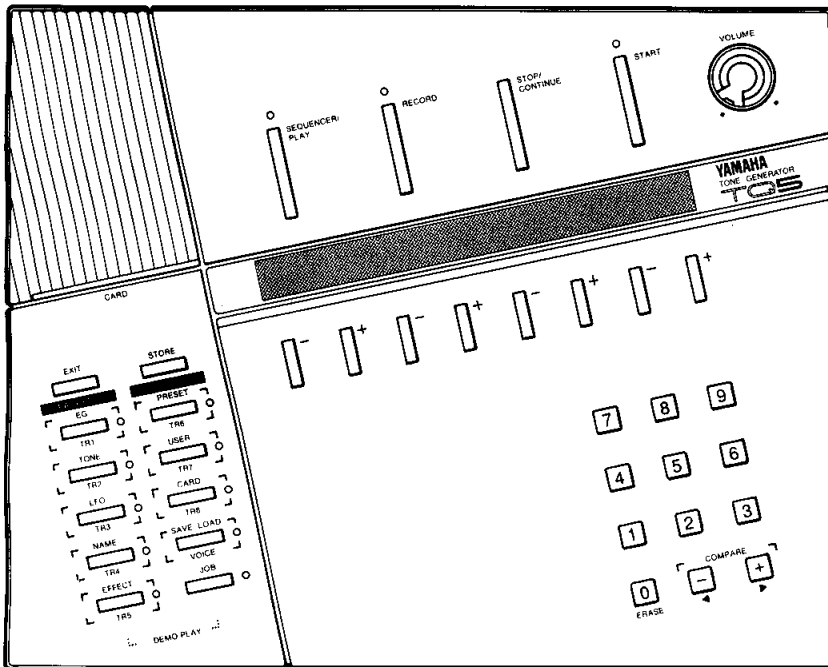


YAMAHA

TQ5

TONE GENERATOR

OPERATING MANUAL



FCC INFORMATION

While the following statements are provided to comply with FCC Regulations in the United States, the corrective measures listed below are applicable worldwide.

This series of Yamaha professional music equipment uses frequencies that appear in the radio frequency range and if installed in the immediate proximity of some types of audio or video devices (within three meters), interference may occur. This series of Yamaha professional music equipment has been type tested and found to comply with the specifications set for a class B computing device in accordance with those specifications listed in subpart J of part 15 of the FCC rules. These rules are designed to provide a reasonable measure of protection against such interference. However, this does not guarantee that interference will not occur. If your professional music equipment should be suspected of causing interference with other electronic devices, verification can be made by turning your professional music equipment off and on. If the interference continues when your equipment is off, the equipment is not the source of interference. If your equipment does appear to be the source of the interference, you should try to correct the situation by using one or more of the following measures:

Relocate either the equipment or the electronic device that is being affected by the interference. Utilize power outlets for the professional music equipment and the device being affected that are on different branch (circuit breaker or fuse) circuits, or install AC line filters.

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

If these corrective measures do not produce satisfactory results, please contact your authorized Yamaha professional products dealer for suggestions and/or corrective measures.

If you cannot locate a franchised Yamaha professional products dealer in your general area contact the Electronic Service Department, Yamaha Corporation of America, 6600 Orangethorpe Ave., Buena Park, CA 90620, U.S.A.

If for any reason, you should need additional information relating to radio or TV interference, you may find a booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio — TV Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington D.C. 20402 — Stock No. 004-000-00345-4.

HOW TO USE THIS MANUAL

Welcome to the TQ5 FM Tone Generator! This incredibly versatile instrument is certain to open up for you a whole new world of musical expression.

What can the TQ5 do for you?

The answer: plenty! The TQ5 gives you up to 300 different rich and dynamic sounds — sounds that, with the wide variety of controls and functions, will be most effective when played with an electronic piano or synthesizer, providing you with a virtual orchestra at your fingertips.

Although the TQ5 is a sophisticated musical instrument, you'll find it remarkably easy to use. The controls are laid out and labeled in a logical, easy-to-understand fashion and the large display gives you all pertinent information and even guides you through certain operations.

This manual is a complete introduction to the TQ5, but you won't need to read it from cover to cover. Here's what we suggest you do to get a firm understanding of the TQ5 and its functions:

- Read the **PRECAUTIONS** section. You should know beforehand how to treat your new TQ5 with care.
- Follow the steps in **STARTING OUT**. This will get you operating the TQ5 for the very first time, so look this over briefly before going to any other section — and then have fun exploring!
- The next section, **OPERATION BASICS**, takes you step-by-step through the basic features and functions of the TQ5. Whether you've used similar functions on other synthesizers before or not, please don't skip this! The hands-on experience you gain here will be valuable later.
- If you're a newcomer to the world of synthesizers and digital music, it might be worth your while to skip over to the **GLOSSARY** in the **APPENDICES** section. In a brief and easy-to-understand way, the **GLOSSARY** explains some of the words and phrases used throughout the manual that might be unfamiliar to you.
- The **SYNTHESIZER REFERENCE** and **SEQUENCER REFERENCE** section cover all the functions of the TQ5 in depth. Everything you need to know is here; so after going through the first three sections of this manual and you feel confident as you operate and play the TQ5, explore the **REFERENCE** sections at your own pace, trying out whatever features interest you. (Later you can refer to this material whenever you need to check something or jog your memory.)
- The **APPENDICES** cover various topics that should, like the **REFERENCE** section, prove useful in the future as you use the TQ5. No need to jump in and read them right away, but you'll find plenty of help in them (should you ever need it).

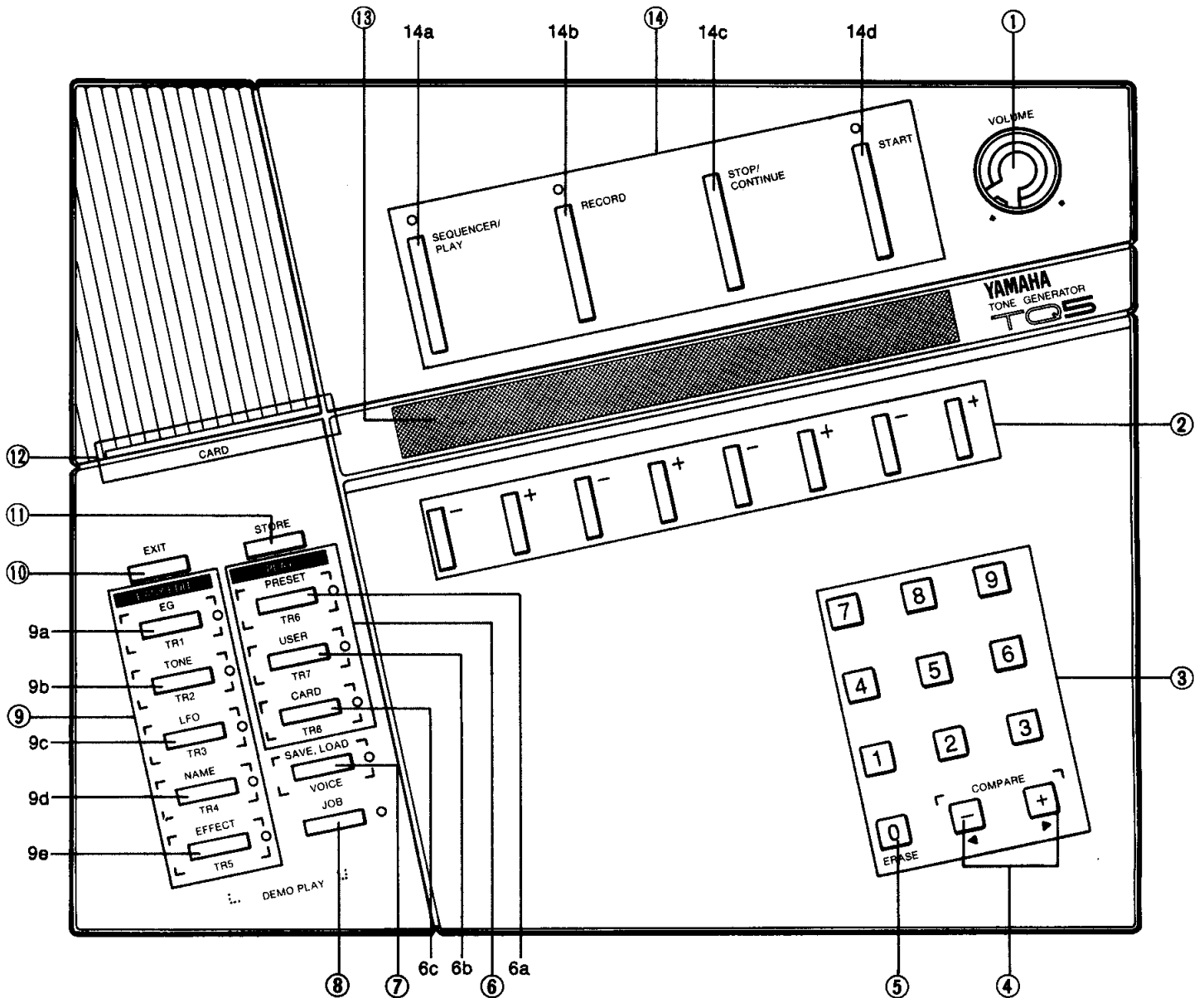
Refer to the FRONT/REAR PANEL diagram on pages 4 — 5 as you read this manual.

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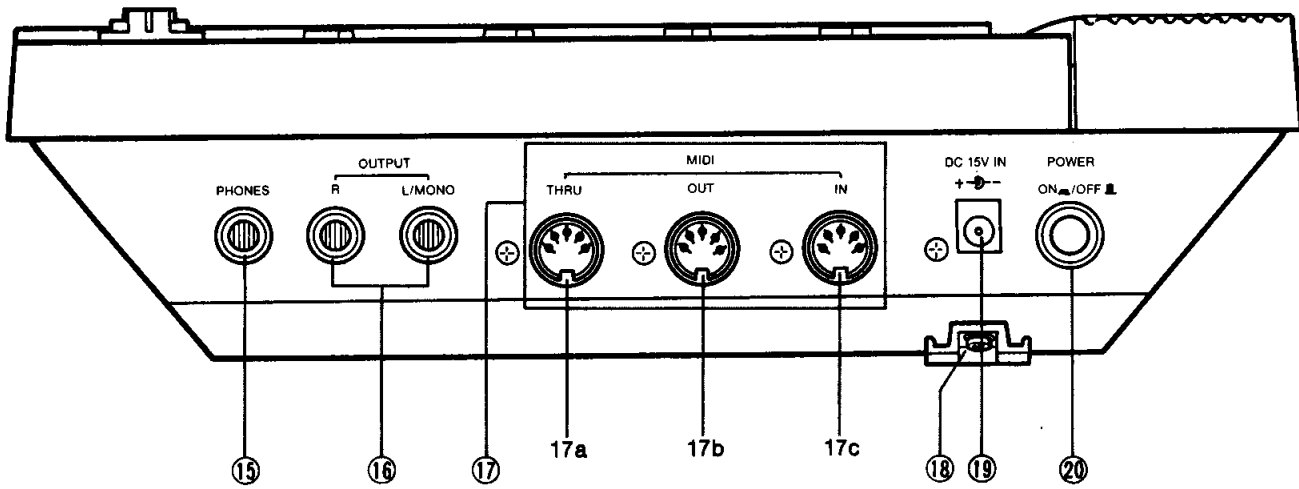
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FRONT/REAR PANELS



FRONT PANEL

- ① VOLUME Control
- ② +/− SELECTOR Buttons (for data entry and function/parameter selection)
- ③ Numeric Keypad
- ④ Cursor Left and Cursor Right Keys (also serve as − and + data entry keys and, when pressed together, as COMPARE keys)
- ⑤ ERASE Key (also serves as “0” in the numeric keypad)
- ⑥ PLAY Mode Buttons
 - 6a) PRESET/TR6
 - 6b) USER/TR7
 - 6c) CARD/TR8
- ⑦ SAVE, LOAD/VOICE Button
- ⑧ JOB Button
- ⑨ EASY EDIT Mode Buttons
 - 9a) EG/TR1
 - 9b) TONE/TR2
 - 9c) LFO/TR3
 - 9d) NAME/TR4
 - 9e) EFFECT/TR5
- ⑩ EXIT Button
- ⑪ STORE Button
- ⑫ CARD Slot
- ⑬ LCD
- ⑭ Sequencer Mode Buttons
 - 14a) SEQUENCER/PLAY
 - 14b) RECORD
 - 14c) STOP/CONTINUE
 - 14d) START



REAR PANEL

- ⑮ Headphone Jack
- ⑯ Outputs
 - R (right stereo channel output)
 - L/MONO (serves as either mono out or, if Output R is connected, the left stereo channel)
- ⑰ MIDI Terminals
 - 17a) MIDI THRU
 - 17b) MIDI OUT
 - 17c) MIDI IN
- ⑱ Power Supply Cord Hook
 - The adaptor cord can be wound around this hook to prevent it from coming loose during performance.
- ⑲ DC 15V IN Jack (for connection of AC power adaptor)
- ⑳ Power Switch

PRECAUTIONS

- The voltage requirement for your TQ5 has been set specifically for the main supply voltage used in your area. If you have any doubts about voltage suitability, please consult your local Yamaha dealer. If you intend to use your TQ5 in an area with a different voltage, be sure to use the appropriate voltage convertor.
- Avoid placing your TQ5 in direct sunlight or close to a source of heat. Also, avoid locations where the instrument is likely to be subjected to vibration, excessive dust, cold or moisture. All of these conditions could have a detrimental effect on both the mechanisms and the circuitry incorporated into the TQ5.
- Do not use abrasive cleaners, waxes, solvents, or chemical dust cloths to clean the exterior of your TQ5 as these may damage the finish. Use a slightly damp cloth and a neutral cleanser. Never use aerosol sprays near the TQ5 as they can get into the circuitry and prevent accurate transmission of data.
- Your TQ5 contains no user serviceable parts. Opening it or tampering with it can lead to electrical shock as well as damage, and will void the product warranty. Refer all servicing to qualified Yamaha personnel.
- The TQ5 is equipped with an internal battery for preservation of stored data. Since the life of this battery is about five years, you should have a qualified Yamaha service representative replace the battery before that time (See "About the TQ5's internal battery", page 52 for the details.).
- All computer circuitry, including that of the TQ5, is sensitive to power surges or voltage spikes, such as those caused by lightning. For this reason, the TQ5 should be turned off and unplugged from the wall socket in the event of an electrical storm.
- Computer circuitry is sensitive to electromagnetic radiation, such as is generated by television sets. The TQ5's digital operation also generates high frequency pulses that may adversely affect radio or TV reception in the vicinity of the instrument. Use your TQ5 at a suitable distance from such equipment to avoid malfunctions in the TQ5 or any other connected equipment.
- Avoid applying excessive force to the controls. Also avoid dropping the instrument or otherwise subjecting it to impact. While the internal circuitry is of reliable integrated circuit design, the TQ5 should be treated with care.
- When unplugging cords (MIDI, audio, power, etc.) from the TQ5, never unplug by pulling on the cords; this can result in damage to the TQ5 or the cords.
- After studying this manual thoroughly, keep it in a safe place for future reference.

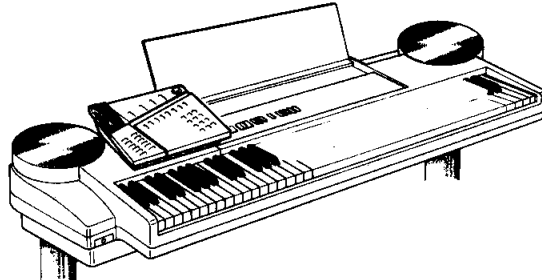
STARTING OUT

This chapter of the manual will guide you step by step as you use the TQ5 for the very first time. You will learn how to make all of the connections between the TQ5 and the rest of your equipment (including the MIDI keyboard or controller you are using).

Whether you've had experience using a MIDI-controlled tone generator before or not, we recommend that you take the time to read through this section so that you can follow these steps each time you set up and play your TQ5.

Before following any of the steps in this section, please read through the PRECAUTIONS chapter to ensure trouble-free operation and that the TQ5 will be in its optimum playing condition.

You'll find that the TQ5 fits securely and unobtrusively on top of most MIDI keyboards. The slightly slanted design of the control panel of the TQ5 makes it particularly easy to operate when placed on the left side of the controlling keyboard. The illustration below shows the TQ5 atop a Yamaha PF1500 Electronic Piano.



For more information on connecting your TQ5 to other MIDI instruments, additional setup suggestions and about MIDI in general, read the MIDI AND MIDI APPLICATIONS chapter of this manual.

SETTING UP

BASIC STEPS IN SETTING UP THE TQ5

To set up your TQ5 for playing (with a remote MIDI keyboard and an audio amplifier), follow these simple steps:

- 1) Connect all MIDI and audio cables to their appropriate terminals and jacks.
- 2) Connect all power cords to appropriate electrical outlets.
- 3) Turn on the power of the equipment in the following order: a) MIDI keyboard, b) TQ5, c) audio amplifier.
- 4) Make the appropriate MIDI settings on both the TQ5 and the MIDI keyboard.

Here, in more detail, is how to perform the above steps:

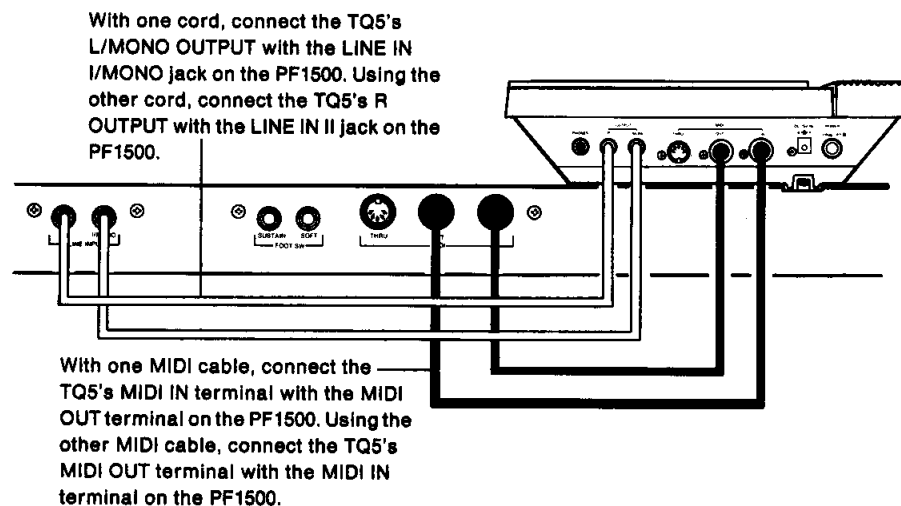
Note:

The following instructions refer specifically to use with the Yamaha PF1500 Electronic Piano. In this setup, the keyboard of the PF1500 is being used to play the voices of the TQ5, and the sequencer of the TQ5 is being used to control the voices of the PF1500. If you are using other MIDI keyboards/instruments/controllers, please refer to the owner's manuals of those devices for particular setup information.

- 1) Connect all MIDI and audio cables to their appropriate terminals and jacks. For this basic setup, you'll need the following cables:
 - a) 2 MIDI cables
 - b) 2 shielded audio cables, with 1/4" phone jack connectors

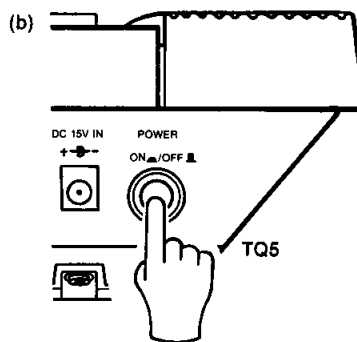
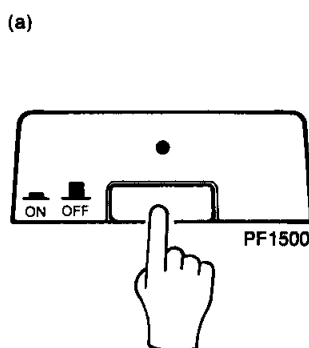
Having a pair of cables for each set is not absolutely necessary for operation, but we recommend this to take greatest advantage of the TQ5's MIDI functions and stereo capability.

Make the connections as shown in the illustration below.



In this example, the TQ5's voices will be heard through the speakers of the PF1500, along with the sound of the PF1500 itself. You can, however, connect the audio outputs of the TQ5 directly to an audio mixer and/or amplification system for playing it separately from the PF1500.

- 2) Connect all power cords to appropriate electrical outlets.
Connect the AC power cords of all equipment to AC electrical outlets of the same voltage rating. Consult your local Yamaha dealer if you have any doubts about voltage suitability.
- 3) Turn on the power of the equipment in the following order: a) MIDI keyboard, b) TQ5, c) audio amplifier.



You should always follow the above order when turning on the power of your audio equipment. The rule of thumb is to turn on your amplification system at the very last and then bring the various volume controls to a comfortable listening level. The rationale behind this is to ensure that whatever amplifier/speaker system you are using will not be damaged by any sudden sounds from the connected synthesizers. Turning on the connected MIDI equipment after the TQ5 may result in an error message on the TQ5. For this reason, it's best to turn the TQ5 on after all other connected MIDI equipment.

Note:

Inserting or removing a RAM memory card while the power is turned on may result in partial damage or complete deletion of voice data stored in the card. For this reason, insert or remove your RAM memory card from the CARD slot while the power is turned off.

Note:

The TQ5 is also equipped with an clock/calendar function. It is automatically displayed upon power on, or when no buttons have been pressed (nor any MIDI data, other than Active Sensing and clock, has been received) for one minute or longer.

When you turn on the power of the TQ5, the following display will briefly appear:

```
====< YAMAHA Tone Generator TQ 5 >====  
***** 12:00'15 '88-11-13 Sunday *****
```

The bottom line of the display shows the current time (in 24-hour format), the date and the day of the week.

If you leave the TQ5 on for one minute or longer without pressing any buttons on the panel, or without transmitting any MIDI data (with the exceptions of Active Sensing and clock) to it the following display will appear:

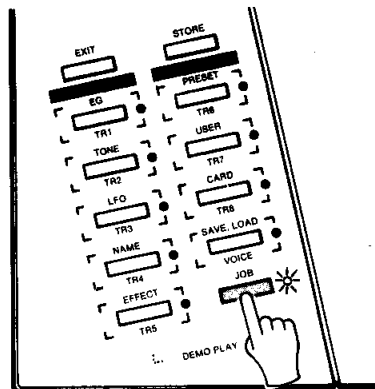
```
19:30 15 '88-12-25 Friday hit any key
```

To return the TQ5 to normal operation, press any key on the panel. The display will return to whatever condition or function was last selected.

For more information about the clock/calendar and how to set it, refer to the CLOCK/CALENDAR section in the SYNTHESIZER REFERENCE chapter.

- 4) Make the appropriate MIDI settings on both the TQ5 and the MIDI keyboard. Since setting of the MIDI channels and other MIDI functions can be a fairly confusing affair to the uninitiated, we've kept things as simple as possible in this setup with the PF1500. All you have to do is:

- a) Press **JOB** on the front panel. Its red LED will light up.



PLAYING THE TQ5

If you've followed all the above steps properly, you can begin playing your TQ5.

When you first turn on the power to your new TQ5, Preset voice #00, Elegant, will be automatically selected and the following display will appear:

```
PLAY) PRESET VOICE   Tuning  Note shift
No.00   Elegant       +00    +00
```

Note:

Whenever you turn on the power, the TQ5 will, after a short warm-up, be set to the voice (or sound program) that was last selected, before the instrument was last turned off.

Adjust the volume using the rotary volume control. After playing this sound for a while, go on to the next section and explore some of the other sounds of the TQ5.

SELECTING PRESET VOICES

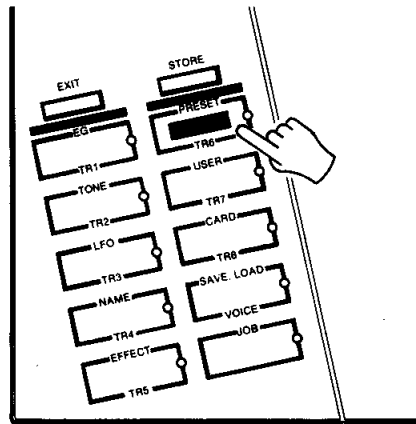
VOICE LIST

00	Elegant	25	FloatChime	50	Guitar 1	75	Sax 1
01	SoftBrass	26	Daybreak	51	Guitar 2	76	Sax 2
02	WideString	27	Tinkle	52	E. Guitar 1	77	Oboe 1
03	Cosmic	28	SandBell	53	Harp 1	78	Clarinet
04	LargePipes	29	Suspense	54	Koto	79	Flute
05	SynString 1	30	Fog	55	Marimba	80	Recorder
06	FolkGuitar	31	HuskyVoice	56	Violin 1	81	Harmonica 1
07	Plano 1	32	Swirlies	57	Cello 1	82	Whistle
08	E.Piano 1	33	HuskyChoir	58	CelloEns.	83	Castanet
09	DistGuitar	34	PluckBrass	59	UprightBass	84	Triangle
10	SoftString	35	AngelChoir	60	E.Bass 1	85	BellTree
11	SynString 2	36	FluteVoice	61	E.Bass 2	86	Referee
12	RichString	37	SmallPipes	62	SynBass 1	87	SteelDrum 1
13	SynBrass 1	38	E.Organ 1	63	SynBass 2	88	SteelDrum 2
14	SynBrass 2	39	E.Organ 2	64	SynBass 3	89	Ricochet
15	SynBrass 3	40	Piano 2	65	SynBass 4	90	Zapl
16	BrethBrass	41	E.Piano 2	66	SynBass 5	91	Shwhapl
17	SoftEns.	42	WireBrass	67	NasalLead	92	PoundWood
18	WarmEns.	43	EasyClav	68	SolidLead	93	OilDrum
19	OrchesEns.	44	FunkyClav	69	ClarLead	94	SynSnare
20	Sunbeam	45	Harpichrd	70	Trumpet 1	95	DragonHit
21	Shimmer 1	46	Vibe	71	TightBrass	96	DuneHit
22	SoftCloud	47	Celeste	72	Trombone 1	97	Warp
23	Bamarimba	48	TubeBell	73	Horn 1	98	IceAge
24	Sandarimba	49	MusicBox	74	Horn 2	99	Encore

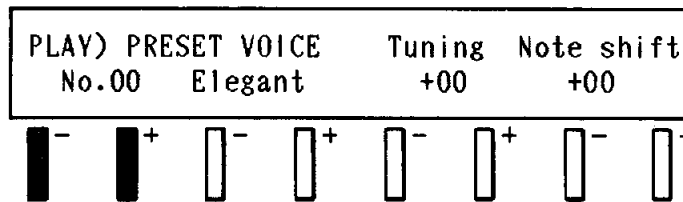
The TQ5 has 100 different voices that are stored in its internal Preset memory, and we're sure that you'll want to begin exploring those voices as soon as you turn the TQ5 on.

To select a Preset voice:

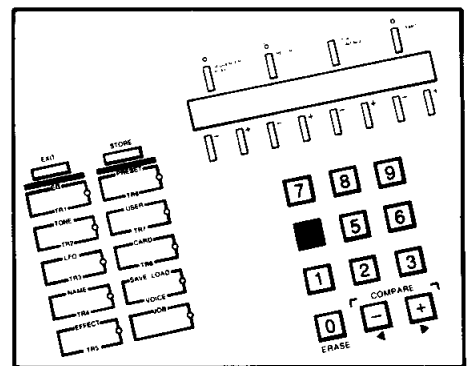
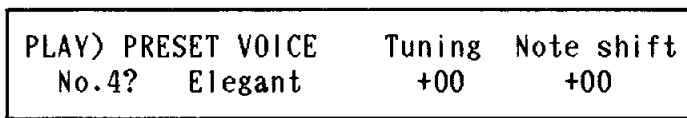
- 1) Press the **PRESET** button.



- 2) Use the left most pair of **+/- SELECTOR** keys (under the voice number) to step up or down to the desired voice. (The **- SELECTOR** key decreases the Preset voice number by one, while the **+ SELECTOR** key increases it by one.) Holding down either **SELECTOR** key causes the Preset voice numbers to advance rapidly in either direction.

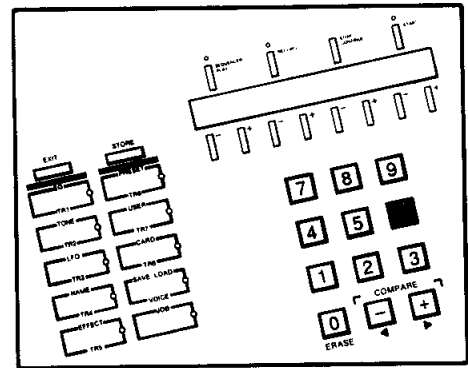


- The cursor left and cursor right keys can also be used to select voices, in the same way as the leftmost **+/- SELECTOR** button pair is used.
- You can also use the numeric keypad to select a Preset voice. Press the first digit of the Preset voice you wish to select. (As an example, let's select Preset voice #46, Vibe.) The display shown below will appear:



- The question mark after the number 4 indicates that you must press one more number on the numeric keypad to finally select the desired voice. So, press 6 to select voice #46.

PLAY)	PRESET VOICE	Tuning	Note shift
No.46	Vibe	+00	+00



That's all there is to it.

Now let's move on to the next section and make some changes in the sounds of some of the voices.

Note:

Some voices (among which include #47 Celeste, #49 MusicBox and #81 Harmonica1) have repeating octaves in the highest ranges; on voice #47 for example, playing C5 on your connected keyboard results in the same pitch as when playing C4.

OPERATION BASICS

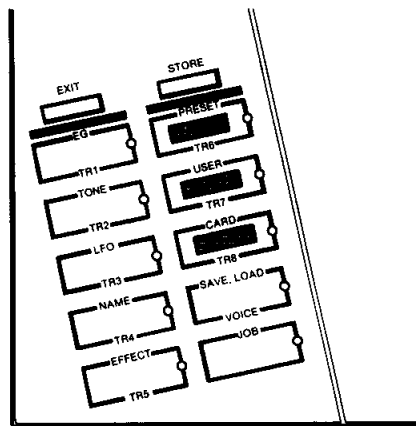
This chapter of the manual will guide you through the TQ5's basic operations. Here you will learn how to edit Preset voices, name and store the voices you create, select and edit effect settings for your voices, and use some of the card operations of the instrument. You will also learn how to use the sequencer portion of the TQ5, both by playing specially prepared demonstration songs, and by recording your own song.

ABOUT THE CONTROLS Let's begin this chapter by introducing you to some of the controls you will be using.

THE PLAY BUTTONS

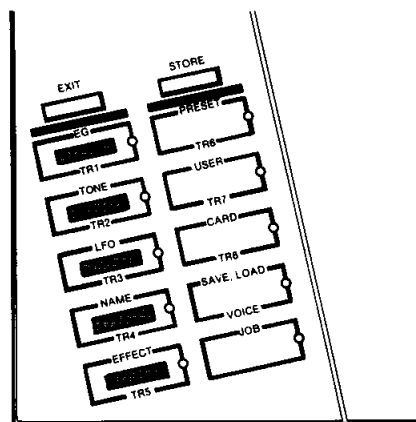
The **PLAY** buttons, labeled in purple, are used to select voices from the three different memory locations: PRESET, USER, and CARD. USER and PRESET are internal memory storage locations and can be selected at any time. CARD can only be used when a RAM or ROM card is inserted in the CARD slot. Each button has an LED which lights up in red when the button is pressed.

Try pressing each of the buttons in turn and notice what happens, both on each button's LED and the display.



THE EASY EDIT BUTTONS

There are five buttons in the **EASY EDIT** button column: **EG**, **TONE**, **LFO**, **NAME**, and **EFFECT**. The name "EASY EDIT" is appropriate since these buttons allow you to easily alter the character of a voice to your liking. As with the **PLAY** buttons, each has an LED which lights up in red when the button is pressed. Press each of these buttons in turn, as you did with the **PLAY** buttons above, and notice what happens.



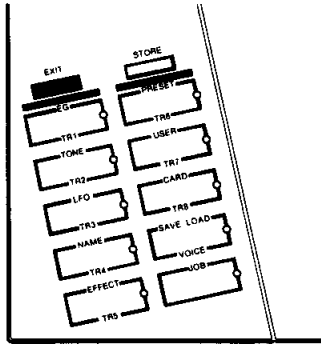
THE EXIT KEY

Pressing the **EXIT** button allows you to return to the last selected voice, regardless of the operation you are doing. You may, for example, be recording a song using the sequencer and suddenly decide to edit a voice you wish to use; a press of the **EXIT** button will return you to the voice you last selected, whether it is a Card, User,

or Preset voice.

Note:

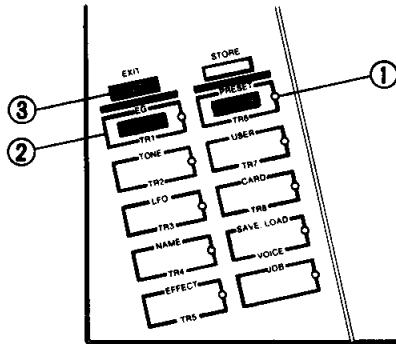
Pressing the **EXIT** button is the **ONLY** way (except for turning the power switch off and on again) to go from Sequencer operation to Synthesizer operation.



When you are using any of the **EASY EDIT** buttons to change the sound of a voice, the **EXIT** button also allows you to cancel those changes and return to the voice's original sound.

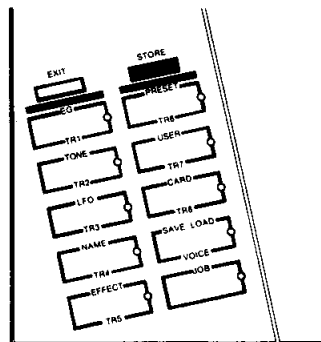
Watch how the display changes as you try the following steps:

- 1) Press the **PRESET** button.
- 2) Press the **EG** button.
- 3) Press the **EXIT** button. The display will be the same as you saw in step #1.



THE STORE BUTTON

This button allows you to store a voice to either the internal user memory or a RAM card. Pressing the STORE button while in any operation will let you store the currently selected voice to a chosen memory location.

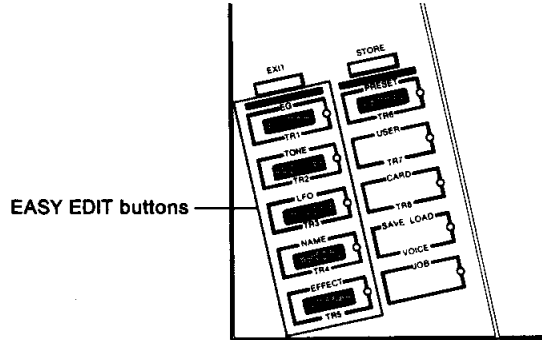


Now that you know something about some of the controls, let's actually begin using them!

EDITING THE VOICES

CHANGING THE SOUND OF A PRESET VOICE

Changing the sound of a voice — a process we'll call "editing" — is very simple. First, make sure that a Preset voice has been selected by pressing the **PRESET** button. Then, press the appropriate **EASY EDIT** buttons and change the values shown in the display.



Now it's time for you to create your own voice by editing a Preset voice.

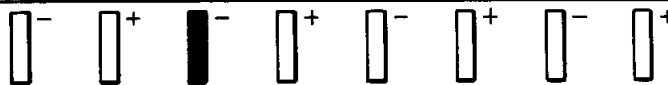
Try this:

- 1) Press **PRESET**. Its red LED should light up. Then use the numeric keypad to select voice #71, TightBrass.
- 2) Press the **EG** button. The red LED at the top of the button will light to indicate that the function is active. The following display will appear:

```
EDIT) EG  -Attack-  --Decay-  -Release-
vol+tone   +00      +00      +00
```

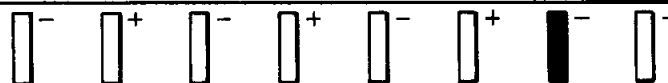
- 3) By using the four pairs of **+/- SELECTOR** buttons, you can edit the various EG parameters as shown in the display. For now, let's use the pair directly under the Attack parameter. Press and hold the **- SELECTOR** button until the Attack parameter's value is **-06**. (You can also use the numeric keypad to enter the value directly.) Play the voice now and notice the difference in how the sound starts when you press a key.

```
EDIT) EG  -Attack-  --Decay-  -Release-
vol+tone   -06      +00      +00
```



- 4) You can edit the release time by using the **+/- SELECTOR** buttons directly under — you guessed it — the Release parameter. Set this value to **-05** by holding down the **- SELECTOR** button and listen to the new sound you've created.

```
EDIT) EG  -Attack-  --Decay-  -Release-
vol+tone   -06      +00      -05
```



- 5) You can also compare your new sound with the Preset sound, listening to both in turn. Try this now. Firmly and simultaneously, press down the + and - keys on the numeric keypad (also labeled as the COMPARE keys). Notice that the LEDs of the bottom four **EASY EDIT** buttons flash in red. Play the sound. Do you recognize it? It's the one you started with, the sound before you began editing. To return to the sound you created in step #4 above, press the COMPARE keys together again. The LEDs will stop flashing and you can hear your new sound once again.

Note:

You may find that some parameter value displays are accompanied by an exclamation mark (!) when edited beyond a certain value. This means that the actual parameter indicated does not change when adjusted to this value or beyond. Though the number (value) can be changed, the sound cannot.

CHANGING THE TONE SETTINGS OF A VOICE

There are three Tone parameters: Brilliance, Wave, and Input-4Nos!. By changing these you can determine the quality of the voice—whether it sounds harsh or mellow, thin or full, metallic or breathy.

The changes you made in the section above had some affect on the tone of the voice, but let's alter the tone even further here.

Try this:

- 1) Using the same voice as before (#71, TightBrass) and keeping the changes you made, press **TONE**.

EDIT) TONE Brilliance Wave Input-4Nos!							
		+00		+00		0663	
<input type="checkbox"/> -	<input type="checkbox"/> +	<input checked="" type="checkbox"/> -	<input type="checkbox"/> +	<input type="checkbox"/> -	<input type="checkbox"/> +	<input type="checkbox"/> -	<input type="checkbox"/> +

- 2) Press and hold the - **SELECTOR** button directly below "Brilliance" in the display until the value is -08. Play the voice now to hear how it's changed.
- 3) Now, make a more dramatic change in the sound by pressing the + **SELECTOR** button directly below "Wave" in the display.

EDIT) TONE Brilliance Wave Input-4Nos!							
		-08		+01		0663	
<input type="checkbox"/> -	<input type="checkbox"/> +	<input type="checkbox"/> -	<input type="checkbox"/> +	<input type="checkbox"/> -	<input checked="" type="checkbox"/> +	<input type="checkbox"/> -	<input type="checkbox"/> +

Notice that the voice has become more bell-like and has taken on a second pitch. If you like this sound, keep it and go on to the next section. If the voice sounded better to you before you changed the Wave parameter, press the - **SELECTOR** button directly below "Wave" to return the value to 00.

CHANGING THE LFO SETTINGS OF A VOICE

The initials LFO stand for Low Frequency Oscillator. Don't let the terminology intimidate you; this is just a fancy name for the method in which effects like vibrato and tremolo are created for synthesizer voices.

Vibrato and tremolo are age-old musical techniques used for both acoustic instruments and voice (the human kind!). A violinist, for example, rapidly moves his hand back and forth while holding a note in order to slightly waver the pitch. This is called vibrato, and in small amounts it gives the instrumental tone greater depth and an-

imation. Tremolo is a similar effect, except that the volume of the sound varies, not the pitch. The LFO makes it possible to imitate these acoustic effects, or to create even wilder, more obviously electronic sounds.

- By now, you're undoubtedly using the TQ5's functions with ease, so we'll just briefly introduce you to the parameters of the LFO and let you go exploring on your own!

- 1) Select a Preset voice and press **LFO**.
- 2) Change the three parameters one by one and listen to the effect created.

EDIT) LFO	Speed	Vibrato	Tremolo
	31	14	00
<input type="checkbox"/> - <input type="checkbox"/> +	<input checked="" type="checkbox"/> - <input checked="" type="checkbox"/> +	<input checked="" type="checkbox"/> - <input checked="" type="checkbox"/> +	<input checked="" type="checkbox"/> - <input checked="" type="checkbox"/> +

- **SPEED** (0 — 99)
This controls how fast the LFO varies the pitch or volume.
- **VIBRATO** (0 — 99)
This controls how deep the pitch variation will be.
- **TREMOLO** (0 — 99)
This controls how deep the volume variation will be.

CHANGING THE EFFECT SETTINGS OF A VOICE

The **EFFECT** section of the **EASY EDIT** Modes is one of the most dramatic. With the right effect, applied in the right amount, your voices can sound more dynamic and professional.

You'll learn more about effects and how to edit them to your liking in the **SYNTHESIZER REFERENCE** chapter of this manual. For the moment though, let's select a voice and use a few different effects on it so that you can see just how powerful this function can be.

Try this:

- 1) Using the same voice you've been editing, press **EFFECT**.

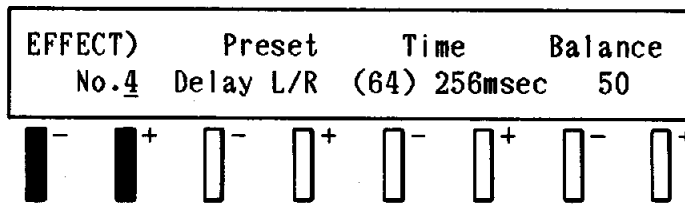
EFFECT)	Preset	Time	Balance
No.1	Rev. Room	(12) 1.5sec	41

- 2) Press and hold down the + **SELECTOR** button directly below "Time" in the display until the value is 2.6sec.

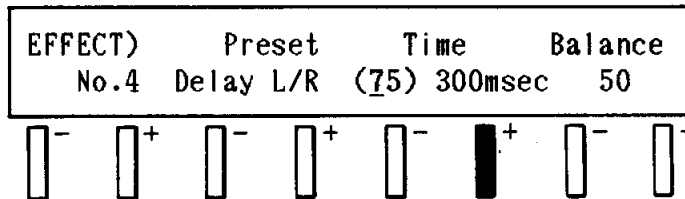
EFFECT)	Preset	Time	Balance
No.1	Rev. Room	(20) 2.6sec	41
<input type="checkbox"/> - <input type="checkbox"/> +	<input type="checkbox"/> - <input type="checkbox"/> +	<input type="checkbox"/> - <input checked="" type="checkbox"/> +	<input type="checkbox"/> - <input type="checkbox"/> +

Play the voice again. You'll notice that it sounds as if it was being played in a spacious concert hall.

- 3) Using the leftmost +/- **SELECTOR** button pair, change the effect setting to #4, Delay L/R.



- 4) Press and hold down the + **SELECTOR** button directly below "Time" in the display until the value is 300msec.



Play the voice. This time the sound has definite echoes that rebound across the stereo image, adding greater interest and depth to the voice.

- 5) Change the effect setting once more, this time to # 7, Dist. (Distortion) + Echo. The definite echoes heard in the last effect are in this one as well, but there is a harder edge to the sound—the result of distortion—which makes the voice sound somewhat like the sustained tones of a heavily distorted guitar, especially when played in the middle octaves.

You can see that the **EFFECT** Mode is musically useful and adds tremendous depth to the already impressive sounds of the TQ5. Take some time and explore the other effect settings with other preset voices.

NAMING AN EDITED VOICE

Once you have edited a Preset voice to your liking, you'll probably want to give that newly edited voice a name and save it so that you can select it and play it again at any future time.

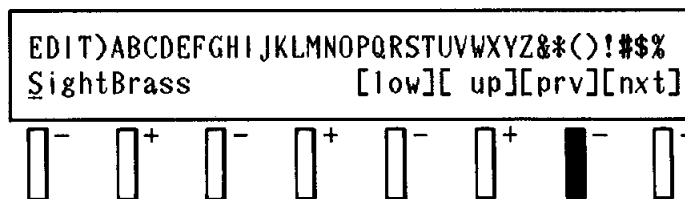
Now, let's change the name of the voice we've been editing from "TightBrass" to "Slow organ."

Try this:

- 1) Press **NAME** of the **EASY EDIT** buttons. Its red LED will light up and the following display will appear:



- 2) Press — just one time — the - **SELECTOR** button directly under [prv] (previous) in the display.



You've just changed the first letter in the name (at the bottom left of the display) from "T" to "S."

3) Now, let's change the second letter of the name from "i" to "l." First move the cursor under the first letter of the name by pressing the + **SELECTOR** button directly under the voice name.

```
EDIT)abcdefghijklmnopqrstuvwxyz/::;?=',.
S_ightBrass      [low][ up][prv][nxt]
```

- + - + - + - +

The top line of characters will have changed to lowercase (since the second letter was originally entered in lowercase) and you can now change the second letter.

4) Using the + **SELECTOR** button directly under [nxt] (next) in the display, move the cursor in the top line of characters until it covers the letter "l."

```
EDIT)abcdefghijklmnopqrstuvwxyz/::;?=',.
S_lightBrass     [low][ up][prv][nxt]
```

- + - + - + - +

Notice again that the letter in the name automatically changes when you press or hold the either of the +/- **SELECTOR** buttons under [prv] and [nxt].

5) Change the next two letters of the name to "o" and "w" to finish the word "Slow" of "Slow organ." Do this in the same way that you changed the first two letters of the name in steps #2 through #4 above: Use the +/- **SELECTOR** buttons under the name to advance or move back the cursor to the proper position, and press the +/- **SELECTOR** buttons under [prv] and [nxt] in the display to select the desired character.

```
EDIT)abcdefghijklmnopqrstuvwxyz/::;?=',.
Slow_tBrass     [low][ up][prv][nxt]
```

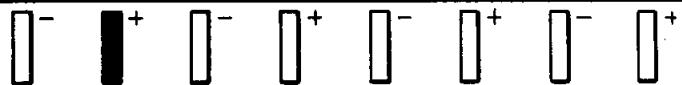
- + - + - + - +

6) To enter a space after the word "Slow," move the cursor in the top line to the far right of the display (with the +/- **SELECTOR** buttons under [prv] and [nxt]) and press the + **SELECTOR** button under the name to advance the name cursor to the next position.

```
EDIT)abcdefghijklmnopqrstuvwxyz/::;?=',.
Slow_ Brass     [low][ up][prv][nxt]
```

- + - + - + - +

```
EDIT) ABCDEFGHIJKLMNOPQRSTUVWXYZ&*()!#$%
Slow Brass [low][up][prv][nxt]
```



7) Next, let's enter a lowercase "o" to begin the word "organ." Though the top line of characters is already set to capital letters, you can change it by pressing one of the +/- **SELECTOR** buttons directly under [low] and [up] in the display. To change the case from capital ([up]) to lower ([low]), press the - **SELECTOR** button directly under [low] in the display.

```
EDIT) abcdefghijklmnopqrstuvwxyz/;?=',.
Slow brass [low][up][prv][nxt]
```



8) Using the + **SELECTOR** button directly below [nxt], select the letter "o."

```
EDIT) abcdefghijklmnopqrstuvwxyz/;?=',.
Slow orrass [low][up][prv][nxt]
```



9) Continue with the remaining letters of the name "organ" by following the directions in step #5 above.

```
EDIT) abcdefghijklmnopqrstuvwxyz/;?=',.
Slow organ [low][up][prv][nxt]
```

Note:

Remember to always advance the cursor after selecting a character, otherwise the character will not be entered to the name. This includes the tenth character of a name; even though the cursor does not advance past the tenth space, you must press the leftmost + **SELECTOR** button once after selecting the character to actually enter it.

Note:

Since voice names can have a maximum of 10 characters, exercise a little creativity and judgement when naming voices. Try to be as descriptive as possible — it's much easier to remember how "Glass Bell" and "Bell Mute" sound than "Bell 1" and "Bell 2."

STORING AN EDITED VOICE

Once you've edited a voice to your satisfaction or made any changes that you wish to keep, you should store that voice to a memory location so that you can retrieve it whenever you need it. Keep in mind that until you actually store the changes that you made, all changes will be lost when you press the **EXIT** button, or the **Sequencer/Play** or turn off the power on the TQ5. The TQ5 has space in its internal User memory for 100 user-programmed voices, and optional RAM cards are also available for storing 100 voices.

Note:

Voices CANNOT be erased from Preset memory. Nor can newly edited voices be stored to a Preset memory location. To keep a newly edited Preset voice, you must store the edited voice to a User or Card memory location.

Let's store the "Slow organ" voice you created in the above sections to User memory.

Try this:

- 1) Directly after making the edits in the sections above (DON'T press the **EXIT** button or turn the power off!), press **STORE**.

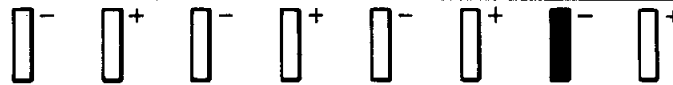
```
Store<Slow organ>to   Memory   Protect
71<TightBrass>?[yes]  user      on
```

- 2) Select the destination number to which the voice will be stored by using the numeric keypad. Any destination number will do; however, since this is your first edited voice, press 0 on the numeric keypad twice to call up voice No. 00 in the display.

```
Store<Slow organ>to   Memory   Protect
00<Elegant  >?[yes]  user      on
```

- 3) Press the rightmost - **SELECTOR** button (directly below the "Protect" parameter) to cancel the memory protect function. When this is set to ON, voices cannot be stored.

```
Store<Slow organ>to   Memory   Protect
00<Elegant  >?[yes]  user      off
```



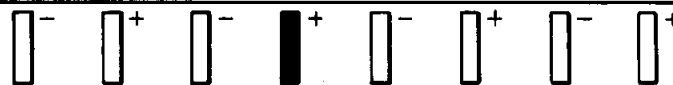
- 4) Press the - **SELECTOR** button directly below the "Memory" parameter to select User memory.
- 5) Now that you've set the memory type and destination number AND disabled the memory protect function, press the + **SELECTOR** button directly below [yes] in the display.

```
Store<Slow organ>to   Memory   Protect
00<Elegant  >?Sure?  user      off
```



- 6) Press the same + **SELECTOR** button, under the "Sure?" prompt in the display to finally store the voice.

```
Store<Slow organ>to   Memory   Protect
00<Completed!>?     user      off
```



Note:

The **STORE** button should be used immediately after editing a voice, if you want to keep that voice. Pressing some of the other buttons (**EXIT** in particular) may cause you to lose your edits.

Keep on experimenting with the **EASY EDIT** features. Use them with different Preset voices before you go to the next section, and when you come upon some combinations that you like, store them to User memory, as you did above.

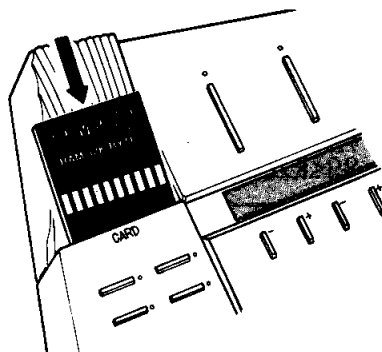
CARD OPERATIONS

In addition to the User and Preset voices, voices from memory cards are also available. Specially designed cards (ROM cards) can optionally be purchased, each with 100 voices created by expert programmers. If you have such a ROM card for the TQ5, here's how to use it and listen to some of its voices. (Also optionally available is the MCD32 RAM card for storing your own original voice data.)

SELECTING CARD VOICES

Try this:

- 1) Insert the ROM card into the **CARD** slot on the top left of the front panel. Gently slide it in face up until it is securely seated in the slot.



- 2) Press **CARD**.

PLAY) CARD	VOICE	Tuning	Note shift
No.00	Syn.Str 1	+00	+00

The above display should appear and you should now be ready to select and play the Card voices. If you haven't inserted a Card, or if you've improperly inserted the Card, the following display will appear:

PLAY) CARD	VOICE	Tuning	Note shift
ERROR Not ready!---Please insert card!			

Carefully repeat steps #1 and #2 above to remedy the problem.

- 3) Now, select Card voices in exactly the same way you selected Preset voices (as described in the **STARTING OUT** chapter).

STORING CARD VOICES TO USER MEMORY

Let's take one of the Card voices now and store it to the internal User memory.

Try this:

- 1) Select the Card voice you wish to store. For our example, let's select voice No. 89, E.Organ 1. Press **CARD**, then enter 89 on the numeric keypad.

PLAY) CARD	VOICE	Tuning	Note shift
No.89	E.Organ 1	+00	+00

- 2) Press **STORE**.

Store<E.Organ 1>to	Memory	Protect
89<Ricochet >?[yes]	user	on

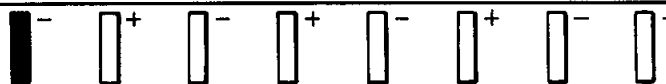
Note:

After pressing **STORE**, you can also use the leftmost +/– **SELECTOR** button pair to select the Card voice.

Try this:

- a) Following step #2 above, press the leftmost – **SELECTOR** button.

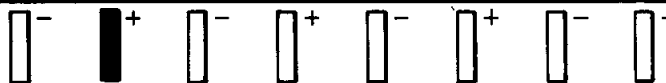
Store<Harmonica >to	Memory	Protect
89<Ricochet >?[yes]	user	on



Notice that the voice on the top line (the voice that will be stored) changed from "E.Organ 1" to "Harmonica."

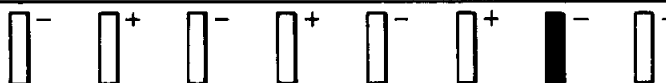
- b) Change the voice back to "E.Organ 1" by pressing the + **SELECTOR** button directly below the voice name in the display.

Store<E.Organ 1>to	Memory	Protect
89<Ricochet >?[yes]	user	on



- 3) Press the rightmost – **SELECTOR** button (directly below the "Protect" parameter) to cancel the memory protect function. When this is set to ON, voices cannot be stored to User memory.

Store<E.Organ 1>to	Memory	Protect
89<Ricochet >?[yes]	user	off



- 4) Press the – **SELECTOR** button directly below the "Memory" parameter to select User memory, if it hasn't already been selected.

- 5) Select the user memory number to which you want to store the card voice. Since we've already stored one voice to User memory voice No. 00, let's select the next available memory space, No. 01.

Note:

You can do this in one of two ways: by using the cursor left and cursor right keys (to step forward or backward through the voice numbers), or by using the numeric keypad (to directly enter the voice number).

Try this:

- a) Let's use the "step" method first. Press and hold down the left cursor key until voice No. 01 appears in the display. Since the voice numbers change quite rapidly, you may miss it and go all the way down to No. 00. If you do, simply press the right cursor key to step forward to No. 01.

Store<E.Organ 1>to	Memory	Protect
01<SoftBrass >?[yes]	user	off

- b) Alternatively, you can directly enter the number of the voice number on the numeric keypad. Press 0 twice to change the voice to No. 00.

Store<E.Organ 1>to	Memory	Protect
00<Elegant >?[yes]	user	off

Return to No. 01 by pressing the right cursor key or by entering 01 on the numeric keypad.

- 6) To store the voice to No. 01, press the + **SELECTOR** button directly below [yes] in the display.

Store<E.Organ 1>to	Memory	Protect
01<SoftBrass >?Sure?	user	off



- 7) Press the same + **SELECTOR** button, under the "Sure?" prompt in the display to complete the operation.

Store<E.Organ 1>to	Memory	Protect
01<Completed!>?	user	off



- 8) Now, simply press the + **SELECTOR** button below [yes] to execute the store operation.

SAVING VOICES TO MEMORY CARDS

You can also store voices to Card memory. However, the ROM card that you used to select voices from in the above operations cannot be used to store voices. For this you need a special kind of card — a memory card. You can find out more about memory cards in the SYNTHESIZER REFERENCE chapter. Memory cards allow you to store sequencer songs as well as voices, a feature you'll find out more about in the SYNTHESIZER REFERENCE chapter.

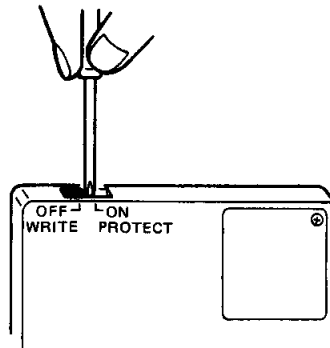
Note:

Inserting or removing a RAM memory card while the power is turned on may result in partial damage or complete deletion of voice data stored in the card. For this reason, insert or remove your RAM memory card from the CARD slot while the power is turned off.

If you have a RAM memory card, use it now for storing your original voice (No. 00, Slow organ).

Try this:

- 1) Set the WRITE PROTECT switch on the RAM memory card to OFF. Use a sharp-pointed tool such as a small screwdriver.



- 2) Insert the RAM memory card in the CARD slot (before turning the power on).

Note:

Before you can store voices to a new RAM memory card, it must be formatted. Formatting makes it possible for the TQ5 to write and read information on the card. There are two available formats: Voice and Sequencer. To save voices to a RAM memory card, you must format the card to Voice.

Try this:

- a) Press **SAVE,LOAD**.

To Card? From Card? Format <YS S/V>?
 [yes] [yes] for seq [yes]

- b) Press the **- SELECTOR** button directly under "Format" in the display, to select formatting for voice.

To Card? From Card? Format <YS S/V>?
 [yes] [yes] for voice [yes]



- c) Press the rightmost + **SELECTOR** button (directly below the rightmost [yes] in the display).

To Card?	From Card?	Format	<YS S/V>?
[yes]	[yes]	for voice	Sure?[yes]

- + - + - + - +

- d) Press the rightmost + **SELECTOR** button again to complete the formatting operation.

To Card?	From Card?	Format	<YS S/V>?
[yes]	[yes]	for voice	Completed!

- + - + - + - +

Now that the RAM card is formatted properly, you can go on to the following steps and store a voice to it.

- 3) Press **USER**.

PLAY) USER	VOICE	Tuning	Note shift
No.00	Slow organ	+00	+00

- 4) If a voice other than No. 00 shows in the display, select voice No. 00 manually. Use the leftmost +/- **SELECTOR** button pair or the cursor left and cursor right keys to step to the voice, or enter the voice number directly on the numeric keypad.

- 5) Press **STORE**.

Store<Slow organ>to	Memory	Protect
00<Slow organ>?[yes]	user	on

- 6) Press the + **SELECTOR** button directly below the "Memory" parameter to select Card memory, if it hasn't already been selected.

Store<Slow organ>to	Memory	Protect
00<Syn.Str 1>?[yes]	card	on

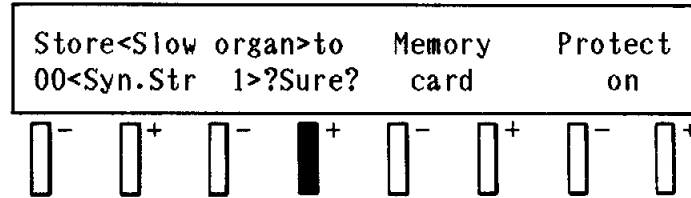
- + - + - + - +

The above display should appear and you should now be ready to store the voice to the RAM card. If you haven't inserted a Card, or if you've improperly inserted the Card, the following display will appear:

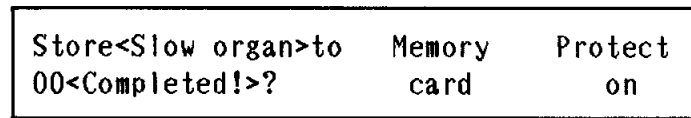
Store<Slow organ>to	Memory	Protect
00<check card>?[yes]	card	on

Repeat step #2 carefully, followed by steps #5 and #6, to remedy the problem.

7) To store the voice to card memory voice No. 00, press the + **SELECTOR** button directly below [yes] in the display.



8) Press the same + **SELECTOR** button, under the "Sure?" prompt in the display to complete the operation.



9) Finally, reset the the WRITE PROTECT switch on the RAM memory card to ON, in order to avoid erasing your recently stored voice.

The **SAVE, LOAD** button can also be used to carry out similar card operations. However, it is far more powerful — and potentially more destructive — than the **STORE** button. More powerful, because you can copy a whole card's contents into User memory at one time. More destructive, because in doing so, you erase whatever voices were in User memory originally.

Use the **STORE** button for the time being; it's safer and, initially, you probably won't need to throw 100-voice groups back and forth between Card and User memory. When you DO need to, though, you can find out more about the **SAVE, LOAD** button in the SYNTHESIZER REFERENCE chapter.

DEMONSTRATION SONG PLAY

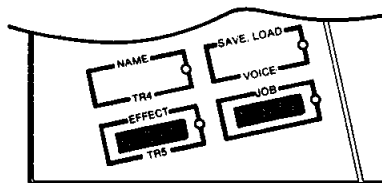
The TQ5 also is capable of playing specially prepared demonstration songs. Three such songs have been loaded into the internal memory and more can be played from current and soon-to- be-released ROM Voice Data cards.

The demonstration songs in both internal and Card memory should amply illustrate the powerful multi-voice capabilities of the TQ5.

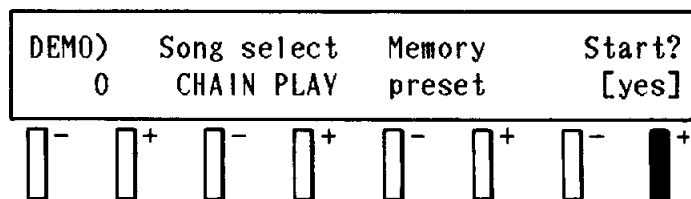
Let's play the Preset memory's demonstration songs.

Try this:

1) Press **EFFECT** and **JOB** simultaneously.



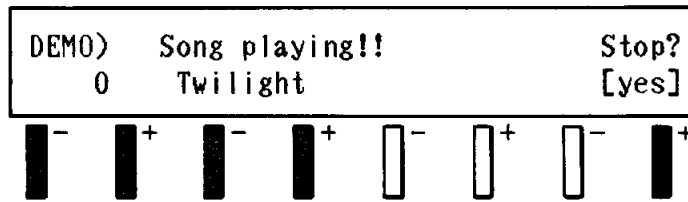
- | |
|---|
| Demonstration songs:
1. Twilight
2. BOPHOP
3. BeBallad |
|---|



2) The first selection ("CHAIN PLAY") automatically plays through the three demonstration songs in order, and repeats play indefinitely by pushing the rightmost

+ **SELECTOR** button (directly below "Start?" in the display) to play the demonstration songs.

- 3) The other selections allow you to play each of the songs individually. Select the song you wish to play with either the leftmost + / - **SELECTOR** button pair (directly below the song number) or the next + / - **SELECTOR** button pair (directly below the song name).



- 4) Press the rightmost + **SELECTOR** button (directly below "Start?" in the display) to play the selected song.
- 5) To stop playback at any point, press the same rightmost + **SELECTOR** button (directly below "Stop?" in the display).
- 6) To leave the demonstration song play function and return to normal operation, press **EXIT**.

Note:

Pressing the **EXIT** button is the only way, other than turning the power off and on, that you can return to other synthesizer and sequencer functions from demonstration song play.

Note:

With regard to the 3rd song, "BeBallad", the piano part is performed on an external tone generator. Connect the MIDI IN of the PF1500 to the TQ5's MIDI OUT (refer to "SETTING UP", page 7). Set the MIDI receive signal to channel 1, and after turning the OMNI to OFF, play the demo with the piano tone of your choice.

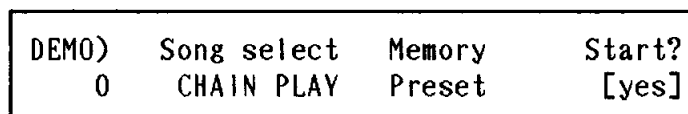
PLAYING DEMONSTRATION SONGS FROM CARD MEMORY

Yamaha's ROM Voice Data cards also have specially prepared demonstration songs that utilize various voices of the cards.

If you have a ROM Voice Data card, let's listen to the songs stored on it.

Try this:

- 1) Insert the card firmly and securely into the CARD slot (before turning the power on).
- 2) Hold down **EFFECT** and press **JOB**.



- 3) Press the + **SELECTOR** button directly below "Memory" in the display to select Card memory.
- 4) Select and play the songs in the same way described above in playing Preset memory songs (beginning with step #2).

Note:

The voices of the TQ5 cannot be played from the connected MIDI keyboard when the demonstration songs are being played.

Note:

These demonstration songs are in no way related to the TQ5 sequencer. Demonstration song data cannot be loaded or edited as sequence data.

THE SEQUENCER SECTION

Among the comprehensive features of the TQ5, one of the most impressive is the sequencer. In effect, it is like having a small recording studio right inside your synthesizer. With it you can record and play songs, using up to eight different voices of the TQ5, and even use it to play voices on other connected instruments.

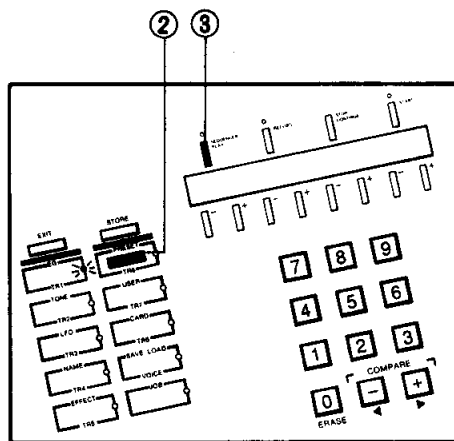
To get a basic idea of what the sequencer is capable of, take some time to explore the following sections.

RECORDING TO A SEQUENCER TRACK

In this section you'll record to the sequencer of the TQ5 from your connected MIDI keyboard. (In our example, as usual, we'll use the PF1500 Electronic Piano.)

Try this:

- 1) Make certain that all MIDI settings are correct for playing the voices of the TQ5 from your connected keyboard. (Refer to BASIC STEPS IN SETTING UP THE TQ5 in the SETTING UP section.)
- 2) Press **PRESET**. Doing this allows you to select voices in the next step from Preset memory. (Of course, User or Card may also be selected, but for our example, let's use the Preset voices.)

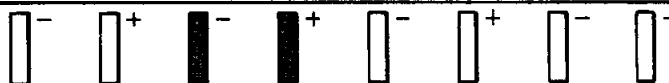


- 3) Press **SEQUENCER/PLAY**. The LED above the **SEQUENCER/PLAY** button will light up in red. The LED next to the **EG** button, which functions as the **TR1** (Track 1) button in the Sequencer Mode, lights up in green to indicate that Track 1 is ready for playback.

PLAY SONG)	Voice	Measure	Tempo
1:	P00:Elegant	001	120

- 4) Select a voice with which to record. A good, full-range voice to start out with is Preset voice No. 08, E.Piano 1. Select the voice by using the **+/- SELECTOR** button pair directly below the voice name in the display, or by entering the voice number directly on the numeric keypad.

PLAY SONG)	Voice	Measure	Tempo
1:	P08:E.Piano 1	001	120



- 5) Press **RECORD**. The LED above the **RECORD** button will light up in red. The LED next to **TR1** will light up in red to indicate that Track 1 is ready for recording.

NORMAL REC)	Beat	Measure	Tempo
P08:E.Piano 1	4/4	001	120

- 6) If you've set up everything properly now, you're ready to record. Simply press **START** to begin recording. The LED above the button will light up in red. A metronome beep will begin after you press **START**, and will continue all the time you are recording to serve as a rhythmic guide while you play. The red LED above the **SEQUENCER/PLAY** button will also flash at the same rhythm as the metronome.

NORMAL REC)	Beat	Measure	Tempo
P08:E.Piano 1	4/4	-8	120

Recording doesn't begin immediately when you press **START**, however. The metronome will give you a two-measure lead-in before the sequencer actually records your play, in order that you can correctly anticipate the beginning of the first measure. The measure number in the display shows the number of beats remaining until recording begins, starting at -8 and counting down after **START** is pressed. The metronome beep has two pitches, high and low; the first beat of each measure is indicated by the high pitch and the rest of the beats by the low pitch.

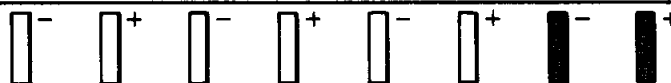
Note:

Before actually recording, you may want to set the tempo to a more comfortable or appropriate speed for your song. Rather than guess at the tempo number you want before recording, set the tempo while the sequencer is running so that you can "feel" your way to the right tempo.

Try this:

- Following steps #5 and #6 above, press and hold down the rightmost - **SELECTOR** button directly below "Tempo" in the display. The tempo will decrease as you do this, as will the tempo number shown in the display.
- To increase the tempo, press and hold down the rightmost + **SELECTOR** button directly below "Tempo" in the display.
- Once you've found the proper tempo by using the rightmost +/- **SELECTOR** button pair, press **STOP/CONTINUE**. The red LEDs above the **RECORD** and **START** buttons will turn off.

PLAY SONG)	Voice	Measure	Tempo
1:	P08:E.Piano 1	001	110



Since pressing **STOP/CONTINUE** cancels the record function and returns you Sequencer/Play operation, you'll have to:

- Press **RECORD** again, then **START**, to record at the newly set tempo.
- 7) To stop recording, press **STOP/CONTINUE**. The red LEDs above the **RECORD** and **START** buttons will turn off.

PLAYING BACK YOUR NEWLY RECORDED SONG

If you are still in the Sequencer Mode after recording (the LED above **SEQUENCER/PLAY** should be lit in red and the LED next to **TR1** should be lit in green), you're now ready to hear what you've just recorded.

Note:

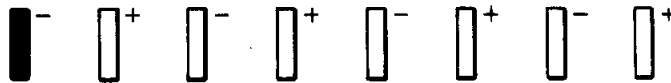
If you are not in Sequencer Mode, press **SEQUENCER/PLAY**.

PLAY SONG)	Voice	Measure	Tempo
1:	P00:Elegant	001	120

The voice number and name shown in the display may not be the one that you originally selected for the song. This has no effect on playback, however, and the originally selected voice will be heard (and displayed) when the song starts.

If also, for some reason, the song number displayed is something other than "1," your song will not play back.

PLAY SONG)	Voice	Measure	Tempo
2:	P00:Elegant	001	120



To return to song number 1, repeatedly press the leftmost – **SELECTOR** button (directly below the song number) until "1" appears in the display.

Let's play back your newly recorded song.

Try this:

- 1) Press **START** to begin playback.

PLAY SONG)	Voice	Measure	Tempo
1:	P08:E.Piano 1	001	120

Your song will begin playing from the first measure with the voice that you selected. The metronome beep will not be heard in playback, but the LED above **SEQUENCER/PLAY** will flash at the indicated tempo.

- 2) Press **STOP/CONTINUE** whenever you want to stop playback of the song.
- 3) To resume playback of the song from the point at which you stopped, press **STOP/CONTINUE** a second time.

To play back the song from the beginning after stopping it at any point, press **START**.

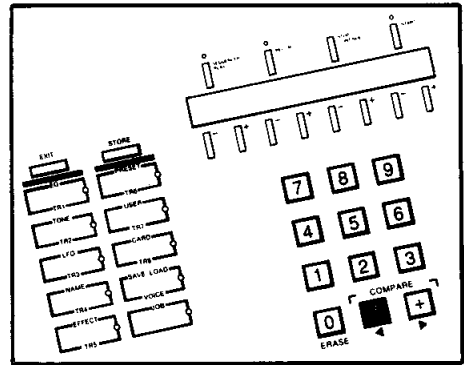
Note:

As the song plays, you'll notice that the measure number advances (just as it did in recording). In addition to the measure number indication in the display, however, there is also a unique stop watch feature. It can be turned on either in recording or playback.

Try this:

- a) While the sequencer is running, press the cursor right key on the numeric keypad.

PLAY SONG)	Voice	Total	Tempo
1:	P08:E.Piano 1	00'09 2	120



The stop watch feature is now displayed, with the total time of the song indicated in minutes, seconds and 1/10 seconds.

b) Press **STOP/CONTINUE** to stop both the watch and song playback.

The stop watch time is cumulative; in other words, it continues to run from the point at which it was last stopped, even if the song plays to its conclusion once and is played back again.

For example, if your song is 32 seconds in length, playing it back twice will result in a stop watch reading of 64 seconds.

c) You can reset the stop watch to zero at any time (even while it is running) by pressing the cursor left key on the numeric keypad.

CHANGING VOICES AND MAKING EFFECT SETTINGS IN YOUR SONG

The song that you just finished recording and listening to already has a specific voice assigned for playback. However, you don't need to keep that voice. Any voice in the selected memory type can be used for playback and you can even change the voice during playback.

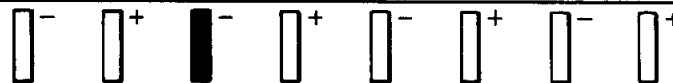
Try this:

1) While in the Sequencer Mode, press **START**.

PLAY SONG)	Voice	Measure	Tempo
1:	P08:E.Piano 1	001	120

2) With the sequencer running, press the **- SELECTOR** button directly below the voice number once.

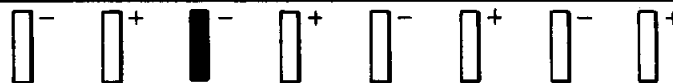
PLAY SONG)	Voice	Measure	Tempo
1:	P07:Piano 1	005	120



After a short delay (while the voice change is made), you'll hear another voice, "Piano 1," playing the song.

3) Press the same **- SELECTOR** button three more times to hear the song played with a pipe organ voice.

PLAY SONG)	Voice	Measure	Tempo
1:	P04:LargePipes	009	120



Go on and play back your song using other voices, changing them with the +/– **SELECTOR** buttons directly below the voice number and name.

Your entire song can also be given an effect setting, allowing you to apply reverb, delay or distortion as you wish.

Try this:

- 1) While in the Sequencer Mode but with song playback stopped, press **JOB**.

```

SEQUENCER JOB SELECT)  Select one!
Song Qntz  Cnd Edit  Mix Card  Rec Efct
  
```

- 2) Press the rightmost + **SELECTOR** button directly below "Efct" (Effect) in the display.

```

EFCT) Effect preset  Time  Balance
No. 0 Rev. Hall  (00)  0.3sec  00
  
```

The effect number

The effect name

The time number (from 00 to 36)

The time value (from 0.3 to 10 seconds)

The balance of the effect sound and the voice sound

- 3) At the moment, the present effect is at its minimum setting, and will not affect the voice of the song. For a spacious reverb effect, press and hold down the + **SELECTOR** button directly under "Time" in the display, until the display reads "(17) 2.0sec," or thereabouts. Do the same with the rightmost + **SELECTOR** button to raise the balance to about 45.

```

EFCT) Effect preset  Time  Balance
No. 0 Rev. Hall  (17)  2.0sec  45
  
```

- + - + - + - +

- 4) To return to your song, press **SEQUENCER/PLAY**.

```

PLAY SONG) Voice  Measure  Tempo
1:         P00:Elegant  001    120
  
```

- 5) Finally, to hear your song with the new effect setting, press **START**.

NAMING YOUR SONG

Now that you've recorded a song, assigned a voice and effect setting to it, let's give it a name.

Try this:

- 1) While in the Sequencer Mode, press **JOB** button.

```

SEQUENCER JOB SELECT)  Select one!
Song Qntz  Cnd Edit  Mix Card  Rec Efct
  
```

- + - + - + - +

2) Press the leftmost - **SELECTOR** button to select "Song".

SONG) NAME	Tempo	Store	Song	clear
	120	[yes]	[yes]	
<input checked="" type="checkbox"/> -	<input checked="" type="checkbox"/> +	<input type="checkbox"/> -	<input type="checkbox"/> +	<input type="checkbox"/> -
<input type="checkbox"/> -	<input type="checkbox"/> +	<input type="checkbox"/> -	<input type="checkbox"/> +	<input type="checkbox"/> -

3) Press the leftmost +/- **SELECTOR** button.

SONG) abcdefghijklmnopqrstuvwxyz/;?=',.
- [low][up][prv][nxt]

4) Enter a name (of up to 8 characters) for the song. As you did in NAMING AN EDITED VOICE in the OPERATION BASICS section, follow this procedure:

a) Use the rightmost +/- **SELECTOR** button pair to select the character.

SONG) abcdefghijklmnopqrstuvwxyz/;?=',.							
- [low][up][prv][nxt]							
<input type="checkbox"/> -	<input type="checkbox"/> +	<input type="checkbox"/> -	<input type="checkbox"/> +	<input type="checkbox"/> -	<input type="checkbox"/> +	<input checked="" type="checkbox"/> -	<input checked="" type="checkbox"/> +

b) Use the +/- **SELECTOR** button pair to the left of those above to select the case of the letters (capital or lowercase).

SONG) abcdefghijklmnopqrstuvwxyz/;?=',.							
- [low][up][prv][nxt]							
<input type="checkbox"/> -	<input type="checkbox"/> +	<input type="checkbox"/> -	<input type="checkbox"/> +	<input checked="" type="checkbox"/> -	<input checked="" type="checkbox"/> +	<input type="checkbox"/> -	<input type="checkbox"/> +

c) Use the leftmost +/- **SELECTOR** button pair to move the cursor.

SONG) abcdefghijklmnopqrstuvwxyz/;?=',.							
- [low][up][prv][nxt]							
<input checked="" type="checkbox"/> -	<input checked="" type="checkbox"/> +	<input type="checkbox"/> -	<input type="checkbox"/> +	<input type="checkbox"/> -	<input type="checkbox"/> +	<input type="checkbox"/> -	<input type="checkbox"/> +

Note:

Remember to always advance the cursor after selecting a character, otherwise the character will not be entered to the name. This includes the eighth character of a name; even though the cursor does not advance past the eighth space, you must press the leftmost + **SELECTOR** button once after selecting the character to actually enter it.

d) Press **JOB** button to leave the naming operation.

SONG) NAME	Tempo	Store	Song	clear
	120	[yes]	[yes]	

SAVING YOUR NEWLY RECORDED SONG

Since all of the recording and settings you've made up to this point (including entering the name) are merely temporary and will be lost when you turn off the power of the TQ5, you'll probably want to save your newly recorded song to the internal memory of the sequencer.

Try this:

- 1) Press **JOB** button.

SEQUENCER JOB SELECT)				Select one!			
Song	Qntz	Cnd	Edit	Mix	Card	Rec	Efct
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 2) Press **SONG** button.

SONG) NAME	Tempo	Store	Song clear
My song	120	[yes]	[yes]

The song name that you entered in the previous section, NAMING YOUR SONG, will be shown in the display.

- 3) Press the + **SELECTOR** button directly below "Store" in the display.

SONG) NAME	Tempo	Store	Song clear
My song	120	Sure?[yes]	[yes]
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- 4) Press the same + **SELECTOR** button as in step #3 to finally execute the store operation.

SONG) NAME	Tempo	Store	Song clear
My song	120	Completed!	[yes]
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Your song, with its voice and effect assignment and its name has now been saved to the TQ5's internal memory.

RECORDING TO A SEQUENCER TRACK — STEP RECORDING

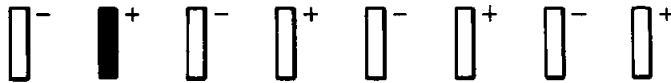
In addition to recording notes as you play them, the sequencer of the TQ5 lets you record notes individually. This step-by-step method of recording is called, naturally, Step recording. The primary benefit of Step recording is that it allows you to create very complex passages that would be difficult to play by hand.

Let's record a couple of measures using the Step recording method.

Try this:

- 1) Press **SEQUENCER/PLAY** button.

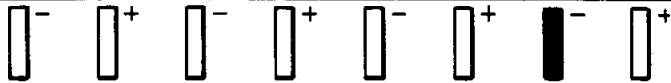
PLAY SONG)	Voice	Measure	Tempo
1:My song	P00:Elegant	001	120



2) Since you are about to record a new song, select a new song number. Press the leftmost + **SELECTOR** button to select song number 2.

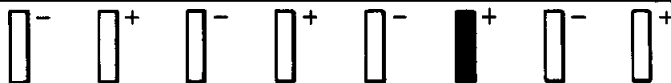
3) Press **JOB** button.

SEQUENCER JOB SELECT)	Select one!		
Song Qntz	Cnd Edit	Mix Card	Rec Efct



4) Press the - **SELECTOR** button directly below "Rec" (Record) in the display.

RECORD MODE)	Mode	Receive ch
Free memory= 98%	normal	omni



5) Press the + **SELECTOR** button directly below "Mode" in the display once to select Step recording.

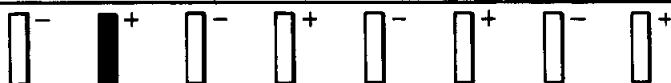
RECORD MODE)	Mode	Receive ch
Free memory= 98%	step	omni

6) Press **RECORD** button.

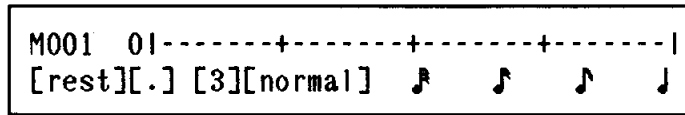
STEP REC)	Beat	Measure
P00:Elegant	4/4	001

7) Select the voice that you wish to use for the recording. For our example, we'll use voice No. 05, SynString1. Press the leftmost + **SELECTOR** button five times to call up this voice.

STEP REC)	Beat	Measure
P05:SynString1	4/4	001



8) Now you're ready to record, so press **START** button.



This is the basic Step recording display. The top line indicates the current measure number and shows that measure as a dotted line of 32 divisions (each division represents a 32nd note). The notes that you enter will appear on this line as diamond-shaped marks.

The bottom line of the display contains the commands that you use to enter the lengths of notes and rests.

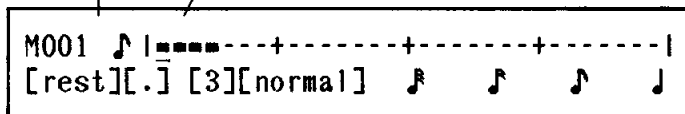
The pitches of the notes can be entered from your connected MIDI keyboard.

The staff below shows the notes we'll be recording.

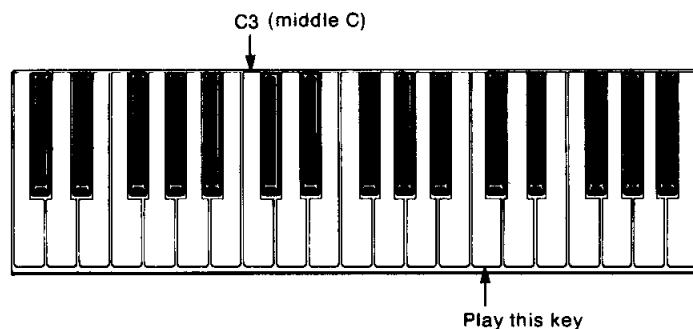
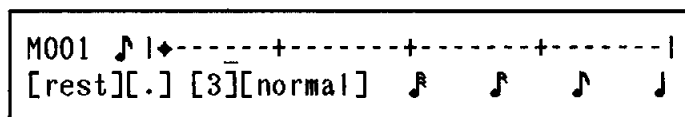


9) To record a note, first select its length. For our first note, press the rightmost **SELECTOR** button (directly below the 1/8 note in the display).

Note length (1/8 note symbol) Note length represented graphically (each bar equals 1/32 note)

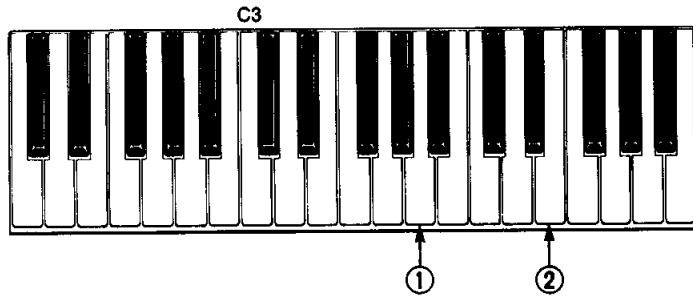
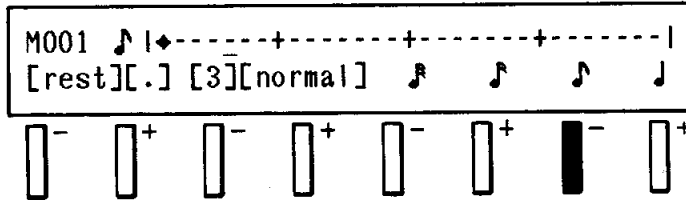


10) The note isn't actually recorded until its pitch is entered. To do this, play the key indicated on the keyboard illustration below:

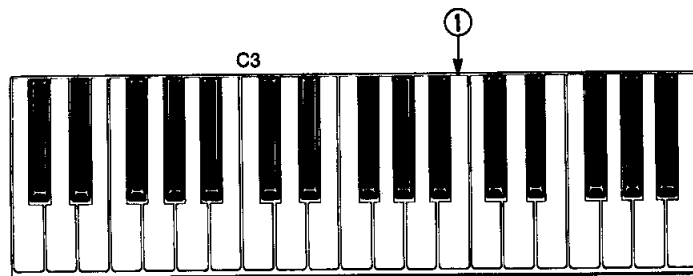
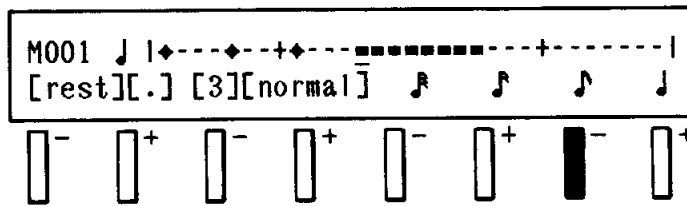


Notice that a diamond-shaped mark has been entered at the beginning of the measure and that the cursor has advanced the length of a 1/8 note.

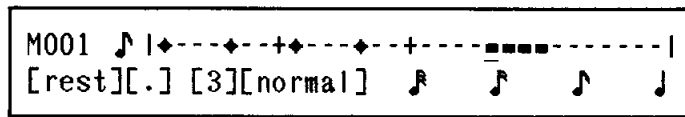
11) Now, enter the next two notes. Since you're already specified the note value (in step #9) and the same note value will be used for the next two notes, it's not necessary to press the rightmost – **SELECTOR** button again; simply play the notes on your keyboard.

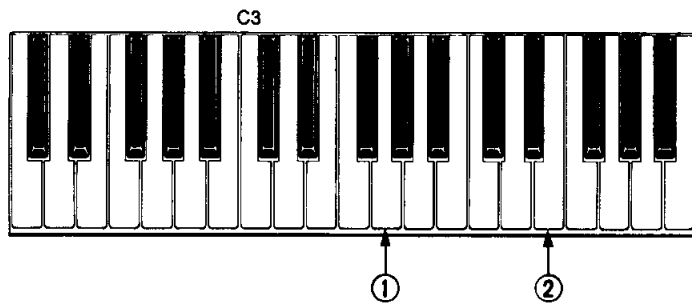


12) The next two notes are tied, effectively making a 1/4 note out of two 1/8 notes. To record the notes, press the – **SELECTOR** button below the 1/8 note in the display twice then play the note on the keyboard.

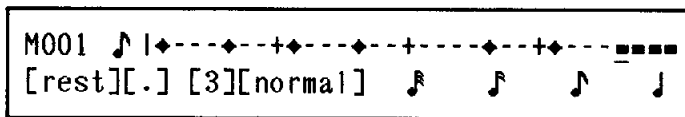


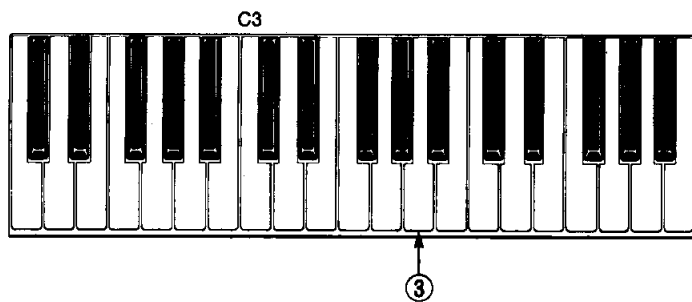
13) Record the next two notes just as you did in step #9, #10 and #11 above, selecting the 1/8 note length and playing the proper keys, as illustrated below.

M001 



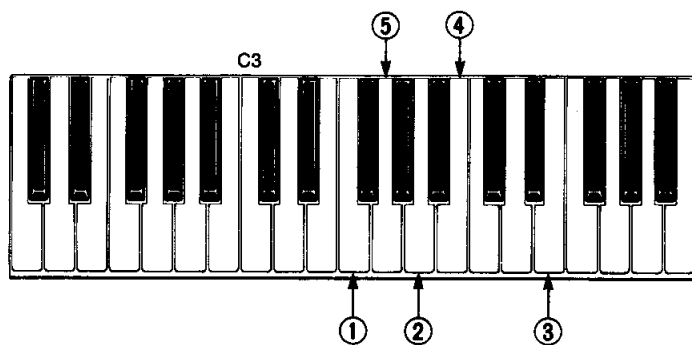
14) The next two notes are tied, so record them just as you did in step #12, playing A3 on the keyboard.

M001 

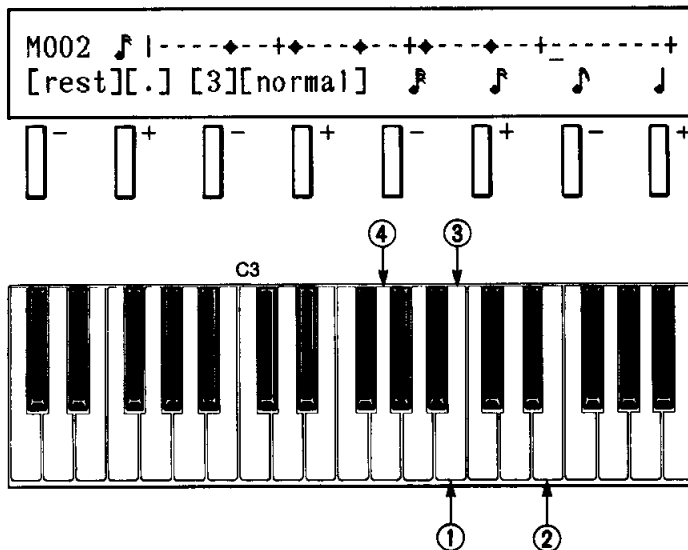


The cursor will automatically advance to the next available space in the next measure when the tie has been entered.

15) In measure #2, record the next five 1/8 notes by first selecting the note length (just as you did in step #9) and then playing the keys in the order shown below:



16) To add the final 1/16 notes, use the same procedure as you've done in step #15 above, this time pressing the + **SELECTOR** button below the 1/16 note in the display before playing the notes.



17) Finally, press **STOP/CONTINUE** to stop recording. The LED above **SEQUENCER/PLAY** will light in red, and you can now play the recorded passage in the normal way (by pressing **START** button).

PLAY SONG)	Voice	Measure	Tempo
3:	P05:SynString1	001	120

This completes your short tour through the basic recording and play functions of the TQ5's sequencer. For more detailed information on how to use the sequencer and its many functions, refer to the **SEQUENCER REFERENCE** section.

Now that you've completed this chapter, you should be able to operate most of the functions of the TQ5 with complete ease and confidence.

Go exploring again at your leisure — find sounds you like, change them around with the various editing features, and use them in songs of your own creation. If you're uncertain about how to do something, come back to this chapter to jog your memory. Or better yet, go to the next chapters, **SYNTHESIZER REFERENCE** and **SEQUENCER REFERENCE**. There you'll discover even more interesting and exciting ways to use the TQ5.

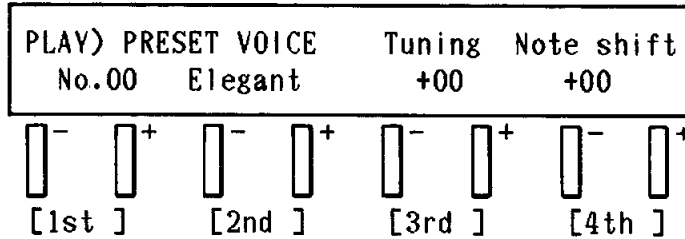
SYNTHESIZER REFERENCE

This chapter of the manual is a comprehensive guide to all of the synthesizer functions of the TQ5. We urge you to go through it casually at first; if some function or job strikes your interest, read about it and try to use it on your TQ5. You'll also find this section handy when you need to refresh your memory about a function or operation.

This chapter covers all Synthesizer operations. The next chapter covers all Sequencer operations. The Synthesizer Reference chapter describes functions in the order of the corresponding front panel buttons. The Sequencer Reference chapter generally describes functions in their logical order of use.

Note:

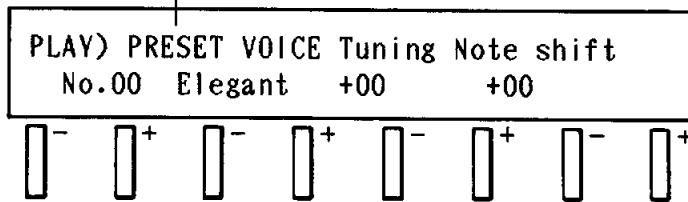
For brevity and to avoid possible confusion over use of the controls, we'll refer (when necessary) to the +/- **SELECTOR** button pairs as 1st, 2nd, 3rd or 4th as shown below:



PLAY MODE BUTTONS

Use the PLAY buttons (PRESET, CARD, USER) and the numeric key pad (or +/-) to select voices.

Select PRESET, CARD or USER.



■ +/- **SELECTOR** Button Pairs/Parameters/Ranges

- [1st] Select the voice number. (Numeric keypad or cursor left and cursor right keys can also be used to select values.)
Range: 00 — 99
- [2nd] Press these +/- **SELECTOR** buttons simultaneously to enter the Play Hold mode. (The Play Hold mode changes the way you enter voice numbers from the numeric keypad. Normally, you must press two buttons on the numeric keypad to enter a voice name; in the Play Hold mode, the tens digit is "held" and the numbers you press select corresponding voices within that "held" set. For example, if you enter Play Hold mode the after voice number 89 has been selected, pressing 2 on the numeric keypad selects voice number 82, pressing 5 selects 85, and so on.)
- [3rd] Adjust the tuning of the voice.
Range: -64 — +63 (± 1 half-step)
- [4th] Transpose the voice in half-steps.
Range: ± 24 (± 2 octaves)

EASY EDIT MODE BUTTONS

EG

■ **Functions:** Adjust envelope generator settings (Attack, Decay, and Release times) for both Volume and Tone

ABOUT EG:

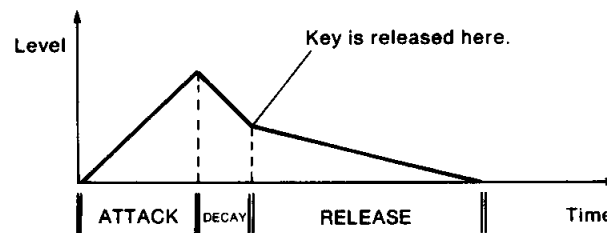
EG stands for envelope generator. Not that the words themselves are important to remember, but you should know what an envelope generator does.

Every sound that you hear, from the clanging of a bell to the screeching tires of a car coming to a sudden halt, has a direct relation to time. The volume of a sound takes a certain length of time to reach its loudest point — in the case of a bell, almost instantly — and it takes a certain length of time to die away.

Also, if you listen closely to the sound of a bell, you'll notice that the initial metallic clanging sound is gradually replaced by a softer, more mellow ringing tone. In other words, the tone of the bell also changes over time.

For a synthesizer to imitate the sounds of the real world and, in fact, for it to create sounds of any interest, it must be able to control these variations in volume and tone over time.

The TQ5 does this with its EG's Attack, Decay, and Release parameters. Their effect can be easily understood from this diagram:



The envelope generator controls how the sound changes in both volume and tone over time. Both volume and tone can be controlled together by the same EG setting, or independent EG settings can be made for each.

In FM synthesis terminology, the volume EG affects the carrier operator(s) and the tone EG affects the modulator operator(s).

■ + / - **SELECTOR Button Pairs/Parameters/Ranges**

[1st] Select the EG assignment.

- To set a separate EG for volume:
Press either button of the first + / - **SELECTOR** button pair until "volume" is displayed.
- To set a separate EG for tone:
Press either button of the first + / - **SELECTOR** button pair until "tone" is displayed.
- To set a common EG for volume and tone:
Press either button of the first + / - **SELECTOR** button pair until "vol + tone" is displayed.

[2nd] Adjust the attack rate. This determines the time it takes for the sound to reach its loudest point after the key is pressed.

Range: ± 10

[3rd] Adjust the decay rate. This determines the time it takes for the sound to decrease to its second volume.

Range: ± 10

[4th] Adjust the release rate. This determines the time it takes for the sound to reach silence from its second volume.

Range: ± 10

(Positive values DECREASE the time, or make the sound change faster; negative values INCREASE the time, or make the sound change more slowly.)

TONE

■ **Functions:** Set harmonic content and brilliance of tone; determine the waveforms of the voice.

The Brilliance parameter controls how bright or mellow the tone is. Positive values make the tone brighter; negative values make it more mellow. In FM synthesis terminology, Brilliance controls the output level of the modulator operator(s).

The Wave parameter affects the frequency (position) of the harmonics or overtones — i.e. it changes the fundamental character of the sound. Positive settings will produce higher overtones, and negative settings will produce lower overtones. Notice that changing this parameter can result in metallic or gritty sounds for some settings. In FM synthesis terminology, Wave controls the coarse frequency setting of the modulator operator(s).

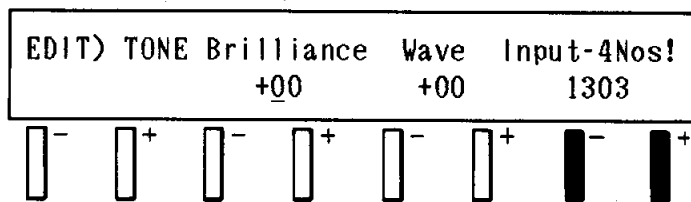
The Input-4Nos! parameter lets you change the waveforms that the voice uses for its sound generation. Each voice has four sound sources, and each can be given one of eight different waveforms. Because some waveforms are brighter than others, this parameter also helps determine the overall brightness and tone quality of the sound. In FM synthesis terminology, the Input-4Nos! parameter determines the waveform for each operator.

Use the numeric keypad (0~7) to select one of the eight waveforms for each individual sound source (operator), and use the rightmost +/- SELECTOR buttons to advance all sound sources' waveforms by one.

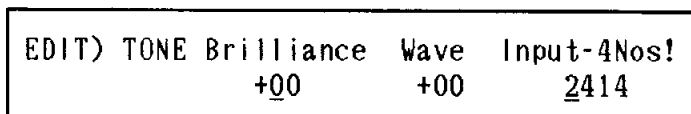
Each sound source (operator) is represented by a single digit in the four-digit display, and each can only be changed from 0 to 7.

Here are examples of the two methods of editing the Input-4Nos! parameter:

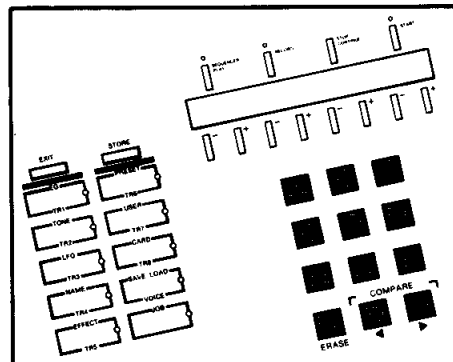
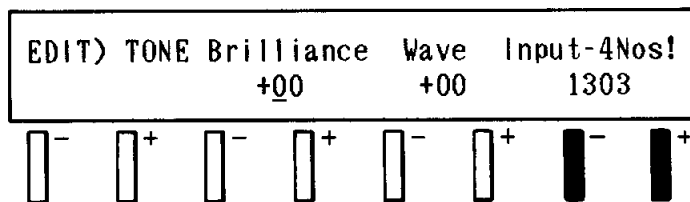
a) Using the rightmost +/- SELECTOR button pair



The rightmost +/- SELECTOR button pair advances all four digits in the display by one. For example, if you press the rightmost + SELECTOR button from the display above, the display will change as follows:

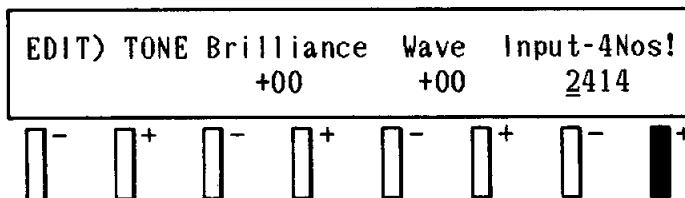


b) Using the numeric keypad



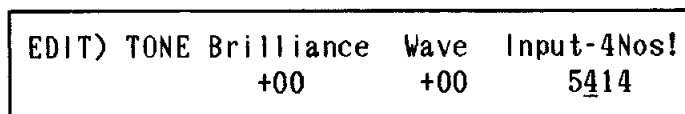
The numeric keypad can be used to directly enter the numbers. However, if the cursor (the line under the Brilliance value in the display above) is at Brilliance or Wave, you first have to press one of the rightmost +/- **SELECTOR** button pair to move the cursor to the Input-4Nos! parameter.

To see what we mean, press the rightmost + **SELECTOR** button.



Notice that the cursor is now beneath the Input-4Nos! parameter. Since the values have been changed by pressing the + **SELECTOR** button, you might want to return to the original values by pressing the - **SELECTOR** button next to it.

To enter individual values for each position, simply press the desired number, and that number is entered and the cursor automatically moves to the next position. For example, if you press 5 from the display above, the display will change as follows:



Note:

Since 7 is the highest value that can be entered, pressing either 8 or 9 on the numeric keypad also enters 7 to the display.

■ +/- **SELECTOR** Button Pairs/Parameters/Ranges

- [2nd] Adjust the brilliance of the tone.
Range: ± 10
- [3rd] Determine the frequency components of the voice.
Range: ± 10
- [4th] Determine the waveforms used by the sound sources. (Numeric keypad can also be used to select values.)
Range: 0 — 7 (for each operator indicated in the four-digit display.)

LFO

■ **Functions:** Adjust speed, depth and sensitivity of vibrato and tremolo effect.

The low frequency oscillator is used to modulate (cause periodic variations in) the pitch and/or volume of the sound. LFO-controlled pitch modulation is called Vibrato, and volume or amplitude modulation is called Tremolo.

- The speed of the modulation can be set.
- The Vibrato parameter adjusts both pitch modulation depth and sensitivity simultaneously.

- The Tremolo parameter adjusts both depth and sensitivity of amplitude modulation.

Note:

Two independent LFOs are available for voices when using the Multi Mode functions. Thus, when using 3 or more voices at the same time, the LFO applied to one voice could affect one or more of the other voices. See **LFO** in the MULTI MODE FUNCTIONS section of this chapter for more information.

■ **+/- SELECTOR Button Pairs/Parameters/Ranges**

- [2nd] Adjust the speed of the modulation.
Range: 0 — 99
- [3rd] Adjust the degree of pitch modulation.
Range: 0 — 99
- [4th] Adjust the degree of amplitude (volume) modulation.
Range: 0 — 99

NAME

■ **Function:** Assign names to voices.

Voice names can be up to ten characters in length. The available characters include letters of the alphabet, numbers, and 18 additional special characters and punctuation marks.

To enter a voice name:

- 1) Select the character set you wish to use: capital or lower case. Use the third pair of +/- **SELECTOR** buttons (directly below [low] and [up] in the display).
 - 2) Select the particular character you want to enter from the top line of the display. Use the fourth pair of +/- **SELECTOR** buttons (directly below [prv] and [nxt] in the display).
 - 3) Enter the selected character and advance the cursor to the next position in the name. Use the + **SELECTOR** button directly below the name in the display. To move the cursor back for re-entering characters, use the accompanying - **SELECTOR** button.
- Use the numeric keypad to enter numbers to voice names. The cursor left and cursor right buttons by the numeric keypad can be used to enter “-” and “+”, respectively. Spaces are entered by selecting the farthest right position of either character set on the top line of the display.

Note:

Remember to always advance the cursor after selecting a character, otherwise the character will not be entered to the name. This includes the tenth character of a name; even though the cursor does not advance past the tenth space, you must press the leftmost + **SELECTOR** button once after selecting the character to actually enter it.

■ **+/- SELECTOR Button Pairs/Parameters**

- [1st] Enter the selected character and move the cursor backward or forward.
- [3rd] Select the character set (capital or lower case).
- [4th] Select the character from the top line in the display.

EFFECT

■ **Functions:** Assign effect presets to voices; edit parameters of effect presets.

Ten effect presets are available:

- No. 0 Reverb — Hall
- No. 1 Reverb — Room
- No. 2 Reverb — Plate
- No. 3 Delay
- No. 4 Delay — Left/Right
- No. 5 Stereo Echo
- No. 6 Distortion + Reverb
- No. 7 Distortion + Echo
- No. 8 Gate Reverb
- No. 9 Reverse Gate

- The Reverb presets recreate the reflections of the sound as it would be heard in various environments and thus make the sound seem more natural and lifelike.
- The Delay preset adds a single repeat. The Delay — Left/Right adds a single repeat, first to the left, then to the right.
- The Stereo Echo preset adds gradually decaying repeats (left and right together).
- The Distortion presets add a hard-edged, gritty sound.
- The Gate preset creates a reverb that is cut off (i.e. "gated") before it can decay naturally. The Reverse Gate preset creates a reverb that grows louder with time (the opposite of natural reverb) before it is cut off.

Each preset has two parameters: Time (or, in the case of the two Gate reverb presets, Room Size) and Balance. The Time parameters in the Reverb presets basically determine the perceived size of the room by adjusting the length of reverberation. Time parameters in Delay and Echo presets determine the length of time between the original sound and the delayed repeats. The Room Size parameters in the Gate presets determine the amount of reverberant "wash" in the sound. Balance parameters in all presets allow adjusting of the relative level of the effect compared to the voice. A Balance setting of 0 turns the effect off.

Note:

Effect and Pan cannot be used at the same time. If an effect setting is adjusted for a voice while that voice or any other in the Multi Mode arrangement has a pan setting, the following message will briefly appear and the pan setting(s) will be ignored.

```
EFFECT)      Preset      Time      Balance
*ATTENTION* Pan data was ignored!
```

■ **+ / - SELECTOR Button Pairs/Parameters/Ranges**

[1st] Select the preset effect.
Range: No.0 — No.9

[3rd] For presets #0 — #7, adjust the time of the reverb or delay effect. For presets #8 and #9, adjust the apparent room size.

Ranges:

Presets #0, 1, 2, 6: 0.3 — 10.0 sec
Presets #3, 4, 5, 7: 0.1 — 300 msec
Presets #8, 9: 0.5 — 3.2

[4th] Adjust the overall balance of the effect sound and the direct sound.
Range: 0 — 99

SAVE, LOAD AND STORE OPERATIONS

SAVE, LOAD MODE

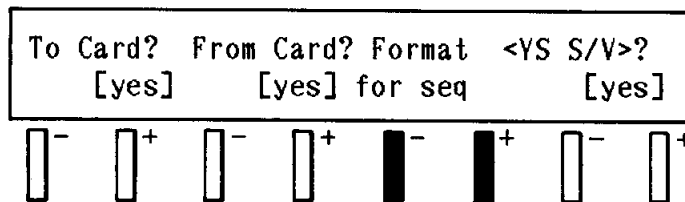
■ **Functions:** Save TQ5 voices or sequencer data to RAM memory card; load voices or sequencer data to the TQ5 from ROM or RAM memory cards; format RAM memory cards for storage of either voice/system or sequencer data.

■ **FORMAT**

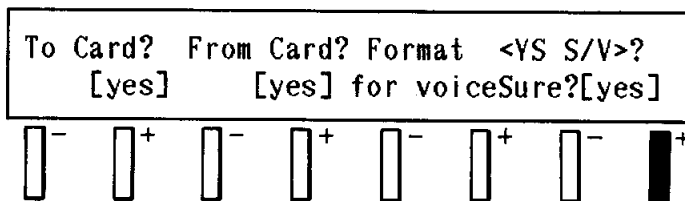
Before you can save TQ5 voice (or sequence) data to a RAM memory card, it must be formatted to accept YS voice (or sequence) data. The YS format is also used by the YS200, YS100 and B200 Digital Synthesizers. This means that all properly formatted cards can be used interchangeably on the TQ5 and any of the above mentioned synthesizers.

To format a RAM memory card:

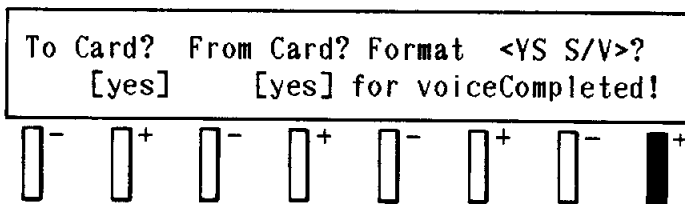
- 1) Insert the appropriate RAM memory card in the CARD slot on the front panel.
- 2) Make certain that the memory protect on the card is set to OFF. (See "ABOUT THE RAM MEMORY CARD (MCD 32)" below.)
- 3) Press **SAVE, LOAD** button.



- 4) Use the third +/- **SELECTOR** button pair to select the format.
- 5) Press the rightmost + **SELECTOR** button (directly below the rightmost [yes] in the display).



- 6) The display will prompt for confirmation. Press the rightmost + **SELECTOR** button again to complete the formatting operation.



You can cancel the operation (after step #5) by pressing either button of the third +/- **SELECTOR** button pair.

Note:

Formatting a previously used RAM memory card MAY erase the data that is saved on the card. Whether it does or not depends on the type of data that is stored to the card. The rules are:

- 1) Voice data on the RAM memory card is NOT erased when formatting for voice or sequencer.
- 2) Sequencer data on the RAM memory card is ALWAYS erased when formatting for voice or sequencer.

For this reason, make absolutely certain that no important data is on the RAM card you intend to format. If possible, use only blank RAM memory cards for the storage of new data.

■ SAVE, LOAD

The **SAVE, LOAD** function allows you to execute either of the following two operations:

- 1) **SAVE** all 100 voices contained in User or Preset memory to a RAM memory card.
- 2) **LOAD** all 100 voices contained on a ROM or RAM memory card to User memory.

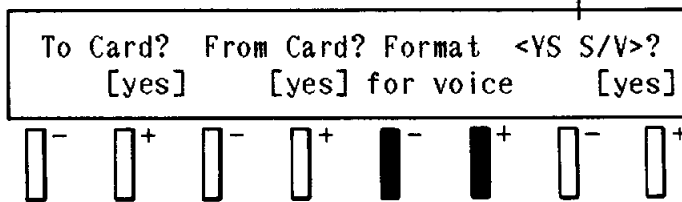
Note:

Loading data from a card into the User memory of the TQ5 will erase all previous voice in the TQ5. Similarly, saving data from the User memory of the TQ5 to a RAM card will erase all previous voice data stored to the card. If possible, save your important data to a blank RAM memory card before loading any new data.

To save data to or load data from card memory:

- 1) Insert the appropriate ROM or RAM memory card in the CARD slot on the front panel.
- 2) If you are saving data to a RAM memory card, make certain that the memory protect on the card is set to OFF. (See "ABOUT THE RAM MEMORY CARD (MCD 32)" on the next page.)
- 3) Press **SAVE, LOAD** button. The red LED near the **SAVE/LOAD** switch lights, and the following is displayed.

check whether <YS S/V> appears here.



Check that <YS S/V> is displayed for the format. If anything else is displayed, the voices of this card cannot be loaded to user memory.

- 4) If you are saving data to card, press the + **SELECTOR** button directly below "To Card?" in the display; if you are loading data from card press the + **SELECTOR** button directly below "From Card?" in the display.
- 5) The display will prompt for confirmation. Press the same + **SELECTOR** button again (as you did in step #5) to complete the save or load operation. You can cancel the operation (after step #5) by pressing either button of the third +/- **SELECTOR** button pair.

■ + / - SELECTOR Button Pairs/Parameters

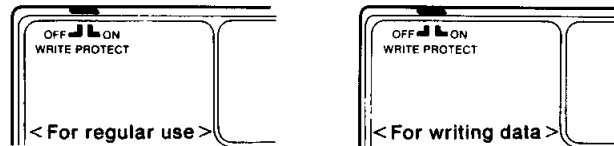
- [1st] Save internal data to card memory.
- [2nd] Load card data to internal memory.
- [3rd] Select the format type.
- [4th] Execute the formatting operation.

ABOUT THE RAM MEMORY CARD (MCD 32)

Data cannot be stored to the RAM memory card unless the Write Protect Switch on the card is set to OFF. The card is also equipped with a cell battery that must be replaced periodically.

1) Write Protect Switch (WRITE PROTECT)

Use a sharp-pointed tool such as a screwdriver to switch the Write Protect Switch to ON or OFF. Set the switch to ON for regular use in order to protect the data. Switch it to OFF when writing data.



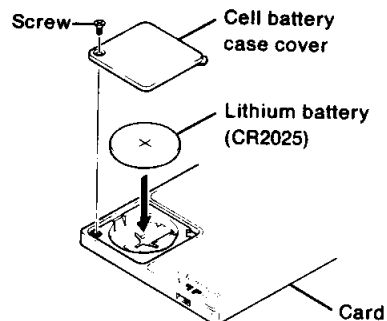
2) Replacement of Cell Batteries

Memorization of data requires a lithium battery. For regular use, a lithium battery lasts about five years. The RAM Memory Card is shipped with the lithium battery already installed. If the battery runs down, replace it with a new one, following the procedure below. Use a CR2025 lithium battery.

Note:

When the battery is replaced, all the data memorized in the RAM card will be erased. Load the necessary data to the TQ5's internal memory before replacing the battery.

- 1) Remove the screw and the cell battery case cover with a small Phillips screwdriver.
- 2) Remove the old cell battery and insert the new one (CR2025) with the + side facing upward.
- 3) Install the cover and fasten it with the screw.



STORE

■ **Functions:** Store single voices to User or Card memory; select memory type for storage; set memory protect; select destination number.

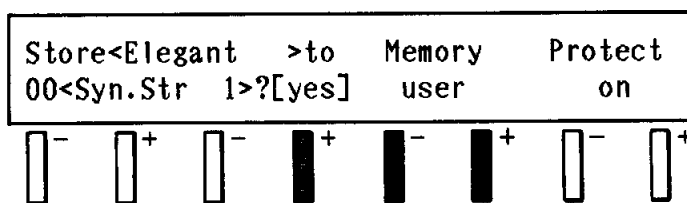
The **STORE** button allows you to quickly store a single voice to User or Card memory. With the sole exception of the Sequencer Mode, pressing the **STORE** button allows

you to exit from any mode and operation to store the currently selected voice.

Voices from any PLAY Mode location — Card, User, or Preset — may be stored to any Card or User location. This means that you can also move voices from one location to another.

To store a voice to User or Card memory:

- 1) Select the memory type from which the voice to be stored will be chosen. Use the three **PLAY** mode buttons.
- 2) Select the voice which will be stored (the top voice in the display). Use the first pair of **+/- SELECTOR** buttons, the cursor left and cursor right keys or the numeric keypad. You can also use the first pair of **+/- SELECTOR** buttons, after you have selected the STORE operation (step #3 below).
- 3) Press **STORE** button.



- 4) Select the memory type to which the voice will be stored: User or Card. Use the third pair of **+/- SELECTOR** buttons.
- 5) If you are storing a voice to Card memory, turn the Write Protect switch on the card off. If you are storing a voice to User memory, turn the User memory protect function off (with the right most **- SELECTOR** button).
- 6) Select the destination number to which the voice will be stored. Use the cursor left and cursor right keys or enter the number directly from the numeric keypad.
- 7) Press the **+ SELECTOR** button directly below [yes] in the display.
- 8) The display will prompt for confirmation. Press the same **+ SELECTOR** button again (as you did in the last step) to execute the operation.

■ **+/- SELECTOR Button Pairs/Parameters**

- [1st] Select the voice to be stored.
- [2nd] Execute the store operation (**+ SELECTOR** button only).
- [3rd] Select the memory type (User or Card).
- [4th] Turn on and off the User memory protect function.

Note:

The Store operation also applies to voices currently being edited. With this function, you can immediately save the voice you are editing to either User or Card memory. However, the source number cannot be selected; it remains the same as the number of the voice being edited.

Note:

Storing a voice to User or Card memory will automatically and irretrievably ERASE THE VOICE AT THE DESTINATION NUMBER. Make certain that the voice at the destination number is no longer needed or has been stored to another location.

■ About the TQ5's internal battery:

The TQ5's User voices are kept intact during periods of power off by an internal battery. This battery has a life of approximately five years and, if not replaced at the end of those five years, could result in irretrievable loss of voice data. To replace the battery, bring your TQ5 to the store where you purchased it or to your nearest Yamaha service center. Do not try to replace the battery yourself. When the battery is replaced, all the data memorized in User memory will be erased. Transfer the data to a RAM memory card before having the battery replaced.

JOB MODE FUNCTIONS

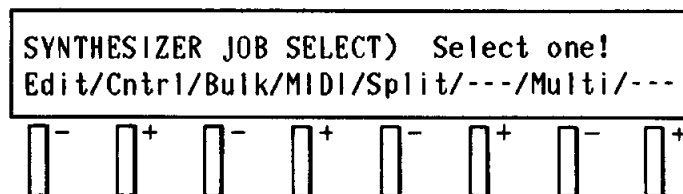
JOB MODE

The JOB Mode lets you delve deeper into the editing and control features of the TQ5. Within the JOB Mode are several sub-modes that allow you to:

- Edit additional voice parameters
- Edit real time performance control parameters
- Send voice and system data out to other MIDI devices
- Select MIDI transmission and reception channels
- Select the Play Mode to be used: Split or Multi
- Set a maximum of eight different voices to be used simultaneously, each with its own MIDI reception channel, key assignment, and volume, pan, LFO and detune settings

With the exception of the Sequencer Mode, the Synthesizer Job Mode can be selected from within any mode or operation.

1) Press **JOB** button.



2) Press the + / - **SELECTOR** button directly below the name of the sub-mode you wish to use.

VOICE EDIT (Edit)

■ **Functions:** Adjust the Feedback, Transpose and Touch Sensitivity settings of a voice; determine its Poly/Mono setting.

These are parameters which, in addition to the **EASY EDIT** parameters, let you create and shape the voices of the TQ5.

- The Feedback parameter determines the basic tone qualities of a voice; a low value makes the sound soft and mellow, while higher values generally brighten the sound and give it a metallic edge. In FM synthesis terminology, this parameter allows you to adjust the amount that the modulator operator feedbacks on itself.
- Transpose is used to raise or lower the pitch of the TQ5, in semitone steps, to any key.
- Touch Sensitivity determines the degree to which the volume and tone of the voice respond to your playing of the keyboard. The greater the value, the more sensitive the voice will be to your keyboard touch.
- "Poly/Mono" is normally set to "Poly". In PLAY mode, the voice will be able to play up to 8 simultaneous notes. In MULTI mode, the voice will be able to play as many simultaneous notes as specified by the max Notes setting.

"Mono" mode is a bit unusual. Only one note can be sounding at a time, but if you press a key before releasing the previously pressed key, the sound will change in pitch, but will not "re-attack". I.e., mono mode lets you play "smoothly". (If you then release the second key while the first key is still pressed, the sound will return to the first pitch.)

■ **Parameter ranges:**

FEEDBACK: 0 — 7
TRANPOSE: C1 — C5
TOUCH SENS.: 0 — 7
POLY/MONO: Poly, Mono

CONTROL (Cntrl)

■ **Functions:** Set pitch bend range; determine assignment of modulation wheel and breath control.

Note:

The four functions of the Control sub-mode only apply when using the TQ5 with MIDI instruments that transmit these kinds of information. (The PF1500 Electronic Piano does NOT transmit these four data types.) Check the owner's manuals of your MIDI instruments as to whether they are appropriately equipped as well as for more information on how to best use these functions.

If the preset Control settings for the voice have not been changed, the lower line of the LCD will show "-----" for each controller. You may select the following options for each controller.

PB Range:	Pitch bend range of 0 — 12 semitones (in either direction).
MW effect:	Select the effect that the MODULATION wheel will have. Select from vibrato, tremolo or wowwow.
Breath cnt:	Select the effect that a separately sold BC1 or BC2 Breath Control will have when plugged into the BREATH CONT jack of appropriately equipped instruments. Select from vibrato, tone or volume.
After tch:	Select the effect that pressing down on an after-touch equipped keyboard after a note is played will have. Select from vibrato, tone, tremolo or wowwow.

MIDI BULK OUT (Bulk)

■ **Functions:** Send currently edited voice (from edit buffer), 100 user voices, or system setup memory via MIDI OUT. System setup memory includes the following data; tuning, memory protect on/off, MIDI receive channel, MIDI transmit channel, settings for each instrument.

- To execute, press the + **SELECTOR** button directly below the [yes] display of the type of data you wish to send.

Note:

When transmitting 100 user voices to a 32-voice synthesizer (such as the DX11), only voice numbers 75 to 99 will be sent to the receiving synthesizer.

MIDI CHANNEL (MIDI)

■ **Functions:** Set the MIDI reception and transmission channels.

To receive play data (from external MIDI devices such as other sequencers and synthesizers) and send data, the proper MIDI channel settings must be made.

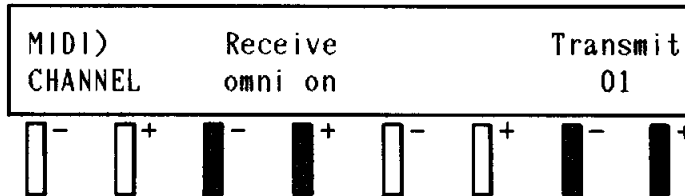
- For normal MIDI operation, the channels of the TQ5 and the MIDI device that is either sending or receiving must match.

- Omni On allows the TQ5 to receive MIDI data over all channels.
- The Off value disables MIDI reception and transmission in the respective parameters.

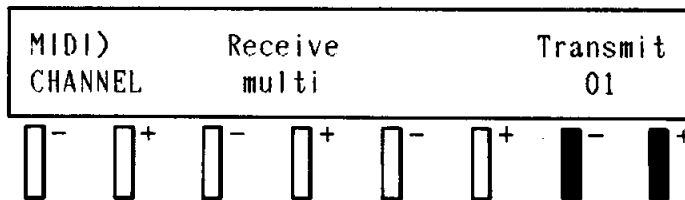
Set the MIDI receive channel by using the second pair of +/- **SELECTOR** buttons. Set the MIDI transmit channel by using the fourth pair of +/- **SELECTOR** buttons.

There are two different ways of selecting the MIDI Channel job, and the function as well as the display changes slightly depending on which way is selected.

The first way is directly from the Play Mode or after normal voice selection.



The second way is within the Multi Mode. If you return to the Synthesizer jobs directly from the Multi Mode (without pressing any of the **PLAY MODE** buttons or the **EXIT** button) and select MIDI Channel, the following display will appear:



The "multi" in the display indicates that the Receive channel must be set for each voice in the Multi Mode's MIDI Receive Channel job. Receive channel settings CANNOT be made here.

Note:

If you have made changes in the MIDI transmit and receive channels, you may discover that some voices will not sound when you play the connected MIDI keyboard or a sequencer song with several voices. Here is a short explanation of why that happens and how to avoid it:

Each voice can have its own MIDI receive channel (set in the Multi Mode's MIDI Receive Channel job). If that channel setting matches the MIDI transmit channel of the connected MIDI keyboard, the voice will sound. Assign different MIDI channels to different voices when:

- 1) You want to control different voices from different MIDI keyboards, or,
 - 2) You want to play different voices from different sequencer tracks.
- In normal operation, set all receive channels AND the transmit channel to the same value.

■ **Parameter ranges:**

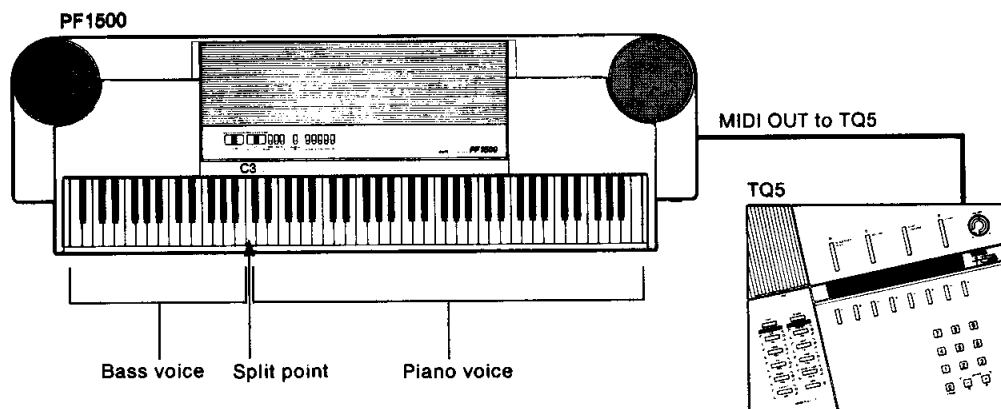
RECEIVE CHANNEL: Multi (after making Multi Mode settings only)
1 – 16, Omni On, Off

TRANSMIT CHANNEL: 1 – 16, Off

SPLIT MODE (Split)

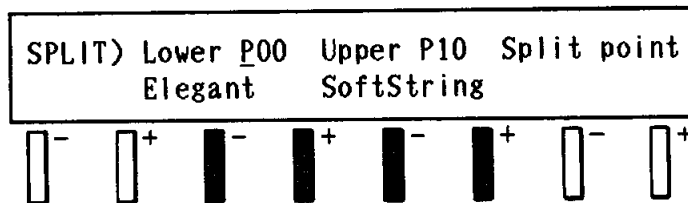
■ **Functions:** Set two voices to be played from separate parts of the connected keyboard and determine the split point that will separate them.

Split Mode allows two different voices to be assigned to separate sections of the connected MIDI keyboard. For example, you could set a split point at C3 (as shown in the illustration below) and have a bass voice be played from all keys B2 and lower, while the playing of keys C3 and higher could be set to sound a piano voice.



To set up the TQ5 for Split play:

- 1) Press **JOB** button.
- 2) Select Split Mode by pressing the **+/- SELECTOR** button.



- 3) Make certain that the cursor is at the voice number of the keyboard section you wish to edit first. You can move the cursor to the desired section by pressing either button of the **+/- SELECTOR** button pair directly below that desired section. For example, if you want to select the lower voice first, press either button of the second **+/- SELECTOR** button pair. (The upper voice is selected with the third pair of **+/- SELECTOR** buttons.)
- 4) Select the memory type from which the voice will be selected. Press **PRESET**, **USER** or **CARD**. The selected memory type will be indicated in the display, just in front of the voice number, by its initial: "P," "U" or "C."
- 5) Select the voice number for the keyboard section. There are three ways to select the number: 1) use the same **+/- SELECTOR** button pair as you did in step #2, 2) enter the voice number directly from the numeric keypad, or 3) use the cursor left and cursor right keys.
- 6) Finally, set the split point. There are two ways to set the split point: a) use the fourth pair of **+/- SELECTOR** buttons, or b) with the cursor at the split point parameter (press one of the fourth pair of **+/- SELECTOR** buttons to move it there), press the appropriate key on the connected MIDI keyboard. Each time you use the second method of entering the split point from a MIDI keyboard, you must first press one of the fourth pair of **+/- SELECTOR** buttons.
All keys played below the split point will sound the lower voice, while all keys above and including the split point will sound the upper voice.

■ Parameter ranges:

LOWER: Preset (P), User (U), or Card (C) voices 00 — 99
UPPER: Preset (P), User (U), or Card (C) voices 00 — 99
SPLIT POINT: C-2 — G8

Note:

You can edit voice data directly from the Split Mode by pressing the appropriate **EASY EDIT** button; however, only the low voice of the split can be selected automatically in this way.

To edit the high voice you must return to PLAY mode and select the voice.

Note:

In the Split Mode the original effect settings for the two voices are ignored. If you want to apply an effect to the voices, you must select a "global" effect — an effect setting that will be applied to both voices equally. To do this, press **EFFECT** while in the Split job and make the desired setting. Returning to Play Mode restores the original effect settings for the voices.

CLOCK/CALENDAR FUNCTION

The TQ5 has a built-in clock/calendar which is automatically displayed upon power on, when no buttons have been pressed for one minute or longer or when no MIDI data (with the exceptions of active sensing and clock) has been received.

When you turn on the power of the TQ5, the following display will briefly appear:

```
====< YAMAHA Tone Generator TQ 5 >====  
***** 12:00'15 '88-11-13 Sunday *****
```

The bottom line of the display shows the current time (in 24-hour format), the date and the day of the week.

If you leave the TQ5 on for one minute or longer without pressing any buttons on the panel and unaffected by MIDI data, the following display will appear:

```
19:30 15 Friday  
'88-12-25 hit any key
```

Press any front panel button to return the TQ5 to normal operation. The display will return to whatever condition or function was last selected.

SETTING THE TIME AND DATE

1) Press **EXIT** repeatedly until the following clock/calendar display appears.

```
19:30 15 Friday  
'88-12-25 [mode]
```

2) Press the rightmost + **SELECTOR** button (directly below [mode] in the display) to select the SET mode.

```
19:30 15 Friday SET  
'88-12-25 [sel][mode]
```

The seconds' counter of the clock will flash, indicating that it is ready to be set.

3) Reset the seconds' counter to zero by pressing either the cursor left or cursor right

keys.

- 4) Press the rightmost – **SELECTOR** button (directly below [sel] in the display) to select the minutes' counter.
- 5) Set the minutes' counter by using the cursor left and cursor right keys or by entering the number directly from the numeric keypad.
- 6) Repeat the above two steps for each remaining counter or entry: hours, year (the last two digits of the year are displayed), month (up to 12), date (up to 31) and day of the week (selectable with the cursor left and cursor right keys **only**).
- 7) After setting the correct time and date, press **EXIT** to return to normal operation.

MULTI MODE FUNCTIONS

The Multi Mode is a powerful function in which you can play up to eight different voices at the same time and set each to be controlled independently over separate MIDI channels. Each voice can also be given its own key assignment, and volume, pan and detune settings.

When you select the Multi Mode job, you will get the following display.

```
MULTI MODE JOB SELECT > Select one!  
Max/R.ch/Voice/Volm/Pan/Detun/Nim/LFO  
[ ]- [ ]+ [ ]- [ ]+ [ ]- [ ]+ [ ]- [ ]+
```

Press one of the +/- **SELECTOR** buttons to choose a Multi Mode setting to adjust.

To exit any of the Multi Mode functions and return to the Multi Mode Job Select display (above), press **JOB**.

To exit the Multi Mode and return to the Synthesizer Job Select display (below), press **JOB** again.

```
SYNTHESIZER JOB SELECT) Select one!  
Edit/Cntrl/Bulk/MIDI/Split/---/Multi/---
```

MULTI MODE DISPLAY EXAMPLES

Here in a Multi Mode application example, the following screens show a setup with a mono bass voice assigned to the lowest octave, a five-note polyphonic piano to the next two octaves, and two different strings voices (each monophonic) together occupying the highest range, and slightly detuned to create a richer sound. The Piano Voice is assigned to be controlled by LFOb, allowing you to create a tremolo effect. (This will depend on the LFO settings for the Piano voice.) The two Strings voices are using vibrato.

```
MAX NOTES> MIDI R.ch=01 , P60 E.Bass 1  
 1 5 1 1 0 0 0 0
```

The 8 notes of polyphonic capability of the TQ5 must be divided among the instruments used in Multi Mode. (In the following LCDs, notice that a "----" is displayed for instruments whose "Max Note" setting is 0. You will not be able to change settings for these instruments.)

```
RECEIVE CH> Max Notes=1 , P60 E.Bass 1  
 01 01 01 01 ---- ---- ---- ----
```

Each instrument can be set to receive a different MIDI channel. This means that a MIDI sequencer connected to the TQ5 MIDI IN terminal can independently play specified voices if desired. The MIDI transmit channel of the connected MIDI keyboard must match the MIDI receive channels of the instruments in order to play those instruments. Instruments set to different receive channels will NOT sound. To play the voices in the display above, the MIDI transmit channel connected keyboard must be set to 1. (Refer to the owner's manual of your keyboard.)

```
VOICE NO.>Max Notes=1,R.ch=01,E.Bass 1
  P60 P07 P10 P02 --- --- --- ---
```

Select a voice (0 - 99) for each instrument.

```
VOLUME>MaxNotes=1,R.ch=01 P.60 E.Bass 1
  99 99 99 99 -- -- -- --
```

Adjust the volume balance of the instruments.

```
PAN> MaxNotes=1,R.ch,P60 E.Bass 1
<□> <■> <□> <■> -----
```

Each instrument can be panned to L, L+R or R in the audio output for a spacious effect when listening in stereo.

```
DETUNE>MaxNotes=1,R.ch=01,P60 E.Bass 1
  +0 +0 -1 +1 -- -- -- --
```

By detuning two voices that are to be played in unison (the two string voices in the above example), you can create a feeling of richness.

```
H B1 B3 C6 C6 -----
L C1 C2 C4 C4 -----
```

Each instrument can be limited to a specified area of the keyboard, to make complex keyboard splits.

```
LFO> MaxNotes=1,R.ch=01,P60 E.Bass 1
  off LFOb vib vib -----
```

Each instrument can use its own vibrato generator, or share one of the two LFOs (LFOa and LFOb) for tremolo effects.

MAXIMUM NOTES (Max)

■ **Function:** Set the maximum number of notes each voice can sound.

To set the number of maximum notes:

Use the cursor left and cursor right keys or enter the number directly by using the numeric keypad.

Note:

The total number of notes cannot exceed 8. For this reason, you may have to subtract notes from some instruments before you can increase notes in other instruments.

■ **Parameter ranges:**

MAXIMUM NOTES: 0 — 8

**MIDI RECEIVE CHANNEL
(R ch)**

■ **Function:** Set the MIDI receive channel for each voice.

To set the MIDI receive channel:

Use the cursor left and cursor right keys or enter the number directly by using the numeric keypad. (Entering numbers of 16 or higher on the numeric keypad all result in a MIDI channel setting of 16.)

■ **Parameter ranges:**

RECEIVE CHANNEL: 1 — 16, omni

VOICE NUMBER (Voice)

■ **Function:** Select the voice number (and the memory type from which it is selected) for each of the Multi Mode instrument slots.

To set the voice number:

- 1) Select the memory type: Preset (P), User (U), or Card (C). Press the appropriate PLAY Mode button.
- 2) Select the voice number. Use the cursor left and cursor right keys or enter the number directly by using the numeric keypad. The name of the selected voice will be shown in the upper right part of the display.

VOLUME (Volm)

■ **Function:** Set the volume for each voice.

To set the volume:

Use the cursor left and cursor right keys or enter the number directly by using the numeric keypad.

■ **Parameter ranges:**

VOLUME: 0 — 99

PAN

■ **Function:** Determine the pan setting for each voice.

- Use the + / - **SELECTOR** buttons below each voice slot parameter to select the pan setting (<□> = Left, <■> = Center, <□▶ = Right). Each press of the corresponding + or - **SELECTOR** button steps through one of the three pan settings.

Note:

Effect and Pan cannot be used at the same time. If a pan setting of left or right is adjusted for a voice while that voice or any other in the Multi Mode arrangement has an effect setting, the following message will briefly appear and the effect setting(s) will be ignored.

PAN) MaxNotes=1,R.ch=01,P00 Elegant
ATTENTION Effect data was ignored!

■ **Parameter ranges:**

PAN: ◀◻▶ = Left, <■> = Center, ◻▶ = Right

DETUNE (Detun)

■ **Function:** Set the degree of detuning for each voice.

Each voice can be detuned up or down relative to the originally set central pitch. Setting different detuning values to different voices lends an overall richness to the sound.

To set the direction and amount of detuning

- 1) Set the direction of detuning: positive or negative. Use the cursor left (–) and cursor right (+) keys.
- 2) Enter the amount of detuning directly from the numeric keypad. (Entering numbers of 7 or higher on the numeric keypad all result in a detuning setting of 7.)

■ **Parameter ranges:**

DETUNE: –7 – +7

NOTE LIMIT (Nlim)

■ **Function:** Set the lowest and highest notes at which each voice will sound.

Note Limit allows you to assign up to eight different voices to sections of the connected keyboard, in any fashion you desire. This Multi Mode job, in conjunction with Maximum Notes and Voice Number, is most important in creating multi-voice keyboard setups.

For example, a bass voice and a piano voice could be assigned to opposite sides of the keyboard. Note Limit would be used to determine where on the keyboard those sounds could be played. Once the bass voice is selected (in Voice Number), the low note limit could be set to C1 and the high note limit to G2. The piano voice would then be assigned to the range above that (G#2 to C6), allowing you to play independent voices with your left and right hands.

Both the currently set high note limit and low note limit values are shown in two rows on the display, but only the lower row of values can be edited. Use the numeric keypad to reverse the position of the rows on the display: pressing any number from 0 to 4 puts the low note limit row at the bottom of the display for editing; pressing numbers 5 to 9 puts the high note limit at the bottom for editing. The note values for each voice can then be set by first selecting the instrument with the appropriate +/– **SELECTOR** button, and by entering the value from the cursor left/cursor right keys. The connected keyboard can also be used to enter a Note Limit value; simply press the appropriate instrument's +/– **SELECTOR** button and then press the key on the keyboard. To change your selection, repeat the process.

■ **Parameter ranges:**

LOW NOTE (L): C-2 – G8
HIGH NOTE (H): C-2 – G8

LFO

■ **Function:** Set the two independent LFOs and vibrato control for each voice.

The TQ5 is equipped with two independent LFOs that can be used simultaneously with any voice. However, since eight voices can be simultaneously sounded, no more than two different LFO settings (tremolo, tone, volume and wowwow) can be used at the same time. The only exception to this rule is vibrato, which is separate from the LFO (though is still considered as an LFO-type effect) and can be applied

is the next different LFO setting. For example, if a strings voice with an LFO setting of tremolo occupied the first, or leftmost, position in the display, "LFOa" would be set to tremolo, and all other voices given an "LFOa" value would have the same tremolo setting. The actual LFO values (Speed, Vibrato and Tremolo) are set in the LFO of the Easy Edit mode. Please refer to that section for more information.

■ **Parameter values:**

off, LFOa, LFOb, vib

Note:

You can edit voice data directly from the Multi Mode by pressing the appropriate **EASY EDIT** button; however, only the leftmost voice in the display can be selected automatically in this way. To edit other voices, you must return to PLAY mode and select the voice.

Note:

In the Multi Mode, all voices must share the same effect (reverb, delay, distortion, etc.). Initially, this 'global' effect for the Multi Mode will be No. 0 Rev.Hall. To change this, press EFFECT and make the desired setting. It will apply to all the voices. When you return to Play Mode, each voice will regain its original effect settings.

Note:

When editing voices directly from the Multi Mode, it is possible to edit a voice and yet not be able to hear it. This happens when the edited voice (the leftmost voice on the display) has a MIDI Receive channel that is different from the MIDI Transmit channel of the connected MIDI keyboard. To hear only the voice you are editing, you can:

- 1) Set the MIDI Receive channel (in the Multi Mode's MIDI Receive Channel job) to the same value as the MIDI Transmit channel of the connected MIDI keyboard.
- 2) Set the MIDI Receive channel (in the Multi Mode's MIDI Receive Channel job) of all other voices to a different value than that set above in step #1.
- 3) Press the desired **EASY EDIT** button and begin editing.

OR (if the above three steps appear too troublesome),

Select the voice manually (as described in the OPERATION BASICS chapter) and edit it as you usually do.

MULTI MODE OPERATION — A SETUP EXAMPLE

The Multi Mode has some very powerful features, but it also contains some of the more complicated functions of the TQ5. This section is meant to serve as a quick introduction to the operation of some of the Multi Mode jobs and give you a clearer grasp of how to use them for your own applications.

In this setup example, we'll create a keyboard arrangement in which three separate instrument sounds — piano, brass and solo violin — can be played.

The three voices used will be Preset voices #07 Piano 1, #56 Violin 1, and #75 Sax 1.

Before we assign these sounds to sections of the keyboard, we should find out what LFO settings these voices have and which are most important. Since the voice occupying the leftmost position in the Multi Mode displays determines the setting for "LFOa" (refer back to the description in the Multi Mode's LFO job), the voice whose LFO setting we feel is most important to keep should be assigned to the leftmost spot. (Remember that a voice's original LFO setting may be overridden or ignored if another voice precedes it in the display.) Our example is quite easy, since #56 Violin 1 is the only voice in which an LFO parameter is set to greater than 0 (in this case, tremolo = 15).

Now, let's set up the Multi parameters.

- 1) Press **JOB** and select **Multi**.
- 2) Select **Max** (since we must determine the maximum number of notes for each voice before doing anything else).
- 3) Press the leftmost — **SELECTOR** button.
- 4) Since the leftmost position will be occupied by the solo violin voice, enter "1" from the numeric keypad to make this a mono voice.

The previously selected voice

MAX NOTES) MIDI R.ch=01 , P00 Elegant							
<u>1</u>	0	0	0	0	0	0	0
█ ⁻	□ ⁺	□ ⁻	□ ⁺	□ ⁻	□ ⁺	□ ⁻	□ ⁺

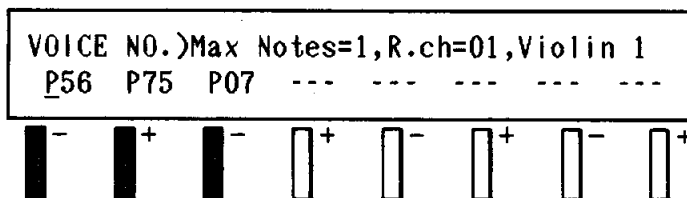
- 5) Now, set the maximum notes for the other two voices: 2 for voice #75 (the brass sound) and 5 for #07 (the piano sound).

MAX NOTES) MIDI R.ch=03 , P02 WideString							
1	2	<u>5</u>	0	0	0	0	0
□ ⁻	█ ⁺	█ ⁻	□ ⁺	□ ⁻	□ ⁺	□ ⁻	□ ⁺

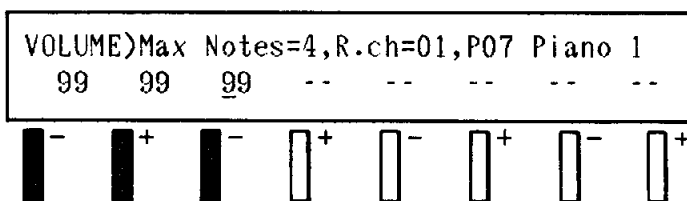
- 6) Press **JOB** again and select **R.ch** (Receive Channel) this time.
- 7) Set all Receive Channel values for the three voices to "01." The display should appear as shown below:

RECEIVE CH) Max Notes=5 , P02 WideString							
01	01	<u>01</u>	-----	-----	-----	-----	-----
█ ⁻	█ ⁺	█ ⁻	□ ⁺	□ ⁻	□ ⁺	□ ⁻	□ ⁺

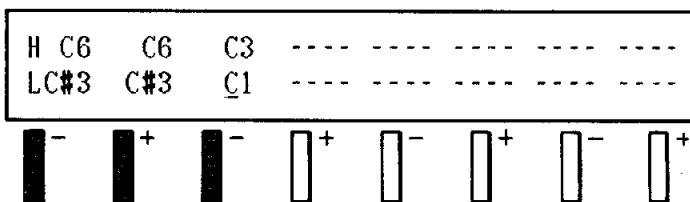
- 8) Select the voice numbers for each voice position. Press **JOB** again, then select **Voice**.
- 9) Press **PRESET** (since we must select the memory type in which the voice is located).
- 10) Enter "56" on the numeric keypad. Then enter Preset voices #75 and #07 in the same way. The display should appear as shown below:



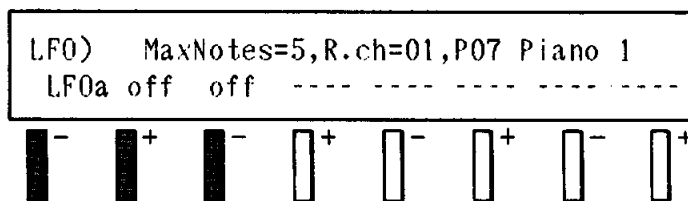
- 11) Press **JOB**, then select "Volm", and set the volumes of the voices to an appropriate balance.



- 12) Next, set the note limits for each voice. This will determine the part of the keyboard at which each voice can be played. Press **JOB** again, then select **Nlim**.
- 13) Now you can determine the note limits for each voice—the range of the keyboard over which they will sound. Note limit settings can be changed only for the lower line of the display. To switch the Low and High limit displays, press any numeric key 0 — 4 to set the Low key limit, and any numeric key 5 — 9 to set the High key limit. The first keyboard note you press after selecting a **SELECTOR** button will set the new note limit for that instrument. Or, you can use the cursor left and cursor right keys located below the numeric key pad to change the note limit setting.
- 14) Set the first two voices to the same low note and high note limit values (C#3 and C6) and set the third to low and high limits of C1 and C3. In this way, the lower two octaves will be used to play the piano voice and the top three octaves will be used for the brass and violin. The display should appear as follows.



15) Finally, select the LFO settings for each voice. Press **JOB**, then select **LFO**. Use the +/- **SELECTOR** buttons under the voice positions to select the desired voice, then use the + and - keys on the numeric keypad to set the value. The solo violin voice, since it has the only LFO setting, should be set to "LFOa." The other two voices may be set to "off."



Now, play the voices from the keyboard... and then go on to create and experiment with your own Multi Mode settings.

**CONCERNING THE
RECEPTION OF VOICE
DATA (MIDI BULK DATA
RECEPTION)**

The TQ5 can send and receive voice data from other TQ5s. One voice (of Preset, User or Card memory) can be sent or received at one time, or voice data of User memory can be sent or received in banks of 100 voices.

To make the data transfer, simply select the MIDI BULK OUT function of the JOB Mode on the transmitting TQ5 and select the type of data transfer to be made ("voice" = one voice; "100 user" = bank of 100 user voices; "System" = system or control data). When receiving banks of 100 voices, the memory protect function of the receiving device should be set to OFF; you can easily release the memory protect function by pressing STORE. The memory protect has no effect, however, when receiving single voices. Singly received voices can be stored to User or Card memory; banks of 100 voices are automatically sent to User memory. Tuning and all other parameter values are sent with voice data.

Voice and system data transfer between the TQ5 and other Yamaha instruments is also possible to a certain extent, depending on the instrument used. Compatible instruments for which partial data transfer is possible include the DX100, DX21, DX27, DX27S and DX11 synthesizers and the TX81Z FM Tone Generator. The voice and system data of the TQ5 and the YS100, YS200 and B200 synthesizers are fully compatible. Voice and system data of the TQ5 can also be stored to floppy disks by sending it to the DX7IIFD synthesizer, the QX3 sequencer or the MDF1 MIDI Data Filer.