YAMAHA Electone®
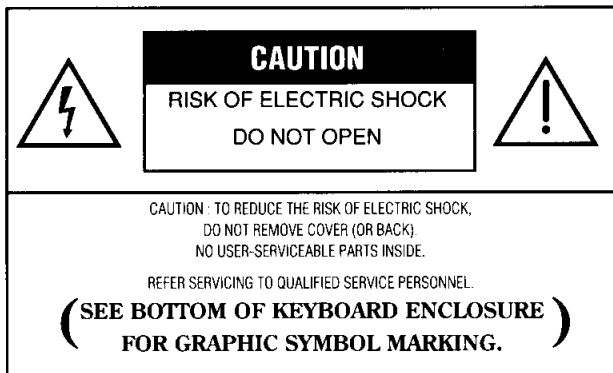
EL-90
EL-70

OWNER'S MANUAL

SUPPLEMENTAL MARKING INFORMATION

Yamaha electronic products will have either a label similar to the graphic shown above or a molded/stamped facsimile of the graphic on its enclosure.The explanation of these graphics appears on this page.Please observe all cautions indicated.

The Exclamation point within an equilateral triangle is intended to alert the users to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.
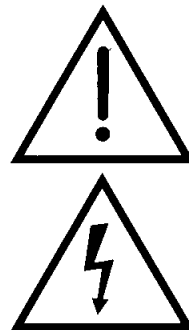
IMPORTANT SAFETY AND INSTALLATION INSTRUCTIONS

INFORMATION RELATING TO POSSIBLE PERSONAL INJURY, ELECTRIC SHOCK, AND FIRE HAZARD POSSIBILITIES HAS BEEN INCLUDED IN THIS LIST.

WARNING - When using electronic products, basic precautions should always be followed, including the following:

1. Read all Safety and Installation Instructions,Supplemental Marking and Special Message Section data, and assembly instructions (where applicable) BEFORE using your Yamaha electronic product. Check unit weight specifications before you attempt to move this instrument!

2. Main Power Supply Verification: Your Yamaha electronic product has been manufactured specifically for the main supply voltage used in your area. If you should move, or if any doubt exists, please contact your dealer for instructions. The main supply voltage required by your electronic product is printed on the name plate. For name plate location see graphic in Special Message Section.

3. This product may be equipped with a polarized line plug (one blade wider than the other). If you are unable to insert the plug into the outlet, contact an electrician to have your obsolete outlet replaced.Do NOT defeat the safety purpose of the plug. Yamaha products not having polarized plugs incorporate construction methods and designs that do not require line plug polarization.

4. WARNING - Do NOT place objects on your electronic product's power cord or place the unit a position where anyone could trip over, walk over, or roll anything over cords of any kind. Do NOT allow your electronic product or its bench to rest on or be installed over cords of any type. Improper installations of this type create the possibility of a fire hazard and/or personal injury.

5. Environment: Your electronic product should be installed away from heat sources such as a radiator, heat registers and/or other products that produce heat. Additionally, the unit should not be located in a position that exposes the cabinet to direct sunlight , or air currents having high humidity or heat levels.

6. Your Yamaha electronic product should be placed so that its location or position does not interfere with its proper ventilation.

7. Some Yamaha electronic products may have benches that are either a part of the product or supplied as an optional accessory. Some of these benches are designed to be dealer assembled. Please make sure that the bench is stable before using it. The bench supplied by Yamaha was designed for seating only. No other uses are recommended.

8. Some Yamaha electronic products can be made to operate with or without the side panels or other components that constitute a stand. These products should be used only with the components supplied or a cart or stand that is recommended by the manufacturer.

9. This product, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.

10. Do not use your Yamaha electronic product near water or in wet environments. For example, near a swimming pool, spa,or in a wet basement.

11. Care should be taken so that objects do not fall,and liquids are not spilled, into the enclosure through openings.

12. Your Yamaha electronic product should be serviced by a qualified service person when:
a. The power-supply cord or plug has been damaged: or
b. Objects have fallen, or liquid has been spilled into the product: or
c. The product has been exposed to rain: or
d. The product does not operate, exhibits a marked change in performance: or
e. The product has been dropped, or the enclosure of the product has been damaged.

13. When not in use, always turn your Yamaha electronic product "OFF". The power-supply cord of the product should be unplugged from the outlet when it is to be left unused for a long period of time. Notes:In this case, some units may lose some user programmed data. Factory programmed memories will not be affected.

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

15. Electromagnetic Interference(RFI).This series of Yamaha electronic products utilizes digital (high frequency pulse) technology that may adversely affect Radio/TV reception or the operation of other devices that utilize digital technology. Please read FCC Information for additional information.

16. WARNING: CHEMICAL CONTENT NOTICE !
The solder used in the manufacture of this product contains LEAD. In addition, the electrical/electronic and /or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and /or birth defects or other reproductive harm.
DO NOT REMOVE ANY ENCLOSURE COMPONENTS !
There are no user serviceable parts inside. All service should be performed by a service representative authorized by Yamaha to perform such service.
IMPORTANT MESSAGE : Yamaha strives to produce products that are both user safe and environmentally "friendly". We sincerely believe that our products meet these goals. However, in keeping with both the spirit and the letter of various statutes we have included the messages shown above and others in various locations in this manual.

PLEASE KEEP THIS MANUAL FOR FUTURE REFERENCE!

FCC INFORMATION (U.S.A.)

1. IMPORTANT NOTICE : DO NOT MODIFY THIS UNIT !
This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.

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

3. NOTE : This product has been tested and found to comply with the requirements listed in FCC Regulations,Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices.This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices. Compliance with FCC regulations does not guarantee that interference will not occur in all

installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON" ,please try to eliminate the problem by using one of the following measures:
●Relocate either this product or the device that is being affected by the interference.
●Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s
●In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to co-axial type cable.

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

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

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

This applies only to products distributed by Yamaha Canada Music Ltd .

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

Ceci ne s'applique qu'aux produits distribués par Yamaha Canada Music Ltd.

*Wichtiger Hinweis für die Benutzung in der Bundesrepublik Deutschland.

Bescheinigung des importeurs

Hiermit wird bescheinigt daß der/die/das Elektronische Orgel Typ: EL-90, EL-70 in Übereinstimmung mit den Bestimmungen der VERFÜGUNG 1046/84.

(Amtsblattverfügng)funk-entstört ist.
Der Deutschen Bundespost wurde das Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräunt.
Das Funkschutzzeichen ist beim VDE beantragt.
Yamaha Europa GmbH: (Name des Importeurs)

*Dies bezicht sich nur auf die von der YAMAHA EUROPE GmbH. vertriebenen Produkte.

Dette apparat overholder det gaeldende EF-Direktiv vedrørende radiostøj.

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

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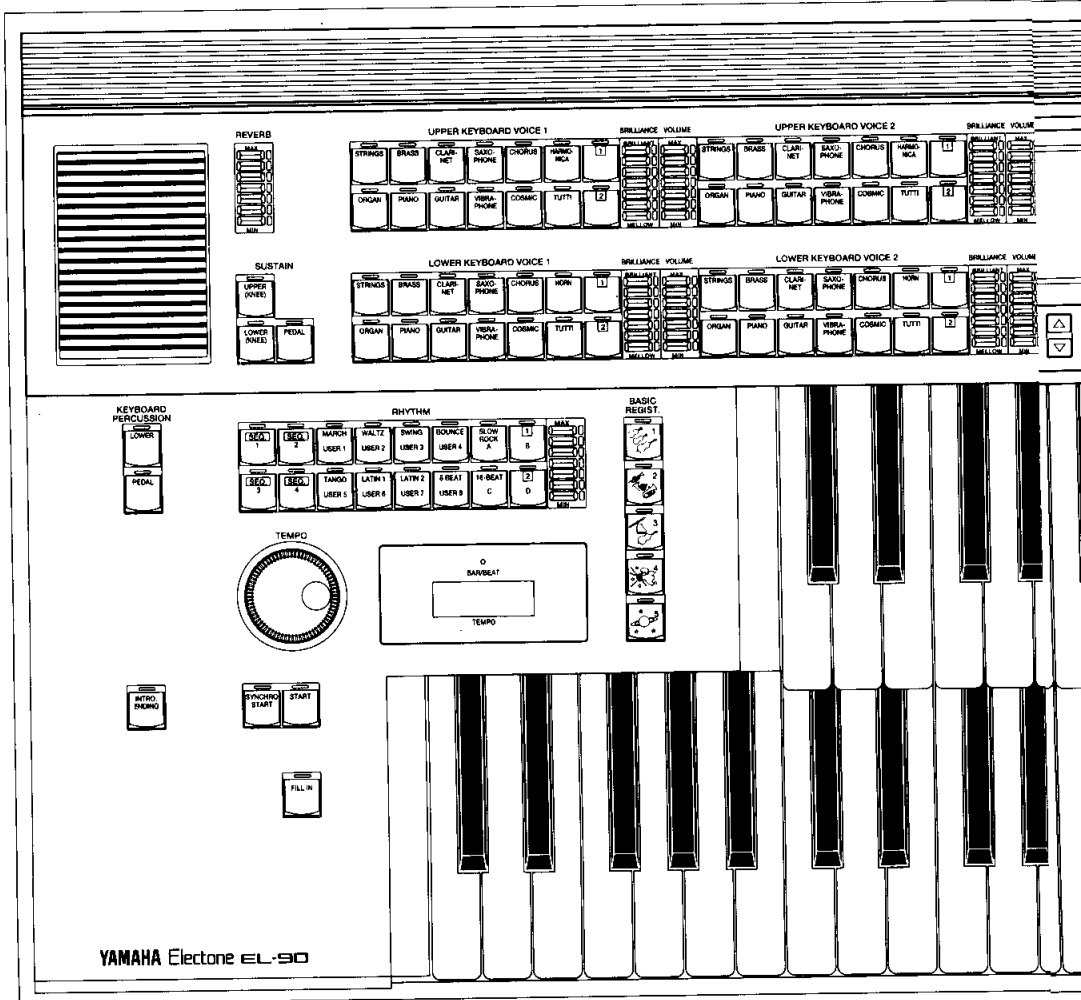82/499/EWG und/oder 87/308 EWG.

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

Questo apparecchio è conforme al D.M.13 aprile 1989 (Direttiva CEE/87/308) sulla soppressione dei radiodisturbi.
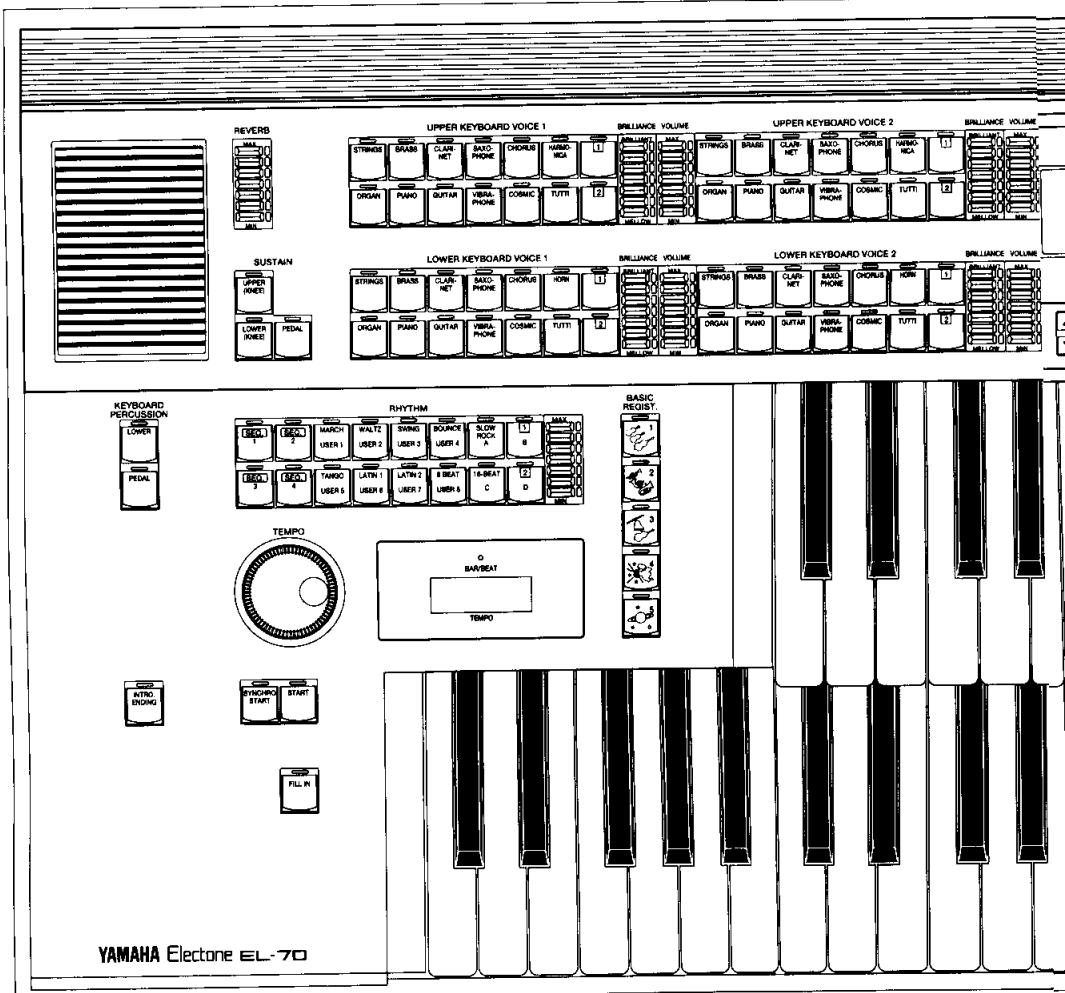
Este producto está de acuerdo con los requisitos sobre interferencias de radio frequencia fijados por el Consejo 87/308/CEE.
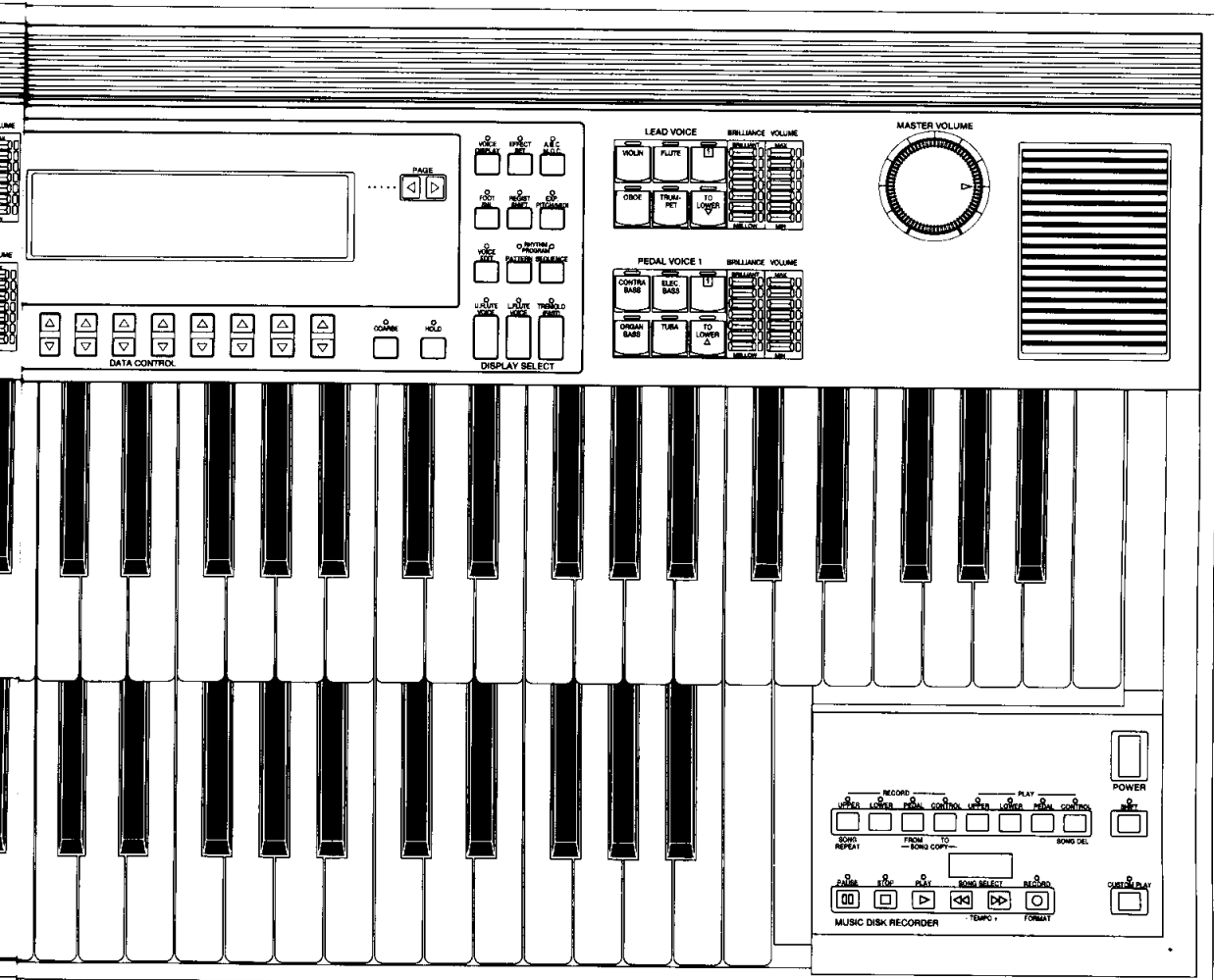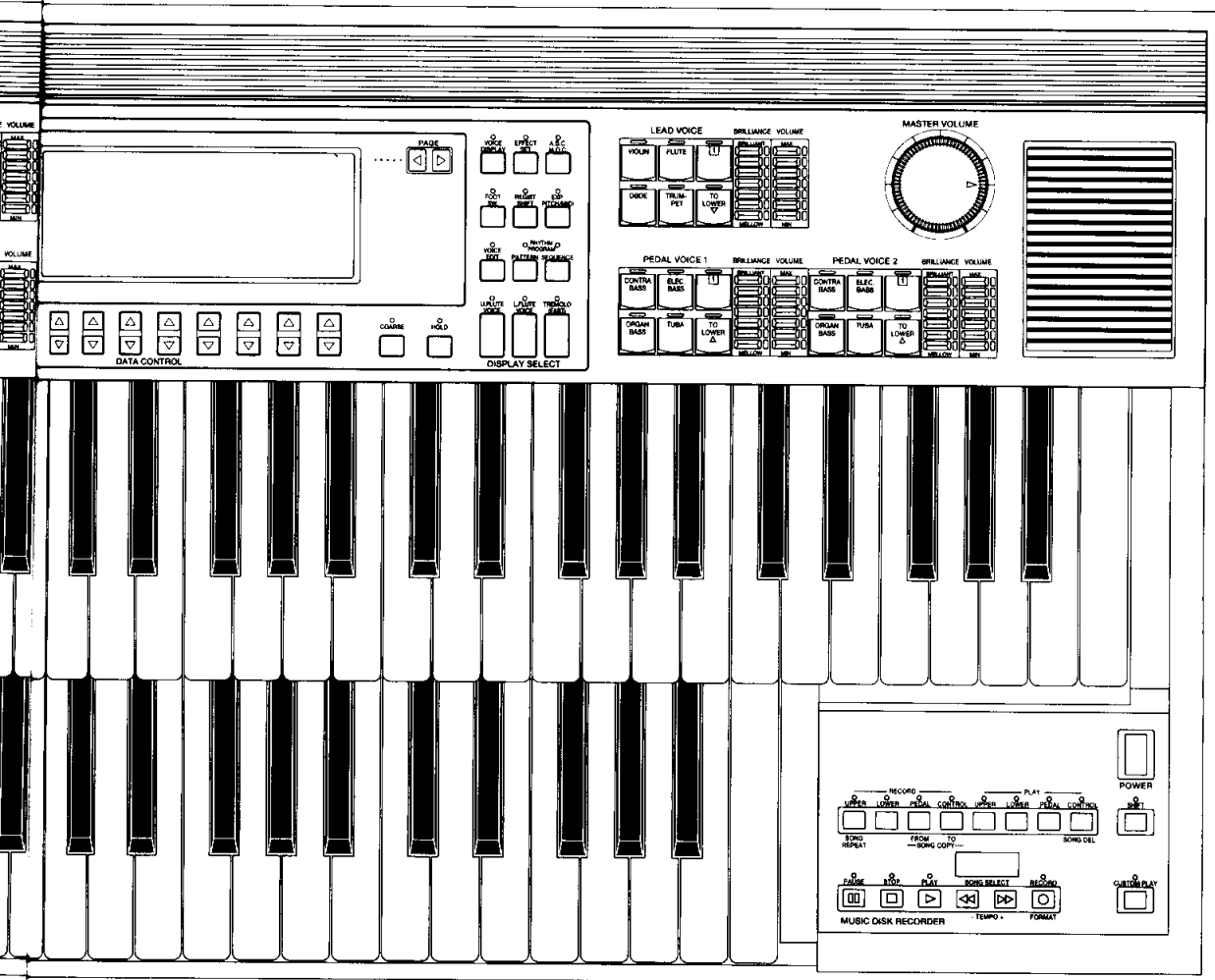
YAMAHA CORPORATION

EL-90

EL-70

Table of Contents

MAIN FEATURES

Your Yamaha Electone is packed with many sophisticated functions. Yet it is amazingly easy to use. The main features are briefly described here so that you can quickly understand the capabilities of your Electone.

Included among the main features are:

Astoundingly True-to-life Sounds

The new AWM (Advanced Wave Memory) and FM (Frequency Modulation) tone generation technologies combined with authentic touch response for individual instrument voices, make this Electone a truly expressive musical instrument. (See page 15.)

Limitless Variety of Organ Sounds

The Electone also has separate voice sections that feature classic organ sounds — from jazz and pop to church and theater — and lets you easily create your own organ sounds by adjusting the volumes of the various flute footages. (See page 22.)

Wide Variety of Registration Menus

The Electone is equipped with convenient Registration Menus that allow you to instantly change all settings for the entire instrument in real time, as you play. Each Registration has been specially created by professional Electone artists to match virtually any style of music you play in. (See page 8.)

Original Voice Creation

The Electone also provides easy-to-use voice editing tools for manipulating the sophisticated AWM and FM tone generation technologies, allowing you to create your own original Electone voices. (See page 72.)

Dynamic Rhythm Patterns and Programmable Percussion Sounds

The Rhythm section of the Electone features authentic drum and percussion sounds, used by expert rhythm programmers in creating a total of 66 rhythm patterns, ranging across all styles of music. (See page 38.)

Along with the Keyboard Percussion function, which lets you play percussion sounds from the keyboard, the Rhythm Pattern Programmer and Rhythm Sequence Programmer let you record your own rhythm patterns and connect them to make songs. (See page 84.)

Wide Variety of Effects

Electone voices can also be enhanced with a full range of high-quality effects, ranging from Tremolo (for reproducing the sound of a rotating speaker) and Reverb to Flanger and Delay. (See page 25.)

Recording of Performances with the Music Disk Recorder

The Electone also features a Music Disk Recorder for recording your performances. The recording is completely digital and is stored to disk, which means that no matter how many times you play back the recording, it will always sound exactly the same as the original performance. (See page 56.)

Quick Introductory Guide

Playing Your Electone

Whether you are an advanced Electone performer or have never touched an electronic keyboard in your life, we recommend that you take the time to go through this basic section. It shows you in the simplest possible manner how to start playing your Electone. The basic operations and functions that you learn in this section will also be important when you later use the Electone's more advanced features.

Getting Started

Once you've set up your Electone and plugged the power cord in to an electrical outlet, you're ready to get started and play.

1. Turn on the Electone by pressing the POWER switch.

When you turn on the Electone, the following displays will appear one after the other in the LCD display:

YAMAHA

Electone.

EL-90

UPPER		LEAD	UPPER
Strings1	Strings1	Violin1	
LOWER			
Strings1	Strings1		LOWER
PEDALS			
Cont.Bass1	Cont.Bass1		

EL-70

UPPER		LEAD	UPPER
Strings1	Strings1	Violin1	
LOWER			
Strings1	Strings1		LEAD
PEDALS			
Cont.Bass1			

This last display shows the currently assigned voice settings for each voice section, as well as the overall balance between the Upper and Lower voices.

Turning the Electone off erases all panel settings you have made. When the Electone is turned on, Basic Registration 1 is automatically selected. If you have made panel settings you wish to keep, save them to Registration Memory (see p. 50) before turning the Electone off. You can, however, restore the panel settings that were made before the Electone was last turned off. In doing this, first be careful NOT to press any panel buttons (excepting those in Basic Registration) after you turn the Electone back on. Then, to restore the previous settings, hold down the M (Memory) button and press D(Disable) button.

2. Set the MASTER VOLUME control.

The MASTER VOLUME control is an overall control which affects the volume of the entire instrument.

MASTER VOLUME
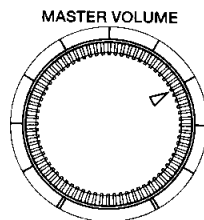
**Set the control to roughly this position.
This is the normal playing level.**

3. Press the Expression pedal down with your foot.

The Expression pedal (the right pedal on the EL-90) also controls the entire volume of the Electone. Once you have set the MASTER VOLUME control to a suitable level, you can use the Expression pedal to change the volume with your foot as you play.
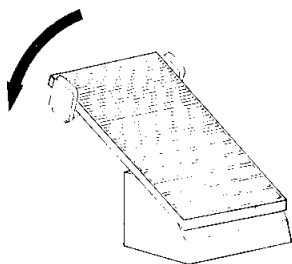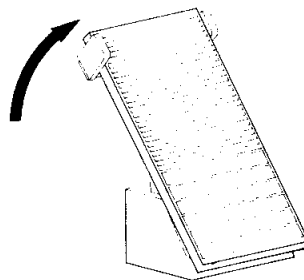
Maximum volume   **Minimum volume**

For now, press the pedal down slightly beyond the halfway point.

Playing Your Electone

Your Electone is fully equipped with an exceptionally wide variety of voices, rhythms, effects and other convenient functions. Since it may take some time to master the wealth of features available, the Electone includes convenient Registrations that let you completely and instantly change the voices and other settings for all of the keyboards, even as you play. Each registration is pre-programmed to be used for a specific music style or instrumental combination.
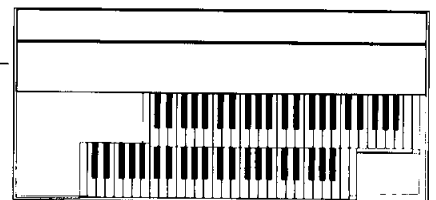
Basic Registrations

The Basic Registration section has five factory preset registrations, each with a different set of voices for the Upper/Lower keyboards and Pedalboard and each specially suited for playing in a different music style.

When you turn the power on, the Electone automatically selects Basic Registration 1. If another registration has been selected (the lamp on the button will be lit), press the button for Basic Registration 1.

BASIC
REGIST.

6

Try playing the melody line of following piece of music on the Upper keyboard, using the indicated registration.

Basic Registration 1 **From the New World** *A. Dvořák* [Musical 2] Tempo ♩ = 72

Now, try out the rest of the Basic Registrations with the following music examples. Press the appropriate buttons to select the registrations. Each music example has been chosen to best suit its companion registration.

Basic Registration 2 **Little Brown Jug** *American Folk Song* [Bigband 1] Tempo ♩ = 182

Basic Registration 3 **Cradle Song** *B. Flies* [Standard 1] Tempo ♩ = 106

Basic Registration 4 **Twinkle, Twinkle Little Star** *German Folk Song* [Baroque] Tempo ♩ = 76

Basic Registration 5 **Ode to Joy** *L.V.Beethoven* [March 1] Tempo ♩ = 123

7

The chart below lists the voices that have been set for the Upper/Lower keyboards and Pedalboard in each of the five Basic Registrations.

	Basic Registration 1	Basic Registration 2	Basic Registration 3	Basic Registration 4	Basic Registration 5
Upper keyboard voice	Strings 1	Brass 1	Flute 1	Cosmic 1	Synth. Brass 1
Lower keyboard voice	Strings 1	Horn 1	Piano 1	Cosmic 2	Cosmic 3
Pedal voice	Contra Bass 1	Tuba	Contra Bass 1	Cosmic 2	Synth. Bass 1

Registration Menu Disk

Included with your Electone is a Registration Menu Disk. The disk is packed with various registrations, including voice and rhythm selections, specially created by professional Electone performers to suit a variety of music styles. With the 80 registrations available on both the EL-90 and the EL-70, you're certain to find any number of registrations that perfectly suit any style of music you play.

To select registrations from the Registration Menu Disk:

1. Put the included Registration Menu Disk into the Disk slot, located just under the Music Disk Recorder at the right side of the Electone.
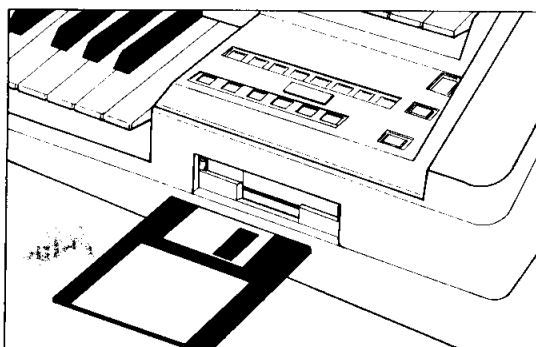
Once you've securely inserted the disk into the slot, the LCD Display on the panel will automatically change to show the available music styles:
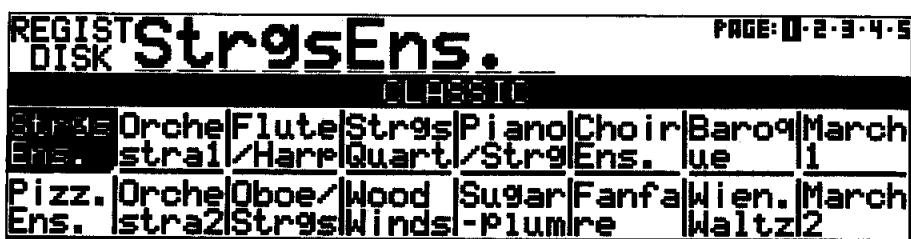
PAGE

2. Press the PAGE ► button to select the various menu "pages" of registrations available on the disk.

There are dozens of registrations on a disk, but up to 16 can only be shown in the LCD Display at a time. Each time you press the PAGE ► button, the LCD will "turn" to the next page. When you reach the last page of registrations, one more press of the button will return the LCD to the first page. (Pressing the PAGE ◄ button selects the previous page.)

Note: The Registration Menu Disk does not operate when the HOLD, VOICE EDIT or RHYTHM PROGRAM buttons are on.

3. Select one of the registrations shown on the LCD by pressing the appropriate Data Control button.
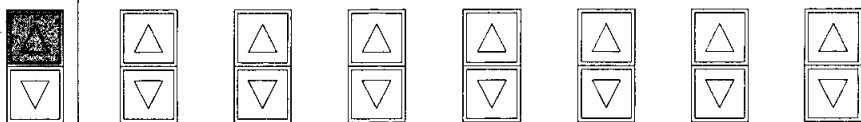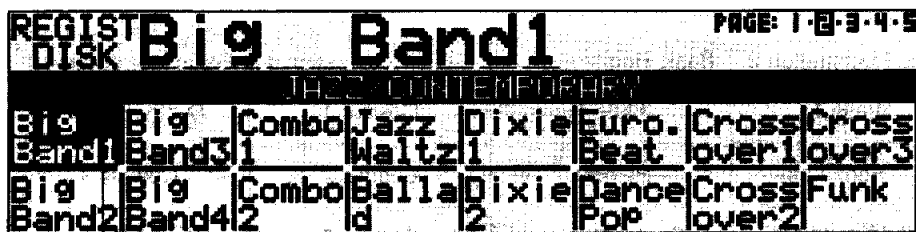
Dark background indicates the selected registration.

Press this button

Up to 16 registration selections are shown on the LCD, and the 16 Data Control buttons correspond to those selections. (For more on the functions and operation of the LCD Display, refer to page 12.)

4. Next, press the START button in the Rhythm section. This step starts up a rhythm pattern appropriate to the music style you have selected. (To turn the pattern off, press the START button again.)
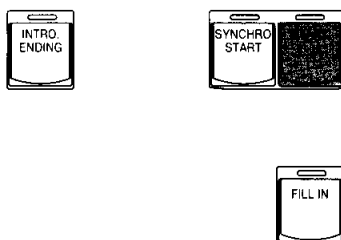
You can also adjust the tempo of the rhythm to your liking by turning the TEMPO dial, as indicated in the illustration below.

Slower   TEMPO   Faster
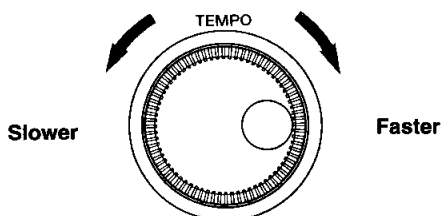
Rhythms are an important part of each registration. Each registration's rhythm has been carefully chosen and programmed to best match the particular music style.

> **Note:** Some of the registrations in the Registration Menus may not have an assigned rhythm and automatic accompaniment pattern.

The A.B.C. (Auto Bass Chord) automatic accompaniment feature of the Electone also plays an important role and is used in conjunction with the registrations and rhythm patterns. Like the rhythm patterns, A.B.C. patterns have been programmed to best match the selected registration. They allow you to add sophisticated bass and chord accompaniment patterns that suit the music, simply by playing chords on the Lower keyboard.

5. Play a chord on the Lower keyboard. (Try the chord shown on the right.) Even after you release your fingers from the keyboard, the chord and accompaniment pattern continue to sound.
This provides automatic accompaniment specially tailored for the music style in which you play. For more details on automatic accompaniment, see page 44.

Example:

C
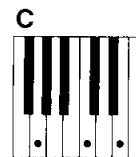
Play a C chord on the keyboard.

6. Now return to the first five written music examples in the Basic Registrations section above. (See p. 7.) Select the registration indicated at the top of the score (for example, "Musical 2 (Page 4)" in the first song). Refer back to steps #2 and #3 above if you've forgotten how to select registrations.

7. Adjust the tempo of the rhythm for each song by turning the Tempo dial until the tempo number indicated in the display matches that shown at the top of each score.

TEMPO

BAR/BEAT

`1 2 0`

TEMPO

Rhythm tempo
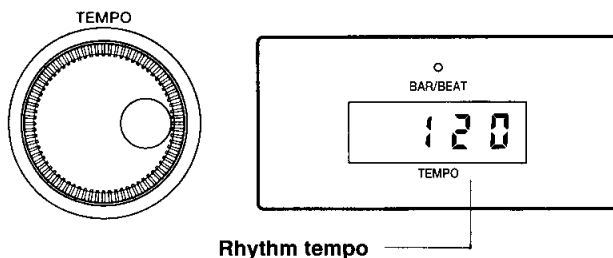
8. Play the melody line as you did before with your right hand on the Upper keyboard. This time, however, use the A.B.C. automatic accompaniment by playing the chords with your left hand. The keys you should press are indicated by the small diagrams just below the melody in the score.

Example:

C
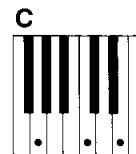
9. Now that you've heard what A.B.C. can do, try selecting other registrations from the Registration Menu. (Return to the display of the Registration Menu by pressing the PLAY button in the Music Disk Recorder section.)
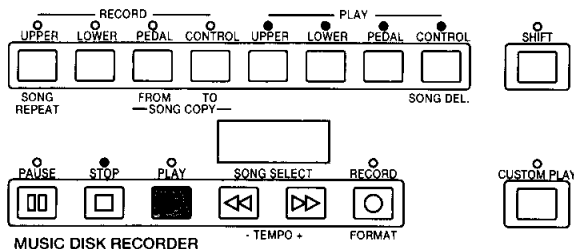
	Rock& Roll	Hard Rock1	Music al1	Stand ard1	Bounc e	Polka	Count ry1
Pops Orch2	60's Pop	Hard Rock2	Music al2	Stand ard2	Waltz -Folk	Germ. Waltz	Count ry2

10

Select various registrations by following the same steps as you did in steps #2 and #3 above. Use the A.B.C. function with the newly selected registrations as well, to get a better idea of the wide stylistic range of your Electone.

See how easy it is? And remember, you don't have to hold the key down. Just press the key once and the automatic accompaniment will continue until you press the next key.

Canceling the A.B.C. Automatic Accompaniment Function

You can, of course, cancel the automatic accompaniment patterns if you want and play the accompaniment by yourself on the Lower keyboard and Pedalboard.

To cancel the A.B.C. automatic accompaniment:

1. Press the A.B.C. M.O.C. button in the DISPLAY SELECT section, to the right of the LCD Display.

AUTO BASS CHORD			MELODY ON CHORD		
MODE		MEM.	MODE		KNEE
OFF	Single Finger	LOWER	OFF	1	ON OFF
Finger Chord	Custom A.B.C.	PEDAL	2	3	

Display shows A.B.C. functions.

2. Press the DATA CONTROL buttons that correspond to "OFF" and "MEM.(Memory) LOWER/PEDAL" in the display.

AUTO BASS CHORD			MELODY ON CHORD		
MODE		MEM.	MODE		KNEE
OFF	Single Finger	LOWER	OFF	1	ON OFF
Finger Chord	Custom A.B.C.	PEDAL	2	3	
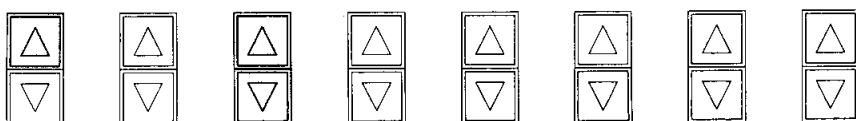
Selecting "OFF" cancels the automatic accompaniment and returns the Electone to normal operation.

11
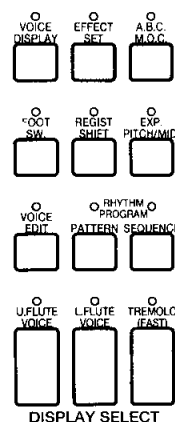
This short section has shown you just a small portion of the vast potential of your Electone. Now that you know how to select registrations, take some time to explore the other registrations and their rhythm patterns. There's a great wealth of realistic voices, authentic orchestration and stylistically varied rhythms — all instantly available from the Registration Menus on the disks. A separate chart included with this manual provides a list of all the available music styles on the disks, along with the rhythm patterns used.

Note: Before going on to explore the remaining sections of this manual, we suggest that you turn the A.B.C. automatic accompaniment and memory functions off. To do this, return to the section Canceling the A.B.C Automatic Accompaniment Function above and select the OFF setting in A.B.C. and press the buttons that correspond to LOWER and PEDAL in the display to turn memory off.

Using The LCD Display

This chart introduces you to the convenient control functions of the LCD display. The LCD display lets you see at a glance the current settings and provides easy-to-understand graphic representation of all parameters.

To call up the Voice Menu LCD display used in this example, press the ORGAN button in the Upper Keyboard Voice 1 section.

The following display will appear:
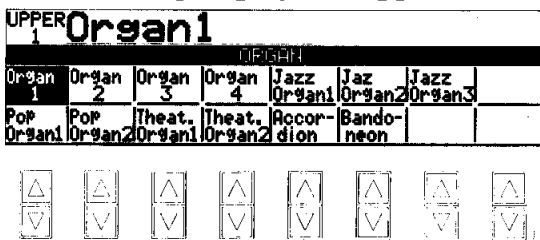
Data Control Buttons

The Data Control buttons are used to select or adjust the settings shown on the display. Each pair of buttons corresponds to the section of the display directly above it. For example, pressing the button on the far left in the bottom row selects the POP ORGAN 1 voice:
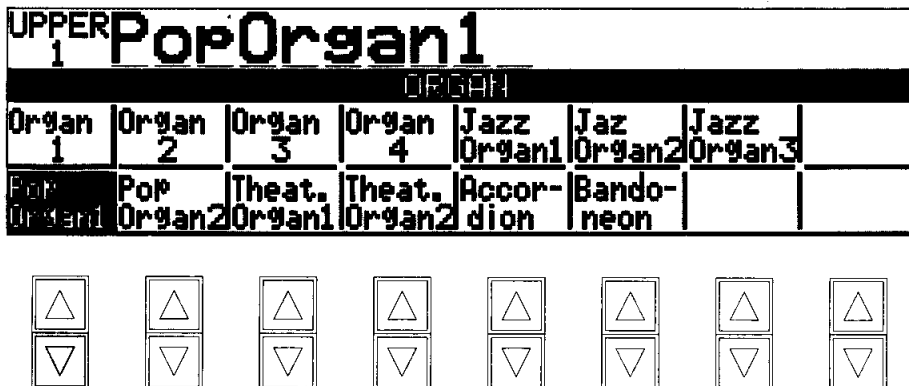
Reverse display indicates selected section.

12

Now, call up the Upper Condition LCD display for additional examples. Press the ORGAN button in the Upper Keyboard Voice 1 section once again.

The following display will appear:
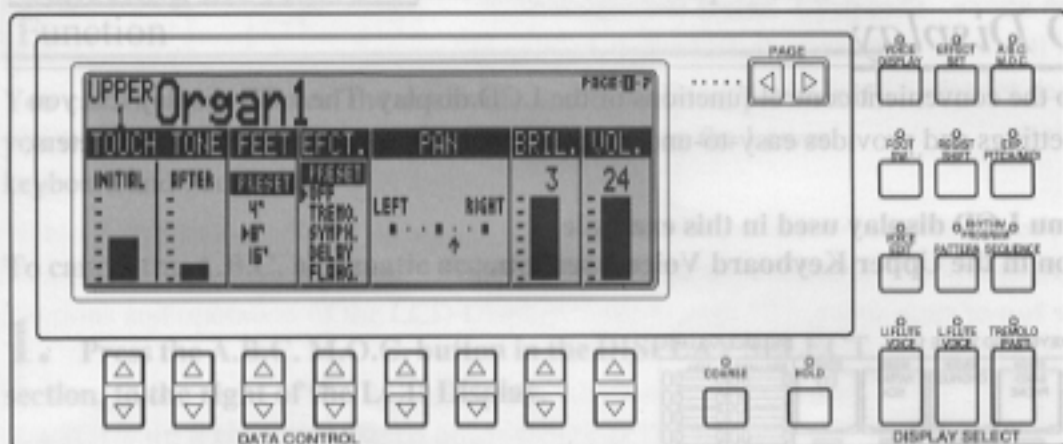
This LCD shows some of the other ways in which the Data Control buttons are used to control Electone functions.

The upper row of buttons (marked with ▲) are used generally to increase settings or switch the LCD indicator one step up. The lower row of buttons (marked with ▼) are used to decrease settings or switch the LCD indicator one step down.

Some specific examples:
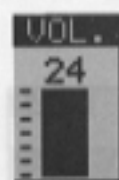
Pressing this button increases the value and moves the dark bar in the display up.

Pressing this button decreases the value and moves the dark bar in the display down.

Pressing these buttons move the dark indicator (▶)up or down in the display to select the various settings.

Either button in this pair moves the arrow in the display to the left.

Either button in this pair moves the arrow in the display to the right.
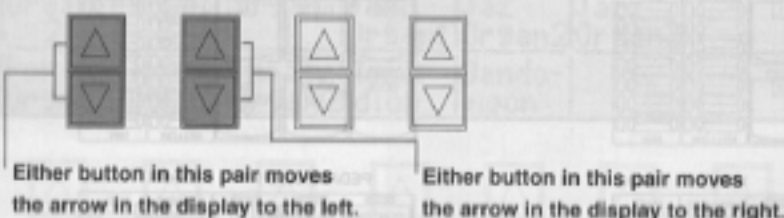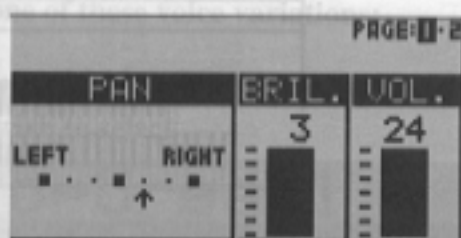
In the above example, where the parameter setting in the display stretches out over two pairs of Data Control buttons, two buttons may be used for the same function.

❶ Page Select Buttons

These buttons are used to select (when available) the various "pages" of the display, the names of which appear at the top right of the LCD. Use Page ► to select the next page, and Page ◄ to select the previous page.

❷ Coarse Button

This button allows you to make quick "jumps" when changing values (of the parameters with bar indications). While holding the Coarse button down, press the Data Control button corresponding to the value you wish to change; the values will change rapidly toward the maximum or minimum.

❸ Hold

This button allows you to keep the LCD display at the current function. Normally, if the buttons of other functions are pressed, the LCD will switch to those functions. To keep this from happening, press the Hold button; the button's LED will remain lit as long as Hold is in effect. Press the button again to cancel Hold.

❹ DISPLAY SELECT Buttons

These buttons access some of the major functions of the Electone and call up their respective LCD displays. The LCD display changes when another function has been selected. Note: The Voice Edit and Rhythm Program functions are exceptions to this; the Voice Edit and Rhythm Program displays remain until the buttons corresponding to those functions are pressed again (turned off). No other function can be selected while these functions are active.

There are two ways to call up LCD displays: One is by pressing the panel's voice/rhythm buttons or reverb and sustain controls; the other is by pressing the DISPLAY SELECT buttons.

The LEDs above the buttons momentarily flash when the buttons are pressed. The LEDs of the UPPER/LOWER FLUTE VOICE, VOICE EDIT, RHYTHM PATTERN/SEQUENCE and TREMOLO (FAST) buttons remain lit when the buttons are pressed (indicating ON status) and turn off when pressed again.

14
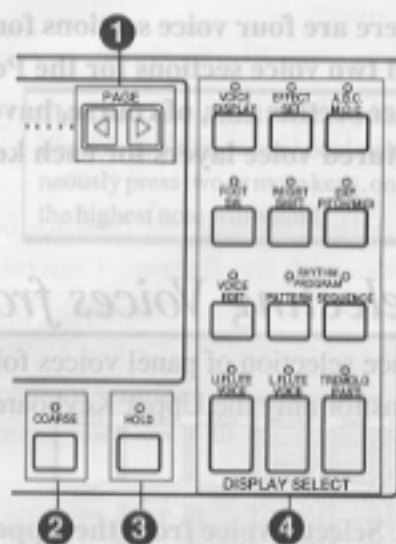
1 Voice Sections

There are four voice sections for the Upper keyboard, three voice sections for the Lower keyboard, and two voice sections for the Pedalboard. (The Pedalboard of the EL-70 has one voice section.) Each voice section can, of course, have its own voice and volume settings, which allows you to create richly textured voice layers for each keyboard.

Selecting Voices from the Panel

Since selection of panel voices follows the same procedure throughout the various voice sections, instructions for only the Upper Keyboard Voice sections are given here.

1. **Select a voice from the Upper Keyboard Voice 1 section by pressing one of the Voice buttons in that section.**

> **Note:** Voices of the Upper and Lower Flute Voice sections are selected by a different procedure. Refer to the section Flute Voices below for details.

If, for example, you have selected the ORGAN voice, the following display will appear:

UPPER 1	Organ1					
	ORGAN					
Organ 1	Organ 2	Organ 3	Organ 4	Jazz Organ1	Jaz Organ2	Jazz Organ3
Pop Organ1	Pop Organ2	Theat. Organ1	Theat. Organ2	Accor- dion	Bando- neon	
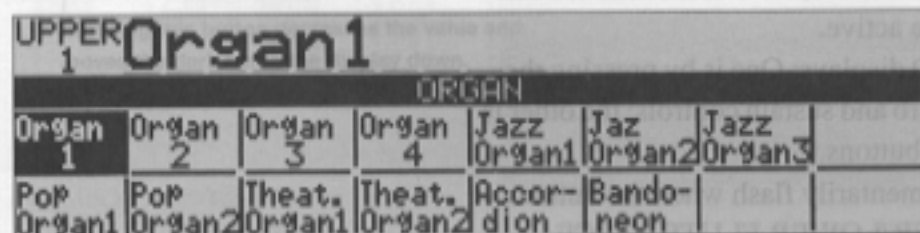
Notice that several different voice names are shown on this display.
These are variations of the basic organ voice category.

To select one of these voice variations:

2. Press one of the Data Control buttons that corresponds to voice you wish to select.

UPPER 1	PopOrgan1						
ORGAN							
Organ 1	Organ 2	Organ 3	Organ 4	Jazz Organ1	Jaz Organ2	Jazz Organ3	
Pop Organ1	Pop Organ2	Theat. Organ1	Theat. Organ2	Accor- dion	Bando- neon		

3. If you wish to, you can select voices from the other Upper Keyboard Voice sections (Upper Voices 2 and Lead Voices), following steps #1 and #2 above.

> The Lead and Pedal Voices sound one note at a time; when you simultaneously press two or more keys, only the highest note will sound.

PLAYING LEAD AND BASS VOICES FROM THE LOWER KEYBOARD:

The Electone has a special "To Lower" function that lets you assign Lead or Bass voices to the Lower keyboard. Simply press the TO LOWER button on the voice section you wish to assign, and that voice will be playable from the Lower keyboard.
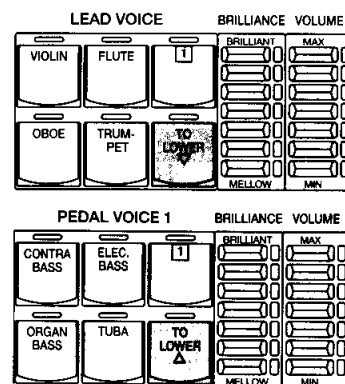
4. Set the volume for each voice section. There are two volume controls: Coarse and Fine.

Coarse: Use the VOLUME controls of each voice section on the panel to set the desired level for each voice. The controls have seven volume settings, from a minimum of 0, or no sound, to a maximum of full volume.

16
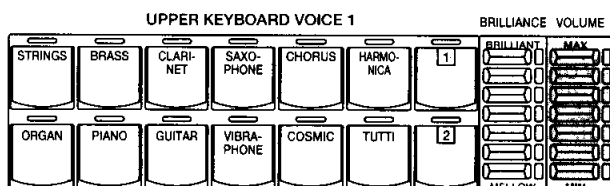
Fine: Pressing the same panel voice button again (or the same Data Control button corresponding to the selected voice) calls up the Voice Condition display. Use the Data Control buttons directly under the display to change the level of the desired voice. The relative level is indicated by the bar under each voice in the display as well as by a numeric value (from 0 - 24).

> **Note:** Pressing a voice button once calls up that voice's Voice Menu display. Pressing it a second time calls up the Voice Condition display (as shown on the left). Successive presses alternate between the two displays.
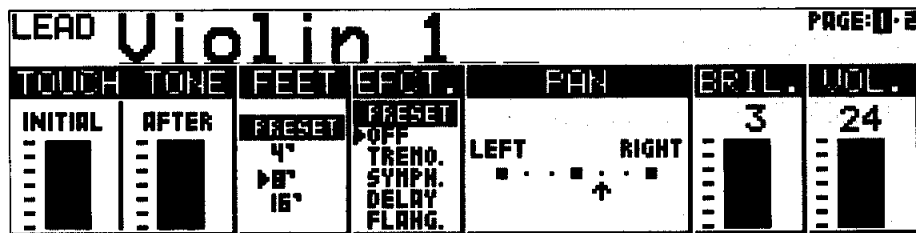
Fine volume control

5. **Now select voices for the Lower keyboard and Pedalboard as you did for the Upper keyboard above. Also set the volumes of the voices.**

Follow steps #1 - #4 above, now using the controls of the Lower and Pedal Voices.

Note: The Pedalboard of the EL-70 has only one voice section.

6. **Adjust the volume balance between the Upper and Lower Voices with the Balance Control provided on the Voice Display.**

Return to the Voice Display by pressing the VOICE DISPLAY button in the DISPLAY SELECT section.

Adjust the balance with the corresponding Data Control buttons.

> **ABOUT VOICE SECTION VOLUMES:** The voices of the three voice sections of the Upper keyboard (two in the Lower and Pedal) sound together in a layer, and the balance of the voices in the layer is determined by these VOLUME controls. You can easily mute the voice of a voice section by holding down the COARSE button and pressing the panel volume control of the voice section you wish to mute. Repeating the procedure restores the original volume setting.

DISPLAY SELECT

> **Note:** Pressing this pair of Data Control buttons at the same time restores the balance to the center position.

Selecting Additional Voices — Dotted Buttons and User Voices

The EL-90/70 Electones have a wide variety of voices from which you can choose — far greater than what is immediately apparent from the front panel controls. You've already learned in the section above how to select the different voices that are available in the Voice Menu display of each panel voice. The Electone also has dotted buttons in each voice section, giving you access to even more voices by including space for storing and recalling voices you've created yourself. Optional Voice Disk voices containing many new voices are also being made available for both the EL-90 and EL-70. (See page 78.)

Selecting Voices From the Dotted Buttons

Each voice section has one or two dotted buttons, found on the right side of each voice section. These dotted buttons function as "wild card" Voice Menu selectors; any internal or User voices can be selected from these buttons.

The dotted buttons have three basic uses:

1) For playing any voice of the Voice Menus from any of the keyboards or Pedalboard. You can play on the Upper keyboard, for example, voices from the twenty-two Voice Menu pages (including User), and not be limited to only the twelve buttons (equivalent to twelve Voice Menu pages) that make up the Upper Voice section. Another advantage to this feature is that when the normally monophonic (one note) Lead and Pedal voices are assigned to the Upper or Lower keyboards, they can be played polyphonically.

2) For having three different voices from the same Voice Menu page available for selection in the same song. For example, you can assign one of the voices to a dotted button in the Upper Keyboard Voice 1 section, the second voice to the other dotted button in the same section, and the third one on the Voice Menu.

3) For playing the User voices of your own creation or those from a Voice Disk. (See page 78.)

To select voices from the dotted buttons:

1. Press one of the dotted buttons in any of the voice sections.
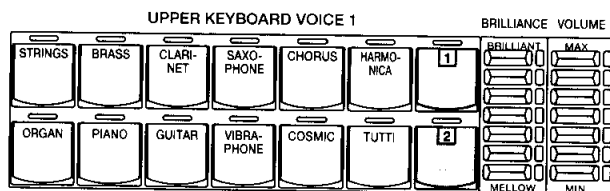
Note: You can directly view and select Voice Menu pages by holding down one of the Dotted buttons and simultaneously pressing the desired voice buttons in succession.

2. Select one of the pages with the Page Select buttons, and choose a Voice Menu (PIANO, for example).

Each page represents a general voice category and the title of the category appears in the dark bar in the middle of the display when the page has been selected.

Note: The voice name shown at the top of the LCD is that of the currently assigned voice and is irrelevant to the Voice Menu below.

3. Select a voice from the display (PIANO 1, for example)

UPPER 1 Piano1			PAGE: 1·2·3·4·5·6·7·8·9·10·11 12·13·14·15·16·⟨⟩·18·19·20·21·USER	
PIANO				
Piano 1	Piano 2	Honky Tonk		Elec. Piano1	Elec. Piano2		
Harpsi chord		Clavi.					

Select the USER page when you wish to play voices that you've created in Voice Edit (see p. 72.) or voices from a Voice Disk (see p. 78.)

UPPER 1 Piano1			PAGE: 1·2·3·4·5·6·7·8·9·10·11 12·13·14·15·16·17·18·19·20·21·USER	
USER VOICE				
USER 1	USER 2	USER 3	USER 4	USER 5	USER 6	USER 7	USER 8
USER 9	USER 10	USER 11	USER 12	USER 13	USER 14	USER 15	USER 16

Voice Menus

The following chart lists the voices available and their button/page assignment. The numbers shown in the list correspond to the page numbers shown in the display.

EL-90

1. Upper/Lower

STRINGS							
String 1	String 2	String 3	String 4	String 5			
Pizz. Strs.	Trem. Strs.			Synth. Strs.1	Synth. Strs.2		

2. Lead

VIOLIN							
Violin 1	Violin 2	Violin 3	Violin 4	Pizz. Violin	Cello		

3. Pedal

CONTRA BASS							
Contra Bass 1	Contra Bass 2			Pizz. Bass	Uprght Bass		

4. Upper/Lower

BRASS							
Brass 1	Brass 2	Brass 3	Brass 4	Synth. Brass 1	Synth. Brass 2		

5. Lower

HORN							
Horn 1	Horn 2	Horn 3	Muted Horn				

6. Lead

TRUMPET							
Trum- pet 1	Trum- pet 2	Trum- pet 3	Trum- pet 4	Trum- pet 5	Muted Trp.		
Trom- bone1	Trom- bone2	Muted Trb.		Flugel Horn			

7. Pedal

TUBA							
Tuba				Tim- pani	Timp. Roll		

8. Lead

FLUTE							
Flute 1	Flute 2	Pic- colo		Recor- der		Pan Flute	
Whis- tle							

9. Lead

OBOE							
Oboe 1	Oboe 2	English Horn		Bas- soon1	Bas- soon2		

10. Upper/Lower

CLARINET							
Clari- net 1	Clari- net 2			Synth. Cla.			

11. Upper/Lower

SAXOPHONE							
Saxo-phone1	Saxo-phone2	Sopra. Sax.	Sax. Ensem.				

12. Upper/Lower

TUTTI							
Tutti 1	Tutti 2	Tutti 3	Tutti 4	Tutti 5	Tutti 6		

13. Upper/Lower

CHORUS							
Chorus 1	Chorus 2	Chorus 3			Vocal		

14. Upper

HARMONICA							
Harmo-nica 1	Harmo-nica 2						

15. Upper/Lower

ORGAN							
Organ 1	Organ 2	Organ 3	Organ 4	Jazz Organ1	Jazz Organ2	Jazz Organ3	
Pop Organ1	Pop Organ2	Theat. Organ1	Theat. Organ2	Accor-dion	Bando-neon		

16. Pedal

ORGAN BASS							
Organ Bass 1	Organ Bass 2	Organ Bass 3	Organ Bass 4				

17. Upper/Lower

PIANO							
Piano 1	Piano 2	Honky Tonk		Elec. Piano1	Elec. Piano2		
Harpsi-chord		Clavi.					

18. Upper/Lower

GUITAR							
Guitar 1	Guitar 2	Guitar 3		Banjo	Mando-lin		
Elec. Gtr. 1	Elec. Gtr. 2	Muted Guitar	Dist. Guitar	Harp		Koto	Taisho koto

19. Upper/Lower

VIBRAPHONE							
Vibra-phone	Gloc-ken.	Celes-ta		Marim-ba	Xylo-phone		
Chime	Synth. Chime			Steel Drum			

20. Pedal

ELECTRIC BASS							
Elec. Bass 1	Elec. Bass 2	Elec. Bass 3		Synth. Bass 1	Synth. Bass 2	Synth. Bass 3	

21. Upper/Lower

COSMIC							
Cosmic 1	Cosmic 2	Cosmic 3	Cosmic 4	Cosmic 5	Cosmic 6	Cosmic 7	Cosmic 8
Cosmic 9							

22. USER

USER VOICE							
USER 1	USER 2	USER 3	USER 4	USER 5	USER 6	USER 7	USER 8
USER 9	USER 10	USER 11	USER 12	USER 13	USER 14	USER 15	USER 16

EL-70

1. Upper/Lower

STRINGS							
String 1	String 2	String 3					
Pizz. Strs.	Trem. Strs.			Synth. Strs.			

2. Lead

VIOLIN							
Violin 1	Violin 2				Cello		

3. Pedal

CONTRA BASS							
Contra Bass				Pizz. Bass	Uprght Bass		

4. Upper/Lower

BRASS							
Brass 1	Brass 2	Brass 3		Synth. Brass			

5. Lower

HORN							
Horn 1	Horn 2						

6. Lead

TRUMPET							
Trum-pet 1	Trum-pet 2				Muted Trp.		
Trom-bone				Flugel Horn			

20

7. Pedal

TUBA							
Tuba				Tim-pani			

8. Lead

FLUTE							
Flute		Pic-colo		Recor-der			
Whis-tle							

9. Lead

OBOE							
Oboe		English Horn		Bas-soon			

10. Upper/Lower

CLARINET							
Clari-net							

11. Upper/Lower

SAXOPHONE							
Saxo-phone		Sopra. Sax.					

12. Upper/Lower

TUTTI							
Tutti 1	Tutti 2	Tutti 3	Tutti 4				

13. Upper/Lower

CHORUS							
Chorus 1	Chorus 2						

14. Upper

HARMONICA							
Harmo-nica							

15. Upper/Lower

ORGAN							
Organ				Jazz Organ1	Jazz Organ2		
Pop Organ		Theat. Organ		Accor-dion	Bando-neon		

16. Pedal

ORGAN BASS							
Organ Bass 1	Organ Bass 2	Organ Bass 3					

17. Upper/Lower

PIANO							
Piano				Elec. Piano1	Elec. Piano2		
Harpsi-chord							

18. Upper/Lower

GUITAR							
Guitar 1	Guitar 2	Guitar 3		Banjo	Mando-lin		
Elec. Guitar.				Harp			

19. Upper/Lower

VIBRAPHONE							
Vibra-phone	Gloc-ken.			Marim-ba	Xylo-phone		
Chime	Synth. Chime						

20. Pedal

ELECTRIC BASS							
Elec. Bass 1	Elec. Bass 2			Synth. Bass 1	Synth. Bass 2		

21. Upper/Lower

COSMIC							
Cosmic 1	Cosmic 2	Cosmic 3	Cosmic 4	Cosmic 5	Cosmic 6		

22. USER

| USER VOICE							
USER 1	USER 2	USER 3	USER 4	USER 5	USER 6	USER 7	USER 8
USER 9	USER 10	USER 11	USER 12	USER 13	USER 14	USER 15	USER 16

2 Flute Voices

The Flute Voice feature allows you to create your own organ voices, giving you access to an unlimited combination of organ sounds. With this function, you can recreate all of the classic organ sounds by adjusting the flute footage levels and the percussive sounds, just like on conventional organs.

There are eight flute footage settings, with three additional footage settings for the attack sound. You can select various Preset Flute Voices, or create your own and save those to User Voices.

There are five pages: Menu, Footage, Attack, Volume, Save.

| To use the Flute Voice function and select the Flute page:

1. Press one of the Flute Voice buttons (UPPER or LOWER) in the DISPLAY SELECT section. The LED above the button lights.
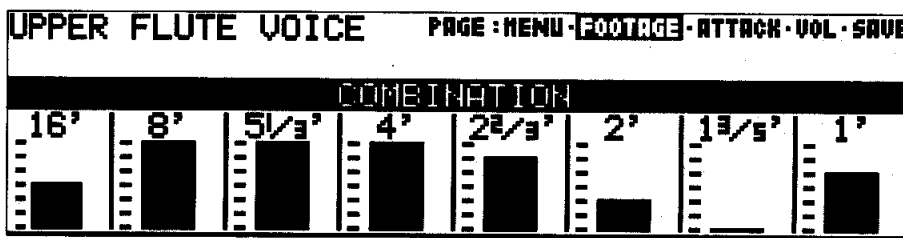
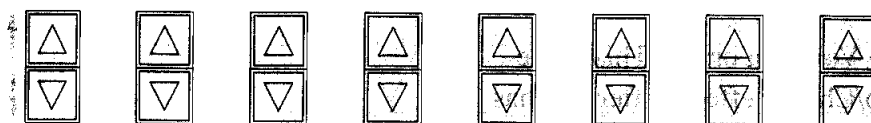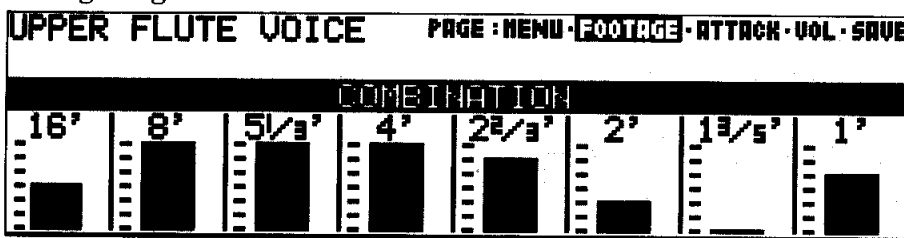
Pressing the button again turns the Flute Voice function off (the LED also turns off), and changes the LCD to the Voice Display. Each of the buttons acts as an on/off switch.
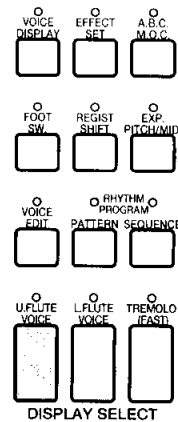
2. Use the Data Control buttons directly under the flute footage numbers to change each footage volume.
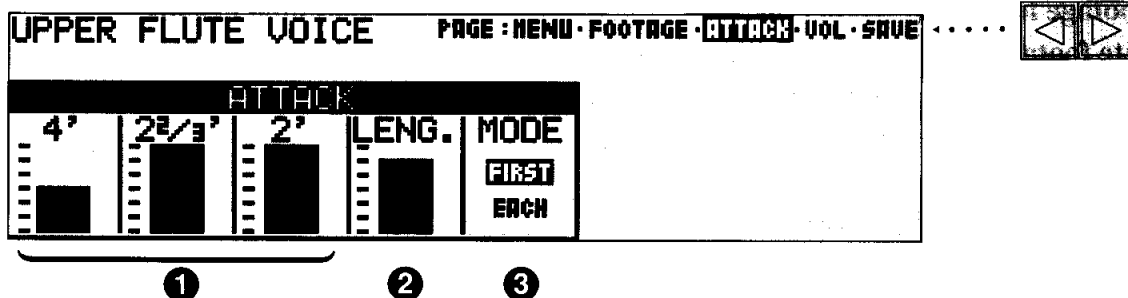
Footage Page

Play the keyboard and listen to the changes in the sound as you adjust the footage volumes.

3. Press the Page Select buttons to select the various pages for the other Flute Voice functions.

Attack Page

```
UPPER FLUTE VOICE    PAGE:MENU·FOOTAGE·ATTACK·VOL·SAVE    · · · · ·
                      ATTACK
    4'  2²/₃'  2'  LENG. MODE
                              FIRST
                              EACH
    ①          ②   ③
```

① Attack Footages
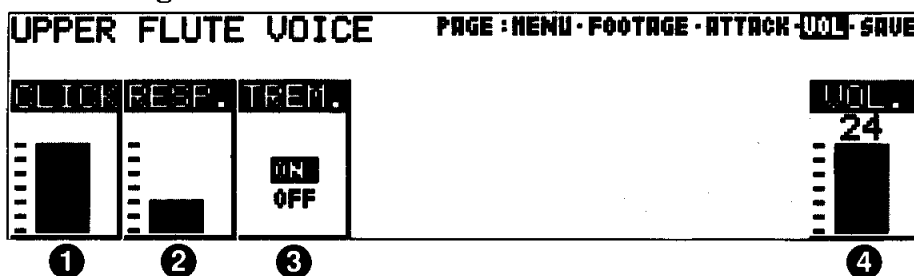Determines the level of each volume in the percussive portion of the voice. Footage settings are 4', 2-2/3' and 2'.

② Attack Length
Determines the duration of the attack sound.

③ Mode
Determines which notes in a held group of notes are given an attack sound. With the EACH setting, all notes played have an attack sound. In FIRST, only the first note played will have attack; all other notes played while the first is held have no attack.

Volume Page

```
UPPER FLUTE VOICE    PAGE:MENU·FOOTAGE·ATTACK·VOL·SAVE
    CLICK RESP. TREM.              VOL.
                     ON            24
                     OFF
    ①    ②    ③                   ④
```

① Click
Determines the volume of the key click sound. Click is independent of the Attack sound described above.

② Response
Determines the overall response speed of the sound. Higher settings make the keyboard response faster; lower settings result in a slower response, creating a pipe organ effect.

③ Tremolo
Turns the Tremolo effect for the Flute Voice on or off. This is the primary on/off switch for the Tremolo/Chorus effect. After this has been set to ON, you can turn the effect on and off during your performance by using the TREMOLO (FAST) button in the DISPLAY SELECT section. (See the Tremolo section, p.32, for more information.)

④ Volume
Determines the overall volume of the Flute Voice voice. Range: 0 - 24

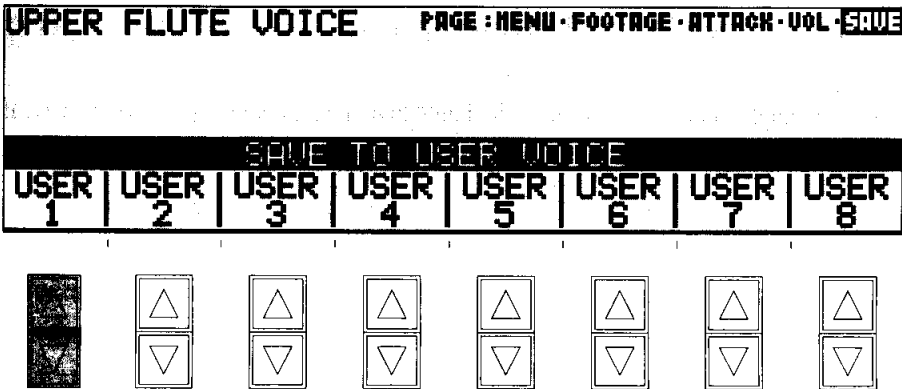**Note:** If the Volume is set to 0, no sound will be produced.

Save to User Flute Voice

Saves the currently created Flute Voice to the selected User Flute Voice memory space.

After you have created a Flute Voice with the Flute, Attack and Volume pages, you can save that Flute Voice:

Save Page

The Save page provides User Flute Voice spaces that allow you to save the Flute Voices you created in the Footage, Attack and Volume pages above.

UPPER FLUTE VOICE	PAGE : MENU · FOOTAGE · ATTACK · VOL · **SAVE**

SAVE TO USER VOICE

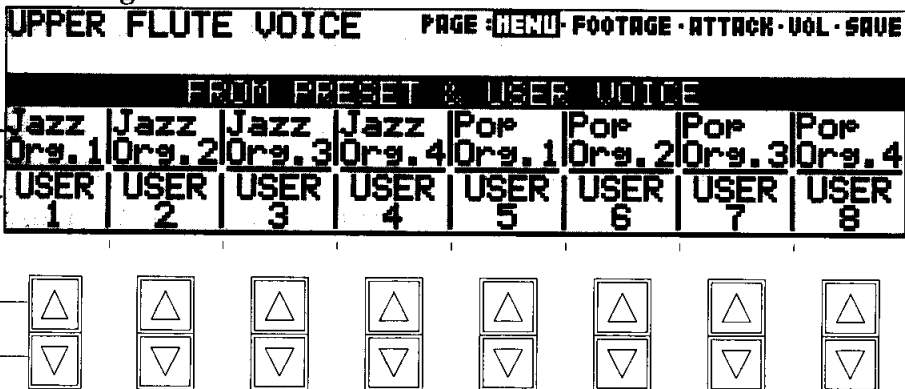| USER 1	USER 2	USER 3	USER 4	USER 5	USER 6	USER 7	USER 8

Note: All settings in the Footage, Attack and Volume pages can be saved to the Save page, except for the following: Attack Mode, Tremolo On/Off, and Volume.

1. Select the desired user voice number (USER 1 through 8) to which the new voice will be saved.

2. Pressing the appropriate Data Control button saves your new Flute Voice to that memory space and erases any voice that had been previously saved there. When the operation has been completed, the selected User number in the display will momentarily flash.

Note: The User area described in this section has no relation to that of the Voice Menu page.

User voices 1 through 8 correspond to those shown in the Menu page below.

Menu Page

UPPER FLUTE VOICE	PAGE : **MENU** · FOOTAGE · ATTACK · VOL · SAVE

FROM PRESET & USER VOICE

Jazz Org.1	Jazz Org.2	Jazz Org.3	Jazz Org.4	Pop Org.1	Pop Org.2	Pop Org.3	Pop Org.4
USER 1	USER 2	USER 3	USER 4	USER 5	USER 6	USER 7	USER 8

Note: When you use the Upper/Lower Flute Voices and/or other voices at the same time, only one of the voices can be displayed at a time, even though all voices may be operative and both of the Upper and Lower Flute Voice LEDs are lit.

From Preset and User Flute Voices

Allows you to select Preset and User Flute Voice voices.

Eight factory-preset voices (four Jazz Organ and four Pop Organ voices) are set to the upper row, and the eight User voices in the bottom row are for selecting voices you created and stored with the Save page.

Note: Remember that the UPPER and LOWER FLUTE VOICE buttons are on/off switches. In the process of turning on a Flute Voice, then switching to another function and returning to the Flute Voice, you may unintentionally turn the Flute Voice off. Check whether the Flute Voice LEDs are on or off before you start to play.

24

3 Voice Controls and Effects

The Electone is equipped with two general kinds of functions that can be used to change the sound of the voices: Voice Controls and Effects.

Voice controls are used to change various aspects of the voices, such as the touch sensitivity, volume, octave (footage), vibrato, pan setting and brilliance. The voice controls, as well as the selection of certain effects, are provided in the Voice Condition pages, described below.

Effects are a extremely versatile set of tools through which you can enhance the sound of the voices. They include: Reverb, Sustain, Tremolo, Symphonic, Delay, Flanger and D.R.E. (Dynamic Range Enhancer; EL-90 only). Effect settings are controlled from the Reverb, Sustain, Tremolo and Effect Set pages.

Each voice has been given certain factory-preset effect settings to best enhance its sound. However, if you wish, you can change the sound to suit your preferences by using the controls described in this section.

The chart below shows the various voice controls and effects for the individual voice sections of the two models. Available functions are indicated by circles.

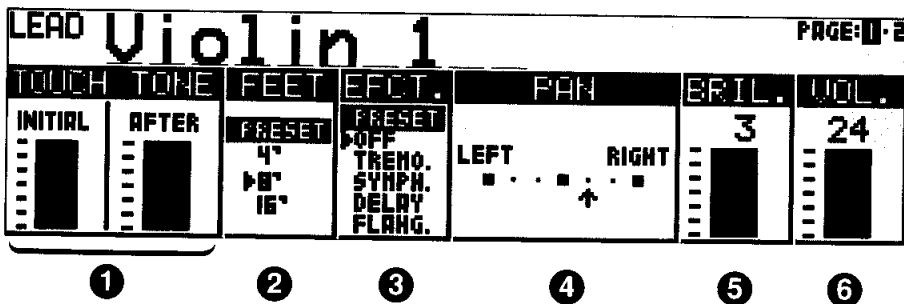|		Touch Tone (Initial/After)	Feet (Octave)	Tremolo/Chorus, Symphonic/Celeste	DRE	Delay, Flanger	Pan	Brilliance	Volume	Vibrato	Touch Vibrato	Slide With Time control	Slide Without Time control	Tune
EL-90	Upper/Lower	○	○	○		○	○	○	○	○	○	–	–	–
	Lead	○	○	○	○	○	○	○	○	○	○	○	–	○
	Pedal	○	○	○		○	○	○	○	–	–	–	–	–
EL-70	Upper/Lower	○	○	○		○*	○	○	○	○	○	–	–	–
	Lead	○	○	○	–	○	○	○	○	○	○	–	○	–
	Pedal	–	○	○		–	○	○	○	–	–	–	–	–

*Upper/Lower Keyboard Voice 1 only.

Voice Controls

Voice Condition Pages

To select the Voice Condition pages and change the settings: Choose a voice on the panel, then press that voice's panel button again (or again press the Data Control button corresponding to the selected voice).
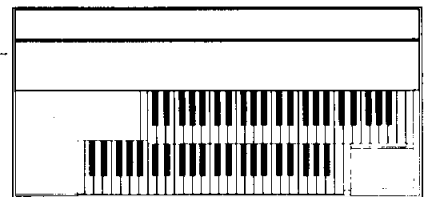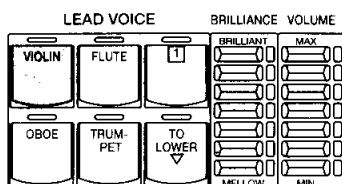
Note: The Voice Condition display pages of the various voice sections have slight differences in their functions. There are also slight differences in the functions of the two models, the EL-90 and the EL-70. Where differences occur, all relevant LCD displays are shown.

```
LEAD  Violin 1                          PAGE:[]·2
TOUCH TONE  FEET  EFCT.      PAN       BRIL.  VOL.
INITIAL  AFTER  PRESET  PRESET                3     24
         █      █  4"    OFF                  █     █
                  ▶8"   TREMO.  LEFT    RIGHT
                  16"   SYMPH.   ■ · · ■ · · ■
                       DELAY          ↑
                       FLANG.
```

     ❶   ❷   ❸   ❹   ❺   ❻

❶ Touch Tone

The Touch Tone function gives you expressive control over the volume and timbre of a voice. Two types of keyboard touch affect this function: Initial Touch and After Touch.

All voices are provided with this expressive function, making it possible to perfectly reproduce the subtle dynamic and tonal changes of actual instruments. For example, piano voices sound much brighter when you hit the keys strongly, especially in the attack portion of the sound – exactly as if you were playing an acoustic piano.

Initial Touch

Controls volume and timbre according to the velocity at which you strike the keys. The harder you strike the keys, the greater the volume and the brighter the timbre will become.

After Touch

Controls volume and timbre according to the pressure you apply to the keys after playing them. The harder, you press down on the keys, the greater the volume and the brighter the timbre will become.

❷ Feet

Determines the octave setting of the voice. PRESET is the original (factory) setting; 4' is the highest and 16' is the lowest.

❸ Effects

Determines the effect type applied to the voice. PRESET selects the original (factory) effect, while OFF cancels the effect. This is essentially an on/off switch for the effects; settings and adjustments to the effects are made from other pages. (For more information about effects, see p.29 —37.)

❹ Pan

Determines the position of the voice in the stereo image. Seven pan positions are available. The Pan effect is displayed and active only when other effects are set to OFF (in the Effects parameter above).
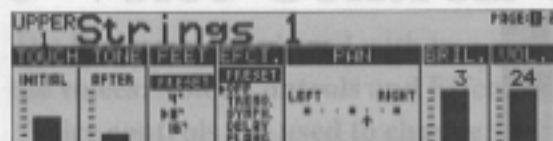
❺ Brilliance

Adjustment of the voice tone. Higher settings make the voice brighter. (This control is the same as on the panel.) Range: 0 - 6

❻ Volume

Fine adjustment of the voice volume. (Coarse volume settings are made with the front panel VOLUME controls.) Range: 0 - 24
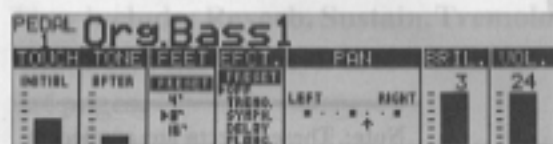
> **Note:** These effects are applied in different degrees depending on the voice group you've selected.

> **Note:** Generally, After Touch has no effect on percussive voices (such as Piano, Harpsichord or Vibraphone) or percussion sounds.

26

Upper/Lower Voice Condition — Page 1 (EL-90)

Pedal Voice Condition (EL-90)

Note: The Pedal voices have one page of settings. (The Vibrato and Touch Vibrato settings found on the Upper and Lower voices are not available here.)

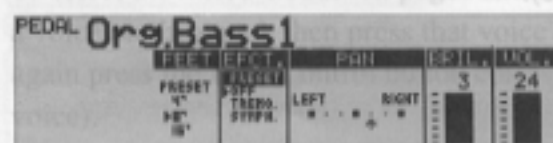## — EL-70 —

Lead Voice Condition — Page 1 (EL-70)

Touch Tone

Determines the degree of sensitivity of the Touch Tone function. (This is the same function as that of the EL-90, but with only one control.) Higher settings make the voice volume and timbre more responsive to the speed and force with which you play.

Upper/Lower Voice Condition — Page 1 (EL-70)

Note: Delay and Flanger are available only on the Upper/Lower Keyboard Voice 1 sections.

Pedal Voice Condition (EL-70)

Note: Touch Tone is not available for the Pedal voices of the EL-70.

27
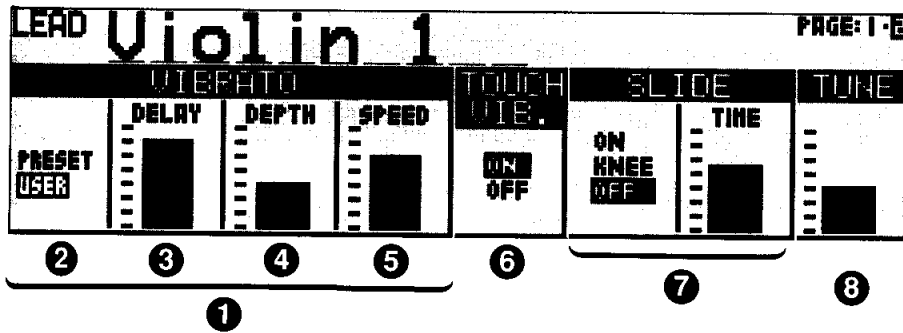
❶ Vibrato

❷ Preset/User

Selects Preset, which calls up the original (factory) vibrato settings for the voice, or User, which lets you adjust the vibrato settings yourself. (Note: The Delay, Depth and Speed settings are not displayed and cannot be adjusted unless USER has been selected in this setting.)

❸ Delay

Determines the amount of time that elapses between the playing of a key and the start of the vibrato effect (see diagram). Higher settings increase the delay of the vibrato onset.
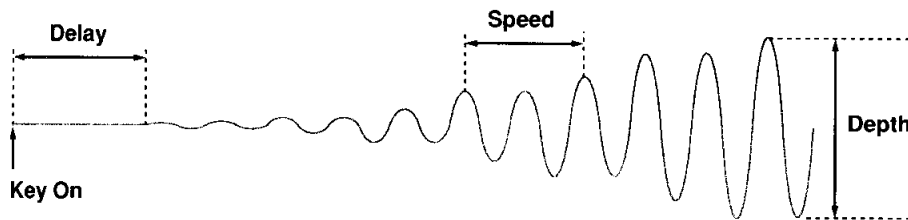
❹ Depth

Determines the intensity of the vibrato effect (see diagram). Higher settings result in a more pronounced vibrato.

❺ Speed

Determines the speed of the vibrato effect (see diagram).

Vibrato Controls

❻ Touch Vibrato

On/Off switch for the Touch Vibrato function.

About Touch Vibrato:

Touch Vibrato lets you apply vibrato to individual notes as you play them. While playing a key, press down harder on it to give the note vibrato. The harder you press the key down, the greater the vibrato will be.

❼ Slide (Lead voices only)

Slide applies a portamento effect to notes played in legato. For example, if you play one note, then play another before completely releasing the first note, the pitch of the first note will "slide" up or down to the second note.

On/Knee/Off

On/Off switch and knee lever selector for the Slide effect.

Slide Time (EL-90 only)

Determines the speed of the slide or portamento effect. The higher the value that is set, the slower the speed. Range: 0 - 14

> **Note:** The Slide function cannot be used when the Pitch Bend function is applied.
> The Slide function is effective within a one-octave range.

❽ Tune (EL-90, Lead voices only)

Determines the pitch of the Lead voice. This control lets you detune the Lead voice relative to the other voices of the Electone, for producing a richer sound. The higher the value set, the higher the pitch. Range: 0 - 14 (max. 15.68 cents; 1 step = 1.12 cents)

Effects — Reverb

Reverb adds an echo-like effect to the sound, giving the impression of a performance in a large room or concert hall. The effect can be applied equally and simultaneously to all voices, or set individually for each section of the Electone, even independently for rhythm, accompaniment and effects.
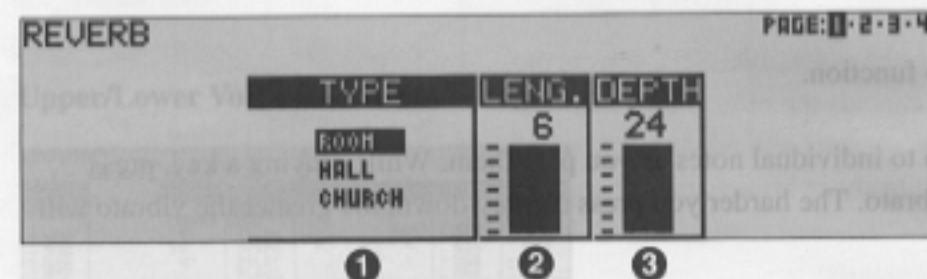
To adjust the reverb effect and call up the Reverb pages:

Press one of the REVERB buttons, located to the left of the Upper Keyboard Voices section.

Reverb Pages

Reverb Page 1

❶ **Type**

Determines the type of reverb effect: Room, Hall or Church. Each type simulates a different acoustic environment; Room is the smallest and Church the largest.

❷ **Length**

Determines the acoustic liveliness of the simulated room in the effect. Higher settings make the room more reverberant. Range: 0 - 6
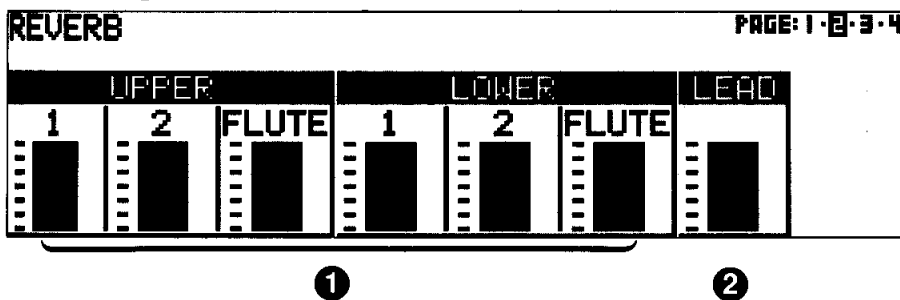
❸ **Depth**

Fine adjustment of the depth of reverberation or the level of the reflected sounds. (Coarse reverb depth settings are made with the front panel REVERB controls.) A setting of 0 cancels the reverb effect. Range: 0 - 24

> **Note:** When this parameter or the panel REVERB control is set to the minimum, the settings in the pages that follow have no effect.
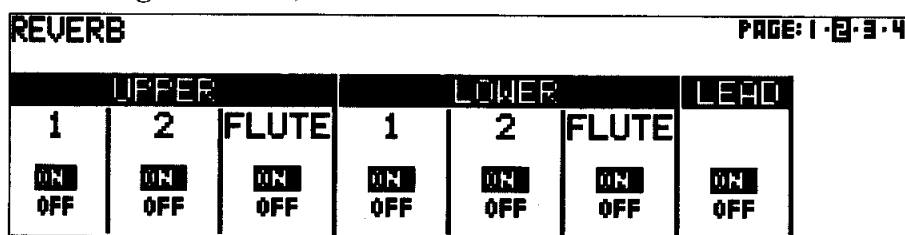
Reverb Page 2 (EL-90)

```
REVERB                                    PAGE: 1·2·3·4
┌──────────────────────┬──────────────────────┬────────┐
│        UPPER         │        LOWER         │  LEAD  │
├──────┬──────┬────────┼──────┬──────┬────────┼────────┤
│  1   │  2   │ FLUTE  │  1   │  2   │ FLUTE  │        │
│  ■   │  ■   │   ■    │  ■   │  ■   │   ■    │   ■    │
└──────┴──────┴────────┴──────┴──────┴────────┴────────┘
        └────────────────────────────────┘
                      ❶                        ❷
```

❶ Upper and Lower Voice Sections

Determines the amount of reverb applied to each voice section. Range: 0 — 24
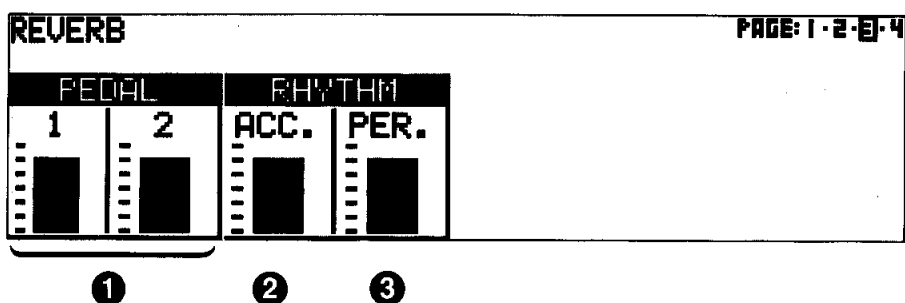
❷ Lead

Determines the amount of reverb applied to the Lead Voice section, as well as the Lead Delay and Flanger effects. Range: 0 — 24

Reverb Page 2 (EL-70)

```
REVERB                                    PAGE: 1·2·3·4
┌──────────────────────┬──────────────────────┬────────┐
│        UPPER         │        LOWER         │  LEAD  │
├──────┬──────┬────────┼──────┬──────┬────────┼────────┤
│  1   │  2   │ FLUTE  │  1   │  2   │ FLUTE  │        │
│ ON   │ ON   │  ON    │ ON   │ ON   │  ON    │  ON    │
│ OFF  │ OFF  │  OFF   │ OFF  │ OFF  │  OFF   │  OFF   │
└──────┴──────┴────────┴──────┴──────┴────────┴────────┘
```

Reverb Page 2 for the EL-70 has reverb on/off switches for the individual sections.

Reverb Page 3 (EL-90)

```
REVERB                                    PAGE: 1·2·3·4
┌──────────────┬──────────────┐
│    PEDAL     │    RHYTHM    │
├──────┬───────┼──────┬───────┤
│  1   │   2   │ ACC. │ PER.  │
│  ■   │   ■   │  ■   │  ■    │
└──────┴───────┴──────┴───────┘
  └──────────┘
       ❶          ❷       ❸
```

❶ Pedal Voice Sections

Determines the amount of reverb applied to the Pedal Voice sections. Range: 0 — 24
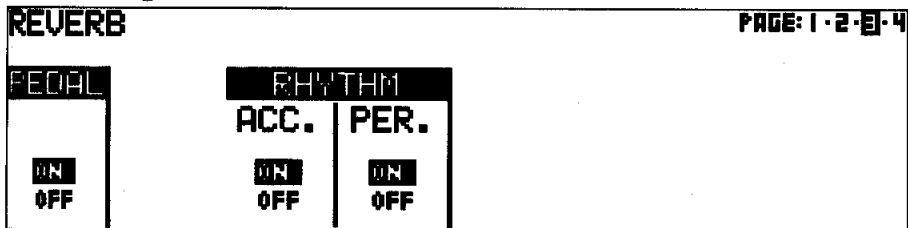
❷ Accompaniment

Determines the amount of reverb applied to the Accompaniment (mentioned on p. 46)   Range: 0 — 24
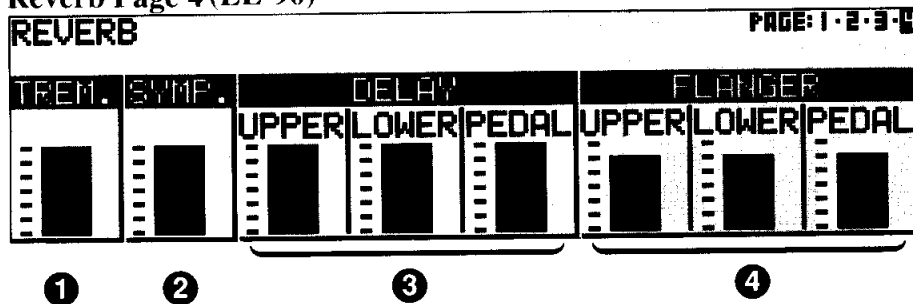
❸ Percussion

Determines the amount of reverb applied to the rhythm pattern percussion sounds. Range: 0 — 24

Reverb Page 3 (EL-70)

```
REVERB                                    PAGE: 1·2·3·4
┌──────────────┬──────────────┐
│    PEDAL     │    RHYTHM    │
├──────────────┼──────┬───────┤
│              │ ACC. │ PER.  │
│     ON       │ ON   │  ON   │
│     OFF      │ OFF  │  OFF  │
└──────────────┴──────┴───────┘
```

Note: The EL-70 has one Pedal Voice section.

Reverb Page 3 for the EL-70 has reverb on/off switches for the individual sections.

Reverb Page 4 (EL-90)

❶ Tremolo

Determines the amount of reverb applied to the sound of the Tremolo/Chorus effect. Range: 0 — 24

❷ Symphonic

Determines the amount of reverb applied to the sound of the Symphonic effect. Range: 0 — 24

❸ Delay

Determines the amount of reverb applied to the sound of the Delay effect; it is adjustable individually for the Upper, Lower and Pedal Voice sections. Range: 0 — 24

❹ Flanger

Determines the amount of reverb applied to the sound of the Flanger effect; it is adjustable individually for the Upper, Lower and Pedal Voice sections. Range: 0 — 24
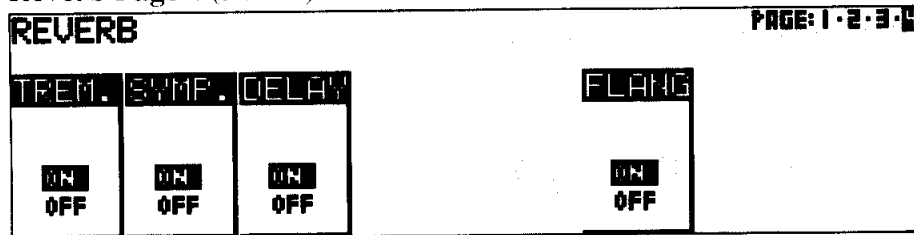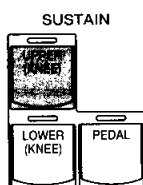
Reverb Page 4 (EL-70)

Reverb Page 4 for the EL-70 has reverb on/off switches for the individual sections.

Note: There are no Delay and Flanger effects for the Upper 2, Lower 2 and Pedal Voice sections on the EL-70.

Effects – Sustain

The Sustain effect, selectable for the Upper, Lower and Pedal voices, causes voices to gradually fade out when the keys are released. The sustain on/off and sustain length settings are independent for each keyboard, providing maximum expressive control.

To add sustain to the voices and call up the Sustain Length page:
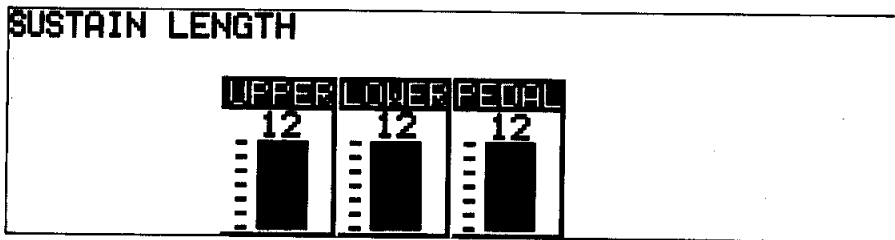Press the UPPER button in the SUSTAIN section.

Note: Sustain cannot be applied to the Lead voices.

SUSTAIN

Note: If knee lever control of the Upper or Lower sustain has been turned on, pressing the Upper or Lower buttons here will not add sustain unless the knee lever is pushed. (See page 106, USING THE KNEE LEVER TO CONTROL SUSTAIN.)

The lamp of the button lights up to indicate that sustain is on. Press the button again to turn sustain off.

Sustain Length Page

SUSTAIN LENGTH

```
      UPPER LOWER PEDAL
        12    12    12
```

Upper, Lower, Pedal

Determines the length of sustain applied to each voice section.
The display shows the current sustain length values for each voice
section. Range: 0 - 12.

Note: The values here must be set high enough for the sustain effect to be noticeable.

Note: Remember that the SUSTAIN buttons are on/off switches. If you use them to simply check the sustain length values, you may unintentionally change the on/off status of the effect. Remember to check whether the sustain button lamps are on or off before you start to play.

Effects – Tremolo/Chorus

Tremolo recreates the rich, swirling sound of the popular rotating
speaker effect. Just as with a conventional rotating speaker, you can
switch between slow and fast speeds. And like a motor-driven
speaker, the characteristic tremolo effect gradually changes speed
after it is switched. You can also adjust the maximum speed of the effect to suit your playing style. The
Tremolo effect can be switched in real time as you play with either the front panel button or the left
footswitch (when properly set for footswitch operation).
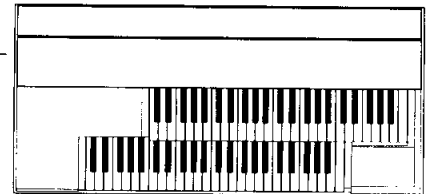
Tremolo Operation

For Panel Voices (Voice Menu)

Turn on Tremolo effect
in each Voice Condition display.

For Upper/Lower Flute Voice

Turn on Tremolo effect
in Volume page of Flute Voices.

Adjust the Tremolo setting in
Tremolo Control or Effect Set pages.

Assign footswitch for
Tremolo Control, if desired.

Turn on Tremolo as you play, with
Tremolo button or footswitch.

Turning On The Tremolo Effect

Before you can switch Tremolo on and off in real time, you must first turn the effect on in the various voice sections. This doesn't actually start the effect, but merely puts Tremolo in a "standby" condition. Tremolo can be applied selectively to the voice sections; in other words, the Upper Keyboard voices can have the Tremolo effect while the Lead voices have another effect or no effect at all.

To turn on the Tremolo effect (set to standby):

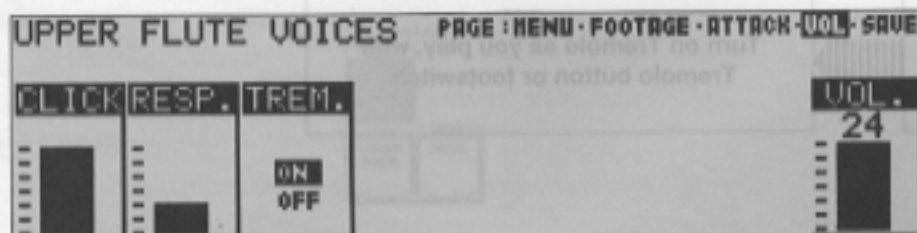| For Lead, Upper, Lower and Pedal voices |

Press the desired voice button on the panel twice, then select Tremolo.
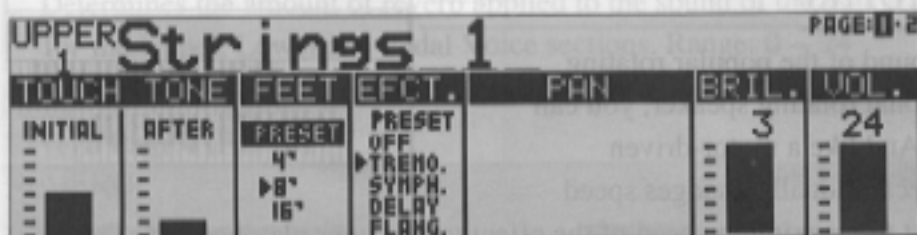
Selecting TREMO. turns on Tremolo for the Upper Keyboard Voice 1 section (or the currently assigned voice group).

| For Flute Voices |

Press the U.FLUTE VOICE button and/or L.FLUTE VOICE button in the DISPLAY SELECT section, then select the VOL page.

Selecting ON turns on Tremolo for the current Flute Voice.

33

Setting The Tremolo Effect

Tremolo settings made here are global; in other words, they are applied the same to all voices for which Tremolo has been turned on (set to standby).

There are two ways in which you can set or adjust the Tremolo effect: 1) by selecting the Tremolo Control page (for both panel/Voice Menu voices and Flute voices), or 2) by selecting the first Effect Set page (for panel/Voice Menu voices).
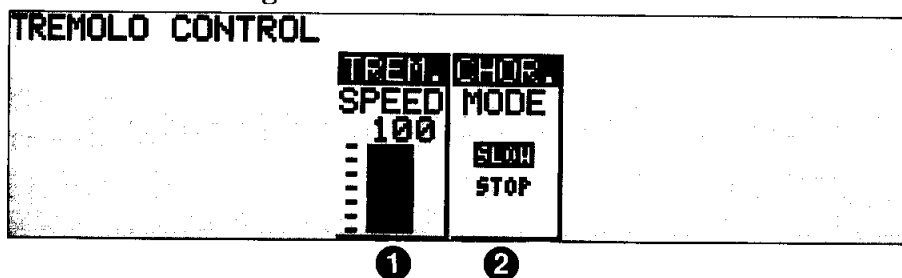
To turn on the Tremolo effect and call up the Tremolo Control page:

Press the TREMOLO (FAST) button in the DISPLAY SELECT section.
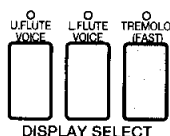
The lamp of the button lights up to indicate that Tremolo is on. Press the button again to turn Tremolo off and Chorus on (the LED turns off).
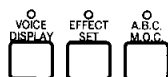
Tremolo Control Page

❶ Tremolo Speed

Determines the speed of the Tremolo (rapid rotation) effect. Range: 0 - 100

❷ Chorus

Determines the effect applied when Tremolo is switched off: a slow chorus effect (SLOW) or STOP. Use the SLOW setting when you want to have a constant rotating speaker sound.

To adjust the Tremolo effect settings without turning Tremolo on, press the EFFECT SET button in the DISPLAY SELECT section. Use the Page buttons if necessary to select the "TRM. SYM. & D.R.E." page.


Effect Set Page
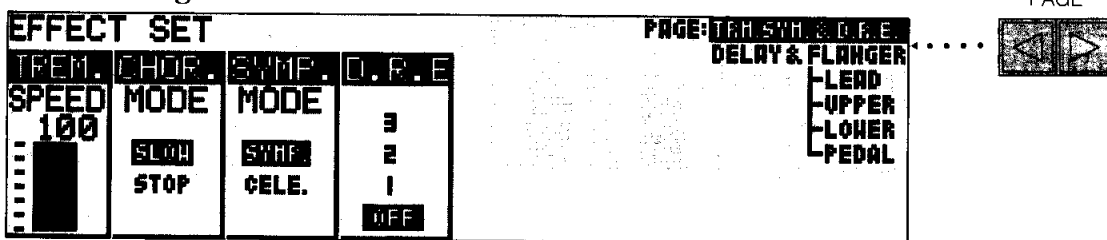
These are the same settings as in the Tremolo Control page above.

34

Real-Time Control of Tremolo Effect

Once the Tremolo effect has been turned on and set, you can control the effect in real time from the panel or from the left footswitch.

Panel Control

Simply press the TREMOLO (FAST) button in the DISPLAY SELECT section to turn the Tremolo effects on and off while you're playing.
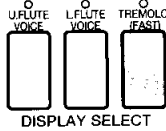
This button functions just like the fast/slow switch on an actual rotating speaker cabinet. When Tremolo is on, the rotation effect is fast; when off (Chorus), it is slow. The speed change is gradual, effectively simulating the slowing down and speeding up of a rotating speaker.

Footswitch Control

You can also use one of the footswitches to control the Tremolo effect in the same way, if the footswitch has been properly assigned. (See the section Footswitch Assign for details.)

Effects – Symphonic, Dynamic Range Enhancer (D.R.E), Delay and Flanger

Like Tremolo above, the Symphonic, Delay and Flanger effects are set in two steps, from two different groups of display pages: the Voice Condition pages and the Effect Set pages. The D.R.E. effect (EL-90 only) is controlled completely from the Effect Set pages.

To set these effects:

1. Call up a Voice Condition page by pressing the desired voice button on the panel twice.
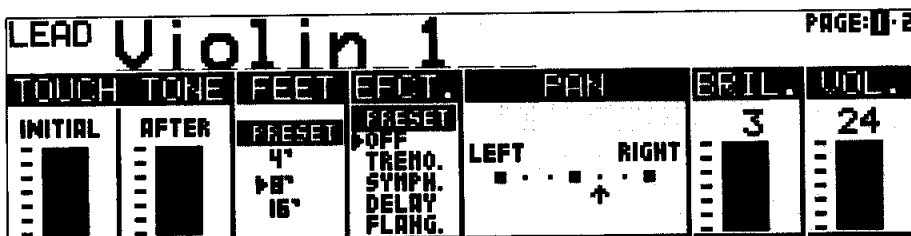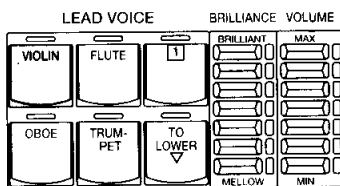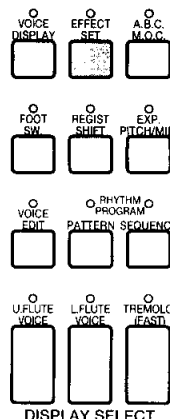
2. Turn on the desired effect for the voice by using the Data Control buttons below EFCT in the display.

```
EFCT.
PRESET
OFF
TREMO.
►SYMPH.
DELAY
FLANG.
```
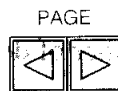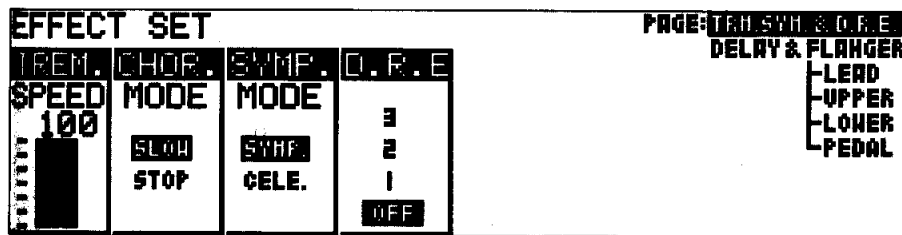
△
▽
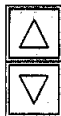
Symphonic, Delay and Flanger can be selected for each voice section independently. Select the effect you want to apply to the voice, or turn all effects off by selecting OFF.

3. Press the EFFECT SET button in the DISPLAY SELECT section, and use the Page Select buttons to select the various pages.

VOICE   EFFECT   A.B.C.
DISPLAY   SET   M.O.C.

FOOT   REGIST   EXP.
SW.   SHIFT   PITCH/MIDI

VOICE   RHYTHM
EDIT   PROGRAM
      PATTERN SEQUENCE

U.FLUTE L.FLUTE TREMOLO
VOICE   VOICE   (FAST)

DISPLAY SELECT

Effect Set
Tremolo, Symphonic and D.R.E. Page

PAGE

```
EFFECT SET                    PAGE:TREM.SYM. & D.R.E.
                                  DELAY & FLANGER
TREM. CHOR. SYMP. D.R.E            � LEAD
SPEED MODE  MODE                  � UPPER
  100                    3        � LOWER
        SLOW  SYMP.      2        �└ PEDAL
        STOP  CELE.      1
                       OFF
```

◁ ▷

❶   ❷ ❸

❶ **Tremolo/Chorus**
   (See Tremolo section above.)
❷ **Symphonic**
   Determines the type of the Symphonic effect, SYMPHONIC (SYMP.) or CELESTE (CELE.). Symphonic is a subtle echo effect that makes one voice sound like an ensemble. For example, a solo violin voice played through Symphonic would sound like many violins playing together. SYMPHONIC simulates the effect of a large ensemble, while CELESTE creates the effect of a gradually expanding sound.
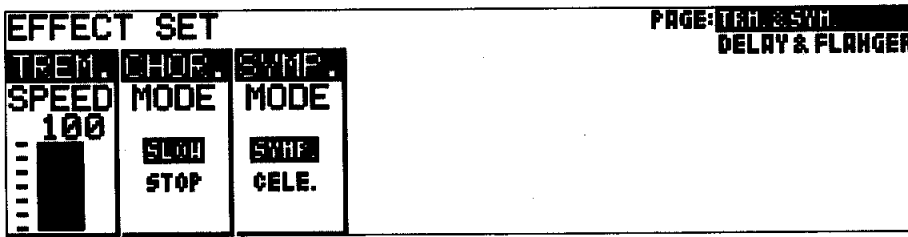
> **Note:** Symphonic and Celeste cannot be used at the same time for different sections.

❸ **D.R.E. (EL-90 only)**
   The Dynamic Range Enhancer effect increases the clarity of the sound and gives it greater definition and presence. The louder the sound, the brighter the sound becomes, particularly in the high registers. The D.R.E. effect is applied equally to all voices and can only be set globally for the entire instrument (except for rhythms). OFF turns the D.R.E. effect off, while settings 1, 2, and 3 determine the intensity of the effect.

Effect Set

Tremolo and Symphonic Page (EL-70)

EFFECT SET			PAGE: TRM. & SYM.
			DELAY & FLANGER
TREM.	CHOR.	SYMP.	
SPEED	MODE	MODE	
100			
	SLOW	SYMP.	
	STOP	CELE.	

Effect Set

Delay and Flanger Pages (EL-90)

EFFECT SET						PAGE: TRM.SYM. & D.R.E.
						DELAY & FLANGER
DELAY			FLANGER			LEAD
SPEED	F.B.	BAL.	SPEED	F.B.	DEPTH	UPPER
100	100	100	100	100	100	LOWER
						PEDAL
①	②	③	④	⑤	⑥	
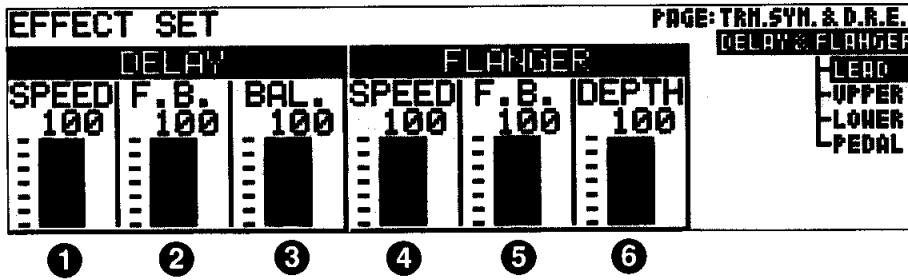
Delay

Delay is a pronounced echo effect, with distinct delayed repeats of the original sound.

① Speed

Determines the time between delayed repeats. Range: 0 - 100

② Feedback (F.B.)

Determines the number of delayed repeats. Range: 0 - 100

③ Balance

Determines the volume of the delay effect, relative to the original sound. Higher settings produce a louder delay. Range: 0 - 100

Flanger

Flanger introduces a swirling, animated modulation effect to the sound.

④ Speed

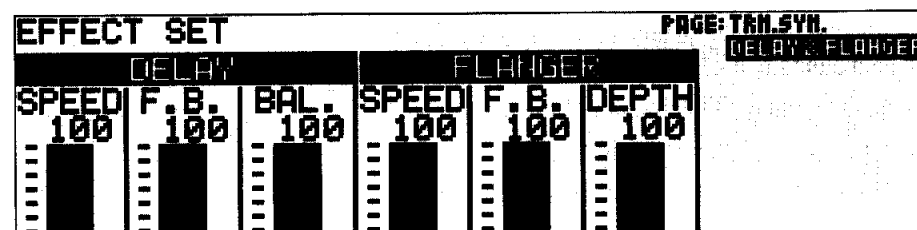Determines the speed of the modulation. Range: 0 - 100

⑤ Feedback (F.B.)

Controls the brightness and the metallic sound of the effect. Range: 0 - 100

⑥ Depth

Determines the intensity of the effect. Range: 0 - 100

Effect Set

Delay and Flanger Page (EL-70)

EFFECT SET						PAGE: TRM.SYM.
						DELAY & FLANGER
DELAY			FLANGER			
SPEED	F.B.	BAL.	SPEED	F.B.	DEPTH	
100	100	100	100	100	100	

Note: On the EL-70, Delay and Flanger are available only for Lead voices and Upper/Lower keyboard Voice 1 voices.