

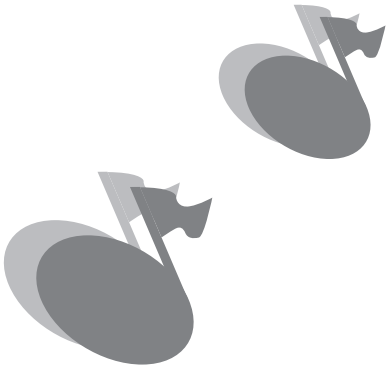
CELVIANO

AP-24


USER'S GUIDE GUÍA DEL USUARIO



CASIO®



IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
 2. Keep these instructions.
 3. Heed all warnings.
 4. Follow all instructions.
 5. Do not use this apparatus near water.
 6. Clean only with dry cloth.
 7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
 8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
 9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
 10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
 11. Only use attachments/accessories specified by the manufacturer.
 12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
 14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

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

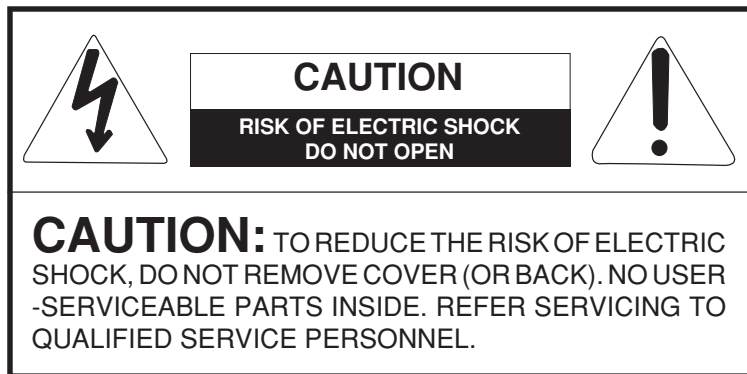
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

Introduction

Congratulations on your selection of the CASIO Digital Piano. This digital piano is a sophisticated musical instrument that blends the very best of traditional piano feel and sound quality with the latest that modern electronics technology has to offer.

Before using the instrument, be sure to carefully read through the instructions contained in this manual. Please keep all information for future reference.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



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

CE CASIO Europe GmbH
Bornbarch 10, 22848 Norderstedt, Germany

This mark applies to the AP-24V only.
Please keep all information for future reference.

Safety Precautions

Symbols

Various symbols are used in this user's guide 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 (\triangle) means that the user should be careful. (The example at left indicates electric shock caution.)



This circle with a line through it (\odot) 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 (\bullet) 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 electric socket.)

⚠ WARNING

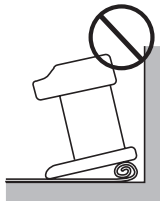
Power Cord

- Improper use of the power cord can create the risk of fire and electric shock. Always be sure to observe the following precautions.
 - Use only the power cord specified for this digital piano.
 - Make sure that the power source you are using matches the rating marked on the instrument itself.
 - Do not use an extension cord to plug multiple devices into the same power outlet.
- Improper use of the power cord can create the risk of personal injury, material damage, fire and electric shock. Always be sure to observe the following precautions.
 - Do not place heavy objects on the power cord or subject it to heat.
 - Never try to modify the power cord or subject it to excessive bending.
 - Never twist or pull on the power cord.
 - Should the power cord or plug become damaged, contact your original retailer or an authorized CASIO service provider.
- Do not touch the plug with wet hands when it is plugged in. This may cause electric shock.
- Never allow the digital piano to get wet. Water creates the risk of fire and electric shock.
- Never place a vase or any other liquid container on the digital piano. Water creates the risk of fire and electric shock.

Do not locate the digital piano on an unstable surface.

Never locate the digital piano on a surface that is wobbly, tilted, or otherwise unstable*. An unstable surface can cause the digital piano to fall over, creating the risk of personal injury.

* Avoid areas where there are multiple layers of carpeting, and where cables are running under the digital piano.



Always make sure you secure the digital piano to the stand with the screws that are provided. An unsecured the digital piano can fall from the stand, creating the risk of personal injury.

Never climb onto the digital piano or stand.

Never climb onto the digital piano or hang from its edges. Doing so can cause the digital piano to fall over, creating the risk of personal injury. Special care concerning this point is required in households where there are small children.



Never dispose of the digital piano by burning it.

Never dispose of the digital piano by burning it. Doing so creates the risk of fire and personal injury due to explosion.



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 electric 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
- Naked flame sources, such as lighted candles



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

1. Turn off power.
2. Unplug the power cord from the wall outlet.
3. Consult with the dealer where you purchased the instrument or with an authorized CASIO service provider.



Do not expose this digital piano to rain or moisture.

To reduce the risk of fire or electric shock, do not expose this digital piano to rain or moisture.

Never try to take the digital piano apart or modify it.

Never try to take the digital piano apart or modify it in any way. Doing so creates the risk of electric shock, burn injury, or other personal injury. Leave all internal inspection, adjustment, and repair up to your original retailer or an authorized CASIO service provider.



Precautions concerning smoke, abnormal odor, and other abnormalities

Continued use of the digital piano while it is emitting smoke or abnormal odor, or while it is displaying other abnormalities creates the risk of fire and electric shock. Immediately perform the following steps whenever you notice any abnormality.

1. Turn off the digital piano power.
2. Unplug the digital piano from its power outlet.
3. Contact your original retailer or an authorized CASIO service provider.



Avoid dropping the digital piano and other strong impact.

Continued use of the digital piano after it has been damaged by dropping or by other external impact creates the risk of fire and electric shock. Immediately perform the following steps whenever the digital piano is damaged by impact.

1. Turn off the digital piano power.
2. Unplug the digital piano from its power outlet.
3. Contact your original retailer or an authorized CASIO service provider.



Do not put plastic bags over your head or in your mouth.

Never allow the plastic bags that the digital piano and its accessories come in to be placed over the head or swallowed. Doing so creates the risk of suffocation. Special care concerning this point is required in households where there are small children.



Opening and closing the keyboard cover

Make sure that the keyboard cover is completely opened as far as it will go. When closing the keyboard cover, hold the front of the cover and close it slowly. Pinching your fingers between the digital piano and keyboard cover creates the risk of personal injury.

CAUTION

Power Outlet

To power the digital piano, use a power outlet that allows easy access when plugging in or unplugging the power cord.

Power Cord

Improper use of the power cord can create the risk of fire and electric shock. Always be sure to observe the following precautions.

- Never locate the power cord near a stove or other source of heat.
- When unplugging from an outlet, never pull on the cord.
(Always grasp the plug when pulling.)
- After use turn off the power switch of the instrument and unplug the power cord from the electrical outlet.



Power Plug

Improper use of the power plug can create the risk of fire and electric shock. Always be sure to observe the following precautions.

- Push the plug fully into the power outlet as far as it will go.
- Unplug from the power outlet during lightning storms, and when you do not plan to use the digital piano for a long time (such as before a long trip).
- After unplugging from the wall outlet, clean the area between the prongs of the plug to keep dust from building up.



Moving the digital piano

Be sure to perform the following steps before moving the digital piano. Failure to do so can damage the power cord, creating the risk of fire and electric shock.

1. Unplug the digital piano from its power outlet.
2. Unplug the pedal connecting cord, and all cords and other items connected to the back of the digital piano.



Cleaning

Before cleaning the digital piano, unplug it from the power outlet. Failure to do so can damage the power cord, creating the risk of fire and electric shock. It can also cause the digital piano to fall over, creating the risk of personal injury.



Never climb onto the digital piano or stand.

Doing so can cause the digital piano to fall over, creating the risk of personal injury. Special care concerning this item is required in households where there are small children.



Connector

Connect only the specified devices to the digital piano's connectors. Connecting non-specified items creates the risk of fire and electric shock.



Location

Avoid locating the digital piano in the following types of areas. Subjecting the digital piano to the conditions described below creates the risk of fire and electric shock.

- Areas expose to high humidity or large amounts of dust
- Near food preparation areas and other areas where it is exposed to oil smoke
- Near a heater, on a heated carpet, in direct sunlight, inside a closed automobile parked in the sun, and any other area subjected to very high temperature



Never place the digital piano directly onto furniture or other item that has a finished surface. The rubber feet on the bottom of the digital piano can react with the paint or other coatings, resulting in soiling of or damage to the finished surface. Be sure to lay felt or some other material on the finished surface before placing the digital piano on it.

Do not place heavy objects on the digital piano.

Never place heavy objects on top of the digital piano. Doing so can cause the stand to tip over and the object to fall, creating the risk of personal injury.



Volume setting

Do not play at very loud volumes for a long time. This precaution is especially important when using the headphones. Long-term exposure to very loud sound can damage your hearing.



Assemble the stand properly.

Failure to do so can cause the stand to fall over and the digital piano to fall from the stand, creating the risk of personal injury. Make sure you assemble the stand in accordance with the instructions that come with it, and ensure that all connections are secure. Also make sure that you choose an appropriate location for the stand.

- When placing the digital piano onto the stand, take care that you do not pinch your fingers between the digital piano and the stand.
- At least two people should lift the digital piano when placing it onto the stand or moving it. Trying to move the digital piano alone can cause the stand to fall over, creating the risk of personal injury.
- Do not drag the stand or tilt it forward or back when placing the digital piano onto the stand or moving it. Doing so can cause the digital piano to fall over, creating the risk of personal injury.
- Periodically check the screws that secure the digital piano to the stand for looseness. If a screw is loose, retighten it. Loose screws can cause the stand to tip over and the digital piano to fall, creating the risk of personal injury.



Operational Precautions

Locating the Unit

Avoid the following locations.

- Areas exposed to direct sunlight and high humidity.
- Areas subjected to very low temperatures.
- Near a radio, TV, video deck, or tuner (unit can cause interference with audio or video signals)

Care of the Unit

- Never use benzene, alcohol, thinner or other such chemicals to clean the exterior of the unit.
- To clean the keyboard, use a soft cloth dampened with a weak solution of a mild neutral detergent and water. Wring out all excess moisture from the cloth before wiping.
- Severe impact can cause problems.
When transporting the piano, use soft cloth to pack around the keyboard and buttons to protect them against damage.
- Never try to repair or modify any part of the piano.
Any attempt to repair or modify the piano can cause problems with operation.
- Avoid using this piano near televisions, radios, etc.
Because this piano uses digital circuitry, it may cause interference with other electronic devices such as televisions, radios, etc.
- In case of a problem, check that buttons and connections are correct, as indicated in this manual. If the piano still does not work properly, contact your retailer or a nearby dealer. Never try to repair the piano yourself.

Lithium Battery

This unit is equipped with a lithium battery to provide power needed to retain memory contents while unit power is turned off. Should the lithium battery go dead, all memory contents will be lost whenever you turn unit power off. The normal life of the lithium battery is five years from the time that the battery was installed. Be sure to periodically contact your retailer or authorized service provider to have the lithium battery replaced. Note that you will be charged separately for lithium battery replacement.

- Note that CASIO COMPUTER CO., LTD. shall not be held liable for any damages or losses or any claims by third parties arising from corruption or loss of data caused by malfunction or repair of the unit, or from battery replacement.

You may notice lines in the finish of the case of this piano. These lines are the 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.

NOTE

- Unauthorized reproduction of this manual in its entirety or in part is expressly forbidden. All rights reserved.
- CASIO COMPUTER CO., LTD. shall not be held liable for any damages or losses or any claims by third parties arising from use of this product or this manual.
- The contents of this manual are subject to change without notice.



Main Features

❑ 8 versatile tones

- Eight instrument tones including piano and pipe organ provide plenty of performance versatility.
- Two tones can be layered and played simultaneously, and the keyboard can be split to assign different tones to the left and right sides.
- Other features include digital effects that control the acoustical characteristic of tones, as well as three pedal effects for all the nuances of an acoustic piano.

❑ Metronome

- A simple operation lets you set the tempo and the beat of the metronome to suit the tune you want to play. It's the perfect practice tool for players of all levels.

❑ 8 demo tunes

- Eight demo tunes demonstrate how to use each of the built-in tones.

❑ Song Memory

- Two independent memory areas let you separately record and playback tunes. You can record in one memory and later record in the other memory while playing back your original recording, or even play back from both memories at the same time.

❑ Powerful keyboard setting functions

- A selection of powerful keyboard setting functions help you get create exactly the musical mood you want.
 - Transpose adjusts the key of the keyboard in semitone steps.
 - Tuning provides a means to tune with another musical instrument.
 - Touch Select adjusts the intensity of the output sound in accordance with the amount of pressure you apply to the keyboard.

❑ MIDI terminal

- Connecting to another MIDI musical instrument lets you play two instruments from the keyboard of your digital piano. You can also connect to a commercially available MIDI sequencer to increase the number of parts you can play.

❑ Storing and Playing Back Tune Data You Transferred from Your Computer

- You can connect your keyboard to a computer, use special CASIO conversion software to convert SMF data you purchase or create to CASIO format, and then transfer it to the digital piano.



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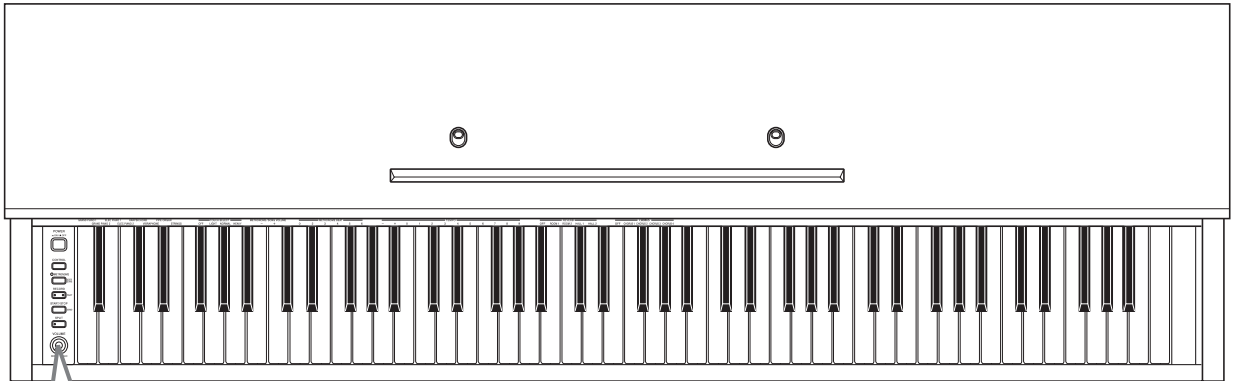
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Initial Power On Settings A-1

MIDI Implementation Chart

General Guide



POWER
ON / OFF

① POWER button

CONTROL

② CONTROL button

METRONOME
USED / OFF

③ METRONOME button

RECORD

④ RECORD button

START/STOP

⑤ START/STOP button

SPLIT

⑥ SPLIT button

VOLUME
MIN MAX

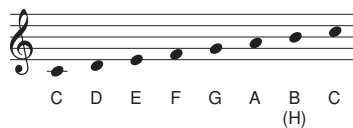
⑦ VOLUME knob

Back Panel

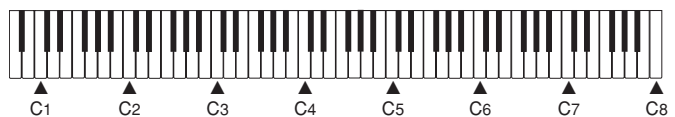
⑧ MIDI Terminals

• See page E-24 for details on the stand.

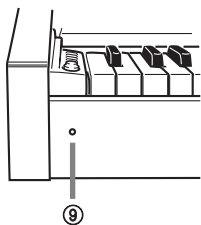
Note Names



A value next to a note name indicates the relative position of the note on the keyboard as shown below.



Front

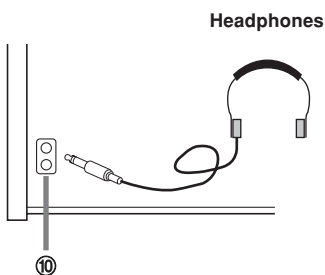


⑨ Power Indicator

IMPORTANT!

- Make sure the power indicator is completely turned off before unplugging the power cord from the power outlet. Be sure to read and observe all of the safety precautions concerning power supply on page E-2.

Bottom



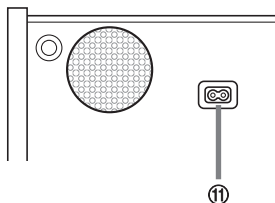
⑩ Headphone Jack

IMPORTANT!

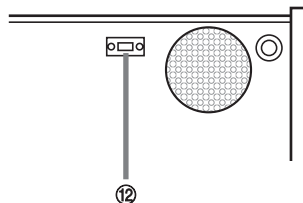
- Whenever connecting headphone, first set the VOLUME knob of the digital piano and the volume controller of the external equipment to relatively low volume settings. You can later adjust volume to the level you want after connections are complete.

Connecting Headphones

Connect commercially available headphones to the digital piano's headphones jack. This cuts off the built-in speakers, which means you can practice even late at night without disturbing others. To protect your hearing, make sure that you do not set the volume level too high when using headphones.



⑪ AC Power Jack*



⑫ Pedal Connector

* With the AP-24, the power cord is hard-wired to the bottom of the instrument.

CAUTION

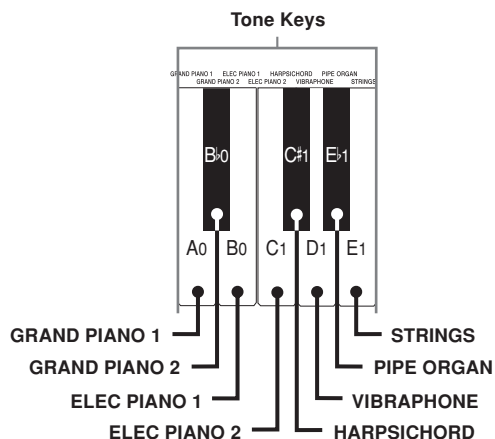
Make sure that the cover of the piano is fully open whenever you are playing on the keyboard. A partially open cover can suddenly close unexpectedly and pinch your fingers.

Basic Operation

Selecting a Tone

Your digital piano has a selection of 8 built-in tones. There are also two tones that are exclusively for use as low-range split tones. See "Built-in Bass Tones" (page E-12) for more information.

* The names of the tones are marked above the keyboard keys to which they are assigned.



• The GRAND PIANO 1 tone was recorded with stereo sampling.

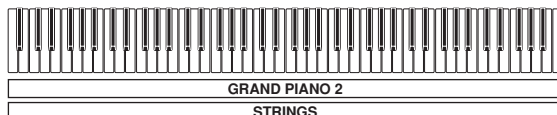
To select a tone

- 1 Press the POWER button to turn on the digital piano.
 - This causes the power indicator to light.
 - The "GRAND PIANO 1" tone is selected at this time.
- 2 Select the tone you want.
 - While holding down the CONTROL button, press the keyboard key that corresponds to the tone you want to select.
 - * A note does not sound when you press a keyboard key while holding down CONTROL button.
- 3 Use the VOLUME knob to adjust the volume.
 - It is a good idea to set the volume to a relatively low level at first.
 - * Moving the knob towards MIN decreases volume, while moving it towards MAX increases volume.
- 4 Play something on the keyboard.
 - Adjust volume to the level you want as you play.
- 5 After you are finished playing, press the POWER button to turn off power.

Layering Two Tones

Use the following procedure to layer two tones, so they sound at the same time.

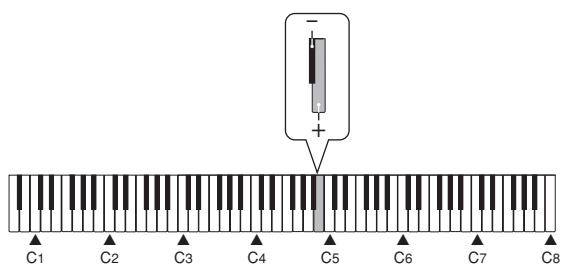
- 1 While holding down the CONTROL button, simultaneously press the keyboard keys that correspond to the two notes that you want to layer.
Example: To layer GRAND PIANO 2 and STRINGS



- The tones are now layered.
- 2 After you are finished using the layered tones, hold down the CONTROL button and press the keyboard key that corresponds to the single tone you want to use.

Adjusting the Volume of Layered Tones

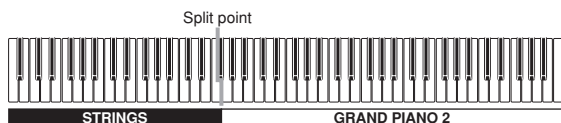
- 1 While holding down the CONTROL button, use the keyboard keys shown below to adjust the volume of the layered tones.



+ : Raises the volume
 - : Lowers the volume

Assigning Different Tones to the Left and Right Sides of the Keyboard

You can assign different tones to keys on the left side and the right side of the keyboard.



- 1 Press the keyboard key that corresponds to the tone you want to assign to the right side of the keyboard.
Example: GRAND PIANO 2
- 2 Press the SPLIT button.
 - This causes the SPLIT indicator lamp to light.
- 3 Press the keyboard key that corresponds to the tone you want to assign to the left side of the keyboard.
 - The keyboard is now split between the two tones.
 - Example: STRINGS*
- 4 After you are finished using the split keyboard, press the SPLIT button again to unsplit it.
 - This causes the SPLIT indicator lamp to go out.

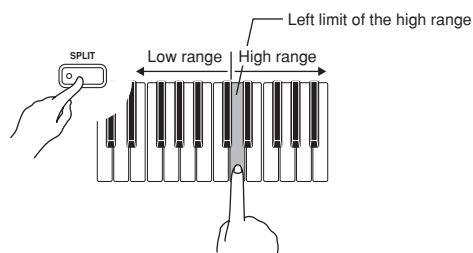
Built-in Bass Tones

Your digital piano comes with two built-in bass tones.

- Pressing the SPLIT button in step 2 of the above procedure selects "ACOUSTIC BASS" for the lower range of the keyboard.
- Holding down the CONTROL button as you press the SPLIT button in step 2 of the above procedure selects "RIDE ACO BASS" for the lower range of the keyboard.

Specifying the Keyboard Tone Split Point

- 1 While holding down the SPLIT button, press the keyboard key where you want the left limit of the high range (right) tone to be.



* A note does not sound when you press a keyboard key at this time.

Using Digital Effects

Your digital piano provides you with a selection of digital effects that you can apply to tones.

Digital Effect Types

REVERB : 4 Types

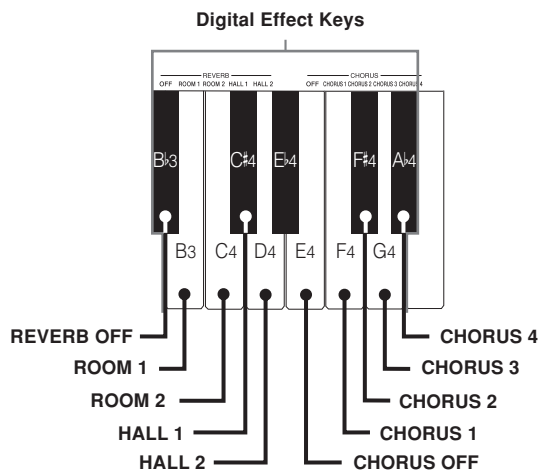
The REVERB effect gives you a choice of the four variations listed below. Each one simulates the acoustics of different environments.

- ROOM 1 Small, intimate live house
- ROOM 2 Small stage
- HALL 1 Stage area of a large hall
- HALL 2 Audience area of a large hall

CHORUS : 4 Types

The CHORUS effect is most effective for the E.PIANO tone.

* The names of the settings are marked above the keyboard keys to which they are assigned.



To toggle digital effects on and off

- 1 While holding down the CONTROL button, press the keyboard key that corresponds to the digital effect you want to turn on or off.
 - * A note does not sound when you press a keyboard key while holding down CONTROL button.

Power on effect settings

The table below shows the effect settings that are assigned to each tone whenever you turn on the digital piano.

Tone Name	Digital Effect Setting	
	REVERB	CHORUS
GRAND PIANO 1	HALL 1	OFF
GRAND PIANO 2	HALL 1	OFF
ELEC PIANO 1	HALL 1	CHORUS 1
ELEC PIANO 2	HALL 1	CHORUS 1
HARPSICHORD	ROOM 2	OFF
VIBRAPHONE	HALL 1	CHORUS 1
PIPE ORGAN	HALL 1	OFF
STRINGS	HALL 1	OFF
ACOUSTIC BASS	OFF	OFF
RIDE ACO BASS	OFF	OFF

* The above digital effect settings can be changed after you turn on power.

NOTE

- Selecting a tone automatically selects the digital effects currently assigned to it.
- Digital effect settings remain in effect until you turn off the digital piano.
- Demo tunes have their own digital effect settings, which are automatically selected whenever you select a demo tune.

More about tones

Polyphony

This digital piano can play up to 32 notes at the same time. Also note that some of the tones offer only 16-note polyphony (GRAND PIANO 1, ELEC PIANO 2, RIDE ACO BASS).

Touch Response

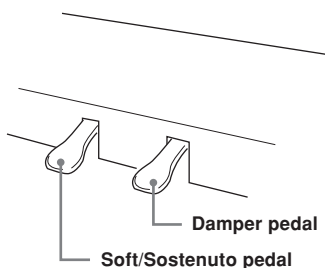
The touch response feature of this digital piano causes the volume of the tones and the sound of the tones themselves to change slightly in accordance with how much pressure you apply to the keyboard, just like with an acoustic piano. Touch response affects the HARPSICHORD tone only slightly, because the original musical instrument normally produces the same sound, no matter how much pressure is applied.

Digitally Sampled Tones

The tones of this digital piano are produced using digitally recorded samples of actual musical instruments. Not all of the instruments, however, can produce tones across the entire range played by this digital piano (A0 through C8). In such a case, digital recordings are used for the range that actually can be produced by the original instrument, and synthesized tones are used for notes that cannot be produced naturally. Because of this, you may notice very slight differences between natural notes and synthesized notes in sound quality and in results produced when using effects. These differences are normal and do not indicate malfunction.

Using the Pedals

The digital piano is equipped with the two pedals shown in the illustration below. The left pedal normally functions as a soft pedal.



Pedal functions

- **Damper pedal**
Pressing this pedal causes notes to reverberate and to sustain longer.
- **Soft pedal**
Pressing this pedal dampens notes and slightly reduces their volume. Only notes played after the pedal is depressed are affected, and any notes played before the pedal is pressed sound at their normal volume.
- **Sostenuto pedal**
Like the damper pedal, this pedal causes notes to reverberate and to sustain longer. The difference between the two pedals is the timing when they are pressed. With the sostenuto pedal, you press the pedal after depressing the notes you want to sustain. Only the notes whose keyboard keys are depressed when the sostenuto pedal is pressed are affected.

To assign the sostenuto to the left pedal

While holding down the left pedal, turn on the digital piano. To return left pedal to soft pedal, turn power off and then back on again.

NOTE

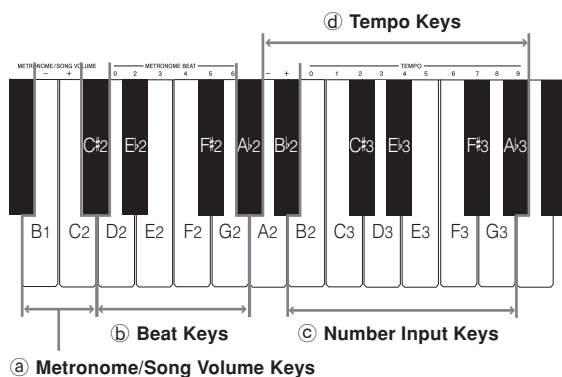
- The following shows how pedal effects are applied during different types of operations.

Memory playback, demo tune play
 Pedal effects applied to notes played on the keyboard only.

Using the Metronome

The metronome provides a reference beat that you can use during your performances or practice sessions. You can change the beat and the tempo of the metronome.

* The names of the settings are marked above the keyboard keys to which they are assigned.



Using the Metronome

To use the metronome

- 1 Press the METRONOME button to start the metronome.
 - This starts the metronome sound.
- 2 Set the beat of the metronome.
 - While holding down the CONTROL button, press the keyboard key that corresponds to the beat setting you want to select (Figure 6).
 - * A note does not sound when you press a keyboard key while holding down the CONTROL button.
 - The first value of the beat can be set to a value of 2 through 6, or 0 (unaccented beat).

- 3 Change the tempo setting as described below.
- A note does not sound when you press a keyboard key while holding down the CONTROL button (Figure ㉔).
 - While holding down the CONTROL button, press keyboard key A₂ (-) to decrease tempo or B₂ (+) to increase it. Holding down either keyboard key changes the setting at high speed. Pressing keyboard key A₂ (-) and B₂ (+) at the same time changes the tempo setting to 120.
 - You can also change the tempo setting (beats per minute) by holding down the CONTROL button and using keyboard keys B₂ through A₃ to input values from 0 to 9 (Figure ㉔). You can input a two-digit or three-digit tempo value. Note that the tempo value you input is applied when you release the CONTROL button. The tempo setting does not change if you input a one-digit value or a value that is outside of the allowable setting range.
 - The tempo can be set within the range of 30 to 255 (beats per minute).

- 4 When you want to stop the metronome, press the METRONOME button again.
- Pressing the METRONOME button again restarts the metronome sound using the current beat and tempo setting.
 - If you want to change both the tempo and the beat before restarting the metronome, perform the above procedure here.

NOTE

- You can change metronome beat and tempo settings at any time, even while the metronome is sounding.
 - You can also use the metronome in combination with memory play. See the section of this User's Guide covering the function for details.
-

Adjusting the Metronome Volume

Use the following procedure to increase and decrease the volume of the metronome beat.

To adjust the metronome volume

- 1 While holding down the CONTROL button, use the keyboard's B₁ (-) and C₂ (+) keys to adjust the volume level (Figure ㉔). The setting range is 000 to 127.
- * A note does not sound when you press a keyboard key while holding down the CONTROL button.

NOTE

- The metronome volume is automatically set to 110 whenever you turn on the digital piano.
-

Using the Memory

This section describes how to record keyboard play to memory and playback data from memory.

About the Memory

Memory Capacity

- There are two song memory tracks named Track A and Track B. The two tracks can store a combined total of approximately 5,200 notes.
- The indicator lamp of the track you are recording to flashes at high speed to let you know that remaining memory capacity is running low.
- Recording stops automatically whenever memory becomes full.

Recorded Data

- Anything you played on the keyboard (received MIDI data not recorded)
- Tone settings
- Tempo and beat settings used during recording
- Pedal operations
- Reverb settings
- Chorus settings

Recorded Data Storage

This digital piano has a lithium battery to supply power to retain memory contents even while power is off.* The life of the lithium battery is five years after the date of manufacture of the digital piano. Be sure to contact your CASIO service provider about having the lithium battery replaced every five years.

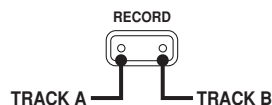
* Never turn off digital piano power while a record operation is in progress.

IMPORTANT!

- If the data recorded in a single track uses up all the available Song Memory capacity, you will not be able to record anything in the other track.
- Recording new data to a track automatically deletes any data previously stored in that track.
- Turning off power while a record operation is in progress deletes anything recorded up to that point.
- CASIO shall not be held responsible for any losses by you or any third party due to loss of data caused by malfunction or repair of this digital piano, or by battery replacement.

Recording

In addition to recording notes as they are played on the keyboard, you can also record to one track while playing back from the other track. The following procedures cover each of these operations.



To record notes from the keyboard

PREPARATION

- Select the tone and effects you want to start with.
- If you want to use the metronome during recording, start the metronome. Use the procedure under "Using the Metronome" on page E-14 to set the beat and the tempo.

- 1 Press the RECORD button to put the digital piano into record standby.
 - Track A is selected first for recording, which is indicated by its indicator flashing.
 - You can also change the metronome's beat setting at this time.
 - If you want the metronome to sound while you are recording, press the METRONOME button here to start the metronome.
- 2 Select the track you want to record.
 - While holding down the CONTROL button, press the RECORD button. Each press of the RECORD button causes the indicator lamps to toggle between the two states shown below.



- 3 Play something on the keyboard to start recording.
 - What you play sounds from the speakers and is recorded into memory.
 - You can also start recording by pressing the START/STOP button. In this case, blank space is inserted in memory from the point that you press the START/STOP button up to the point you start to play on the keyboard.
- 4 After you are finished recording, press the START/STOP button to stop the record operation.
 - At this time, the indicator lamp of the track you just recorded will change from flashing to lit.
 - Stopping recording also stops the metronome.
 - Here you can press the START/STOP button and playback the data you just recorded.

To record to one track while playing back from the other track

This procedure is basically the same as that under "To record notes from the keyboard" on page E-16.

Example: To play back Track A while recording to Track B

- 1 Select the track you want to play back.
 - While holding down the CONTROL button, press the RECORD button as many times as necessary so the Track A indicator lamp is lit.
- 2 Press the RECORD button to enter record standby.
 - This causes the Track A lamp to flash. While holding down the CONTROL button, press the RECORD button so the Track B indicator lamp is flashing.
- 3 Start recording.
 - Press the START/STOP button to start recording to Track B as Track A plays back. Play in time with the playback from Track A.

MEMO

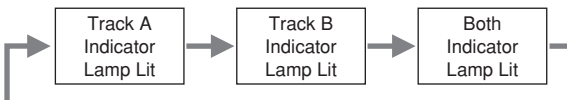
- You can adjust the tempo and beat during record standby. Playback, however, is performed using the tempo and beat that was selected when Track A was selected.

Playback

Use the following procedure to play back from memory.

To playback from memory

- 1 Select the track(s) you want to play back.
 - While holding down the CONTROL button, press the RECORD button. Each press of the RECORD button causes the indicator lamps to cycle between the three states shown below.



- A track whose indicator lamp is lit is in playback standby.
- If you want to play back both tracks, both of the RECORD button's indicator lamps should be lit.

- 2 Press the START/STOP button to start playback.
 - You can toggle the playback metronome sound on and off by pressing the METRONOME button.
 - Playback stop automatically when the end of the tune is reached.
 - To stop part way through, press the START/STOP button.
 - To stop the metronome, press the METRONOME button.

NOTE

- You can change the playback tempo while playing back from memory.
- You cannot change the tone when playing back from memory.

Deleting Memory Contents

IMPORTANT!

- The delete operation cannot be undone. Make sure you play back song memory contents and confirm that you no longer need it before performing the following procedure.

To delete the contents of a specific track

- 1 Enter record standby.
 - While holding down the CONTROL button, press the RECORD button. Each press of the RECORD button causes the indicator lamps to toggle between the two states shown below. Make sure that the indicator lamp for the track whose contents you want to delete is flashing.



- 2 Press the START/STOP button twice to delete the contents of the selected track.

To delete the contents of both tracks

- 1 Hold down the RECORD button for at least two seconds, until the indicator lamps of both tracks start to flash.
 - This indicates that the contents of both tracks have been deleted.

Using Demo Tunes

Your digital piano comes with eight built-in demo tunes, each of which features one of the eight built-in tones.

To play the demo tunes in sequence

- 1 While holding down the CONTROL button, press the START/STOP button.
 - All the demo tunes play in sequence, starting from the Tune 1.

To start playback from a specific tune

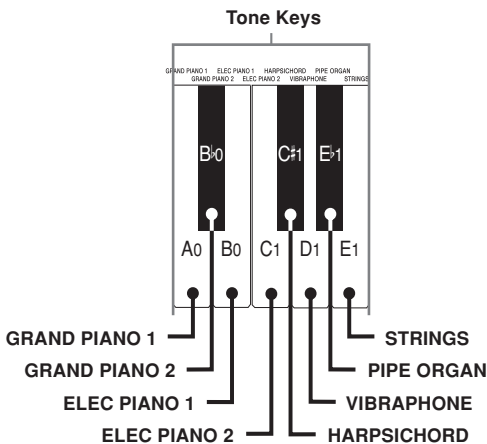
- 1 Start sequential demo tune play and then hold down the CONTROL button and press the keyboard key that corresponds to the tune you want to play.
 - Demo tunes are played in sequence, in an endless loop, starting from the tune you selected.

To stop demo tune play

- 1 Press the START/STOP button to stop demo tune play.

NOTE

- You cannot change the tempo or tone, or turn on the metronome while a demo tune is playing.
- Playing on the keyboard during demo tune play plays notes using the demo tune's tone.
- You can adjust volume while demo playback is in progress.
- Playing a demo tune causes the tone, digital effect, transpose, and tuning settings to change to the preset configuration of the demo tune. These settings are retained after demo tune play is finished.
- Pedal operations performed during demo tune play are applied to notes played on the keyboard only. They are not applied to demo tune playback.
- Demo tune notes cannot be sent as MIDI data.



Demo Tune List

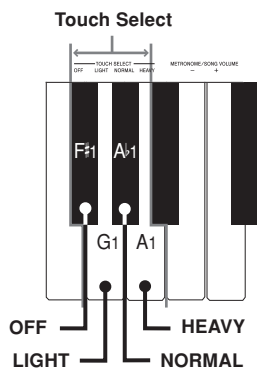
Tone (Keyboard Key)	Title	Composer
GRAND PIANO 1	Etude Op.25-9	F.F.Chopin
GRAND PIANO 2	Someday My Prince Will Come	F.Churchill
ELEC PIANO 1	Original	—
ELEC PIANO 2	Original	—
HARPSICHORD	Praeludium [Partita 1]	J.S.Bach
VIBRAPHONE	Original	—
PIPE ORGAN	Jesus Bleibet Meine Freude	J.S.Bach
STRINGS	Intermezzo Sinfonico [Cavalleria Rusticana]	P.Mascagni

Keyboard Settings

Using the Touch Select

This setting lets you adjust the touch of the keyboard to suit your own playing style. This means you can select a stronger touch for those with powerful hands, and a lighter touch for beginners and anyone else with less strength.

* The names of the settings are marked above the keyboard keys to which they are assigned.



Touch Select Settings

<OFF>

<LIGHT>

This setting produces strong output, even when light pressure is applied to the keyboard.

<NORMAL>

This is the standard setting.

<HEAVY>

This setting requires relatively strong keyboard pressure to produce normal output.

To change the Touch Select setting

1 While still holding down the CONTROL button, select the key touch by pressing one of the keyboard keys illustrated below.

* A note does not sound when you press a keyboard key while holding down the CONTROL button.

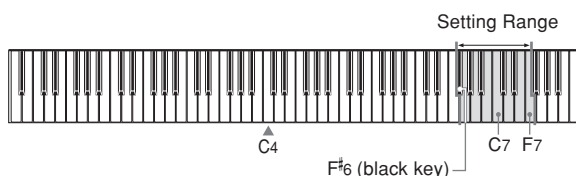
NOTE

- Touch select is automatically set to NORMAL whenever you turn on the digital piano.

Using Transpose

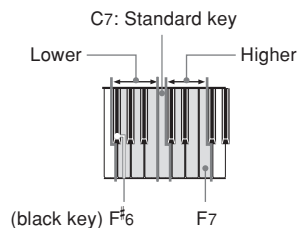
Transpose lets you adjust the pitch of your digital piano in semitone steps. This means you can change the key of the piano to suit the voice of a vocalist or the key of another musical instrument, without having to learn to play a piece in another key.

Use the keys shown below to change the transpose setting.



To change the transpose setting

1 While holding down the CONTROL button, select a key by pressing one of the keyboard illustrated below.



* The transpose range is F# - C - F.

* A note does not sound when you press a keyboard key while holding down the CONTROL button.

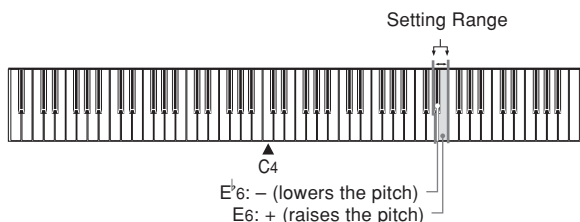
NOTE

- The transpose value is automatically set to 0 (C) whenever you turn on the digital piano.

Adjusting the Tuning of the Digital Piano

You can adjust the overall tuning of the digital piano for play along with another instrument. You can adjust tuning within a range of ± 50 cents from $A_4 = 440.0\text{Hz}$.

Use the keyboard keys noted below to adjust the tuning of the piano.



To adjust the tuning of the piano

Adjust the tuning as described below.

- 1 While holding down the CONTROL button, press keyboard key E^b_6 (-) to lower the tuning or E_6 (+) to raise it. Each press of a key changes the tuning by about 0.8 cents (1/128 semitone).
 - A note does not sound when you press a keyboard key while holding down the CONTROL button.

NOTE

- Holding down the CONTROL button and pressing keyboard keys E^b_6 (-) and E_6 (+) at the same time returns tuning to the standard $A_4 = 440.0\text{Hz}$.
- * 100 cents is equivalent to one semitone.

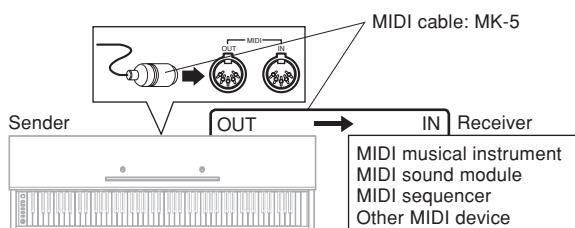
MIDI

What is MIDI?

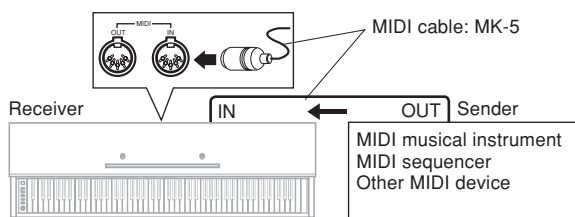
The letters MIDI stand for Musical Instrument Digital Interface, which is the name of a worldwide standard for digital signals and connectors that makes it possible to exchange musical data between musical instruments and computers (machines) produced by different manufacturers.

MIDI Connections

Send



Receive



NOTE

- The digital piano is equipped with only two pedals. The left-hand pedal can be switched between soft and sostenuto. The pedal effect applied by MIDI data depends on whether data is being sent or received.
Send: Pressing the left pedal sends data that corresponds to the current pedal effect setting (soft or sostenuto).
Receive: Pedal effect is applied in accordance with the data received.

MIDI Settings

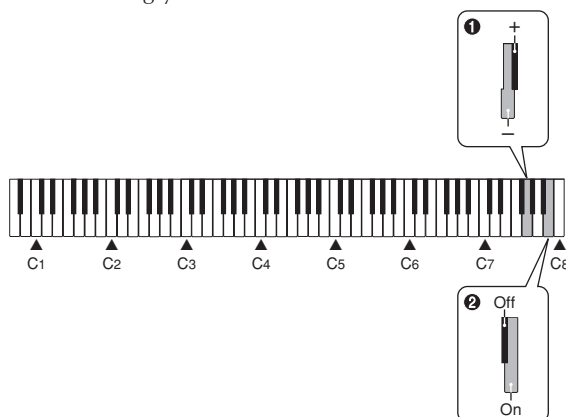
1 Send Channel

Use this setting to specify one of the MIDI channels (1 through 16) as the Send Channel for sending MIDI messages to an external device.

2 Local Control

This setting controls whether or not power is cut off internally from the digital piano's keyboard and sound source. Turning off Local Control cuts off power to the keyboard and source, which means that the digital piano does not produce any sound when played. This comes in handy when you want to turn off the digital piano's keyboard and use its auto accompaniment feature to accompany an external sequencer or other device.

- While holding down the CONTROL button, press one of the keyboard keys shown below to configure the setting you want.



1 Send Channel

- : Decreases value
- + : Increases value

2 Local Control

- Off
- On

Expanding Tunes in Digital Piano Memory

You can transfer song data from your computer to the digital piano's user area. You can store up to 10 tunes* (about 7,600 notes, about 47 kilobytes) as User songs 0 through 9.

* You may not be able to store 10 tunes if fewer tunes cause memory to become full.

For SMF data you purchase or create, you need to use special CASIO conversion software to convert it to CASIO format before transferring it to the piano.

You can obtain a copy of the special CASIO conversion software by downloading it at the Web page shown below. After downloading, install the software on your computer.

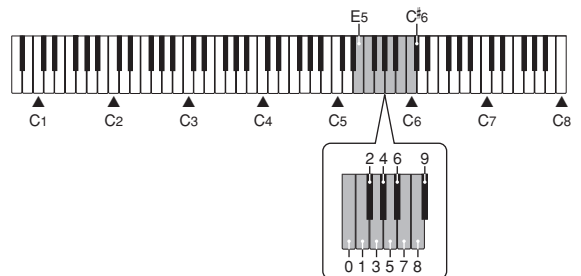
CASIO MUSIC SITE

<http://music.casio.com/>

- In addition to the software itself, the CASIO MUSIC SITE will also provide you with information about its installation and use. You can also find out about how to connect your computer and digital piano, the latest news about your digital piano and other CASIO musical instruments, and much more.

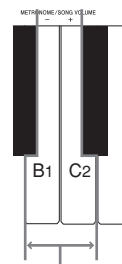
To play back a user song

- 1 While holding down the CONTROL button, press the METRONOME button.
 - This enters the user song playback mode.
- 2 While holding down the CONTROL button, press the keyboard key that corresponds to the number of the user song (0 to 9) you want to play.



* A note does not sound when you press a keyboard key at this time.

- 3 Press the START/STOP button to start playback.
 - While holding down the CONTROL button, use the keyboard's B1 (-) and C2 (+) keys to adjust the volume level of tune playback (Range: 000 to 127).
 - * The names of the settings are marked above the keyboard keys to which they are assigned.



Metronome/Song Volume Keys

* A note does not sound when you press a keyboard key at this time.

- Some songs that you transfer from your computer will let you select a playback part. A RECORD button indicator lamp will light for each part. You can press the RECORD button and turn off the lamp of a particular part and practice that part.

Troubleshooting

Symptom	Possible Cause	Action	Reference
No sound produced when keyboard keys are pressed.	<ol style="list-style-type: none"> 1. VOLUME knob set to MIN. 2. Headphones connected to the piano. 3. Local Control turned off. 	<ol style="list-style-type: none"> 1. Move VOLUME knob more towards the MAX side. 2. Disconnect the headphones from the digital piano. 3. Turn on Local control. 	<p>Page E-11</p> <p>Page E-10</p> <p>Page E-21</p>
Keyboard out of tune.	<ol style="list-style-type: none"> 1. Transpose is set to a value other than 0. 2. Incorrect tuning setting 	<ol style="list-style-type: none"> 1. Change the transpose setting to 0, or turn the digital piano power off and then back on again. 2. Correct the tuning setting, or turn the digital piano power off and then back on again. 	<p>Page E-19</p> <p>Page E-20</p>
Pedal effect continues to be applied even though pedals are not pressed.	Problem with the connection between the pedals and piano.	Turn off the digital piano power and then check to make sure that the pedal plug is securely connected to the piano's pedal connector.	Page E-27
No sound produced by demo tune play.	<ol style="list-style-type: none"> 1. VOLUME knob set to MIN. 2. Headphones connected to the digital piano. 	<ol style="list-style-type: none"> 1. Move VOLUME knob more towards the MAX side. 2. Disconnect the headphones from the digital piano. 	<p>Page E-11</p> <p>Page E-10</p>
Memory contents deleted.	Lithium battery is dead.	Contact your CASIO Service Provider for replacement of the lithium battery.	Page E-6
No sound produced by connected external MIDI sound source when the digital piano keys are pressed.	<ol style="list-style-type: none"> 1. The digital piano Keyboard Channel does not match the send Channel of the MIDI sound source. 2. Volume or expression setting of the external sound source is set to 0. 	<ol style="list-style-type: none"> 1. Change the send Channel settings so they are identical. 2. Change the volume or expression setting of the external sound source to an appropriate value. 	<p>Page E-19</p> <p>See the documentation that comes with the external sound source.</p>

Assembly Instructions

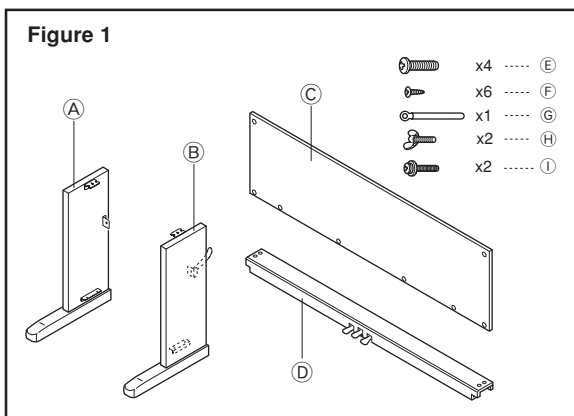
⚠ CAUTION

- Take particular care to avoid injury when installing legs and pedals, and when mounting the keyboard onto the stand.
- When assembling, make sure that the sliding keyboard cover of the digital piano body is completely closed. If the cover is left open during assembly, it may close suddenly causing the fingers to be pinched between the digital piano body and cover.

Important!

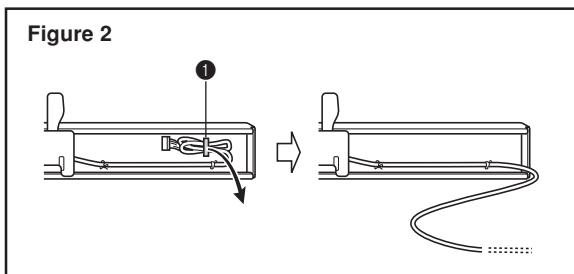
- Be sure to assemble the stand on a flat surface.
- This stand does not include any of the tools required to assemble it. You should have a large Phillips head (+) screwdriver on hand for assembly.

Figure 1



- Check the items that come with the unit to make sure that everything shown in Figure 1 (A through I) is included. All screws are in a plastic bag inside of the packing cardboard.

Figure 2

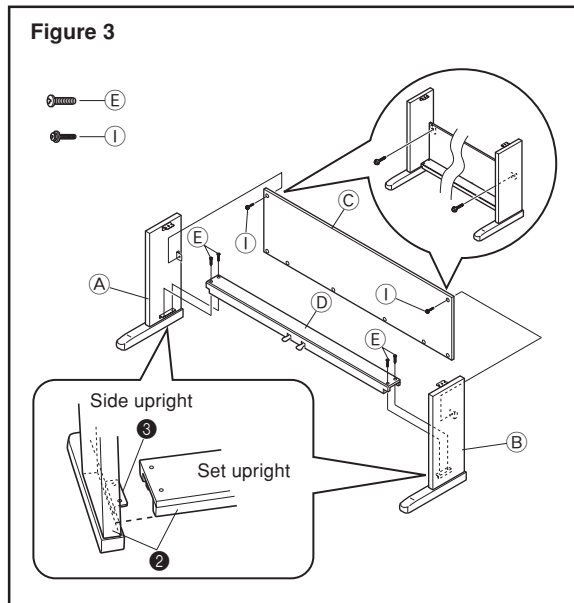


- Before starting actual assembly of the stand, undo the clip at location 1 (Figure 2) where the pedal cable comes out the back of crosspiece D.

1 Assembling the stand

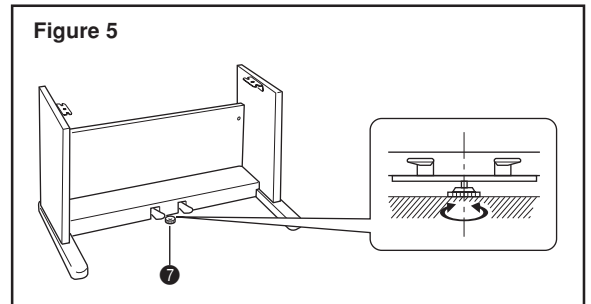
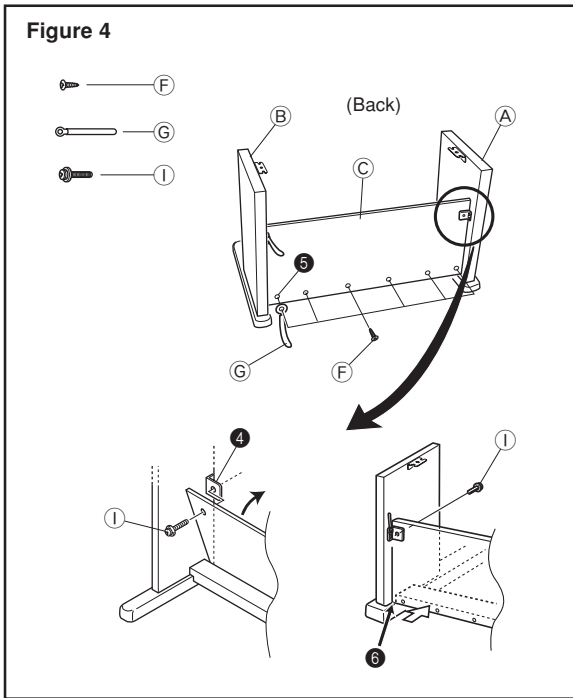
Refer to Figures 3, 4 and 5 as you assemble the stand according to the following procedure.

Figure 3



1. Attach side uprights (A) and (B) to crosspiece (D) using the four (E) screws (Figure 3).

- When joining the two pieces marked 2, the metal pieces 3 on the insides of side uprights (A) and (B) should fit into the slots at the ends of crosspiece (D). Make sure the metal pieces are pushed into the slots as far as they will go. If they are not, the metal pieces 3 and the screws (E) will not match up correctly, which can cause stripping of the screws.



3. Rotate height adjustment screw **7** until it supports crosspiece **D**, preventing the crosspiece from bending when you press the pedals (Figure 5).

Important!

- Be sure to rotate adjustment screw **7** and perform the adjustment procedure described above before depressing the pedals. Failure to do so can result in damage to crosspiece **D**.

2. Attach back panel **C** to the **4** brackets and crosspiece **D**. Note that the back panel **C** should be installed so it is in front of the **4** brackets (Figure 4). Use the two **I** screws, six **F** screws to secure the back panel in place (Figures 3 and 4). Note that you must also install the **G** clip at this time as shown in the illustration.

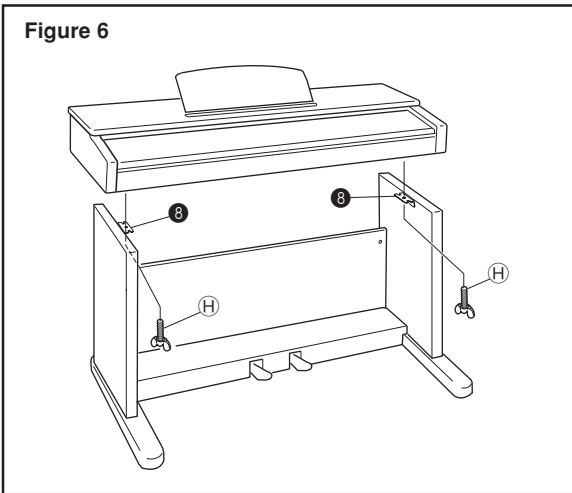
- First, install the topmost **I** screws on the left and right sides of the back panel **C**. Note that you should slip the **G** clip onto the **F** screw at point **5** before you screw in the **F** screw.
- The back panel **C** should rest on the feet of side uprights **A** and **B** as indicated by **6** in the illustration. Press the back panel **C** against crosspiece **D** while installing the **I** screws.

2 Installing the Keyboard onto the Stand

⚠ CAUTION

Take care that you do not pinch your fingers between the keyboard and stand!

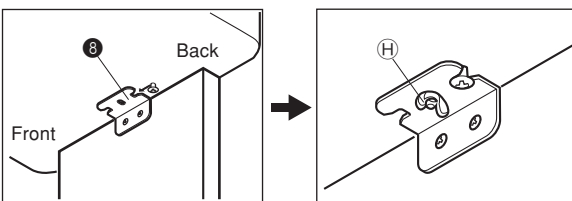
Figure 6



Be sure that you securely anchor the keyboard to the stand using the (H) butterfly bolts (Figure 6).

- Slide the screws on the bottom of the keyboard into the slots in the two angle brackets (B). Next, secure the keyboard to the stand with two butterfly bolts (H) (Figure 7).

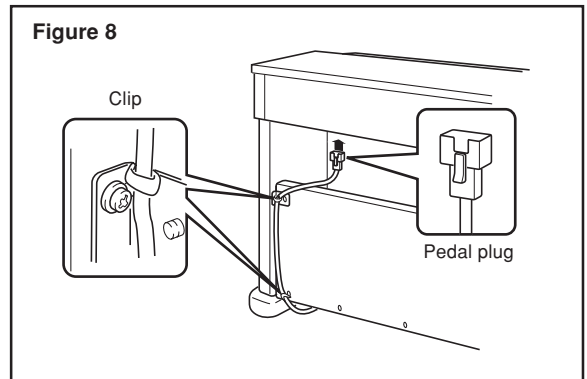
Figure 7



- The butterfly bolts keep the keyboard from falling from the stand. Be sure that you always secure the keyboard with the butterfly bolts.

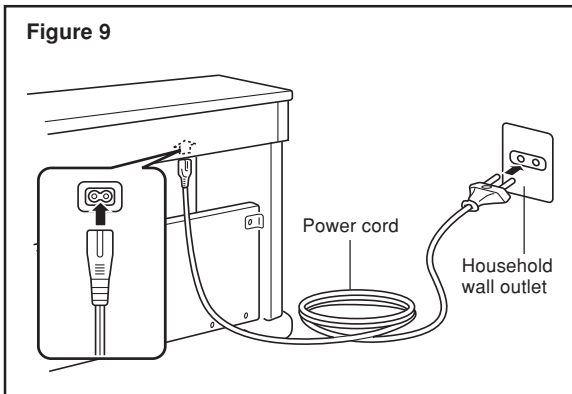
3 Connecting the Pedal

Figure 8



Position the pedal plug as shown in Figure 8 and insert it into the pedal connector on the bottom of the digital piano. Secure the pedal cable to the upright of the stand using the clips (Figure 8).

4 Connecting to a Power Supply



1. Check to make sure that the digital piano's POWER button is in the OFF position. If it is ON, press the button to switch it OFF.
2. Attach the power cord that comes with the digital piano to the bottom of the digital piano.*
3. Plug the digital piano's power cord into a wall outlet (Figure 9).

* applies to the AP-24V.

Important!

- The shapes of the digital piano's power cord and wall outlet should be different according to countries or regions. The illustrations are examples.
- With the AP-24, the power cord is hard-wired to the bottom of the instrument.

CAUTION

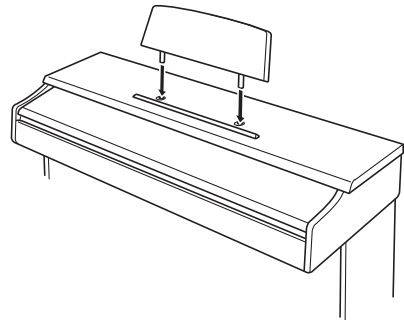
- The screws that you use to assemble the stand may become loose after a long period due to changes in temperature and humidity, or vibration caused by normal use, etc. Periodically check the screws used to fasten the stand and the butterfly bolts used to fasten the stand and the digital piano, and tighten them whenever necessary.

Power Outlet

- To power the digital piano, use a power outlet that allows easy access when plugging in or unplugging the power cord.

Attachment of the Score Stand

Install the music stand by inserting its pegs into the holes in the top of the piano.



Specifications

All of the items in these specifications apply to the AP-24 and AP-24V, unless specifically noted otherwise.

Models:	AP-24/AP-24V
Keyboard:	88 piano keys (with touch response)
Polyphony:	32 notes, maximum
Tones:	10 tones (including two low-range tones for split), with layer and split
Digital Effects:	Reverb (4 types), Chorus (4 types)
Demo Tunes:	<ul style="list-style-type: none"> • Number of Tunes: 8 • Playback: Repeat (all tunes)
User Songs:	<ul style="list-style-type: none"> • Number of Songs: Up to 10 download songs • Capacity: Approximately 7600 notes (47 kilobytes)
Memory:	<ul style="list-style-type: none"> • Operations: Real-time recording, playback • Capacity: Approximately 5,200 notes (2 tracks) • Memory Backup: Built-in lithium battery (Battery Life: 5 years)
Pedals:	Damper, Soft/Sostenuto (Selectable)
Other Functions:	<ul style="list-style-type: none"> • Metronome: Beat (6 types), Tempo (♩ = 30 to 255) • Touch Select: 3 types, off • Transpose: 1 octave (F# to C to F) • Tuning: A4 = 440Hz ±50 cents (adjustable)
MIDI:	16 multi-timbre receive
Input/Output:	<ul style="list-style-type: none"> • Headphones: Stereo standard jacks × 2 • MIDI (OUT) (IN)
Speakers:	∅ 12cm × 2 (Output: 20 W + 20 W)
Power Supply:	AP-24: 120V AP-24V: 220-240V
Power Consumption:	AP-24: 55W AP-24V: 58W
Dimensions:	<ul style="list-style-type: none"> • Digital Piano (without stand): 137.2 × 42.3 × 20.5 cm (54 1/16 × 16 11/16 × 8 1/16 inch) • Digital Piano: 138.5 × 43.2 × 81.0 cm (54 9/16 × 17 × 31 15/16 inch)
Weight:	<ul style="list-style-type: none"> • Digital Piano (without stand): approximately 34.0 kg (75.0 lbs) • Digital Piano: Approximately 44.0 kg (97.0 lbs)

- Design and specifications are subject to change without notice.
- AP-24 has hardwired power cords.
- AP-24V has detachable power cords.

Appendix/Apéndice

Initial Power On Settings

The table below shows the initial settings of the digital piano whenever power is turned on.

Item	Setting
Tone	GRAND PIANO 1
Reverb	HALL 1 (GRAND PIANO 1)
Chorus	Off (GRAND PIANO 1)
Touch Select	NORMAL

Item	Setting
Transpose	C
Tuning	A4 = 440.0Hz
Send Channel	Channel 1
Local Control	On

Ajustes iniciales al activarse la alimentación

La tabla siguiente muestra los ajustes iniciales del piano digital siempre que se activa la alimentación.

Item	Ajuste
Sonido	GRAND PIANO 1
Reverberación	HALL 1 (GRAND PIANO 1)
Coro	Desactivado (GRAND PIANO 1)
Selección de toque	NORMAL

Item	Ajuste
Transposición	C
Afinación	A4 = 440,0Hz
Canal de envío	Canal 1
Control local	Activado

MIDI Implementation Chart

Function ...	Transmitted	Recognized	Remarks
Basic Channel Default Changed	1 1-16	1-16 1-16	
Mode Default Messages Altered	Mode 3 X *****	Mode 3 X	
Note Number True voice	21-108 *****	0-127 0-127	
Velocity Note ON Note OFF	0 9nH V = 1-127 X 8nH V = 64	0 9nH V = 1-127 X 9nH V = 0, 8nH V = **	** = no relation ** = sin relación
After Touch Key's Ch's	X X	X O	
Pitch Bender	X	O	
Control Change 0, 32 1 6, 38 7 10 11 64 66 67 91 93 100, 101 120 121	O X O*1 X X X O O*2 O*2 O O O O X O	O O O*1 O O O O O O O O O O O O O	Bank select Modulation Data entry Volume Pan Expression Damper Sostenuto Soft Reverb send Chorus send RPN LSB, MSB All sound off Reset all controller

Program Change	:True #	O 0-7, 32 *****	O 0-7, 32 *****
System Exclusive		O*3	O*3
System Common	: Song Pos : Song Sel : Tune	X X X	X X X
System Real Time	: Clock : Commands	O O	X X
Aux Messages	: Local ON/OFF : All notes OFF : Active Sense : Reset	X O X X	X O O X
Remarks	<p>*1 Fine tune and coarse tune send/receive, RPN Null, and pitch bend sense receives</p> <p>*1 Afinación fina y envío/recepción de afinación gruesa. RPN nulo y recepción de captación de inflexión de altura tonal.</p> <p>*2 In accordance with pedal</p> <p>*2 De acuerdo al pedal.</p> <p>*3 • Reverb type [F0][7F][7F][04][05][01][01][01][01][01][00][vv][F7] vv=00: Room1, 01: Room2, 02: Hall1, 03: Hall2</p> <p>• Chorus type [F0][7F][7F][04][05][01][01][01][01][02][00][vv][F7] vv=00: Chorus1, 01: Chorus2, 02: Chorus3, 03: Chorus4</p> <p>*3 • Tipo de reverberación [F0][7F][7F][04][05][01][01][01][01][01][00][vv][F7] vv=00: Room1, 01: Room2, 02: Hall1, 03: Hall2</p> <p>• Tipo de chorus [F0][7F][7F][04][05][01][01][01][01][02][00][vv][F7] vv=00: Chorus1, 01: Chorus2, 02: Chorus3, 03: Chorus4</p>		

O : Yes
X : No

Mode 1 : OMNI ON, POLY
Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY
Mode 4 : OMNI OFF, MONO

Mode 1 : OMNI ON, POLY
Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY
Mode 4 : OMNI OFF, MONO




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