33 has two pairs of stereo outputs — OUTPUT 1 and OUTPUT 2 — to which different voice groups can be assigned in the MULTI EDIT mode. Please note that the TG33 effects are only applied to voices assigned to OUTPUT 1.

If a plug is inserted only into the L/MONO jack of an output pair, the left and right-channel signals are combined and delivered via this jack (for connection to a monaural sound system).

### ②③ MIDI IN, OUT and THRU Connectors

The MIDI IN connector receives the data from a sequencer or other MIDI controller which is to control the TG33. The MIDI THRU connector simply retransmits the data received at the MIDI IN connector, allowing convenient chaining of MIDI devices. The MIDI OUT connector transmits data corresponding to all TG33 performance operations, or bulk data when one of the MIDI voice data transmission functions are activated.

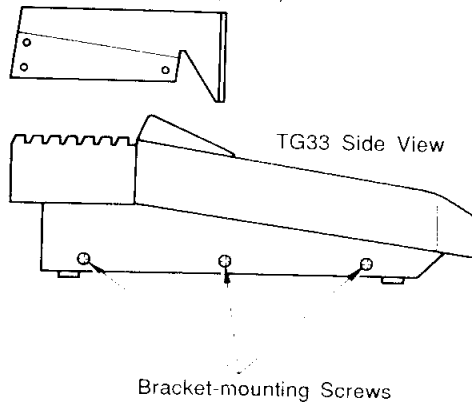
## Rack Mounting the TG33

The TG33 is supplied with a pair of rack-mount brackets that can be attached to the sides of the TG33 in a number of ways to provide a choice of mounting positions and angles.

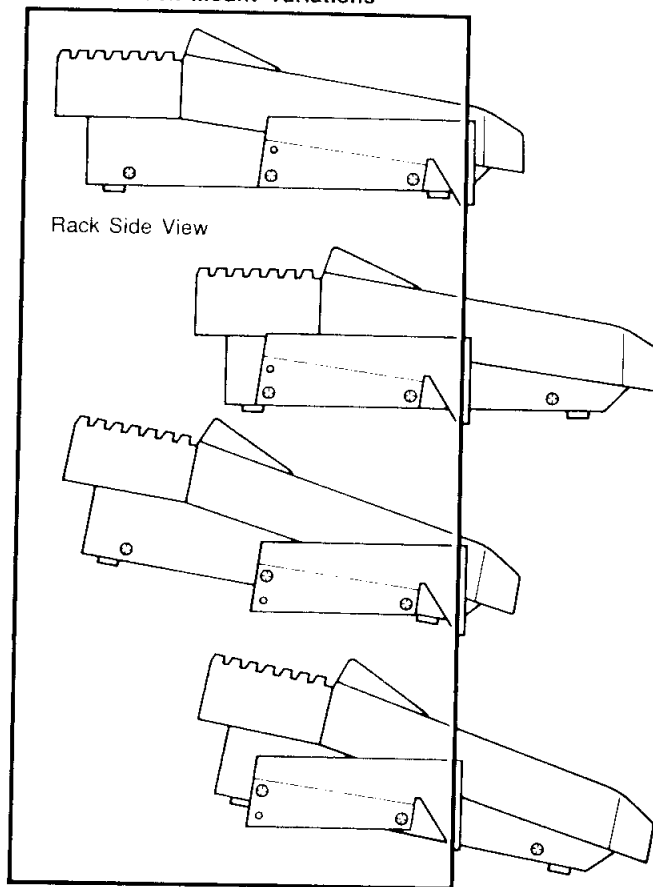
Attach the brackets as required by temporarily removing two of the three bracket-mounting screws provided on each side of the TG33, hold the angles in place, then replace the screws — firmly — as shown in the illustrations below.

Since each bracket requires two screws and three are provided on either side of the TG33, you have two spares. If you do need extra mounting screws, please contact your Yamaha dealer.

Rack Mount Bracket (1 of 2)



4 Rack Mount Variations





# TUTORIALS SECTION



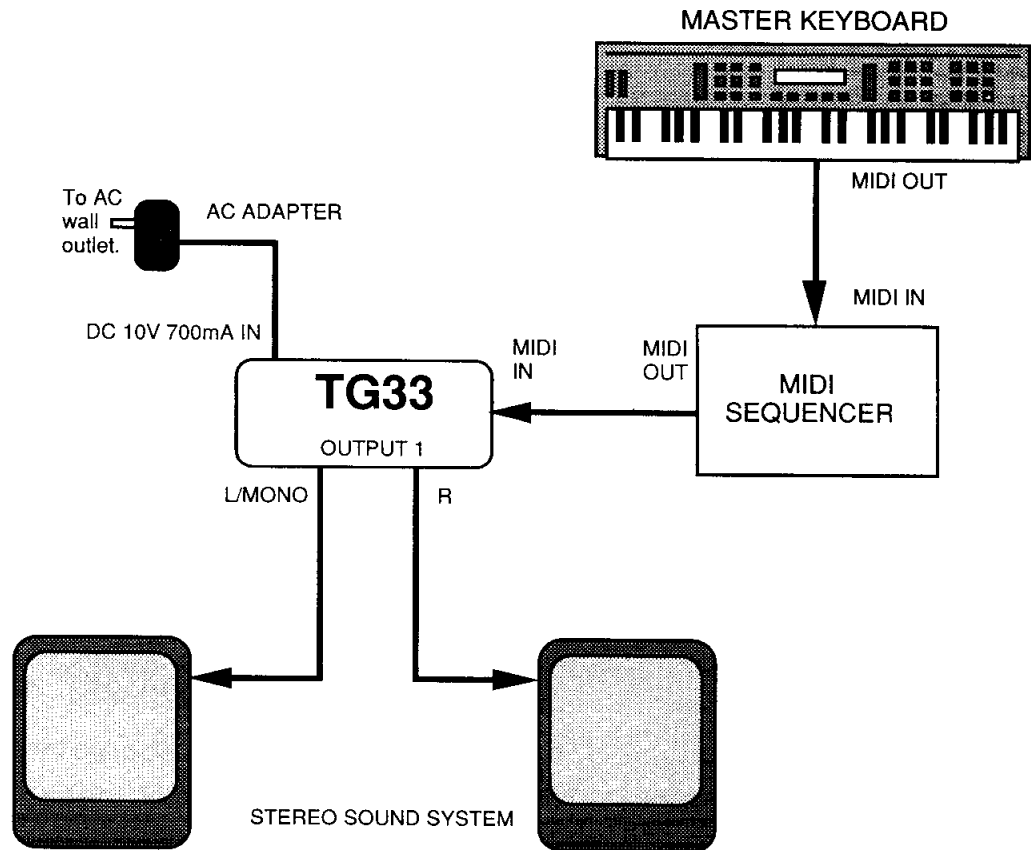


# 1. SETTING UP YOUR SYSTEM

## Connections

The diagram below shows the basic connections in a setup using the TG33, a master keyboard, a MIDI sequencer, and a stereo sound system.

**CAUTION!!:** Make sure that both the TG33 and your sound system are turned OFF when making connections.



**NOTE:** Always use high-quality MIDI cables when making MIDI connections, and avoid using cables longer than about 15 meters since longer cables can pick up noise that might cause data errors.

## Power-on Procedure

1. Make sure your sound system's volume control and the TG33 volume control are turned all the way down prior to turning power on.
2. Turn on the master keyboard.
3. Turn on the sequencer.
4. Turn on the TG33.
5. Turn on the sound system.
6. Raise the sound system volume to a reasonable level.
7. Gradually raise the TG33 VOLUME control while playing the keyboard to set the desired listening level.

## MIDI Channel Matching

Be sure to refer to your master keyboard and sequencer operation manuals to ensure that they are connected properly and that the MIDI transmit channel of the keyboard is matched to the receive channel of the sequencer. You may also have to make special settings to ensure that the MIDI data received from the keyboard by your sequencer is simultaneously “echoed” to the TG33 via its MIDI OUT connector.

Also make sure that the TG33 is set to receive on the appropriate MIDI channel as follows:

1. Press the [UTILITY] key to select the UTILITY mode.
2. Press the UTILITY MIDI key (BANK/MULTI CHANNEL key [7]) to select the utility MIDI function group.
3. Use the PAGE [▷] and [◁] keys to locate the following display:

```
UM MIDI
Receive Ch= 1
```

4. Use the DATA ENTRY control or [-1/NO] and [+1/YES] keys to set the receive channel number to the channel on which your sequencer is currently transmitting — or select “omni” to allow reception on all 16 MIDI channels.
5. Press the [VOICE] key to return to the VOICE PLAY mode.

## Demo

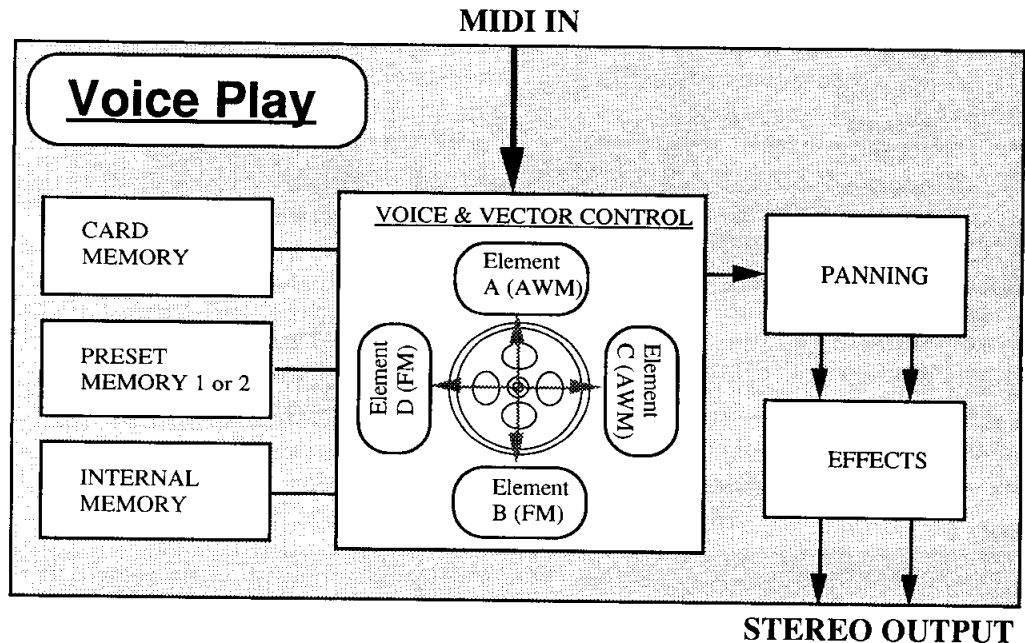
The TG33 is programmed with a demonstration sequence that you might like to listen to after setting up your system. Take a short break and enjoy the demo:

1. Press the [DEMO] key. ““YES” to START” will appear on the LCD display.
2. Press the [+1/YES] key to start demo playback. ““NO” to STOP” will appear on the LCD display.
3. Press the [-1/NO] key when you want to stop demo playback.

## 2. SELECTING AND PLAYING VOICES

### The PRESET, INTERNAL and CARD Voice Memories

Here's an overview of the TG33 VOICE PLAY mode:



Please note that the voices played by the TG33 can come from three different sources: the PRESET voice memory (PRESET 1 or 2), the INTERNAL voice memory, or a CARD voice memory:

### PRESET

The PRESET voice memory contains 128 pre-programmed voices in ROM (Read Only Memory) that cannot be overwritten or changed in any way. The PRESET voice memory has two banks — PRESET 1 and PRESET 2 — containing 64 voices each. The PRESET 1 and PRESET 2 banks are represented on the display by letter “P1” and “P2”. For easier identification the indicator *above* the [PRESET] key lights when PRESET 1 is selected, and the indicator *below* the [PRESET] key lights when PRESET 2 is selected.

# PRESET VOICE LIST

## PRESET 1

\*EL = No. of elements.

	No.	Voice Name	EL*		No.	Voice Name	EL*		No.	Voice Name	EL*		No.	Voice Name	EL*
1	1.1	SP*Pro33	4	17	3.1	SC*Groov	2	33	5.1	SL*Sync	4	49	7.1	SE*Mount	4
2	1.2	SP*Echo	4	18	3.2	SC*Airy	4	34	5.2	SL*VCO	4	50	7.2	SE*5.PM	4
3	1.3	SP*BelSt	4	19	3.3	SC*Solid	4	35	5.3	SL*Chic	4	51	7.3	SE*FlyBy	4
4	1.4	SP*Full	4	20	3.4	SC*Sweep	4	36	5.4	SL*Mini	2	52	7.4	SE*Fear	4
5	1.5	SP*Ice	4	21	3.5	SC*Drops	4	37	5.5	SL*Wisul	4	53	7.5	SE*Wolvs	2
6	1.6	SP*Dandy	4	22	3.6	SC*Euro	4	38	5.6	SL*Blues	4	54	7.6	SE*Hades	4
7	1.7	SP*Arkle	4	23	3.7	SC*Decay	4	39	5.7	SL*Cosmo	2	55	7.7	SE*Neuro	4
8	1.8	SP*BrVec	4	24	3.8	SC*Steel	2	40	5.8	SL*Super	4	56	7.8	SE*Angel	4
9	2.1	SP*Matrx	4	25	4.1	SC*Rude	4	41	6.1	ME*Vecta	4	57	8.1	SQ*MrSeq	2
10	2.2	SP*Gut	4	26	4.2	SC*Bellz	4	42	6.2	ME*NuAge	4	58	8.2	SQ*It	2
11	2.3	SP*Omni	4	27	4.3	SC*Pluck	4	43	6.3	ME*Hit+	4	59	8.3	SQ*Id	4
12	2.4	SP*Oiled	4	28	4.4	SC*Glass	4	44	6.4	ME*Glace	4	60	8.4	SQ*Wrupa	4
13	2.5	SP*Ace	4	29	4.5	SC*Wood	4	45	6.5	ME*Astro	4	61	8.5	SQ*TG809	4
14	2.6	SP*Quire	4	30	4.6	SC*Wire	4	46	6.6	ME*Vger	4	62	8.6	SQ*Devol	4
15	2.7	SP*Digit	4	31	4.7	SC*Cave	4	47	6.7	ME*Hitch	4	63	8.7	DR*Kit	2
16	2.8	SP*Swell	4	32	4.8	SC*Wispa	4	48	6.8	ME*Indus	4	64	8.8	DR*EFX	4

## PRESET 2

\*EL = No. of elements.

	No.	Voice Name	EL*		No.	Voice Name	EL*		No.	Voice Name	EL*		No.	Voice Name	EL*
1	1.1	EP*Arlad	4	17	3.1	BA*Slap	4	33	5.1	BR*Power	4	49	7.1	ST*Arco	4
2	1.2	AP:Piano	2	18	3.2	BA*Atack	4	34	5.2	BR*Fanfr	4	50	7.2	ST*Chmbr	2
3	1.3	EP*Malet	4	19	3.3	BA*Seq	4	35	5.3	BR*Class	4	51	7.3	ST*Full	4
4	1.4	AP*ApStr	4	20	3.4	BA*Trad	4	36	5.4	BR*Reeds	4	52	7.4	ST*Pizza	2
5	1.5	EP:Dx6op	2	21	3.5	BA*Pick	2	37	5.5	BR*Chill	4	53	7.5	ST*CelSt	4
6	1.6	EP*Pin	4	22	3.6	BA*Syn	4	38	5.6	BR*Zeus	4	54	7.6	ST*Exel	4
7	1.7	EP*New DX	4	23	3.7	BA*Rezz	2	39	5.7	BR*Moot	4	55	7.7	ST*Synth	4
8	1.8	EP*Fosta	4	24	3.8	BA*Unisn	4	40	5.8	BR*Anlog	4	56	7.8	ST*Eroid	4
9	2.1	OR*Gospl	4	25	4.1	BA*Fingr	2	41	6.1	BR*FrHm	2	57	8.1	CH*Modrn	4
10	2.2	OR*Rock	4	26	4.2	BA*Frtls	4	42	6.2	BR*Trmpt	2	58	8.2	CH*Duwop	4
11	2.3	OR*Pipe	4	27	4.3	BA*Wood	2	43	6.3	BR*Tromb	4	59	8.3	CH*Itopy	4
12	2.4	OR*Perc	4	28	4.4	PL*Foksy	4	44	6.4	WN*Sax	4	60	8.4	CH*Astiz	4
13	2.5	KY*Squez	4	29	4.5	PL*12Str	4	45	6.5	WN:Pan	2	61	8.5	PC:Marim	2
14	2.6	KY:Hrpsi	2	30	4.6	PL*Mute	4	46	6.6	WN:Oboe	2	62	8.6	PC:Vibes	2
15	2.7	KY*Celst	4	31	4.7	PL*Nylon	4	47	6.7	WN:Clart	2	63	8.7	PC*Bells	4
16	2.8	KY:Clavi	2	32	4.8	PL*Dist	4	48	6.8	WN:Flute	2	64	8.8	PC*Clang	4

## INTERNAL

The INTERNAL voice memory is a RAM (Random Access Memory) area into which you can store up to 64 voices that you create or load from an external memory card. The INTERNAL voice memory is represented on the display by the letter "I".

## CARD

The CARD memory bank is a Yamaha MCD64 or MCD32 Memory Card (or pre-programmed voice card) plugged into the TG33 card slot. Memory cards are convenient for external storage and transportation of voices you or others create. You can also store sets of related voices on different memory cards. An MCD32 Memory Card allows storage of up to 64 voices (in addition to 16 MULTI setups — see page 33). An MCD64 Memory Card holds two banks of 64 voices each — for a total of 128 voices per card (REFERENCE SECTION, page 95). The CARD voice banks are represented on the display by "C1" and "C2". For easier identification the indicator *above* the [CARD] key lights when CARD bank 1 is selected, and the indicator *below* the [CARD] key lights when CARD bank 2 is selected.

**NOTE:** Yamaha SY22 Music Synthesizer voice cards can also be used with the TG33. Since the SY22 does not have Effect Balance and Effect Send level parameters, however, these parameters are automatically set to their default values (Effect Balance = 64; Effect Level = 127) when SY22 voices are used with the TG33 (REFERENCE SECTION, page 45).

Any voice in any of these locations can be selected and played while the TG33 is in the VOICE PLAY mode.

## Selecting the VOICE PLAY Mode, a Voice Memory, and Voice

1. If the VOICE PLAY mode is not already selected — as indicated by a lit [VOICE] key LED and "VOICE PLAY" across the top of the LCD — press the [VOICE] key to select it.

```
VOICE PLAY
P11 SP*Pro33
```

2. The [INTERNAL], [CARD], and [PRESET] keys are used to select the desired voice memory.

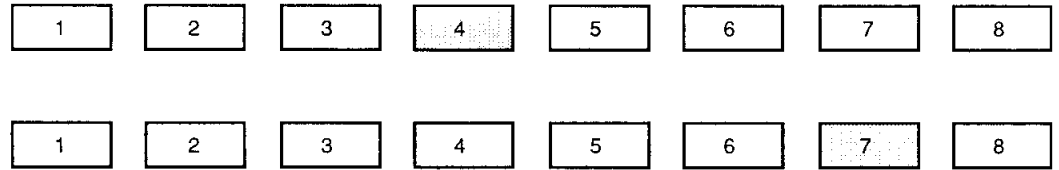
**NOTE:** The CARD memory cannot be selected if an appropriate memory card is not plugged into the card slot.

3. The 64 voices in each voice memory area are organized into 8 banks of 8 voices each ( $8 \times 8 = 64$ ). Any voice can be selected by specifying its bank using the top row of BANK/MULTI CHANNEL keys, and its number using the bottom row of BANK/MULTI CHANNEL keys.

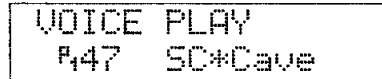
Voice numbers are displayed on the LCD in the same way. "P<sub>1</sub>25," for example, is not preset voice number 25, but rather preset voice bank 2, number 5. The 64th voice in PRESET 1, therefore, is displayed as "P<sub>1</sub>88" on the LCD.

To select voice bank 4 number 7, for example, press the top-row BANK/MULTI CHANNEL [4] key and the bottom-row BANK/MULTI CHANNEL [7] key — in any order.

BANK/MULTI CHANNEL



The display should look something like this:



To select a different number within the same bank it is only necessary to press the appropriate bottom-row key. In the same way, to select the same number in a different bank all you have to do is press the appropriate upper-row key.

The [-1/NO] and [+1/YES] keys can also be used to select a voice in the VOICE PLAY mode. Holding the [-1/NO] or [+1/YES] key causes continuous scrolling in the specified direction.

4. Play the master or other MIDI controller keyboard.

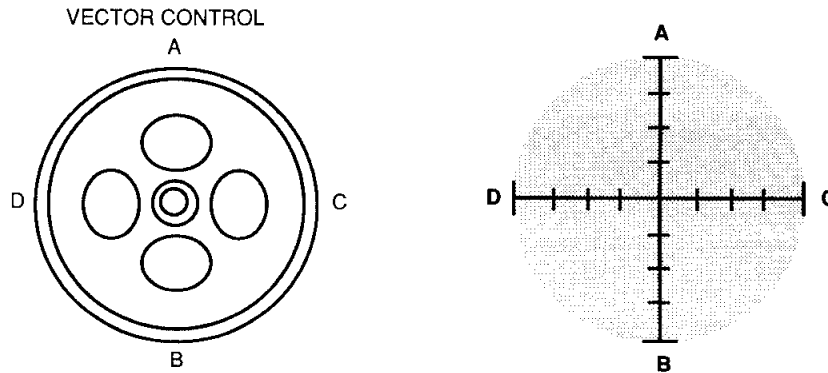
If you don't get any sound at this point:

- Make sure your sound system is turned ON and the volume is turned up to a reasonable level.
- Make sure that the TG33 VOLUME control is turned up to a reasonable level.
- Check all MIDI channel assignments.
- Check all connections carefully.

### 3. VECTORS

#### Voice Configurations

TG33 voices can have either a 2-element or 4-element configuration (REFERENCE SECTION, page 45). Each “element” is actually an independent sound or “waveform,” and vector control allows the 2 or 4 different waveforms in a voice to be blended and detuned in a variety of ways — manually or automatically.



For the sake of clarity, we'll represent the TG33 vector control by a simple graph like the one shown to the right for the rest of the tutorial.

The “A,” “B,” “C,” and “D” markings around the [VECTOR CONTROL] correspond to the voice elements. A 2-element voice uses only elements A and B, while a 4-element voice uses all four elements — A, B, C and D.

Elements A and C are *always* AWM elements, while B and D are *always* FM elements. When you start programming your own voices you can assign any of 128 preset AWM waveforms to elements A and C, and any of 256 preset FM waveforms to elements B and D (REFERENCE SECTION, page 60).

**AWM & FM:** AWM stands for “Advanced Wave Memory,” Yamaha’s sophisticated sampling technology that allows high-fidelity reproduction of digitally recorded “live” sound. FM is Yamaha’s proven Frequency Modulation synthesis technology which is capable of creating extraordinarily warm, vibrant simulations of actual instruments, as well as an infinite variety of original sounds.

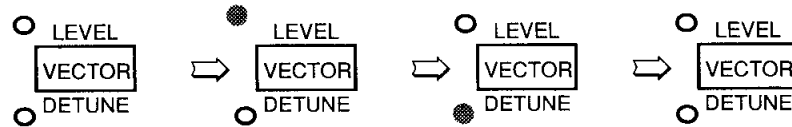
#### Two Types of Vectors: Manual & Dynamic

Vector control can be accomplished in two ways: manually by operating the [VECTOR CONTROL] while playing, or automatically. Automatic vectors are called “dynamic vectors” in the TG33, and these play automatically whenever you play a note on the keyboard. Dynamic vectors can be recorded in real time via the [VECTOR CONTROL] by using the procedure described in the “Recording an Original Dynamic Vector” section on page 27. Dynamic vectors function whenever the VECTOR PLAY mode is OFF — i.e. when both the VECTOR [LEVEL] and [DETUNE] indicators are out.

Manual vector control is possible whenever the VECTOR mode is ON — i.e. when either the VECTOR [LEVEL] or [DETUNE] indicator is lit.

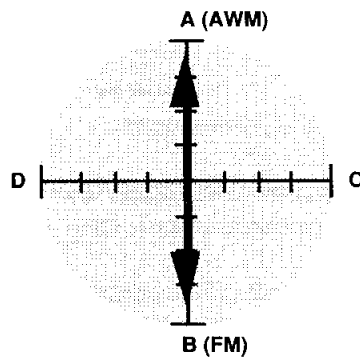
## Manual Vector Control

Manual vector control while playing can be accomplished by turning the vector play mode on — press the [VECTOR] key so that either the [LEVEL] or [DETUNE] indicator lights — the [LEVEL] and [DETUNE] indicators light and then go out in sequence each time the [VECTOR] key is pressed.

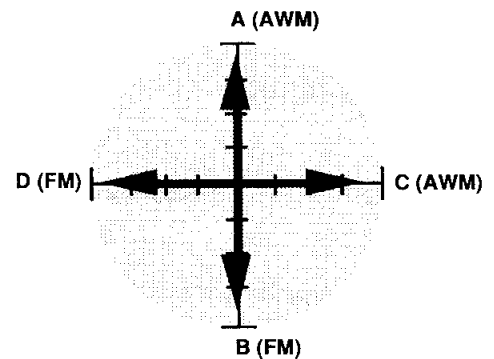


The [VECTOR CONTROL] can then be used to control the selected parameter — level or detune — along the vertical axis only if a 2-element voice is selected, or along both the vertical and horizontal axes if a 4-element voice is selected.

2-ELEMENT VOICE



4-ELEMENT VOICE



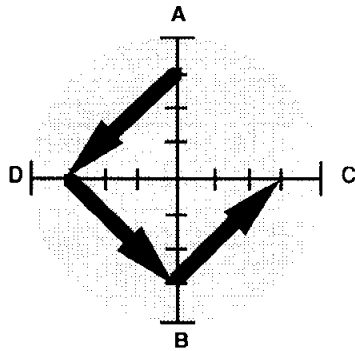
When level vector control is selected, moving the control towards one element (A, B, C or D) increases the level of that element while decreasing the level of the others proportionally. The [VECTOR CONTROL] works in a similar way when detune vector control is selected — moving the control towards one element increases the pitch of that element while decreasing the pitch of the others.

The following diagrams should give you a rough idea of how the level or pitch of each element in a 4-element voice is affected by [VECTOR CONTROL] motion.

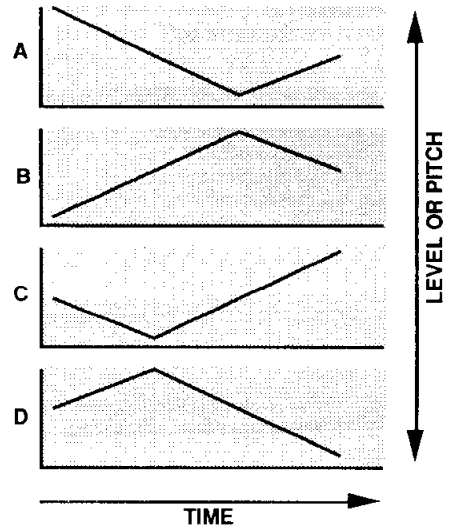
**NOTE:** Manual vector control is automatically turned OFF whenever a new voice is selected.



**VECTOR CONTROL MOTION**



**LEVEL OR PITCH CHANGE**



**An Exercise**

The best way to discover what vector control can do for you is to listen and experiment. Here's a list of the preset voices including the configuration of each (2 or 4-element) and the names of the waveforms assigned to each element.

**PRESET VOICE Performance Notes**

**PRESET 1**

No.	Voice Name	EL*	Vector**	Wave	Effect	Comments
1	1.1 SP*Pro33	4	Yes/Yes	083 HornBody 121 Move 4 096 Pad wv 121 Move 4	Rev Hall	Warm sweeping synth voice. Best with long chords
2	1.2 SP*Echo	4	Yes/Yes	021 Steel 073 Vibes 4 044 Itopia 054 Bass 1	Rev Metal	Steel guitar with vector synth harmonics. Play arpeggios with sustained notes — vectors will bring in harmonics for each note.
3	1.3 SP*BelSt	4	Yes/Yes	038 Strings 086 Metal 2 038 Strings 130 Decay 6	Rev Hall	Bells and strings.
4	1.4 SP*Full	4	Yes/Yes	112 Pulse 3 113 Attack 1 104 Saw 3 113 Attack 1	Pan Ref	Jump if you must.
5	1.5 SP*Ice	4	Yes/Yes	043 Choir 121 Move 4 043 Choir 122 Move 5	Rev Metal	Best with long chords.
6	1.6 SP*Dandy	4	No/No	096 Pad wv 156 Saw 2 013 Fr Horn 100 Sus. 3	Rev Room	This voice is simple but heavy with a crisp attack. Great for backing.
7	1.7 SP*Arkle	4	Yes/No	042 Syn Str 069 Str 7 043 Choir 100 Sus. 3	Rev Room	Synth strings with a fast attack. Hold notes to shift to a chorus sound.
8	1.8 SP*BrVec	4	Yes/Yes	056 Harmonic 021 Brass 8 038 Strings 123 Move 6	Pan Ref	Complex vector voices sweeping from brass to strings to bells. features panning, filtering, and more!

\*EL = No. of elements.

\*\* = Vector

Yes/Yes

↑

↑

LEVEL VECTOR      DETUNE VECTOR

	No.	Voice Name	EL*	Vector*2	Wave	Effect	Comments
9	2.1	SP*Matrx	4	Yes/Yes	039 Vn.Ens. 121 Move 4 038 Strings 12 Move 5	Rev Hall	Big orchestra with sweeping brass.
10	2.2	SP*Gut	4	Yes/Yes	020 Gut 052 Guitar 7 039 Vn.Ens. 068 Str 6	Delay 2	Classic guitar with string ensemble.
11	2.3	SP*Omni	4	No/Yes	085 Str.Body 091 Lead 1 085 Str.Body 091 Lead 1	Rev Room	A rich, moody string ensemble.
12	2.4	SP*Oiled	4	Yes/Yes	043 Choir 125 Decay 1 024 Mute Gtr 050 Guitar 5	Rev Hall	A "square wave" choir.
13	2.5	SP*Ace	4	Yes/Yes	056 Harmonic 073 Vibes 4 044 Itopia 068 Str 6	Rev Metal	A "space vector," just as the name implies.
14	2.6	SP*Quire	4	Yes/Yes	038 Strings 104 Sus. 7 044 Itopia 063 Str 1	Rev Hall	Very expressive pad sound responds well to different playing styles. "Ghosties" in background.
15	2.7	SP*Digit	4	No/Yes	023 E.Gtr 2 065 Str 3 023 E.Gtr 2 065 Str 3	Rev Room	A digital pad with a guitar-like envelope.
16	2.8	SP*Swell	4	Yes/Yes	083 HornBody 061 Bass 8 012 Flugel 121 Move 4	Delay 2	Analog synth pad with "vector filter."
17	3.1	SC:Groov	2	No/Yes	036 SynBass 1 062 Bass 9	Gate Rev	Funky synth pad.
18	3.2	SC*Airy	4	No/Yes	057 Mix 185 Wave5-2 044 Itopia 199 Wave10-1	Rev Hall	A breathy chorus-like voice with considerable "puff" on the attack.
19	3.3	SC*Solid	4	Yes/Yes	113 Pulse 4 014 Brass 1 102 Saw 1 196 Wave9-1	Rev Club	An excellent comping voice with a brassy feel.
20	3.4	SC*Sweep	4	Yes/Yes	112 Pulse 3 113 Attack 1 104 Saw 3 113 Attack 1	Pan Ref	A good example of vectors used to imitate a filter sweep.
21	3.5	SC*Drops	4	No/No	062 Noise 1 050 Guitar 5 090 Ep wv 073 Vibes 4	Rev Hall	Musical water droplets in a resonant cavern.
22	3.6	SC*Euro	4	Yes/Yes	036 SynBass 1 059 Bass 6 038 Strings 103 Sus. 6	Rev Hall	Percussive sound vectoring to string pad.
23	3.7	SC*Decay	4	No/No	042 Syn Str 238 Wave23-1 042 Syn Str 139 Decay 15	Rev Hall	Digital orchestra with a relatively quick decay. Mod wheel vibrato.
24	3.8	SC:Steel	2	No/Yes	021 Steel 001 E.Piano2	Rev Hall	An acoustic guitar type sound that is ideally suited to slow phrases and ballads.
25	4.1	SC*Rude	4	Yes/Yes	036 SynBass 1 094 Lead 4 111 Pulse 2 132 Decay 8	Rev Hall	A raspy digital sound, gradually fading to a harmonic-like tone.

\*EL = No. of elements.

\*2 = Vector

Yes/Yes  
 ↑ ↑  
 LEVEL VECTOR DETUNE VECTOR

	No.	Voice Name	EL*	Vector**	Wave	Effect	Comments
26	4.2	SC*Bellz	4	No/No	068 Coin 130 Decay 6 068 Coin 130 Decay 6	Rev Hall	"Rude" combination of percussive sounds. Good for metal lead. Mod wheel vibrato & major 2nd pitch bend.
27	4.3	SC*Pluck	4	No/Yes	086 AirBlown 098 Sus. 1 086 AirBlown 098 Sus. 1	Rev Room	Space-age harpsichord with a distinct pluck sound. Pluck is more audible in lower register.
28	4.4	SC*Glass	4	No/Yes	046 Vibes 188 Wave6-2 046 Vibes 188 Wave6-2	Rev Hall	Musical wine glasses.
29	4.5	SC*Wood	4	Yes/Yes	085 Str.Body 118 Move 1 042 Syn.Str 119 Move 2	Pan Ref	"Woody" string pad with percussive attack.
30	4.6	SC*Wire	4	Yes/Yes	015 SynBrass 049 Guitar 4 085 Str.Body 100 Sus. 3	Pan Ref	A percussive synth composite.
31	4.7	SC*Cave	4	No/No	044 Itopia 155 Saw 1 044 Itopia 151 Sin 8'	Rev Hall	Mysterious cave adventure. Mod wheel adds "warble."
32	4.8	SC*Wispa	4	Yes/Yes	059 Bell Mix 047 Guitar 2 070 Bottle 100 Sus. 3	Pan Ref	"Comp" bass parts with the left hand a pad with the right. The "wispa" will appear over right-hand notes.
33	5.1	SL*Sync	4	Yes/Yes	036 SynBass 1 058 Bass 5 106 Square 1 093 Lend 3	Pan Ref	Fat analog synth lead voice with aftertouch vibrato.
34	5.2	SL*VCO	4	Yes/Yes	042 Syn Str 092 Lead 2 100 Digital 4 097 Lead 7	Delay 2	Powerful synth lead voice with aftertouch vibrato.
35	5.3	SL*Chic	4	Yes/Yes	042 Syn Str 017 Brass 4 102 Saw 1 017 Brass 4	Delay 2	Brass with lots of ambience. Good lead voice. Mod wheel vibrato.
36	5.4	SL:Mini	2	Yes/Yes	108 Square 3 157 Square	Rev Club	Analog square-wave lead voice with aftertouch vibrato.
37	5.5	SL*Wisul	4	No/Yes	116 Tri 144 SFX 2 116 Tri 144 SFX 2	Rev Hall	Bright whistling simulation. Mod wheel vibrato.
38	5.6	SL*Blues	4	No/No	097 Digital 171 Digi 11 097 Digital 171 Digi 11	Rev Hall	Blues harp (harmonica).
39	5.7	SL:Cosmo	2	No/No	068 Coin 093 Lead 3	Dly&Rev 1	A relatively thick, versatile voice with aftertouch vibrato.
40	5.8	SL*Super	4	Yes/Yes	102 Saw 1 061 Bass 8 015 SynBrass 061 Bass 8	Pan Ref	Powerful fat synth pad. Use the VECTOR CONTROL for a wide range of timbres.
41	6.1	ME*Vecta	4	Yes/Yes	056 Harmonic 121 Move 4 058 Sync 123 Move 6	Rev Hall	A rich mix of four quite different waveforms. Best with long notes. Try vector control for more variety.
42	6.2	ME*NuAge	4	Yes/Yes	070 Bottle 068 Str 6 043 Choir 088 Metal 4	Rev Metal	Spacey "blown bottle" effect. Good new-age flute/lead voice.

\*EL = No. of elements.

\*\* = Vector

Yes/Yes

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LEVEL VECTOR DETUNE VECTOR

	No.	Voice Name	EL*	Vector*2	Wave	Effect	Comments
43	6.3	PC*Hit+	4	Yes/No	064 Oh Hit 145 SFX 3 049 Timpani 158 LFOnoise	Pan Ref	Play short orchestra type hits in double octaves — hold for the "+".
44	6.4	ME*Glance	4	Yes/Yes	005 P.Organ 071 Vibes 2 029 Wood B 2 211 Wave14-1	Rev Metal	Here's how vectors can create multiple effects — echo on quarter notes, pan and resolve on longer notes.
45	6.5	ME*Astro	4	Yes/Yes	044 Itopia 147 SFX 5 056 Harmonic 075 Marimba2	Delay 3	Play sustained notes in double octaves. A new-age pad/movie score type effect.
46	6.6	ME*Vger	4	No/No	044 Itopia 106 Sus. 9 059 Bell Mix 056 Bass 3	Rev Plate	Choir with "sizzle." Play long notes.
47	6.7	ME*Hitch	4	No/Yes	055 Hit 141 Decay 17 055 Hit 132 Decay 8	Delay 3	Play staccato for nice bell EP — hold notes for horror-style entry.
48	6.8	ME*Indus	4	Yes/Yes	125 SEQ 7 104 Sus. 7 038 Strings 122 Move 5	Rev Hall	Strings with sequence wave. Best with long chords.
49	7.1	SE*Mount	4	Yes/Yes	067 Stream 143 SFX 1 067 Stream 154 Sin 2'	Rev Metal	This one brings up the image of cool grassy fields in the mountains.
50	7.2	SE*5.PM	4	Yes/No	063 Noise 2 014 Brass 1 053 Whistle 014 Brass 1	Rev Plate	Rush hour in the city.
51	7.3	SE*FlyBy	4	Yes/Yes	000 Piano 211 Wave14-1 039 Vn.Ens 220 Wave17-1	Rev Hall	Hold down C4 and use volume control to bring in "fly in" effect. May take some practice, but can be very effective.
52	7.4	SE*Fear	4	Yes/Yes	062 Noise 1 249 Wave26-3 057 Mix 079 Bells 3	Delay 3	Good Sci-fi type effect. Play slow arpeggio, holding each note.
53	7.5	SE:Wolvs	2	No/No	052 Cuica 193 Wave8-1	Rev Hall	Here come the Baskerville hounds! Play individual notes between C3 and C4.
54	7.6	SE*Hades	4	Yes/Yes	062 Noise 1 144 SFX 2 074 Metal 077 Bells 1	Pan Ref	Hear what it sounds like to fall into a bottomless pit. Play C4 hard for maximum effect.
55	7.7	SE*Neuro	4	No/No	067 Stream 148 SFX 6 055 Hit 160 Noise 2	Rev Metal	Play long notes ... if you dare.
56	7.8	SE*Angel	4	No/Yes	044 Itopia 122 Move 5 044 Itopia 122 Move 5	Pan Ref	Best with long notes. Features LFO pitch bend.
57	8.1	SQ:MrSeq	2	No/No	072 Cracker 064 Str 2	Rev Room	A snappy short-decay voice that lends itself well to sequenced phrases.
58	8.2	SQ:It	2	No/No	109 Square 4 155 Saw 1	Rev Hall	A percussive plucked effect.
59	8.3	SQ*Id	4	No/No	031 E.Bass 2 167 Digi 7 047 Marimba 235 Wave22-1	Gate Rev	An interesting vector blend of percussive waveforms. Mod wheel vibrato.

\*EL = No. of elements.

\*2 = Vector

Yes/Yes

↑ ↑

LEVEL VECTOR    DETUNE VECTOR

No.	Voice Name	EL*	Vector* <sup>2</sup>	Wave	Effect	Comments
60	SQ*Wrapa	4	No/No	087 Reverse 1 143 SFX 1 088 Reverse 2 143 SFX 1	Early Ref	Rap percussion.
61	SQ*TG809	4	No/No	054 Claps 144 SFX 2 063 Noise 2 144 SFX 2	Gate Rev	Analog drum machine. Lower octaves for kicks and toms. Upper octaves for snares and hand claps.
62	SQ*Devol	4	Yes/No	127 Drum set 160 Noise 2 124 SEQ 6 160 Noise 2	Rev Hall	Rap drums.
63	DR:Kit	2	No/No	127 Drum set 000 E.Piano1	Rev Plate	A fairly orthodox drum and percussion kit.
64	DR*EFX	4	Yes/Yes	127 Drum set 255 Wave30 127 Drum set 160 Noise 2	Dly&Rev 2	90's phased drums. Play hard for full phase effect.

\*EL = No. of elements.

\*<sup>2</sup> = Vector

Yes/Yes

↑ ↑

LEVEL VECTOR DETUNE VECTOR

### PRESET 2

No.	Voice Name	EL*	Vector* <sup>2</sup>	Wave	Effect	Comments
1	EP*Ariad	4	Yes/Yes	000 Piano 079 Bells 3 001 E.Piano 070 Vives 1	Rev Hall	An interesting blend of acoustic and electric piano.
2	AP:Piano	2	Yes/No	000 Piano 002 E.Piano3	Rev Room	Acoustic piano.
3	EP*Malet	4	No/No	001 E.Piano 071 Vibes 2 001 E.Piano 071 Vibes 2	Rev Hall	Electric piano with a sharp attack.
4	AP*ApStr	4	Yes/Yes	000 Piano 002 E.Piano3 039 Vn.Ens. 068 Str 6	Rev Hall	Acoustic piano plus violin section.
5	EP:DX6op	2	No/Yes	004 Celesta 001 E.Piano2	Rev Room	This is a TG33 version of the classic DX7 electric piano.
6	EP*Pin	4	No/Yes	090 Ep wv 188 Wave6-2 000 Piano 005 E.Piano6	Rev Hall	Electric piano with a brilliant attack — similar to "prepared piano."
7	EP*NewDX	4	No/Yes	001 E.Piano 001 E.Piano2 046 Vibes 072 Vibes 3	Rev Hall	A new-age electric piano with a vibes-like feel.
8	EP*Fosta	4	No/Yes	075 Metal 2 001 E.Piano2 000 Piano 005 E.Piano6	Rev Hall	A brilliant combination of acoustic and electric piano.
9	OR*Gospl	4	Yes/Yes	006 E.Organ1 007 E.Organ2 005 P.Organ 013 E.Organ8	Pan Ref	Classic rock/church organ with aftertouch rotary speaker effect.
10	OR*Rock	4	No/Yes	006 E.Organ1 006 E.Organ1 006 E.Organ1 007 E.Organ2	Rev Hall	Rock organ. Mod wheel adds rotary speaker effect.

\*EL = No. of elements.

\*<sup>2</sup> = Vector

Yes/Yes

↑ ↑

LEVEL VECTOR DETUNE VECTOR

	No.	Voice Name	EL*	Vector* <sup>2</sup>	Wave	Effect	Comments
11	2.3	OR*Pipe	4	No/No	005 P.Organ 011 E.Organ6 005 P.Organ 250 Wave27-1	Rev Hall	Big church organ.
12	2.4	OR*Perc	4	Yes/Yes	007 E.Organ2 006 E.Organ1 007 E.Organ2 007 E.Organ2	Rev Hall	Percussive organ. Mod wheel vibrato.
13	2.5	KY*Squeez	4	No/No	008 Reed 166 Digi 6 008 Reed 166 Digi 6	Pan Ref	"Squeeze box" type accordion.
14	2.6	KY:Hrpsi	2	No/Yes	003 Cembalo 048 Guitar 3	Rev Room	Harpsichord.
15	2.7	KY*Celst	4	No/No	004 Celesta 072 Vibes 3 004 Celesta 072 Vibes 3	Rev Plate	The light, sparkling timbre of celeste. Mod wheel vibrato.
16	2.8	KY:Clavi	2	Yes/Yes	002 Clavi 045 Clavi 4	Rev Hall	Two different waveforms vector-combined to create a fast-attack clavi.
17	3.1	BA*Slap	4	No/No	030 E.Bass 1 055 Bass 2 031 E.Bass 2 055 Bass 2	Delay 1	A dynamic fusion-style electric bass.
18	3.2	BA*Atack	4	No/No	001 E.Piano 059 Bass 6 031 E.Bass 2 059 Bass 6	Rev Hall	Somewhere between acoustic and electric bass — with a crisp attack.
19	3.3	BA*Seq	4	Yes/Yes	036 SynBass 1 059 Bass 6 036 SynBass 1 059 Bass 6	Rev Hall	Percussive synth bass.
20	3.4	BA*Trad	4	No/Yes	080 Slam 055 Bass 2 032 E.Bass 3 062 Bass 9	Gate Rev	A super bass sound with mod wheel vibrato and major 2nd pitch bend.
21	3.5	BA:Pick	2	No/No	032 E.Bass 3 055 Bass 2	Early Ref	Mod wheel vibrato.
22	3.6	BA*Syn	4	Yes/Yes	000 Piano 151 Sin 8' 039 Vn.Ens. 152 Sin 4'	Rev Hall	Rich pulse-wave type synthesizer bass.
23	3.7	BA:Rezz	2	No/No	037 SynBass 2 138 Decay 14	Delay 1	Resonant synth bass with pitch modulation on mod wheel.
24	3.8	BA*Unisn	4	No/No	036 SynBass 1 059 Bass 6 036 SynBass 1 058 Bass 6	Early Ref	Unison analog synth bass.
25	4.1	BA:Fingr	2	No/No	030 E.Bass 1 055 Bass 2	Rev Plate	Fingered electric bass with mod wheel vibrato and major 2nd pitch bend.
26	4.2	BA*Frtls	4	Yes/Yes	013 Fr Horn 103 Sus. 6 035 Fretles 055 Bass 2	Rev Hall	Fretless bass with aftertouch vibrato.
27	4.3	BA:Wood	2	No/No	028 Wood B 1 055 Bass 2	Rev Room	Wood bass with aftertouch vibrato.
28	4.4	PL*Foksy	4	No/No	021 Steel 206 Wave12-2 021 Steel 206 Wave12-2	Rev Hall	Steel-string folk guitar.
29	4.5	PL*12Str	4	Yes/Yes	021 Steel 044 Clavi 3 021 Steel 196 Wave9-1	Pan Ref	Full 12-string guitar.

\*EL = No. of elements.

\*<sup>2</sup> = Vector

Yes/Yes

↑ ↑

LEVEL VECTOR DETUNE VECTOR

	No.	Voice Name	EL*	Vector*2	Wave	Effect	Comments
30	4.6	PL*Mute	4	No/No	021 Steel 049 Guitar 4 024 Mute Gtr 050 Guitar 5	Rev Hall	Light touch for muted, heavy for normal electric guitar. Aftertouch vibrato.
31	4.7	PL*Nylon	4	No/No	020 Gut 049 Guitar 4 023 E.Gtr 2 045 Clavi 4	Delay 3	Classic nylon folk guitar sound with aftertouch vibrato.
32	4.8	PL*Dist	4	Yes/No	022 E.Gtr 1 157 Square 098 Digital 2 193 Wave8-1	Dist&Rev	Heavy guitar with slow fade to feedback. Vector level control can be used for manual feedback.
33	5.1	BR*Power	4	No/Yes	102 Saw 1 091 Lead 1 102 Saw 1 091 Lead 1	Rev Hall	Powerful synth brass. Mod wheel vibrato-detune.
34	5.2	BR*Fanfr	4	No/Yes	082 Tb.Body 016 Brass 3 011 Trombone 017 Brass 4	Rev Hall	Classical brass section with aftertouch vibrato.
35	5.3	BR*Class	4	Yes/Yes	019 Sax 217 Wave16-1 009 Trumpet 217 Wave16-1	Rev Hall	Classical brass section.
36	5.4	BR*Reeds	4	Yes/Yes	086 AirBlown 041 Reed 6 019 Sax 037 Reed 2	Rev Room	Big band sax section. Play octaves or chords for best effect.
37	5.5	BR*Chill	4	Yes/Yes	019 Sax 038 Reed 3 014 BrasAtak 016 Brass 3	Early Ref	Big band brass section with mod wheel vibrato.
38	5.6	BR*Zeus	4	No/Yes	104 Saw 3 091 Lead 1 104 Saw 3 091 Lead 1	Rev Hall	Fanfare-like brass in the high register, rumbling power brass in the low range. Mod wheel vibrato.
39	5.7	BR*Moot	4	No/No	010 Mute Trp 206 Wave12-2 081 Tp.Body 242 Wave24-2	Rev Hall	Muted jazz trumpet with aftertouch and mod wheel vibrato.
40	5.8	BR*Anlog	4	No/Yes	015 SynBrass 019 Brass 6 015 SynBrass 027 Brass 14	Pan Ref	Classic analog brass sound. Also useful for lead.
41	6.1	BR:FrHrn	2	No/No	013 Fr Horn 236 Wave22-2	Rev Hall	French horn ensemble with aftertouch vibrato.
42	6.2	BR:Trmpt	2	No/No	009 Trumpet 017 Brass 4	Rev Hall	Solo trumpet with aftertouch vibrato.
43	6.3	BR*Tromb	4	Yes/Yes	011 Trombone 017 Brass 4 011 Trombone 024 Brass 11	Rev Room	Solo trombone with aftertouch vibrato.
44	6.4	WN*Sax	4	Yes/No	019 Sax 040 Reed 5 018 Oboe 196 Wave9-1	Rev Hall	Hard sax with aftertouch vibrato.
45	6.5	WN:Pan	2	No/Yes	070 Bottle 034 Wood 7	Delay 2	Pan flute.
46	6.6	WN:Oboe	2	No/Yes	018 Oboe 036 Reed 1	Rev Hall	Solo oboe with aftertouch vibrato.
47	6.7	WN:Clart	2	No/Yes	017 Clarinet 157 Square	Rev Hall	Clarinet
48	6.8	WN:Flute	2	Yes/No	016 Flute 039 Reed 4	Rev Hall	Solo flute.

\*EL = No. of elements.

\*2 = Vector

Yes/Yes

↑ ↑

LEVEL VECTOR DETUNE VECTOR

	No.	Voice Name	EL*	Vector*2	Wave	Effect	Comments
49	7.1	ST*Arco	4	No/Yes	039 Vn.Ens. 068 Str 6 038 Strings 064 Str 2	Pan Ref	Arco strings with a realistic "edge."
50	7.2	ST:Chmbr	2	Yes/Yes	039 Vn.Ens. 063 Str 1	Rev Room	"Arco" type string sound. Best played with quick attack.
51	7.3	ST*Full	4	No/Yes	038 Strings 155 Saw 1 038 Strings 155 Saw 1	Rev Hall	Very useful full string sound can be used as pad or moving strings.
52	7.4	ST:Pizza	2	No/Yes	041 Pizz. 052 Guitar 7	Rev Hall	Pizzicato strings. Best played around C2 or higher with <i>very</i> short notes.
53	7.5	ST*CelSt	4	No/No	040 Cello 067 Str 5 085 Str.Body 091 Lead 1	Pan Ref	Cello section or solo cello.
54	7.6	ST*Exel	4	Yes/Yes	038 Strings 155 Saw 1 039 Vn.Ens. 156 Saw 2	Rev Hall	"Sophisticated" classical strings.
55	7.7	ST*Synth	4	No/Yes	042 SynStr 063 Str 1 042 SynStr 063 Str 1	Rev Hall	Classic synth strings.
56	7.8	ST*Eroid	4	Yes/Yes	038 Strings 104 Sus. 7 044 Itopia 104 Sus. 7	Rev Hall	Airy chorus plus strings. A great mood-setter.
57	8.1	CH*Modrn	4	Yes/Yes	043 Choir 122 Move 5 044 Itopia 247 Wave26-1	Rev Plate	'90s pop/synth choir sound.
58	8.2	CH*Duwop	4	No/Yes	043 Choir 036 Reed 1 043 Choir 036 Reed 1	Rev Club	"doo-wop" chorus.
59	8.3	CH*Itopy	4	Yes/Yes	044 Itopia 103 Sus. 6 044 Itopia 233 Wave21-2	Rev Hall	Breathy choir with aftertouch volume control.
60	8.4	CH*Astiz	4	No/Yes	044 Itopia 132 Decay 8 044 Itopia 132 Decay 8	Pan Ref	Clock chime choir.
61	8.5	PC:Marim	2	No/No	079 Bamboo 150 Sin 16'	Rev Hall	A fairly orthodox marimba sound.
62	8.6	PC:Vibes	2	Yes/Yes	046 Vibes 082 Bells 6	Rev Plate	Classic vibes.
63	8.7	PC*Bells	4	No/No	118 Sin 8'+4' 077 Bells 1 118 Sin 8'+4' 077 Bells 1	Rev Hall	Tubular bells in the lower range, almost celeste-like on the high-notes.
64	8.8	PC*Clang	4	No/No	048 Bells 078 Bells 2 068 Coin 071 Vibes 2	Pan Ref	Quickly hit notes for bell → echoes sound. Hold notes for clock tower strikes.

\*EL = No. of elements.

\*2 = Vector

Yes/Yes  
 ↑    ↑  
 LEVEL VECTOR    DETUNE VECTOR



Voice number P<sub>187</sub> provides a complete drum kit plus a range of valuable percussion sounds. The voice is set up so that each note produces a different drum sound, as shown in the list below. The DR:Kit voice can be used on its own, or as a source of drums and percussion in a multi-play setup (TUTORIALS section, page 33; REFERENCE section, page 77).

Voice Number P<sub>187</sub> DR:Kit: Drum-set Voice

Key	Wave Name
C1	BD 1
C#1	Triangle closed
D1	SD 1
D#1	Triangle open
E1	E.Tom 1
F1	E.Tom 2
F#1	E.Tom 3
G1	E.Tom 4
G#1	BD 2
A1	BD 3
A#1	Cross Sticks
B1	Tom 1
C2	Tom 2
C#2	SD 2
D2	Tom 3
D#2	Rim
E2	SD 3
F2	Tom 4
F#2	Claps
G2	Cowbell 1
G#2	Shaker
A2	HH closed
A#2	Crash 1
B2	HH open

Key	Wave Name
C3	Crash 2
C#3	Splash
D3	Cup
D#3	Ride
E3	Low Conga
F3	High Conga
F#3	Mute Conga
G3	DigiAttack
G#3	Ooo!
A3	Low Timbales
A#3	High Timbales
B3	Tambourine
C4	Finger snaps
C#4	Claves
D4	Low Agogo
D#4	High Agogo
E4	Low Cuica
F4	High Cuica
F#4	Low Whistle
G4	High Whistle
G#4	Bamboo
A4	Bottle
A#4	Cowbell 2
B4	Crash

Key	Wave Name
C5	SD 4
C#5	Low Scratch
D5	SD 5
D#5	High Scratch
E5	Reverse Cymbal
F5	Slam 1
F#5	Coin
G5	Slam 2
G#5	Water Drop
A5	Low Timpani
A#5	Cracker
B5	High Timpani
C6	Metal Hit

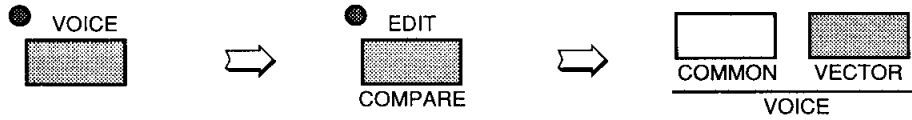
Select the ME\*Vecta voice, turn the VECTOR mode ON, select level control, and use the [VECTOR CONTROL] to listen carefully to the sound of the various elements and how they interact when the [VECTOR CONTROL] is moved. Repeat this process with a number of different voices and you'll quickly begin to hear how powerful and versatile vector synthesis can be.

### Recording an Original Dynamic Vector

Before you begin recording your own dynamic vector, select the "ME\*Vecta" voice (P<sub>161</sub>), make sure the manual VECTOR mode is turned OFF (neither the [LEVEL] or [DETUNE] indicators should be lit), and play a nice long note or chord. Notice how the various elements are gradually brought in and blended automatically — this is the result of a dynamic vector. Now press the [VECTOR] key to select LEVEL control. Now set the [VECTOR CONTROL] to center position and play another note or chord. You should hear all 4 elements at the same time, in approximately equal proportions. Play with the [VECTOR CONTROL] a bit to get a feel for this particular combination of elements.

Now we'll go ahead and record an original dynamic level vector for the "ME\*Vecta" voice ...

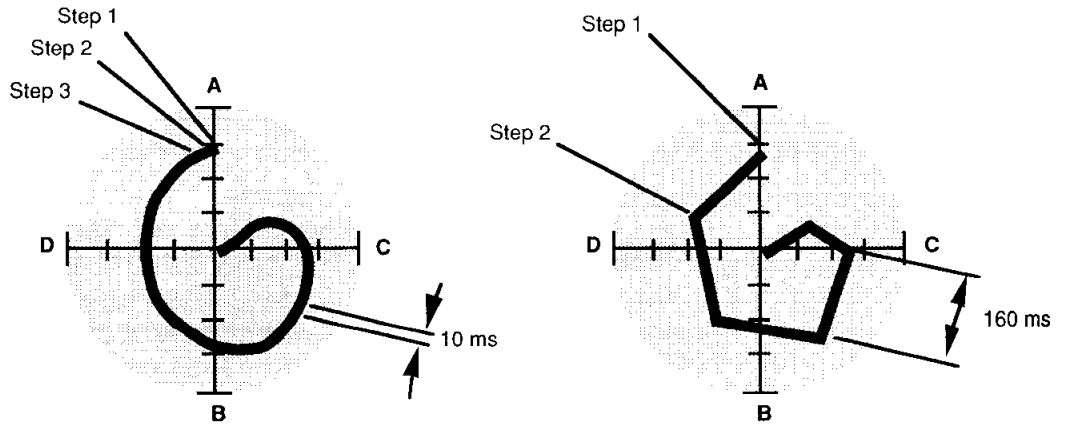
1. The first step is to enter the VOICE VECTOR edit mode, which we do by pressing the [EDIT] key and then the [VOICE VECTOR] key while in the VOICE PLAY mode (REFERENCE SECTION, page 52).



2. If the LEVEL SPEED function does not appear immediately when you enter the VOICE VECTOR edit mode, press the [VOICE VECTOR] key a few times until it does appear, or use the PAGE [◀] and [▶] keys to locate it (REFERENCE SECTION, page 53).

```
UV LEVEL SPEED
Vector Rate 10ms
```

Vectors are recorded by “sampling” the position of the [VECTOR CONTROL] at evenly-spaced steps. This function allows you to set the time between each sample step — i.e. the “Vector rate”. Quite logically, short vector rates are best for quick control movements while longer vector rates are better for slow control movements. If you set the vector rate to too long a value for a rapid control movement, you may end up with a “jerky” sounding vector. The diagrams below show the same control movement recorded at 10-millisecond and 160-millisecond vector rates.



Use the [DATA ENTRY] control or [-1/NO] and [+1/YES] keys to set the vector rate parameter to “30ms.” This is a fairly “average” vector rate, and is a good place to start experimenting with dynamic vectors.

```
UV LEVEL SPEED
Vector Rate 30ms
```

3. Press the [VOICE VECTOR] key or PAGE [▶] key once to move ahead to the LEVEL REC display (REFERENCE SECTION, page 53).

```
UV LEVEL REC
▶STBY REC PLAY
```

Use the CURSOR [◀] and [▶] keys to move the cursor to the STBY (standby) parameter. At this point the [VECTOR CONTROL] will be active in the level control mode, and you can rehearse the level vector you are about to record.

4. Move the cursor to the REC parameter. Vector recording will begin the instant you play a note. A rectangular block will flash at the cursor position while recording. Recording will end automatically when the maximum of 50 sampling steps has been reached — how long this takes depends both on the vector rate setting and how fast you move the [VECTOR CONTROL]. When recording finishes, the cursor will move automatically to the PLAY parameter position. At the same time the VECTOR mode will automatically be turned OFF so that the dynamic vector just recorded is active. Now you can play on the master keyboard to hear how your dynamic level vector turned out. If you don't like the results, simply move the cursor back to REC and record again.

**Detune Vectors:** Although you've just recorded a dynamic level vector, dynamic detune vectors can be recorded in exactly the same way using the DETUNE SPEED and DETUNE REC functions which are also accessible in the VOICE VECTOR edit mode (REFERENCE SECTION, page 55).

5. When you're satisfied with your first vector masterpiece, you can return to the VOICE PLAY mode by pressing the [VOICE] key and then store the voice you have just edited into one of the TG33's INTERNAL memory locations.

### Storing Edited Voice Data to the INTERNAL Memory

When you return to the VOICE PLAY mode after editing a voice in the VOICE EDIT mode, you'll see a reverse letter "E" (white on a black background) following the voice number on the display.

```
VOICE PLAY
424E 50*Urafa
```

This indicates that the voice has been edited. If you want to keep the edited voice, it must be stored either to an internal or card memory location *before* you select another voice, or all your editing work will be lost.

To store your creation to an internal memory location:

1. Press the [STORE/COPY] key from the VOICE PLAY mode.

```
STORE VOICE
424 → 184 →
```

The number of the voice you edited will be shown to the left of the lower display line, and the cursor will be placed under the equivalent INTERNAL voice number to the right of the arrow. The arrow to the far right of the screen indicates that other parameters can be accessed by pressing the CURSOR [▶] key.

2. Select the memory location to which you want to store the new voice using the standard voice selection procedure, the [DATA ENTRY] control, or the [-1/NO] and [+1/YES] keys. For the sake of example, if you choose to store your voice in INTERNAL memory bank 1 number 1, then the display will look something like this:

```
STORE VOICE
P:84 + I11 +
```

**NOTE:** It is also possible select CARD bank 1 or 2 for voice storage by pressing the [CARD] key, if a properly formatted memory card has been inserted into the TG33 card slot (REFERENCE section, page 96).

3. When the target memory location has been selected, press the CURSOR [>] key. "Are you sure?" will appear on the display.

```
STORE VOICE
+ Are you sure?
```

4. Confirm your intention to store the new voice by pressing the [+1/YES] key, and the store operation will begin. ">>Completed!!<<" will appear on the display briefly when the store operation is finished, and the TG33 will return to the VOICE PLAY mode.

```
STORE VOICE
>>Completed!!<<
```

**NOTE:** You can exit the STORE mode and return to the VOICE PLAY mode at any time simply by pressing the [VOICE] key.

## Conclusion

You now have an edited version of "ME\*Vecta" featuring your own original dynamic level vector. You could use the VOICE COMMON edit mode NAME function (REFERENCE SECTION, page 48) to give the voice a new name — "Vecta2" for example. Using the same procedure you could create an infinite range of variations on the preset voices.

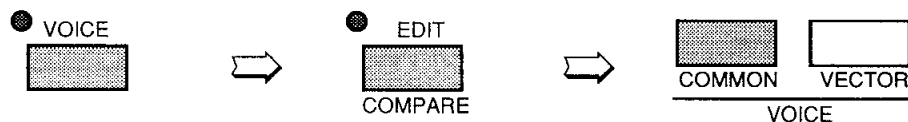
The method of dynamic vector recording just described is quick and easy — all you have to do is operate the [VECTOR CONTROL] and use your ears. This quick-and-easy method is recommended for most applications. If you want really fine control, however, the TG33 offers a number of level and detune vector editing functions that allow the position and length of each vector step to be precisely programmed as required. See pages 51 through 56 of the REFERENCE SECTION for details.

## 4. INSTANT VOICE PROGRAMMING

Although the TG33 allows you to program voices in considerable detail, in this section we'll present a simple way to create an unlimited range of new and useful voices.

Detailed parameters for programming individual elements are available in the ELEMENT TONE and ELEMENT ENVELOPE edit modes described in the REFERENCE SECTION, beginning on pages 57 and 67, respectively. Everything we need to have loads of fun — and to create some very serious voices — is available in the VOICE COMMON edit mode.

1. Select any preset voice while in the VOICE PLAY mode to serve as a “platform” for your new voice. “ME\*Vecta” (P161) is a good choice to start with.
2. Enter the VOICE COMMON edit mode by pressing the [EDIT] key and then the [VOICE COMMON] key while in the VOICE PLAY mode (REFERENCE SECTION, page 44).



The [VOICE] and [EDIT] keys do not need to be pressed if both their LEDs are ON.

The VOICE COMMON edit mode provides access to the following functions, of which we're going to use just one!

### CONFIGURATION

EFFECT (Type, Balance & Send Level)

PITCH BEND

WHEEL (Amplitude & Pitch Modulation)

AFTER TOUCH (Amplitude & Pitch Modulation, Pitch & Level Control)

ENVELOPE (Attack & Release Rates)

RANDOM (Element, Level Vectors & Detune Vectors)

NAME

VOICE INITIALIZE

VOICE RECALL

3. Press the [VOICE COMMON] key a few times or use the PAGE [◀] and [▶] keys to locate the “VC RANDOM” function (REFERENCE SECTION, page 48).

```
VC RANDOM
#ELEMENT  Y/N?
```

4. If it is not already selected, select “ELEMENT” using the [-1/NO] and/or [+1/YES] keys (the other RANDOM options are LEVEL VEC and DETUNE VEC).

5. Press the CURSOR [▷] key once so that the cursor appears as a flashing block to the right of the “Y/N?” parameter.

```
UC RANDOM
ELEMENT Y/N■
```

6. Now, each time you press the [+1/YES] key the TG33 will randomly assign different waveforms to the four elements in what used to be the ME\*Vecta voice. An asterisk (\*) will appear in place of the flashing block cursor briefly while the waveforms are being assigned.

Try it a few times: press [+1/YES] then play a few notes via your master keyboard to hear a totally new voice. Since the element combinations are generated randomly, some are not particularly useful ... but others will surprise you. Every few tries you'll probably come up with a combination which, if not ready to use without further modification, can be turned into a very fine voice with a little “brushing up” in the various TG33 editing modes.

Please note that the RANDOM ELEMENT function *only* replaces the element waveforms in the voice you started with, so, unless you go into further programming, the voice you choose as your platform will determine how controllers like the pitch and modulation wheels function (REFERENCE SECTION, page 46), the shape of the amplitude envelopes used for each element (REFERENCE SECTION, page 69), the type of effect (reverb, delay, etc.) applied to the voice (REFERENCE SECTION, page 45), and more.

7. While trying out the new voices you create, you can turn the VECTOR PLAY mode ON and experiment manually with different vectors. You can also enter the VOICE VECTOR mode by pressing the [VOICE VECTOR] key and record a dynamic vector as described in the previous section.
8. If you come up with something you want to keep, use the same voice store procedure as described on page 29 after returning to the the VOICE PLAY mode.

## Conclusion

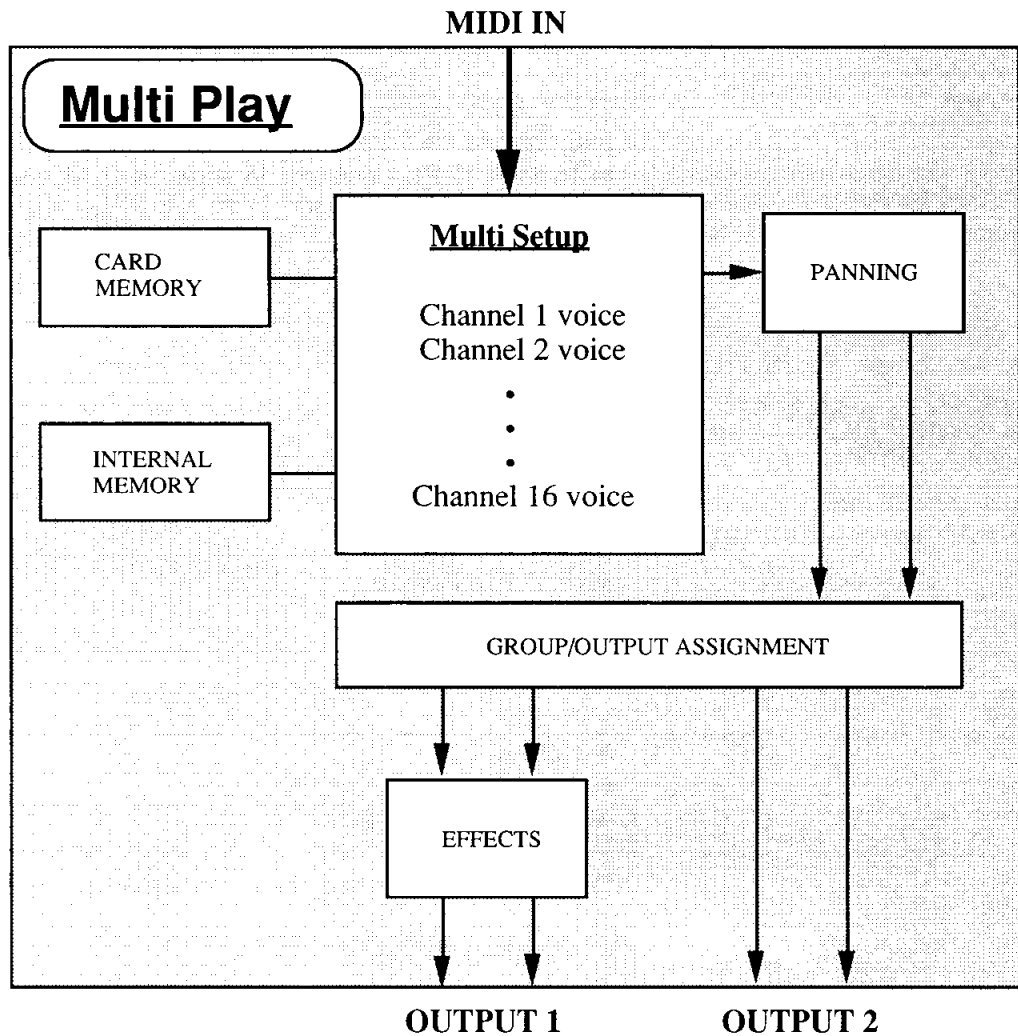
You're now equipped to create a world of vibrant and very useful new voices with very little actual programming indeed. If you do want to get deep into the details and fine tune your voices until they are perfect, please take the time to read through the REFERENCE SECTION of this manual. In it, each editing function is described individually, often with a few helpful hints that will help you use it most effectively.

## 5. THE MULTI PLAY & EDIT MODES

If you've been going through the tutorials section in sequence as we recommended, you've only used the VOICE PLAY and VOICE EDIT modes thus far. If, however, your intention is to use the TG33 with a sequencer to play a number of different voices simultaneously, the modes you'll use most frequently are the MULTI PLAY and MULTI EDIT modes.

The TG33 provides 16 INTERNAL memory locations for complete "MULTI PLAY" setups. This allows you to create up to 16 original "orchestras" with different combinations of voices that can be recalled whenever needed. MULTI PLAY setups can also be stored on external memory cards in the same way as ordinary voices.

Here's an overview of the TG33 MULTI PLAY mode:



Note that TG33 MULTI PLAY setups can come from two different sources: the INTERNAL memory, or CARD memory (CARD bank 1 or 2):

## INTERNAL

The INTERNAL MULTI memory is a RAM (Random Access Memory) area into which you can store up to 16 MULTI PLAY setups that you create or load from an external memory card. The INTERNAL MULTI memory is represented on the display by the letter "I".

INTERNAL memory locations I11 through I18 are initially programmed with a range of multi-play setups designed for different types of music. Locations I21 through I28 contain "initial" data.

I11	Popular
I12	Modern
I13	Funky
I14	Ballad
I15	Jazz
I16	Big Band
I17	Symphony
I18	WindEns.
I21 ... I28	Initial

## CARD

The CARD memory bank is a Yamaha MCD64 or MCD32 Memory Card plugged into the TG33 card slot. An MCD32 Memory Card allows storage of up to 16 MULTI PLAY setups in addition to 64 voices. An MCD64 Memory Card holds two banks of 16 MULTI PLAY setups each — in addition to 64 voices in each bank (REFERENCE SECTION, page 96). The CARD voice banks are represented on the display by "C1" and "C2". For easier identification the indicator *above* the [CARD] key lights when CARD bank 1 is selected, and the indicator *below* the [CARD] key lights when CARD bank 2 is selected.

## What's In a MULTI PLAY Setup?

A single MULTI PLAY setup can consist of up to 16 different voices assigned to different MIDI channels. These voices can then be controlled independently from a sequencer, music computer, or other controller transmitting on the appropriate channels.

Each voice also has several settings that can be individually adjusted in the MULTI EDIT mode:

- Voice number
- Volume
- Detune
- Note shift
- Pan
- Send group select

There are also several settings that affect the entire setup:

- Assign mode select
- Output select
- Effect type, balance, and send level for each group
- Name



## MULTI PLAY Polyphony & Dynamic Voice Allocation

Since the TG33 can produce a maximum of 32 notes at the same time (32-note polyphony), the number of simultaneous notes that each voice in a MULTI PLAY setup can produce depends on the number of voices being played at the time. If all 16 voices are played at once, each can produce a maximum of two notes. On the other hand, if only one voice is being played the TG33's "Dynamic Voice Allocation" feature allows 32 notes to be played simultaneously by that one voice even if 16 voices are assigned.\*

The only thing you have to be concerned about in programming sequences to drive the TG33, is that the maximum polyphony of 32 notes is never exceeded.

\* 4-element voices reduce the total number of notes available.

## Selecting a MULTI PLAY Setup

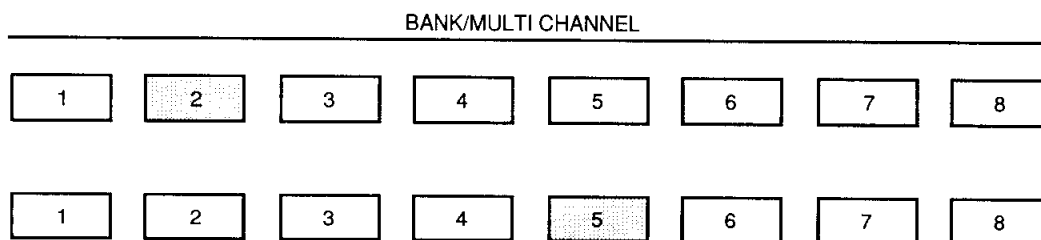
MULTI PLAY setups are selected in essentially the same way as voices.

1. If the MULTI PLAY mode is not already selected — as indicated by a lit [MULTI] key LED and "MULTI PLAY" across the top of the LCD — press the [MULTI] key to select it.

```
MULTI PLAY
I11 Popular
```

2. The [INTERNAL] and [CARD] keys are used to select the desired MULTI memory. The CARD memory cannot be selected if an appropriate memory card is not plugged into the card slot.
3. The 16 MULTI PLAY setups in each memory area are organized into 2 banks of 8 setups each ( $2 \times 8 = 16$ ). Any MULTI PLAY setup can be selected by specifying its bank using the top-row BANK/MULTI CHANNEL keys [1] or [2], and its number using the bottom-row BANK/MULTI CHANNEL keys [1] through [8].

To select MULTI PLAY bank 2 number 5, for example, press the top-row BANK/MULTI CHANNEL [2] key and the bottom-row BANK/MULTI CHANNEL [5] key — in any order.



The display should look something like this:

```
MULTI PLAY
I25 Initial
```

To select a different number within the same bank it is only necessary to press the appropriate bottom-row key. In the same way, to select the same number in a different bank all you have to do is press the appropriate upper-row key.

The [-1/NO] and [+1/YES] keys can also be used to select a MULTI PLAY setup in the MULTI PLAY mode. Holding the [-1/NO] or [+1/YES] key causes continuous scrolling in the specified direction.

## Creating a Simple 4-voice MULTI PLAY Setup

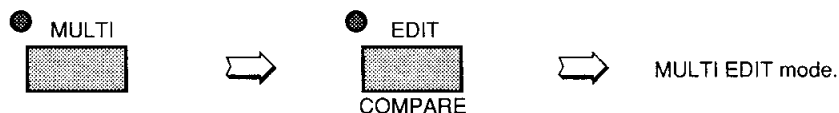
To familiarize you with the process of creating MULTI PLAY setups, here's how you would program a simple four-voice setup that we'll call, reasonably enough, "Quartet."

The Quartet setup will basically be something like this:

MIDI Channel	Required Voice Type	TG33 Voice
1	Piano	P <sub>212</sub> AP:Piano
2	Sax	P <sub>264</sub> WN*Sax
3	Bass	P <sub>243</sub> BA:Wood
4	Drums	P <sub>187</sub> DR:Kit*

\* See page 27 of the TUTORIALS section for the DR:Kit note assignments.

1. After selecting the MULTI PLAY setup you want to program, as described in the preceding section, press the [EDIT] key to enter the MULTI EDIT mode.



The [MULTI] key does not need to be pressed if its LED is ON.

2. We'll begin by "initializing" the selected MULTI PLAY setup to ensure that all parameters are set to their default parameters. You don't always have to do this — but it's handy to know how.

Press the PAGE [▷] key as many times as necessary until the "INIT MULTI" function appears (you can also hold the PAGE [▷] for continuous scrolling). "Are you sure?" should be showing on the bottom line of the display.

```

MU INIT MULTI
Are you sure?
  
```

Press the [+1/YES] key and wait for the ">>Completed!!<<" display to disappear. The MULTI PLAY setup parameters have now been initialized to their default values (see "MULTI INITIALIZE" on page 81 of the REFERENCE section for a full list of the initialized parameters).

- Use the PAGE [ $\leftarrow$ ] key to scroll back to the first function in the MULTI EDIT mode function list — VOICE NO (hold the PAGE [ $\leftarrow$ ] key for continuous scrolling).

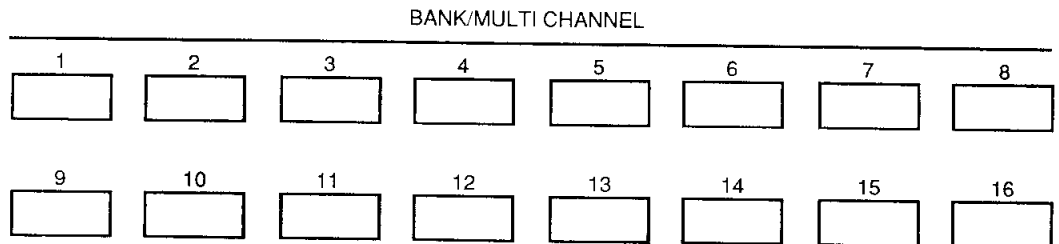
```

MU VOICE NO CH 1
P11 SP*Pro33

```

This function allows you to assign different voices to as many as 16 different MIDI channels. The channel number in the upper right-hand corner of the display (CH 1) is the currently selected MIDI channel number.

- The small white numbers above the BANK/MULTI CHANNEL keys correspond to the 16 available MIDI channels. Pressing any of these while in the MULTI EDIT mode selects the corresponding channel for programming.



If a channel number other than “CH 1” is showing in the upper right-hand corner of the display, press the BANK/MULTI CHANNEL [1] key to select channel 1.

- At this point the underline cursor should be located below the memory area indicator, so you can use the [DATA ENTRY] control or [-1/NO] and [+1/YES] keys to select any of the available memory areas — I, P<sub>1</sub>, P<sub>2</sub>, C<sub>1</sub>, or C<sub>2</sub> (the latter two only if an appropriate memory card is present in the card slot). Since the voice we want to assign to channel 1 is “P<sub>2</sub>12 AP:Piano,” make sure that “P<sub>2</sub>” is selected.

Next move the cursor one step to the right (below the voice bank) by pressing the CURSOR [ $\triangleright$ ] key once, and use the [DATA ENTRY] control or [-1/NO] and [+1/YES] keys to make sure that bank 1 is selected.

Move the cursor one more step to the right (to below the voice number), and use the [DATA ENTRY] control or [-1/NO] and [+1/YES] keys to select number 2. The “AP:Piano” voice name should appear to the right of the voice number.

```

MU VOICE NO CH 1
P212 AP:Piano

```

- You can now press the BANK/MULTI CHANNEL [2] key to select MIDI channel 2, and select the “P<sub>2</sub>64 WN\*Sax” voice as described in the previous step.

```

MU VOICE NO CH 2
P264 WN*Sax

```

7. Go ahead and select the next two channels — 3 and 4 — and assign the required voices to each:

```
MU VOICE NO CH 3
#43 BA:Wood
```

```
MU VOICE NO CH 4
#82 DR:Kit
```

That completes the basic voice assignments for “Quartet.” For a bit more experience, let’s go on and set the PAN positions for each voice, and give our MULTI PLAY setup its rightful name.

8. Press the PAGE [▷] key four times to reach the PAN function, bypassing the VOLUME, DETUNE, and NOTE SHIFT functions on the way.

```
MU PAN CH 1
L--I--R
```

You can now select each of the four channels we’ve used by pressing the corresponding BANK/MULTI CHANNEL keys, and set an appropriate PAN position for each by using either the [DATA ENTRY] control or the [-1/NO] and [+1/YES] keys. PAN can be set to five different positions from left (L) to right (R), indicated by the position marker in the pan display on the bottom line of the LCD. If you move the marker “past” the rightmost position, the word “voice” will appear, indicating that the PAN position specified in the VOICE ELEMENT TONE EDIT mode will be retained.

Our suggestions for the “Quartet” setup”

Channel 1 (AP:Piano)

```
MU PAN CH 1
LI----R
```

Channel 2 (WN\*Sax)

```
MU PAN CH 2
L----IR
```

Channel 3 (BA:Wood)

```
MU PAN CH 3
L-I----R
```

Channel 4 (DR:Kit)

```
MU PAN CH 4
L---I-R
```

- Finally, skip ahead to the NAME function (press the PAGE [▷] key six times) and enter the name "Quartet." This is done simply by using the CURSOR [◀] and [▷] keys to move the underline cursor to the appropriate character position, and then using the [DATA ENTRY] control or [-1/NO] and [+1/YES] keys to select the desired character.

```

MU NAME
  I11 Quartet

```

Here's a list of the available characters:

```

(Space) !"#%&'( )*+, -./0123456789:;<=>?@
ABCDEFGHIJKLMNPOQRSTUVWXYZ[ ]^_`
abcdefghijklmnopqrstuvwxyz{|}~

```

- When you're satisfied with your MULTI PLAY setup, you can return to the MULTI PLAY mode by pressing the [MULTI] key and then store the setup you have just edited into one of the TG33's INTERNAL MULTI memory locations.

**NOTE:** The [VECTOR CONTROL] can be used to control any voice in a MULTI PLAY setup — set the UTILITY mode VECTOR CHANNEL parameter to the channel number of the voice you wish to control (REFERENCE SECTION, page 89). Also note that manual vector control is automatically turned OFF whenever a new MULTI PLAY setup is selected.

### Storing Edited MULTI PLAY Setup Data to the INTERNAL Memory

When you return to the MULTI PLAY mode after editing in the MULTI EDIT mode, you'll see a reverse letter "E" (white on a black background) following the MULTI PLAY number on the display.

```

MULTI PLAY
  I11E Quartet

```

This indicates that the setup has been edited. If you want to keep the edited setup, it must be stored either to an internal or card memory location *before* you select another setup, or all your editing work will be lost.

To store your creation to an internal memory location:

- Press the [STORE/COPY] key from the MULTI PLAY mode.

```

STORE MULTI
  I11 ÷ I11      →

```

The number of the voice you edited will be shown to the left of the lower display line, and the cursor will be placed under the equivalent INTERNAL voice number to the right of the arrow. The arrow to the far right of the screen indicates that other parameters can be accessed by pressing the CURSOR [▷] key.

2. Select the memory location to which you want to store the new MULTI PLAY setup using the BANK/MULTI CHANNEL keys, the [DATA ENTRY] control, or the [-1/NO] and +1/YES] keys.

**NOTE:** It is also possible to select CARD bank 1 or 2 for MULTI PLAY setup storage by pressing the [CARD] key, if a properly formatted memory card has been inserted into the TG33 card slot (REFERENCE section, page 96).

3. When the target memory location has been selected, press the CURSOR [▷] key. “Are you sure?” will appear on the display.

```
STORE MULTI
← Are you sure?
```

4. Confirm your intention to store the new setup by pressing the [+1/YES] key, and the store operation will begin. “>>Completed!!<<” will appear on the display briefly when the store operation is finished, and the TG33 will return to the MULTI PLAY mode.

```
STORE MULTI
>>Completed!!<<
```

**NOTE:** You can exit the STORE mode and return to the MULTI PLAY mode at any time simply by pressing the [MULTI] key.

## Conclusion

Now that you’ve created and stored your first, albeit simple, MULTI PLAY setup, you should be able to create more complex setups customized to suit your own musical needs by referring to the MULTI EDIT mode function descriptions between pages 75 and 82 of the REFERENCE section. Pay particular attention to the SEND GROUP SELECT, OUTPUT SELECT and ASSIGN MODE functions, as these allow you to divide the MULTI PLAY setup voices into two groups which can independently be assigned to the TG33’s two pairs of stereo outputs — OUTPUT 1 and OUTPUT 2.