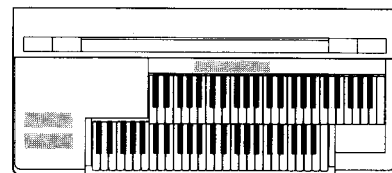# 4 Rhythm, Accompaniment and Percussion

The Rhythm features of the Electone use actual drum and percussion sampled sounds to automatically play various rhythm patterns. Automatic Accompaniment functions are used with the rhythm patterns, providing appropriate and completely automatic accompaniment to match the style of the rhythm pattern selected. Moreover, the Electone has a Keyboard Percussion feature that allows you to play drum and percussion sounds from the Lower keyboard and Pedalboard.

Rhythm Patterns

Fourteen different rhythm categories in various styles can be instantly selected from the front panel. The Electone has additional "hidden" rhythm patterns, however. A total of 41 rhythm patterns are available, and can be selected by using the LCD display.

To select and play a rhythm pattern:

1. Choose a rhythm pattern by pressing one of the Rhythm buttons in the Rhythm section on the panel.
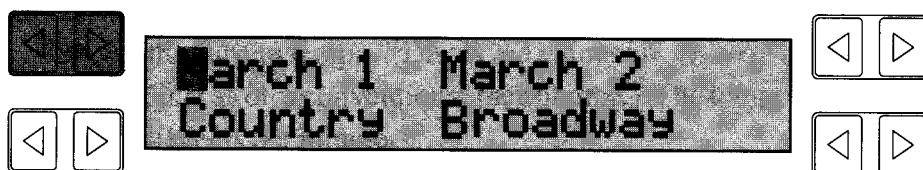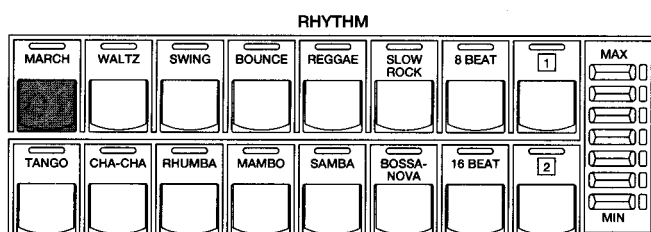
To select a rhythm pattern from each category in the display, press the Data Control button corresponding to the rhythm you wish to play, as you do with the voices. The first character of the selected rhythm pattern's name flashes. (Refer to the Rhythm Menu list on page 35 for a list of available rhythms.)

From the example display shown below, select Broadway.
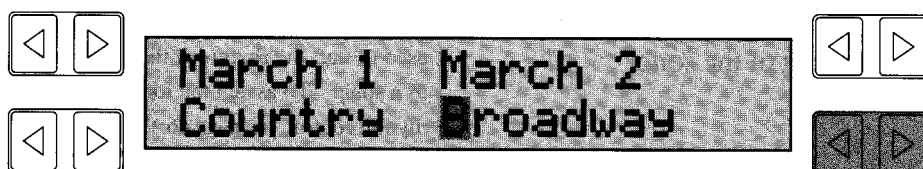
Press either of these Data Control buttons that correspond to Broadway in the display.

2. Turn the rhythm on. You can use one of three buttons to turn on the rhythm:
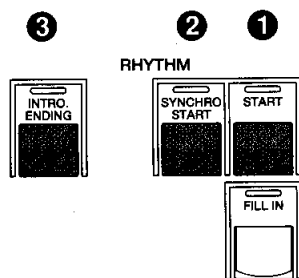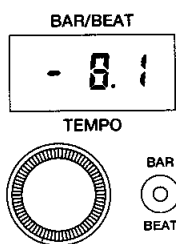

❶ START

This button does as its name indicates; the rhythm begins as soon as the button is pressed. To stop the rhythm, press this button again.

❷ SYNCHRO START

This button puts the rhythm pattern in "stand-by"; the rhythm will start when you press a note on the Lower keyboard or Pedalboard. To stop the rhythm, press this button again.

❸ INTRO. ENDING

Pressing this button automatically plays a short introduction (of up to eight measures) before starting the actual rhythm pattern. First, press the INTRO. ENDING button, then the START or SYNCHRO START buttons. While the introduction is playing, the TEMPO Display shows the countdown to the first measure of the pattern. For example, if there is an eight-measure lead-in for a pattern in 4/4 time, the following display appears:

Pressing the INTRO. ENDING button again while the pattern is being played will automatically add an ending phrase before stopping the rhythm.

LEAD IN
Pressing the START button while holding down the INTRO. END-ING button automatically plays a special one-measure Lead In, with a click on each beat, to cue you in to the beginning of the song.

Note: The left footswitch can also be used to turn the rhythm off and on in the middle of a song. However, it cannot be used to start the rhythm at the beginning of a song. (To assign the footswitch for rhythm control, see page 46.)


ABOUT SYNCHRO START:

The Synchro Start feature functions quite differently when Auto Bass Chord is turned on and Accompaniment Memory is turned off. The rhythm pattern starts when a key on the Lower keyboard is played, but then immediately stops when the key is released. To keep this from happening, turn the Memory function on. (Refer to the Automatic Accompaniment section, page 37, for details on Auto Bass Chord and Memory.)

3. Set the volume.

Press the VOLUME controls to the right of the Rhythm buttons to set the desired level of the rhythm. The controls have seven volume settings, from a minimum of 0, or no sound, to a maximum of full volume.

Fine adjustments in the volume of the rhythm pattern can also be made from the Rhythm Condition page (see page 34).

Note: When the Electone is turned on, the rhythm volume is automatically set to 0.

4. Set the tempo.

BAR/BEAT

١ ٦ ٥

TEMPO

BAR
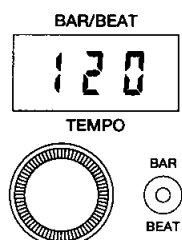
BEAT

❶ TEMPO Dial

For adjusting the speed of the rhythm. Turn the dial clockwise to increase the tempo, and counter-clockwise to decrease it.

❷ TEMPO Display

Shows the current tempo. (Displayed values are given in beats per minute, just as on a conventional metronome.) The tempo range is 40 to 240 beats per minute.

When the rhythm pattern begins playing, the TEMPO display changes function to a bar/beat indicator.

BAR/BEAT

٤ ٦

TEMPO

The number on the left indicates the current bar or measure and the one on the right indicates the number of the beat in each bar. The beat indicator lamp below the display also indicates the beats.

Fill In Patterns

Fill In patterns are designed to be used as temporary and regular rhythmic breaks to spice up a repeating rhythm pattern. Like the regular rhythm patterns, all Fill In patterns have been designed to perfectly match the bass and chord parts of the Automatic Accompaniment feature.

To use the Fill In patterns:

1. Select and play a rhythm pattern.

2. As you play the Electone along with the rhythm pattern, occasionally press the FILL IN button.
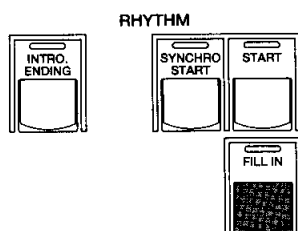
RHYTHM

For best results, press the FILL IN button just at the beginning or the first
beat of a measure.

USING A FILL IN FOR THE START OF A SONG:
Fill In patterns can also be used as introductions; simply press the FILL IN button before starting the rhythm with the START or SYNCHRO START buttons.

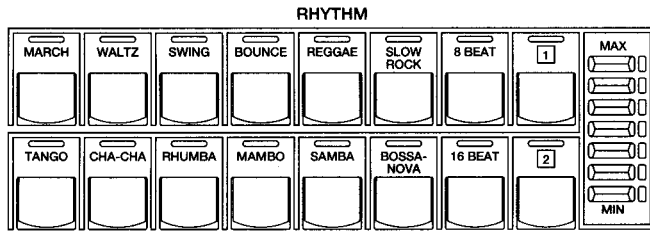**PLAYING PARTIAL FILL IN PATTERNS:**
You can also start Fill In patterns within a bar, in order to play only the final one or two beats of the Fill In pattern and create additional rhythmic interest. Since the Fill In feature is very sensitive to bar/beat boundaries, you should be very careful to "play" the FILL IN button precisely on (or just slightly before) the beat that you want the Fill In pattern to begin.


Auto Variation and Percussion Volume

These two settings are controlled from each voice's Rhythm Condition pages. There are three Rhythm Condition pages.

To select the Rhythm Condition pages:
Choose a rhythm pattern, and press that pattern's panel button again.
(The button should be pressed only once if the Rhythm display has
already been called up; otherwise press the button twice.)

Rhythm Condition Page 1

These buttons turn the Auto Variation function on and off.

Increases the volume
Decreases the volume
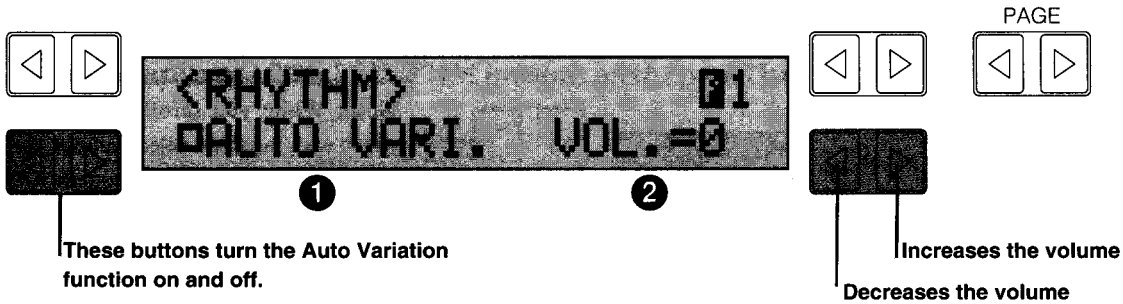
❶ Auto Variation

The Auto Variation function lets you set pattern variations to be played automatically. When set to on, Auto Variation automatically substitutes additional pattern variations to make the rhythm more interesting and complex.

> **Note:** The Auto Variation function is not applied to some of the rhythm patterns.

❷ Volume

Fine adjustment of the overall volume of the rhythm patterns and Keyboard Percussion. Range: 0 - 24

> **Note:** Rhythm Condition Pages 2 and 3 are described later in this section. (See pages 36.)

Dotted Buttons

The Rhythm section also has, like the voice sections, dotted buttons from which rhythm patterns can be selected. These dotted buttons function as "wild card" rhythm pattern selectors; any of the rhythm patterns available from the panel buttons or from the pattern displays can be selected from these buttons.

As with the Voice sections' dotted buttons, you can set two or three rhythm patterns from the same page to be selected from different buttons (one from the original Rhythm button, and the others from the dotted buttons).

To select a rhythm pattern from a dotted button:

1. Press one of the dotted buttons on the right side of the Rhythm section.
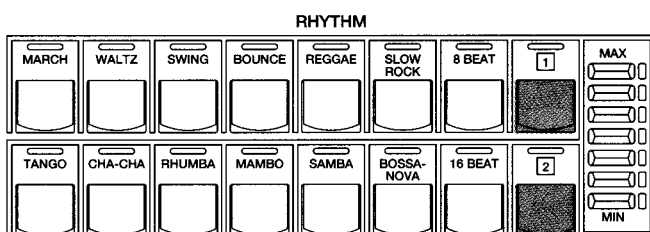
2. Select one of the pages with the Page Select buttons.

◁ ▷

◁ ▷

```
Swing 1  Swing 2  P3
J.Ballad Dixie
```

◁ ▷

◁ ▷

PAGE

◁ ▷
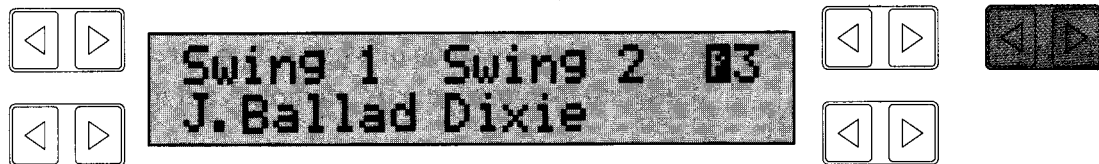
3. Select one of the rhythms by pressing one of the appropriate Data Control buttons.

◁ ▷

◁ ▷

```
Swing 1  Swing 2  P3
J.Ballad ■ixie
```

◁ ▷

◁ ▷

Note: While you scroll through the pages with the Page Select buttons, the originally selected rhythm pattern will sound until you select another pattern with the Data Control buttons.

For example, select Dixie by pressing one of the bottom right Data Control buttons.

Rhythm Menus

This chart lists all 41 of the rhythm patterns available on the Electone. The numbers in the chart correspond to the page numbers shown in the display.

March 1	March 2	P1
Country	Broadway	

Cha-cha		P8

Waltz 1	Waltz 2	P2
J.Waltz	Bolero	

Rhumba	Beguine	P9

Swing 1	Swing 2	P3
J.Ballad	Dixie	

Mambo	Salsa	P10

Bounce 1	Bounce 2	P4

Samba 1	Samba 2	P11
Samba 3		

Reggae 1	Reggae 2	P5

Bossa. 1	Bossa. 2	P12
Bossa. 3		

S. Rock 1	S. Rock 2	P6
S. Rock 3		

8 Beat 1	8 Beat 2	P13
8 Beat 3	D. Pop	

Tango 1	Tango 2	P7
Tango 3		

| 16 Beat 1	16 Beat 2	P14
16 Beat 3	Funk	

Accompaniment Controls

The Accompaniment function here is independent of the A.B.C. accompaniment and works with the Rhythm section to automatically add arpeggiated chords and other instrumental embellishments. The Accompaniment controls include the setting of the Accompaniment type and its volume.

To select the Accompaniment controls in the Rhythm Condition pages:

1. Press any one of the RHYTHM buttons on the panel twice.
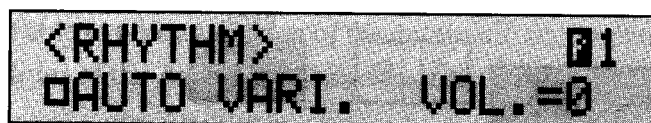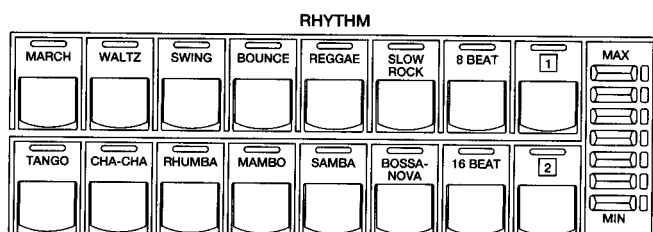
2. Once the Rhythm Condition Page 1 display (above) has been called up, use the Page Select buttons to select Page 2.
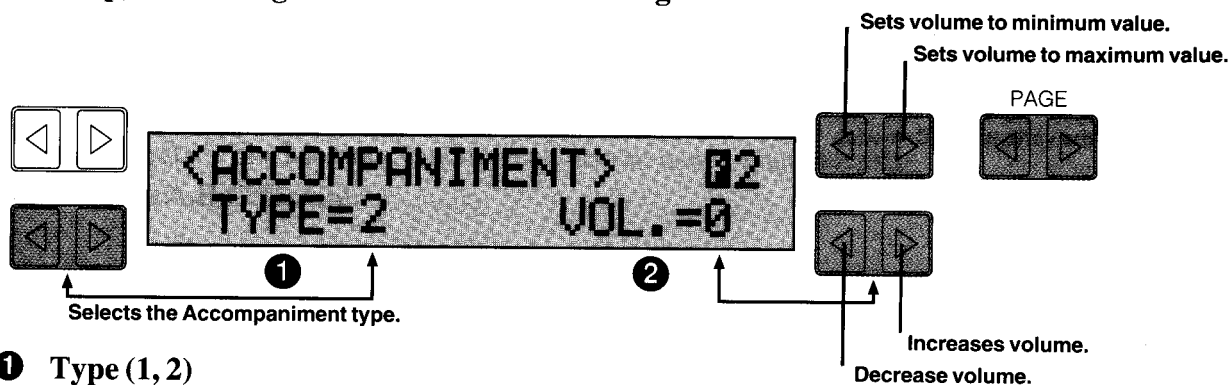
❶ Type (1, 2)

These settings provide two different types of rhythmic and melodic accompaniment, Type 2 being more complex than Type 1.

❷ Volume

Determines the volume of the Accompaniment. The Accompaniment can be turned off by setting this parameter to the minimum value. Range: 0 - 24

Note: Even if the Accompaniment Type is changed, the Intro/Ending pattern remains the same.
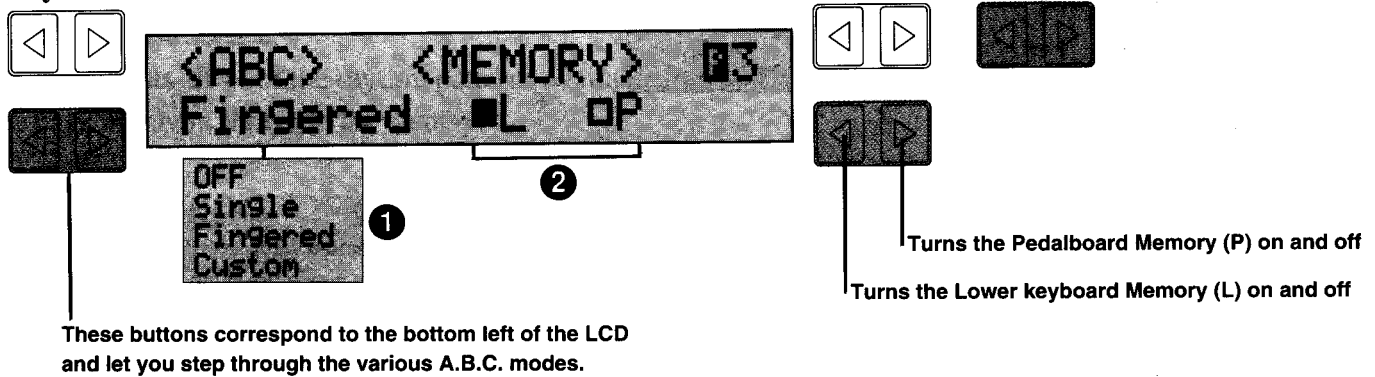
Automatic Accompaniment — Auto Bass Chord

The Auto Bass Chord (A.B.C.) function works with the Rhythm section of the Electone to automatically produce chord and bass accompaniment as you play. Depending on the feature or mode selected, you can play anything from a single note to a full chord on the Lower keyboard and hear complete, rhythmical bass and chord accompaniment.

There are three Auto Bass Chord modes — Single Finger, Fingered Chord and Custom A.B.C. — and they are selected from either Rhythm Condition Page 3 or the A.B.C. page.

To select the A.B.C. function:

1. **Press the A.B.C. button. (Or, alternately, press any of the RHYTHM buttons twice to call up the Rhythm Condition pages, then use the Page Select buttons to select Page 3, the A.B.C. & Memory page.)**

Rhythm Condition — Page 3

PAGE

Turns the Pedalboard Memory (P) on and off

Turns the Lower keyboard Memory (L) on and off

These buttons correspond to the bottom left of the LCD and let you step through the various A.B.C. modes.

Auto Bass Chord

❶ **Mode: Off, Single, Fingered, Custom**

Off
Cancels the Auto Bass Chord function.

Single (Single Finger mode)
The Single Finger mode provides the fastest and easiest means to obtain many different chord/bass combinations, by simply using one, or at most, two or three fingers to play the chords.

Refer to the chart below, "Chords Recognized in the Single Finger Mode," for details on playing chords in this mode.

Fingered (Fingered Chord mode)

The Fingered Chord mode automatically produces bass and chord accompaniment for chords played in the Lower keyboard. It allows you to use a wider range of chord types than in the Single Finger mode. In the Fingered Chord mode, you play all the notes of the chord while the Auto Bass Chord function automatically selects the appropriate bass pattern and rhythmic accents.

Refer to the chart below, "Chords Recognized in the Fingered Chord Mode," for details on playing chords in this mode.

Custom (Custom A.B.C. mode)

The Custom A.B.C. mode is a slight variation on the Fingered Chord mode. It allows you to determine what bass notes will be played in the accompaniment by playing a note on the Pedalboard along with the chords you play in the Lower keyboard. In this way, you have greater control over the actual notes of the accompaniment and the freedom to use a wider variety of chords and voicings, yet are still able to take advantage of the automatic accompaniment capabilities of the Auto Bass Chord feature.

❷ Memory

The Memory function allows you to have the bass and chord accompaniment continue even after you release your fingers from the keyboard. Independent Memory settings are available for the Lower keyboard and Pedalboard, making it possible, for example, to have the bass continue with the rhythm while the chord accompaniment "rests." The Memory function can also be used independently from the A.B.C. feature.

The bottom right Data Control button pair is used to control the Memory function. The left button corresponds to the Lower keyboard, and the right button corresponds to the Pedalboard.

L (Lower)

When Lower is set to on (solid box), the chord accompaniment of the Lower Keyboard voices continues to play even after you release your fingers from the Lower keyboard.

P (Pedal)

When Pedal is set to on (solid box), the bass accompaniment of the Pedalboard voices continues to play even after you release your fingers from the Lower keyboard.

Chords Recognized in the Single Finger Mode (Key of C)

Major, minor, 7th and minor 7th chords can all be played in the Single Finger mode.

Chords Roots on the Lower Keyboard

Major chords:
Press the root of the chord (the note that corresponds to the chord's name).

C

Minor chords:
Simultaneously press the root and any one black key to the left of it.

Cm

7th chords:
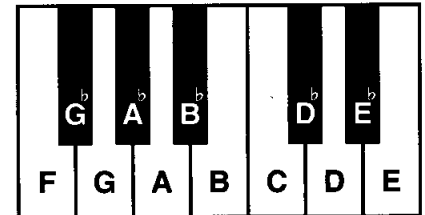Simultaneously press the root and any one white key to the left of it.

C7

> **Note:** Minor, 7th and minor 7th chords with black key roots (such as B♭ or G♭) are played in the same way as those with white key roots.

Minor 7th chords:
Simultaneously press the root as well as any black key and any white key to the left of it.

Cm7

> **Note:** With Single Finger, the chord produced will sound in the same octave regardless of where it is played on the Lower keyboard.

PLAYING SINGLE FINGER CHORDS WITHOUT RHYTHM:
Auto Bass Chord is generally used with rhythm patterns to create full rhythmic accompaniment, but it can also be used in the Single Finger mode to add full continuous chords to your performance without the use of the rhythm. Simply leave the rhythm off in Single Finger mode, and play Single Finger chords from the Lower keyboard.

> **Note:** If you forget to cancel the Single Finger or Fingered Chord accompaniment functions, single notes that you play will be sounded as continuous chords.
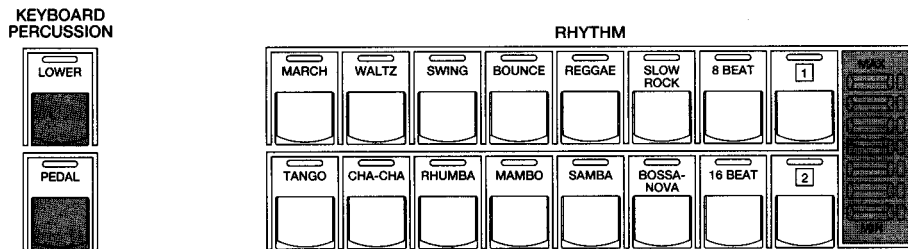

Chords Recognized in the Fingered Chord Mode (Key of C)

C	Cm	C7	Cm7	Cmaj7

Cm maj7	C+5	C7+5	Cdim	C7sus4

Cm7-5	C-5	C7-5	C6	Cm6
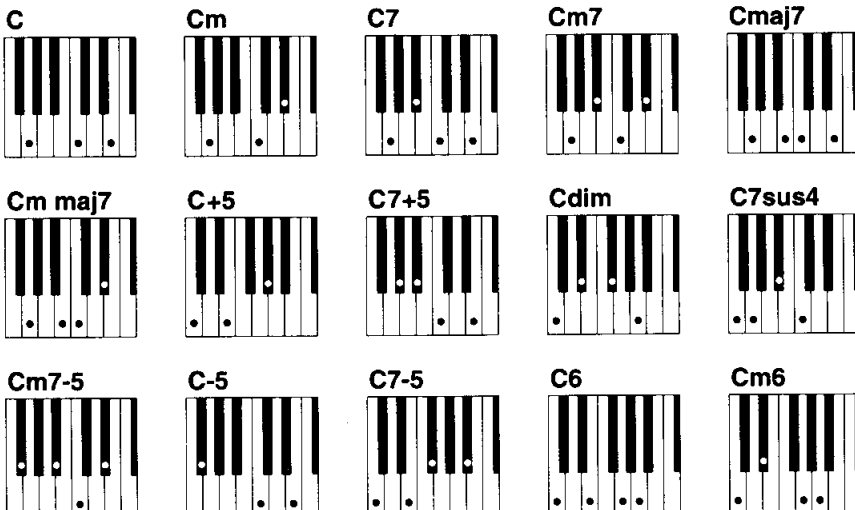
Keyboard Percussion

To play the Keyboard Percussion sounds:

1. Turn on the Keyboard Percussion function by pressing either
or both the LOWER and PEDAL buttons in the KEYBOARD PER-
CUSSION section.

2. Set the volume.
The volume of the percussion sounds is set together with that of the
rhythm by using the VOLUME controls in the Rhythm section. Set the
volume to the desired level.

3. Turn off all the Lower and Pedal voices by setting each voice's
volume to MIN.

4. Play some notes on the Lower keyboard and Pedalboard. The
various percussion sounds (a total of 43 are available) have been
assigned to the keyboards as shown in the charts below.

Percussion Assignments for the Lower Keyboard
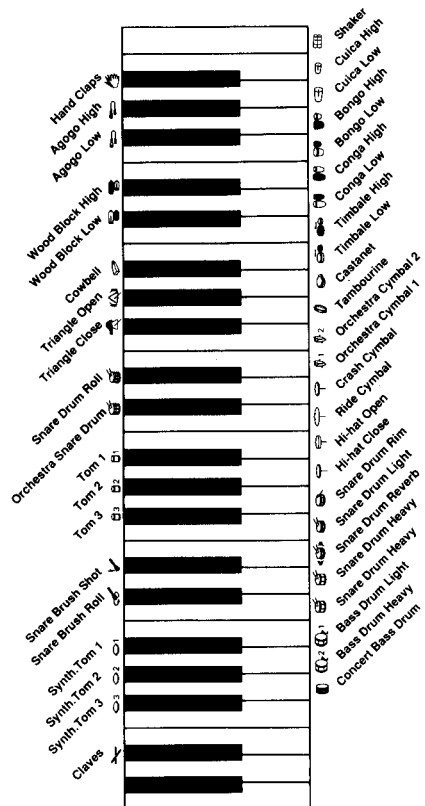
**Percussion Assignments for the Pedalboard**
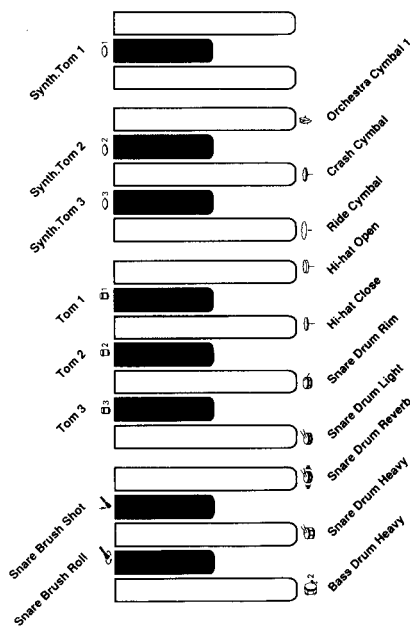
Melody On Chord

The Melody On Chord (M.O.C.) feature automatically adds a harmony part to the melodies you play on the Upper keyboard. The harmony is derived from the chords you play on the Lower keyboard — or from the chords that are played for you, if you use the A.B.C. Automatic Accompaniment.
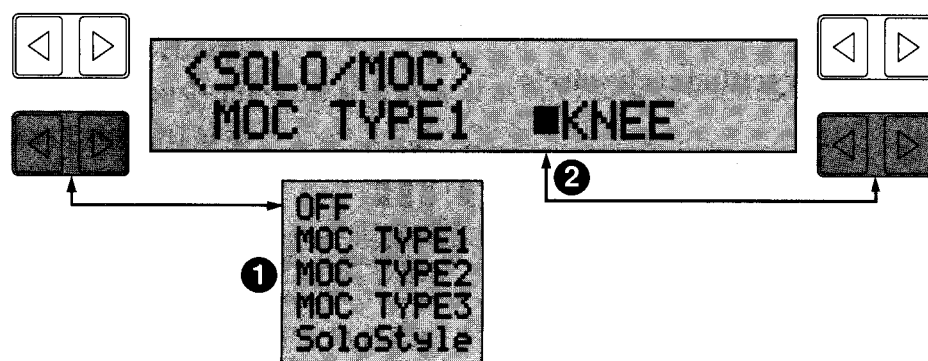
Melody On Chord has three different types, each providing a different set of harmonies to accompany the melody played. The Melody On Chord feature is selected from the SOLO/MOC page.

To select the M.O.C. function:
Press the SOLOSTYLE button in the DISPLAY SELECT section.
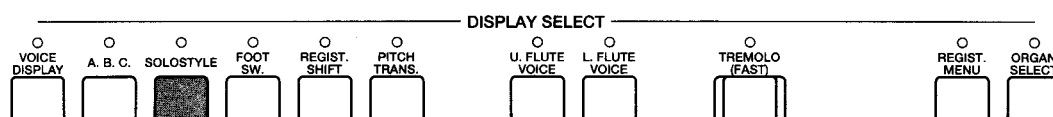
SOLO/MOC Page

❶ Type

Off
Cancels the Melody On Chord/SoloStyle function.

> **Note:** Even when Melody On Chord is on, if the Upper keyboard voices are set to 0, the function will not sound.

MOC Type 1
Produces harmonies of up to two notes in a range close to the melody played.

MOC Type 2
Produces harmonies of up to three notes in a range close to the melody played.

MOC Type 3
Produces harmonies of up to four notes in a range relatively distant from the melody played.

SoloStyle
(Refer to the following section on SoloStyle.)

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❷ **Knee**

On/off switch for knee lever control over Melody On Chord/So-
loStyle operation. When this is on, pressing the knee lever to the
right activates the Melody On Chord/SoloStyle function. (Refer to
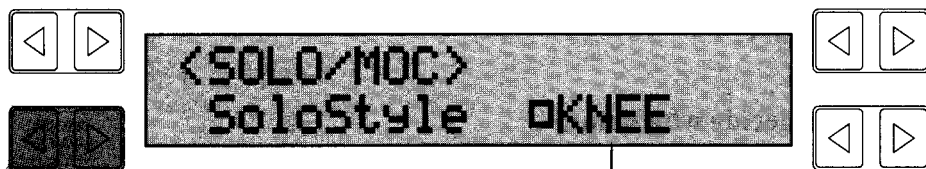Knee Lever Control, page 47.)

SoloStyle

The SoloStyle function generally works with the rhythm patterns and automatically produces various kinds of
musical embellishments (harmonies, delayed repeats, or sequenced phrases) to the Lead voice you play on the
Upper keyboard. There are 41 different SoloStyle patterns, one for each of the rhythm patterns.

When turned on, SoloStyle automatically sets the volume of the Lead
voice to nearly the maximum level and plays the ideal embellishment to
match the rhythm style. (Refer to the SoloStyle Voice Assignments List,
page 61.)

> **Note:** The Accompaniment type cannot
> be changed.

**To select the SoloStyle function:**

1. Press the SOLOSTYLE button in the DISPLAY SELECT section.

2. Select SOLOSTYLE by using the bottom left Data Control buttons.

This Knee setting is the same as described above in the
M.O.C. section. It serves as an on/off switch for knee
lever control over SoloStyle operation. (Also refer to
Knee Lever Control, page 47.)

> **Note:** M.O.C. and SoloStyle are highly
> distinctive effects, and as such it may
> not be musically appropriate to keep
> them on for the duration of a song. Use
> the Knee Lever to turn the functions on
> and off as necessary; this is a convenient
> way to add dynamic changes to your
> performance as you play.

5 Registration Memory
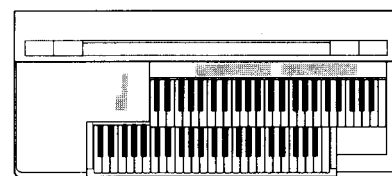
Registration Memory allows you to store virtually all the settings you make on the panel and with the LCD, providing a convenient way to instantly change all voice settings and rhythms while you're playing, with the simple touch of a single button in the REGIST. MEMORY section.

Virtually all of the front panel settings and the functions and settings accessible from display pages, such as effects and accompaniment, can be memorized to Registration Memory.

The following functions and settings cannot be memorized:
Pitch/Transpose settings
Registration Shift settings
MIDI settings

Saving Registrations

Newly created registrations you make can be saved to the Registration Memory panel buttons. All registrations in Registration Memory can also be saved to disk for future recall (when equipped with an optional Yamaha Music Disk Recorder, exclusive for use with the EL-25).

To store registrations to the Registration Memory:

1. After creating your original registration, decide which numbered button you wish to replace (1 - 5).

2. While holding down the M (Memory) button in the Registration Memory section, press the numbered button to which you wish to save your registration.

When the registration is stored, the numbered button flashes momentarily.

To select registrations from Registration Memory:
Simply press the numbered button that corresponds to the registration you wish to select.
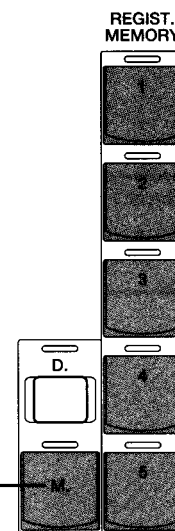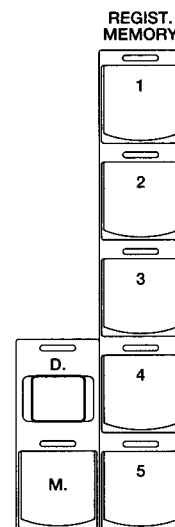
1) While holding down M button...

2) ...press desired numbered button.

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USING THE D (DISABLE) BUTTON:

Rhythm and automatic accompaniment patterns also change when you select different Registration Memory buttons. Pressing the D (Disable) button allows you to keep the same rhythm and accompaniment patterns throughout all your registration changes.
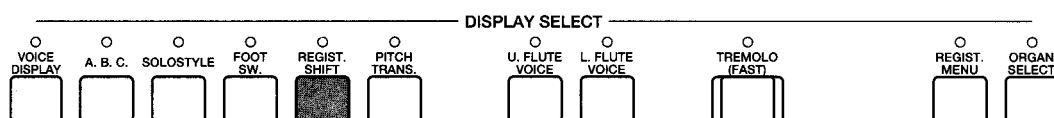
REGIST. MEMORY

1 2 3 D. 4 M. 5
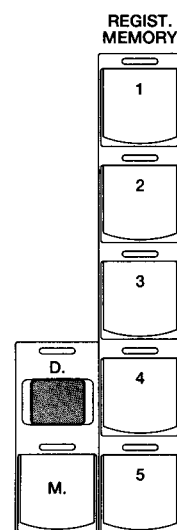
Registration Shift

The Registration Shift function allows you to change registrations on the Registration Panel without taking your hands from the keyboards. By using the right footswitch on the expression pedal, you can step through the panel registrations in sequence.

To select the Registration Shift functions:

1. Press the REGIST SHIFT button in the DISPLAY SELECT section.

DISPLAY SELECT

VOICE DISPLAY | A. B. C. | SOLOSTYLE | FOOT SW. | REGIST. SHIFT | PITCH TRANS. | U. FLUTE VOICE | L. FLUTE VOICE | TREMOLO (FAST) | REGIST. MENU | ORGAN SELECT

2. Select SHIFT in the display by pressing any one of the bottom Data Control buttons.

```
<REGIST SHIFT>
□OFF ■SHIFT
```
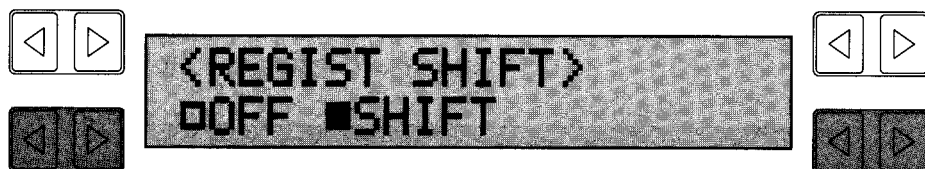
In the SHIFT mode, each press of the right footswitch selects the Registration Memory buttons in their numerical order. After the last preset is reached, the function "wraps around" to select the first button again. The numbered buttons light up as they are selected.

44

Resetting the Registration Memory Buttons (Power On Reset)

All current registrations can be deleted at once by using the Power On
Reset function. This replaces the registrations you stored with the preset
registrations loaded at the factory. To do this:

1. **Turn off the power.**

2. **While holding down the top left Data Control button, turn the
power back on.**
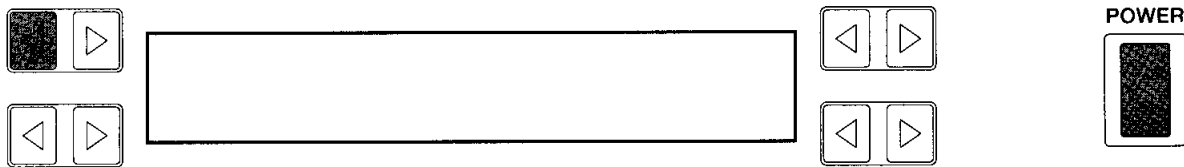
Be careful when using this operation, since it erases all your Registration
Memory settings.

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 page 43) 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 the D (Disable) button.

6 Footswitches and Knee Lever
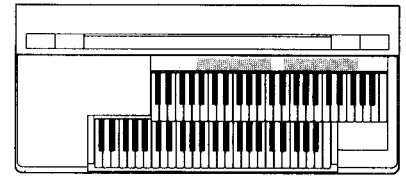
These leg- and foot-operated controls allow you to turn on and execute various performance functions without taking your hands from the keyboards. Controllable functions include Registration Shift, Glide, Sustain, and Melody On Chord/SoloStyle, as well as Rhythm operations such as stop, ending and Fill In.
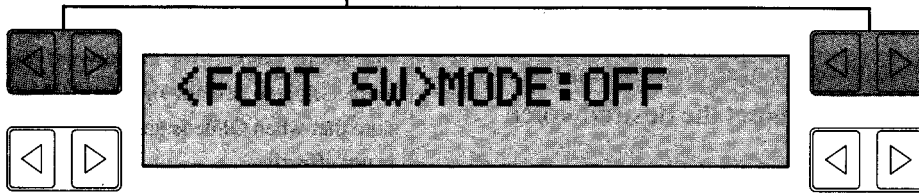
Footswitch Control

The Electone has two footswitches on the expression pedal that can be used to control various functions. The right footswitch is used for the Registration Shift functions (see page 44). The left footswitch can be set to control one of the following functions: Glide, rhythm stop, rhythm ending, and rhythm Fill In. Assignments of the functions are made in the Footswitch pages.

To select the Footswitch pages:
Press the FOOT SW. button in the DISPLAY SELECT section.
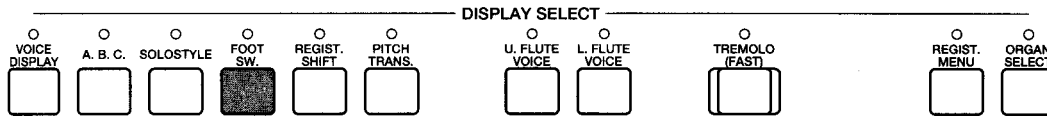
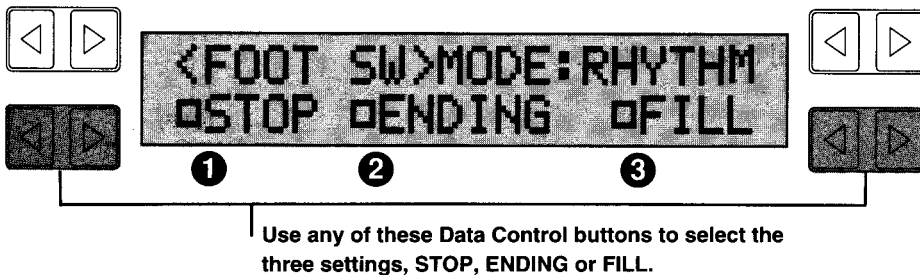Use any of these Data Control buttons to select the footswitch mode.

Three modes are available: OFF, RHYTHM, and GLIDE. Select the desired mode with the top right or top left Data Control buttons.

Off
Cancels left footswitch control.

Rhythm Mode
Selection of left footswitch control over rhythm functions. When this is chosen, the following display appears:

Use any of these Data Control buttons to select the three settings, STOP, ENDING or FILL.

Select one of the three Rhythm Control functions from this display.
Pressing the footswitch executes the corresponding function:

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❶ STOP

Functions as an off/on switch for the rhythm pattern.

❷ ENDING

Switches the rhythm to the Ending pattern, after which the rhythm is stopped.

❸ FILL (Fill In)

Switches the rhythm to the Fill In pattern.

Glide Mode

Selection of footswitch control over Glide. Pressing the footswitch immediately lowers the pitch of the selected voice or voices by a half-step. When the Glide setting is chosen, the following display appears:

Selects LEAD   Selects UPPER   Either of these selects LOWER
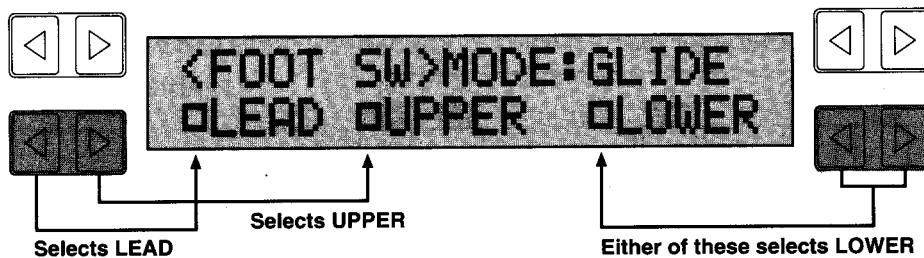
The Glide function can be applied to any one or all of the voice sections shown in the display: Lead, Upper, and Lower. Select the desired voice section(s).

> **Note:** When using the footswitch to control Glide, be careful to keep pressing the footswitch for as long as you want Glide to remain in effect. Also note that when Glide is applied, Vibrato is not effective.
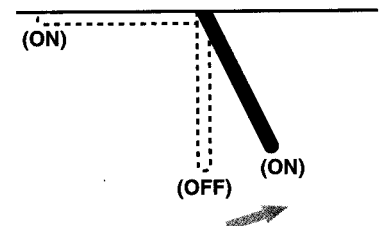
Knee Lever

The knee lever, located on the underside of the keyboard panel, can be used to turn one of the following functions on and off: Melody On Chord/SoloStyle or the Sustain effect.

Sustain

To select knee lever control over Sustain:

Make sure that the Upper and/or Lower Sustain effect panel controls have been turned on; otherwise, the knee lever will have no effect.

(ON)

(OFF)   (ON)

To use the knee lever:
Fold the knee lever down and press it to the right with your knee when
you want to have sustain.

When the knee lever is vertical:
The sustain effect is cancelled.

When the knee lever is continuously pressed to the right:
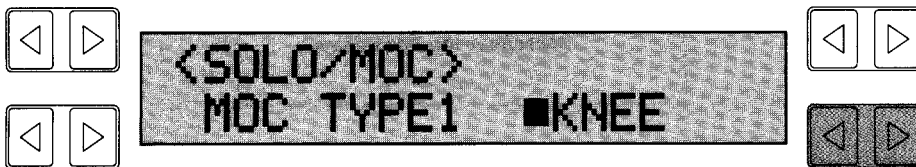The sustain effect is on.

When the knee lever is folded up:
The sustain effect is applied constantly, as long as the front panel sustain
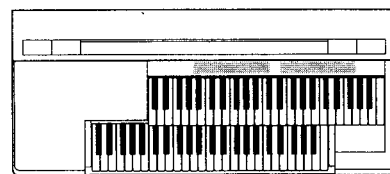buttons are on.

Melody On Chord and SoloStyle

To select knee lever control over Melody On Chord and SoloStyle:
Press the SOLOSTYLE button in the DISPLAY SELECT section. Set
the KNEE control to ON, and select one of the modes.

7 Pitch Controls

There are two pitch-related controls on the Electone: Transpose and Pitch. Transpose allows you to change the key of the instrument and Pitch lets you finely adjust the tuning. These features make it easy to change the key of a song to accommodate a vocalist's range or to precisely match the tuning of another instrument. The Pitch controls are located on the PITCH TRANS. page.

To select the PITCH TRANS. page (Page 1):
Press the PITCH TRANS. button in the DISPLAY SELECT section.

Increases the Transpose value
Decreases the Transpose value

Increases the Pitch value
Decreases the Pitch value

Transpose (TRANS.)
Determines the coarse pitch setting of all the voices, and is adjustable in half-steps (semitones). Range: -6 — +6 (one octave)
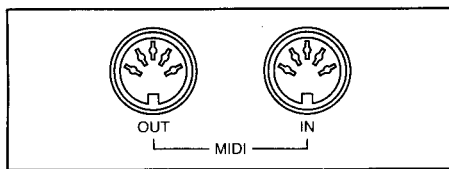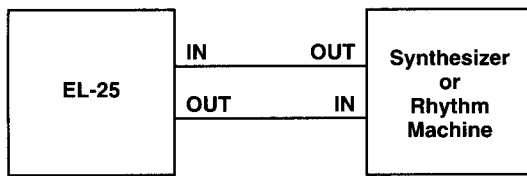
Pitch
Determines the fine pitch setting of all the voices. Range: 438.8 Hz — 444.5 Hz

8 MIDI Controls

MIDI (Musical Instrument Digital Interface) is a sophisticated communication system for electronic musical instruments. It is built into most every modern digital musical instrument and allows different instruments to "talk" to each other and control each other's functions. For example, the Upper keyboard of your Electone could be used to play sounds on a connected synthesizer. In another application, a rhythm machine can be programmed to play its rhythm patterns in perfect synchronization with the tempo set on the Electone.

To use the MIDI functions you must, of course, have a second MIDI device (such as a synthesizer or rhythm machine), and a set of MIDI cables. Connect the MIDI cables as shown in the illustration below:
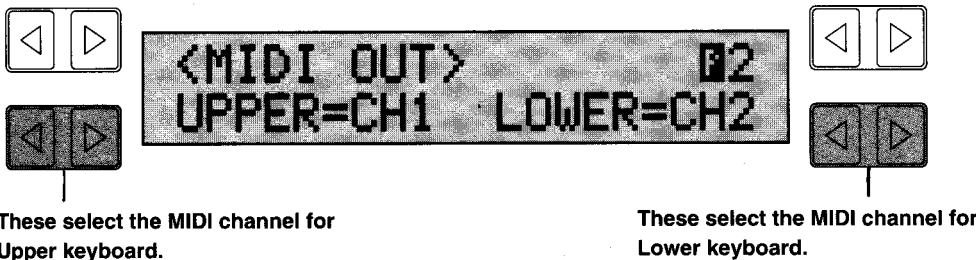

All MIDI functions are controlled from the two pages that follow the PITCH TRANS. page. (See page 49.)

To select the MIDI pages:
Press the PITCH TRANS. button in the DISPLAY SELECT section,
and select Page 2 and Page 3 with the Page Select buttons.

Page 2 — Output Channels

These select the MIDI channel for Upper keyboard.

These select the MIDI channel for Lower keyboard.

This determines the channels over which MIDI information will be transmitted. The Upper keyboard can be set to send over channels 1 or 4, while the Lower keyboard can send over 2 or 5. The Pedalboard automatically sends over channel 3. The MIDI receive channel of each connected MIDI device should match the numbers set here.

Note: When using another MIDI device to play the Electone's voices, you must set the MIDI transmit channel(s) of the connected device to match the receive channel(s) of the Electone. The MIDI receive channels of the Electone are automatically set to the following values:

Upper: 1
Lower: 2
Pedal: 3
Keyboard
Percussion: 15
(receive channel only)

Page 3 — Internal/External Control

These select the Lead setting.

These select the Sync setting.

These select the Expression Pedal setting.
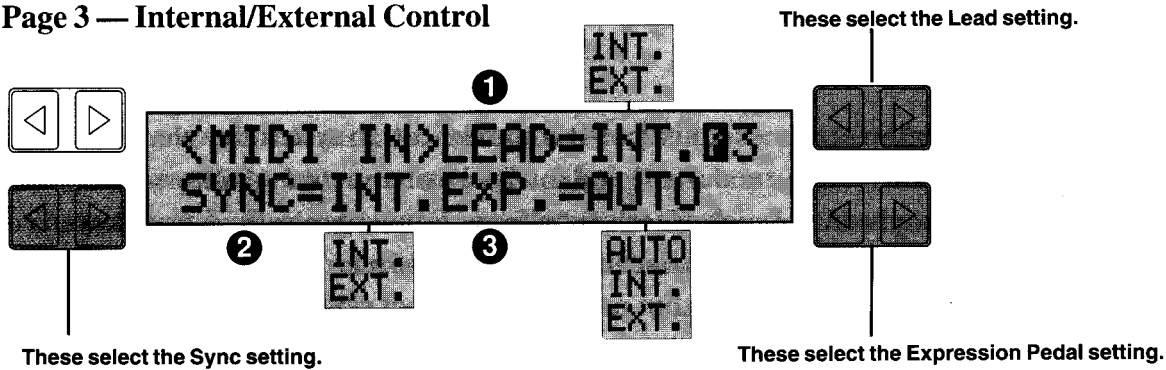
❶ **Lead**

Determines Internal or External control of the Lead Voices. When set to Internal, Lead Voices are played from the Electone and the sounds from a connected MIDI instrument can be played via MIDI channel 1 (or channel 2, when the To Lower function is on). When set to External, the Lead Voices can only be played from the connected instrument via MIDI channel 4.

❷ **Sync**

Determines the source of the timing control, for rhythm synchronization purposes. Setting this to Internal gives the Electone timing control over the connected rhythm machine. This also allows you to start and stop the rhythm patterns of the connected rhythm machine from the Electone's panel controls. Setting this to External gives timing control to the connected rhythm machine.

❸ **Expression (EXP.)**

Determines the control of the expression functions. Ordinarily, this control is set to AUTO. However, when it is set to INT., you can manually control the expression pedal during M.D.R. playback (when equipped with the optional MDR-3 Music Disk Recorder, exclusive for use with the EL-25). When set to EXT., another (external) Electone can be used to control the expression pedal functions.

> **Note:** Accompaniment pattern sounds cannot be controlled via MIDI.

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9 Accessory Jacks

On the left underside of the Electone keyboard is a separate panel equipped with several input/output terminals, the functions of which are described below.
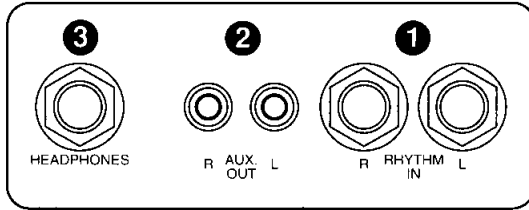
❶ RHYTHM IN (Left and Right)

This pair of phone jacks are for connection to an external rhythm machine. The sound of the connected device is mixed with the sound of the Electone and played through the speaker system. The volume of the rhythm machine can be controlled by the Expression pedal of the Electone.

❷ AUX. OUT (Left and Right)

This set of stereo outputs (RCA pin jacks) is for connection to external amplification/speaker systems. Typically, they are for direct connection to a home audio system or cassette deck.

❸ HEADPHONES

For connection of a stereo or monaural headphone set. When headphones are connected to this jack, sound to the Electone's built-in speaker system is automatically cut off, allowing you to play without disturbing others.

Troubleshooting

Please note that the appearance of any of following phenomena does not indicate a mechanical failure of the Electone.

Problem	Possible Cause and Solution
GENERAL OPERATION	
Some of the LEDs in the DISPLAY SELECT section do not light.	The LEDs of on/off buttons [UPPER/LOWER FLUTE VOICES, and TREMOLO (FAST)] are lit when those functions are turned on. The LEDs of other function's buttons momentarily flash when the functions are selected.
No sound is produced from the Electone's speakers.	The plug of the cable from the speaker unit is disconnected. Refer to the separate "Assembly Instructions," and reconnect the plug securely.
A crackling noise is sometimes heard.	Noise may be produced when either an electrical appliance is turned on or off, or an electric power tool (such as a drill) is used in the proximity of the Electone. If this occurs, plug the Electone into an electrical outlet located as far as possible from the device that seems to be the source of the problem.
Interference from radio, TV, or other sources occurs.	This is caused by the proximity of a high-power broadcasting station or amateur ham radio setup.
The sound of the Electone causes surrounding objects to resonate.	Because the Electone is capable of producing powerful bass sounds, resonance may be caused in surrounding objects, such as cabinets or glass windows. To avoid this, relocate the objects or lower the Electone's volume.
The Electone panel does not function normally or the content of the memorized data has changed.	This happens very rarely. Occasionally, power surges and spikes due to electrical storms or other reasons may cause the Electone to malfunction and/or alter the contents of memorized data. If this happens, perform the Power On Reset operation to reset the Electone. (See page 45.)
VOICES/RHYTHMS	
When too many keys are pressed, not all of the notes sound.	Total polyphonic capacity (notes sounding for both Upper and Lower keyboards) is 11 notes. Polyphonic capacity is 12 for the Upper and Lower Flute Voices and 6 each for the Upper and Lower Attack sound.
When playing a Pedal voice from the Lower keyboard (using the To Lower function), pressing the Lower keyboard's Sustain button does not turn on Sustain.	Even though the Pedal voice is being played from the Lower keyboard, it is still a Pedal voice; turn the Sustain on with the Pedal Sustain button. (See page 27.)
The sound is too soft, despite the volume being set to the maximum.	Check all of the volume controls, making sure that they are set to suitable levels: the panel Volume controls for each voice section, the Master Volume dial, and the Expression Pedal.
Switching voices causes the volume to change, despite their having identical volume settings.	The volume of certain voices may seem lower than that of others. Adjust the balance of the sound with the Volume control within the appropriate Voice Condition display.
When keys on the Lower keyboard or Pedalboard are pressed, the sounds of percussion instruments are also heard.	The Keyboard Percussion function has been turned on. When not using the function, be sure to turn it off. (See page 40.)
Only one sound is heard when two notes of the Lead or Pedal voices are simultaneously played.	For practical performance reasons, the Electone has been designed so that one note of the Lead or Pedal voices can be played at a time. If several keys are pressed at once, only the highest note will be sounded (high-note priority).
The Pedal voices do not sound, even when though the volume is properly set.	The Single Finger or Fingered Chord mode of Auto Bass Chord is on. Turn off the mode in the display. (See page 37.)
While an Intro./Ending pattern is automatically playing, the Lower keyboard does not produce any sound, even when the keys are played.	Since the Accompaniment chords play automatically one after another, the Lower keyboard is designed not to produce any sound during the play of an Intro./Ending pattern.
EFFECTS	
The Tremolo effect cannot be heard, even when the TREMOLO (FAST) button in the DISPLAY SELECT section is on.	Tremolo must be selected first in the Voice Condition display (for panel voices), or in Page 1 of Flute Voice (for Flute Voices). (See page 27.)
ACCOMPANIMENT AND OTHER FUNCTIONS	
Despite its volume being set to a suitable level, the Accompaniment cannot be heard.	The rhythm has not been started. Be sure to use Accompaniment together with the rhythm.
The pitch in the Single Finger mode does not change, even when pressing different keys of the keyboard.	Single Finger mode will only produce notes when played within a fixed octave interval on the Lower keyboard. If notes with the same letter name are pressed outside of that range, the chords that are sounded will share the same pitch.
The harmony notes of the Melody On Chord function cannot be heard.	The Upper keyboard has been set to sound only Lead voices. Increase the volume of the Upper voices.

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Specifications

		EL-25
KEYBOARD	Keyboards	Upper: 49 keys , Lower: 49 keys , Pedal: 20 keys
	Touch Tone	Initial (Upper, Lower; preset for each voice)
VOICE	Tone Generation	New AWM & FM
	Upper/Lower Keyboard	Strings, Pizz.Strings; Brass, Synth.Brass; Clarinet; Saxophone; Chorus; Organ, Piano, Elec.Piano, Harpsichord; Guitar, Elec.Guitar; Vibraphone, Glockenspiel, Marimba; Cosmic 1, 2, 3; Tutti; [Upper] Harmonica; [Lower] Horn; User 1-4; (23 Voices) Volume Fine
	Lead (Upper)	Violin; Flute, Whistle; Oboe, Bassoon; Trumpet, Trombone; User 1-4; To Lower; (7 Voices) Volume Fine
	Pedalboard	ContraBass, Pizz.Bass; Elec.Bass, Synth.Bass; Organ Bass; Tuba; User 1-4; To Lower; (6 Voices) Volume Fine
	Voice Display	Upper, Lower, Lead, Pedal
	Upper/Lower Flute Voice	Flute Voices (16', 8', 5$\frac{1}{3}$', 4', 2$\frac{2}{3}$', 2', 1$\frac{3}{5}$', 1'); Attack (4', 2$\frac{2}{3}$', 2'; Length); Click; Response; Tremolo On/Off; Volume; 8 Presets; On/Off Control: Upper, Lower
MELODY ON CHORD/SOLOSTYLE		Mode: Off, MOC 1, 2, 3, SoloStyle, Knee: On/Off
EFFECT/ CONDITION	Digital Reverb	Depth
	Sustain	Upper (Knee), Lower (Knee), Pedal; Length
	Tremolo/Chorus	Upper, Lead, Lower, Pedal, Flute Voice; Tremolo (Fast)/Chorus
	Vibrato	Upper/Lower: Preset/User (Depth), Lead: Preset/User (Delay, Depth, Speed)
	Feet	Upper, Lead, Lower, Pedal: Preset/4'/8'/16'
	Glide	Lead, Upper, Lower
RHYTHM	Rhythms	March 1, 2, Country, Broadway; Waltz 1, 2, Jazz Waltz, Bolero; Swing 1, 2, Jazz Ballad, Dixieland; Bounce 1, 2; Reggae 1, 2; Slow Rock 1, 2, 3; 8 Beat 1, 2, 3, Dance Pop; Tango 1, 2, 3; Cha-cha; Rhumba, Beguine; Mambo, Salsa; Samba 1, 2, 3; Bossanova 1, 2, 3; 16 Beat 1, 2, 3, Funk; (41 Rhythms); Volume Fine
	Variations	Fill-In, Intro. Ending, Lead In, Auto Variation: On/Off
	Others	Start, Synchro Start, Tempo, Bar/Beat LED, Volume
KEYBOARD PERCUSSION		On/Off: Lower, Pedal; 43 Sounds
ACCOMPANIMENT	Auto Bass Chord (A.B.C.)	Mode: Off, Single Finger, Fingered Chord, Custom A.B.C., Memory: Lower/Pedal
	Accompaniments	Type: 1, 2; Volume Fine
REGISTRATION MEMORY		M (Memory), 1~5; Disable Button, Mode: Off, Shift
BASIC REGISTRATION		1~5
REGISTRATION MENU/ORGAN SELECT		Registration Menu: 41, Organ Select: 15
FOOT SWITCH		[Left] Mode: Off, Rhythm (Stop, Ending, Fill-In), Glide (Upper, Lower, Lead), [Right] Regist. Shift Mode: Off, Shift
KNEE LEVER		On/Off: Sustain (Upper, Lower), MOC/SoloStyle
LCD DISPLAY		20×2 characters
OTHER CONTROLS		Power On/Off, Exp. Pedal, Pitch Control, Transpose, Master Volume, Display Select, Data Controls, Page, MIDI (Out: Upper, Lower; In: Lead Int./Ext., Sync. Int./Ext., Exp. Auto/Int./Ext.)
OTHER FITTINGS		Matching Bench, Dust Cover, Music Stand, MIDI In/Out, Headphone Jack, Rhythm In (Phone; R/L), Aux Out (RCA; R/L)
OPTIONAL ACCESSORIES		MDR-3 Music Disk Recorder, YHE-5 Headphones
SOUND SYSTEM	Power Amplifiers	55W
	Speakers	20cm (8")×1; 5cm (2")×1; Monitor×2
DIMENSIONS Width×Depth×Height		108cm (42$\frac{1}{2}$")×46cm (18$\frac{1}{8}$")×92cm (36$\frac{1}{4}$")
WEIGHT		50.0kg (110 lbs., 4 oz.)
FINISH		Simulated Mahogany Grain

Specifications and descriptions in this Owner's Manual are for information purposes only.
Yamaha Corp. reserves the right to change or modify products or specifications at any time without prior notice.
Since specifications, equipment or options may not be the same in every locale, please check with your Yamaha dealer.

MIDI Implementation Chart

Function		Transmitted	Recognized	Remarks
Basic Channel	Default	1 2 3 16	1 2 3 16	UK LK PK CONTROL
	Changes	4 5	4	UK LK LEAD
Mode	Default Messages Altered	Mode 3 × * * * * * * * * * * * *	Mode 3 × ×	
Note Number	 True Voice	36-96* * * * * * * * * * * * *	36-96* *	UK
Velocity	Note ON Note OFF	9nH, v = 1-127 9nH, v = 0	9nH, v = 1-127 9nH, v = 0, 8nH	
After Touch	Key Channel	× ×	× ×	
Pitch Bender		×	×	
Control Change	1 4 11 64	× × ○ ×	× × ○ * * * ×	Modulation wheel 2nd Expression pedal Expression pedal Sustain
Program Change	 Range	0-4 112-116 * * * * * * * * * * * *	0-4 112-116 * * * * * * * * * * * *	
System Exclusive		○	○	
System Common	Song Pos Song Sel Tune	× × ×	× × ×	
System Real Time	Clock Commands	○ ○	○ * * * ○	 FAH, FCH
Aux Messages	Local ON/OFF All Notes OFF Active Sense Reset	× × ○ ×	× × ○ ×	
Notes		* CH1: 48-96, CH2: 36-84, CH3: 36-55 ** CH15 only: 36-127, Others: 36-96 *** Recognized only in External mode		

Mode 1: OMNI ON, POLY   Mode 2: OMNI ON, MONO   ○: YES
Mode 3: OMNI OFF, POLY   Mode 4: OMNI OFF, MONO   ×: NO

MIDI Specifications

■CHANNEL MESSAGES

Code	Function	Transmitted	Recognized	Remarks
8nH, nnH (Note No.), 00H-7FH	Note OFF	× × × × ×	CH 1 CH 2 CH 3 (CH 4)∗ CH 15	UK LK PK LEAD Keyboard Percussion
9nH, nnH (Note No.), 00H (OFF) 01-7FH (ON)	Note OFF Note ON	CH 1 CH 2 CH 3 (CH 4)∗ (CH 5)∗ ×	CH 1 CH 2 CH 3 (CH 4)∗ × CH 15	UK LK PK Transmitted: UK Recognized:LEAD LK Keyboard Percussion
BFH, 08H, 00H-7FH	Expression Pedal	CH 16	CH 16	CONTROL
CnH, nnH (Regist. No.)	Program Change (Registration Memory)	× × × CH 16	CH 1 CH 2 CH 3 CH 16	UK LK PK CONTROL

∗ Alternate setting for MIDI send and receive channels.

■SYSTEM REALTIME MESSAGES

Code	Function	Transmitted	Recognized	Remarks
F8H	Clock	○	○	Recognized in Ext. mode
FAH	Start	○	○	
FCH	Stop	○	○	
FEH	Active Sensing	○	○	

1. Electone common messages

■BULK DUMP Related Messages

Code	Messages	Transmitted	Recognized
F0H, 43H, 70H, 70H, 00H, ...(data)......., F7H	Bulk Dump data	×	○
01H	Request-to-Send Voice Parameter data	×	○
02H	Request-to-Receive Voice Parameter data	×	○
F0H, 43H, 70H, 70H, 10H, F7H	Request-to-Send all RAM data	×	○
11H	Request-to-Send Registration data	×	○
16H	Request-to-Send USER Voice data	×	○
F0H, 43H, 70H, 70H, 20H, F7H	Request-to-Receive all RAM data	×	○
21H	Request-to-Receive Registration data	×	○
26H	Request-to-Receiver USER Voice data	×	○
F0H, 43H, 70H, 70H, 30H, F7H	Request-to-Send Model ID data	×	○
F0H, 43H, 70H, 70H, 38H, 7FH, F7H	Bulk Dump Acknowledge	○	×
00H	Ignore	○	×

■CONTROL CHANGE

Code	Messages		Transmitted	Recognized
F0H, 43H, 70H, 70H, 40H, 45H, 7FH, F7H	FOOT SWITCH LEFT	ON	○	○
00H		OFF	○	○
F0H, 43H, 70H, 70H, 40H, 47H, 7FH, F7H	KNEE LEVER	ON	○	○
00H		OFF	○	○
F0H, 43H, 70H, 70H, 40H, 48H, 7FH, F7H	FILL IN	ON	○	○
00H		OFF	○	○
F0H, 43H, 70H, 70H, 40H, 4BH, 7FH, F7H	INTRO./ENDING	ON	○	○
00H		OFF	○	○
F0H, 43H, 70H, 70H, 40H, 50H, TIH, ThH, F7H	TEMPO		○	○

■MDR STATUS

Code	Messages		Transmitted	Recognized
F0H, 43H, 70H, 70H, 70H, 01H, 7FH	PLAY	Start	×	○
02H		Stop	×	○
03H	RECORD	Start	×	○
04H		Stop	×	○
05H	FF ►►	Start	×	○
06H		Stop	×	○
09H	Rhythm Pointer Reset*[1]		×	○

*1 Rhythm pointer reset and fast forward messages are transmitted in the rewind function.

■OTHERS

Code	Messages	Transmitted	Recognized
F0H, 43H, 70H, 70H, 78H, SCH, NCH, F7H	Bar signal	○	○

2. EL-25 common message

Code	Messages	Transmitted	Recognized
F0H, 43H, 70H, 78H, 00H, ...(data)......., F7H	Bulk Dump data	○	○
01H	Request-to-Send Voice Parameter data	×	○
02H	Request-to-Receive Voice Parameter data	×	○
F0H, 43H, 70H, 78H, 10H, F7H	Request-to-Send all RAM data	×	○
11H	Request-to-Send Registration data	×	○
16H	Request-to-Send USER Voice data	×	○
F0H, 43H, 70H, 78H, 20H, F7H	Request-to-Receive all RAM data	×	○
21H	Request-to-Receive Registration data	×	○
26H	Request-to-Receive USER Voice data	×	○
F0H, 43H, 70H, 78H, 41H,........(data)........,F7H	Panel Switch Event data *1	○	○
F0H, 43H, 70H, 78H, 42H,........(data)........F7H	Current Registration data	○	○

*1 Refer to the "Table of Switch-Related MIDI Codes."

● Table of SW MIDI codes [F0H, 43H, 70H, 78H, 41H, CODE, DATA, F7H]
Switch Code

Functions/Switches		Code	Data	Remarks
Selector	UK Voice	02H	00H-0DH	SW no.
	LK Voice	03H	00H-0DH	
	Lead Voice	06H	00H-04H	
	PK Voice	07H	00H-04H	
	Rhythm	0BH	00H-0FH	
Volume	UK Voice	12H	00H-7FH	Volume data
	LK Voice	13H	00H-7FH	
	Lead Voice	16H	00H-7FH	
	PK Voice	17H	00H-7FH	
	Rhythm	1AH	00H-7FH	
	Reverb	1BH	00H-7FH	Depth data
ON/OFF	Upper Flute Voice	30H	00H, 01H	00H = Off 01H = On
	Lower	31H	00H, 01H	
To Lower	Lead Voice	36H	00H, 01H	00H = Off 01H = On
	PK Voice	37H	00H, 01H	
Sustain	UK	50H	00H, 01H	00H = Off 01H = On
	LK	51H	00H, 01H	
	PK	52H	00H, 01H	
Keyboard Percussion	LK	5BH	00H, 01H	00H = Off 01H = On
	PK	5CH	00H, 01H	
Disable		5FH	00H, 01H	00H = Off 01H = On
Tremolo		60H	00H, 01H	00H = Chorus 01H = Tremolo

3. Model-Specific messages

Code	Messages	Transmitted	Recognized
F0H, 43H, 70H, nnH, 00H, F7H	Model ID Data	○	×
00H, ... (data) ...., F7H	Bulk Dump data	×	○
01H,	Request-to-Send Voice Parameter data	×	○
02H	Request-to-Receive Voice Parameter data	×	○
F0H, 43H, 70H, nnH, 10H, F7H	Request-to-Send all RAM data	×	○
11H	Request-to-Send Registration data	×	○
16H	Request-to-Send USER Voice data	×	○
F0H, 43H, 70H, nnH, 20H, F7H	Request-to-Receive all RAM data	×	○
21H	Request-to-Receive Registration data	×	○
26H	Request-to-Receive USER Voice data	×	○

"nnH" can be sent/received by using $41.

4. Electone/Single Keyboard common messages

Code	Messages	Transmitted	Recognized
F0H, 43H, 73H, 01H, 02H, F7H	Request for Internal Synchronous mode	×	○
03H	Request for External Synchronous mode	×	○

SoloStyle Voice Assignments

Rhythm Style	Mode	Lead Voice	Additional Voices
1. MARCH 1	Harmony	Clarinet	Saxophone, Flutes
2. MARCH 2	Harmony	Horn	Horn, Brass
3. COUNTRY	Harmony	Piano	Pianos
4. BROADWAY	Harmony	Strings	Strings, Marimba
5. WALTZ 1	Delay	Flute	Flutes
6. WALTZ 2	Harmony	Strings	Strings
7. J. WALTZ	Harmony	Flute	Flute, Clarinet, Saxophone
8. BOLERO	Delay	Trumpet	Trumpets
9. SWING 1	Harmony	Brass	Brass, Trumpets
10. SWING 2	Sequence	Saxophone	Saxophones
11. DIXIE	Harmony	Piano	Pianos
12. J. BALLAD	Sequence	Saxophone	Vibraphones
13. BOUNCE 1	Delay	Cosmic	Cosmic
14. BOUNCE 2	Harmony	Vibraphone	Vibraphone, E. Guitar
15. REGGAE 1	Harmony	Trombone	Trumpet, Saxophone
16. REGGAE 2	Harmony	Jazz Organ	Jazz Organ
17. S. ROCK 1	Harmony	Flute	Oboes, Clarinet
18. S. ROCK 2	Harmony	Strings	Strings
19. S. ROCK 3	Harmony	Jazz Organ	Jazz Organ
20. 8 BEAT 1	Sequence	Flute	Cosmic
21. 8 BEAT 2	Harmony	Chorus	Horn, Organ
22. 8 BEAT 3	Delay	Trumpet	Trumpet, Saxophones
23. D. POP	Sequence	Jazz Organ	Jazz Organ
24. TANGO 1	Harmony	Violin	Violin, Strings, Piano
25. TANGO 2	Harmony	Violin	Violin
26. TANGO 3	Harmony	Piano	Piano
27. MAMBO	Sequence	Trumpet	Trumpets
28. SALSA	Delay	Trombone	Trumpets, Trombone
29. CHA-CHA	Harmony	Flute	Pianos, Flute
30. RHUMBA	Sequence	Marimba	Marimba
31. BEGUINE	Harmony	Piano	Pianos
32. SAMBA 1	Delay	Trombone	Flutes, Trombone
33. SAMBA 2	Delay	Flute	Flutes
34. SAMBA 3	Harmony	Guitar	Flutes
35. BOSSA 1	Delay	Flute	E. Guitar
36. BOSSA 2	Harmony	Flute	Strings
37. BOSSA 3	Harmony	Saxophone	Saxophones
38. 16 BEAT 1	Delay	Harmonica	Harmonicas
39. 16 BEAT 2	Delay	Trumpet	Trumpet, Saxophone, Brass
40. 16 BEAT 3	Delay	Tutti	Tutti, Brass
41. FUNK	Delay	Syn. Brass	Syn. Brass, Brass

IMPORTANT SAFETY INSTRUCTIONS

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

WARNING— When using any electrical or electronic product, basic precautions should always be followed. These precautions include, but are not limited to, the following:

1. Read all Safety Instructions, Installation Instructions, Special Message Section items, and any Assembly Instructions found in this manual BEFORE making any connections, including connection to the main supply.

2. Main Power Supply Verification: Yamaha products are manufactured specifically for the supply voltage in the area where they are to be sold. If you should move, or if any doubt exists about the supply voltage in your area, please contact your dealer for supply voltage verification and (if applicable) instructions. The required supply voltage is printed on the name plate. For name plate location, please refer to the graphic found in the Special Message Section of this manual.

3. This product may be equipped with a polarized plug (one blade wider than the other). If you are unable to insert the plug into the outlet, turn the plug over and try again. If the problem persists, contact an electrician to have the obsolete outlet replaced. Do NOT defeat the safety purpose of the plug.

4. Some electronic products utilize external power supplies or adapters. DO NOT connect this type of product to any power supply or adapter other than one described in the owners manual, on the name plate, or specifically recommended by Yamaha.

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

6. Ventilation: Electronic products, unless specifically designed for enclosed installations, should be placed in locations that do not interfere with proper ventilation. If instructions for enclosed installations are not provided, it must be assumed that unobstructed ventilation is required.

7. Temperature considerations: Electronic products should be installed in locations that do not significantly contribute to their operating temperature. Placement of this product close to heat sources such as; radiators, heat registers and other devices that produce heat should be avoided.

8. This product was NOT designed for use in wet/damp locations and should not be used near water or exposed to rain. Examples of wet/damp locations are; near a swimming pool, spa, tub, sink, or wet basement.

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

10. The power supply cord (plug) should be disconnected from the outlet when electronic products are to be left unused for extended periods of time. Cords should also be disconnected when there is a high probability of lightening and/or electrical storm activity.

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

12. Electrical/electronic products should be serviced by a qualified service person when:

    a. The power supply cord has been damaged; or
    b. Objects have fallen, been inserted, or liquids have been spilled into the enclosure through openings; 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. Do not attempt to service this product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

14. This product, either alone or in combination with an amplifier and headphones or speaker/s, may be capable of producing sound levels that could cause permanent hearing loss. DO NOT operate for 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. IMPORTANT: The louder the sound, the shorter the time period before damage occurs.

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

PLEASE KEEP THIS MANUAL

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