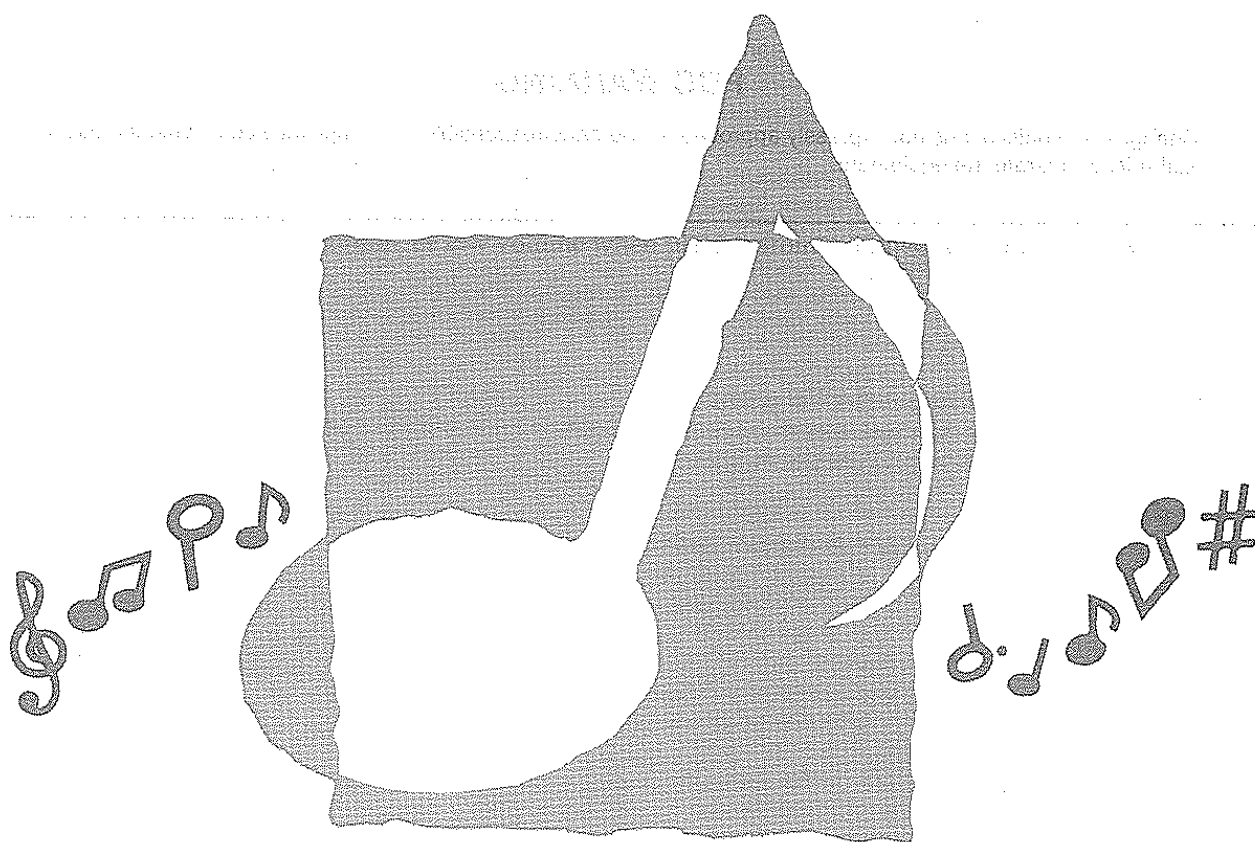
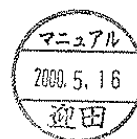


# LK-60

## USER'S GUIDE GUÍA DEL USUARIO



マニュアル書サンプル



P  
英西  
LK60-ES-1

**CASIO**

**GUIDELINES LAID DOWN BY FCC RULES FOR USE OF THE UNIT IN THE U.S.A. (not applicable to other areas).**

### **NOTICE**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### **FCC WARNING**

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

# Welcome...

To the happy family of satisfied CASIO electronic musical instrument owners! To get the most out of the many features and functions of the keyboard, be sure to carefully read this manual and keep it on hand for future reference.

## Important!

When using batteries, be sure to replace them or shift to one of the alternate power sources whenever you notice any of the following symptoms.

- Dim power supply indicator
- Instrument does not turn on.
- Dim, difficult to read display
- Abnormally low speaker/headphone volume
- Distortion of sound output
- Occasional interruption of sound when playing at high volumes
- Sudden power failure when playing at high volumes
- Dimming of the display when playing at high volume
- Abnormal rhythm pattern and demo tune play
- Dimming of keyboard lights when notes sound.
- Loss of power, sound distortion, or low volume when playing from a connected computer or MIDI device.

Use of any other corporate or product name should not be regarded as affecting the validity of any trademark or service mark. All other product and company names mentioned herein may be the trademarks of their respective owners.



CASIO ELECTRONICS CO., LTD.  
Unit 6, 1000  
North Circular Road  
London NW2 7JD, U.K.

This mark is valid in the EU countries only.  
Please keep all information for future reference.

# Main Features

## ☐ 137 tones

- Everything from orchestra instruments to synthesized sounds, drum sets and more.

## ☐ 100 rhythms

- A selection of rhythms that cover rock, pops, jazz and just about any other musical style imaginable.

## ☐ Auto Accompaniment

- Simply specify a chord and the keyboard automatically plays the correct rhythm, bass, and chord parts.

## ☐ 100 built-in tunes

- A simple operation cuts out the melody part of any of the 100 Song Bank tunes so you can play along on the keyboard.

## ☐ Key Light System with 3-step lesson

- Use any of the 100 Song Bank tunes to learn to play as the keyboard keys light to teach you the correct notes. First practice the timing of the notes. Next, play along at your own pace. Soon you will be ready for step three, where you play along at normal speed.
- Note that key lights may be difficult to see under direct sunlight or under other very bright lighting.

## ☐ Big display with a wealth of musical information

- A big, informative display shows you which fingers to use, which keys to press, staff notation of the notes being played, and much more.

## ☐ Memory function

- Record up to two parts in memory for later playback. Realistic ensemble play can also be created using the Auto Accompaniment function.

## ☐ General MIDI compatibility

- General MIDI tones let you connect to a personal computer and enjoy "desktop music" capabilities. This keyboard can be used as a desktop music input device or as a sound source, and it's just the thing for play back of commercially available pre-recorded General MIDI music software.

## ☐ Keys light to show received MIDI messages

- The keyboard can be set up so its keys light in accordance with the channels of commercially available General MIDI music software. You can even turn off the output of a channel and play along on the keyboard.

## ☐ Reverb

- Built-in reverb lets you select from among room stage, and concert hall effects.



# Safety Precautions

## Symbols

Various symbols are used in this operating manual and on the product itself to ensure that the product is used safely and correctly, and to prevent injury to the user and other persons as well as damage to property. Those symbols along with their meanings are shown below.

### WARNING


This indication stipulates matters that have the risk of causing death or serious injury if the product is operated incorrectly while ignoring this indication.

### CAUTION


This indication stipulates matters that have the risk of causing injury as well as matters for which there is the likelihood of occurrence of physical damage only if the product is operated incorrectly while ignoring this indication.

## Symbol Examples




This triangle symbol () means that the user should be careful. (The example at left indicates electrical shock caution.)



This circle with a line through it () means that the indicated action must not be performed. Indications within or nearby this symbol are specifically prohibited. (The example at left indicates that disassembly is prohibited.)



The black dot () means that the indicated action must be performed. Indications within this symbol are actions that are specifically instructed to be performed. (The example at left indicates that the power plug must be unplugged from the electrical socket.)



## WARNING

Please use caution regarding the handling of the AC adaptor.

- Do not use a voltage other than the indicated power supply voltage. Use of a voltage other than that indicated may cause fire or electrical shock.
- If the power cord should become damaged (exposed wires, disconnection, etc.), purchase a new AC adaptor. Use of a damaged power cord may cause fire or electrical shock.
- Do not cut or damage the power cord. Also do not place heavy objects on top of it or subject it to excessive heat. Damage to the power cord may cause fire or electrical shock.
- Do not attempt to shape the power cord or subject it to excessive bending, twisting or pulling. This may cause fire or electrical shock.
- Please use the adaptor specified for this instrument. Use of another adaptor may cause fire, electrical shock, or malfunction.



Do not locate the instrument or its stand on an uneven or unstable surface.

- Locating the instrument or its stand on an uneven or unstable surface can cause it to fall, creating the danger of personal injury.

Do not place containers containing water or other liquids on the instrument.

- Do not place the following objects on the instrument. Placing such objects on the instrument may cause fire or electrical shock if they spill and get inside the instrument.
  - Containers filled with water or other liquids (including vases, potted plants, cups, cosmetics and medicines)
  - Small metal objects (including hairpins, sewing needles and coins)
  - Flammable objects



In the event a foreign object should happen to get inside the instrument, please take the following actions:

1. Turn power off.
2. Unplug the AC adaptor from the wall outlet.
3. If there are any batteries loaded in the keyboard, remove them.
- Do not touch the batteries directly with your hands when removing them. They may be hot or battery fluid may be leaking from them.
4. Consult with the dealer where you purchased the keyboard or with an authorized CASIO service provider.



### Do not disassemble or modify the instrument.

- Never attempt to take apart or modify the instrument, its accessories, or separately sold options. Doing so may cause fire, electrical shock or malfunction. Consult your dealer concerning all inspection, adjustment or repair of internal components.



### Do not use if there is an abnormality or malfunction.

- Do not use the instrument if there appear to be abnormalities such as the presence of smoke or abnormal odor. Also do not use the instrument if there appear to be malfunctions such as the power not coming on or sound not being produced. Use under such conditions may cause fire or electrical shock. In such cases, take the following actions immediately. Never attempt to repair the instrument yourself.



1. Turn power off.
2. Unplug the AC adaptor from the wall outlet.
3. If there are any batteries loaded in the keyboard, remove them.
- Do not touch the batteries directly with your hands when removing them. They may be hot or battery fluid may be leaking from them.
4. Consult with the dealer where you purchased the keyboard or with an authorized CASIO service provider.



### When the instrument has been dropped:

- In the case the instrument has been dropped or damaged, take the following actions. Continued use may cause fire or electrical shock.



1. Turn power off.
2. Unplug the AC adaptor from the wall outlet.
3. If there are any batteries loaded in the keyboard, remove them.
- Do not touch the batteries directly with your hands when removing them. They may be hot or battery fluid may be leaking from them.
4. Consult with the dealer where you purchased the keyboard or with an authorized CASIO service provider.



### Be careful of the bags around children.

- Never allow anyone to place the plastic bags of the instrument, its accessories, and its separately sold options over their heads. Doing so may cause suffocation. Particular caution is required in homes with small children.

## CAUTION

### AC Adaptor

- Do not locate the power cord in close proximity to heaters or other heating appliances. This may cause the cord to melt leading to possible fire or electrical shock.
- When unplugging the AC adaptor from an electrical outlet, always make sure to pull on the adaptor itself and not the cord. Pulling excessively on the cord may cause it to be damaged or break leading to possible fire or electrical shock.
- Do not touch the AC adaptor with wet hands when it is plugged in. This may cause electrical shock.
- When not using the instrument for an extended period such as when traveling, always make sure to unplug the AC adaptor from the electrical outlet for safety reasons.
- After use turn off the power switch of the instrument and unplug the AC adaptor from the electrical outlet.
- At least once a year, unplug the AC adaptor from the power outlet and clean the area around the prongs of the plug. Dust build up around the prongs can create the danger of fire.



### Batteries

- Improper battery use may cause batteries to rupture and leak. This may cause injury, malfunction of the instrument or discoloration of furniture and other articles that come into contact with battery fluid. Take care to observe the following.
- Install batteries so their polarity (+/-) matches that indicated on the instrument.
- For safety and to prevent possible leakage of battery fluid, always make sure to remove batteries from the instrument when you do not plan to use it for a long time.
- Always make sure that the batteries making up a set are all of the same type.
- Never combine new batteries with old ones.
- Never dispose of batteries by incinerating them. Never short or disassemble batteries, and do not expose them to excessive heat.
- Replace dead batteries as soon as possible.
- Never attempt to recharge batteries.

### Transport

- When transporting the instrument, always make sure to unplug the AC adaptor from the electrical outlet and confirm that all other external connections have been disconnected. Only then should the instrument be transported. If the above is not done, the cord may be damaged leading to possible fire or electrical shock.



## Care

- Whenever caring, make sure to first unplug the AC adaptor from the electrical outlet. Also remove the instrument's batteries if battery power is being used.

## Location

- Never locate the instrument in areas subject to high humidity or heavy accumulation of dust. Doing so may cause fire or electrical shock.
- Never locate the instrument in areas subject to grease splatters or steam, such as in a kitchen or near a humidifier. Doing so may cause fire or electrical shock.



## Do not place keyboard on lacquered furniture.

- The instrument's silicone rubber feet may eventually blacken or scar lacquered surfaces. Use felt cloth pads to insulate the feet or preferably use a CASIO musical instrument stand designed for your keyboard.

## Do not place heavy objects on the instrument.

- Do not place heavy objects on the instrument. This may cause the instrument to tip over or break resulting in injury.

## Volume

- Very high volume levels can damage hearing. Avoid using the instrument at very high volume settings for long periods. Consult with a physician immediately if you experience impaired hearing or ringing in the ears.

## Liquid Crystal Display (LCD) Precautions

- Avoid subjecting the keyboard's LCD to strong impact, which can crack or break the LCD's glass creating the danger of personal injury.
- Should the LCD glass ever crack or break, do not allow the liquid inside the LCD to come into contact with your skin, which can cause inflammation and reddening.
  - \*Should the LCD liquid get into your mouth, immediately wash out your mouth with water and then consult a physician.
  - \*Should the LCD liquid get in your eyes or on your skin, immediately flush with water for at least 15 minutes and then consult a physician.

## Do not get onto the instrument or stand.\*

- Do not crawl on top of the instrument or its optional stand. Particular caution is required in homes having small children. This may cause the instrument or stand to tip over and break resulting in injury.

## Optional Stand\*

- Carefully assemble the stand following the assembly instructions that come with it. Securely tighten all bolts, nuts, and fasteners, and make sure that you mount the instrument correctly onto the stand. Incorrectly or insufficiently tightening screws, or incorrectly mounting the instrument onto the stand can cause the stand to tip over or the instrument to fall off the stand, possibly leading to injury.

\* The stand is available as an option.

# Care of your keyboard

## Avoid heat, humidity or direct sunlight.

Do not overexpose the instrument to direct sunlight, or place it near an air conditioner, or in any extremely hot place.

## Do not use near a TV or radio.

This instrument can cause video or audio interference with TV and radio reception. If this happens, move the instrument away from the TV or radio.

## Do not use lacquer, thinner or similar chemicals for cleaning.

Clean the keyboard with a soft cloth dampened in a weak solution of water and a neutral detergent. Soak the cloth in the solution and squeeze until it is almost dry.

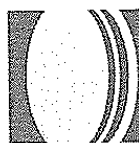
## Avoid use in areas subjected to temperature extremes.

Extremely high or low temperature can cause figures on the LCD screen to become dim and difficult to read. This condition should correct itself when the keyboard is brought back to normal temperature.

## NOTE

You may notice lines in the finish of the case of this keyboard. These lines are a result of the molding process used to shape the plastic of the case. They are not cracks or breaks in the plastic, and are no cause for concern.





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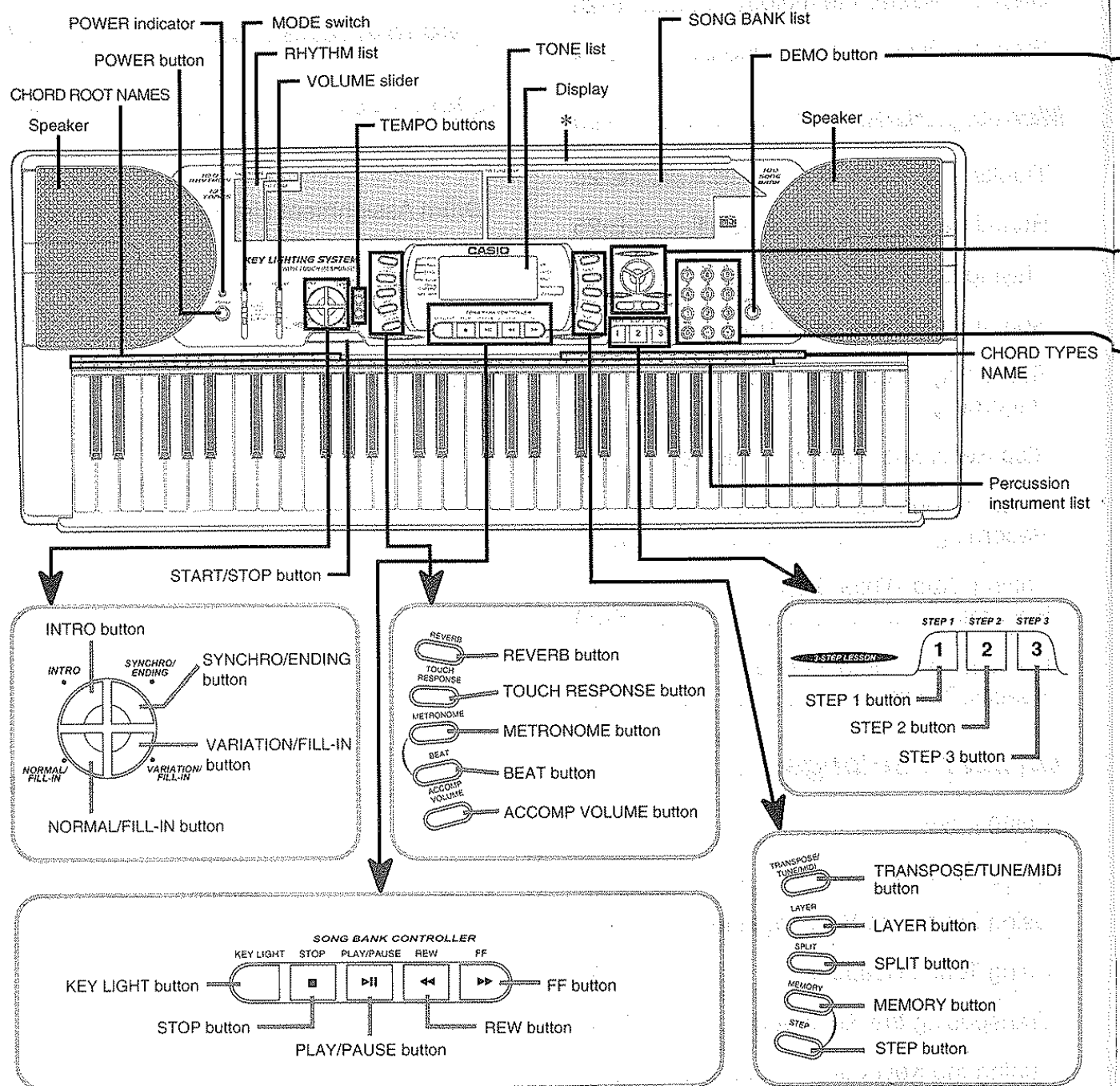
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## **MIDI Implementation Chart**

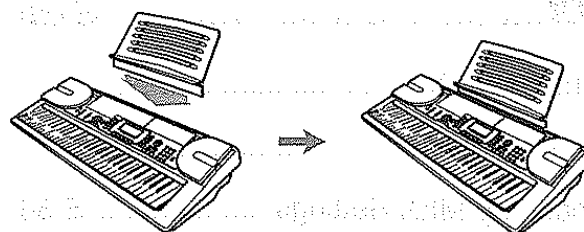
# General Guide

Key, button, and other names are indicated in the text of this manual using bold type.



## \*Attaching the Score Stand

Insert the score stand into the slot at the top of the keyboard as shown in the illustration.



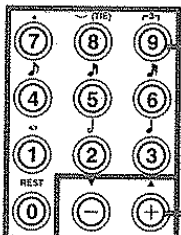
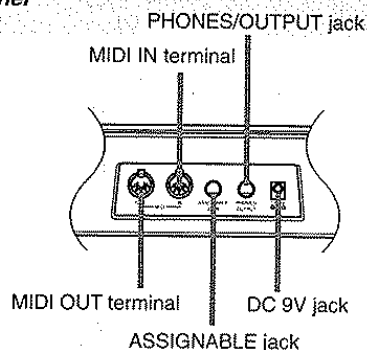
## Playing a Demo Tune

Pressing the DEMO button starts demo tune play, which plays the 100 built-in tunes in sequence. To stop demo tune play, press the DEMO, START/STOP, or STOP button.

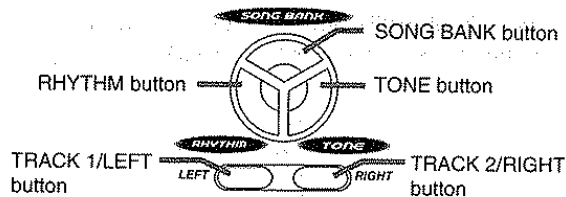
### NOTES

- Pressing [+] (forward) or [-] (back) skips to the next demo tune.
- You can change the tone setting of the keyboard (page E-14) before starting demo play, and then use that tone to play along on the keyboard.
- MIDI, Layer, and Split are disabled while a demo tune is playing.

## Rear Panel



- Number buttons
- For input of numbers to change a displayed number or setting.
- Negative values cannot be input using the number buttons. Use [+] (increase) and [-] (decrease) instead.
- [+]/[-] buttons



## About the display

2. This area shows tone number and name, rhythm number and name, and tune number and name. It also shows other information when using the memory function and other functions. Indicators also appear here to show what kind of data is displayed: TONE (tone data), RHYTHM (rhythm data), SONG BANK (Song Bank data).

1. A pointer appears next to a function that is in use: reverb, touch response, key light.

3. This area is a staff notation display that shows notes being played on the keyboard or from memory, chord forms, and MIDI receive data.\*1 Notes in the range C#6 to C7 are shown in the staff notation display one octave lower, along with an octave up mark (8va).\*2 If you are using a pedal, a pedal mark (ped.) appears here whenever you press the pedal.

\*1 Received notes outside the range of C2 to C7 do not appear on the display.

\*2 Notes in the range of C2 through B2 are not shown while the octave up mark (8va) is on the display.

7. This area shows chord names during Auto Accompaniment and Song Bank play.

6. This area shows measure number, beat number, a graphic metronome, and tempo value (beats per minute) during rhythm and Auto Accompaniment play, and when using memory. It also shows the step number when using the 3-step lesson.

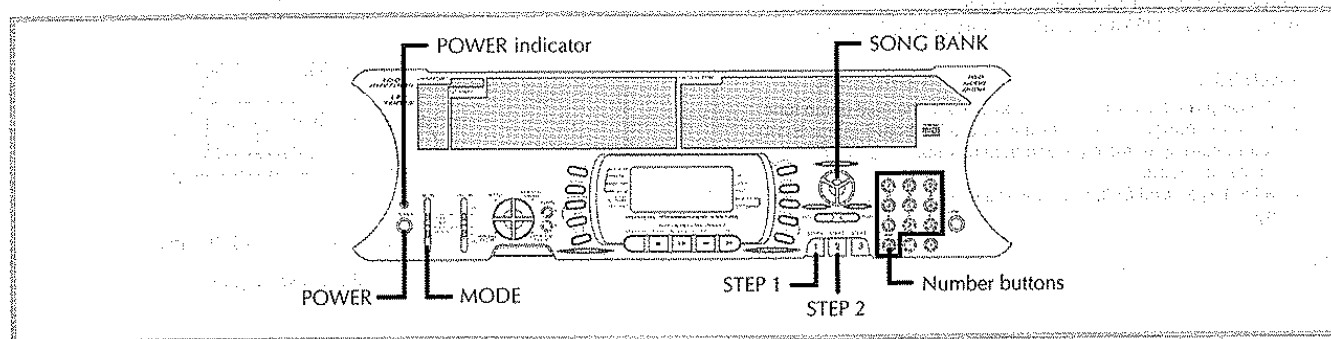
The main display area shows various indicators and data. On the left, there are indicators for REVERB, HALL, STAGE, ROOM, TOUCH RESPONSE, and KEY LIGHT. In the center, it displays RHYTHM, 76 Rhumba, M7, T=119, MEASURE BEAT 001-1, and hand icons for L (left) and R (right). On the right, it shows GM, LAYER, SPLIT, MEMORY, and STEP.

4. A pointer appears next to a function that is in use: General MIDI Mode, layer, split, memory, step.

5. This area shows fingerings, dynamic marks, finger crossing techniques, and other finger information during 3-step lesson and Song Bank play. The letters "L" (left) and "R" (right) appear to indicate left and right hand Auto Accompaniment parts and memory tracks.



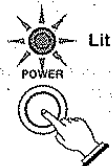
# Quick Reference



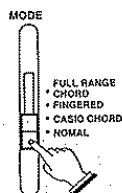
This section provides a quick overview of keyboard operation using steps one and two of the 3-step lesson feature.

## To play the keyboard

1. Press the **POWER button** to turn on power.
  - This causes the power indicator to light.



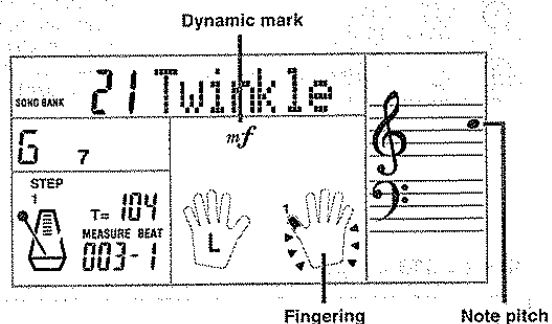
2. Set the **MODE switch** to **NORMAL**.



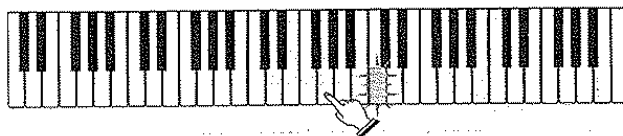
3. Press the **SONG BANK button**.
4. Find the tune you want to play in the **Song Bank List**, and then use the **number buttons** to input its two-digit number.  
 Example: To select "21 TWINKLE TWINKLE LITTLE STAR", input 2 and then 1.



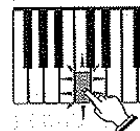
5. Press the **STEP 1 button** or **STEP 2 button**.
  - The keyboard sounds a count beat and waits for you to play something on the keyboard. The keys that you need to press first flash.
6. Play the melody along with the selected tune's accompaniment.
  - Play in accordance with the fingerings, notes, and dynamic marks that appear on the display.



- If you selected lesson Step 1
- Play the notes on the keyboard.
  - A sub-melody (obligato) plays in time with the melody.
  - With Step 1, the correct melody note is played no matter which keyboard key you press.



- If you selected lesson Step 2
- Play the correct notes on the keyboard.



- Press the keyboard key that lights. Note that with tunes 70 through 99, the keyboard key light turns off as soon as you press the key.
- The keyboard key for the next note you will need to play flashes.
- A sub-melody (obligato) plays in time with the melody, as long as you press the correct keyboard keys.

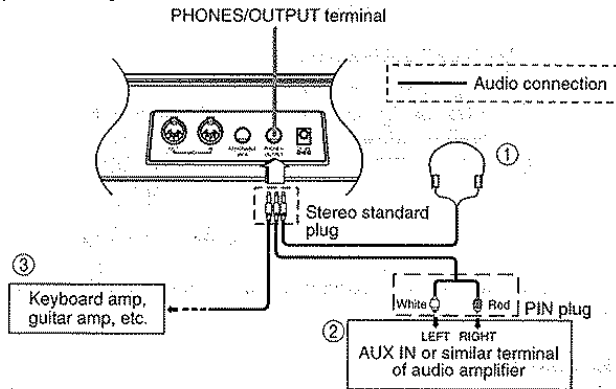


# Connections

## Phones/Output Terminal

Before connecting headphones or other external equipment, be sure to first turn down the volume settings of the keyboard and the connected equipment. You can then adjust volume to the desired level after connections are complete.

[Rear Panel]



### Connecting Headphones (Figure ①)

Connecting headphones cuts off output from the keyboard's built-in speakers, so you can play even late at night without disturbing anyone.

### Audio Equipment (Figure ②)

Connect the keyboard to a audio equipment using a commercially available connecting cord with a standard plug on one end and two PIN plugs on the other end. Note that the standard plug you connect to the keyboard must be a stereo plug, otherwise you will be able to output only one of stereo channels. In this configuration, you normally set the input selector of the audio equipment to the terminal (usually marked AUX IN or something similar) where the cord from the keyboard is connected. See the user documentation that comes with your audio equipment for full details.

### Musical Instrument Amplifier (Figure ③)

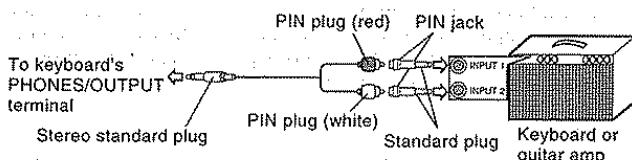
Use a commercially available connecting cord to connect the keyboard to a musical instrument amplifier.

### NOTE

Be sure to use a connecting cord that has a stereo standard plug on the end you connect to the keyboard, and a connector that provides dual channel (left and right) input to the amplifier to which you are connecting. The wrong type of connector at either end can cause one of the stereo channels to be lost.

When connected to a musical instrument amplifier, set the volume of the keyboard to a relatively low level and make output volume adjustments using the amplifier's controls.

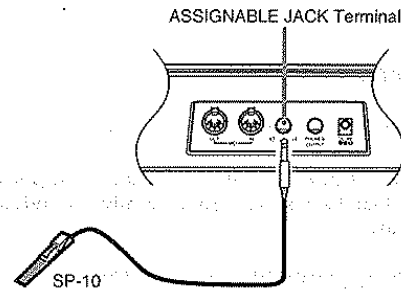
### Connection Example



## Assignable jack Terminal

You can connect an optional sustain pedal (SP-2 or SP-10) to the ASSIGNABLE JACK terminal to enable the capabilities described below.

For details on how to select the pedal function you want, see "ASSIGNABLE JACK" on page E-38.



### Sustain Pedal

- With piano tones, depressing the pedal causes notes to linger, much like a piano's damper pedal.
- With organ tones, depressing the pedal causes notes to continue to sound until the pedal is released.

### Sostenuto Pedal

- As with the sustain pedal function described above, depressing the sostenuto pedal causes notes to be sustained.
- This difference between a sostenuto pedal and sustain pedal is the timing. With a sostenuto pedal, you press the keys and then depress the pedal before you release the keys. Only the notes that are sounding when the pedal is depressed are sustained.

### Soft Pedal

Depressing the pedal softens the sound of the notes being played.

### Rhythm Start/Stop Pedal

In this case, the pedal performs the same functions as the START/STOP button.

## Accessories and Options

Use only the accessories and options specified for this keyboard. Use of non-authorized items creates the danger of fire, electrical shock, and personal injury.

# Power Supply

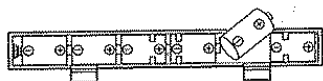
This keyboard can be powered by current from a standard household wall outlet (using the specified AC adaptor) or by batteries. Always make sure you turn the keyboard off whenever you are not using it.

## Using batteries

Always make sure you turn off the keyboard before loading or replacing batteries.

### To load batteries

1. Remove the battery compartment cover.
2. Load 6 D-size batteries into the battery compartment.
  - Make sure that the positive (+) and negative (-) ends are facing correctly.



3. Insert the tabs on the battery compartment cover into the holes provided and close the cover.

The keyboard may not function correctly if you load or replace batteries with power turned on. If this happens, turning the keyboard off and then back on again should return functions back to normal.

### Important Battery Information

■ The following shows the approximate battery life.

Manganese batteries ..... 5 hours

The above value is standard battery life at normal temperature, with the keyboard volume at medium setting. Temperature extremes or playing at very loud volume settings can shorten battery life.

■ Any of the following symptoms indicate low battery power. Replace batteries as soon as possible whenever any of the following occurs.

- Dim power supply indicator
- Instrument does not turn on
- Dim, difficult to read display
- Abnormally low speaker/headphone volume
- Distortion of sound output
- Occasional interruption of sound when playing at high volumes
- Sudden power failure when playing at high volumes
- Dimming of the display when playing at high volume
- Abnormal rhythm pattern and demo tune play
- Dimming of keyboard lights when notes sound
- Loss of power, sound distortion, or low volume when playing from a connected computer or MIDI device

### IMPORTANT!

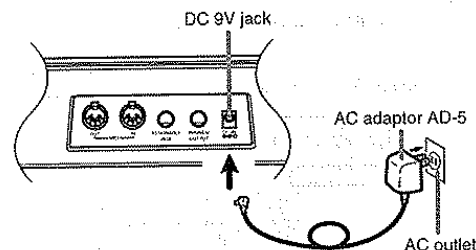
Improper handling of batteries can cause them to burst and leak, which creates the danger of personal injury or damage due to contact with battery acid. Be sure to note the following important precautions.

- Always make sure that the positive (+) and negative (-) poles are facing correctly as indicated inside the battery compartment.
- To avoid damage caused by leaking batteries, be sure to remove batteries from the keyboard whenever you leave it unattended for long periods (such as when leaving on a trip).
- Never mix batteries of different types.
- Never mix old batteries with new ones.
- Never discard batteries by incinerating them, do not allow their poles to be shorted (connected to each other), never take batteries apart, and do not expose batteries to direct heat.
- Replace batteries as soon as possible after any sign they are getting weak.
- Never attempt to recharge batteries.

## Using the AC Adaptor

Make sure that you use only the AC adaptor specified for this keyboard.

Specified AC Adaptor: AD-5



Also note the following important warnings and precautions when using the AC adaptor.

### WARNING!

- Take care to avoid any damage to or breakage of the power cord. Never place any heavy objects on the power cord or expose it to direct heat. Doing so creates the danger of power cord damage, fire, and electrical shock.
- Use only the specified AC adaptor. Use of another type of adaptor creates the danger of fire and electrical shock.

### CAUTION!

- For safety sake, be sure to unplug the AC adaptor from the wall outlet whenever leaving the keyboard unattended for a long time (such as when leaving on a trip).
- Always turn off the keyboard and unplug the AC adaptor from the wall outlet when you are not using the keyboard.

### IMPORTANT!

- Make sure that the keyboard is turned off before connecting or disconnecting the AC adaptor.
- Using the AC adaptor for a long time can cause it to become warm to the touch. This is normal and does not indicate malfunction.

## Auto Power Off

When you are using battery power, keyboard power turns off automatically whenever you leave it on without performing any operation for about 6 minutes. When this happens, press the POWER button to turn power back on.

### NOTE

Auto Power Off is disabled (it does not function) when you are using the AC adaptor to power the keyboard.

## Power On Alert

Keyboard keys light to alert you if you leave power on and do not perform any operation for about 6 minutes. Note that keys light only, and no sound is produced. When this happens, press any button or keyboard key to clear the power on alert.

### NOTE

Power on alert operates only when you are powering the keyboard using the AC adaptor. It does not operate when you are using batteries.

## To disable Auto Power Off and power on alert

Hold down the TONE button while turning on the keyboard to disable Auto Power Off and power on alert.

- When these functions are turned off, the keyboard does not turn off automatically and no alert is performed no matter how long it is left with no operation being performed.
- Auto Power Off and power on alert are enabled again when you manually turn off power and then turn it back on again.

## Settings and Memory Contents

### Settings

Tone, rhythm, and other "main keyboard settings" in effect when power is turned off manually with the POWER button or automatically by Auto Power Off remain in effect when you next turn power back on.

#### Main Keyboard Settings

Main keyboard settings are: tone number, layer, split, split point, touch response, reverb, rhythm number, tempo, accompaniment volume, General MIDI mode on/off, accompaniment MIDI OUT on/off, Assignable jack setting, keyboard channel, and Song Bank number.

### Memory Contents

In addition to the above settings, data stored using the memory function is also retained.

### Electrical Power

The settings and memory data described above are retained as long as the keyboard is being supplied with electrical power. Unplugging the AC adaptor when batteries are not loaded or when loaded batteries are dead cuts off the keyboard's electrical power supply. This causes all settings to be initialized to their factory defaults and clears all data stored in memory.

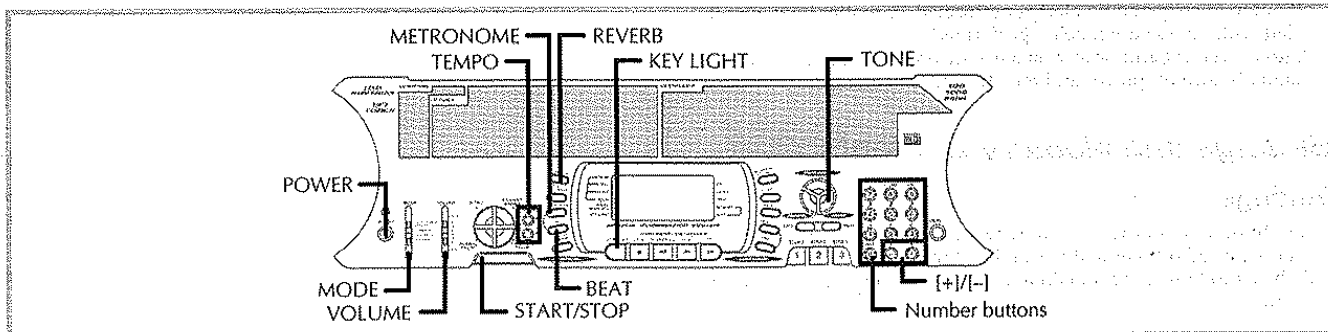
### Power Requirements

Note the following precautions whenever you want to ensure that current keyboard settings and memory contents are not lost.

- Make sure the keyboard is being supplied power through the AC adaptor before replacing its batteries.
- Before unplugging the AC adaptor, make sure that fresh batteries are loaded in the keyboard.
- Make sure that keyboard power is turned off before replacing batteries or unplugging the AC adaptor.



# Basic Operations



This section provides information on performing basic keyboard operations.

## To play the keyboard

1. Press the **POWER** button to turn the keyboard on.
2. Set the **MODE** switch to **NORMAL**.
3. Use the **VOLUME** slider to set the volume to a relatively low level.
4. Play something on the keyboard.

## Selecting a Tone

This keyboard comes with 137 built-in tones. Use the following procedure to select the tone you want to use.

### To select a tone

1. Find the tone you want to use in the keyboard's tone list and note its tone number.
2. Press the **TONE** button.



Indicator appears

3. Use the **number buttons** to input the three digit tone number for the tone you want to select.  
*Example:* To select "032 ACOUSTIC BASS", input 0, 3 and then 2.



### ■ NOTES ■

- Always input all three digits for the tone number, including leading zeros (if any). If you input one or two digits and stop, the display will automatically clear your input after a few seconds.
- You can also increment the displayed tone number by pressing **[+]** and decrement it by pressing **[-]**.
- When one of the drum sets is selected (tone numbers 128 through 136), each keyboard key is assigned a different percussion sound. See page A-2 for details.

## Polyphony

The term polyphony refers to the maximum number of notes you can play at the same time. The keyboard has 24-note polyphony, which includes the notes you play as well as the rhythms and auto-accompaniment patterns that are played by the keyboard. This means that when a rhythm or auto-accompaniment pattern is being played by the keyboard, the number of notes (polyphony) available for keyboard play is reduced. Also note that some of the tones offer only 12-note polyphony.

- When rhythm or auto accompaniment is playing, the number of sounds simultaneously played is reduced.

## Digital Sampling

A number of the tones that are available with this keyboard have been recorded and processed using a technique called digital sampling. To ensure a high level of tonal quality, samples are taken in the low, mid, and high ranges and then combined to provide you with sounds that are amazingly close to the originals. You may notice very slight differences in volume or sound quality for some tones when you play them at different positions on the keyboard. This is an unavoidable result of multiple sampling, and it is not a sign of malfunction.



## Using Reverb

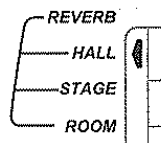
Reverb causes the sound to linger and reverberate.

### To use reverb

Use the REVERB button to select the type of reverb you want to use. Each press of REVERB selects cycles through the available settings. The current setting is indicated by the bar on the keyboard's display.

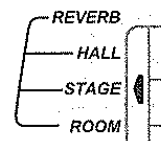
#### ■ HALL

This setting creates a concert hall effect.



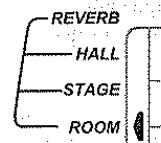
#### ■ STAGE

With this setting, you get the acoustics of a small club.



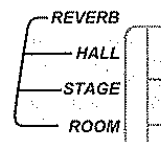
#### ■ ROOM

This setting adds the acoustics of a studio to the sound.



#### ■ REVERB OFF

Reverb is off when there is no bar on the display indicating a reverb effect.



## Turning the Key Light System On and Off

Use the following procedure when you want to turn the key light system on or off.

### To turn the key light system on and off

1. Press the **KEY LIGHT** button to toggle the key light system on and off.
  - The **KEY LIGHT** pointer disappears when the key light system is turned off.



#### ■ NOTE ■

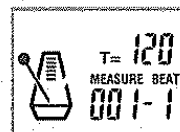
The key light system is turned on automatically whenever you turn on keyboard power.

## Using the Metronome

The metronome feature of this keyboard produces a bell sound for the first beat of each measure, followed by click sounds for each successive beat of the measure. It is the perfect tool for practicing tunes without accompaniment (rhythm).

### To start the metronome

1. Press the **METRONOME** button to start sounding the metronome.



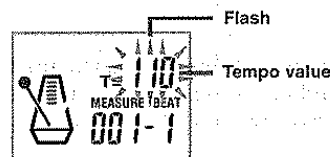
2. Press the **BEAT** button and then use the **number buttons** or **[+]** and **[-]** to change the number of beats per measure.
  - You can specify the number of beats per measure a value from 1 to 6.



#### ■ NOTE ■

The bell (indicating the first beat of a measure) does not sound while one beat per measure is specified. All beats are indicated by a click sound. This setting lets you practice with a steady beat, without worrying about how many beats there are in each measure.

3. Use the **TEMPO** buttons to set the tempo:
  - Press **▲** to increase the tempo (make it faster) or **▼** to decrease it (make it slower).



#### ■ NOTES ■

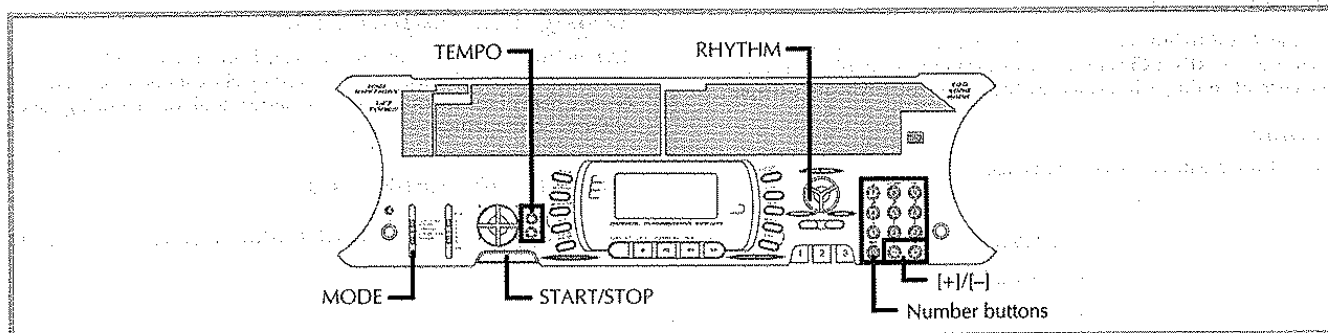
- While the tempo value is flashing, you can also use the number buttons or **[+]** and **[-]** to input a three-digit value. Note that you must input leading zeros, so 90 is input as 090.
- Pressing both the **▲** and **▼** TEMPO buttons at the same time automatically returns the currently selected rhythm to its default tempo.

4. To turn off the metronome, press the **METRONOME** or **START/STOP** button.

#### ■ NOTES ■

- The metronome is disabled whenever you are using Step 1 or Step 2 of the 3-step lesson.
- Starting play of a two-hand tune (Song Bank tunes 70 through 99) or Step 3 of the 3-step lesson while the metronome is operating or activating the metronome while either of the two above operations is already in progress causes the metronome to sound in time with the Auto Accompaniment played by the keyboard. At this time, the tempo of the metronome beat changes to that of the default tempo for the Auto Accompaniment being played.

# Auto Accompaniment



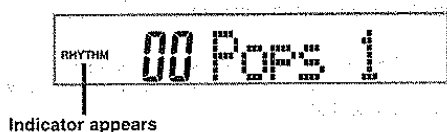
This keyboard automatically plays bass and chord parts in accordance with the chords you finger. The bass and chord parts are played using sounds and tones that are automatically selected to select the rhythm you are using. All of this means that you get full, realistic accompaniments for the melody notes you play with your right hand, creating the mood of an one-person ensemble.

## Selecting a Rhythm

This keyboard provides you with 100 exciting rhythms that you can select using the following procedure.

### To select a rhythm

1. Find the rhythm you want to use in the "Rhythm List" (page A-4) and note its rhythm number.
2. Press the **RHYTHM** button.



3. Use the **number buttons** to input the two digit rhythm number for the rhythm you want to select.  
Example: To select "76 RHUMBA", input 7 and then 6.



### NOTE

You can also increment the displayed rhythm number by pressing **[+]** and decrement it by pressing **[-]**.

## Playing a Rhythm

Use the following procedure to start and stop rhythm play.

### To play a rhythm

1. Set the **MODE** switch to **NORMAL**.
2. Press the **START/STOP** button to start play of the currently selected rhythm.
3. To stop rhythm play, press the **START/STOP** button again.

### NOTE

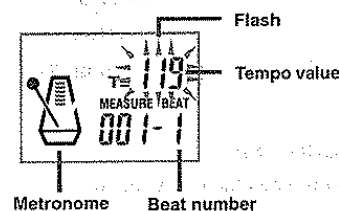
All of the keyboard keys are melody keys while the **MODE** switch is set to **NORMAL**.

## Adjusting the Tempo

The tempo (beats per minute) can be set to a value in the range of 40 to 255. The tempo value you set is use for Song Bank, 3-step lesson, and Auto Accompaniment chord play, as well as playback from memory and metronome operation.

### To set the tempo

1. Use the **TEMPO** buttons to set the tempo.  
▲ : Increase the tempo value.  
▼ : Decreases the tempo value.



### NOTES

- While the tempo value is flashing, you can also use the number buttons or **[+]** and **[-]** to input a three-digit value. Note that you must input leading zeros, so 90 is input as 090.
- Pressing both the ▲ and ▼ **TEMPO** buttons at the same time automatically returns the currently selected rhythm to its default tempo.

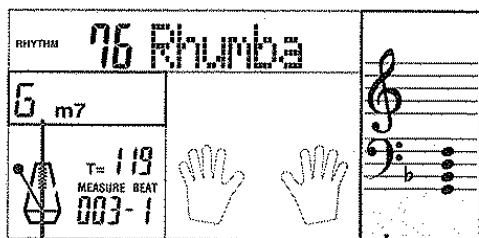
## Using Auto Accompaniment

The following procedure describes how to use the keyboard's Auto Accompaniment feature. Before starting, you should first select the rhythm you want to use and set the tempo of the rhythm to the value you want.

### To use Auto Accompaniment

1. Set the **MODE** switch to **CASIO CHORD**, **FINGERED**, or **FULL RANGE CHORD**.
2. Press the **START/STOP** button to start play of the currently selected rhythm.
3. Play a chord.  
• The actual procedure you should use to play a chord depends on the current **MODE** switch position. Refer to the following pages for details on chord play.

CASIO CHORD	Page E-17
FINGERED	Page E-17
FULL RANGE CHORD	Page E-18



Chord name

Basic Chord Form

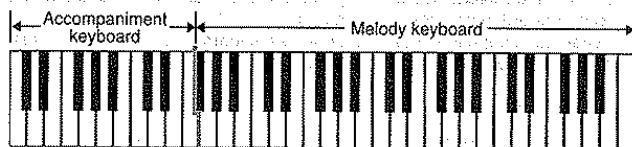
(The chord form that appears here may show notes that differ from those actually pressed on the keyboard. With some chords, inverted chord forms may be displayed.)

4. To stop Auto Accompaniment play, press the **START/STOP** button again.

## CASIO CHORD

This method of chord play makes it possible for anyone to easily play chords, regardless of previous musical knowledge and experience. The following describes the CASIO CHORD "Accompaniment keyboard" and "Melody keyboard", and tells you how to play CASIO CHORDS.

### CASIO CHORD Accompaniment Keyboard and Melody Keyboard



#### NOTE

The accompaniment keyboard can be used for playing chords only. No sound will be produced if you try playing single melody notes on the accompaniment keyboard.

### Chord Types

CASIO CHORD accompaniment lets you play four types of chords with minimal fingering.

Chord Types	Example
<b>Major chords</b> Major chord names are marked above the keys of the accompaniment keyboard. Note that the chord produced when you press an accompaniment keyboard does not change octave, regardless of which key you use to play it.	<b>C Major (C)</b> 
<b>Minor chords (m)</b> To play a minor chord, keep the major chord key depressed and press any other accompaniment keyboard key located to the right of the major chord key.	<b>C minor (Cm)</b> 
<b>Seventh chords (7)</b> To play a seventh chord, keep the major chord key depressed and press any other two accompaniment keyboard keys located to the right of the major chord key.	<b>C seventh (C7)</b> 

Chord Types	Example
<b>Minor seventh chords (m7)</b> To play a minor seventh chord, keep the major chord key depressed and press any other three accompaniment keyboard keys located to the right of the major chord key.	<b>C minor seventh (Cm7)</b> 

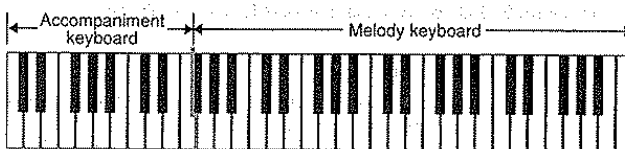
#### NOTE

It makes no difference whether you press black or white keys to the right of a major chord key when playing minor and seventh chords.

## FINGERED

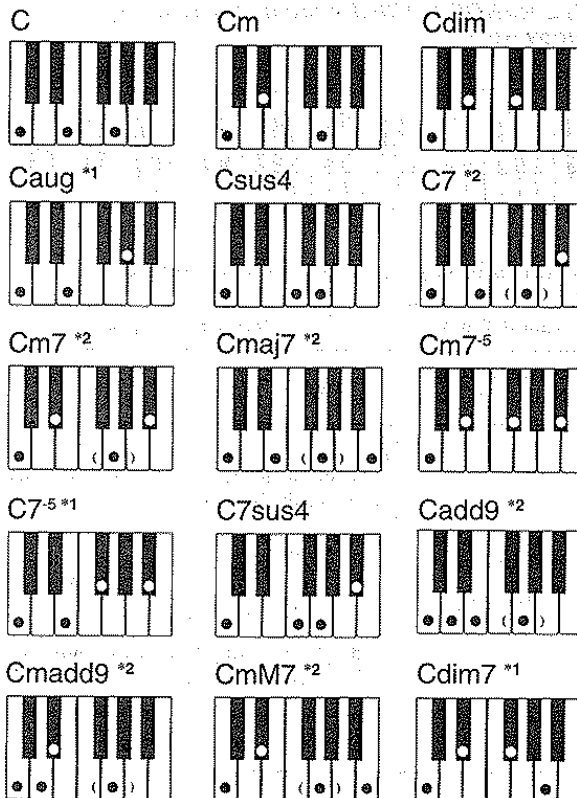
FINGERED provides you with a total of 15 different chord types. The following describes the FINGERED "Accompaniment keyboard" and "Melody keyboard", and tells you how to play a C-root chord using FINGERED.

### FINGERED Accompaniment Keyboard and Melody Keyboard



#### NOTE

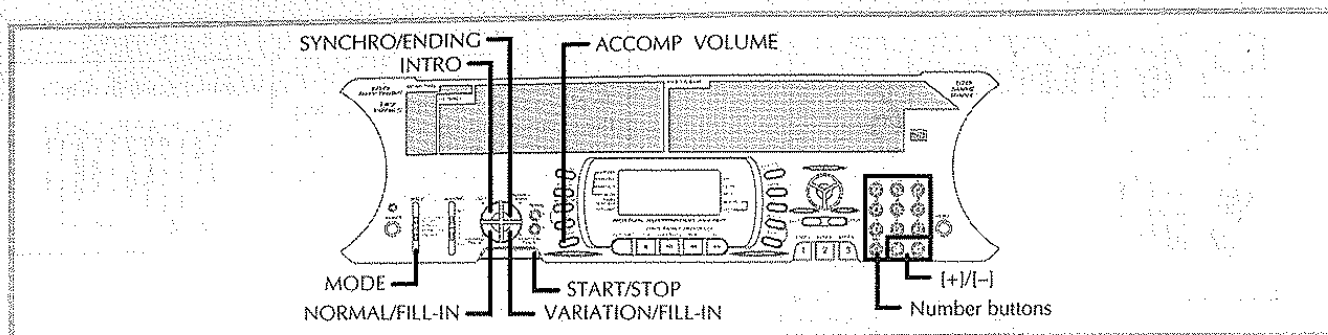
The accompaniment keyboard can be used for playing chords only. No sound will be produced if you try playing single melody notes on the accompaniment keyboard.



See the FINGERED Chord Chart on page A-3 for details on playing chords with other roots.

- \*1: Inverted fingerings cannot be used. The lowest note is the root.  
 \*2: The same chord can be played without pressing the 5th G.





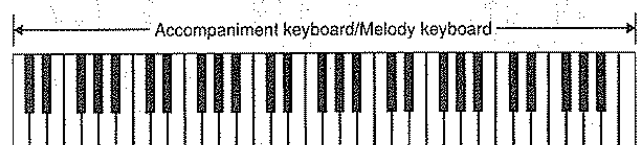
### ■ NOTES ■

- Except for the chords specified in note\*<sup>1</sup> above, inverted fingerings (i.e. playing E-G-C or G-C-E instead of C-E-G) will produce the same chords as the standard fingering.
- Except for the exception specified in note\*<sup>2</sup> above, all of the keys that make up a chord must be pressed. Failure to press even a single key will not play the desired FINGERED chord.
- When the key light system is turned on, the keys of the accompaniment keyboard light to show the chord you played. Though the chord is the same, the form of the keys (the keys that light) may differ from the one you used (the keys you pressed). If you play C Major using the inverted chord form E-G-C, for example, the keys for C-E-G will light.

## FULL RANGE CHORD

This accompaniment method provides a total of 38 different chord types: the 15 chord types available with FINGERED plus 23 additional types. The keyboard interprets any input of three or more keys that matches a FULL RANGE CHORD pattern to be a chord. Any other input (that is not a FULL RANGE CHORD pattern) is interpreted as melody play. Because of this, there is no need for a separate accompaniment keyboard, so the entire keyboard, from end to end, can be used for both melody and chords.

### FULL RANGE CHORD Accompaniment Keyboard and Melody Keyboard

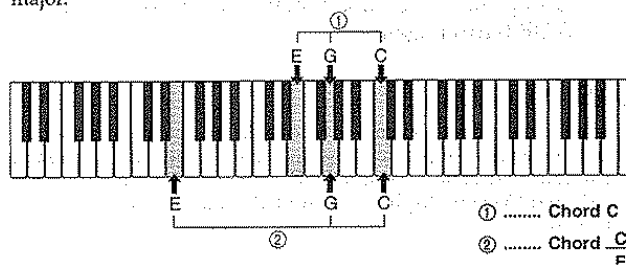


### < Chords Recognized by This Keyboard >

Chord Types	Number of Types
Corresponding FINGERED Chord	15 (page E-17)
Other Chords	<p>23</p> <p>The following are examples of chords that use C as the bass note.</p> <p>C<sub>6</sub> • C<sub>min</sub>6 • C<sub>6</sub>9</p> <p>C<sub>7</sub><sup>#</sup> • D • E • F • G • A<sub>b</sub> • B<sub>b</sub></p> <p>C • C • C • C • C • C • C</p> <p>B • C<sub>7</sub><sup>#</sup>m • Dm • Fm • Gm • Am • B<sub>b</sub>m</p> <p>C • C • C • C • C • C • C</p> <p>Dm<sub>7</sub><sup>-5</sup> • A<sub>b</sub>7 • F7 • Fm7 • Gm7 • A<sub>b</sub> add9</p> <p>C • C • C • C • C • C • C</p>

Example: To play the chord C major.

Any of the fingerings shown in the illustration below will produce C major.

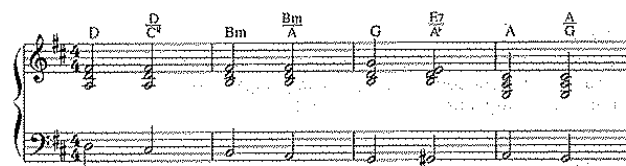


### ■ NOTES ■

- As with the FINGERED mode (page E-17), you can play the notes that form a chord in any combination (①).
- When the composite notes of a chord are separated by 6 or more notes, the lowest sound becomes the bass (②).

### < Music Example >

Tone: 016, Rhythm: 05, Tempo: 070



## Using an Intro Pattern

This keyboard lets you insert a short intro into a rhythm pattern to make startup smoother and more natural.

The following procedure describes how to use the Intro feature. Before starting, you should first select the rhythm you want to use, and set the tempo.

### To insert an intro

1. Press the **INTRO** button to start the selected rhythm with an intro pattern.
  - With the above setup, the intro pattern is played and the auto accompaniment with intro pattern starts as soon as you play chords on the accompaniment keyboard.

### ■ NOTES ■

- The standard rhythm pattern starts to play after the intro pattern is complete.
- Pressing the VARIATION/FILL-IN button while an intro pattern is playing causes the variation pattern to sound after the intro pattern is complete.
- Pressing the SYNCHRO/ENDING button while an intro pattern is playing causes the ending pattern to sound after the intro pattern is complete.

## Using a Fill-in Pattern

Fill-in patterns let you momentarily change the rhythm pattern to add some interesting variation to your performances.

The following procedure describes how to use the Fill-in feature.



## To insert a fill-in

1. Press the **START/STOP** button to start rhythm play.
2. Press the **NORMAL/FILL-IN** button to insert a fill-in pattern for the rhythm you are using.

### ■ NOTE ■

The fill-in pattern does not play if you press the **NORMAL/FILL-IN** button while an intro pattern is playing.

## Using a Rhythm Variation

In addition to the standard rhythm pattern, you can also switch to a secondary "variation" rhythm pattern for a bit of variety.

## To insert the variation rhythm pattern

1. Press the **START/STOP** button to start rhythm play.
2. Press the **VARIATION/FILL-IN** button to switch to the variation pattern for the rhythm you are using.

### ■ NOTE ■

To switch back to the standard rhythm pattern, press the **NORMAL/FILL-IN** button.

## Using a Fill-in Pattern with a Variation Rhythm

You can also insert a fill-in pattern while a variation rhythm pattern is playing.

## To insert a fill-in into a rhythm variation

1. While a variation rhythm pattern is playing, press the **VARIATION/FILL-IN** button to insert a fill-in pattern for the variation rhythm you are using.

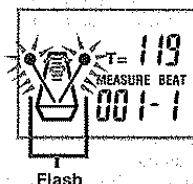
## Synchro Starting Accompaniment with Rhythm Play

You can set up the keyboard to start rhythm play at the same time you play the accompaniment on the keyboard.

The following procedure describes how to use synchro start. Before starting, you should first select the rhythm you want to use, set the tempo, and use the **MODE** switch to select the chord play method you want to use (**NORMAL**, **CASIO CHORD**, **FINGERED**, **FULL RANGE CHORD**).

## To use synchro start

1. Press the **SYNCHRO/ENDING** button to put the keyboard into synchro start standby.



2. Play a chord and the rhythm pattern starts to play automatically.

### ■ NOTES ■

- If the **MODE** switch is set to **NORMAL**, only the rhythm plays (without a chord) when you play on the accompaniment keyboard.
- If you press the **INTRO** button before playing anything on the keyboard, the rhythm starts automatically with an intro pattern when you play something on the accompaniment keyboard.
- Pressing the **VARIATION/FILL-IN** button before playing anything on the keyboard causes play to start with the variation pattern when something is played on the keyboard.
- To cancel synchro start standby, press the **SYNCHRO/ENDING** button one more time.

## Finishing with an Ending Pattern

You can end your performances with an ending pattern that brings the rhythm pattern you are using to a natural-sounding conclusion. The following procedure describes how to insert an ending pattern. Note that the actual ending pattern played depends on the rhythm pattern you are using.

## To finish with an ending pattern

1. While the rhythm is playing, press the **SYNCHRO/ENDING** button.
  - This causes the ending pattern to play which brings rhythm accompaniment to an end.
  - The timing when the ending pattern starts depends on when you press the **SYNCHRO/ENDING** button. If you press the button before the second beat of the current measure, the ending pattern starts playing immediately. Pressing the button at any point in the measure after the second beat results in the ending pattern playing from the beginning of the following measure.

## Adjusting the Accompaniment Volume

You can adjust the volume of the accompaniment parts as a value in the range of 000 (minimum) to 127.

1. Press the **ACCOMP VOLUME** button.

Current accompaniment volume setting



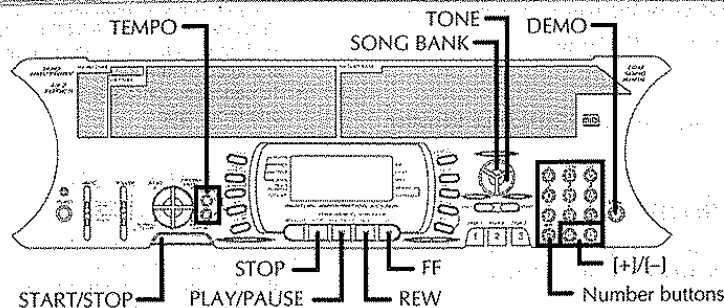
2. Use the **number** buttons or the **[+]/[-]** buttons to change the current volume setting value.  
Example: 110



### ■ NOTES ■

- The current accompaniment volume value that appears in Step 1 automatically clears from the display if you do not input anything within about five seconds.
- Pressing **[+]** and **[-]** buttons at the same time automatically sets an accompaniment volume of 075.

# Song Bank



This keyboard features a built-in Song Bank of 100 tunes that can be used for Auto Accompaniment playback. You can select a song simply to enjoy listening to it, or you can cut out its melody part and play along on the keyboard using the 3-step lesson. Melody and accompaniment fingerings and notes appear on the keyboard's display, and the keys you should press light up on the keyboard to help you on your way to keyboard mastery.

## To select a tune

1. Find the tune you want to play in the **Song Bank List**, and note its number.
2. Press the **SONG BANK** button.
  - This causes the number and name of the currently selected Song Bank tune to appear on the display.
3. Use the **number buttons** to input the two-digit tune number.
 

Example: To select "21 TWINKLE TWINKLE LITTLE STAR", input 2 and then 1.

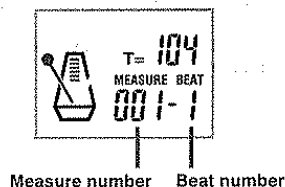


### NOTE

You can also change the displayed song number using **[+]** (increase) and **[-]** (decrease).

## To play a tune

1. Select the tune you want to play.
2. Press the **PLAY/PAUSE** button to start play of the tune.
  - The current measure and beat numbers are shown on the display.



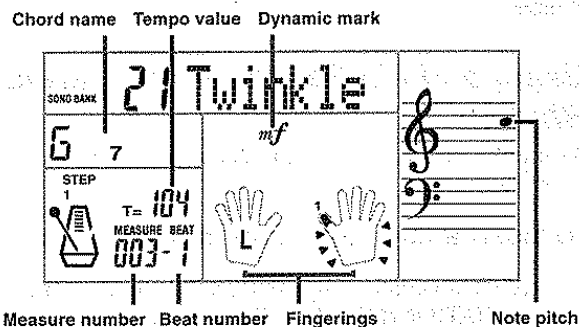
3. To stop play, press the **STOP** button.
  - The tune you select continues to play until you stop it.

### NOTE

While a tune is playing, you can use the number buttons or **[+]** and **[-]** to change to another tune. The change is made as soon as you input a different number, even if the current tune is not finished playing.

## Key Lighting System Operation and Display Contents During Song Bank Play

Keyboard keys light to show the keys that should be pressed to play along with Song Bank tunes as they play back. At the same time, the display shows fingerings, chord forms, notes, tempo and other information.

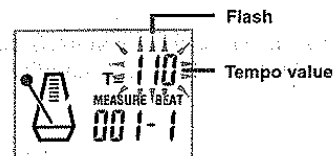


## Adjusting the Tempo

Each tune has a preset default tempo (beats per minute) that is set automatically whenever you select a tune. While the tune is playing, you can change the tempo setting to a value in the range of 40 to 255.

## To set the tempo

1. Use the **TEMPO** buttons to set the tempo.
  - ▲ : Increases the tempo value.
  - ▼ : Decreases the tempo value.



### NOTES

- While the tempo value is flashing, you can also use the number buttons or **[+]** and **[-]** to input a three-digit value. Note that you must input leading zeros, so 90 is input as 090.
- Pressing both the ▲ and ▼ TEMPO buttons at the same time automatically returns the currently selected rhythm to its default tempo.
- Tunes 70 to 99 have tempo changes part way through in order to produce specific musical effects. Note that the tempo setting automatically returns to the default whenever a tempo change occurs within one of these tunes.

## To pause playback

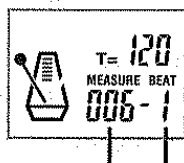
1. Press the **PLAY/PAUSE** button while a tune is playing to pause it.
2. Pressing the **PLAY/PAUSE** button again resumes play from the point where it was paused.

### NOTE

After you press **STOP** to stop playback, pressing **PLAY/PAUSE** restarts play from the beginning of the tune.

## To fast reverse

1. While a tune is playing or paused, hold down the **REW** button to skip in a reverse direction at high speed.
  - The fast reverse operation skips back one measure at a time.
  - The measure and beat numbers on the display change while the fast reverse operation is being performed.



Measure number Beat number.

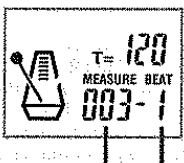
2. Releasing the **REW** button starts song playback from the measure whose number is shown on the display.

### NOTE

Fast reverse does not work while Song Bank play is stopped.

## To fast forward

1. While a tune is playing or paused, hold down the **FF** button to skip forward at high speed.
  - The fast forward operation skips forward one measure at a time.
  - The measure and beat numbers on the display change while the fast forward operation is being performed.



Measure number Beat number

2. Releasing the **FF** button starts song playback from the measure whose number is shown on the display.

### NOTE

Fast forward does not work while Song Bank play is stopped.

## To change the melody tone

1. While a tune is playing or paused, press the **TONE** button.



Indicates TONE was pressed.

2. Find the tone you want in the **Tone List**, and then use the **number buttons** to input its three-digit number.  
Example: To select "040 VIOLIN", input 0, then 4, then 0.
  - You can select any one of the keyboard's 137 built-in tones.



### NOTES

- You can also use the **[+]** and **[-]** buttons to change the melody tones.
- For two-hand tunes (Song Bank tunes 70 through 99), the same tone is applied for both the left and right hand parts.
- Specifying the tune number for the same tune that is currently selected returns the melody tone to the default setting for that tune.

## To play all Song Bank tunes in succession

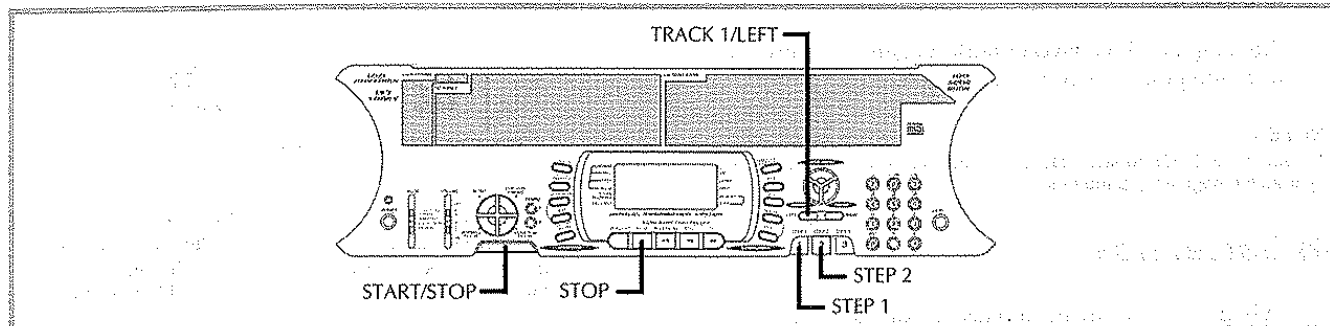
1. Press the **DEMO** button.
  - Song Bank tune starts from tune number 00, and continues with each tune in numeric sequence.
2. To stop Song Bank tune play, press the **DEMO**, **STOP**, or **START/STOP** button.

### NOTES

- While a tune is playing, you can use the **number buttons** or **[+]** and **[-]** to change to another tune.
- You can play along with the tunes on the keyboard.



# 3-Step Lesson



The 3-step lesson feature takes you through the three distinct steps described below to help you learn to play tunes on the keyboard.

## Step 1 – Master the timing.

In this step, pressing any key on the keyboard plays the correct note, so you can concentrate on getting the timing right without worrying about playing the right note. The sub-melody (obligato) waits until you press a key before proceeding to the next phrase.

## Step 2 – Master the melody.

In this step, you use the display to learn which fingers you should use and how loud or soft to play, and the key light system to learn which keyboard keys to press. The sub-melody (obligato) waits until you play the correct note, so you can learn at your own pace.

## Step 3 – Play at a normal speed.

This is where you enjoy actually playing the tunes you learn using Step 1 and Step 2. The key light system still shows you which keyboard keys to press, but accompaniment proceeds at normal speed regardless of whether or not you play the correct notes.

## Tune Types and Their Parts

There are two types of tunes in the Song Bank: Auto Accompaniment tunes and two-hand accompaniment tunes. The parts available for 3-step lesson practice depend on the type of tune you are using.

### Auto Accompaniment Tunes (Numbers 00 through 69)

As their name suggests, these tunes are made up of an Auto Accompaniment part and a melody part. When using these tunes for a 3-step lesson, you can practice playing along with the melody (right hand) part only.

### Two-hand Tunes (Numbers 70 through 99)

These types of tunes are played with both hands, as in a piano solo. When using these tunes for a 3-step lesson, you can practice playing along with both the left hand and right hand parts.

## Key Lighting System Operation and Display Contents During 3-step Lesson Play

Whenever you select an Auto Accompaniment tune (00 to 69) for 3-step lesson play, the key lighting system shows you which keys to press, while the display shows you the notes and their fingerings.

### Note Pitch

The keyboard key that should be pressed lights, while the actual pitch of the note appears in the display's staff notation area. The fingers you should use to play the notes are also shown on the display.

### Note Length

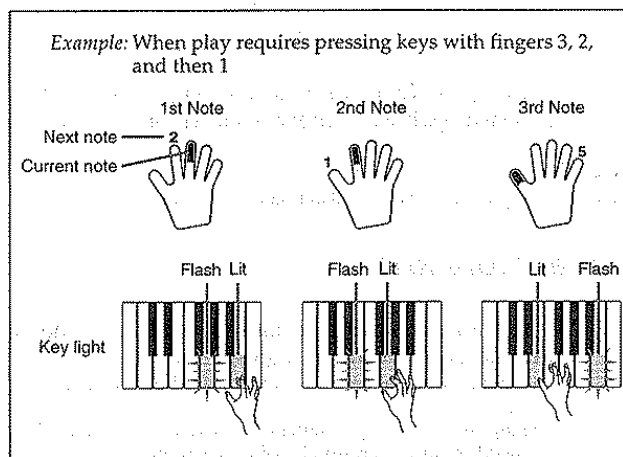
Keyboard keys stay lit for as long as the note should be played. The staff notation and fingerings also remain on the display for the length of the note.

## Next Note

The keyboard key for the next note to be played flashes, while a number appears on the display near the finger you should use to play the next note.

## Series of Same Pitch Notes

The keyboard key light turns off momentarily between the notes and lights again for each successive note. The staff notation and fingerings also turn off and back on again.



## NOTES

- Note length is not indicated when you are using two-hand tunes (70 to 99) with 3-step lesson Steps 1 and 2. As soon as you press a lit key, it goes out and the next key to be played starts to flash.
- Note length is indicated by the key light system when you use a two-hand tune with Step 3. In this case, the next key to be pressed does not flash when you press a lit key and the next finger number does not appear on the display. Only the current finger number is shown.

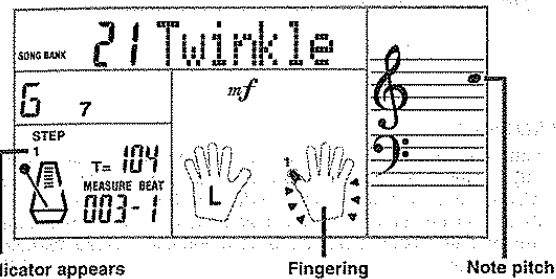
## 3-step Lesson Tempo Setting

Use the procedure under "Adjusting the Tempo" on page E-16 to adjust the tempo for 3-step lesson play.

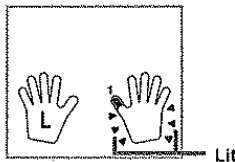


## Step 1 – Master the timing.

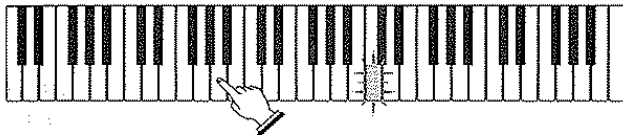
1. Select the Song Bank tune you want to use.
2. Press the **STEP 1** button to start Step 1 play.
  - After a count sounds, the keyboard stands by and waits for you to play the first note of the tune.



- The hand you should use is indicated by arrows around it.



3. Press any keyboard keys to play the melody (right hand part).



- The key for the next note to be played flashes while the keyboard waits for you to play it. When you press any key to play the note, the key remains lit as the note plays.
- Accompaniment (left-hand part) waits until you press any key to play a note.
- If you accidentally press more than one key in succession, accompaniment is played for the corresponding number of notes.
- Pressing more than one key at the same time counts as a single melody note. Pressing a key while another key is held down is counted as two melody notes.

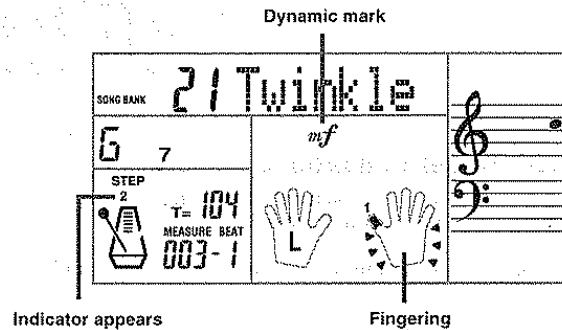
4. To stop play at any time, press the **STOP** or **START/STOP** button.

### ! NOTES !

- Left hand practice can also be performed with two-hand tunes (70 to 99). Simply select one of the two-hand tunes in step 1 of the above procedure, and then press the **TRACK 1/LEFT** button following step 2.
- 3-step lesson does not allow simultaneous practice of both hands.
- You can also use fast forward and fast reverse operations with Step 1 play.
- You cannot pause Step 1 play.
- Rhythm does not sound during Step 1 play.

## Step 2 – Master the melody.

1. Select the Song Bank tune you want to use.
2. Press the **STEP 2** button to start Step 2 play.
  - After a count sounds, the keyboard stands by and waits for you to play the first note of the tune.



3. Follow the key light system to press the correct keyboard keys and play the melody (right hand part).



- The key for the next note to be played flashes while the keyboard waits for you to play it. When you press any key to play the note, the key remains lit as the note plays.
- If more than one key lights when you are using a two-hand tune, it means that you must press all of the keys that are lit.

4. To stop play at any time, press the **STOP** or **START/STOP** button.

### ! NOTES !

- Left hand practice can also be performed with two-hand tunes (70 to 99). Simply select one of the two-hand tunes in step 1 of the above procedure, and then press the **TRACK 1/LEFT** button following Step 2.
- 3-step lesson does not allow simultaneous practice of both hands.
- You can also use fast forward and fast reverse operations with Step 2 play.
- You cannot pause Step 2 play.
- Rhythm does not sound during Step 2 play.

## Dynamic Marks

The dynamic marks listed below appear on the display while Song Bank tunes are playing. Adjust the pressure you apply to the keyboard in accordance with the mark that is on the display.

**pp** pianissimo: Very soft

**p** piano: Soft

**mp** mezzo piano: Moderately soft

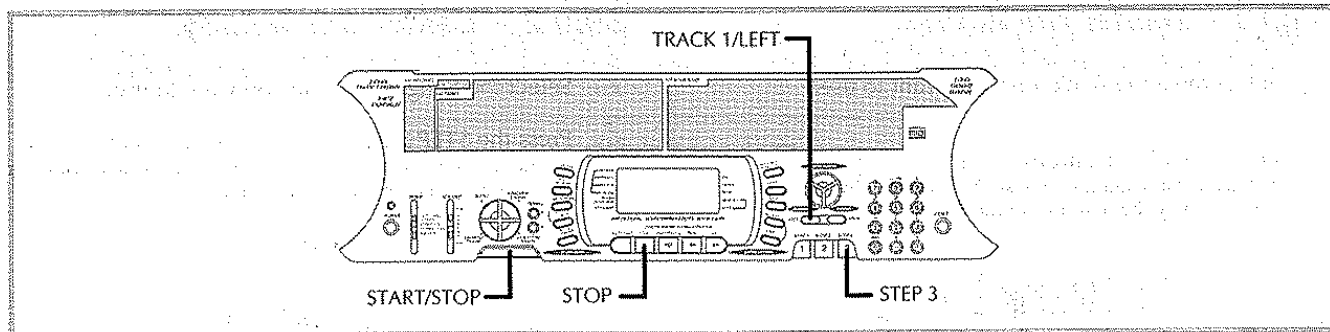
**mf** mezzo forte: Moderately loud

**f** forte: Loud

**ff** fortissimo: Very loud

**cresc.** (<) crescendo: Gradually louder

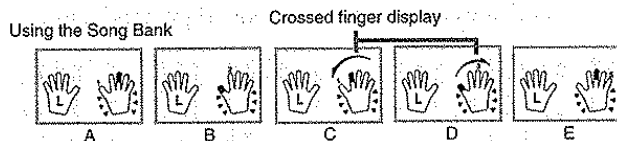
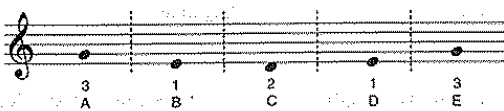
**decresc.** (>) decrescendo: Gradually softer



## Crossed Finger Indications

The display also shows when you have to cross fingers to play notes, and in which direction your fingers should cross.

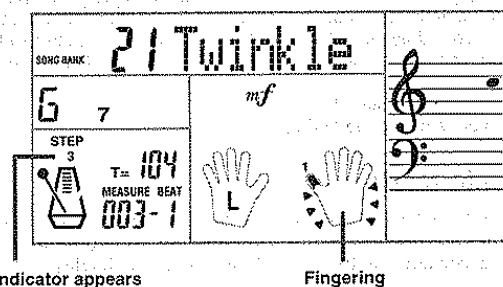
Example: Display for playing the notes below with the right hand only



- B and C indicate that the index finger should cross over the thumb.
- C and D indicate that the thumb should cross under the index finger.

## Step 3 – Play a normal speed.

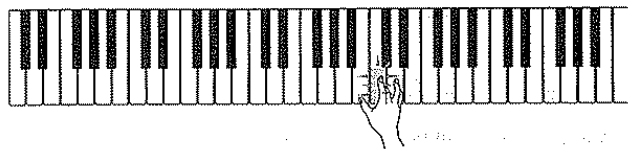
1. Select the Song Bank tune you want to play.
2. Press the **STEP 3** button to start Step 3 play.
  - Accompaniment (left hand part) starts to play at normal speed.



Indicator appears

Fingerings

3. Follow the key light system to press the correct keyboard keys and play the melody (right hand part).

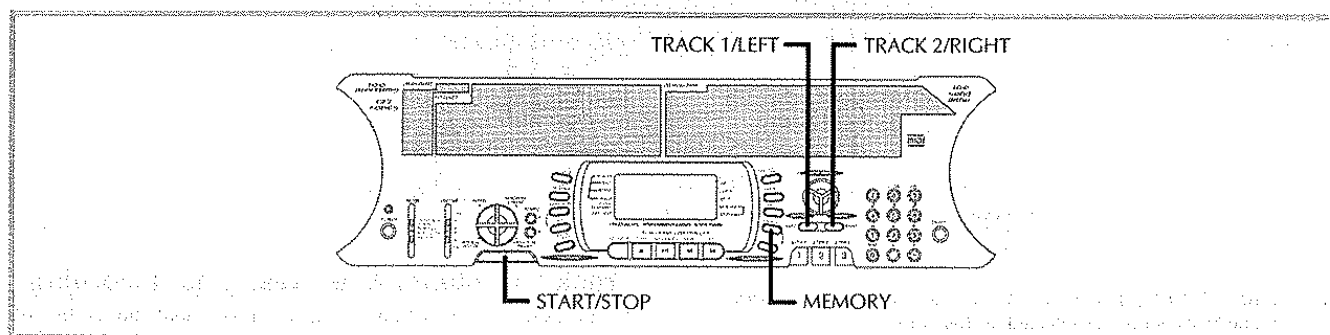


4. To stop play at any time, press the **STOP** or **START/STOP** button.

## NOTES

- Left hand practice can also be performed with two-hand tunes (70 to 99). Simply select one of the two-hand tunes in step 1 of the above procedure, and then press the TRACK 1/LEFT button following step 2.
- 3-step lesson does not allow simultaneous practice of both hands.
- You can also use pause, fast forward and fast reverse operations with Step 3 play.

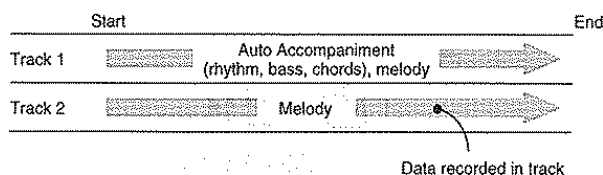
# Memory Function



You can store up to two separate songs in memory for later playback. There are two methods you can use to record a song: real-time recording where you record the notes as you play them on the keyboard, and step recording where you input chords and notes one-by-one.

## Tracks

The memory of this keyboard records and plays back notes much like a standard tape recorder. There are two tracks, each of which can be recorded separately. Besides notes, each track can be assigned its own tone number. During playback you can adjust the tempo to change the speed of playback.

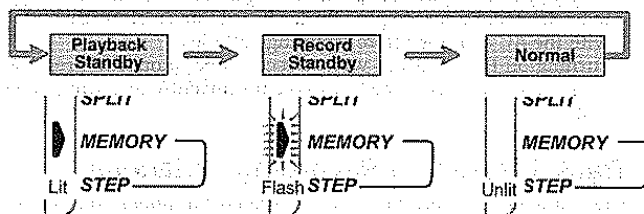


## NOTES

- Track 1 is the basic track, which can be used to record Auto Accompaniment along with the melody. Track 2 can be used for melody only, and is for adding to what is recorded in Track 1.
- Note that each track is independent of the other. This means that if you make a mistake while recording, you need to re-record only the track where the mistake was made.

## Memory Button Operation

Each press of the MEMORY button cycles through the functions shown below.

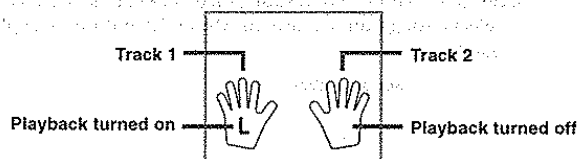


## Selecting a Track

Press the TRACK1/LEFT button to select Track 1 and the TRACK2/RIGHT button to select Track 2. The letter "L" (left) appears on the display to indicate Track 1 is selected, and the letter "R" (right) appears to indicate Track 2 is selected.

## Playback

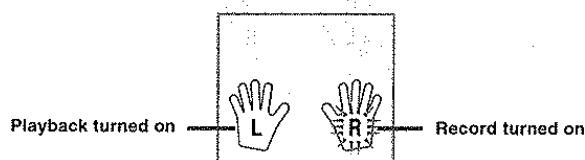
Each press of the TRACK1/LEFT and TRACK2/RIGHT button while the keyboard is in playback standby (see "Memory Button Operation" above) toggles playback of the corresponding track on and off. The letter that identifies a track (L or R) appears on the display whenever playback of that track is turned on.



- With the above setting, Track 1 will play while Track 2 will not play.

## Record

Each press of the TRACK1/LEFT and TRACK2/RIGHT button while the keyboard is in record standby (see "Memory Button Operation") toggles recording to the corresponding track on and off. The letter that identifies a track (L or R) flashes on the display whenever recording to that track is turned on.



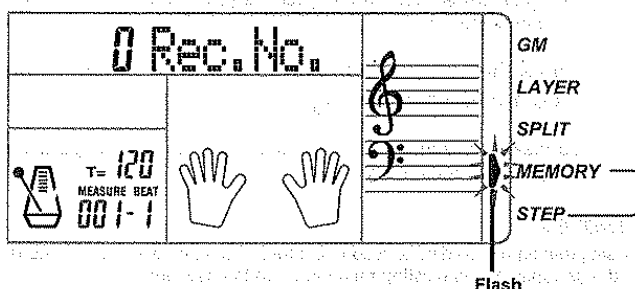
- The above indicates that Track 1 will play back while Track 2 is being recorded to.

## Real-time Recording to Track 1

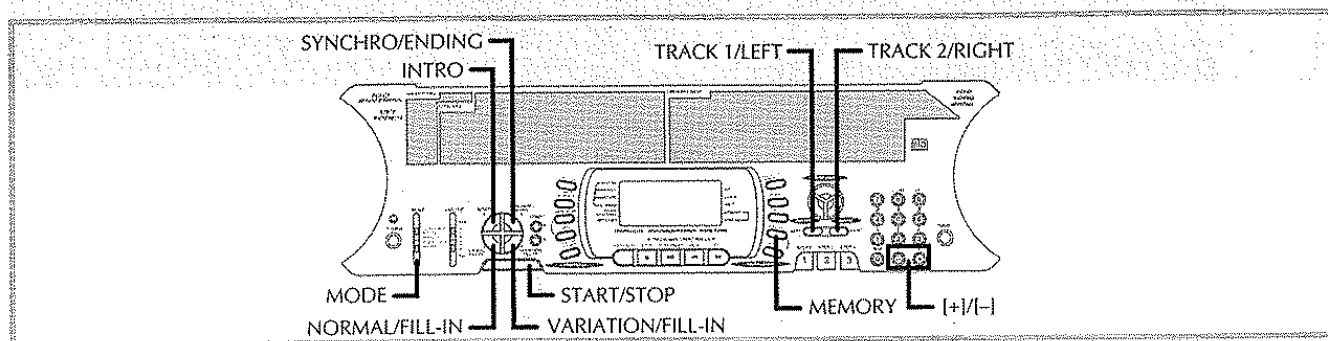
With real-time recording, the notes and chords you play on the keyboard are recorded as you play them.

## To record to Track 1 using real-time recording

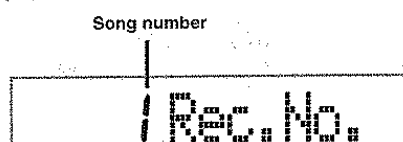
- Use the MEMORY button to enter record standby.



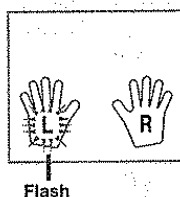




2. Use **[+]** and **[-]** to select 0 or 1 as the song number.
  - The track is not yet selected at this point.
  - The above song number screen remains on the display for about five seconds. If it disappears before you have a chance to select a song number, use the **MEMORY** button to display it again.



3. Press the **TRACK1/LEFT** button to select Track 1.
  - The "L" flashes on the display to indicate the track that will be recorded to.



4. Make any of the following settings if you want.
  - Tone number (page E-14)
  - Rhythm number (page E-16)
  - **MODE** switch (page E-16)
  - If you are not confident about playing at a fast tempo, try using a slower tempo setting (page E-16).
5. Press the **START/STOP** button to start real-time recording to Track 1.
6. Play something on the keyboard.
  - Any melody and accompaniment you play on the keyboard (including Auto Accompaniment chords played on the accompaniment keyboard) is recorded.
  - If you use a pedal during recording, pedal operations are also recorded.
7. Press the **START/STOP** button to end recording when you are finished playing.
  - If you make a mistake while recording, stop the record operation and begin over again from step 1.

#### NOTE

Using real-time recording to record to a track that already contains recorded data replaces the existing recording with the new one.

## Track 1 Contents After Real-time Recording

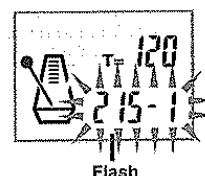
In addition to keyboard notes and accompaniment chords, the following data is also recorded to Track 1 during real-time recording. This data is used whenever Track 1 is played back.

- Tone number
- Rhythm number
- **INTRO**, **SYNCHRO/ENDING**, **NORMAL/FILL-IN**, **VARIATION/FILL-IN** button operations
- Pedal operations

## Memory Capacity

The keyboard has memory for approximately 5,200 notes. You can use all 5,200 notes for a single song, or you can divide memory between two different songs.

- The measure number and note number flash on the display whenever remaining memory is less than 100 notes.



- Recording automatically stops (and Auto Accompaniment and rhythm stops playing if they are being used) whenever memory becomes full.

## Memory Data Storage

- Anything previously stored in memory is replaced whenever you make a new recording.
- Memory contents are retained as long as the keyboard is supplied with electrical power. Unplugging the AC adaptor when batteries are not loaded or when loaded batteries are dead cuts off the keyboard's electrical power supply, causing all data stored in memory to be deleted. Be sure to plug the keyboard into an electrical outlet with the AC adaptor before replacing batteries.
- Turning off the keyboard while a record operation is in progress causes the contents of the track you are currently recording to be lost.

## Track 1 Real-time Recording Variations

The following describes a number of different variations you can use when recording to Track 1 using real-time recording. All of these variations are based upon the procedure described under "To record to Track 1 using real-time recording" on page E-25.

### To record without rhythm

Skip step 5. Real-time recording without rhythm starts when you press a keyboard key.

### To start recording with synchro start

In place of step 5, press the **SYNCHRO/ENDING** button. Auto Accompaniment and recording will both start when you play a chord on the accompaniment keyboard.

### To record using an intro, ending, or fill-in

During recording, the INTRO, SYNCHRO/ENDING, NORMAL/FILL-IN, and VARIATION/FILL-IN buttons (pages E-18 through E-19) can all be used as they normally are.

### To synchro start Auto Accompaniment with an intro pattern

In place of step 5, press the SYNCHRO/ENDING button and then the INTRO button. Auto Accompaniment will start with the intro pattern when you play a chord on the accompaniment keyboard.

### To start Auto Accompaniment part way into a recording

In place of step 5, press the SYNCHRO/ENDING button and then play something on the melody keyboard to start. When you reach the point where you want Auto Accompaniment to start, play a chord on the accompaniment keyboard.

## Playing Back from Memory

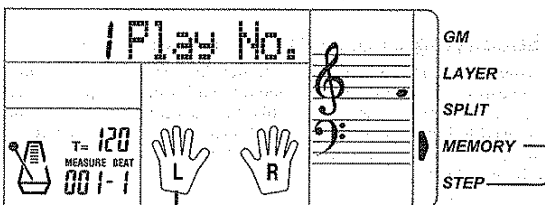
Use the following procedure to play back memory contents.

### To play back from memory

1. Use the **MEMORY** button to enter playback standby, and then use [+] and [-] to select 0 or 1 as the song number.
  - The above song number screen remains on the display for about five seconds. If it disappears before you have a chance to select a song number, use the MEMORY button to display it again.

1 Play No.

2. Press the **START/STOP** button to start playback of the song you selected.
  - During memory playback you can use the TRACK1/LEFT and TRACK2/RIGHT buttons to turn playback of either track on or off.



- You can use the TEMPO buttons to adjust the tempo.

3. Press the **START/STOP** button again to stop playback.

#### ■ NOTES ■

- During memory playback, the entire keyboard functions as a melody keyboard, regardless of the MODE switch setting.
- You can play along on the keyboard while playing back from memory. You can also use layer (page E-32) and split (page E-32) to play along with more than one tone.
- You cannot use pause, fast forward or fast reverse operations with memory playback.

## Real-time Recording to Track 2

After you record Track 1, you can use real-time recording to add a melody in Track 2.

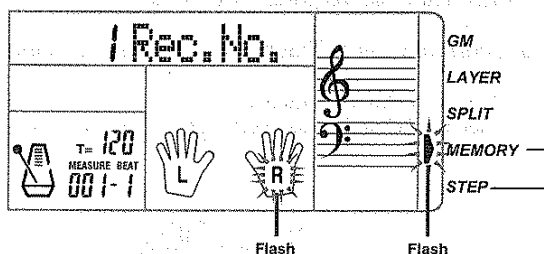
### To record to Track 2 while playing back Track 1

1. Use the **MEMORY** button to enter record standby, and then use [+] and [-] to select 0 or 1 as the song number.

1 Rec. No.

- The track is not yet selected at this point.

2. Press the **TRACK2/RIGHT** button to select Track 2.



3. Make any of the following settings if you want.
  - Tone number (page E-14)
  - If you are not confident about playing at a fast tempo, try using a slower tempo setting (page E-16).
4. Press the **START/STOP** button to start real-time recording to Track 2 along with playback from Track 1.
5. Listening to the playback from Track 1, play what you want to record to Track 2 on the keyboard.
6. Press the **START/STOP** button to end recording when you are finished playing.
  - If you make a mistake while recording, stop the record operation and begin over again from step 1.

#### ■ NOTE ■

Track 2 is a melody-only track, so chords cannot be recorded there. Because of this, the entire keyboard is a melody keyboard, regardless of the MODE switch setting.

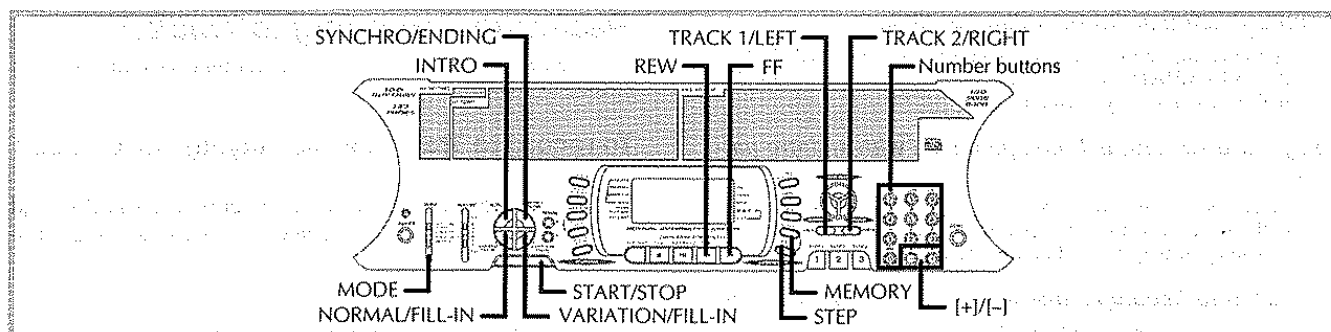
### To record to Track 2 without playing back Track 1

1. Use the **MEMORY** button to enter record standby.
2. Press the **TRACK1/LEFT** button to turn off playback of Track 1.
3. Continue from step 1 under "To record to Track 2 while playing back Track 1."
  - Note that the above procedure does not turn off rhythm and Auto Accompaniment.

## Track 2 Contents After Real-time Recording

The following data is recorded to Track 2 during real-time recording.

- Tone number
- Rhythm number
- Pedal operations



## Recording Chords with Step Recording

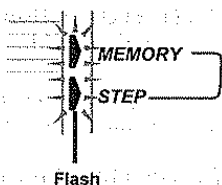
With step recording, you can record a chord progression in Track 1 chord-by-chord. You can then use the chord progression as an Auto Accompaniment or later add melody notes to Track 2.

### To record chords to Track 1 using step recording

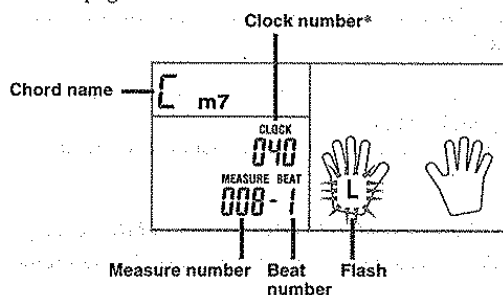
1. Use the **MEMORY** button to enter record standby, and then use **[+]** and **[-]** to select 0 or 1 as the song number.



2. Press the **TRACK1/LEFT** button to select Track 1.
3. Press the **STEP** button.



4. Make any of the following settings if you want.
  - Rhythm number (page E-16)
  - MODE switch (page E-16)
5. Press the **SYNCHRO/ENDING** button.
6. Play a chord.
  - Use the chord play method that is specified by the current MODE switch setting: FINGERED, CASIO CHORD, NORMAL.
  - When the MODE switch is set to NORMAL, specify the chord using the root input keyboard and chord type input keyboard. See "Specifying Chords in the Normal Mode" on this page for details.



\* 48 clocks = 1beat

7. Input the length of the chord (how long it should be played until the next chord is played).
  - Use the number keys to specify the length of a chord. See "Specifying the Length of a Note" on page E-29 for details.
  - Repeat steps 6 and 7 to input all the chords you want.
  - If you make a mistake while step recording chords, use the procedure under "Editing Data While Step Recording" to make corrections.
8. After you finish step recording, press the **START/STOP**, **MEMORY**, or **STEP** button.
  - This enters playback standby for the song you have just input. Pressing the **START/STOP** button plays it back.

### NOTES

- You can use the FF and REW buttons to change the current input position during step recording. See "Editing Data While Step Recording" on page E-30 for details.
- Pressing the **[0]** button in step 7 inputs a rest. Note, however, that any rests you input do not have any effect on Auto Accompaniment.

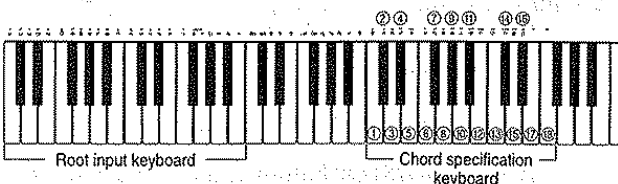
### Track 1 Contents After Step Recording

In addition to chords, the following data is also recorded to Track 1 during step recording.

- Tone number
- Rhythm number (step 4)
- INTRO, SYNCHRO/ENDING, NORMAL/FILL-IN, VARIATION/FILL-IN button operations (step 6)

### Specifying Chords in the Normal Mode

When the MODE switch is set to NORMAL during step recording, you can specify chords using a method that is different from CASIO Chord and Fingered fingerings. This chord specification method can be used to input 18 different chord types using only two keyboard keys, so chords can be specified even if you don't know how to actually play them.

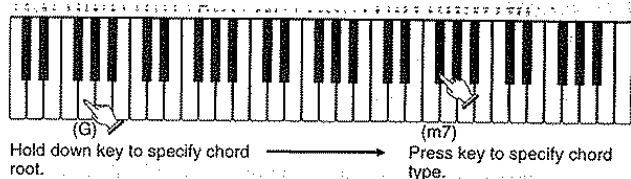


- |                       |                           |
|-----------------------|---------------------------|
| ① Major               | ⑩ Seventh flat five       |
| ② Minor               | ⑪ Minor seventh flat five |
| ③ Augmented           | ⑫ Seventh suspended four  |
| ④ Diminished          | ⑬ Diminished seventh      |
| ⑤ Suspended fourth    | ⑭ Minor add ninth         |
| ⑥ Seventh             | ⑮ Add ninth               |
| ⑦ Minor seventh       | ⑯ Minor sixth             |
| ⑧ Major seventh       | ⑰ Sixth                   |
| ⑨ Minor major seventh | ⑱ Six ninth               |

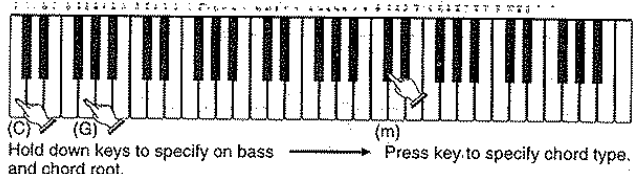


To specify a chord, hold down the key on the root input keyboard that specifies the root, and press the key in the chord type input keyboard to specify the chord type. When inputting a chord with a specified bass note, pressing two keys of the root input keyboard causes the lower note to be specified as a bass note.

**Example 1:** To input Gm7, hold down G on the root input keyboard and press the m7 key on the chord type input keyboard.



**Example 2:** To input Gm/C, hold down C and G on the root input keyboard and press the m key on the chord type input keyboard.



## Specifying the Length of a Note

During step recording, the number buttons are used to specify the length of each note.

### • Note lengths

Use number buttons [1] through [6] to specify whole notes (♩), half notes (♪), quarter notes (♫), eighth notes (♮), 16th notes (♯), and 32nd notes (♭).

**Example:** To specify a quarter note (♫), press [3].

### • Dots (•) and triplicates (≡)

While holding down the [7] (dot) or [9] (triplicate), use buttons [1] through [6] to input the lengths of the notes.

**Example:** To input a dotted eighth notes (♫.), hold down [7] and press [4].

### • Ties

Press [8] and then input the first and then the second note.

**Example:** To input ♫, press [8] and then press [4] (note length) while holding down [7] (dot). This note will be tied to the next note you input (16th note in this example).

### • Rest

Hold down [0] and then use number buttons [1] through [9] to specify the length of the rest.

**Example:** To input an eighth note rest, hold down [0] and press [4].

## Track 1 Step Recording Variations

The following describes a number of different variations you can use when recording to Track 1 using step recording. All of these variations are based upon the procedure described under "To record chords to Track 1 using step recording." on page E-28.

### To start accompaniment with an intro pattern

In step 5, press the INTRO button after the SYNCHRO/ENDING button.

### To switch to a rhythm variation

In step 6, press the VARIATION/FILL-IN button immediately before inputting the chord.

## To insert an ending or fill in

In step 6, press the SYNCHRO/ENDING button NORMAL/FILL-IN button (VARIATION/FILL-IN in the case of a variation rhythm) immediately before inputting the chord.

## To step record chords without rhythm

After performing steps 1 through 4, you can use the number buttons to input the length of the specified chord. Skipping step 5 (not pressing the SYNCHRO/ENDING button) creates chord without rhythm, so you can input a rest by pressing the [0] button in step 6 and then specifying the length of the rest in step 7.

## To add chord accompaniment part way through rhythm play

In step 6, input all rests from the beginning of the recording up to the point where you want accompaniment to start. Next, input the chords.

## Step Recording Melody to Track 2

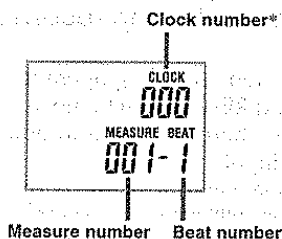
You can use step recording to input notes one-by-one in Track 2. This technique is perfect for those who want to make original recordings, but are not accomplished enough to play along with rhythm. Note that step recording of melody notes can be performed in Track 2 only.

## To step record melody to Track 2

1. Use the **MEMORY** button to enter record standby, and then use [+] and [-] to select 0 or 1 as the song number.

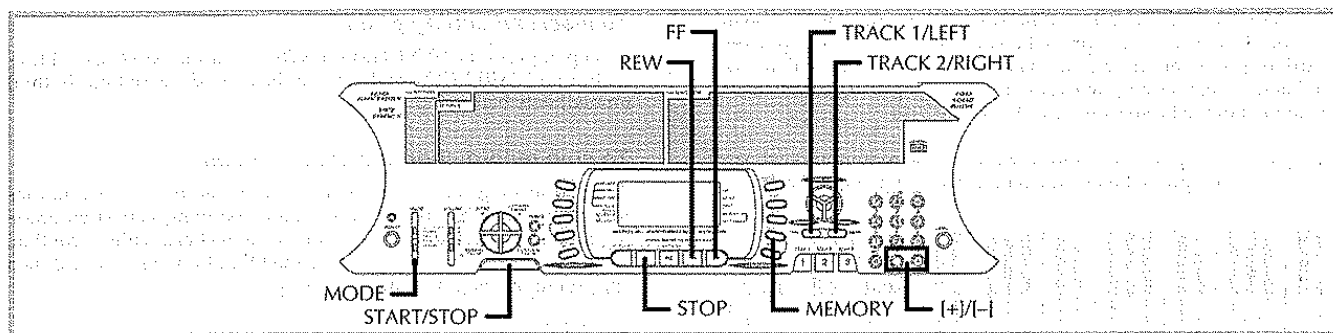


2. Press the **TRACK2/RIGHT** button to select Track 2.
3. Press the **STEP** button to start step recording.



\* 48 clocks = 1beat

4. Select a tone number if you want.
5. Use the keyboard keys or the [+] and [-] buttons to input notes, and the [0] button to input rests.
  - When touch response is turned on, the amount of pressure you use to press keyboard keys is also recorded. You can also use keyboard keys to input chords.
  - With [+] and [-] button input, a staff appears on the display showing the note you are inputting. The loudness or softness of a note input using these buttons is the same as the note immediately before it.
  - To cancel input of a rest, press [0] again.
6. Use **number buttons** [1] through [9] to input the length of each note or rest.
  - After input the length of a note or rest, the keyboard stands by for the next input.
7. Repeat steps 5 and 6 to input all the notes you want.
  - If you make a mistake during input, you can make corrections using the procedures under "Editing Data While Step Recording" on page E-30.



8. After you are finished inputting notes, press the **START/STOP**, **MEMORY**, or **STOP** button to quit step recording.

#### ■ NOTES ■

- During step recording of a melody, the entire keyboard is a melody keyboard, regardless of the MODE switch setting.
- During step recording you can use FF and REW to move the input point forward and back. See "Editing Data While Step Recording" on this page for details.

### Track 2 Contents After Step Recording

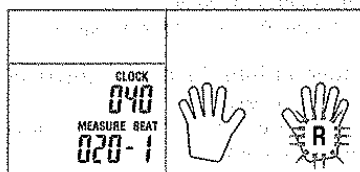
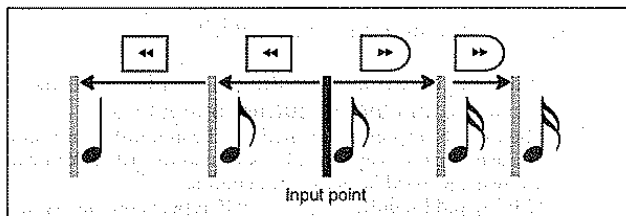
In addition to notes, tone numbers can also be recorded.

### Editing Data While Step Recording

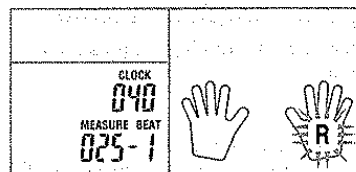
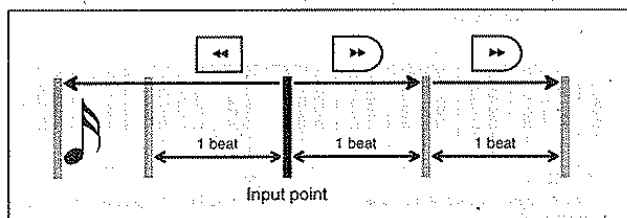
Memory data can be thought of as a musical score that progresses from left to right, with the input point normally at the far right of the recorded data. The following procedure describes how to move the input point to the left in order to make changes in data you have already input. Note, however, that moving the input point to the left and changing data automatically deletes all of the data to the right of the input point.

#### To edit data while step recording

1. While a step recording operation is in progress, use the **FF** and **REW** button to move the input point to the location where you want to edit the data you have already input.
  - If notes are already recorded, each press of FF or REW moves the input point to the next successive note. The data recorded at the current input point appears on the display.



- If notes are not recorded, each press of FF or REW moves the input point to the next successive beat.



- If you move from an area that contains note data to an area that does not contain note data, each press of FF moves the input point to the next beat. Pressing the REW button, however, causes the input point to jump back to the location of the first note or rest to the left.

2. Press **[+]** and **[-]**.



3. Press **[+]** to start the data editing operation or **[-]** to clear the data editing screen without changing anything.
  - Pressing **[+]** automatically clears all data to the right of the current input point. Next, the keyboard stands by for input of step recording data.
  - Pressing **[-]** clears the data editing screen and returns to the step recording screen where you can move the input point.

#### ■ NOTE ■

The message [TrackEnd] appears on the display when the input point reaches end of the current data stored in Track 2. At this point you can perform steps 2 and 3 to add more data.

## Deleting the Contents of a Specific Track

Use the following procedure to delete all of the data currently recorded in a specific track.

### To delete all of the data in a specific track

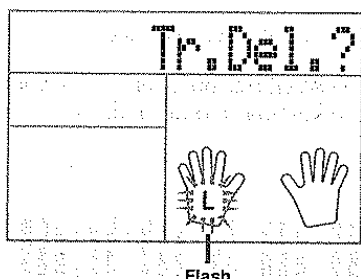
1. Use the **MEMORY** button to enter record standby, and then use **[+]** and **[-]** to select the song (0 or 1) whose track you want to delete.



2. Hold down the **MEMORY** button until the track delete screen appears on the display.



3. Use the **TRACK1/LEFT** or **TRACK2/RIGHT** button to select the track whose data you want to delete.  
Example: To select Track 1.



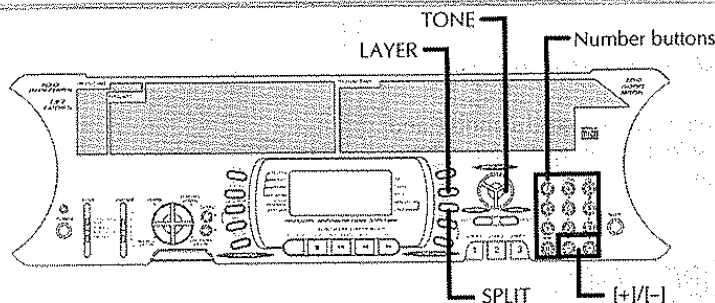
4. Press **[+]** to delete the track.

#### NOTES

- The track delete screen is cleared from the display automatically if you leave the keyboard with the track delete message on the display for about five seconds without doing anything.
- Once you select a track in step 3, you cannot change to a different track without quitting the track delete operation and starting again.
- You cannot select a track for deletion if that track does not contain any data.
- Pressing the **MEMORY** button while the track delete screen is on the display returns to record standby.



# Keyboard Settings



This section describes how to use layer (to play two tones with a single key) and split (to assign different tones to either end of the keyboard), and how to make touch response, transpose, and tuning settings.

## Using Layer

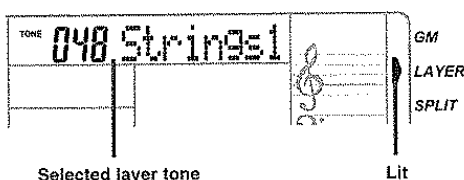
Layer lets you assign two different tones (a main tone and a layered tone) to the keyboard, both of which play whenever you press a key. For example, you could layer the FRENCH HORN tone on the BRASS tone to produce a rich and brassy sound.

### To layer tones

1. First select the main tone.  
Example: To select "061 BRASS" as the main tone, press the TONE button and then use the number buttons or [+] and [-] buttons to input 0, 6 and then 1.



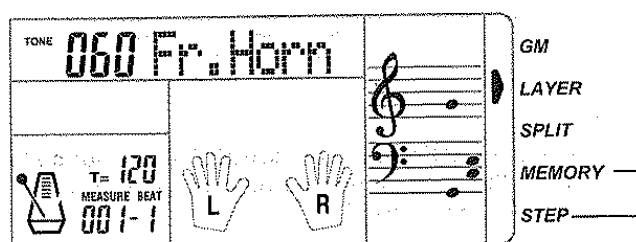
2. Press the LAYER button.



3. Select the layered tone.  
Example: To select "060 FRENCH HORN" as the layered tone, use the number buttons or [+] and [-] buttons to input 0, 6 and then 0.



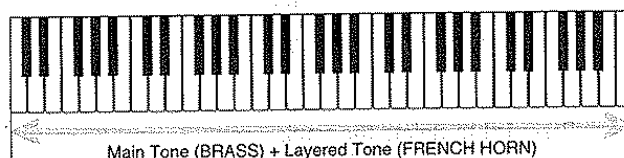
4. Now try playing something on the keyboard.



- Both tones are played at the same time.

5. Press the LAYER button again to unlayer the tones and return the keyboard to normal.

### LAYER



## Using Split

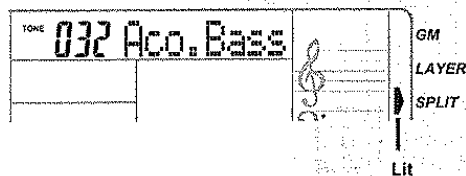
With split you can assign two different tones (a main tone and a split tone) to either end of the keyboard, which lets you play one tone with your left hand and another tone with your right hand. For example, you could select STRINGS as the main (high range) tone and PIZZICATO as the split (low range) tone, putting an entire string ensemble at your fingertips. Split also lets you specify the split point, which is the location on the keyboard where the changeover between the two tones occurs.

### To split the keyboard

1. First select the main tone.  
Example: To select "048 STRINGS 1" as the main tone, press the TONE button and then use the number buttons or [+] and [-] buttons to input 0, 4 and then 8.

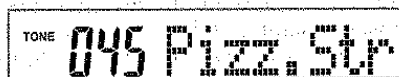


## 2. Press the **SPLIT** button.



## 3. Select the split tone.

*Example:* To select "045 PIZZICATO STR" as the split tone, use the number buttons or [+] and [-] buttons to input 0, 4 and then 5.



## 4. Specify the split point. While holding down the **SPLIT** button, press the keyboard where you want the leftmost key of the high end range to be.

*Example:* To specify G3 as the split point, press the G3 key.

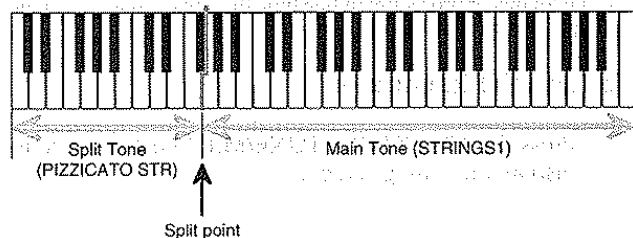


## 5. Now try playing something on the keyboard.

- Every key from F3 and below is assigned the PIZZICATO tone, while every key from G3 and above is assigned the STRINGS tone.

## 6. Press the **SPLIT** button again to unsplit the keyboard and return it to normal.

### SPLIT



## Using Layer and Split Together

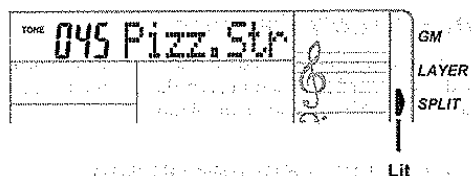
You can use layer and split together to create a layered split keyboard. It makes no difference whether you layer tones first and then split the keyboard, or split the keyboard and then layer tones. When you use layer and split in combination, the high range of the keyboard is assigned two tones (main tone + layered tone), and the low range two tones (split tone + layered split tone).

## To split the keyboard and then layer tones

### 1. Press the **TONE** button and then input the tone number of the main tone.



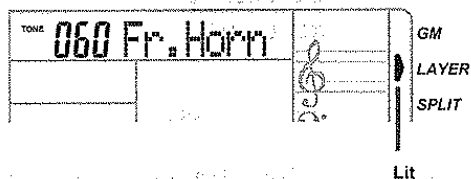
### 2. Press the **SPLIT** button and then input the number of the split tone.



- After specifying the split tone, press the SPLIT button to unsplit the keyboard.

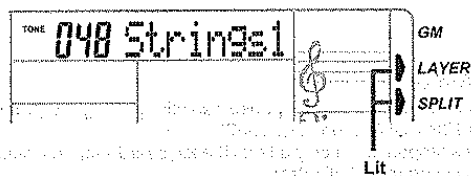
### 3. Press the **LAYER** button and then input the number of the layered tone.

- Note that you can reverse steps 2 and 3, specifying the layered tone first and then the split tone.



### 4. Press the **SPLIT** button or the **LAYER** button so both of the **SPLIT** and **LAYER** indicators are displayed.

### 5. Input the number of the layered split tone.



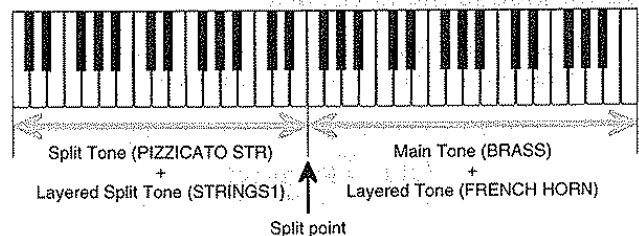
### 6. Specify the split point.

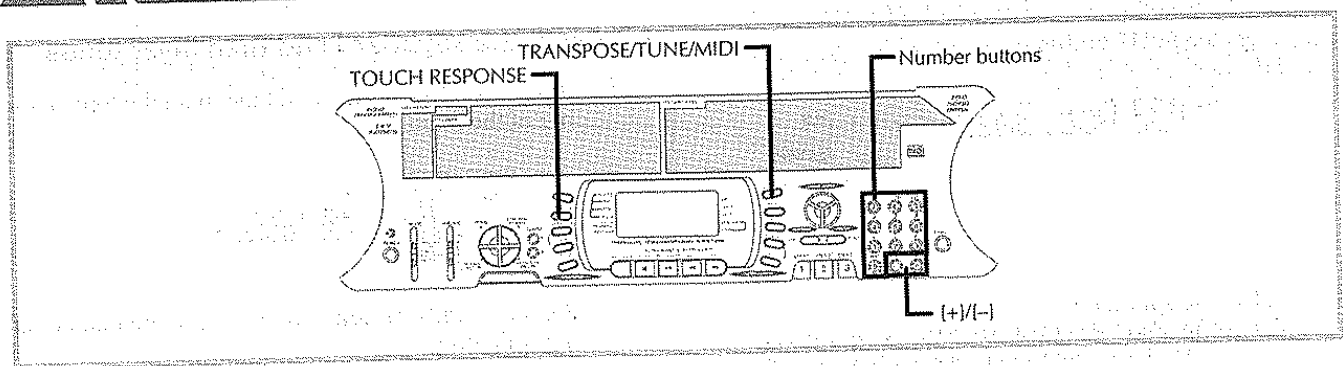
- While holding down the SPLIT button, press the keyboard where you want the leftmost key of the low end range to be.

### 7. Play something on the keyboard.

- Press the LAYER button to unlayer the keyboard, and the SPLIT button to unsplit it.

### LAYER SPLIT



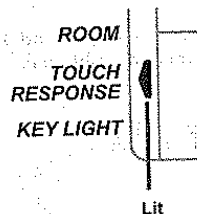


## Using Touch Response

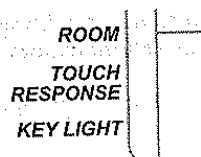
When touch response is turned on, the relative volume of sound output by the keyboard is varied in accordance with the amount of pressure applied, just like an acoustic piano.

### To turn touch response on and off

1. Press the **TOUCH RESPONSE** button to toggle touch response on and off.
  - Touch response is on when touch response indicator is on.



- Touch response is off when touch response indicator is off.



#### ■ NOTES ■

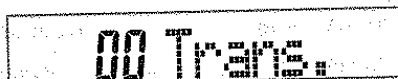
- You can adjust touch response sensitivity using the procedure under "TOUCH CURVE" on page E-37.
- Touch response not only affects the keyboard's internal sound source, it also is output as MIDI data.
- Memory playback, accompaniment, and external MIDI note data does not affect the touch response setting.

## Transposing the Keyboard

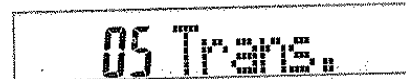
Transpose lets you raise and lower the overall key of the keyboard in semitone units. If you want to play an accompaniment for a vocalist who sings in a key that's different from the keyboard, for example, simply use transpose to change the key of the keyboard.

### To transpose the keyboard

1. Press the **TRANSPOSE/TUNE/MIDI** button until the transpose screen appears on the display.



2. Use the **[+]**, **[-]**, and the **number buttons** to change the transpose setting of the keyboard.  
*Example:* To transpose the keyboard five semitones upwards.



#### ■ NOTES ■

- The keyboard can be transposed within a range of -12 (one octave downwards) to +12 (one octave upwards).
- The default transpose setting is "00" when keyboard power is turned on.
- If you leave the transpose screen on the display for about five seconds without doing anything, the screen is automatically cleared.
- The transpose setting also affects playback from memory and Auto Accompaniment.

## TRANSPOSE/TUNE/MIDI Button

Each press of the TRANSPOSE/TUNE/MIDI button cycles through a total of 12 setting screens: the transpose screen, the tuning screen, and 10 MIDI setting screens (page E-35). If you accidentally pass the screen you want to use, keep pressing the TRANSPOSE/TUNE/MIDI button until the screen appears again.

## Tuning the Keyboard

Use the following procedure to fine tune the keyboard to match the tuning of another musical instrument.

### To tune the keyboard

1. Press the **TRANSPOSE/TUNE/MIDI** button twice to display the tuning screen.



2. Use the **[+]**, **[-]**, and the **number buttons** to adjust the tuning value.  
*Example:* To lower tuning by 20



#### ■ NOTES ■

- The keyboard can be tuned within a range of -50 cents to +50 cents. \*100 cents is equivalent to one semitone.
- The default tuning setting is "00" when keyboard power is turned on.
- If you leave the tuning screen on the display for about five seconds without doing anything, the screen is automatically cleared.
- The tuning setting also affects playback from memory and Auto Accompaniment.



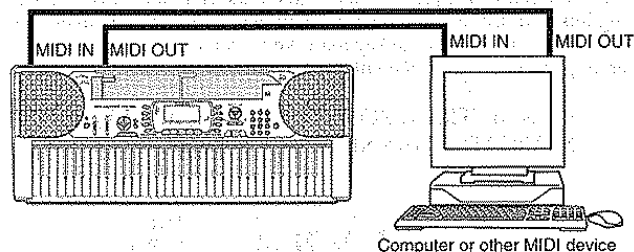
## What is MIDI?

The letters MIDI stand for Musical Instrument Digital Interface, which is the name of a worldwide standard for digital signals and connectors that makes it possible to exchange musical data between musical instruments and computers (machines) produced by different manufacturers. MIDI compatible equipment can exchange keyboard key press, key release, tone change, and other data as messages. Though you do not need any special knowledge about MIDI to use this keyboard as a stand-alone unit, MIDI operations require a bit of specialized knowledge. This section provides you with an overview of MIDI that will help to get you going.

## MIDI Connections

MIDI messages are sent out through the MIDI OUT terminal of one machine to the MIDI IN terminal of another machine over a MIDI cable. To send a message from this keyboard to another machine, for example, you must use a MIDI cable to connect the MIDI OUT terminal of this keyboard to the MIDI IN terminal of the other machine. To send MIDI messages back to this keyboard, you need to use a MIDI cable to connect the other machine's MIDI OUT terminal to the MIDI IN terminal of this keyboard.

To use a computer or other MIDI device to record and playback the MIDI data produced by this keyboard, you must connect the MIDI IN and MIDI OUT terminals of both machines in order to send and receive data.

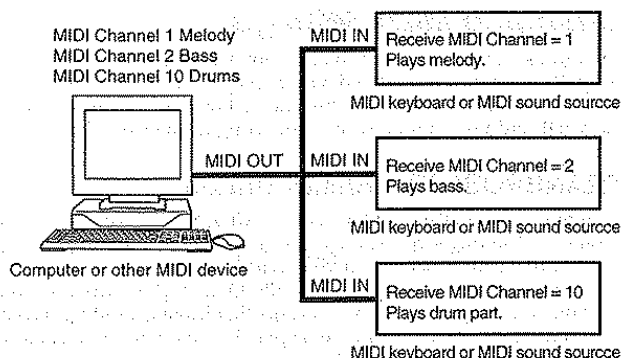


- To use the MIDI THRU function of a connected computer, sequencer, or other MIDI device, be sure to turn this keyboard's LOCAL CONTROL off (page E-37).

## MIDI Channels

MIDI allows you to send the data for multiple parts at the same time, with each part being sent over a separate MIDI channel. There are 16 MIDI channels, numbered 1 through 16, and MIDI channel data is always included whenever you exchange data (key press, pedal operation, etc.).

Both the sending machine and the receiving machine must be set to the same channel for the receiving unit to correctly receive and play data. If the receiving machine is set to Channel 2, for example, it receives only MIDI Channel 2 data, and all other channels are ignored.



This keyboard is equipped with multi-timbre capabilities, which means it can receive messages over all 16 MIDI channels and play up to 16 parts at the same time.

Keyboard and pedal operations performed on this keyboard are sent out by selecting a MIDI channel (1 to 16) and then sending the appropriate message.

## General MIDI

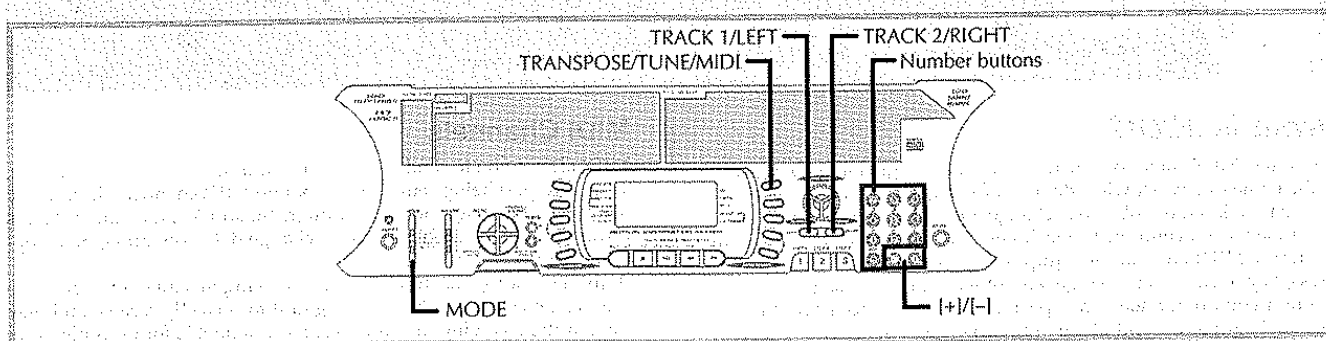
As we have already seen, MIDI makes it possible to exchange musical data between devices produced by different manufacturers. This musical data does not consist of the notes themselves, but rather information on whether a keyboard key is pressed or released, and the tone number.

If tone number 1 on a keyboard produced by Company A is PIANO while tone number 1 on a Company B's keyboard is BASS, for example, sending data from Company A's keyboard to Company B's keyboard produces a result entirely different from the original. If a computer, sequencer or other device with auto accompaniment capabilities is used to produce music data for the Company A keyboard which has 16 parts (16 channels) and then that data is sent to the Company B keyboard which can receive only 10 parts (10 channels), the parts that cannot be played will not be heard.

The standard for the tone numbering sequence, the number of pads, and other general factors that determine the sound source configuration, which was arrived at by mutual consultations by manufacturers, is called General MIDI.

The General MIDI standard defines the tone numbering sequence, the drum sound numbering sequence, the number of MIDI channels that can be used, and other general factors that determine the sound source configuration. Because of this, musical data produced on a General MIDI sound source can be played back using similar tones and identical nuances as the original, even when played on another manufacturer's sound source.

This keyboard conforms with General MIDI standards, so it can be connected to a computer or other device and used to play back General MIDI data that has been purchased, downloaded from the Internet, or obtained from any other source.



## Changing MIDI Settings

You can use this keyboard in combination with an external sequencer, synthesizer, or other MIDI device to play along with commercially available General MIDI software. This section tells you how to make the MIDI settings required when connecting to an external device.

### TRANPOSE/TUNE/MIDI Button

Each press of the TRANPOSE/TUNE/MIDI button cycles through a total of 12 setting screens: the transpose screen, the tuning screen, and 10 MIDI setting screens. If you accidentally pass the screen you want to use, keep pressing the TRANPOSE/TUNE/MIDI button until the screen appears again. Also note that leaving a setting screen is automatically cleared from the display if you do not perform any operation for about five seconds.

### GM MODE (Default: Off)

**on:** This keyboard plays General MIDI data from a computer or other external device. MIDI IN CHORD JUDGE cannot be used when GM MODE is turned on.

**off:** MIDI IN CHORD JUDGE can be used.

1. Press the **TRANPOSE/TUNE/MIDI** button until the GM MODE screen appears.  
*Example:* When GM MODE is turned off



2. Use the **[+]** and **[-]** or **[0]** and **[1]** buttons to turn the setting on and off.  
*Example:* To turn GM MODE on



### KEYBOARD CHANNEL

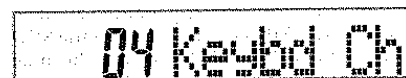
The keyboard channel is the channel used to send MIDI messages from this keyboard to an external device. You can specify one channel from 1 to 16 as the keyboard channel.

1. Press the **TRANPOSE/TUNE/MIDI** button until the KEYBOARD CHANNEL screen appears.



2. Use the **[+]**, **[-]**, and the **number buttons** to change the channel number.

*Example:* To specify channel 4



### NAVIGATE CHANNEL (Default: 4)

When MIDI messages are received from an external device for play on this keyboard, the navigate channel is the channel whose note data appears on the display and is used to light keyboard keys. You can select one channel from 1 to 8 as the navigate channel. Since this setting lets you use the data on any channel of commercially available MIDI software to light the keyboard keys, you can analyze how different parts of an arrangement are played.

1. Press the **TRANPOSE/TUNE/MIDI** button until the NAVIGATE CHANNEL screen appears.



2. Use the **[+]**, **[-]**, and the **number buttons** **[1]** through **[8]** to change the channel number.

*Example:* To specify channel 2



### NOTE

The navigate channel automatically changes to 1 whenever you turn MIDI IN CHORD JUDGE.

### To turn off specific sounds before playing back MIDI data that is being received

<<Navigate channel on/off>>

While playing MIDI data, press the **TRACK2/RIGHT** button.

- This cuts the sound of the navigate channel, but keyboard keys continue to light in accordance with the channel's data as it is received. Press **TRACK2/RIGHT** button again to turn the channel back on.

<<Next lower channel from navigate channel on/off>>

While playing MIDI data, press the **TRACK1/LEFT** button.

- This cuts the sound of the channel whose number is one less than the navigate channel, but keyboard keys continue to light in accordance with the channel's data as it is received. Press **TRACK1/LEFT** button again to turn the channel back on.

*Example:* If the navigate channel is channel 4, the above operation turns off channel 3. If the navigate channel is channel 1 or 2, the above operation turns off channel 8.



## MIDI IN CHORD JUDGE (Default: Off)

**on:** When a chord specification method is selected by the MODE switch, chords are specified by the keyboard channel note data input from the MIDI IN terminal.

**off:** MIDI IN CHORD JUDGE is turned off.

1. Press the **TRANPOSE/TUNE/MIDI** button until the MIDI IN CHORD JUDGE screen appears.

off Chord

2. Use the **[+]** and **[-]** or **[0]** and **[1]** buttons to turn the setting on and off.

*Example:* To turn MIDI IN CHORD JUDGE on

on Chord

### NOTE

MIDI IN CHORD JUDGE automatically turns off whenever you change the navigate channel to any channel besides 01.

## LOCAL CONTROL (Default: On)

This setting determines whether or not the keyboard and sound source of this keyboard are connected internally. When recording to a computer or other external device connected to this keyboard's MIDI IN/OUT terminal, it helps if you turn LOCAL CONTROL off.

**on:** Anything played on the keyboard is sounded by the internal sound source and simultaneously output as a MIDI message from the MIDI OUT terminal.

**off:** Anything played on the keyboard is output as a MIDI message from the MIDI OUT terminal, without being sounded by the internal sound source. Turn LOCAL CONTROL off whenever you are using the MIDI THRU function of a computer or other external device. Also note that the no sound is produced by the keyboard if LOCAL CONTROL is turned off and no external device is connected.

1. Press the **TRANPOSE/TUNE/MIDI** button until the LOCAL CONTROL screen appears.

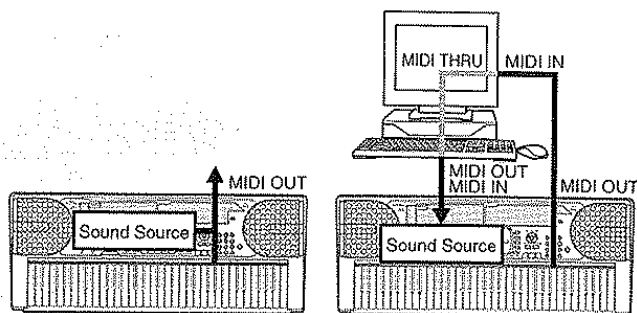
*Example:* When LOCAL CONTROL is on

on Local

2. Use the **[+]** and **[-]** or **[0]** and **[1]** buttons to turn the setting on and off.

*Example:* To turn LOCAL CONTROL off

off Local



### LOCAL CONTROL On

Notes played on the keyboard are sounded by the internal sound source and output as MIDI messages from the MIDI OUT terminal.

### LOCAL CONTROL Off

Notes played on the keyboard are output as MIDI messages from the MIDI OUT terminal, but not sounded directly by the internal sound source. The MIDI THRU terminal of the connected device can be used to return the MIDI message and sound it on this keyboard's sound source.

## ACCOMP MIDI OUT (Default: Off)

**on:** Auto Accompaniment is played by the keyboard and the corresponding MIDI message is output from the MIDI OUT terminal.

**off:** Auto Accompaniment MIDI messages are not output from the MIDI OUT terminal.

1. Press the **TRANPOSE/TUNE/MIDI** button until the ACCOMP MIDI OUT screen appears.

*Example:* When ACCOMP MIDI OUT is off

off AcompOut

2. Use the **[+]** and **[-]** or **[0]** and **[1]** buttons to turn the setting on and off.

*Example:* To turn ACCOMP MIDI OUT on

on AcompOut

## TOUCH CURVE (Default: 0)

0: Normal touch curve

1: Louder than normal tone, even when little pressure is used to press keyboard keys. When touch response is turned off, sound is produced at a louder volume than normal.

1. Press the **TRANPOSE/TUNE/MIDI** button until the TOUCH CURVE SELECT screen appears.

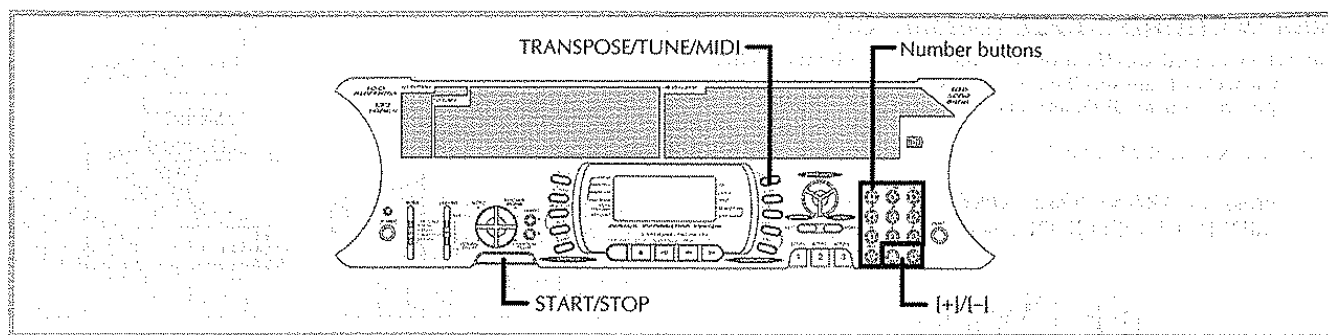
0 Touch

2. Use the **[+]** and **[-]** or **[0]** and **[1]** buttons to change the setting.

*Example:* To select touch curve 1

1 Touch





## ASSIGNABLE JACK

**SUS(sustain):** Specifies a sustain\*<sup>1</sup> effect when the pedal is depressed.

**SoS (sostenuto):** Specifies a sostenuto\*<sup>2</sup> effect when the pedal is depressed.

**Sft (soft):** Specifies reduction of the sound's volume when the pedal is depressed.

**rHy (rhythm):** Specifies START/STOP button operation when the pedal is depressed.

1. Press the **TRANSPOSE/TUNE/MIDI** button until the **ASSIGNABLE JACK** screen appears.

*Example: When sustain is currently set*



2. Use the **[+]** and **[-]** or **[0]**, **[1]**, **[2]**, and **[3]** buttons to change the setting.

*Example: To select rhythm*

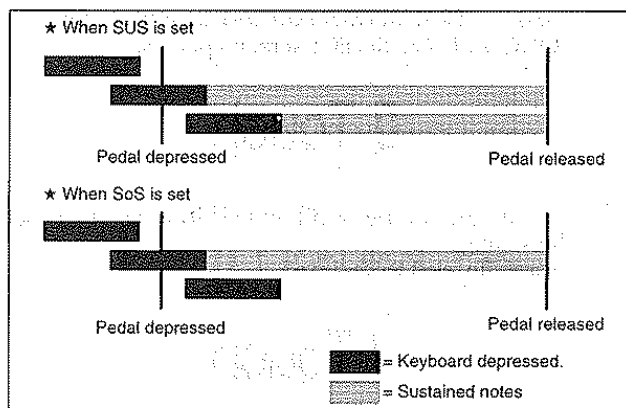


### \*1 Sustain

With piano tones and other sounds that decay, the pedal acts as a damper pedal, with sounds being sustained longer when the pedal is depressed. With organ tones and other continuous sounds, notes played on the keyboard continue to sound until the pedal is released. In either case, the sustain effect is also applied to any notes that are played while the pedal is depressed.

### \*2 Sostenuto

This effect performs the same way as sustain, except that it is applied only to notes that are sounding already when the pedal is depressed. It does not affect notes that are played after the pedal is depressed.



## SOUND RANGE SHIFT (Default: On)

**on:** Shifts low range tones one octave lower and 072 PICCOLO one octave higher.

**off:** Plays low range tones and 072 PICCOLO at their normal levels.

1. Press the **TRANSPOSE/TUNE/MIDI** button until the **SOUND RANGE SHIFT** screen appears.



2. Use the **[+]** and **[-]** or **[0]** and **[1]** buttons to change the setting.

*Example: To turn SOUND RANGE SHIFT off*



## Messages

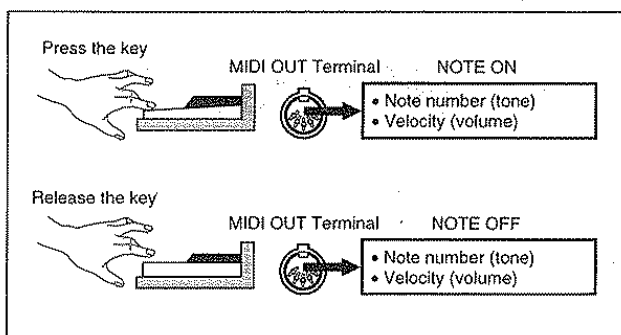
There is a wide variety of messages defined under the MIDI standard, and this section details the particular messages that can be sent and received by this keyboard. An asterisk is used to mark messages that affect the entire keyboard. Messages without an asterisk are those that affect only a particular channel.

### NOTE ON/OFF

This message sends data when a key is pressed (NOTE ON) or released (NOTE OFF).

A NOTE ON/OFF message include a note number (to indicate note whose key is being pressed or released) and velocity (keyboard pressure as a value from 1 to 127). NOTE ON velocity is always used to determine the relative volume of the note. This keyboard does not receive NOTE OFF velocity data.

Whenever you press or release a key on this keyboard, the corresponding NOTE ON or NOTE OFF message is sent from the MIDI OUT terminal.



### NOTE

The pitch of a note depends on the tone that is being used, as shown in the Note Table on page A-1. Whenever this keyboard receives a note number that is outside its range for that tone, the same tone in the nearest available octave is substituted.

## PROGRAM CHANGE

This is the tone selection message. PROGRAM CHANGE can contain tone data within the range of 0 to 127.

A PROGRAM CHANGE message is sent out through this keyboard's MIDI OUT terminal whenever you manually change its tone number. Receipt of a PROGRAM CHANGE message from an external machine changes the tone setting of this keyboard.

### NOTE

This keyboard supports 128 tones in the range 0 to 127. However, Channel 10 is a percussion-only channel, and Channels 0, 8, 16, 24, 25, 32, 40, 48, and 62 correspond to the nine drum set sounds of this keyboard.

## PITCH BEND

This message carries pitch bend information for smoothly sliding the pitch upwards or downwards during keyboard play. This keyboard does not send pitch bend data, but it can receive such data.

## CONTROL CHANGE

This message adds effects such as vibrato and volume changes applied during keyboard play. CONTROL CHANGE data includes a control number (to identify the effect type) and a control value (to specify the on/off status and depth of the effect).

The following is a list of data that can be sent or received using CONTROL CHANGE.

Effect	Control Number
★ Modulation	1
★ Volume	7
★ Pan	10
★ Expression	11
Hold1	64
Sostenuto	66
Soft Pedal	67
RPN*	100 / 101
Data Entry	6 / 38

★ indicates receive-only messages

\* RPN stands for Registered Parameter Number, which is a special control change number used when combining multiple control changes. The parameter being controlled is selected using the control values of control numbers 100 and 101, and then settings are made using the control values of DATA ENTRY (control numbers 6 and 38).

This keyboard uses RPN to control this keyboard's pitch bend sense (pitch change width in accordance with bend data) from another external MIDI device, transpose (this keyboard's overall tuning adjusted in half-tone units), and tune (this keyboard's overall fine tuning).

### NOTE

Sustain (control number 64), sostenuto (control number 66), and soft (control number 67) effects applied using the foot pedal are also applied.

## ALL SOUND OFF

This message forces all sound being produced over the current channel to turn off, regardless of how the sound is being produced.

## ALL NOTES OFF

This message turns off all note data sent from an external device and currently being sounded on the channel.

- Any notes being sustained using a sustain pedal or sostenuto pedal continue to sound until the next pedal off.

## RESET ALL CONTROLLERS

This message initializes pitch bend and all other control changes.

## SYSTEM EXCLUSIVE\*

This message is used to control system exclusives, which are tone fine adjustments that are unique to a particular machine. Originally, system exclusives were unique to a particular model, but now there are also universal system exclusives that are applicable to machines that are different models and even produced by different manufacturers.

The following are the system exclusive messages supported by this keyboard.

### GM SYSTEM ON ([F0][7E][7F][09][01][F7])

GM SYSTEM ON is used by an external machine to turn on this keyboard's GM system. GM stands for General MIDI.

- GM SYSTEM ON takes more time to process than other messages, so when GM SYSTEM ON is stored in the sequencer it can take more than 100msec until the next message.

### GM SYSTEM OFF ([F0][7E][7F][09][02][F7])

GM SYSTEM OFF is used by an external machine to turn off this keyboard's GM system.

### EFFECT CHANGE ([F0][44][0E][09][XX][F7])

EFFECT CHANGE switches the keyboard's internal digital effects. The [XX] parameter in the syntax noted in the title stands for a hexadecimal value that represents an effect number sent from an external machine. The following shows the hexadecimal values that can be specified and their meanings.

Effect Number	Digital Effect	Hexadecimal Value
0	ROOM	00
1	STAGE	01
2	HALL	02
oFF	OFF	0F

# Troubleshooting

Problem	Possible Cause	Action	See page
No keyboard Sound	<ol style="list-style-type: none"> <li>1. Power supply problem.</li> <li>2. Power is not turned on.</li> <li>3. Volume setting is too low.</li> <li>4. The MODE switch is in the CASIO CHORD or FINGERED position.</li> <li>5. LOCAL CONTROL is off.</li> <li>6. MIDI data has changed the VOLUME and EXPRESSION settings to 0.</li> </ol>	<ol style="list-style-type: none"> <li>1. Correctly attach the AC adaptor, make sure that batteries poles (+/-) are facing correctly, and check to make sure that batteries are not dead.</li> <li>2. Press the POWER button to turn on power.</li> <li>3. Use the VOLUME slider to increase volume.</li> <li>4. Normal play is not possible on the accompaniment keyboard while the MODE switch is set to CASIO CHORD or FINGERED. Change the MODE switch setting to NORMAL.</li> <li>5. Turn on LOCAL CONTROL.</li> <li>6. Adjust both parameters.</li> </ol>	<p>Page E-12</p> <p>Page E-14</p> <p>Page E-14</p> <p>Page E-16</p> <p>Page E-37</p> <p>Page E-39</p>
<p>Any of the following symptoms while using battery power.</p> <ul style="list-style-type: none"> <li>• Dim power supply indicator</li> <li>• Instrument does not turn on.</li> <li>• Dim, difficult to read display</li> <li>• Abnormally low speaker/headphone volume</li> <li>• Distortion of sound output</li> <li>• Occasional interruption of sound when playing at high volumes</li> <li>• Sudden power failure when playing at high volumes</li> <li>• Dimming of the display when playing at high volume</li> <li>• Abnormal rhythm pattern and demo tune play</li> <li>• Dimming of keyboard lights when notes sound.</li> <li>• Loss of power, sound distortion, or low volume when playing from a connected computer or MIDI device</li> </ul>	Low battery power	Replace the batteries with a set of new ones or use the AC adaptor.	Page E-12
Auto Accompaniment does not sound.	Accompaniment volume is set to 000.	Use the ACCOMP VOLUME button to increase the volume.	Page E-19
Sound output does not change when key pressure is varied.	Touch response is turned off.	Press the TOUCH RESPONSE button to turn it on.	Page E-34
Key light stays on.	Keyboard is waiting for play of the correct note during Step 1 or Step 2 play.	<ol style="list-style-type: none"> <li>1. Press the lit key to continue with Step 1 or Step 2 play.</li> <li>2. Press the START/STOP button to quit Step 1 or Step 2 play.</li> </ol>	<p>Page E-22</p> <p>Page E-23</p>
Keys are lit though no sound is being produced.	Power on alert is reminding you that power was left on without any operation being performed.	Press any button or keyboard key to restore power to normal.	Page E-12
When playing with another MIDI instrument, keys or tunings do not match.	Transpose or tuning is set to a value other than 00.	Use the TRANSPOSE/TUNE/MIDI button to display the applicable setting screens and set both transpose and tuning to 00.	Page E-36
Cannot record Auto Accompaniment or rhythm.	Track other than Track 1 is selected as the recording track.	Use the track select buttons to select Track 1. (Track 2 is melody track.)	Page E-25
When playing General MIDI data with a computer, playback notes do not match those produced when lit keys are pressed.	Wrong SOUND RANGE SHIFT setting	Use the TRANSPOSE/TUNE/MIDI button to display the SOUND RANGE SHIFT screen and correct the setting.	Page E-38
Playing on the keyboard produces an unnatural sound when connected to a computer.	The computer's MIDI THRU function is turned on.	Turn off the MIDI THRU function on the computer or turn off LOCAL CONTROL on the keyboard.	Page E-37
Cannot record chord accompaniment data on a computer.	ACCOMP MIDI OUT is turned off.	Turn on ACCOMP MIDI OUT.	Page E-37



# Specifications

<b>Model:</b>	LK-60
<b>Keyboard:</b>	61 standard-size keys, 5 octaves (with touch response on/off)
<b>Key Light System:</b>	Can be turned on and off (up to 10 keys can be lit at the same time)
<b>Tones:</b>	137 (128 General MIDI tones + 9 drum tones); with layer and split
<b>Rhythm Instrument Tones:</b>	61
<b>Polyphony:</b>	24 notes maximum (12 for certain tones)
<b>Digital Effects:</b>	3 reverb types (HALL, STAGE, ROOM)
<b>Auto Accompaniment</b> Rhythm Patterns: Tempo: Chords: Rhythm Controller: Accomp Volume:	100 Variable (216 steps, ♩ = 40 to 255) 3 fingering methods (CASIO CHORD, FINGERED, FULL RANGE CHORD) START/STOP, INTRO, NORMAL/NORMAL FILL-IN, VARIATION/VARIATION FILL-IN, SYNCHRO/ENDING 0 to 127 (128 steps)
<b>3-step Lesson:</b> Playback:	3 lessons (Step 1, 2, 3) Repeat play of a single tune
<b>Song Bank</b> Number of Tunes: Controllers:	100 PLAY/PAUSE, STOP, FF, REW, TRACK 1/LEFT, TRACK 2/RIGHT
<b>Musical Information Function:</b>	Tone, Auto Accompaniment, Song Bank numbers and names; staff notation, tempo, metronome, measure and beat number, step lesson display, chord name, dynamic mark, fingering, pedal operation
<b>Metronome:</b> Beat Specification:	On/Off 1 to 6
<b>Memory</b> Songs: Recording Tracks: Recording Methods: Memory Capacity:	2 2 Real-time, step Approximately 5,200 notes (total for two songs)
<b>MIDI:</b>	16 multi-timbre receive, GM Level 1 standard
<b>Other Functions</b> Transpose: Tuning:	25 steps (-12 semitones to +12 semitones) 101 steps (A4 = approximately 440Hz ±50Cents)
<b>Terminals</b> MIDI Terminals: Assignable Jack: Headphone/Output Terminal: Output Impedance: Output Voltage:	IN, OUT Standard jack (sustain, sostenuto, soft, rhythm start/stop) Stereo standard jack 100Ω 4.5V (RMS) MAX
<b>Power Jack:</b>	9V DC
<b>Power Supply:</b> Batteries: Battery Life: AC Adaptor: Auto Power Off:	2-way 6 D-size batteries Approximately 5 hours continuous operation on manganese batteries AD-5 Turns power off approximately 6 minutes after last key operation. Enabled under batter power only, can be disabled manually.
<b>Speaker Output:</b>	2.5W + 2.5W
<b>Power Consumption:</b>	9V --- 7.7W
<b>Dimensions:</b>	96.1 x 39.1 x 14.4 cm (37 7/8 x 15 3/8 x 5 11/16 inch)
<b>Weight:</b>	Approximately 6.0 kg (13.25 lbs)(without batteries)

• Design and specifications are subject to change without notice.