USER’S GUIDE
Please keep all information for future reference.

Safety Precautions
Before trying to use the Digital Keyboard, be sure to read the separate “Safety Precautions”.

GUÍA DEL USUARIO
Guarde toda información para tener como referencia futura.

Precauciones de seguridad
Antes de intentar usar el teclado digital, asegúrese de leer las “Precauciones de seguridad” separadas.
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 CAUTION
Changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.

Declaration of Conformity
Model Number: CTK-2090/CTK-2400
Trade Name: CASIO COMPUTER CO., LTD.
Responsible party: CASIO AMERICA, INC.
Address: 570 MT. PLEASANT AVENUE, DOVER, NEW JERSEY 07801
Telephone number: 973-361-5400
This device complies with Part 15 of the FCC Rules, Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Important!
Please note the following important information before using this product.
- Before using the optional AD-E95100L Adaptor to power the unit, be sure to check the AC Adaptor for any damage first.
- Consult the dealer or an experienced radio/TV technician for help.

Function Transmitted Recognized Remarks
<table>
<thead>
<tr>
<th>Mode</th>
<th>Program Change</th>
<th>System Exclusive</th>
<th>System Common</th>
<th>Control Change</th>
<th>Aux Messages</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode 1 : OMNI PLUS, POLY</td>
<td>O, 0 - 127, O, O</td>
<td>O, O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O, 0 - 127, O, O</td>
</tr>
</tbody>
</table>
Contents

General Guide ......................... EN-2
Using the 10-key Pad (10) .............. EN-4
Using the FUNCTION Button (3) ......... EN-4

Getting Ready to Play .............. EN-5
Preparing the Music Stand .............. EN-5
Power Supply ........................................... EN-5

Playing the Digital Keyboard ... EN-6
Turning on Power and Playing ........... EN-6
Using Headphones ......................... EN-6
Using the Metronome ....................... EN-7

Controlling the Keyboard Sounds ........ EN-8
Select from a variety of musical instrument sounds ............ EN-8
Using Reverb .............................................. EN-9
Using a Pedal ............................................. EN-9
Changing the Pitch (Transposition) .......... EN-10

Sampling a Sound and Playing it on the Keyboard (Sampling) ......... EN-11
Playing the SAMPLING DEMO ............. EN-11
Sampling a Sound and Playing It .......... EN-11
Sounding Sampled Sounds .................. EN-13
Applying an Effect to a Sound Sample ........ EN-14
Using a Sampled Sound in a Rhythm (VOICE PERCUSSION) ............. EN-15
Starting a Sampling Operation Manually .......... EN-15
Deleting Sampled Data ...................... EN-15
Enabling or Disabling the Sampling Play Back ........ EN-16
Enabling or Disabling Auto Incrementing during Short Sampling .......... EN-16

Playing Built-in Songs ........... EN-17
Playing the Demo Songs ............. EN-17
Playing Back a Particular Song .......... EN-17

Using Built-in Songs to Master Keyboard Play ........ EN-21
Phrases .................................................. EN-21
Step Up Lesson Flow ......................... EN-21
Selecting the Song, Phrase, and Part You Want to Practice ........ EN-22
Lessons 1, 2, and 3 ........................ EN-23
Lesson Settings ...................................... EN-24
Using Auto Step Up Lesson ................ EN-25

Using Auto Accompaniment .......... EN-27
Playing the Rhythm Part only ............. EN-27
Playing All Parts ........................ EN-28
Using Auto Accompaniment Effectively .......... EN-30
Using One-Touch Preset .................... EN-31

Connecting External Devices .............. EN-32
Connecting a Computer ..................... EN-32
MIDI Settings ........................................ EN-33
Connecting to Audio Equipment ............ EN-35

Reference ...................... EN-36
Troubleshooting .................................... EN-36
Specifications ........................................ EN-38
Operating Precautions ...................... EN-39
Song List .............................................. EN-40
Fingering Guide ........................ EN-41
Chord Example List ........................ EN-42

MIDI Implementation Chart

Included Accessories
● Music Stand
● Song Book
● Leaflets
  • Safety Precautions
  • Appendix
  • Other (Warranty, etc.)
Items included as accessories are subject to change without notice.

Separately Available Accessories
• You can get information about accessories that are separately for this product from the CASIO catalog available from your retailer, and from the CASIO website at the following URL.

http://world.casio.com/
In this manual, the term “Digital Keyboard” refers to the CTK-2090/CTK-2400.
Illustrations in this User’s Guide show the CTK-2400.
In this manual, buttons and other controllers are identified using the numbers shown below.
The following explains the meaning of the symbol that appears on the product console and with the key names below.

- Indicates a function that is enabled by holding down the button for some time.

1. **POWER** button ➞ EN-6
2. **VOLUME** slider ➞ EN-6
3. **FUNCTION** button ➞ EN-4
4. **METRONOME**, **BEAT** button ➞ EN-7
5. **TEMPO** buttons ➞ EN-7, 19, 31
6. **REPEAT**, **INTRO** button ➞ EN-18, 30
7. **REW**, **NORMAL/FILL-IN** button ➞ EN-18, 30
8. **FF**, **VAR./FILL-IN** button ➞ EN-18, 30
9. **PAUSE**, **SYNCHRO/ENDING** button ➞ EN-18, 30
10. **PLAY/STOP**, **START/STOP** button ➞ EN-11, 17, 27
11. **PART SELECT**, **ACCOMP/CHORDS** button ➞ EN-20, 28
12. **TONE**, **SAMPLING DEMO** button ➞ EN-8, 11
13. **RHYTHM**, **ONE TOUCH PRESET** button ➞ EN-12, 27, 31
14. **SONG BANK** button ➞ EN-11, 17
15. **Number buttons**, **[–]/[+] keys** ➞ EN-4
16. **SAMPLED TONES/EFFECTS 1**, **LISTEN** button ➞ EN-14, 23

17. **SAMPLED TONES/EFFECTS 2**, **WATCH** button ➞ EN-14, 23
18. **SAMPLED TONES/EFFECTS 3**, **REMEMBER** button ➞ EN-14, 24
19. **SAMPLED TONES/EFFECTS 4**, **NEXT** button ➞ EN-14, 22
20. **SAMPLED TONES/EFFECTS 5**, **AUTO** button ➞ EN-14, 25
21. **VOICE PERCUSSION**, **LESSON** button ➞ EN-15, 22
22. **Speakers**
23. **Song Bank list**
24. **Built-in microphone**
25. **Display**
26. **SAMPLING** button ➞ EN-11
27. **Rhythm list**
28. **Tone list**
29. **CHORD root names** ➞ EN-28
30. **Percussion instrument list** ➞ EN-8

---

**Back**

31. **USB port** ➞ EN-32
32. **SUSTAIN** jack ➞ EN-9
33. **AUDIO IN** jack ➞ EN-11, 35
34. **DC 9.5V** terminal ➞ EN-5
35. **PHONES/OUTPUT** jack ➞ EN-6, 35
Use the number buttons and the [–] and [+] keys to change the settings of the parameters that appear in the upper left area of the display.

Example: To enter tone number 004, input 0 → 0 → 4.

NOTE
- Negative values cannot be input using the number buttons. Use [+](increase) and [–](decrease) instead.

You can use the [+] (increase) and [–] (decrease) keys to change the displayed number or value.
- Holding down either key scrolls the displayed setting.
- Pressing both keys at the same time will return to the initial default setting or the recommended setting.

Use the FUNCTION button (3) to access settings that let you select the reverb type, pedal effect, etc.

1. Press 3 (FUNCTION).

2. Next press 3 (FUNCTION) until the parameter whose setting you want to change is displayed.
   - Each press of 3 (FUNCTION) cycles through the available parameters.
   - To scroll backwards through parameters, hold down 3 (FUNCTION) as you press 4 (METRONOME).

### Using the FUNCTION Button (3)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Display</th>
<th>See Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Transpose</td>
<td>Trans.</td>
<td>EN-10</td>
</tr>
<tr>
<td>2 Accompaniment Volume</td>
<td>AcompVol</td>
<td>EN-31</td>
</tr>
<tr>
<td>3 Song Volume</td>
<td>SongVol</td>
<td>EN-19</td>
</tr>
<tr>
<td>4 Tuning</td>
<td>Tune</td>
<td>EN-10</td>
</tr>
<tr>
<td>5 Reverb</td>
<td>Reverb</td>
<td>EN-9</td>
</tr>
<tr>
<td>6 Voice Fingering Guide</td>
<td>Speak</td>
<td>EN-24</td>
</tr>
<tr>
<td>7 Note Guide</td>
<td>NoteGuid</td>
<td>EN-25</td>
</tr>
<tr>
<td>8 Performance Evaluation</td>
<td>Scoring</td>
<td>EN-25</td>
</tr>
<tr>
<td>9 Phrase</td>
<td>PhraseLn</td>
<td>EN-25</td>
</tr>
<tr>
<td>10 Sampling Start</td>
<td>SampAuto</td>
<td>EN-15</td>
</tr>
<tr>
<td>11 Sampling Play Back</td>
<td>SampPB</td>
<td>EN-16</td>
</tr>
<tr>
<td>12 Auto Incrementing during Short Sampling</td>
<td>Autolncr</td>
<td>EN-16</td>
</tr>
<tr>
<td>13 Keyboard Channel</td>
<td>KeybdCh</td>
<td>EN-33</td>
</tr>
<tr>
<td>14 Navigate Channels</td>
<td>Navi.Ch</td>
<td>EN-33</td>
</tr>
<tr>
<td>15 Local Control</td>
<td>Local</td>
<td>EN-34</td>
</tr>
<tr>
<td>16 Accomp Out</td>
<td>AcompOut</td>
<td>EN-34</td>
</tr>
<tr>
<td>17 Pedal Effect</td>
<td>Jack</td>
<td>EN-9</td>
</tr>
</tbody>
</table>

3. When the parameter you want is displayed, use 10 (10-key) to change its setting.
   - The parameter setting will disappear from the upper left area of the screen if you do not perform any operation for some time.

**IMPORTANT!**
- The tone and other parameters revert to their initial defaults whenever you turn on power (page EN-6).
Getting Ready to Play

Preparing the Music Stand

Music stand

Power Supply

Either an AC adaptor or batteries can be used to power this Digital Keyboard. Normally, use of AC adaptor power is recommended.

- The AC adaptor does not come with this Digital Keyboard. Purchase it separately from your retailer. See page EN-1 for information about options.

Using the AC Adaptor

Make sure that you use only the AC adaptor specified for this Digital Keyboard. Use of a different type of AC adaptor can cause malfunction.

Specified AC Adaptor: AD-E95100L (JEITA Standard plug)

Household power outlet

DC 9.5V terminal

AC adaptor

IMPORTANT!

- Be sure to turn off power before loading batteries.
- It is up to you to prepare six commercially available AA-size batteries. Do not use oxyride batteries or any other nickel based batteries.

1. Open the battery cover on the bottom of the Digital Keyboard.

2. Load six AA-size batteries into the battery compartment.

Make sure the positive + and negative - ends of the batteries are facing as shown in the illustration.

3. Insert the tabs of the battery cover into the holes on the side of the battery compartment, and close the cover.

■ Low Battery Indication

The indicator shown below starts to flash to let you know when battery power is low. Replace the batteries with new ones.

Using Batteries

IMPORTANT!

- Be sure to turn off power before loading batteries.
- It is up to you to prepare six commercially available AA-size batteries. Do not use oxyride batteries or any other nickel based batteries.

1. Open the battery cover on the bottom of the Digital Keyboard.

2. Load six AA-size batteries into the battery compartment.

Make sure the positive + and negative - ends of the batteries are facing as shown in the illustration.

3. Insert the tabs of the battery cover into the holes on the side of the battery compartment, and close the cover.

■ Low Battery Indication

The indicator shown below starts to flash to let you know when battery power is low. Replace the batteries with new ones.
Playing the Digital Keyboard

1. Press 1.
   This turns on power.
   • To turn off the Digital Keyboard, press 1 again.

2. Try playing something on the keyboard. Use 2 to adjust volume.

Turning off the Digital Keyboard power causes all current settings to be cleared. The Digital Keyboard will revert to initial default settings the next time you turn it on.

The message “Pls wait” will remain on the display while a data save operation is in progress. Do not perform any other operation while it is displayed.

Turning off the Digital Keyboard can cause Digital Keyboard data to be deleted or become corrupted.

Auto Power Off

If you do not perform any operation on the Digital Keyboard for one of the trigger times noted below, Auto Power Off will turn off power.

- During battery operation : 6 minutes
- During AC adaptor operation : 30 minutes

■ Disabling Auto Power Off

You can disable Auto Power Off to ensure that power is not turned off automatically during a concert, etc.

1. While holding down 13 (TONE), turn on power.
   Auto Power Off will be disabled.

Using Headphones

Using headphones cuts off output from the built-in speakers, which means you can practice playing even late at night without disturbing others.

- Be sure to turn down the volume level before connecting headphones.

NOTE:
- Headphones do not come with the Digital Keyboard.
- Use commercially available headphones. See page EN-1 for information about options.

IMPORTANT!
- Do not listen to very high volume output over headphones for long period. Doing so creates the risk of hearing damage.
- If you are using headphones that require an adaptor plug, make sure you do not leave the adaptor plugged in when removing the headphones.
Using the Metronome

The metronome lets you play and practice along with a steady beat to help keep you on tempo.

### Start/Stop

1. Press **4**.
   This starts the metronome.

2. Press **4** again to stop the metronome.

### Changing the Beats per Measure

You can configure the metronome to use a bell sound for the first beat of each measure of the song you are playing.

- You can specify 0, or a value from 2 to 6 as the number of beat per measure.
- When playing a built-in song, the beats per measure setting (which determines when the bell sounds) is configured automatically for the currently selected song.

1. Hold down **4** until the beats per measure setting screen appears on the display.

   ![Beat Pattern]

   • If you do not perform any operation for after the beats per measure setting screen appears, the display will return to the screen displayed before you pressed **4**.

2. Use **10-key** to enter the number of beats per measure.
   - The bell will not sound if you specify 0 for this setting. In this case, all beats are indicated by a click sound. This setting lets you practice with a steady beat, without worrying how many beats there are in each measure.

### Changing the Metronome Tempo

Use the following procedure to change the tempo of the metronome.

1. Press **5**.

   - Use **\(\wedge\)** (slower) and **\(\vee\)** (faster) to change the tempo setting. Holding down either button changes the setting at high speed.
   - Pressing **\(\wedge\)** and **\(\vee\)** at the same time will initialize the tempo setting in accordance with the currently selected song or rhythm.
   - Pressing **5** causes the tempo value to flash on the display. While the tempo value is flashing, you can use **10-key** to change it.
     - Note that you must input leading zeros, so 89 is input as 089.
   - The tempo value will stop flashing if you do not perform any operation for a short while.

### Changing the Metronome Sound Volume

The metronome volume setting is changed automatically with the volume level of the currently selected Auto Accompaniment or song. The metronome volume cannot be adjusted independently.

- For information about changing the Auto Accompaniment volume, see page EN-31.
- For information about changing the song volume, see page EN-19.

**NOTE**

- You cannot adjust the balance between the metronome and note volume during Auto Accompaniment and built-in tune play.
Controlling the Keyboard Sounds

Select from a variety of musical instrument sounds

Your Digital Keyboard lets you select tones for a wide variety of musical instrument sounds, including violin, flute, orchestra, and more. Even the same song sound takes on a different feel by changing the instrument type.

To select an instrument for playing

1. Press \( \text{bm} \) (TONE).

   ![Tone number]

2. Use \( \text{bp} \) (10-key) to select the tone number you want.

   The corresponding tone number and tone name will appear on the screen.
   - Use the number buttons to enter the tone number.
     Specify three digits for the tone number.
     Example: To select 001, enter 0 → 0 → 1.

   **NOTE**
   - See the separate “Appendix” for a complete list of available tones.
   - When one of the drum sets is selected (tone numbers 395 through 400), each keyboard key is assigned a different percussion sound.

3. Try playing something on the keyboard.

   The tone of the instrument you selected will sound.

<table>
<thead>
<tr>
<th>Playing with a Piano Tone (Piano Setup)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press ( \text{b} ) (TONE) and ( \text{bn} ) (RHYTHM) at the same time. This selects the grand piano tone.</td>
</tr>
</tbody>
</table>

**Settings**

- Tone Number: “001”
- Reverb: “06”
- Transpose: “00”
- Pedal Effect: SUS
- Rhythm Number: “131”
- Accompaniment: Rhythm part only
- Local Control: On
- Voice Percussion: Off
Controlling the Keyboard Sounds

Using Reverb
Reverb adds reverberation to notes. You can change the duration of the reverb.

1. Press 3 (FUNCTION) a number of times until “Reverb” appears on the display (page EN-4).

```
OFF
Reverb
```

2. Use 16 (10-key) [-] and [+] keys to select the reverb setting you want.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off (oFF)</td>
<td>Turns off reverb.</td>
</tr>
<tr>
<td>1 to 10</td>
<td>The larger the number selected, the longer the reverb duration.</td>
</tr>
</tbody>
</table>

```
02
Reverb
```

Using a Pedal
A pedal can be used to change notes in various ways while playing.
- A pedal unit does not come with the Digital Keyboard. Purchase one separately from your retailer. See page EN-1 for information about options.

Connecting a Pedal Unit
Connect an optional pedal unit.

Selecting the Pedal Effect
1. Press 3 (FUNCTION) a number of times until “Jack” appears on the display (page EN-4).

```
Sus
Jack
```

2. Use 15 (10-key) [-] and [+] keys to select the pedal effect you want.
- The following shows the available pedal effects.

<table>
<thead>
<tr>
<th>Pedal Effect</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustain (SUS)</td>
<td>Sustains notes played while the pedal is depressed. Organ and other similar tone notes are sustained even if the pedal is not pressed.</td>
</tr>
<tr>
<td>Sostenuto (SoS)</td>
<td>Sustains notes that are playing when the pedal is depressed before the keyboard keys are released.</td>
</tr>
<tr>
<td>Soft (SFt)</td>
<td>Slightly softens notes played while the pedal is depressed.</td>
</tr>
<tr>
<td>Rhythm (rHy)</td>
<td>Pressing the pedal starts and stops Auto Accompaniment or song playback.</td>
</tr>
</tbody>
</table>
Controlling the Keyboard Sounds

Changing the Pitch (Transpose, Tuning)

Changing the Pitch in Semitone Steps (Transpose)

The transpose feature lets you change the pitch, in semitone steps. A simple operation lets you instantly change the pitch to match that of a singer.

- The transpose setting range is –12 to +12 semitones.

1. Press 3 (FUNCTION).

2. Use 10 (10-key) [-] and [+] keys to select the transpose setting you want.

Fine Tuning (Tuning)

Use the tuning feature when you need to adjust the pitch slightly to play along with another musical instrument. Also, some artists perform their music with slightly altered tuning. You can use the tuning feature to adjust tuning so it exactly matches a performance on a CD.

- The tuning feature specifies the frequency of the A4 note. You can set a frequency within the range of 415.5 to 465.9 Hz. The initial default setting is 440.0 Hz.

1. Press 3 (FUNCTION) a number of times until “Tune” appears on the display (page EN-4).

2. Use 10 (10-key) [-] and [+] keys to adjust the tuning.

- Performing this step causes the display to change from “Tune” to a value that indicates the current frequency setting as shown below. You can change the frequency in 0.1Hz steps.

- Even if you do not perform a 10 (10-key) operation to adjust the tuning, the current frequency setting will appear automatically after a few seconds.
You can use the digital keyboard’s built-in microphone to record a sound and then play it with the keyboard keys. The sampling feature is a great way to create your own original sounds.

Sampling a Sound and Playing It

There are two sampling methods: long sampling and short sampling. Long sampling is used for sampling in the Song Bank Mode, while short sampling is use for sampling in the Rhythm Mode.

- **Long Sampling**
  This method allows sampling of a single sound with a duration of two seconds.

1. Press 14 (SONG BANK).
2. Press 20 (SAMPLING) and release it. This enters sampling standby.

- **IMPORTANT!**
  - Sampling a new sound overwrites all previously recorded data (including data recorded with short sampling).
  - Sampled sounds are recorded in monaural.
  - The built-in microphone is only for inputting and recording external sounds for use with the sampling function. Sounds input with the built-in microphone are not output through the speakers.
  - You cannot sample sounds input through the AUDIO IN jack.

### Playing the SAMPLING DEMO

Use the procedure below to play a demo tune that features sampled sounds.

1. Hold down 12 (SAMPLING DEMO). This starts playback.
2. To stop demo play, press 12 or 10.

- **IMPORTANT!**
3. Produce the desired sound in the direction of the built-in microphone.
Sampling will start automatically.

- Sampling will not start if the volume level of the sound being sampled with the microphone is too low.
- Sampling will stop automatically two seconds after it starts, or if the sound being input through the microphone stops before then.

Random phrases using the sampled sound will play back to indicate that sampling is complete.

What you sample is stored as tone number 401.

4. Press a keyboard key.
This will play the recorded sound.

**Short Sampling**
With short sampling, you can record up to five samples, each with a length of up to approximately 0.4 seconds. Short samples are assigned rhythm parts, and can be sounded as voice percussion. For details, see “Using a Sampled Sound in a Rhythm (VOICE PERCUSSION)” (page EN-15).

**IMPORTANT!**
- Sampling a new sound overwrites all previously recorded data (including data recorded with long sampling).

1. Press \( \text{RHYTHM} \).
- If you want to use a rhythm for sampling, select it here.

2. Press \( \text{SAMPLING} \) and release it.
This enters sampling standby.
- At this time tone number 412 (which is short sampling 1 tone) is selected.

3. Produce the desired sound in the direction of the built-in microphone.
Sampling will start automatically.

- Sampling will not start if the volume level of the sound being sampled with the microphone is too low.
- Sampling will stop automatically 0.4 seconds after it is started.

The sampled sound is assigned a rhythm number and start to play to indicate that sampling is complete.

What you sample is stored as tone number 412.

4. Press a keyboard key.
This will play the recorded sound.
5. Press \( \text{cq} \) (SAMPLING).
   - At this time tone number 415 (which is short sampling 2 tone) is selected.
   - Each subsequent short sampling operation is automatically assigned to the next sequential tone number. After sampling reaches tone number 424 (short sampling 5 tone), it cycles back to tone number 412 (short sampling 1 tone).
   - If you want to assign a sample to a specific number manually, press the SAMPLED TONES/EFFECTS button (1 to 5) that corresponds to the number you want before pressing the SAMPLING button. This will perform short sampling and assign the result to the number that corresponds to the button you press.

6. Repeat steps 2 through 5 as many times as necessary to perform the short sampling you want.

### Sounding Sampled Sounds

#### Long Sample
In the Song Bank Mode, the five SAMPLED TONES/EFFECTS buttons have the functions described below.
1: Sounds the original sampled tone as-is.
2 to 5: Select effects.

##### NOTE
- The SAMPLING L indicator appears on the display when there is a long sample (sample created with long sampling) available.

#### Short Sample
In the Rhythm Mode, the five SAMPLED TONES/EFFECTS button can be used to select short sample tones.
1: Tone number 412
2: Tone number 415
3: Tone number 418
4: Tone number 421
5: Tone number 424

##### NOTE
- The SAMPLING S indicator appears on the display when there is one or more sample (sample created with short sampling) available.
### Applying an Effect to a Sound Sample

Use the procedure below to apply effects to a sample that was recorded using either long sampling or short sampling.

1. **Press one of the five \( \text{Sampled Tones/Effects} \) buttons** to cycle through available effects.

   *Example: Button 1 (tone number 412)*

   Original tone → Loop 1 → Loop 2 → Original tone →

   See the “Sampled Sound Tone Numbers” table below for details about the effects that are assigned to each button.

#### Sampled Sound Tone Numbers

The original sampled sound and its modified (by effects) versions are assigned to sequential tone numbers (the same as built-in tones). This makes it easy to select a version of a sampled sound using \( \text{(10-key)} \).

<table>
<thead>
<tr>
<th>SAMPLED TONES/EFFECTS button</th>
<th>Tone No.</th>
<th>Effect Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>401</td>
<td>Original Long</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>402</td>
<td>Loop 1 Long</td>
<td>Loops the sampled sound.</td>
</tr>
<tr>
<td></td>
<td>403</td>
<td>Loop 2 Long</td>
<td>Loops the sample sound and raises the pitch of the resonating sound when the keyboard key is released.</td>
</tr>
<tr>
<td>2</td>
<td>404</td>
<td>Loop 3 Long</td>
<td>Loops the sample sound and lowers the pitch of the resonating sound when the keyboard key is released.</td>
</tr>
<tr>
<td></td>
<td>405</td>
<td>Pitch 1 Long</td>
<td>Changes the pitch from low to high, at an increasing rate.</td>
</tr>
<tr>
<td>3</td>
<td>406</td>
<td>Pitch 2 Long</td>
<td>Changes pitch from high to low, at a decreasing rate.</td>
</tr>
<tr>
<td></td>
<td>407</td>
<td>Pitch 3 Long</td>
<td>Changes pitch from high to low, at a decreasing rate, and then raises the pitch when the key is released.</td>
</tr>
<tr>
<td>4</td>
<td>408</td>
<td>Tremolo Long</td>
<td>Alternates volume between high and low.</td>
</tr>
<tr>
<td></td>
<td>409</td>
<td>Funny 1 Long</td>
<td>Adds vibrato and changes pitch by a gradually increasing amount.</td>
</tr>
<tr>
<td>5</td>
<td>410</td>
<td>Funny 2 Long</td>
<td>Alternates between high pitch and low pitch.</td>
</tr>
<tr>
<td></td>
<td>411</td>
<td>Funny 3 Long</td>
<td>Adds vibrato and changes pitch from low to high.</td>
</tr>
<tr>
<td>1</td>
<td>412</td>
<td>Original Short 1</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>413</td>
<td>Loop 1 Short 1</td>
<td>Loops the sampled sound.</td>
</tr>
<tr>
<td></td>
<td>414</td>
<td>Loop 2 Short 1</td>
<td>Loops the sample sound and raises the pitch of the resonating sound when the keyboard key is released.</td>
</tr>
<tr>
<td>2</td>
<td>415</td>
<td>Original Short 2</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>416</td>
<td>Loop 3 Short 2</td>
<td>Loops the sample sound and lowers the pitch of the resonating sound when the keyboard key is released.</td>
</tr>
<tr>
<td></td>
<td>417</td>
<td>Pitch 1 Short 2</td>
<td>Changes the pitch from low to high, at an increasing rate.</td>
</tr>
<tr>
<td>3</td>
<td>418</td>
<td>Original Short 3</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>419</td>
<td>Pitch 2 Short 3</td>
<td>Changes pitch from high to low, at a decreasing rate.</td>
</tr>
<tr>
<td></td>
<td>420</td>
<td>Pitch 3 Short 3</td>
<td>Changes pitch from high to low, at a decreasing rate, and then raises the pitch when the key is released.</td>
</tr>
<tr>
<td>4</td>
<td>421</td>
<td>Original Short 4</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>422</td>
<td>Tremolo Short 4</td>
<td>Alternates volume between high and low.</td>
</tr>
<tr>
<td></td>
<td>423</td>
<td>Funny 1 Short 4</td>
<td>Adds vibrato and changes pitch by a gradually increasing amount.</td>
</tr>
<tr>
<td>5</td>
<td>424</td>
<td>Original Short 5</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>425</td>
<td>Funny 2 Short 5</td>
<td>Alternates between high pitch and low pitch.</td>
</tr>
<tr>
<td></td>
<td>426</td>
<td>Funny 3 Short 5</td>
<td>Adds vibrato and changes pitch from low to high.</td>
</tr>
</tbody>
</table>
Using a Sampled Sound in a Rhythm (VOICE PERCUSSION)

Use the following procedure to replace a percussive instrument with a sampled sound you sampled with short sampling and play auto accompaniment rhythms (page EN-27) with it.

1. Each press of the (VOICE PERCUSSION) button toggles between the VOICE PERCUSSION mode and the normal rhythm mode.
   - The VOICE PERCUSSION indicator will be on the display while the VOICE PERCUSSION mode is selected.

2. Start rhythm play (page EN-27).
   - Some rhythm part sounds are replaced by sampled sounds you sampled with short sampling.

Note:
- In the VOICE PERCUSSION mode, the rhythm accompaniment volume level is balanced with the volume of the sampled sound. Because of this, the rhythm accompaniment (chords and obbligato) volume level will be lowered automatically.

Starting a Sampling Operation Manually

1. Press the (FUNCTION) a number of times until “SampAuto” appears on the display (page EN-4).

2. Press the (10-key) [-] key to select the OFF setting.
   - This enables manual sampling. When this setting is selected, sampling starts as soon as you release the in step 2 under “Long Sampling” (page EN-11) or step 2 under “Short Sampling” (page EN-12).

Note:
- When the above setting is “oFF”, sampling starts when you release , not when you press it. Sampling will not start if you keep depressed.

Deleting Sampled Data

To delete all sampled data

1. Press to turn off power.

2. While holding down the (SONG BANK) and (10-key) [0] button, press to turn power back on again.

Note:
- Make sure the digital keyboard is not connected to a computer when performing the above steps. Otherwise, data may not be deleted correctly.

To delete the long sample

1. Press (SONG BANK).

2. Hold down the (SAMPLED TONES/EFFECTS 1). This will cause the confirmation message “Sure?” to appear.

3. Press (10-key) [YES] key to delete the data or (10-key) [NO] key to cancel.

To delete the data for a specific short sample number

1. Press (RHYTHM).

2. Hold down the SAMPLED TONES/EFFECTS button ( to ) whose data you want to delete.
   - This will cause the confirmation message “Sure?” to appear.

3. Press (10-key) [YES] key to delete the data or (10-key) [NO] key to cancel.
Enabling or Disabling the Sampling Play Back

Use the procedure below to enable or disable the auto playback routine (song or rhythm using sampled sound) that is performed after sampling is complete.

1. Keep pressing 3 (FUNCTION) until “SampPB” appears on the display.

2. Press 6 (10-key) [–] key to disable the demo routine.
   - While the demo routine is disabled, the playback in step 3 at the end of long sampling and short sampling is not performed.

Enabling or Disabling Auto Incrementing during Short Sampling

Use this procedure to enable or disable auto incrementing of the short sampling number during short sampling.

1. Keep pressing 3 (FUNCTION) until “AutoIncr” appears on the display.

2. Press 6 (10-key) [–] key to disable short sample number incrementing.
   When short sample number incrementing is turned off, short sampling is repeated using the number (number does not change) selected with the SAMPLED TONES/EFFECTS (1 to 5) button. To change short sampling to another number, you need to press a different SAMPLED TONES/EFFECTS (1 to 5) button before pressing the SAMPLING button.
With this Digital Keyboard, built-in tune data is referred to as “songs”. You can listen to the built-in songs for your own enjoyment, or you can play along with them for practice.

**NOTE**
- In addition to simple listening enjoyment, the built-in songs can be used with the lesson system (page EN-21) for practice.

## Playing the Demo Songs

Use the following procedure to play back built-in songs (001 to 090).

1. **Press** [bk] and [bl] at the same time.
   - This will start playback of the demo songs. Demo playback continues until you stop it.
   - See page EN-40 for a complete list of available songs.
   - Demo playback always starts from song number 001.

2. **To change to another song while demo playback is in progress,** use [bp] (10-key) [-] and [+] keys to enter the song number you want (page EN-4).
   - This will cause demo playback to jump to the song whose number you entered.
   - You cannot use [bp] (10-key) number buttons to select a song.

3. **To stop demo playback,** press [bk].
   - Demo playback continues until you stop it by pressing [bk].

## Playing Back a Particular Song

Use the procedure below to play back one of the built-in songs. You can play along on the keyboard with song playback.

### Start/Stop

1. **Press** [(SONG BANK)]

2. **Use** [bp] (10-key) to enter the number of the song you want.
   - See page EN-40 for a complete list of available songs.
   - Use the number buttons to enter the song number.
   - Specify three digits for the song number.
   - **Example:** To select 001, enter 0 → 0 → 1.

### Twinkle

<table>
<thead>
<tr>
<th>Flashes</th>
<th>Tune name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twinkle</td>
<td>Twinkle</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Song number</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lights</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LESSON</th>
</tr>
</thead>
<tbody>
<tr>
<td>REPEAT</td>
</tr>
<tr>
<td>REVERB</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lights</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

[Diagram of keyboard controls]
3. Press \( \text{bk} \).
This starts playback of the song.

4. Press \( \text{bk} \) again to stop playback.
Song playback will continue (repeat) until you press \( \text{bk} \) to stop it. You can cancel song repeat by pressing \( \text{6} \).

### Pause, Skip Forward, Skip Back

Use the operations in this section to perform pause, skip forward, and skip back operations.

#### Pause

1. Press \( \text{9} \).
This pauses song playback.

2. Press \( \text{9} \) again to resume playback from the point where you paused it.

#### Skip Forward

1. Press \( \text{8} \).
This skips song playback forward to the next measure. Each press of \( \text{8} \) skips ahead one measure. Holding down \( \text{8} \) skips forward at high speed until you release it.
- Pressing \( \text{8} \) while song playback is stopped performs lesson function phrase skip forward (page EN-22).

#### Skip Back

1. Press \( \text{7} \).
This skips song playback back to the previous measure. Each press of \( \text{7} \) skips back one measure. Holding down \( \text{7} \) skips back at high speed until you release it.
- Pressing \( \text{7} \) while song playback is stopped performs lesson function phrase skip back (page EN-22).

### Repeating Playback of Specific Measures

You can use the procedure in this section to repeat particular measures for practice playing along until you master it. You can specify the start measure and the end measure of the section you want to play and practice.

1. Press \( \text{6} \) to temporarily turn off song repeat.
2. When song playback reaches the measure you want to specify as the start measure, press 6. This specifies the measure as the start measure.

3. When playback reaches the measure you want to select as the end measure, press 6 again. This specifies the measure as the end measure and starts repeat playback of the measures in the specified range.
   - During repeat play you can use 5 to pause playback, 7 to skip forward, or 8 to skip back.

4. Pressing 6 again returns to normal playback. Changing the song number clears the start measure and end measure of the repeat operation.

Changing Playback Speed (Tempo)

You can use the following procedure to change the speed (tempo) in order to slow down playback to practice difficult passages, etc.

1. Press 5.
   - Use (slower) and (faster) to change the tempo setting. Holding down either button changes the setting at high speed.
     - Pressing and at the same time will return the current song to its original default tempo.
     - Pressing 5 causes the tempo value to flash on the display. While the tempo value is flashing, you can use 10-key to change it. The tempo value will stop flashing if you do not perform any operation for a short while.
     - Changing the song number will return the song to its original default tempo.

Adjusting the Song Volume

Use the following procedure to adjust the balance between the volume of what you play on the keyboard and song playback volume.

1. Press 3 (FUNCTION) a number of times until “Song Vol” appears on the display (page EN-4).

2. Use 10-key [−] and [+] keys to adjust the song volume.
Playing Built-in Songs

Playing with the Tone as Song Playback
The procedure below lets you select the same keyboard tone as the one being used in the song and play along with your favorite tunes.

1. After selecting a song, hold down (SONG BANK) for about two seconds until the displayed tone name changes to the tone name of the song.
   - If your currently selected tone is the same as the song tone, the display contents will not change.

2. Play along with song playback.

   **NOTE**
   - If you select a song that uses different tones for left and right hand play, the right hand part tone is assigned to the keyboard.

Turning Off the Part of One Hand for Practice (Part Select)
You can turn off the right hand part or the left hand part of a song during playback and practice playing the along with the remaining part.

1. Press (1) to select the part you want to turn off.
   - Each press of (1) cycles through the settings shown below.

   ![Hand icons showing part select options: Right hand part off, Left hand part off, Both hand parts off, Both hand parts on]

2. Press (1). This starts playback in accordance with the setting you selected in step 1.

   **NOTE**
   - During playback with one part turned off, only the notes of the part that is turned off are shown on the display.
Using Built-in Songs to Master Keyboard Play

To master a song, it is best to break it up into shorter parts (phrases), master the phrases, and then put everything together. Your Digital Keyboard comes with a Step Up Lesson feature that helps you to do just that.

The built-in songs are pre-divided into phrases to help you master keyboard play.

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phrase 2</th>
<th>Phrase 3</th>
<th>. . .</th>
<th>Final Phrase</th>
</tr>
</thead>
</table>

Step Up Lesson Flow

Step Up Lesson takes you through practice of the right hand part, left hand part, and both hand parts for each phrase of a song. Master all of the phrases and you master the song.

Phrase 1
- Right Hand Lesson 1, 2, 3
- Left Hand Lesson 1, 2, 3
- Both Hand Lesson 1, 2, 3

Repeat the above to practice phrase 2, 3, 4, and so on, until you reach the final phrase of the song.

After mastering all of the phrases, practice the entire song.

Now you have mastered the entire song!
Using Built-in Songs to Master Keyboard Play

**Messages that Appear during Lessons**

The following are the messages that appear on the display during Step Lessons.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
</table>
| <Phrase> | Appears when you select a phrase, when a lesson starts, etc.  
  • Note that certain phrases will cause "<Wait>" to appear instead of "<Phrase>". |
| <Wait>   | Appears when the lesson starts with an intro or fill-in phrase that is not included in the phrases to be practiced. Play toll advance automatically to the next phrase after the un-included phrase plays, so wait until then to start playing on the keyboard. |
| NextPhrs | Appears when advancing automatically to the next phrase. This message appears following a phrase for which "<Wait>" (see above) is displayed, and during an Auto Step Up Lesson (page EN-25). |
| From Top | This message appears during Auto Step Up Lesson (page EN-25) immediately before practice from Phrase 1 up until the phrase currently being practiced. |
| Complete | Appears at the end of Auto Step Up Lesson (page EN-25). |

**Selecting the Song, Phrase, and Part You Want to Practice**

First, select the song, phrase, and part you want to practice.

1. **Select the song you want to practice (page EN-17).**
   
   This will select the first phrase of the song.

2. **Press 8 (or 7) to move forward one phrase, or 7 to move back one phrase.**
   
   • Holding down 8 or 7 scrolls through phrases at high speed.
   
   • The Digital Keyboard remembers the last phrase you practiced for up to 20 songs. To recall the last practice phrase for the current song (if it is available), hold down 10.

3. **Press 11 to select the part you want to practice.**
   
   Each press of 11 cycles through the settings shown below.

   - Right hand practice
   - Left hand practice
   - Both hand practice

   * This indicator (setting) is skipped if you press 11 while a lesson is in progress.

4. **Hold down 14 (SONG BANK) for about two seconds.**
   
   The same tone used for song playback will be assigned to the keyboard (page EN-20).
Now it is time to start the lessons. First, select the song and part you want to practice.

**Lesson 1: Listen to the song.**

First, listen to the example a few times to familiarize yourself with what it sounds like.

1. Press **bq**. This starts example play.

2. To stop Lesson 1, press **bq** or **bk**.

**Lesson 2: Watch how the song is played.**

Play the song on the keyboard. During this lesson, the display shows the key you need to press next. Voice fingering guide also uses a simulate voice to announce which finger you should use. Follow the instructions to press the correct keyboard keys and play the notes. Don’t worry if you play the wrong note. Song playback will wait until you play the correct note. Take your time and play at your own pace.

1. Press **b**. This starts Lesson 2.

2. Play notes on the keyboard in accordance with the instructions provided on the display and by voice fingering guide.

   During this lesson, the display shows the key you need to press next. Voice fingering guide uses a simulate voice to announce which finger you should use.

   ![Voice Fingering Guide]

   **<Lesson 2 Guidance>**

   Master playing the correct note with the correct finger as instructed by the guidance. Practice playing with the correct timing.

   Song playback will wait for you to play the correct note.
   - Keyboard key goes from flashing to lit.
   - Note guide sounds the correct note to be played.
   - Voice Fingering Guide tells you what finger to use.

3. To stop Lesson 2, press **b** or **bk**.

4. If you complete Lesson 2 play to the end, a score that rates your play appears on the screen.

   ![Score]

   **Bravo!** You pass! Advance to the next lesson. **Again!** Go back and try again.
Lesson 3: Remember what you learned as you play.

Though song playback stands by waiting for you to press the correct keys as in Lesson 2, the Digital Keyboard does not provide any guidance about what note you need to play next. Remember everything you have learned up to Lesson 2 as you play.

1. Press $b$.
   This starts Lesson 3.

2. Play the song along with the song playback.

   <Lesson 3 Guidance>
   Press the keyboard keys you learned in Lesson 2.
   Song playback will wait for you to play the correct note.
   * Note guide sounds the correct note to be played.
   If you are still unable to press the correct keyboard key, the Digital Keyboard will display keyboard guidance and voice fingering guide will tell you what finger to use, just as in Lesson 2.
   Pressing the correct key will cause song playback to resume.

3. To stop Lesson 3, press $b$ or $k$.
   * If you complete Lesson 3 play to the end, a score that rates your play appears on the screen the same as with Lesson 2.

Playing a Particular Song All the Way Through

After you successfully complete all of the phrases in Lessons 1, 2, and 3, it is time to try playing the entire song from beginning to end.

1. Use $h$ to turn off both hand parts and then press $b$.
   Try playing with both hands and find out how the Digital Keyboard evaluates your effort.

Lesson Settings

Playing without Phrase Repeat

You can turn off phrase repeat for Lessons 1, 2, and 3.

1. Press $e$.
   This disables phrase repeat play.

Turning Off Voice Fingering Guide

Use the following procedure to turn off voice fingering guide, which tells you which finger to use to play each note in Lesson 2 and Lesson 3.

1. Press $h$ (FUNCTION) a number of times until “Speak” appears on the display (page EN-4).

2. Press the $b$ (10-key) [–] key to select the OFF setting.
Using Built-in Songs to Master Keyboard Play

Turning Off Note Guide
Use the following procedure to turn off note guide, which sounds the note to be played next in Lesson 2 and Lesson 3.

1. Press 3 (FUNCTION) a number of times until “NoteGuid” appears on the display (page EN-4).

2. Press the 15 (10-key) [-] key to select the OFF setting.

Turning Off Performance Evaluation
Use the following procedure to turn off performance evaluation, which evaluates your performance and displays a score in Lesson 2 and Lesson 3.

1. Press 3 (FUNCTION) a number of times until “Scoring” appears on the display (page EN-4).

2. Press the 15 (10-key) [-] key to select the OFF setting.

Lesson Play without Dividing Songs into Phrases
When the phrase function is turned off, lessons go through an entire song from beginning to end, without dividing it up between phrases.

1. Press 3 (FUNCTION) a number of times until “PhraseLn” appears on the display (page EN-4).

2. Press the 15 (10-key) [-] key to select the OFF setting.

Using Auto Step Up Lesson
With Auto Step Up Lesson, the Digital Keyboard advances through each lesson automatically.

1. Select the song and part you want to practice (page EN-17).

   Listen to the first phrase in Lesson 1.
   • In Lesson 1, the sample phrase is played only once before advancing to Lesson 2.

3. Auto Step Up Lesson stops automatically after you are able to get through all of the lessons successfully.
   • In Lesson 2 and Lesson 3, the Digital Keyboard advances to the next lesson if you are able to achieve the “Bravo!” evaluation result.
   • To cancel a lesson, press 20 or 10.

   **NOTE**
   • You can change the step and phrase during Auto Step Up Lesson using 7, 8, and 10 to 19.
   • Starting Auto Step Up Lesson turns on Phrase Repeat (page EN-24), Note Guide (page EN-25) and Performance Evaluation (page EN-25) automatically. These features cannot be turned off during lessons.
Auto Step Up Lesson Procedure

<table>
<thead>
<tr>
<th>Phrase 1</th>
<th>Lesson 1</th>
<th>Lesson 2</th>
<th>Lesson 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phrase 2</td>
<td>Lesson 1</td>
<td>Lesson 2</td>
<td>Lesson 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phrase 3</td>
<td>Lesson 1</td>
<td>Lesson 2</td>
<td>Lesson 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Next phrase practice using the same procedure

Final phrase
Lesson 1
Lesson 2
Lesson 3
From Phrase 1 to the final phrase

Lesson complete

* Auto Step Up Lesson advances to the next phrase, regardless of whether the “Bravo!” result is attained.
Using Auto Accompaniment

With Auto Accompaniment, simply select an accompaniment pattern. Each time you play a chord with your left hand the appropriate accompaniment will play automatically. It’s like having a personal backup group along with you wherever you go.

**NOTE**
- Auto Accompaniments are made up of the following three parts:
  1. Rhythm
  2. Bass
  3. Harmony

You can have only the rhythm part play, or you can have all three parts play at the same time.

### Playing the Rhythm Part only

The rhythm part is the foundation each Auto Accompaniment. Your Digital Keyboard comes with a variety of built-in rhythms, including 8-beat and waltz. Use the following procedure to play the basic rhythm part.

1. **Press** (RHYTHM).
2. **Use** (10-key) to select the rhythm number you want.
   - See the separate “Appendix” for information about individual rhythms.
   - Use the number buttons to enter the rhythm number. Specify three digits for the rhythm number.
     - **Example:** To select 001, enter 03031.

**NOTE**
- With rhythms 140, and 142 to 150, nothing will sound until you play a chord on the keyboard.

3. **Press** or 7.
   - This starts the rhythm.

### Starting and Stopping the Rhythm Part only

1. **Press** (RHYTHM).

   ![Rhythm pattern name](image)

2. **Use** (10-key) to select the rhythm number you want.
   - See the separate “Appendix” for information about individual rhythms.
   - Use the number buttons to enter the rhythm number. Specify three digits for the rhythm number.
     - **Example:** To select 001, enter 0 → 0 → 1.

**NOTE**
- With rhythms 140, and 142 to 150, nothing will sound until you play a chord on the keyboard.

3. **Press** or 7.
   - This starts the rhythm.

   ![Pattern change](image)

4. Play along with the rhythm.

5. To stop the rhythm, press (RHYTHM) again.
Using Auto Accompaniment

Playing All Parts

Auto Accompaniment with Chords

Playing a chord with your left hand automatically adds bass and harmony accompaniment parts to the currently selected rhythm. It is just like having your own personal back up group on call.

1. Start play of the Auto Accompaniment rhythm part.

2. Press \( \text{bl} \). This enables chord input on the accompaniment keyboard.

3. Use the accompaniment keyboard to play chords. This will cause bass and harmony Auto Accompaniment parts to be added to the rhythm part.

4. Play other chords with left hand as you play the melody with your right hand.

5. Pressing \( \text{bl} \) again returns to rhythm only accompaniment.

**NOTE**

- For information about starting Auto Accompaniment as soon as a chord is played, see "Using Synchro Start" on page EN-31.

Selecting a Chord Input Mode

You can select from among the following five chord input modes.

- FINGERED 1
- FINGERED 2
- FINGERED 3
- CASIO CHORD
- FULL RANGE CHORD

1. Hold down \( \text{bl} \) until the chord input mode selection screen appears on the display.

2. Use \( \text{bp} \) (10-key) [–] and [+] keys to select the chord input mode you want.

Example: Pressing D-F♯-A-C on the accompaniment keyboard

Accompaniment for the D-F♯-A-C chord (D7) sounds.

Chord input mode

Example: Pressing D-F♯-A-C on the accompaniment keyboard

Accompaniment for the D-F♯-A-C chord (D7) sounds.
Using Auto Accompaniment

■ FINGERED 1, 2, and 3
With these three input modes, you play chords on the accompaniment keyboard using their normal chord fingerings. Some chord forms are abbreviated, and can be fingered with one or two keys. See page EN-41 for information about chords that are supported and how they are fingered on the keyboard.

● FINGERED 1
Play the component notes of the chord on the keyboard.

● FINGERED 2
Unlike FINGERED 1, 6th input is not possible. m7 or m7\(^5\) is input.

● FINGERED 3
Unlike FINGERED 1, allows input of fraction chords with the lowest keyboard note as the bass note.

■ CASIO CHORD
With CASIO CHORD, you can use simplified fingerings to play the four types of chords described below.

<table>
<thead>
<tr>
<th>CASIO CHORD Fingering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chord Type</td>
</tr>
<tr>
<td>Major Chords</td>
</tr>
<tr>
<td>C (C Major)</td>
</tr>
<tr>
<td>Minor Chords</td>
</tr>
<tr>
<td>Cm (C Minor)</td>
</tr>
<tr>
<td>Seventh Chords</td>
</tr>
<tr>
<td>C7 (C Seventh)</td>
</tr>
<tr>
<td>Minor Seventh Chords</td>
</tr>
<tr>
<td>Cm7 (C Minor Seventh)</td>
</tr>
</tbody>
</table>

• When playing a minor, seventh, or minor seventh chord, it makes no different whether the additional keys you press are black or white.

■ FULL RANGE CHORD
With this mode, you can use the full range of the keyboard to play chords and the melody. See page EN-41 for information about chords that are supported.
Using Auto Accompaniment

Using Auto Accompaniment Effectively

Auto Accompaniment Pattern Variations

Use the following procedures to play intro and ending patterns, to play fill-in patterns, and to play variations of basic Auto Accompaniment patterns.

■ Auto Accompaniment Variation

Each Auto Accompaniment pattern has a basic “normal pattern” as well as a “variation pattern”.

1. Press 8.
   This starts the variation pattern.

2. Pressing 7 returns to normal pattern.

■ Auto Accompaniment Intro

Use the following procedure to play an intro of a few measures.

   This starts the intro pattern. Normal pattern play will start when the intro pattern is finished.
   • If you press 8 while an intro pattern is being played, the variation pattern will start when the intro pattern is finished.

■ Auto Accompaniment Ending

Use the following procedure to play an ending of a few measures.

1. While an Auto Accompaniment is playing, press 9.
   This will play the ending pattern and then stop Auto Accompaniment play automatically.

Auto Accompaniment Fill-in

Use the procedure below to play a fill-in pattern during a performance.
• A “fill-in” is a short phrase played where you want to change the mood of a piece. A fill-in pattern can be used to create a link between two melodies or an accent.
• Normal and variation patterns have their own unique fill-in patterns.

● Normal Pattern Fill-in

1. While a normal pattern is playing, press 7.
   This plays the fill-in for the normal pattern.
   • Normal pattern play will resume after the fill in pattern is complete.

● Variation Pattern Fill-in

1. While a variation pattern is playing, press 8.
   This plays the fill-in for the variation pattern.
   • Variation pattern play will resume after the fill in pattern is complete.

Lights

Lights

Lights

Lights
Using Synchro Start

Use the following procedure to configure the Digital Keyboard to start Auto Accompaniment play as soon as you press a keyboard key.

1. Press \( \text{9} \).  
   This enters accompaniment start standby.

2. Play a chord on the keyboard.  
   This will start full part accompaniment (normal).

Any of the following operations can be performed while in synchro standby to start a non-normal pattern.

- To start with intro pattern, press \( \text{6} \).
- To start with variation pattern play, press \( \text{8} \).

Changing Auto Accompaniment Speed (Tempo)

Use the following procedure to change Auto Accompaniment speed to a level that suits you.

1. Press \( \text{5} \).  
   Use \( \searrow \) (slower) and \( \nearrow \) (faster) to change the tempo setting. Holding down either button changes the setting at high speed.
   - Pressing \( \searrow \) and \( \nearrow \) at the same time will initialize the rhythm setting in accordance with the currently selected rhythm.
   - While the tempo value is flashing, you also can use \( \text{15} \) (10-key) to change it.
   - If you do not perform any operation for after the tempo setting screen appears, the display will return to the screen displayed before you pressed \( \text{5} \).

Adjusting the Accompaniment Volume

Use the following procedure to adjust the balance between what you are playing on the keyboard and the volume of the Auto Accompaniment.

1. Press \( \text{3} \) (FUNCTION) a number of times until “AcompVol” appears on the display (page EN-4).

2. Use \( \text{15} \) (10-key) [–] and [+] keys to adjust the accompaniment volume.

Using One-Touch Preset

With One-Touch Preset, the Digital Keyboard automatically configures optimal tone, tempo, and other settings in accordance with the rhythm pattern you select.

1. Hold down \( \text{16} \) (RHYTHM) until the current tone screen appears on the display.
   This will automatically apply the One-Touch Preset settings in accordance with the rhythm pattern that is currently selected.

2. Play a chord on the keyboard.
   This will start accompaniment automatically.
Connecting External Devices

Connecting a Computer
You can connect the Digital Keyboard to a computer and exchange MIDI data between them. You can send play data from the Digital Keyboard to music software running on your computer, or you can send MIDI data from your computer to the Digital Keyboard for playback.

Minimum Computer System Requirements
The following shows the minimum computer system requirements for sending and receiving MIDI data. Check to make sure that your computer complies with these requirements before connecting the Digital Keyboard to it.

- **Operating System**
  - Windows® XP (SP2 or later) *1
  - Windows Vista® *2
  - Windows® 7 *3
  - Windows® 8 *4
  - Windows® 8.1 *5
  - Mac OS® X (10.3.9, 10.4.11, 10.5.X, 10.6.X, 10.7.X, 10.8.X, 10.9.X)
  - *1: Windows XP Home Edition
  - Windows XP Professional (32-bit)
  - *2: Windows Vista (32-bit)
  - *3: Windows 7 (32-bit, 64-bit)
  - *4: Windows 8 (32bit, 64bit)
  - *5: Windows 8.1 (32bit, 64bit)

- **USB port**

**IMPORTANT!**
- Never connect to a computer that does not conform to the above requirements. Doing so can cause problems with your computer.

Connecting the Digital Keyboard to Your Computer

- **IMPORTANT!**
  - Make sure you follow the steps of the procedure below exactly. Connecting incorrectly can make data send and receive impossible.

1. Turn off the Digital Keyboard and then start up your computer.
   - Do not start up the music software on your computer yet!

2. After starting up your computer, use a commercially available USB cable to connect it to the Digital Keyboard.

3. Turn on the Digital Keyboard.
   - If this is the first time you are connecting the Digital Keyboard to your computer, the driver software required to send and receive data will be installed on your computer automatically.

4. Start up your computer’s music software.
5. Configure the music software settings to select one of the following as the MIDI device.

CASIO USB-MIDI: For Windows 8.1, Windows 8, Windows 7, Windows Vista, Mac OS X
USB Audio Device: For Windows XP

- For information about how to select the MIDI device, see the user documentation that comes with the music software you are using.

**IMPORTANT!**
- Be sure to turn on the Digital Keyboard first before starting up your computer’s music software.
- USB send and receive is disabled during playback of a Song Bank song (page EN-17).

**NOTE**
- Once you are able to connect successfully, there is no problem with leaving the USB cable connected when you turn off your computer and/or Digital Keyboard.
- This Digital Keyboard conforms to General MIDI Level 1 (GM).
- For detailed specifications and connections that apply to MIDI data send and receive by this Digital Keyboard, see the latest support information provided by the website at the following URL.
  http://world.casio.com/

### MIDI Settings

#### Keyboard Channel

A keyboard channel is the channel used for sending Digital Keyboard data to a computer. You can select the channel you want for sending Digital Keyboard data to a computer.

- The keyboard channel setting range is 01 to 16.

1. Press 3 (FUNCTION) a number of times until “Keybd Ch” appears on the display (page EN-4).

![Keybd Ch](image)

2. Use 18 (10-key) [-] and [+] keys to change the keyboard channel.

#### Navigate Channels

The navigate channels can be used to display only the notes of a particular channel (part) as on-screen guide information from among the note information of a tune sent from the computer.

**Specifying the Navigate Channels**

From among the 16 available channels (numbered 1 to 16), you can specify any two neighboring channels (such as 05 and 06) as navigate channels. The smaller numbered channel is the navigate (L) channel, while the larger numbered channel is the navigate (R) channel. Specifying the navigate (R) channel will automatically configure the navigate (L) channel as well.

1. Press 3 (FUNCTION) a number of times until “Navi. Ch” appears on the display (page EN-4).

![Navi. Ch](image)

2. Use 18 (10-key) to specify the navigate (R) channel.

This also will automatically configure the next lower channel number as the navigate (L) channel.
Connecting External Devices

Turning Off the Navigate Channel Sound and Playing the Part on the Keyboard
You can turn off the sound on one or both of the navigate
channels and play the cancelled part on the keyboard
yourself.

1. Press \( \text{Bl} \) to select the channel setting you want
to turn off.
Each press of \( \text{Bl} \) cycles through settings (1) through (4)
described below.
- If you turn off one channel, you can play the cancelled
part on the keyboard using the same tone as the
channel you turned off. If you turn off both channels
(option (3)), what you play on the keyboard sounds
using the tone of the navigate (R) channel.

Local Control
There are times when exchanging data with a computer when
you may not want the Digital Keyboard to sound notes you
play on its keyboard. The local control setting lets you do just
that.

1. Press \( \text{Bl} \) (FUNCTION) a number of times until
“Local” appears on the display (page EN-4).

2. Use \( \text{Bi} \) (10-key) [-] and [+] keys to specify the
local control setting.

Accomp Out
Enabling the Accomp Out setting causes Auto
Accompaniment data to be sent to the computer.

1. Press \( \text{Bl} \) (FUNCTION) a number of times until
“AcompOut” appears on the display (page
EN-4).

2. Use \( \text{Bi} \) (10-key) [-] and [+] keys to turn Accomp
Out on or off.
Connecting to Audio Equipment

This Digital Keyboard can be connected to commercially available stereo, amplifier, or recording equipment, to a portable audio player or other equipment.

### Outputting Digital Keyboard Notes to Audio Equipment

Connection requires commercially available connecting cords, supplied by you. The connecting cords should have a stereo standard plug on one end and a plug that matches the configuration of the external device on the other end.

**IMPORTANT!**

- Turn off the external device when making connections. After connecting, turn down the Digital Keyboard and external device volume levels whenever turning power on or off.
- After connecting, turn on the Digital Keyboard and then the external device.
- If Digital Keyboard notes sound distorted when they are sounded from external audio equipment, lower the Digital Keyboard’s volume setting.

![Diagram of connecting cords](image)

**Connecting to Audio Equipment**

Inputting Digital Keyboard Notes to Audio Equipment

- Turn off the Digital Keyboard when making connections. After connecting, turn down the Digital Keyboard and external device volume levels whenever turning power on or off.
- After connecting, turn on the external device and then the Digital Keyboard.
- If notes are distorted when they are sounded on the external device, lower the volume setting of the external device.

![Diagram of connecting cords](image)

**Playing an External Device from the Digital Keyboard**

Connection requires commercially available connecting cords, supplied by you. The connecting cords should have a stereo mini plug on one end and a plug that matches the configuration of the external device on the other end.

**IMPORTANT!**

- Turn off the Digital Keyboard when making connections. After connecting, turn down the Digital Keyboard and external device volume levels whenever turning power on or off.
- After connecting, turn on the external device and then the Digital Keyboard.
- If notes are distorted when they are sounded on the external device, lower the volume setting of the external device.
## Troubleshooting

### Included Accessories

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can’t find something that should be here.</td>
<td>Carefully check inside all of the packing materials.</td>
</tr>
</tbody>
</table>

### Power Requirements

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power will not turned on.</td>
<td>• Check the AC adaptor or make sure that the batteries are facing correctly (page EN-5).</td>
</tr>
<tr>
<td></td>
<td>• Replace the batteries with new ones or switch over to AC adaptor power (page EN-5).</td>
</tr>
<tr>
<td>The Digital Keyboard outputs a loud sound and then suddenly powers down.</td>
<td>Replace the batteries with new ones or switch over to AC adaptor power (page EN-5).</td>
</tr>
<tr>
<td>The Digital Keyboard suddenly powers down after a few minutes.</td>
<td>This happens when Auto Power Off (page EN-6) is triggered.</td>
</tr>
</tbody>
</table>

### Display

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>The display keeps going out or are flashing.</td>
<td>Replace the batteries with new ones or switch over to AC adaptor power (page EN-5).</td>
</tr>
<tr>
<td>On-screen keyboard keys or notes remain on the display.</td>
<td>A Step Up Lesson is in progress and the Digital Keyboard is waiting for you to play the next note in the song. To stop this from happening, cancel the lesson (page EN-23).</td>
</tr>
<tr>
<td>Screen contents are visible only from straight ahead.</td>
<td>This is dues to production limitations. It does not indicate malfunction.</td>
</tr>
</tbody>
</table>

### Sound

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nothing happens when I press any keyboard key.</td>
<td>• Adjust the main volume setting (page EN-6).</td>
</tr>
<tr>
<td></td>
<td>• Check if something is plugged into the PHONES/OUTPUT jack ((\text{\textregistered})) on the back of the Digital Keyboard.</td>
</tr>
<tr>
<td></td>
<td>• Turn power off and then back on to initialize all Digital Keyboard settings (page EN-6).</td>
</tr>
<tr>
<td>Nothing happens or notes do not play normally when I play notes on the left side of the keyboard.</td>
<td>Press 1 to disable chord input in the accompaniment keyboard area (page EN-28).</td>
</tr>
<tr>
<td>Nothing happens when I start an Auto Accompaniment.</td>
<td>• With rhythms 140, and 142 to 150, nothing will sound until you play a chord on the keyboard. Try playing a chord (page EN-28).</td>
</tr>
<tr>
<td></td>
<td>• Check and adjust the accompaniment volume setting (page EN-31).</td>
</tr>
<tr>
<td></td>
<td>• Turn power off and then back on to initialize all Digital Keyboard settings (page EN-6).</td>
</tr>
<tr>
<td>Nothing happens when I start playback of a built-in song.</td>
<td>• It takes a little time after you press the button until the song starts to play. Wait for a moment for the song to start.</td>
</tr>
<tr>
<td></td>
<td>• Check and adjust the song volume (page EN-19).</td>
</tr>
<tr>
<td></td>
<td>• Turn power off and then back on to initialize all Digital Keyboard settings (page EN-6).</td>
</tr>
<tr>
<td>The metronome does not sound.</td>
<td>• Check and adjust the accompaniment volume setting (page EN-31).</td>
</tr>
<tr>
<td></td>
<td>• Check and adjust the song volume (page EN-19).</td>
</tr>
<tr>
<td></td>
<td>• Turn power off and then back on to initialize all Digital Keyboard settings (page EN-6).</td>
</tr>
<tr>
<td>Notes keep sounding, without stopping.</td>
<td>• Turn power off and then back on to initialize all Digital Keyboard settings (page EN-6).</td>
</tr>
<tr>
<td></td>
<td>• Replace the batteries with new ones or switch over to AC adaptor power (page EN-5).</td>
</tr>
<tr>
<td>Symptom</td>
<td>Action</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Some notes are cut off while they are playing.</td>
<td>Notes are cut off whenever the number of notes being sounded exceeds the maximum polyphony value of 48 (24 for some tones). This does not indicate malfunction.</td>
</tr>
</tbody>
</table>
| The volume or tone setting I made has changed.                        | • Adjust the main volume setting (page EN-6).  
• Turn power off and then back on to initialize all Digital Keyboard settings (page EN-6).  
• Replace the batteries with new ones or switch over to AC adaptor power (page EN-5). |
| In certain keyboard ranges, the volume and tone quality sound are slightly different from those in other keyboard ranges. | This is due to system limitations. It does not indicate malfunction.                                                                                                                                 |
| With some tones, octaves do not change at the far ends of the keyboard. | This is due to system limitations. It does not indicate malfunction.                                                                                                                                 |
| The pitch of the notes does not match other accompanying instruments or sounds strange when played long with other instruments. | • Check and adjust the transpose (page EN-10) and tuning settings (page EN-10).  
• Turn power off and then back on to initialize all Digital Keyboard settings (page EN-6). |
| The reverb of notes seems to change suddenly.                         | • Check and adjust the reverb setting (page EN-9).  
• Turn power off and then back on to initialize all Digital Keyboard settings (page EN-6). |
| Sounds I sampled were deleted.                                         | Be sure to press the power button to turn off power. Unplugging or disconnecting the AC adaptor without first pressing the power button to turn off power will cause sampled sounds to be deleted. |
| Even though I didn’t input anything with the built-in microphone, the message “Sampled!” appears on the display when I release the SAMPLING button. | • Perform the sampling operation where it is quiet.  
• You may be making noise, which is picked up as sampled sound, when releasing the SAMPLING button release operation. If this is the case, release the SAMPLING button carefully to avoid making noise.  
• Use the procedure under “Starting a Sampling Operation Manually” (page EN-15) to turn off SampAuto, and then try manual sampling. |
| Rhythms played in the VOICE PERCUSSION Mode sound strange and unnatural. | In order to assure proper balance for the rhythm, be sure to record all five short samples. Playing a rhythm in the VOICE PERCUSSION Mode while there is no short sample will cause a preset sample to sound. If there is even a single short sample recorded, rhythm instruments will sound only for the recorded short sample. |

**Operation**

When I perform a skip forward or skip back operation, the skip operation moves multiple song measures instead of only a single measure.  
While song playback is stopped or a Step Up Lesson is in progress, skip forward and skip back operations are performed in phrase units (page EN-18).

**Computer Connection**

I can't exchange data between the Digital Keyboard and a computer.  
• Check to make sure that the USB cable is connected to the Digital Keyboard and computer, and that the device is selected correctly with your computer's music software settings (page EN-32).  
• Turn off the Digital Keyboard and then exit the music software on your computer. Next, turn the Digital Keyboard back on and then restart the music software on your computer.
### Specifications

<table>
<thead>
<tr>
<th><strong>Model</strong></th>
<th>CTK-2090/CTK-2400</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Keyboard</strong></td>
<td>61 standard-size keys</td>
</tr>
<tr>
<td><strong>Maximum Polyphony</strong></td>
<td>48 notes (24 for certain tones)</td>
</tr>
<tr>
<td><strong>Tones</strong></td>
<td></td>
</tr>
<tr>
<td>Built-In Tones</td>
<td>400</td>
</tr>
<tr>
<td>Sampling Tones</td>
<td>1 (Long Sampling) or 5 (Short Sampling)</td>
</tr>
<tr>
<td>Sampling Time</td>
<td>2 second (Long Sampling) or approximately 0.4 seconds each (Short Sampling)</td>
</tr>
<tr>
<td><strong>Reverb</strong></td>
<td>1 to 10, Off</td>
</tr>
<tr>
<td><strong>Metronome</strong></td>
<td></td>
</tr>
<tr>
<td>Beats per Measure</td>
<td>0, 2 to 6</td>
</tr>
<tr>
<td>Tempo Range</td>
<td>30 to 255</td>
</tr>
<tr>
<td><strong>Song Bank</strong></td>
<td></td>
</tr>
<tr>
<td>Tunes</td>
<td>110</td>
</tr>
<tr>
<td><strong>Step Up Lesson</strong></td>
<td>5 (Listen, Watch, Remember, Next, Auto)</td>
</tr>
<tr>
<td>Lesson Part</td>
<td>L, R, LR</td>
</tr>
<tr>
<td><strong>Auto Accompaniment</strong></td>
<td></td>
</tr>
<tr>
<td>Rhythm Patterns</td>
<td>150</td>
</tr>
<tr>
<td>One Touch Presets</td>
<td>150</td>
</tr>
<tr>
<td><strong>Other Functions</strong></td>
<td></td>
</tr>
<tr>
<td>Transpose</td>
<td>±1 octaves (−12 to +12 semitones)</td>
</tr>
<tr>
<td>Tuning</td>
<td>A4 = 415.5 to 465.9 Hz (Initial Default: 440.0 Hz)</td>
</tr>
<tr>
<td><strong>MIDI</strong></td>
<td>16 multi-timbre received, GM Level 1 standard</td>
</tr>
<tr>
<td><strong>Musical Information Function</strong></td>
<td>Tone, Rhythm, Song Bank numbers and names, staff notation, fingering, pedal operation, tempo, measure and beat number, chord name, etc.</td>
</tr>
<tr>
<td><strong>Inputs/Outputs</strong></td>
<td></td>
</tr>
<tr>
<td>USB port</td>
<td>TYPE B</td>
</tr>
<tr>
<td>Sustain jack</td>
<td>Standard jack (sustain, sostenuto, soft, rhythm)</td>
</tr>
<tr>
<td>Phones/Output jack</td>
<td>Stereo standard jack</td>
</tr>
<tr>
<td>Output Impedance</td>
<td>200Ω, Output Voltage: 4.5V (RMS) MAX</td>
</tr>
<tr>
<td>Audio In jack</td>
<td>Stereo mini jack</td>
</tr>
<tr>
<td>Input Impedance</td>
<td>9kΩ, Input Sensitivity: 200mV</td>
</tr>
<tr>
<td>Built-in microphone</td>
<td></td>
</tr>
<tr>
<td><strong>Power Jack</strong></td>
<td>9.5V DC</td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td>2-way</td>
</tr>
<tr>
<td>Batteries</td>
<td>6 AA-size zinc-carbon batteries or alkaline batteries</td>
</tr>
<tr>
<td>Battery Life</td>
<td>Approximately 3 hours continuous operation on alkaline batteries</td>
</tr>
<tr>
<td>AC Adaptor</td>
<td>AD-E95100L</td>
</tr>
<tr>
<td>Auto Power Off</td>
<td>Approximately 6 minutes (during battery operation) or 30 minutes (during AC adaptor operation) without any operation</td>
</tr>
<tr>
<td><strong>Speakers</strong></td>
<td>10cm × 2</td>
</tr>
<tr>
<td>Output</td>
<td>2W + 2W</td>
</tr>
<tr>
<td><strong>Power Consumption</strong></td>
<td>9.5V ≈ 7.7W</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>94.6 × 30.7 × 9.2 cm (37 1/4 × 12 1/16 × 3 5/8 inch)</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>Approximately 3.4kg (7.5 lbs) (without batteries)</td>
</tr>
</tbody>
</table>

* Design and specifications are subject to change without notice.
Operating Precautions

Be sure to read and observe the following operating precautions.

■ Location
Avoid the following locations for this product.
• Areas exposed to direct sunlight and high humidity
• Areas subjected to temperature extremes
• Near a radio, TV, video deck, or tuner
  The above devices will not cause malfunction of the product, but interference from the product can cause audio or video interference of a nearby device.

■ User Maintenance
• Never use benzine, alcohol, thinner, or other chemical agents to clean the product.
• To clean the product or its keyboard, wipe with a soft cloth moistened in a weak solution of water and a mild neutral detergent.
  Wring all excess moisture from the cloth before wiping.

■ Included and Optional Accessories
Use only accessories that are specified for use with this product. Use of unauthorized accessories creates the risk of fire, electric shock, and personal injury.

■ Weld Lines
Lines may be visible on the exterior of the product. These are "weld lines" that result from the plastic molding process. They are not cracks or scratches.

■ Musical Instrument Etiquette
Always be aware of others around you whenever using this product. Be especially careful when playing late at night to keep the volume at levels that do not disturb others. Other steps you can take when playing late at night are closing the window and using headphones.
## Song List

### SONG BANK

<table>
<thead>
<tr>
<th>WORLD</th>
<th>EVENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>046</td>
</tr>
<tr>
<td>002</td>
<td>SILENT NIGHT</td>
</tr>
<tr>
<td>003</td>
<td>047</td>
</tr>
<tr>
<td>004</td>
<td>WE WISH YOU A MERRY CHRISTMAS</td>
</tr>
<tr>
<td>005</td>
<td>048</td>
</tr>
<tr>
<td>006</td>
<td>JINGLE BELLS</td>
</tr>
<tr>
<td>007</td>
<td>049</td>
</tr>
<tr>
<td>008</td>
<td>JOY TO THE WORLD</td>
</tr>
<tr>
<td>009</td>
<td>050</td>
</tr>
<tr>
<td>010</td>
<td>O CHRISTMAS TREE</td>
</tr>
<tr>
<td>011</td>
<td>051</td>
</tr>
<tr>
<td>012</td>
<td>MARY HAD A LITTLE LAMB</td>
</tr>
<tr>
<td>013</td>
<td>052</td>
</tr>
<tr>
<td>014</td>
<td>LE CYGNE FROM &quot;LE CARNAVAL DES ANIMAUX&quot;</td>
</tr>
<tr>
<td>015</td>
<td>053</td>
</tr>
<tr>
<td>016</td>
<td>JE TE VEUX</td>
</tr>
<tr>
<td>017</td>
<td>054</td>
</tr>
<tr>
<td>018</td>
<td>SONATA op.33 “PÂTETIQUE” 2nd Mov.</td>
</tr>
<tr>
<td>019</td>
<td>055</td>
</tr>
<tr>
<td>020</td>
<td>HEIDENROSLEIN</td>
</tr>
<tr>
<td>021</td>
<td>056</td>
</tr>
<tr>
<td>022</td>
<td>AIR FROM “SUITE no.3”</td>
</tr>
<tr>
<td>023</td>
<td>057</td>
</tr>
<tr>
<td>024</td>
<td>SPRING FROM “THE FOUR SEASONS”</td>
</tr>
<tr>
<td>025</td>
<td>058</td>
</tr>
<tr>
<td>026</td>
<td>HABANERA FROM “CARMEN”</td>
</tr>
<tr>
<td>027</td>
<td>059</td>
</tr>
<tr>
<td>028</td>
<td>BRINDISI FROM “LA TRAVIATA”</td>
</tr>
<tr>
<td>029</td>
<td>060</td>
</tr>
<tr>
<td>030</td>
<td>HUNGARIAN DANCES no.5</td>
</tr>
<tr>
<td>031</td>
<td>061</td>
</tr>
<tr>
<td>032</td>
<td>MINUET IN G MAJOR</td>
</tr>
<tr>
<td>033</td>
<td>062</td>
</tr>
<tr>
<td>034</td>
<td>MUSETTE IN D MAJOR</td>
</tr>
<tr>
<td>035</td>
<td>063</td>
</tr>
<tr>
<td>036</td>
<td>GAVOTTE (GOSSEC)</td>
</tr>
<tr>
<td>037</td>
<td>064</td>
</tr>
<tr>
<td>038</td>
<td>ARABESQUE (BURGMULLER)</td>
</tr>
<tr>
<td>039</td>
<td>065</td>
</tr>
<tr>
<td>040</td>
<td>CHOPSTICKS</td>
</tr>
<tr>
<td>041</td>
<td>066</td>
</tr>
<tr>
<td>042</td>
<td>DECK THE HALL</td>
</tr>
<tr>
<td>043</td>
<td>067</td>
</tr>
<tr>
<td>044</td>
<td>ODE TO JOY</td>
</tr>
<tr>
<td>045</td>
<td>068</td>
</tr>
<tr>
<td>046</td>
<td>AVE MARIA (GOUNOD)</td>
</tr>
<tr>
<td>047</td>
<td>069</td>
</tr>
<tr>
<td>048</td>
<td>SONATINA op.36 no.1 1st Mov.</td>
</tr>
<tr>
<td>049</td>
<td>070</td>
</tr>
<tr>
<td>050</td>
<td>PRELUDE op.28 no.7 (CHOPIN)</td>
</tr>
<tr>
<td>051</td>
<td>071</td>
</tr>
<tr>
<td>052</td>
<td>REVERIE</td>
</tr>
<tr>
<td>053</td>
<td>072</td>
</tr>
<tr>
<td>054</td>
<td>GYMNOPÉDIES no.1</td>
</tr>
<tr>
<td>055</td>
<td>073</td>
</tr>
<tr>
<td>056</td>
<td>GOING HOME FROM “FROM THE NEW WORLD”</td>
</tr>
<tr>
<td>057</td>
<td>074</td>
</tr>
<tr>
<td>058</td>
<td>FUR ELISE</td>
</tr>
<tr>
<td>059</td>
<td>075</td>
</tr>
<tr>
<td>060</td>
<td>TURKISH MARCH (MOZART)</td>
</tr>
<tr>
<td>061</td>
<td>076</td>
</tr>
<tr>
<td>062</td>
<td>SONATA op.27 no.2 “MOONLIGHT” 1st Mov.</td>
</tr>
<tr>
<td>063</td>
<td>077</td>
</tr>
<tr>
<td>064</td>
<td>ETUDE op.10 no.3 “CHANSON DE L’ADIEU”</td>
</tr>
<tr>
<td>065</td>
<td>078</td>
</tr>
<tr>
<td>066</td>
<td>THE ENTERTAINER</td>
</tr>
<tr>
<td>067</td>
<td>079</td>
</tr>
<tr>
<td>068</td>
<td>WEDDING MARCH FROM “MIDSUMMER NIGHT’S DREAM”</td>
</tr>
<tr>
<td>069</td>
<td>080</td>
</tr>
<tr>
<td>070</td>
<td>AMERICAN PATROL</td>
</tr>
<tr>
<td>071</td>
<td>081</td>
</tr>
<tr>
<td>072</td>
<td>FRÖHLICHER LANDMANN</td>
</tr>
<tr>
<td>073</td>
<td>082</td>
</tr>
<tr>
<td>074</td>
<td>LA CHEVALERESQUE</td>
</tr>
<tr>
<td>075</td>
<td>083</td>
</tr>
<tr>
<td>076</td>
<td>SONATA K.545 1st Mov.</td>
</tr>
<tr>
<td>077</td>
<td>084</td>
</tr>
<tr>
<td>078</td>
<td>LA PRIERE D’UNE VIERGE</td>
</tr>
<tr>
<td>079</td>
<td>085</td>
</tr>
<tr>
<td>079</td>
<td>VALSE op.64 no.1 “PETIT CHIEN”</td>
</tr>
<tr>
<td>080</td>
<td>088</td>
</tr>
<tr>
<td>081</td>
<td>LIEBESTRAUME no.3</td>
</tr>
<tr>
<td>082</td>
<td>087</td>
</tr>
<tr>
<td>083</td>
<td>JESUS BLEIBET MEINE FREUDE</td>
</tr>
<tr>
<td>084</td>
<td>088</td>
</tr>
<tr>
<td>085</td>
<td>CANON (PACHELBEL)</td>
</tr>
<tr>
<td>086</td>
<td>089</td>
</tr>
<tr>
<td>087</td>
<td>SERENADE FROM “EINE KLEINE NACHTMUSIK”</td>
</tr>
<tr>
<td>088</td>
<td>090</td>
</tr>
<tr>
<td>089</td>
<td>MARCH FROM “THE NUTCRACKER”</td>
</tr>
</tbody>
</table>

### EXERCISE

<table>
<thead>
<tr>
<th>EXERCISE</th>
<th>091-100</th>
<th>EXERCISE I</th>
</tr>
</thead>
<tbody>
<tr>
<td>101-110</td>
<td>EXERCISE II</td>
<td></td>
</tr>
</tbody>
</table>
Fingering Guide

In addition to the chords that can be fingered with Fingered 1 and Fingered 2, the following chords also are recognized.

With Fingered 3, the lowest note fingered is interpreted as the base note. Inverted forms are not supported.

With Full Range Chord, when the lowest note fingered is a certain distance from the neighboring note, the chord is interpreted as a fraction chord.

Unlike Fingered 1, 2, and 3, Full Range Chord requires pressing of at least three keys to form a chord.

### Fingered 1, Fingered 2 Chords

<table>
<thead>
<tr>
<th>Chord</th>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>![C chord diagram]</td>
</tr>
<tr>
<td>Cm</td>
<td>![Cm chord diagram]</td>
</tr>
<tr>
<td>Cdim</td>
<td>![Cdim chord diagram]</td>
</tr>
<tr>
<td>Caug</td>
<td>![Caug chord diagram]</td>
</tr>
<tr>
<td>Csus4</td>
<td>![Csus4 chord diagram]</td>
</tr>
<tr>
<td>Csus2</td>
<td>![Csus2 chord diagram]</td>
</tr>
<tr>
<td>C7</td>
<td>![C7 chord diagram]</td>
</tr>
<tr>
<td>Cm7</td>
<td>![Cm7 chord diagram]</td>
</tr>
<tr>
<td>CM7</td>
<td>![CM7 chord diagram]</td>
</tr>
<tr>
<td>Cm7b5</td>
<td>![Cm7b5 chord diagram]</td>
</tr>
<tr>
<td>C7b5</td>
<td>![C7b5 chord diagram]</td>
</tr>
<tr>
<td>C7sus4</td>
<td>![C7sus4 chord diagram]</td>
</tr>
<tr>
<td>Cadd9</td>
<td>![Cadd9 chord diagram]</td>
</tr>
<tr>
<td>Cmadd9</td>
<td>![Cmadd9 chord diagram]</td>
</tr>
<tr>
<td>CmM7</td>
<td>![CmM7 chord diagram]</td>
</tr>
<tr>
<td>Cdim7</td>
<td>![Cdim7 chord diagram]</td>
</tr>
<tr>
<td>C69</td>
<td>![C69 chord diagram]</td>
</tr>
<tr>
<td>C6</td>
<td>![C6 chord diagram]</td>
</tr>
<tr>
<td>Cm6</td>
<td>![Cm6 chord diagram]</td>
</tr>
</tbody>
</table>

### Fingered 3, Full Range Chords

<table>
<thead>
<tr>
<th>Chord</th>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>![C chord diagram]</td>
</tr>
<tr>
<td>Gm</td>
<td>![Gm chord diagram]</td>
</tr>
<tr>
<td>Am</td>
<td>![Am chord diagram]</td>
</tr>
<tr>
<td>B7m</td>
<td>![B7m chord diagram]</td>
</tr>
<tr>
<td>Ddim</td>
<td>![Ddim chord diagram]</td>
</tr>
<tr>
<td>A7</td>
<td>![A7 chord diagram]</td>
</tr>
<tr>
<td>F7</td>
<td>![F7 chord diagram]</td>
</tr>
<tr>
<td>Fm7</td>
<td>![Fm7 chord diagram]</td>
</tr>
<tr>
<td>Gm7</td>
<td>![Gm7 chord diagram]</td>
</tr>
<tr>
<td>Amadd9</td>
<td>![Amadd9 chord diagram]</td>
</tr>
</tbody>
</table>

### NOTE

- With Fingered 3, the lowest note fingered is interpreted as the base note. Inverted forms are not supported.
- With Full Range Chord, when the lowest note fingered is a certain distance from the neighboring note, the chord is interpreted as a fraction chord.
- Unlike Fingered 1, 2, and 3, Full Range Chord requires pressing of at least three keys to form a chord.
<table>
<thead>
<tr>
<th>Chord</th>
<th>Root</th>
<th>Chord Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>m</td>
<td>M</td>
</tr>
<tr>
<td>m</td>
<td>m</td>
<td>m</td>
</tr>
<tr>
<td>dim</td>
<td>dim</td>
<td>dim</td>
</tr>
<tr>
<td>aug</td>
<td>aug</td>
<td>aug</td>
</tr>
<tr>
<td>sus4</td>
<td>sus4</td>
<td>sus4</td>
</tr>
<tr>
<td>sus2</td>
<td>sus2</td>
<td>sus2</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>m7</td>
<td>m7</td>
<td>m7</td>
</tr>
<tr>
<td>M7</td>
<td>M7</td>
<td>M7</td>
</tr>
<tr>
<td>m7b5</td>
<td>m7b5</td>
<td>m7b5</td>
</tr>
<tr>
<td>7b5</td>
<td>7b5</td>
<td>7b5</td>
</tr>
<tr>
<td>7sus4</td>
<td>7sus4</td>
<td>7sus4</td>
</tr>
<tr>
<td>add9</td>
<td>add9</td>
<td>add9</td>
</tr>
<tr>
<td>mM7</td>
<td>mM7</td>
<td>mM7</td>
</tr>
<tr>
<td>dim7</td>
<td>dim7</td>
<td>dim7</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>m6</td>
<td>m6</td>
<td>m6</td>
</tr>
</tbody>
</table>

Since the chord input range is limited, this model may not support some of the chords shown above.
# MIDI Implementation Chart

<table>
<thead>
<tr>
<th>Function</th>
<th>Transmitted</th>
<th>Recognized</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basic Channel</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Default Changed</td>
<td>1</td>
<td>1 - 16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 - 16</td>
<td>1 - 16</td>
<td></td>
</tr>
<tr>
<td><strong>Mode</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Default Messages</td>
<td>Mode 3 X</td>
<td>Mode 3 X</td>
<td></td>
</tr>
<tr>
<td>Altered</td>
<td>36 - 96</td>
<td>0 - 127</td>
<td></td>
</tr>
<tr>
<td></td>
<td>*</td>
<td>0 - 127 *1</td>
<td></td>
</tr>
<tr>
<td><strong>Note Number</strong></td>
<td>True voice</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>36 - 96</td>
<td>0 - 127</td>
<td></td>
</tr>
<tr>
<td></td>
<td>*</td>
<td>0 - 127 *1</td>
<td></td>
</tr>
<tr>
<td><strong>Velocity</strong></td>
<td>Note ON O 9nH v = 100</td>
<td>O 9nH v = 1 - 127</td>
<td>**:no relation</td>
</tr>
<tr>
<td></td>
<td>X 9nH v = 0</td>
<td>X 9nH v = 0, 8nH v =**</td>
<td>**:sin relación</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>After Touch</strong></td>
<td>Key's X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ch's X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Pitch Bender</strong></td>
<td>X</td>
<td>O</td>
<td></td>
</tr>
</tbody>
</table>

**Control Change**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>Bank select</th>
</tr>
</thead>
<tbody>
<tr>
<td>0, 32</td>
<td>O</td>
<td>O (MSB only)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>X</td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>6, 38</td>
<td>X</td>
<td>O *2</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>O</td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>X</td>
<td>O</td>
<td></td>
</tr>
</tbody>
</table>
Be sure to disconnect the AC adaptor before cleaning the product. The product is not intended for children under 3 years. Do not short-circuit the battery terminals. Replace batteries as soon as possible after any sign they are getting weak. Always make sure that positive (+) and negative (–) poles are facing correctly as indicated near the battery compartment. Never mix old batteries with new ones. Do not use rechargeable batteries. Never attempt to recharge batteries.

Please note the following important information before using this product.

- Before using the optional AD-E95100L Adaptor to power the unit, be sure to check the AC Adaptor for any damage first. Carefully check the power cord for breakage, cuts, exposed wire and other serious damage. Never let children use an AC adaptor that is seriously damaged.
- Never attempt to recharge batteries.
- Do not use rechargeable batteries.
- Never mix old batteries with new ones.
- Use recommended batteries or equivalent types.
- Always make sure that positive (+) and negative (–) poles are facing correctly as indicated near the battery compartment.
- Replace batteries as soon as possible after any sign they are getting weak.
- Do not short-circuit the battery terminals.
- The product is not intended for children under 3 years.
- Use only CASIO AD-E95100L adaptor.
- The AC adaptor is not a toy.
- Be sure to disconnect the AC adaptor before cleaning the product.
GUÍA DEL USUARIO

GUÍA DEL USUARIO

Please keep all information for future reference.

Safety Precautions
Before trying to use the Digital Keyboard, be sure to read the separate “Safety Precautions”.

Precauciones de seguridad
Antes de intentar usar el teclado digital, asegúrese de leer las “Precauciones de seguridad” separadas.

This recycle mark indicates that the packaging conforms to the environmental protection legislation in Germany.

Esta marca de reciclaje indica que el empaquetado se ajusta a la legislación de protección ambiental en Alemania.