



DIGITAL PIANO
PIANO NUMERIQUE

P-155

Owner's Manual
Bedienungsanleitung
Mode d'emploi
Manual de instrucciones

ENGLISH

DEUTSCH

FRANÇAIS

ESPAÑOL

EN
DE
FR
ES

SPECIAL MESSAGE SECTION

This product utilizes batteries or an external power supply (adapter). DO NOT connect this product to any power supply or adapter other than one described in the manual, on the name plate, or specifically recommended by Yamaha.

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

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

SPECIFICATIONS SUBJECT TO CHANGE:

The information contained in this manual is believed to be correct at the time of printing. However, Yamaha reserves the right to change or modify any of the specifications without notice or obligation to update existing units.

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

IMPORTANT: The louder the sound, the shorter the time period before damage occurs.

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

NOTICE:

Service charges incurred due to a lack of knowledge relating to how a function or effect works (when the unit is operating as designed) are not covered by the manufacturer's warranty, and are therefore the owners responsibility. Please study this manual carefully and consult your dealer before requesting service.

ENVIRONMENTAL ISSUES:

Yamaha strives to produce products that are both user safe and environmentally friendly. We sincerely believe that our products and the production methods used to produce them, meet these goals. In keeping with both the letter and the spirit of the law, we want you to be aware of the following:

Battery Notice:

This product MAY contain a small non-rechargeable battery which (if applicable) is soldered in place. The average life span of this type of battery is approximately five years. When replacement becomes necessary, contact a qualified service representative to perform the replacement.

This product may also use "household" type batteries. Some of these may be rechargeable. Make sure that the battery being charged is a rechargeable type and that the charger is intended for the battery being charged.

When installing batteries, do not mix batteries with new, or with batteries of a different type. Batteries MUST be installed correctly. Mismatches or incorrect installation may result in overheating and battery case rupture.

Warning:

Do not attempt to disassemble, or incinerate any battery. Keep all batteries away from children. Dispose of used batteries promptly and as regulated by the laws in your area. Note: Check with any retailer of household type batteries in your area for battery disposal information.

Disposal Notice:

Should this product become damaged beyond repair, or for some reason its useful life is considered to be at an end, please observe all local, state, and federal regulations that relate to the disposal of products that contain lead, batteries, plastics, etc. If your dealer is unable to assist you, please contact Yamaha directly.

NAME PLATE LOCATION:

The name plate is located on the bottom of the product. The model number, serial number, power requirements, etc., are located on this plate. You should record the model number, serial number, and the date of purchase in the spaces provided below and retain this manual as a permanent record of your purchase.

Model

Serial No.

Purchase Date

PLEASE KEEP THIS MANUAL

92-BP (bottom)

FCC INFORMATION (U.S.A.)

1. IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!

This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.

2. IMPORTANT:

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

3. NOTE:

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

interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

Relocate either this product or the device that is being affected by the interference.

Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s.

In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to co-axial type cable.

If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Corporation of America, Electronic Service Division, 6600 Orangethorpe Ave, Buena Park, CA90620

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

* This applies only to products distributed by YAMAHA CORPORATION OF AMERICA.

(class B)

OBSERVERA!

Apparaten kopplas inte ur växelströmskällan (nätet) så länge som den är ansluten till vägguttaget, även om själva apparaten har stängts av.

ADVARSEL: Netspændingen til dette apparat er IKKE afbrudt, så længe netledningen sidder i en stikkontakt, som er tændt — også selvom der er slukket på apparatets afbryder.

VAROITUS: Laitteen toisiopiiriin kytketty käyttökytin ei irroita koko laitetta verkosta.

(standby)

IMPORTANT NOTICE FOR THE UNITED KINGDOM Connecting the Plug and Cord

IMPORTANT. The wires in this mains lead are coloured in accordance with the following code:

BLUE : NEUTRAL

BROWN : LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

Making sure that neither core is connected to the earth terminal of the three pin plug.

• This applies only to products distributed by Yamaha Music U.K. Ltd.

(2 wires)

PRECAUTIONS

PLEASE READ CAREFULLY BEFORE PROCEEDING

* Please keep this manual in a safe place for future reference.



WARNING

Always follow the basic precautions listed below to avoid the possibility of serious injury or even death from electrical shock, short-circuiting, damages, fire or other hazards. These precautions include, but are not limited to, the following:

Power supply/AC power adaptor

- Only use the voltage specified as correct for the instrument. The required voltage is printed on the name plate of the instrument.
- Use the specified adaptor (page 68) only. Using the wrong adaptor can result in damage to the instrument or overheating.
- Check the electric plug periodically and remove any dirt or dust which may have accumulated on it.
- Do not place the AC adaptor cord near heat sources such as heaters or radiators, and do not excessively bend or otherwise damage the cord, place heavy objects on it, or place it in a position where anyone could walk on, trip over, or roll anything over it.

Do not open

- Do not open the instrument or attempt to disassemble the internal parts or modify them in any way. The instrument contains no user-serviceable parts. If it should appear to be malfunctioning, discontinue use immediately and have it inspected by qualified Yamaha service personnel.

Water warning

- Do not expose the instrument to rain, use it near water or in damp or wet conditions, or place containers on it containing liquids which might spill into any openings. If any liquid such as water seeps into the instrument, turn off the power immediately and unplug the power cord from the AC outlet. Then have the instrument inspected by qualified Yamaha service personnel.
- Never insert or remove an electric plug with wet hands.

Fire warning

- Do not put burning items, such as candles, on the unit. A burning item may fall over and cause a fire.

If you notice any abnormality

- If the AC adaptor cord or plug becomes frayed or damaged, or if there is a sudden loss of sound during use of the instrument, or if any unusual smells or smoke should appear to be caused by it, immediately turn off the power switch, disconnect the adaptor plug from the outlet, and have the instrument inspected by qualified Yamaha service personnel.



CAUTION

Always follow the basic precautions listed below to avoid the possibility of physical injury to you or others, or damage to the instrument or other property. These precautions include, but are not limited to, the following:

Power supply/AC power adaptor

- When removing the electric plug from the instrument or an outlet, always hold the plug itself and not the cord.
- Unplug the AC power adaptor when not using the instrument, or during electrical storms.
- Do not connect the instrument to an electrical outlet using a multiple-connector. Doing so can result in lower sound quality, or possibly cause overheating in the outlet.

Location

- Do not expose the instrument to excessive dust or vibrations, or extreme cold or heat (such as in direct sunlight, near a heater, or in a car during the day) to prevent the possibility of panel disfiguration or damage to the internal components.
- Do not use the instrument in the vicinity of a TV, radio, stereo equipment, mobile phone, or other electric devices. Otherwise, the instrument, TV, or radio may generate noise.
- Do not place the instrument in an unstable position where it might accidentally fall over.
- Before moving the instrument, remove all connected adaptor and other cables.
- When setting up the product, make sure that the AC outlet you are using is easily accessible. If some trouble or malfunction occurs, immediately turn off the power switch and disconnect the plug from the outlet. Even when the power switch is turned off, electricity is still flowing to the product at the minimum level. When you are not using the product for a long time, make sure to unplug the power cord from the wall AC outlet.
- Use only the stand specified for the instrument. When attaching the stand or rack, use the provided screws only. Failure to do so could cause damage to the internal components or result in the instrument falling over.

Connections

- Before connecting the instrument to other electronic components, turn off the power for all components. Before turning the power on or off for all components, set all volume levels to minimum. Also, be sure to set the volumes of all components at their minimum levels and gradually raise the volume controls while playing the instrument to set the desired listening level.

Maintenance

- When cleaning the instrument, use a soft, dry cloth. Do not use paint thinners, solvents, cleaning fluids, or chemical-impregnated wiping cloths.
- During extreme changes in temperature or humidity, condensation may occur and water may collect on the surface of the instrument. If water is left, the wooden parts may absorb the water and be damaged. Make sure to wipe any water off immediately with a soft cloth.

Handling caution

- Do not insert a finger or hand in any gaps on the instrument.
- Never insert or drop paper, metallic, or other objects into the gaps on the panel or keyboard. If this happens, turn off the power immediately and unplug the power cord from the AC outlet. Then have the instrument inspected by qualified Yamaha service personnel.
- Do not place vinyl, plastic or rubber objects on the instrument, since this might discolor the panel or keyboard.
- Do not rest your weight on, or place heavy objects on the instrument, and do not use excessive force on the buttons, switches or connectors.
- Do not use the instrument/device or headphones for a long period of time at a high or uncomfortable volume level, since this can cause permanent hearing loss. If you experience any hearing loss or ringing in the ears, consult a physician.

Yamaha cannot be held responsible for damage caused by improper use or modifications to the instrument, or data that is lost or destroyed.

Always turn the power off when the instrument is not in use.

Even when the power switch is in the "STANDBY" position, electricity is still flowing to the instrument at the minimum level. When you are not using the instrument for a long time, make sure you unplug the AC power adaptor from the wall AC outlet.

This product incorporates and bundles computer programs and contents in which Yamaha owns copyrights or with respect to which it has license to use others' copyrights. Such copyrighted materials include, without limitation, all computer software, style files, MIDI files, WAVE data, musical scores and sound recordings. Any unauthorized use of such programs and contents outside of personal use is not permitted under relevant laws. Any violation of copyright has legal consequences. **DON'T MAKE, DISTRIBUTE OR USE ILLEGAL COPIES.**

- Copying of the commercially available musical data including but not limited to MIDI data and/or audio data is strictly prohibited except for your personal use.
- Windows is a registered trademark of Microsoft® Corporation in the United States and other countries.
- The company names and product names in this manual are the trademarks or registered trademarks of their respective companies.

The serial number of this product may be found on the bottom of the unit. You should note this serial number in the space provided below and retain this manual as a permanent record of your purchase to aid identification in the event of theft.

Model No.

Serial No.

Saving data

Saving and backing up your data

- Data in the instrument's internal memory can be lost due to operational errors or malfunction. Be sure to save any important data to external media via a computer connected to the instrument. (page 52)

Backing up the USB Storage device

- To protect against data loss through media damage, we recommend that you save your important data onto two USB storage devices.

(bottom)

Introduction

*Thank you for purchasing the Yamaha Digital Piano!
We recommend that you read this manual carefully so that you can
fully take advantage of the advanced and convenient functions.
We also recommend that you keep this manual in a safe and
handy place for future reference.*

Main Features

■ Graded Hammer Effect Keyboard

Thanks to our experience as the world's leading manufacturer of acoustic pianos, we've developed a keyboard with action that's virtually indistinguishable from the real thing. Just as on a traditional acoustic piano, the keys of the lower notes have a heavier touch, while the higher ones are more responsive to lighter playing. The keyboard's sensitivity can even be adjusted to match your playing style.

■ AWM Dynamic Stereo Sampling

This digital piano offers a rich and versatile range of sounds, which are created using Yamaha's proprietary sampling tone-generation system, "AWM Dynamic Stereo Sampling."

AWM (Advanced Wave Memory) is a sampling system that creates sounds close to those of an acoustic instrument by digitally recording the sounds of an instrument and applying high-quality digital filtering technology to the recorded audio samples.

The sound waveform created by an acoustic piano differs depending on the player's strength of touch, from pianissimo to fortissimo.

AWM Dynamic Stereo Sampling can create extremely dynamic nuances by recording samples at various playing strengths. The greater the number of samples used, the greater the resulting expressiveness of the instrument.

The piano voice "Grand Piano 1" features a totally new sample recorded from a full-size concert grand piano. Each note in the sample has been adjusted meticulously so that the digital piano will play only the very best piano sounds.

The piano voices are well-separated sounds featuring a fast attack and a satisfying response.

The "Grand Piano 1" voice features multiple wave samples for different velocities (Dynamic Sampling). That is, different samples are used depending on how fast or strong the player strikes the keys. Therefore, this voice expresses detailed dynamics and sounds much closer to those of a true acoustic piano.

The instrument creates a rich, luxurious sound using "Sustain Sampling," which is a sample of the soundboard and the resonance of the strings when the damper pedal is pressed. The instrument also features "Key-off Sampling," which is a sample of the very delicate noises that are caused when keys are released.

Accessories

- Owner's Manual
- AC Power Adaptor*

* May not be included depending on your particular area. Please check with your Yamaha dealer.

- Foot Switch FC4
- Music Rest
- My Yamaha Product User Registration*

* The PRODUCT ID on the sheet will be needed when you fill out the User Registration form.

Table of Contents

This manual consists of three main sections: Introduction, Reference and Appendix.

Introduction

Please read this section first.

Main Features	6
Accessories	6
Panel Controls and Terminals	8
Before Using the Instrument	10
Turning the Power On	10
Setting the Volume	10
Using the Pedals.....	11
Using Headphones	11
Music Rest.....	11

Reference

This section explains in detail all of the instrument's features, functions and operations.

Listening to the Demo Songs	12
Using the 50 Piano "Preset" Songs	13
Listening to the 50 Piano Preset Songs.....	13
Practicing a One-Hand Part Using the 50 Preset Songs (Part Cancel Function)	14
A-B Repeat for the 50 Preset Songs	15
Selecting & Playing Voices	16
Selecting Voices	16
Combining Voices (Dual).....	17
Splitting the Keyboard Range and Playing Two Different Voices ([SPLIT])	18
Adding Variations to the Sound – [BRIILLANCE]/[REVERB]/ [EFFECT]/"Damper Resonance"	20
Touch Sensitivity – [TOUCH]	22
Transposition – [TRANPOSE]	23
Using the Metronome	24
Recording Your Performance	25
Recording a performance quickly.....	25
Re-recording a previously recorded song.....	27
Recording to RIGHT/LEFT	28
Changing the Initial Settings (data recorded at the beginning of a song)	30
Handling Recorded Songs with a USB Storage Device	31
About Save and Load.....	31
Saving a Song	32
Loading a Song	33
Deleting Song Files	34
Formatting the USB Storage Device	35

Playing Back "USER" and "USB" Songs	36
Detailed Settings – [FUNCTION]	38
Basic Procedure in Function.....	39
About Each Function	40
F1. Fine Tuning of the Pitch	40
F2. Selecting a Scale	40
F3. Dual Functions	41
F4. Split Functions.....	42
F5. Other Functions	43
F6. Metronome Volume	44
F7. MIDI Functions.....	44
F8. Backup Functions.....	46
Connections	47
Connectors.....	47
Connecting to a USB storage device.....	49
Connecting a Personal Computer	50
Transmitting Song Data between the Computer and the Instrument.....	51
Data Backup Using a Computer	52
Precautions when using the USB [TO DEVICE] terminal	53
Using USB Storage Devices.....	53
Handling the Floppy Disk Drive (FDD) and Floppy Disks (Optional)	54
Message List	55
Troubleshooting	56
Preset Voice List	57
Index	58

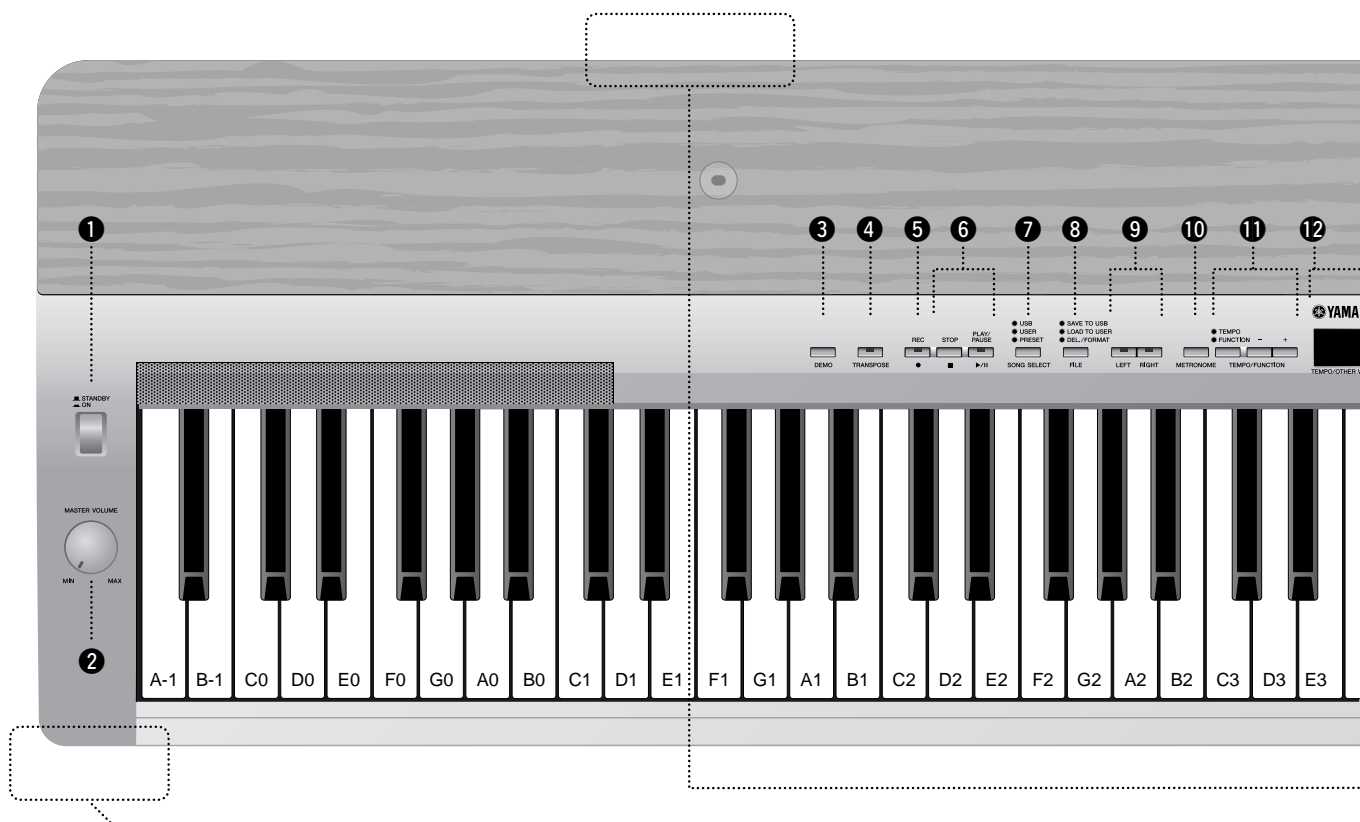
Appendix

This section introduces reference material.

Preset Song List	60
Factory Setting List	61
MIDI Data Format	62
MIDI Implementation Chart	66
Specifications	68

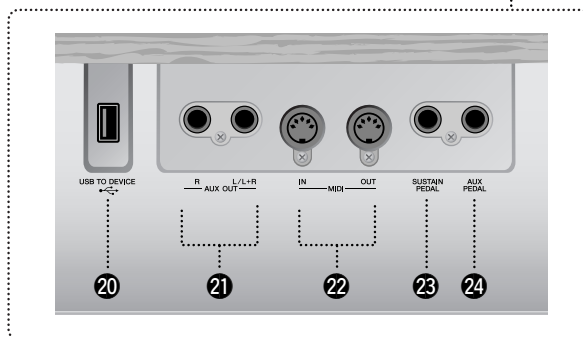
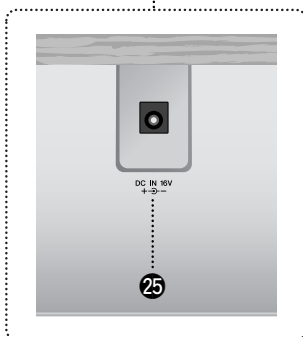
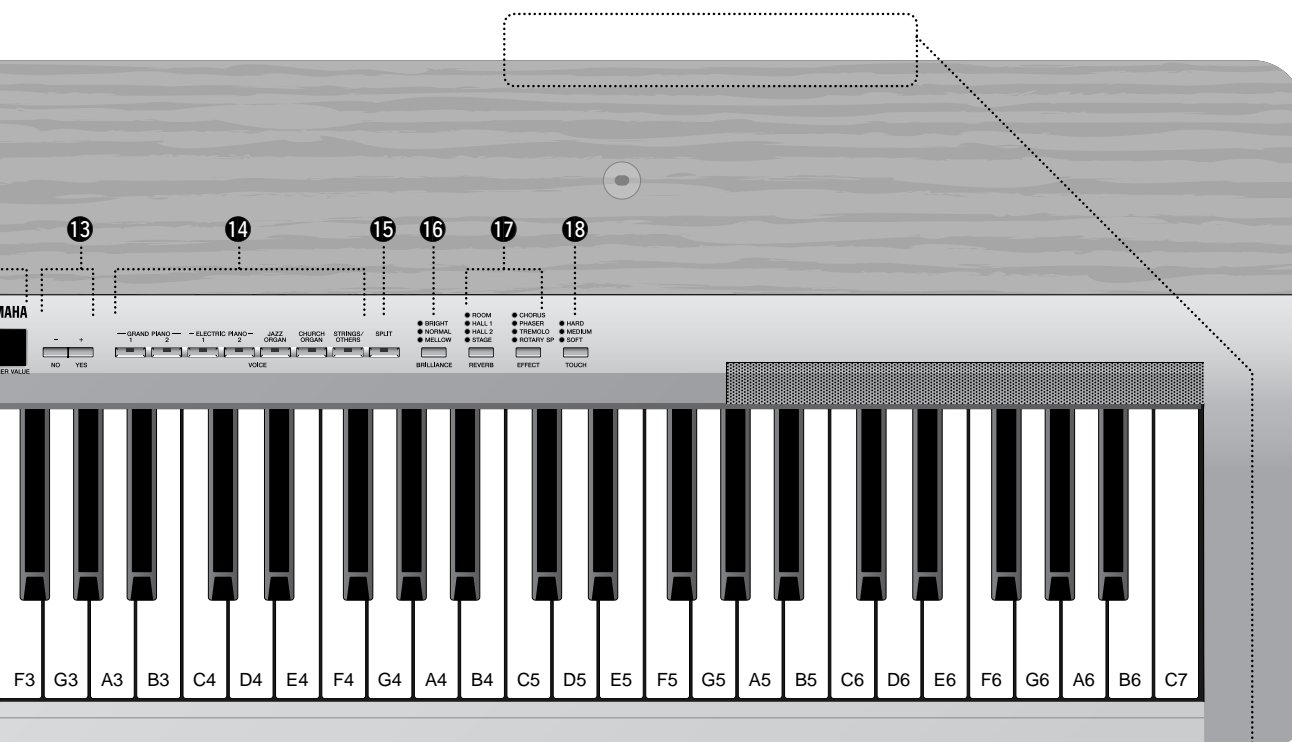
* The illustrations and displays as shown in this owner's manual are for instructional purposes only, and may appear somewhat different from those on your instrument.

Panel Controls and Terminals



Front panel

- | | | | |
|--|----------------------------|--|----------------------------|
| <p>1 [STANDBY/ON] switch
For turning the power on or off.</p> | <p>page 10</p> | <p>12 Display
For showing information on certain settings and values of the instrument.</p> | <p>page 10</p> |
| <p>2 [MASTER VOLUME] dial
For adjusting the volume level of the entire sound.</p> | <p>page 10</p> | <p>⚠ CAUTION
Never attempt to turn off the power while flashing dashes appear in the display, indicating data is being written to internal memory. Doing so may result in loss of all user data.</p> | |
| <p>3 [DEMO] button
For playing the demo songs.</p> | <p>page 12</p> | <p>13 [-/NO], [+ /YES] buttons
For setting values or performing file operations. Pressing both buttons simultaneously for certain value settings (Transpose, Tempo, etc.) restores the default value.</p> | <p>page 18</p> |
| <p>4 [TRANSPOSE] button
For shifting the pitch of the entire keyboard up or down.</p> | <p>page 23</p> | <p>14 Voice group buttons
For selecting voices from 17 internal sounds including Grand Piano 1, 2 and 3.</p> | <p>page 16</p> |
| <p>5 [REC] button
For recording your keyboard performance.</p> | <p>page 25</p> | <p>15 [SPLIT] button
For playing different voices on the left- and righthand sections of the keyboard.</p> | <p>page 18</p> |
| <p>6 [PLAY/PAUSE], [STOP] buttons
For playing back/pausing/stopping the preset songs, your recorded material or commercially available music data, etc.</p> | <p>pages 13, 37</p> | <p>16 [BRILLIANCE] button
For adjusting the brightness of the sound.</p> | <p>page 20</p> |
| <p>7 [SONG SELECT] button
For selecting a song to play back or edit.</p> | <p>pages 13, 37</p> | <p>17 [REVERB], [EFFECT] buttons
For adding reverb and chorus effects to the selected voice for your keyboard performance.</p> | <p>pages 20, 21</p> |
| <p>8 [FILE] button
For saving songs to and loading songs from a USB storage device, as well as managing song files. Also, lets you format a USB storage device.</p> | <p>page 32</p> | <p>18 [TOUCH] button
For selecting the touch response.</p> | <p>page 22</p> |
| <p>9 [RIGHT], [LEFT] buttons
For turning the left- and right-hand parts on or off as required so you can practice the corresponding part (the part that is turned off) on the keyboard.</p> | <p>pages 14, 37</p> | <p>19 [PHONES] jack
For connecting a set of standard stereo headphones, allowing private practice.</p> | <p>page 11</p> |
| <p>10 [METRONOME] button
For starting/stopping the metronome function.</p> | <p>pages 24, 44</p> | | |
| <p>11 [TEMPO/FUNCTION -, +] button
For changing the song tempo (speed) and selecting other useful functions (pages 38–46).</p> | <p>pages 24, 39</p> | | |



Rear panel

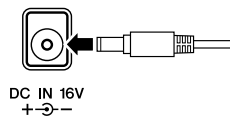
- 20** **USB [TO DEVICE] terminal** **page 47**
 For connecting the instrument to a USB storage device, allowing saving/loading of data to and from the connected device.
- 21** **AUX OUT [L/L+R][R] jacks** **page 47**
 For connecting an external tone generator, allowing you to play the sound of that device via the instrument's internal sound system and speakers.
- 22** **MIDI [IN] [OUT] terminals** **page 48**
 For connecting external MIDI devices, allowing the use of various MIDI functions.

- 23** **[SUSTAIN PEDAL] jack** **pages 11, 48**
 For connecting an included FC4 foot switch or an optional FC3 foot pedal/FC5 foot switch.
- 24** **[AUX PEDAL] jack** **pages 11, 48**
 For connecting an included FC4 foot switch or an optional FC3 foot pedal/FC5 foot switch/FC7 foot controller.
- 25** **[DC IN 16V] jack** **page 10**
 For connecting the included power adaptor.

Before Using the Instrument

Turning the Power On

1. Connect the power adaptor's DC cable to the [DC IN 16V] jack.



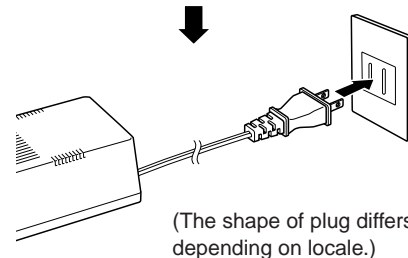
2. Plug the AC adaptor into an AC outlet.

⚠ WARNING

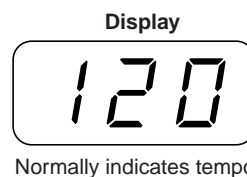
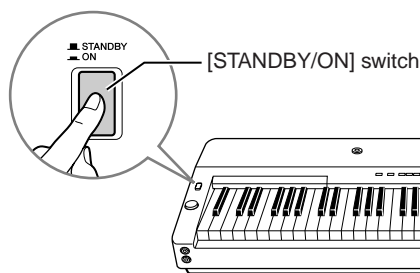
Use the specified adaptor (page 68) only. The use of other adaptors may result in irreparable damage to both the adaptor and the Instrument.

⚠ CAUTION

Unplug the AC Power Adaptor when not using the Instrument, or during electrical storms.



3. Press the [STANDBY/ON] switch to turn the power on.



The display located in the center of the front panel lights up. When you're ready to turn off the power, press the [STANDBY/ON] switch again.

⚠ CAUTION

Even when the instrument is turned off, electricity is still flowing to the instrument at the minimum level. When you are not using the instrument for a long time, make sure you unplug the AC power adaptor from the wall AC outlet.

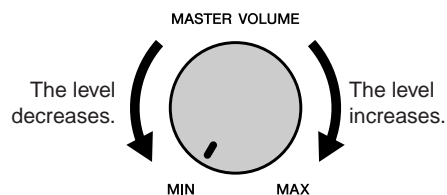
Setting the Volume

Initially set the [MASTER VOLUME] dial about halfway between the "MIN" and "MAX" settings. Then, when you start playing, re-adjust the [MASTER VOLUME] dial to the most comfortable listening level.

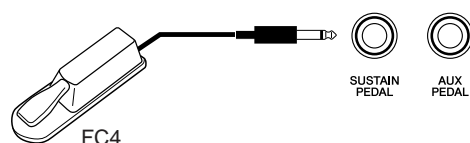
TERMINOLOGY

MASTER VOLUME:

The volume level of the entire keyboard sound



Using the Pedals



Sustain Pedal (Sustain Pedal jack)

This jack is for connecting the included foot switch FC4. The pedal functions in the same way as a damper pedal on an acoustic piano. Connect the included foot switch FC4 to this jack and press the pedal to sustain the sound.

When “Damper Resonance” is on, the instrument simulates the sustain sound that occurs when you press the damper pedal of a grand piano, as you press the damper pedal and play the keyboard.

An optional FC3 foot pedal or FC5 foot switch can also be connected to this jack. For the FC3, the further down the pedal is pressed, the longer the sound will be sustained. (It can be used like a half pedal effect).

- The depth of the effect produced by the Sustain Samples can be adjusted via the Pedal functions (pages 39, 43) in Function.

AUX Pedal (AUX Pedal jack)

This jack is for connecting an optional FC3 foot pedal, FC5 foot switch or FC7 foot controller. An included foot switch FC4 can also be connected to this jack. A wide range of functions, including the Soft Pedal function, can be assigned to this jack. For instructions on assigning the pedal, refer to pages 39, 43.

- The FC7 Foot Controller can be used to control Expression (pages 39, 43).



If the sustain pedal doesn't work, make sure that the pedal cord is properly plugged into the jack.

TERMINOLOGY

Half-pedal:

While playing the piano with Sustain and you want to slightly mute the sustained sound, release the pedal from maximum position to half position.

Using Headphones

Connect a set of headphones to one of the [PHONES] jacks.

Two [PHONES] jacks are provided.

You can connect two sets of standard stereo headphones. (If you are using only one set of headphones, you can plug them into either jack.)

CAUTION

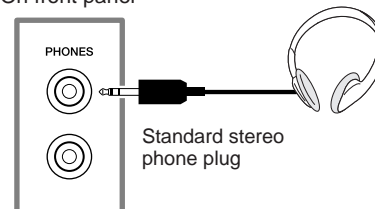
Do not use the instrument at a high volume level for a long period of time, or your hearing may be damaged.

CAUTION

The speakers are automatically shut off when a plug is inserted into this jack.

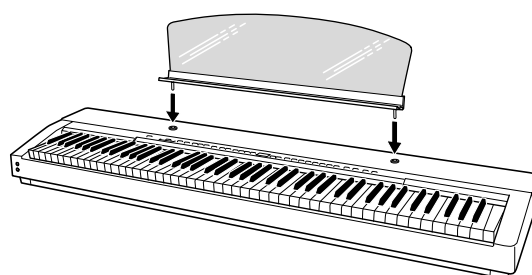
- Optional headphones:
HPE-150 Yamaha headphones

On front panel



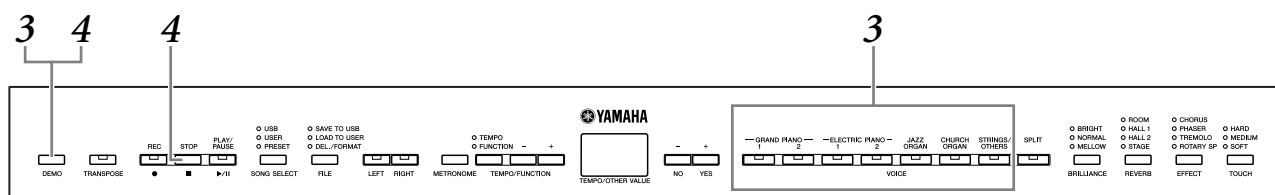
Music Rest

The instrument includes a music rest that can be attached to the instrument by inserting it into the holes at the top of the control panel.



Listening to the Demo Songs

Demo songs are provided that effectively demonstrate each of the instrument's voices.



ENGLISH

1. Press the [STANDBY/ON] switch to turn the power on (page 10).

When the power is turned ON, one of the voice button indicators will light.

2. Adjust the volume (page 10).

Initially set the [MASTER VOLUME] dial about half way between the “MIN” and “MAX” settings. Then, when you start playing, re-adjust the [MASTER VOLUME] dial to the most comfortable listening level.

3. Press the [DEMO] button to listen to the Demo songs.

The VOICE button indicators will flash in sequence, then the GRAND PIANO 1 demo song will start. Demo songs provided for each voice will play back in sequence until you press the [DEMO] or [STOP] button.

Changing a demo song

You can change to another Demo song during playback by pressing the desired VOICE button.

Demo Song List

Voice Name	Title	Composer
GRAND PIANO 1	Original	Original
GRAND PIANO 2	Original	Original
ELECTRIC PIANO 1	Original	Original
ELECTRIC PIANO 2	Original	Original
JAZZ ORGAN	Original	Original
CHURCH ORGAN	Herr Christ, der ein'ge Gottes-Sohn, BWV.601	J. S. Bach
STRINGS 1 ([STRINGS/OTHERS] \square !)	Original	Original

- The demonstration song of CHURCH ORGAN features short rearranged excerpts of the original composition.
- All songs except CHURCH ORGAN are original (© 2008 Yamaha Corporation).

4. Press the [DEMO] or [STOP] button to stop the Voice demo.



Demo song data is not transmitted via the MIDI terminals.



MIDI reception is not possible during Demo song playback.



Demo songs cannot be played during song recording (page 25) or in the File Operation mode (page 39).

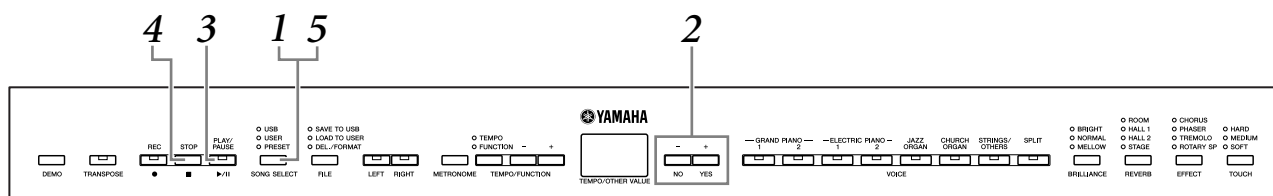


You cannot adjust the tempo of demo songs. You cannot use the Part Cancel function (page 14) or the Song A-B Repeat function (page 15) in Demo.

Using the 50 Piano “Preset” Songs

Listening to the 50 Piano Preset Songs

The instrument provides performance data of 50 piano songs. You can simply listen to these songs (page 60) or use them for practice (page 14).



1. Press the [SONG SELECT] button a few times until the “PRESET” indicator lights.

2. Press the [-/NO], [+ /YES] buttons to select the number of the tune you want to play.

The number will appear on the display.

1–50: Select a preset song number and play only the song.

ALL: Play all preset songs in sequence.

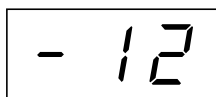
rand: Play all preset songs continuously in random order.

3. Press the [PLAY/PAUSE] button to start playback.

Adjust the tempo

You can use the [TEMPO/FUNCTION –, +] buttons to adjust the playback tempo as required. This produces a relative tempo variation, with a range from “–50” through “0” to “50” at maximum; the range will differ depending on the selected song.

The default tempo can be recalled by simultaneously pressing the [–] and [+] buttons.



4. Stop playback.

Playback will stop automatically when the selected preset song has finished. To stop the song during playback (or continuous playback), press the [STOP] button. You can also pause playback by pressing the [PLAY/PAUSE] button.

To play back another song continuously, see step 2 above.

5. Press the [SONG SELECT] button to exit Preset Song playback.

The indicator turns off, and the instrument returns to normal play.



Preset songs cannot be played during Demo/USER/USB songs playback, song recording (page 25), or in the File Operation mode.

TERMINOLOGY

Song:

On the instrument, performance data is called a “Song.” This includes demonstration tunes and piano preset tunes.

Preset:

Preset Data supplied with the internal memory of the instrument shipped from the factory.



You can play the keyboard along with the preset song. You can change the voice playing on the keyboard.



The default tempo “0” is automatically selected whenever a new preset song is selected, or when playback of a new preset song begins during “ALL” or “rand” playback.



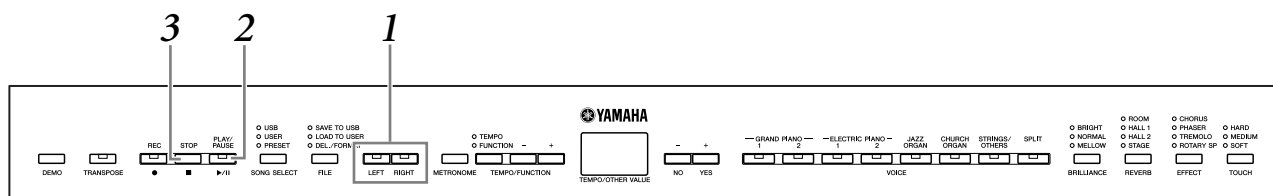
When you select a different song (or a different song is selected during chained playback), appropriate reverb and effect types will be selected accordingly.



You can adjust the Brilliance control (page 20) and Reverb type (page 20) that is applied to the voice played from the keyboard and to preset song playback. You can change the Effect settings (page 21) and Touch sensitivity (page 22) for the keyboard voice as well.

Practicing a One-Hand Part Using the 50 Preset Songs (Part Cancel Function)

The 50 preset songs have separate left- and right-hand parts on individual parts. You can turn the left- and right-hand parts on or off as required so you can practice the corresponding part (the part that is turned off) on the keyboard. The right-hand part is played by **[RIGHT]** and the left-hand part is played by **[LEFT]**.



1. Turn off the playback part you wish to practice.

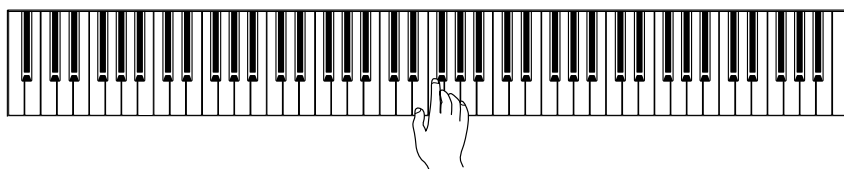
After you select a song to practice, press the **[RIGHT]** or **[LEFT]** button to turn off the corresponding part.

When you first select a song, both **[RIGHT]** and **[LEFT]** indicators light up, indicating that you can play back both parts. When you press one of the buttons to turn off playback, the corresponding button indicator turns off and the corresponding part playback is muted.

Pressing the buttons repeatedly toggles playback between on and off. The parts can be turned on or off even during playback.

2. Press the **[PLAY/PAUSE]** button to start playback and playing.

Play the part you just turned off.



Starting playback automatically as you start playing the keyboard (Sync Start)

You can cause playback to begin when you play the keyboard (Sync Start). Hold down the **[STOP]** button and press the **[PLAY/PAUSE]** button. The **[PLAY/PAUSE]** indicator will blink, and the instrument will wait for Sync Start. Now when you play the keyboard, playback will begin at the same moment. If you press the **[STOP]** button while waiting, Sync Start will be cancelled.

Pedal Play/Pause

A pedal connected to the **[AUX PEDAL]** connector can be assigned to play and pause preset song playback via the AUX Pedal function described on pages 39, 43.

3. Stop playback.

When playback is complete, it automatically stops and the instrument locates the top of the song. If you wish to stop playback in the middle of a song, press the **[STOP]** button. You can also pause playback by pressing the **[PLAY/PAUSE]** button.



The Preset Song Part Cancel function cannot be used during “RL L” or “r rd” (page 13) playback.



Resetting the part playback

Both parts are automatically turned ON whenever you select a new song.

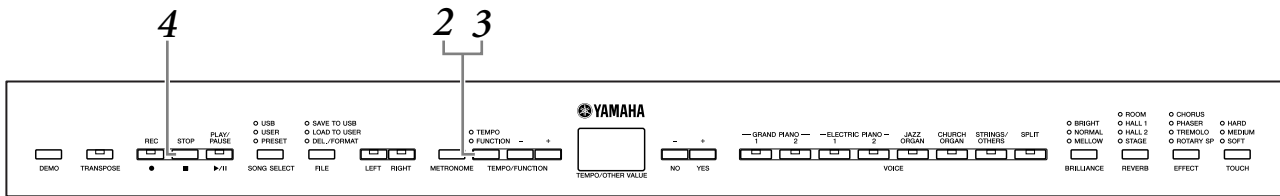
TERMINOLOGY

Sync:

Synchronized; occurring at the same time.

A-B Repeat for the 50 Preset Songs

The A-B Repeat function can be used to continuously repeat a specified phrase within a preset song. Combined with the Part Cancel function (page 14), this provides an excellent way to practice difficult phrases.



1. Select and play a preset song.

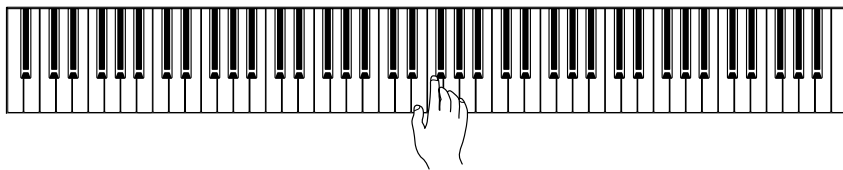
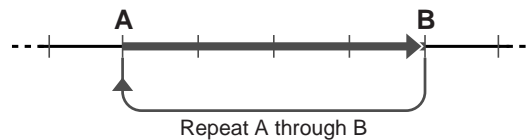
2. Press the [TEMPO/FUNCTION] button at the beginning of the phrase you want to repeat.

This sets the “A” point ($\boxed{A -}$ will appear on the display).

3. Press the [TEMPO/FUNCTION] button a second time at the end of the phrase.

This sets the “B” point ($\boxed{A - b}$ will appear on the display).

At this point, repeat playback will begin between the specified A and B points.



4. Press the [STOP] button to stop playback.

A-B repeat playback will resume if you press the [PLAY/PAUSE] button.

To cancel the A and B points, press the [TEMPO/FUNCTION] button once.



The A-B Repeat function cannot be used during “*RL L*” or “*rnd*” (page 13) playback.



- To set the “A” point at the very beginning of the song, press the [TEMPO/FUNCTION] button before starting playback.
- You can have the B point automatically be set to the song's end, by setting the A point and letting the song play to the end.



An automatic lead-in (to help guide you into the phrase) starts at the A point of the song.



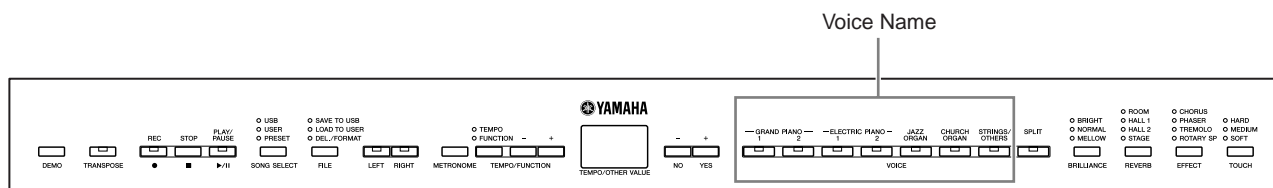
After setting the A and B points, you can set the Sync Start (page 14) and Pedal Play/Pause (page 14) functions.



The A and B points are automatically canceled when a new song is selected.

Selecting & Playing Voices

Selecting Voices



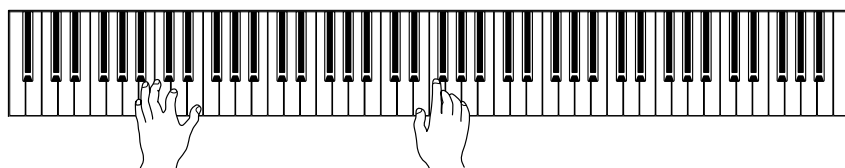
Select the desired voice by pressing one of the Voice buttons.

[STRINGS/OTHERS] button

Pressing the [STRINGS/OTHERS] button switches among the following eleven voices.

Display	Voice Name
0 1	STRINGS 1
0 2	STRINGS 2
0 3	CHURCH ORGAN 2
0 4	HARPSICHORD
0 5	E.CLAVICHORD
0 6	VIBRAPHONE
0 7	CHOIR
0 8	GUITAR
0 9	WOOD BASS
0 10	BASS & CYMBAL
0 11	E.BASS

Then, when you start playing, re-adjust the [MASTER VOLUME] dial for the most comfortable listening level.



To familiarize yourself with the characteristics of the voices, listen to the demo songs for each voice (page 12). Refer to "Preset Voice List" on page 57 for more information on the characteristics of each preset voice.

TERMINOLOGY

Voice:

On the instrument, the term "voice" means "instrument sound."



You can control the loudness of a voice by adjusting the force with which you strike the keys, although different playing styles (touch sensitivities) have little or no effect with certain musical instruments.

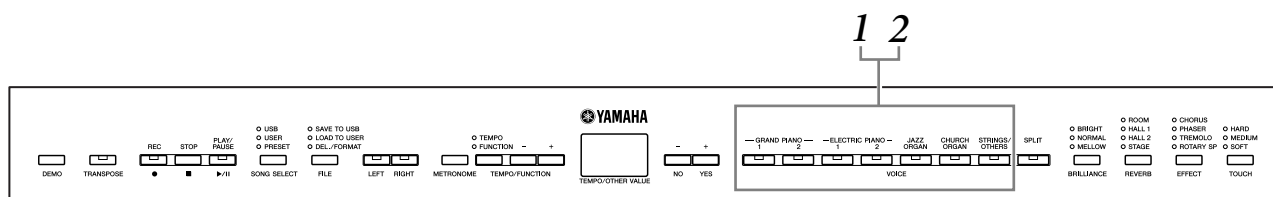
Refer to "Preset Voice List" on page 57.



If you select the voice via the [STRINGS/OTHERS] button then press another VOICE button, the voice last selected via the [STRINGS/OTHERS] button will be maintained. In other words, pressing the [STRINGS/OTHERS] button again calls up the last selected voice.

Combining Voices (Dual)

You can play voices simultaneously across the entire range of the keyboard. In this way, you can combine similar voices to create a thicker sound.



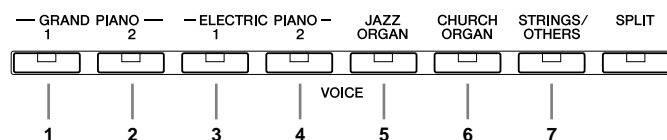
1. Press two voice buttons at the same time (or press one voice button while holding another) to engage Dual.

The voice indicators of both selected voices will light when Dual is active. Play the keyboard.

If you want to use a voice selected via the [STRINGS/OTHERS] button, press the [STRINGS/OTHERS] button several times to call up the desired voice while holding any other VOICE button. The number of the voice name of the [STRINGS/OTHERS] button is displayed on screen.

According to the voice numbering priority shown in the diagram below, the lower value voice number will be designated as Voice 1 (the other voice will be designated as Voice 2).

Voice numbering priority



The Function provides access to a number of other Dual functions, such as volume balance setting and octave setting (pages 39, 41). (If you do not set the Dual functions, the appropriate setting will be set in each voice by default.)

2. Press any single voice button to return to the normal single-voice play.



Two voices in the [STRINGS/OTHERS] button cannot be engaged at the same time.



Dual and Split cannot be engaged at the same time.



[REVERB] in Dual:

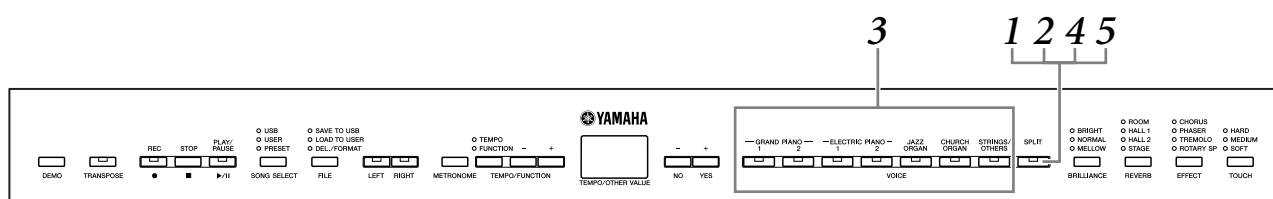
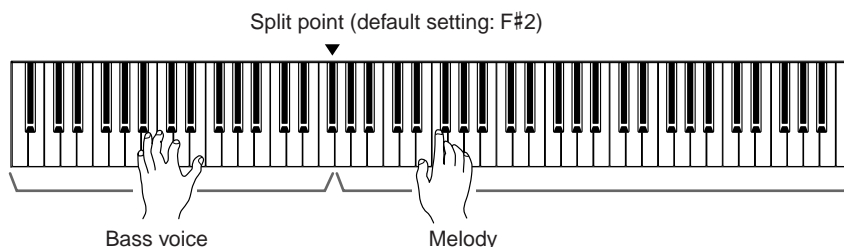
The reverb type assigned to Voice 1 will take priority over the other. (If the reverb is set to OFF, Voice 2 reverb type will be in effect.)

[EFFECT] in Dual:

Depending on the condition, one effect type may take priority over the other. The depth is determined according to the default depth value of the voice combination. However, using function F3 (page 41) you can adjust the depth value for each voice to your liking.

Splitting the Keyboard Range and Playing Two Different Voices ([SPLIT])

Split enables you to play two different voices on the keyboard — one with the left hand and another with the right hand. For example, you can play a bass part using the Wood Bass or Electric Bass voice with the left hand, and a melody with the right hand.



1. Press the [SPLIT] button to engage Split.

The [SPLIT] button lights.

As a default setting, WOOD BASS will be selected for the left-hand part.

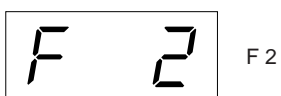
The Function provides access to a number of other Split functions (pages 39, 42). (If you make no settings for the Split functions, the appropriate setting will be set in each voice by default.)

2. Specify the split point (the border between the right- and left-hand range).

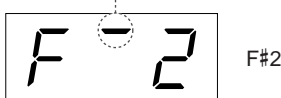
Press and hold down the [SPLIT] button and play the key you wish to assign as the split point.

(The split point is initially set at the F#2 key by default. If you do not need to change the split point, skip this step.) You can check the name of the current split point key on the LED display by holding down the [SPLIT] button.

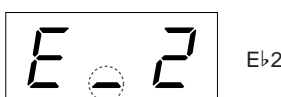
An example of split-point key display



followed by a high bar if sharp



followed by a low bar if flat



Dual and Split cannot be engaged at the same time.

TERMINOLOGY

Default setting:

The “Default setting” refers to the factory setting obtained when you first turn on the power to the instrument.



A specified “split point” key is included in the left-hand range.



The split point can also be set by the Function F4.1 (page 42).



The split point can also be changed by simultaneously holding down the [SPLIT] button and pressing the [-/NO] or [+ /YES] button.

The default split point can be recalled by simultaneously holding down the [SPLIT] button and pressing both the [-/NO] and [+ /YES] buttons together.

3. Press a voice button to select a voice for the right hand.

If you want to use a voice selected via the **[STRINGS/OTHERS]** button, press the **[STRINGS/OTHERS]** button several times to call up the desired voice. The voice number of the **[STRINGS/OTHERS]** button is displayed on screen.

4. Press the corresponding voice button while holding the **[SPLIT]** button to select a voice for the left hand.

The indicator of the left voice button will light while the **[SPLIT]** button is pressed.

If you want to use a voice selected via the **[STRINGS/OTHERS]** button, press the **[STRINGS/OTHERS]** button several times to call up the desired voice while holding the **[SPLIT]** button. The voice number of the **[STRINGS/OTHERS]** button is displayed on screen.

5. Press the **[SPLIT]** button to return to the normal single-voice play.



[REVERB] in Split

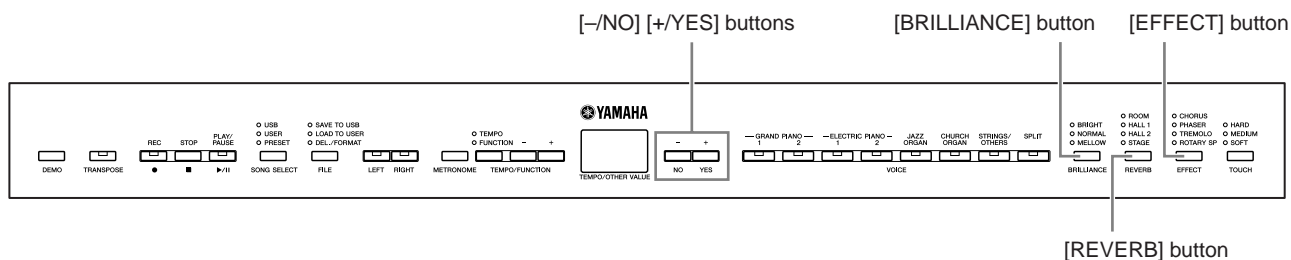
The reverb type assigned to the right voice will take priority over the other. (If the reverb is set to OFF, the left voice's reverb type will be in effect.) Reverb depth settings made via the panel controls (i.e., pressing the **[-/NO]** or **[+/YES]** buttons while holding the **[REVERB]** button; see page 20) will be applied to both voices.



[EFFECT] in Split

Depending on the conditions, one effect type will take priority over the other. The depth will be decided according to the default depth value of the voice combination. However, using Function F4 (pages 39, 42) you can change the depth value for each voice as you like. Effect depth settings made via the panel controls (i.e., pressing the **[-/NO]** or **[+/YES]** buttons while holding the **[EFFECT]** button; see page 21) will be applied to the right voice only.

Adding Variations to the Sound – [BRILLIANCE]/[REVERB]/[EFFECT]/“Damper Resonance”



ENGLISH

[BRILLIANCE]

You can use this control to adjust the brilliance of the tone and change the tonality to suit your preference.

- BRIGHT:** Bright tone
- NORMAL:** Standard tone
- MELLOW:** Soft and mellow tone

To select a brilliance type, press the [BRILLIANCE] button a few times until the indicator corresponding to the desired type lights (the indicator lights in sequence each time you press the [BRILLIANCE] button). Brilliance can be selected among five types. When two adjacent indicators are lit, the type that is between the two indicated types is selected. For example, when both NORMAL and MELLOW are lit, the brilliance setting between NORMAL and MELLOW is selected.

[REVERB]

This control enables you to select various digital reverb effects for adding extra depth and expression to the sound and creating a realistic acoustic ambience.

- OFF:** When no reverb effect is selected, no REVERB indicator is lit.
- ROOM:** This setting adds a continuous reverb effect to the sound, similar to the acoustic reverberation you would hear in a room.
- HALL 1:** For a “bigger” reverb sound, use the HALL 1 setting. This effect simulates the natural reverberation of a small-size concert hall.
- HALL 2:** For a truly spacious reverb sound, use the HALL 2 setting. This effect simulates the natural reverberation of a large concert hall.
- STAGE:** Simulates the reverb of a stage environment.

Pressing the [REVERB] button repeatedly toggles the reverb on and off. The indicators light in sequence each time the [REVERB] button is pressed. When all indicators are off, no effect is produced.

Adjusting Reverb Depth

Adjust the reverb depth for the selected voice by using the [-/NO] [+/YES] buttons while holding the [REVERB] button. Default depth settings are different for each voice. The depth range is from 0 (no effect) through 20 (maximum reverb depth). The current depth setting appears on the display while the [REVERB] button is held.



Default setting = NORMAL



When the BRILLIANCE is set to BRIGHT, the overall sound will be slightly louder. If the MASTER VOLUME is set at a high level the sound may become distorted. If so, lower the MASTER VOLUME level.



The default reverb type (including OFF) and depth settings are different for each voice.



Releasing the [REVERB] button changes the reverb type. If you are changing the reverb depth by holding the [REVERB] button, releasing the [REVERB] button will not change the reverb type.

[EFFECT]

The [EFFECT] button allows you to select an effect to give your sound greater depth and animation.

OFF: When no effect is selected, no EFFECT indicator is lit.

CHORUS: A shimmering, broadening effect.

PHASER: Adds a sweeping effect to the sound.

TREMOLO: Adds an animated, vibrating effect to the sound.

ROTARY SP: Adds the vibrato effect of a rotary speaker.

To select an effect type, press the [EFFECT] button a few times until the indicator corresponding to the desired type lights (the indicators light in sequence each time you press the [EFFECT] button). No effect is produced when all indicators are off.

Adjusting Effect Depth

You can adjust the effect depth for the selected voice by using the [-/NO] and [+ /YES] buttons while holding the [EFFECT] button.

Default depth settings are different for each voice. The depth range is from 0 (no effect) through 20 (maximum effect depth). The current depth setting appears on the display while the [EFFECT] button is held.

“Damper Resonance”

The damper resonance lets you hear a simulation of the sustain sound of the damper pedal on a grand piano, as you press the damper pedal and play the keyboard.

This effect is applied to the voice you play on the keyboard and the part (channel 1 & 2.)

Switching Damper Resonance Effect On or Off and Adjusting Damper Resonance Effect Depth

You can switch the “Damper Resonance” effect on or off via F5.8 Damper Resonance Effect ON/OFF (page 43) in Function and set damper resonance depth via F5.9 Damper Resonance Effect Depth (page 43) in Function.

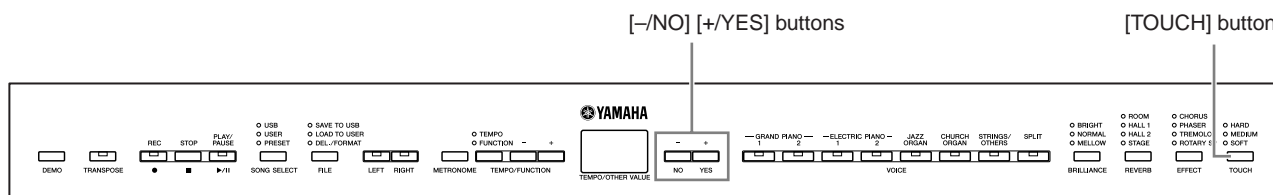


The default effect type (including OFF) and depth settings are different for each voice.



Releasing the [EFFECT] button changes the effect type. If you are changing the depth settings by holding the [EFFECT] button, releasing the [EFFECT] button will not change the effect type.

Touch Sensitivity – [TOUCH]



[TOUCH]

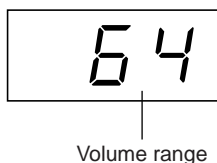
You can select four different types of keyboard touch sensitivity — HARD, MEDIUM, SOFT or FIXED — to match different playing styles and preferences.

- HARD:** Requires that the keys be played quite hard to produce maximum loudness.
- MEDIUM:** Produces a fairly “standard” keyboard response.
- SOFT:** Allows maximum loudness to be produced with relatively light key pressure.
- FIXED:** All notes are produced at the same volume no matter how hard the keyboard is played. (No indicators are lit.) The fixed volume can be changed.

To select a touch sensitivity type press the [TOUCH] button a few times until the indicator corresponding to the desired type lights (the indicators light in sequence each time the [TOUCH] button is pressed). No indicator is lit when “FIXED” is selected.

Changing the volume when FIXED is selected

When you select FIXED, you can set the volume for notes played in FIXED by using the [-/NO] and [+ /YES] buttons while you hold the [TOUCH] button. The current volume level appears on the display. The volume range is from 1 (minimum volume) through 127 (maximum volume). The default setting is 64.



This setting does not change the weight of the keyboard.



Default setting = MEDIUM



The touch sensitivity type will become the common setting for all voices. However, the touch sensitivity settings may have little or no effect with certain voices that are not normally responsive to keyboard dynamics. (Refer to the “Preset Voice List” on page 57.)



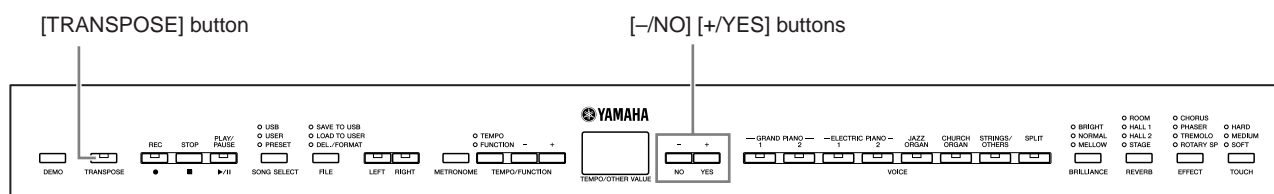
The touch volume set in FIXED will become the common setting for all voices.



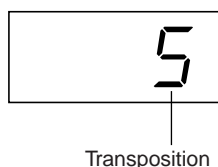
Releasing the [TOUCH] button changes the touch type. If you are changing the volume by holding the [TOUCH] button, releasing the [TOUCH] button will not change the touch sensitivity type. (FIXED will remain selected.)

Transposition – [TRANSPOSE]

The instrument's Transpose function makes it possible to shift the pitch of the entire keyboard up or down in semitone intervals to facilitate playing in difficult key signatures, and to let you easily match the pitch of the keyboard to the range of a singer or other instruments. For example, if you set the transposition amount to "5," playing key C produces pitch F. In this way, you can play a song as though it were in C major, and the instrument will transpose it to the key of F.



Use the [-/NO] and [+ /YES] button while holding the [TRANSPOSE] button to transpose down or up as required. The amount of transposition appears on the display while the [TRANSPOSE] button is held. The default transpose setting is "0."



The [TRANSPOSE] button indicator remains lit when a transpose setting other than "0" is selected. Every time the [TRANSPOSE] button is pressed after that switches the transpose function ON or OFF.

TERMINOLOGY

Transpose:

Changing the key signature of a song. On the instrument, transposing shifts the pitch of the entire keyboard.

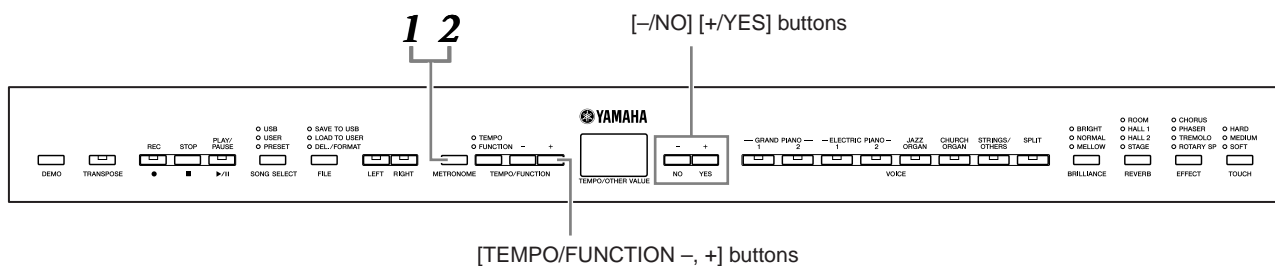


The transposition range:

- 12: -12 semitones (down one octave)
- 0: normal pitch
- 12: 12 semitones (up one octave)

Using the Metronome

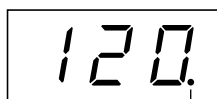
The instrument features a built-in metronome for convenience in practicing and use with the Recording features.



ENGLISH

1. Press the [METRONOME] button to start the metronome.

The metronome sound is turned on.



The beat indicator flashes at the current tempo.

Adjusting the tempo

The tempo of the metronome and song recorder playback (the recorder is described in the next section) can be set from 32 to 280 beats per minute by using the [TEMPO/FUNCTION -, +] buttons (when the [TEMPO/FUNCTION -, +] button's [TEMPO] indicator is lit).

Adjusting the time signature

The time signature (beat) of the metronome can be set by using the [-/NO] and [+ /YES] buttons while holding the [METRONOME] button. You can set the beat from 0 to 15. The current setting appears on the display while you are holding the [METRONOME] button.



Beat

2. Press the [METRONOME] button to stop the metronome.

The metronome sound is turned off.



If the [TEMPO/FUNCTION] button's [FUNCTION] indicator is lit, press the [TEMPO/FUNCTION] button to light the [TEMPO] indicator.



The volume of the metronome can be adjusted via the Metronome Volume function in Function (pages 39, 44).

Recording Your Performance

The ability to record and play back what you've played on the keyboard can be an effective practice aid. You can, for example, record just the left-hand part, and then practice the right-hand part while playing back the recorded left-hand part. Or, since you can record up to two parts separately, you could record the left- and right-hand parts separately, or record both parts of a duet and hear how they sound when played back. The two-part Song Recorder on the instrument allows the recording of up to three songs (U01–U03) or up to a maximum of about 100KB (11,000 notes) in each song on the instrument depending on pedal usage and other factors.

You cannot record the performance to the connected USB storage device directly. The recorded songs are saved to the instrument automatically. If you want to save data to the device, perform the Save operation (page 31) after stopping recording.

TERMINOLOGY

Recording vs. Saving:

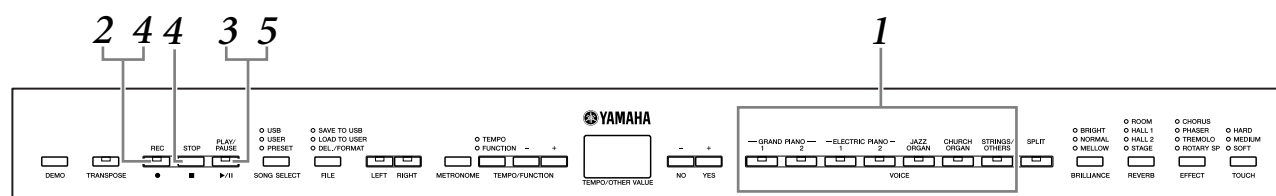
The format of performance data recorded on an MD differs from that of data recorded on the instrument. An MD records audio signals. The instrument "saves" information regarding note timing, voices, and a tempo value, but not audio signals. When you play back recorded songs, the instrument produces sound based on the saved information. Therefore, recording on the instrument may be more accurately called "saving information." However, this book often uses the word "recording" because it seems to make more sense.



You can record your performance (audio data) to an MD recorder or other recording device via the AUX OUT jack (page 47).

Recording a performance quickly

This convenient and simple recording method lets you quickly record your performance without specifying the recording parts — useful, for example, in recording solo piano pieces. In this way, the performance is automatically recorded to right part.



CAUTION

To avoid erasing previously recorded song(s):

If the file contains data, the part indicator lights up green when you select a file. Note that recording new data on this part will erase the existing data.

1. Select the voice you want to record (or voices if you will be using Dual or Split), before you begin to record.

Make any other desired settings (reverb, effect, etc.) as well. You might also want to set the volume.

You can also adjust the playback volume using the [MASTER VOLUME] dial.



Record mode cannot be engaged during Demo/PRESET/USER/USB song playback or in the File Operation mode.

2. Press the [REC] button to engage Record Ready mode.

This automatically selects an empty file (U01–U03) for recording and makes the RIGHT part's indicator turn red. If all file numbers contain recorded data, File U01 will be selected. This simply enables recording; to start recording, go on to step 3.

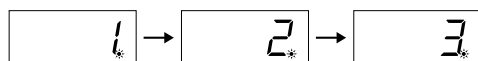
The [PLAY/PAUSE] indicator will flash at the current METRONOME tempo setting.

You can turn on the metronome in this step, and adjust the tempo by using the [TEMPO/FUNCTION −, +] buttons. (Range: 32–280)

Record Ready mode can be disengaged before recording by pressing the [REC] button again.

3. Start recording.

Recording will begin automatically as soon as you play a note on the keyboard or press the [PLAY/PAUSE] button. The current measure's number will appear on the display while recording.



4. Press either [REC] or [STOP] button to stop recording.

When recording is stopped, dashes appear in the display in succession to indicate that the recorded data is being saved to the instrument automatically. After the data is saved, the file name (U01–U03) appears in the display. The recorded part's indicator will light in green to indicate that it now contains data. (Record mode is disengaged automatically.)

CAUTION

Never attempt to turn the [STANDBY/ON] switch OFF while flashing dashes appear in the display (these indicate data is being written to internal memory). Turning the power off in this state results in loss of all recorded data.

5. Play back the recorded performance.

Press the [PLAY/PAUSE] button to play back the recorded performance. To stop playback in the middle of a song, press the [STOP] button.

TERMINOLOGY

Mode:

A mode is a status under which you can execute a certain function. In Record Ready mode, you can record your performance.



If you have selected the LEFT part previously in the same file, the LEFT part will automatically be made active when pressing the [REC] button in step 2.



If the metronome was on when you started recording, you'll be able to keep time with the metronome while recording, but the metronome sound will not be recorded.



For more recording information, see page 29.



The function of the [PLAY/PAUSE] button can be assigned to the AUX pedal (pages 39, 43). This allows you to start recording by pressing the Footswitch connected to the AUX jack.



Song recording can not be paused, even by pressing the [PLAY/PAUSE] button.



If the memory becomes full during recording, "FUL" will appear on the display and recording will stop automatically. (All recorded data up to that point will be retained.)



Pressing the [PLAY/PAUSE] button to start recording, then pressing the [STOP] button to stop recording will erase all previously recorded data on the selected part.

Re-recording a previously recorded song

If you are not satisfied with the recording, you can record it again. Using the following operation.

1. Select a voice or voices (and other settings) for recording, if necessary.

Repeat step 1 on page 25 if you wish to change the previous settings.

2. Press the [REC] button again to re-engage Record Ready mode.

The selected part's indicator lights in red.

Follow the procedure from step 3 in “Recording a performance quickly” on page 26 to re-record.



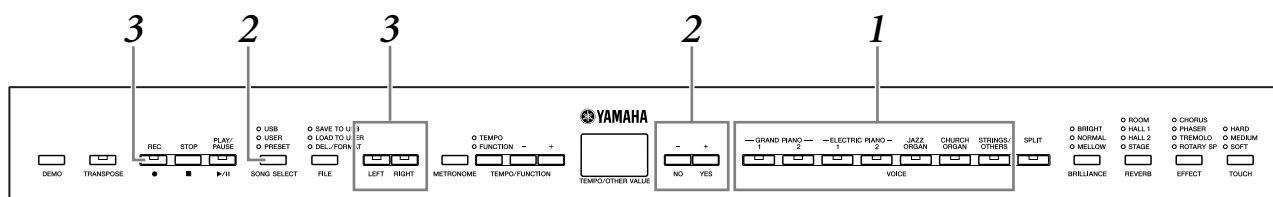
If you want to change the tempo, reverb type, or effect type when re-recording a part or when recording to another part, do so after engaging the Record Ready mode.



You cannot re-record in the middle of a song.

Recording to RIGHT/LEFT

This lets you record the right and left parts separately. Since you can record the left part while playing back the right, this is useful for independently recording both parts of a duet.



1. Make all the initial settings.

Same as step 1 in “Recording a performance quickly” on page 25.

2. Select a file (U01–U03) to record.

Press the [SONG SELECT] button so that the “USER” indicator lights then press the [-/NO][+/YES] buttons to select a file for recording.

⚠ CAUTION

To avoid erasing previously recorded song(s):

If the file contains data, the part indicator lights up green when you select a file. Note that recording new data on this part will erase the existing data.

3. Engage the Record Ready mode.

Press the [REC] button and press the [RIGHT]/[LEFT] button to engage the Record Ready mode. Recording does not actually start yet.

The [PLAY/PAUSE] indicator will flash at the current METRONOME tempo setting.

Record Ready mode can be disengaged before recording by pressing the [REC] button again.

4. Start and stop recording.

Same as steps 3–5 in “Recording a performance quickly” on page 26.



Part button indications

Off: Contains no data

On (green): Contains data

On (red): Part is enabled for recording



If the metronome was on when you started recording, you'll be able to keep time with the metronome while recording, but the metronome sound will not be recorded.



If you want to change the tempo, reverb type, or effect type when rerecording a part or when recording to another part, do so after entering the Record Ready mode.



If you don't want to hear the previously recorded part while you record (for example, when you want to record a song different from what you recorded on the previous part), press the playback part button before pressing the [REC] button so that its indicator is turned off.



For more information on recording, see page 29.

The song recorder records the following data:

Data in addition to the notes and voices you play is recorded.

This data includes “Individual Parts” and “Entire Song.” See below.

Individual Parts

- Notes played
- Voice selection
- Pedal (Sustain/Soft/Sostenuto/Expression)
- [REVERB] depth
- [EFFECT] depth
- Dual voices
- Dual balance (F3)
- Dual detune (F3)
- Dual octave shift (F3)
- Split voices (F4)
- Split balance (F4)
- Split octave shift (F4)

Entire Song

- Tempo
- Time signature (beat)
- [REVERB] type (including OFF)
- [EFFECT] type (including OFF)

Changing the Initial Settings (data recorded at the beginning of a song)

The initial settings (data recorded at the beginning of a song) can be changed after the recording. For example, after recording, you can change the voice to create a different ambience or adjust the song tempo to your taste.

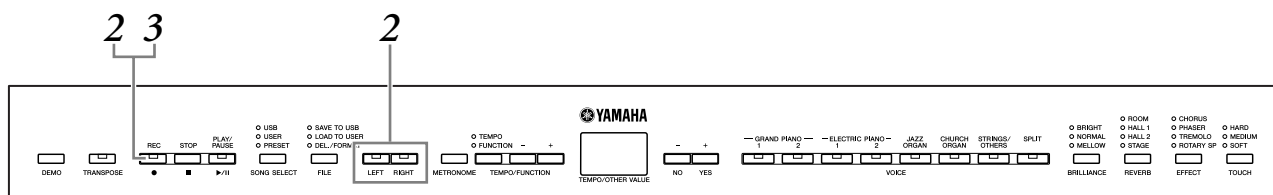
You can change the following initial settings.

Individual Parts

- Voice selection
- [REVERB] depth
- [EFFECT] depth
- Dual voices
- Split voices
- Damper/soft/expression pedal depth

Entire Song

- Tempo
- [REVERB] type (including OFF)
- [EFFECT] type (including OFF)



1. Change the settings via the panel controls.

For example, if you wish to change the recorded voice from [ELECTRIC PIANO 1] to [ELECTRIC PIANO 2], press the [ELECTRIC PIANO 2] button.

2. Press the [REC] button to engage Record mode and select a part to change the initial settings.

The indicator lights in red. (Data shared by two parts can be changed via either part.)

CAUTION

Be careful not to press the [PLAY/PAUSE] button or a key on the keyboard after step 2, either of which will start recording and erase all previously-recorded data on the selected part.

3. Press the [REC] button to exit the Record mode.

Handling Recorded Songs with a USB Storage Device

You can handle recorded songs (save, load, and delete) with a USB storage device. You can also format the device or media.

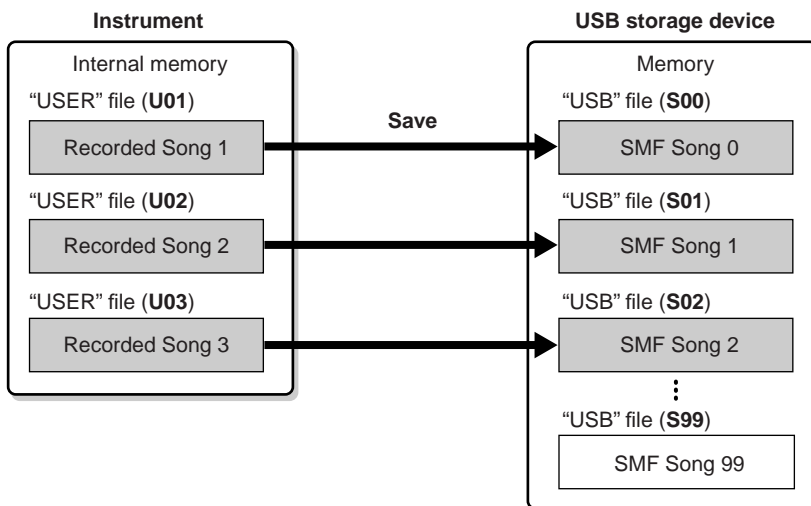
Before using a USB device, read the “Precautions when using the USB [TO DEVICE] terminal” section on page 53.

About Save and Load

Save

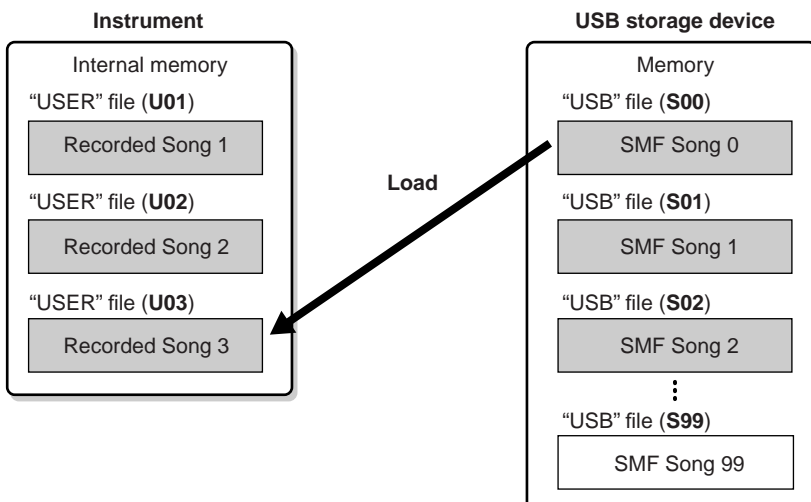
You can save three recorded songs in the instrument to the USB storage device as SMF song files. These songs can be saved to a “container” (or “USB” file) in the USB storage device. 100 containers are available — S00–S99.

Since the recorded songs are saved in SMF format, they can be played back on other instruments.



Load

If you want to only play the song in the USB storage device, the following operation is not necessary. For instructions on playing the song, see “Playing Back USER and USB Songs” on page 36. The Load operation can be used if you want to edit the recorded song on the instrument. Data can be loaded to “USER” file (U03).



Handling of recorded songs cannot be done during Demo/PRE-SET/USER/USB Song playback and in the Record mode.



For details on connecting a USB storage device, see page 49.



The file numbers which can be handled in this instrument are 100 files.

- SMF song numbers: S00–S99



The “S” indication at the top of the file name represents “SMF.”

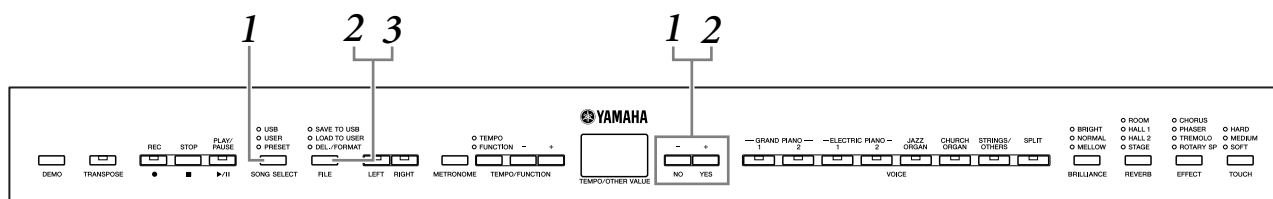
TERMINOLOGY

SMF (Standard MIDI File):

The SMF (Standard MIDI File) format is one of the most common and widely compatible sequence formats used for storing sequence data. There are two variations: Format 0 and Format 1.

A large number of MIDI devices are compatible with SMF Format 0, and most commercially available MIDI sequence data is provided in SMF Format 0. The SMF format for sequence files allows you to exchange song data between different sequencers. User songs recorded on the instrument are SMF Format 0.

Saving a Song



1. Select a "USER" file to save.

Select a "USER" file to save by using the [SONG SELECT] and [-/NO][+/YES] buttons.

2. Select a "USB" file in the device and save the "USER" file.

After making sure that the USB storage device is connected to the instrument, press the [FILE] button (the "SAVE TO USB" indicator lights). Then, while holding the [FILE] button, simultaneously press the [-/NO][+/YES] buttons to select a "USB" file (S00–S99). After releasing the [FILE] button, "n Y" (no/yes) appears in the display. Press the [+/YES] button to save the files. The file is saved into the "USER FILES" folder and named as "USERSONGxx.MID."

Overwriting the song

If you select a "USB" file which contains an SMF song, three dots appear in the display (ex., "S.0.0."). If you do not want to overwrite the file, press the [-/NO] button when "n Y (no or yes)" appears in the display and select another "USB" file. If you want to overwrite the file, press the [+/YES] button. After "n Y" appears in the display again to confirm whether you wish to overwrite the file or not, press the [+/YES] button once more.

CAUTION

While the instrument is accessing data (such as during Save, Load, Delete and Format operations) or is mounting the USB storage device (shortly after the connection: until the FILE LOAD LED flash stops), do NOT unplug the USB cable, do NOT remove the media from the device, and do NOT turn the power off to either devices. Doing so may corrupt the data on either or both devices.

3. Exit from the file operation mode.

Press the [FILE] button several times to exit the file operation mode. (The FILE indicators turn off.)

Play the recorded song (see pages 36).

CAUTION

Do not rename "USER" files on a computer. If the file name is changed in this way, the file cannot be loaded to the instrument.

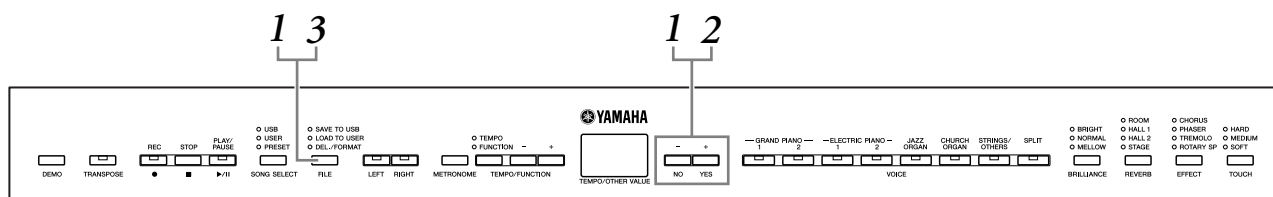
NOTE

If the selected file has no data, the file will not be saved (you cannot select a container for SMF songs — S00–S99). Confirm that the selected file has data by making sure that the indicator of [RIGHT] or [LEFT] is turned on.

NOTE

If you move an SMF song from the "USER FILES" folder to the top folder using a computer, the file type will be changed — from a SMF song (S00–S99) to an External song.

Loading a Song



⚠ CAUTION

If the “USER” file (U03) on the instrument already contains data, this operation can result in overwriting of the data. Make sure to save important data to your computer beforehand.

1. Select a “USB” file in the device.

After making sure that the USB storage device is connected to the instrument, press the [FILE] button (the “LOAD TO USER.” indicator lights). Then, while holding the [FILE] button, press the [-/NO][+ /YES] buttons to select a file (S00–S99). Data saved on the instrument can only be loaded back to the instrument.

2. Load a song to “USER” file (U03).

“n y” (no/yes) appears in the display. Press the [+ /YES] button to load a “USB” file. The file will automatically be loaded into the “USER” file (U03).

The indication “-” moves from left to right in display, indicating that save operation is in process.

⚠ CAUTION

While the instrument is accessing data (such as during Save, Load, Delete and Format operations) or is mounting the USB storage device (shortly after the connection: until the LOAD TO USER LED flash stops), do NOT unplug the USB cable, do NOT remove the media from the device, and do NOT turn the power off to either devices. Doing so may corrupt the data on either or both devices.

⚠ CAUTION

Do not manually change the file name on the USB storage device by using a computer; doing so will render the file unplayable or unable for loading on the instrument.

⚠ CAUTION

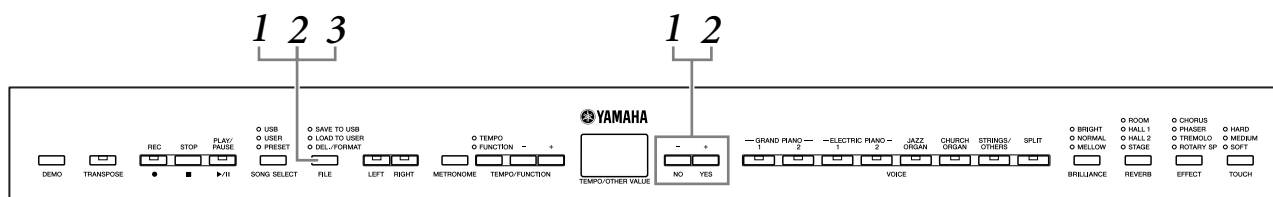
Do not turn off the power to the instrument while flashing dashes appear in the display (indicating the operation is in process). Doing so may damage the data.

When loading is completed, the “End” indication appears in the display, and the “USB” file is loaded into the “USER” file (U03).

3. Exit from the file operation mode.

Press the [FILE] button several times to exit the file operation mode. (The FILE indicators turn off.)

Deleting Song Files



1. Select a "USB" file to be deleted.

Press the [FILE] button. (The "DEL./FORMAT" indicator lights.) Then, hold the [FILE] button, simultaneously press the [-/NO][+/YES] buttons to select a file to be deleted. Two types of files will be displayed in order:

- Sxx..... SMF songs
- xxx..... External songs (commercially available songs or songs which have been edited on a computer)

2. Delete the file.

After releasing the [FILE] button, "n Y (no or yes)" appears in the display. If you want to delete the file, press the [+/YES] button. After "n Y" appears in the display again to confirm whether you wish to delete the file or not, press the [+/YES] button once more.

If you do not want to delete the file, press the [-/NO] button.

CAUTION

While the instrument is accessing data (such as during Save, Delete, Load and Format operations) or is mounting the USB storage device (shortly after the connection: until the LOAD TO USER LED flash stops), do NOT unplug the USB cable, do NOT remove the media from the device, and do NOT turn the power off to either devices. Doing so may corrupt the data on either or both devices.

3. Exit from the file operation mode.

Press the [FILE] button to exit the file operation mode. (The FILE indicators turn off.)

NOTE

Audition the song to be deleted before deleting. Songs cannot be played back after engaging the File Operation mode.

NOTE

Only files which contain data will be displayed.

NOTE

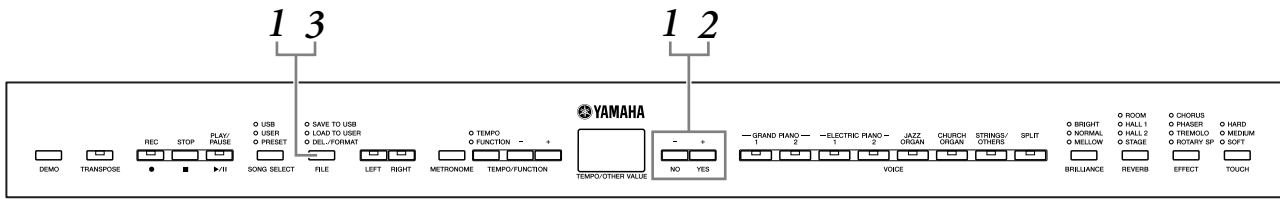
The following types of songs cannot be deleted. If you try to delete the song, "Pro" (Protected) appears in the display.

- Protected songs (extension: Cxx, Exx or SME)
- Disklavier Piano Soft songs

NOTE

For SMF songs (Sxx), the file numbers are fixed and not changed by deleting files. However, the file numbers of External songs are not fixed and may be changed by deleting External songs.

Formatting the USB Storage Device



⚠ CAUTION

If data is already saved to the USB storage device, be careful not to format it. If you format the device, all the previously saved data will be deleted.

1. Engage the file operation mode.

Press the **[FILE]** button. (The “DEL/ FORMAT” indicator lights.) Then, while holding the **[FILE]** button, simultaneously press the **[-/NO]** and **[+/YES]** buttons. When “For” (Format) appears in the display, release the **[FILE]** button to display “n y” (no/yes).

2. Execute the format operation.

After “n y” (no/yes) appears in the display, press the **[+/YES]** button. After “n -y” appears in the display again to confirm whether you wish to format the device or not, press the **[+/YES]** button once more. If you do not want to format the device, press the **[-/NO]** button.

⚠ CAUTION

While the instrument is accessing data (such as during Save, Delete, Load and Format operations) or is mounting the USB storage device (shortly after the connection: until the LOAD TO USER LED flash stops), do NOT unplug the USB cable, do NOT remove the media from the device, and do NOT turn the power off to either devices. Doing so may corrupt the data on either or both devices.

3. Exit from the file operation mode.

Press the **[FILE]** button to exit the file operation mode. (The FILE indicators turn off.)

Playing Back “USER” and “USB” Songs

The following types of songs are available. You can simply listen to these songs or use them for practice (pages 14, 15).

“USER” songs

- **Songs (U01–U03) which you recorded to the instrument by using the record function (page 25).**
- **External songs in the instrument**
Songs transferred from a computer (including commercially available songs and songs which have been edited on a computer). Songs can be transferred (saved) to the instrument by using the included Musicsoft Downloader software (pages 51). The songs are saved to an area of the internal memory separate from the area for recorded songs. Up to 255 songs can be played back on this instrument (numbers 001–255).

“USB” songs

- **Songs (S00–S99) which you recorded to the instrument by using the record function (pages 32) and saved to the USB storage device.**
- **External songs in the USB storage device**
Songs saved in the USB storage device (including commercially available songs and songs which have been edited on a computer). Up to 999 songs can be played back on this instrument (numbers 001–999).

Sequence formats that can be played on the instrument

- **SMF (Standard MIDI File) Formats 0 and 1**
The SMF format is one of the most common and widely compatible sequence formats used for storing sequence data. There are two variations: Format 0 and Format 1. A large number of MIDI devices are compatible with SMF Format 0, and most commercially available MIDI sequence data is provided in SMF Format 0. The SMF format for sequence files allows you to exchange song data between different sequencers.



The “USER” and “USB” songs cannot be played back during Demo/PRESET song playback or in the File Operation and Record modes.



If the metronome is being used during playback, the metronome will automatically stop when playback is stopped.



If the REVERB type is changed via the panel controls during playback, both the playback and keyboard reverb effects will be changed.



If the EFFECT type is changed via the panel controls during playback, the playback effect may be switched off in some cases.

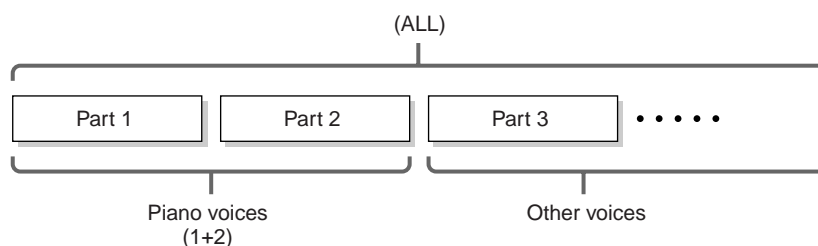
Specify the Song Part (Channel) and Play the Song

Because this instrument is not compatible with GM/XG/DOC/GS/XF Format, when listening to external songs, you can specify the song parts in this setting.

The “ALL” setting plays back all 16 parts, while “1+2” plays back parts 1 and 2.

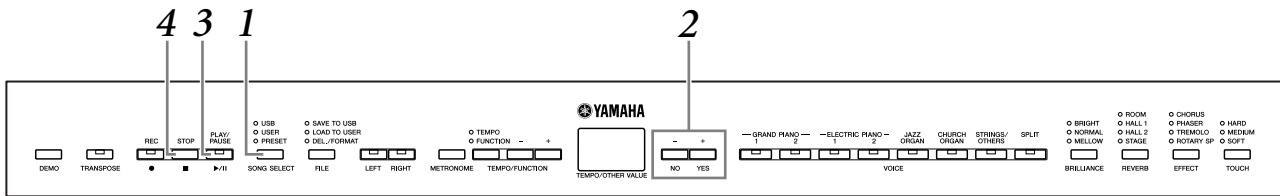
Keep in mind that songs recorded on other devices may use a variety of voices not available on this instrument and hence may sound different than the original songs. In general, this instrument should be used to play back piano songs.

Since piano songs are generally recorded to parts 1 and 2 exclusively, the “1+2” setting is best used with only the piano voice. Default setting is “ALL.”



Setting range: ALL, 1&2

To set the song part (channel), see Function F5.5 (page 43).



1. Press the [SONG SELECT] button (the USER or USB indicator lights).

2. Press the [-/NO] [+ /YES] buttons to select a song (Uxx*)/(xxx*) or (Sxx*)/(xxx*).

The letters “xx” represent the song number.

3. Press the [PLAY/PAUSE] button to start playback.

The current measure number appears on the display during playback.



- You can play the keyboard while the instrument is playing back a song. You can also play the notes with a voice different from the playback voice by selecting a voice from the panel.

Adjust the tempo

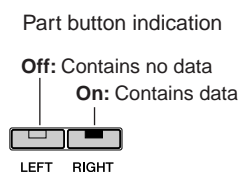
You can use the [TEMPO/FUNCTION -, +] buttons to adjust the playback tempo as required before or during playback. The default tempo (the song’s original tempo) is set when you press the [-] and [+] buttons simultaneously.

4. Press the [STOP] button or [PLAY/PAUSE] button to stop playback.

When playback is complete, the instrument automatically stops and locates the top of the song. To stop playback in the middle of a song, press the [STOP] button. You can also pause playback by pressing the [PLAY/PAUSE] button.

Turning part playback on and off

When you select a song on the instrument, the indicators for parts that contain data (one of [RIGHT] [LEFT] or both) are lit in green. While the instrument is playing or stopped, pressing these part buttons turns off the indicators, and the data on those parts is not played. Pressing the part buttons toggles part playback on and off.



Recorded song playback cannot be started when the recorder contains no data.



You can also enjoy playing duets with yourself by recording one part of a duet or a song for two pianos, then playing the other part while the recorded part plays back.



If you have External songs in the instrument, you can use the repeat function.

ALL : Play all External songs in sequence.

rand : Play all External songs continuously in random order.



Parts can be turned on or off before or during playback.

Detailed Settings – [FUNCTION]

You can set various parameters to make the best use of instrument functions, such as fine tuning the pitch or selecting a scale, etc.

The following parameters are available.

This instrument has eight main functions.

Some of these main functions consist of a set of sub-functions.

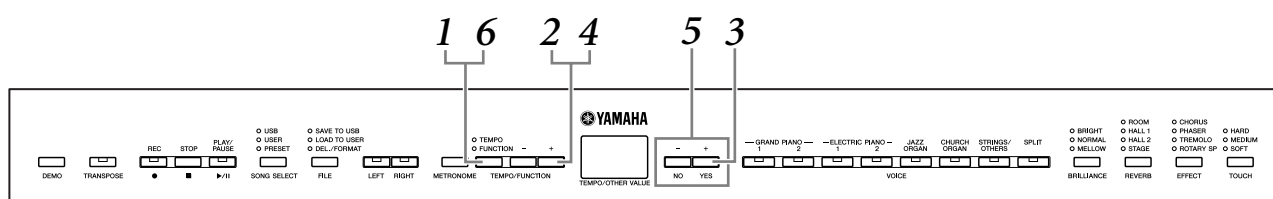
Function List

Function	Sub-function	Default setting	Display	Reference page	Backup Group
Fine tuning of the pitch	—	440.0Hz	F1.	40	F8.3
Selecting a scale	Scale	1 (Equal Temperament)	F2.1	40	F8.1
	Base Note	C	F2.2	41	
Dual functions	Dual Balance	Different for each voice combination.	F3.1	41	F8.1
	Dual Detune	Different for each voice combination.	F3.2	41	
	Voice 1 Octave Shift	Different for each voice combination.	F3.3	41	
	Voice 2 Octave Shift	Different for each voice combination.	F3.4	41	
	Voice 1 Effect Depth	Different for each voice combination.	F3.5	41	
	Voice 2 Effect Depth	Different for each voice combination.	F3.6	41	
	Reset	—	F3.7	41	
Split functions	Split Point	F#2	F4.1	42	F8.1
	Split Balance	Different for each voice combination.	F4.2	42	
	Right Voice Octave Shift	Different for each voice combination.	F4.3	42	
	Left Voice Octave Shift	Different for each voice combination.	F4.4	42	
	Right Voice Effect Depth	Different for each voice combination.	F4.5	42	
	Left Voice Effect Depth	Different for each voice combination.	F4.6	42	
	Sustain Pedal Range	1 (for the right Voice)	F4.7	42	
	Reset	—	F4.8	42	
Other functions	AUX Pedal	1 (Soft Pedal)	F5.1	43	F8.4
	Soft Pedal Effect Depth	3	F5.2	43	
	Sustain Sample Depth	12	F5.3	43	
	Keyoff Sample Volume	10	F5.4	43	
	Song Channel Selection	ALL	F5.5	43	
	Sustain Pedal Type	1	F5.6	43	
	AUX Pedal Type	1	F5.7	43	
	Damper Resonance Effect ON/OFF	ON	F5.8	43	
	Damper Resonance Effect Depth	5	F5.9	43	
Metronome volume	—	10	F6.	44	F8.1
MIDI functions	MIDI Transmit Channel Selection	1	F7.1	44	F8.2
	MIDI Receive Channel Selection	ALL	F7.2	44	
	Local Control ON/OFF	ON	F7.3	44	
	Program Change ON/OFF	ON	F7.4	44	
	Control Change ON/OFF	ON	F7.5	45	
	Panel/Status Transmit	—	F7.6	45	
	Initial Setup Send	—	F7.7	45	
Backup functions	Voice	OFF	F8.1	46	—
	MIDI	ON	F8.2	46	
	Tuning	ON	F8.3	46	
	Others	ON	F8.4	46	
	Character Code	Int (International)	F8.5	46	

Basic Procedure in Function

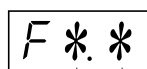
Follow the steps below to use the functions.

If you become lost while using a function, return to this page and read the basic procedure.



1. Press the [TEMPO/FUNCTION] button to enter the Function.

The [FUNCTION] indicator lights.

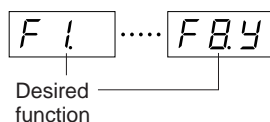


Desired function Sub-function

2. Use the [TEMPO/FUNCTION -, +] buttons to select the desired function from F1–F8.

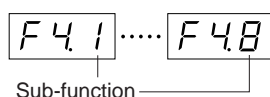
When $F * *$ (that include the sub-functions) is selected, go on to step 3.

When F1 or F6 is selected (these have no sub-functions), go on to step 5.



Desired function

3. Press the [+ / YES] button to enter the sub-function.



Sub-function

4. Use the [TEMPO/FUNCTION -, +] buttons to select the desired sub-function.

In the example below, the sub-functions of F4 (Split) are shown.

5. Use the [- / NO] and [+ / YES] buttons to change the ON/OFF setting, select the type, or change the value.

The default setting (which is used when you first turn on the power to the instrument) is recalled by pressing the [- / NO] and [+ / YES] buttons simultaneously.

6. Press the [TEMPO/FUNCTION] to exit the Function.

The [TEMPO] indicator lights.



Functions cannot be selected during Demo/PRESET/USER/USB song playback or in the File Operation and Record modes.



To cancel the function in step 2, 3, or 4, press the [TEMPO/FUNCTION -, +] button any time to exit Function.



After you select the function, the current setting will be displayed when the [- / NO] or [+ / YES] button is pressed for the first time.

About Each Function

The explanations here apply when entering the Function in step **5** on page 39.

F1. Fine Tuning of the Pitch

You can fine tune the pitch of the entire instrument. This function is useful when you play the instrument along with other instruments or CD music.

Use the [–/NO] and [+ /YES] buttons to lower or raise the pitch of the A3 key in approximately 0.2 Hz increments.

Tenths of a hertz are indicated on the display by the appearance and position of a dot, as in the following example:

Display	Value
40.0	440.0
40.2	440.2
40.4	440.4
46.6	446.6
53.0	453.0

Setting range:
427.0–453.0 (Hz)

Default setting:
440.0 (Hz)

TERMINOLOGY

Hz (Hertz):

This unit of measurement refers to the frequency of a sound and represents the number of times a sound wave vibrates in a second.

Using the keyboard to set the pitch

You can fine tune the pitch by pressing a key on the keyboard, without having to call up the FUNCTION display. See the “Panel Controls and Terminals” (page 8) for the key (note) name.

To tune up (in roughly 0.2Hz steps): Hold the A-1, B-1, and C0 keys simultaneously and press any key between C3 and B3.

To tune down (in roughly 0.2Hz steps): Hold the A-1, B-1, and C#0 keys simultaneously and press any key between C3 and B3.

To restore standard pitch: Hold the A-1, B-1, C0, and C#0 keys simultaneously and press any key between C3 and B3.

To tune down or up, respectively, in approximately 1 Hz increments: Hold the A-1, B-1 and C0 keys or the A-1, B-1 and C#0 keys simultaneously and press the [–/NO] or [+ /YES] button.

To restore standard pitch: Hold the A-1, B-1 and C0 keys or the A-1, B-1 and C#0 keys simultaneously and press the [–/NO] [+ /YES] buttons simultaneously.

F2. Selecting a Scale

You can select various scales.

Equal Temperament is the most common contemporary piano tuning scale. However, history has known numerous other scales, many of which serve as the basis for certain genres of music. You can experience these tunings with the instrument.

F2.1 Scale

Setting range:

- 1: Equal Temperament
- 2: Pure Major
- 3: Pure Minor
- 4: Pythagorean
- 5: Mean Tone
- 6: Werckmeister
- 7: Kirnberger

Default setting: 1: Equal Temperament

EQUAL TEMPERAMENT

The pitch range of each octave is divided equally into twelve parts, with each half-step evenly spaced in pitch. This is the most commonly used tuning in music today.

PURE MAJOR/PURE MINOR

These tunings preserve the pure mathematical intervals of each scale, especially for triad chords (root, third, fifth). You can hear this best in actual vocal harmonies - such as choirs and a cappella singing.

PYTHAGOREAN

This scale was devised by the famous Greek philosopher and is created from a series of perfect fifths, which are collapsed into a single octave.

The 3rd in this tuning are slightly unstable, but the 4th and 5th are beautiful and suitable for some leads.

MEAN-TONE

This scale was created as an improvement on the Pythagorean scale, by making the major third interval more “in tune.” It was especially popular from the 16th century to the 18th century. Handel, among others, used this scale.

WERCKMEISTER/KIRNBERGER

This composite scale combines the Werckmeister and Kirnberger systems, which were themselves improvements on the mean-tone and Pythagorean scales. The main feature of this scale is that each key has its own unique character. The scale was used extensively during the time of Bach and Beethoven, and even now it is often used when performing period music on the harpsichord.

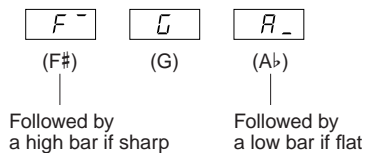
F22 Base Note

If you select a scale other than Equal Temperament, you need to specify the root. (You can also specify the root note with Equal Temperament selected, but it will have no effect. The base note setting is effective for tunings other than the Equal Temperament tuning.)

Setting range: C, C#, D, E♭, E, F, F#, G, A♭, A, B♭, B

Default setting: C

- Root indication example

**F3. Dual Functions**

You can set various parameters for Dual (page 17) to optimize the settings for the songs you play, such as adjusting the volume balance between two voices.

Dual function settings are set individually for each voice combination.

If Dual is not engaged, **F3-** will appear instead of **F34** and you will be unable to select the Dual functions. If this happens, press two voice buttons at the same time to engage Dual.

F31 Dual Balance

Setting range: 0–20 (A setting of “10” produces an equal balance between the two Dual voices. Settings below “10” increase the volume of Voice 2 in relation to Voice 1, and settings above “10” increase the volume of Voice 1 in relation to Voice 2.)

Default setting: Different for each voice combination.

You can set one voice as the main voice, and another voice as a softer, mixed voice.

F32 Dual Detune

Setting range: -20–0–20 (With positive values, the pitch of Voice 1 is raised and the pitch of Voice 2 is lowered. With negative values, the pitch of Voice 1 is lowered and the pitch of Voice 2 is raised.)



The available setting range is wider in the lower range (± 60 cents for A-1), and narrower in the higher range (± 5 cents for C7). (100 cents equal one semitone.)

Default setting: Different for each voice combination.

Detune Voice 1 and Voice 2 for Dual to create a thicker sound.

F33 Voice 1 Octave Shift**F34 Voice 2 Octave Shift**

Setting range: -1, 0, 1

Default setting: Different for each voice combination.

You can shift the pitch up and down in octave steps for Voice 1 and Voice 2 independently. Depending on which voices you combine in Dual, the combination may sound better if one of the voices is shifted up or down an octave.

F35 Voice 1 Effect Depth**F36 Voice 2 Effect Depth**

Setting range: 0–20

Default setting: Different for each voice combination.

These functions make it possible to individually set the depth of the effect for Voices 1 and 2 for Dual. (The effect depth settings cannot be changed unless the [EFFECT] is ON. Function must be exited before the [EFFECT] can be turned ON.)

- “Voice 1” and “Voice 2” are explained on page 17.

F37 Reset

This function resets all Dual functions to their default values. Press the [+ / YES] button to reset the values.

**SHORTCUT:**

You can jump directly to the Dual functions **F3*** by pressing the [TEMPO/FUNCTION] button while holding the two Dual voice buttons.

F4. Split Functions

This menu enables you to make various detailed settings for Split.

By changing the split point or other setting, you can optimize the settings for the songs you play.

Be sure to select the Split by pressing the [SPLIT] button before engaging Function.

If Split is not engaged, [F4-] will appear instead of [F4] and you will be unable to select the Split functions. Also note that you must exit Function before you can engage Split.

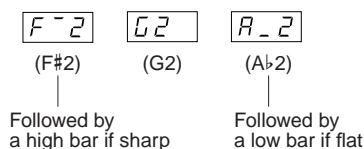
[F41] Split Point

Setting range: The entire keyboard

Default setting: F#2

Set the point on the keyboard that separates the right and left-hand sections (split point). The pressed key is included in the left-hand range.

- Instead of pressing the [-/NO] [+ /YES] buttons, you can engage the split point by pressing the appropriate key on the keyboard.
- Example key name indications for Split Point:



[F42] Split Balance

Setting range: 0–20 (A setting of “10” produces an equal balance between the two Split voices. Settings below “10” increase the volume of the left voice in relation to the right voice, and settings above “10” increase the volume of the right voice in relation to the left voice.)

Default setting: Different for each voice combination.

The volume level of the two voices combined in Split can be adjusted as required. You can make this setting for each combination of voices individually.

[F43] Right Voice Octave Shift

[F44] Left Voice Octave Shift

Setting range: –1, 0, 1

Default setting: Different for each voice combination
You can shift the pitch up and down in octave steps for the Right Voice and Left Voice independently. Make a setting depending on the note range of the songs you play. You can make this setting for each combination of voices individually.

[F45] Right Voice Effect Depth

[F46] Left Voice Effect Depth

Setting range: 0–20

Default setting: Different for each voice combination
These functions make it possible to individually set the depth of the effect for the left and right Split voices. The effect depth settings cannot be changed unless the [EFFECT] is ON. You must exit Function before you can turn on an [EFFECT].
You can make this setting for each combination of voices individually.

[F47] Sustain Pedal Range

Setting range: ALL (for both voices)
1 (for the right Voice)
2 (for the left Voice)

Default setting: 1 (for the right Voice)

The Sustain Pedal Range function determines whether the sustain pedal affects the right voice, the left voice, or both the left and right voices in Split.

[F48] Reset

This function resets all Split functions to their default values. Press the [+ /YES] button to reset the values.

F5. Other Functions

This section provides a variety of other functions, including letting you assign the operation of the AUX pedal to one of several settings, and allowing you to select specific song channels for playback.

F5.1 AUX Pedal

Setting range:

1. Soft Pedal

The soft pedal reduces the volume and slightly changes the timbre of notes played while the pedal is pressed. The soft pedal will not affect notes that are already playing.

2. Sostenuato pedal

If you play a note or chord on the keyboard and press the pedal while the note(s) are held, those notes will be sustained for as long as the pedal is held (as if the sustain pedal had been pressed) but all notes played thereafter will not be sustained. This makes it possible to sustain a chord, for example, while other notes are played “staccato.”



Organ, string and choir voices will continue to sound for as long as the sostenuto pedal is depressed.

3. Expression

This setting allows control of dynamics during performance.

4. Song Play/Pause

This setting allows you to start or pause song playback. In this setting, the AUX Pedal functions in the same manner as the [PLAY/PAUSE] button on the panel.

Default setting: 1 (Soft Pedal)

F5.2 Soft Pedal Effect Depth

Setting range: 1–5

Default setting: 3

This function sets the depth of the soft pedal effect.

F5.3 Sustain Sample Depth

Setting range: 0–20

Default setting: 12

The **GRAND PIANO 1** voice features special “Sustain Samples” that recreate the unique resonance of an acoustic grand piano’s soundboard and strings when the sustain pedal is pressed. This function lets you adjust the depth of this effect.

F5.4 Keyoff Sample Volume

Setting range: 0–20

Default setting: 10

You can adjust the volume of the keyoff sound (the subtle sound produced when the keys are released) for voices [GRAND PIANO 1], [HARPSICHORD], [E.CLAVICHORD].

F5.5 Song Channel Selection

Setting range: ALL, 1&2

Default setting: ALL

The setting here only affects External songs. You can specify which song channels will play back on this instrument. When “ALL” is selected, channels 1–16 will be played back. When “1&2” is selected, only channels 1 and 2 will be played back, while channels 3–16 will be transmitted via MIDI.

F5.6 SUSTAIN PEDAL Type

F5.7 AUX PEDAL Type

Setting range: 1, 2

Default setting: 1

Depending upon the pedal that is connected to the SUSTAIN PEDAL jack or AUX PEDAL jack, the effect produced by operating the pedal (ON/OFF, dynamics, etc.) might be reversed.

If this happens, you can use this setting to correct the pedal operation. The setting range is from 1 to 2.

Press the [–/NO] and [+ /YES] buttons simultaneously to recall the default setting of “1.”



- Make sure that the power is switched OFF when connecting or disconnecting the pedal.
- If the SUSTAIN PEDAL type is set to “2”, disconnecting the sustain pedal while the power is switched on may leave the sustain active, causing notes to sustain indefinitely. In this case, switch the power off, then back on.

F5.8 Damper Resonance Effect ON/OFF

Setting range: ON/OFF

Default setting: ON

F5.9 Damper Resonance Effect Depth

Setting range: 0–20

Default setting: 5

The Damper Resonance lets you apply a simulation of the sustain sound of the damper pedal on a grand piano, as you press the damper pedal and play the keyboard. This effect is applied to the voice you play on the keyboard and the part (channels 1 & 2).

F6. Metronome Volume

Use this function to adjust the metronome volume.

Setting range: 1–20

Default setting: 10



SHORTCUT:

You can jump directly to the metronome functions **F6** by pressing the **[TEMPO/FUNCTION]** button while holding the **[METRONOME]** button.

F7. MIDI Functions

You can make detailed adjustments to the MIDI settings.

For more information about MIDI, see the “About MIDI” section (page 48).

F7.1 MIDI Transmit Channel Selection

In any MIDI control setup, the MIDI channels of the transmitting and receiving devices must be matched for proper data transfer.

This parameter enables you to specify the channel on which the instrument transmits MIDI data.

Setting range: 1–16, OFF (not transmitted)

Default setting: 1



- In Dual, Voice 1 data is transmitted on its specified channel. In Split, right voice data is transmitted on its specified channel. In Dual, Voice 2 data is transmitted on the next greater channel number relative to the specified channel. In Split, left voice data is transmitted on the next greater channel number relative to the specified channel. In either case, no data is transmitted if the transmit channel is set to “OFF.”
- Song data is not transmitted via the MIDI connections. However, channels 3–16 of External songs will be transmitted via the MIDI connections depending on the Song Channel Selection setting (page 43).

F7.2 MIDI Receive Channel Selection

In any MIDI control setup, the MIDI channels of the transmitting and receiving devices must be matched for proper data transfer. This parameter enables you to specify the channel on which the instrument receives MIDI data.

Setting range: ALL, 1&2, 1–16

Default setting: ALL



• ALL:

“Multi-timbre” Receive. This allows simultaneous reception of different parts on all 16 MIDI channels, enabling the instrument to play multi-channel song data received from a music computer or sequencer.

1&2:

“1&2” Receive. This allows simultaneous reception on channels 1 and 2 only, enabling the instrument to play 1 and 2 channel song data received from a music computer or sequencer.

- Program change and other like channel messages received will not affect the instrument’s panel settings or the notes you play on the keyboard.

F7.3 Local Control ON/OFF

“Local Control” refers to the fact that, normally, the instrument keyboard controls its internal tone generator, allowing the internal voices to be played directly from the keyboard. This situation is “Local Control On,” since the internal tone generator is controlled locally by its own keyboard.

Local control can be turned OFF, however, so that the keyboard does not play the internal voices, but the appropriate MIDI information is still transmitted via the MIDI OUT terminal when notes are played on the keyboard. At the same time, the internal tone generator responds to MIDI information received via the MIDI IN terminal.

Setting range: ON/OFF

Default setting: ON

F7.4 Program Change ON/OFF

Normally the instrument will respond to MIDI program change numbers received from an external keyboard or other MIDI device, causing the correspondingly numbered voice to be selected on the corresponding channel (the keyboard voice does not change). The instrument will normally also send a MIDI program change number whenever one of its voices is selected, causing the correspondingly numbered voice or program to be selected on the external MIDI device if the device is set up to receive and respond to MIDI program change numbers.

This function makes it possible to cancel program change number reception and transmission so that voices can be selected on the instrument without affecting the external MIDI device.



For information on program change numbers for each of the instrument’s voices, refer to MIDI Data Format page 62.

Setting range: ON/OFF

Default setting: ON

F 75 Control Change ON/OFF

Normally the instrument will respond to MIDI control change data received from an external MIDI device or keyboard, causing the voice on the corresponding channel to be affected by pedal and other “control” settings received from the controlling device (the keyboard voice is not affected).

The instrument also transmits MIDI control change information when the pedal or other appropriate controls are operated.

This function makes it possible to cancel control change data reception and transmission so that, for example, the instrument’s pedal and other controls can be operated without affecting an external MIDI device.



For information on control changes that can be used with the instrument, refer to MIDI Data Format on page 62.

Setting range: ON/OFF

Default setting: ON

F 76 Panel/Status Transmit

This function causes all the current instrument panel settings (selected voice, etc.) to be transmitted via the MIDI OUT terminal.



Setup Data:

Data that contains a set of panel settings for the instrument.

1. Set up the panel controls as desired.
2. Connect the instrument to a sequencer via MIDI, and set up the sequencer so it can receive the setup data.
3. Engage the Function and select **F 76**.
4. Press the **[+/YES]** button to transmit the panel/status data.

End will appear on the display when the data has been successfully transmitted.



- See page 63 for a list of the Panel Data Contents transmitted by this function.
- **Receiving the transmitted data:**
 1. Connect the instrument via MIDI to the device to which the setup data was transmitted previously.
 2. Start sending the setup data from the device.

The instrument automatically receives the setup data, which will be reflected in the panel settings.
(For the data to be accepted, the instrument that receives the setup data should be the same model as the one that transmitted the setup data to the sequencer.)
- For more information on transmitting and receiving setup data via MIDI, refer to the owner’s manual for the connected MIDI device.

F 77 Initial Setup Send

This function lets you send the data of the panel settings to a computer. By transmitting the panel settings and recording them on the MIDI sequence recorder prior to the actual performance data, the instrument will be automatically restored to the same settings when the performance is played back. You can also use this function to change the settings of a connected tone generator to the same settings as the instrument.

1. Set up the panel controls as desired.
2. Connect the instrument to a sequencer via MIDI, and set up the sequencer so it can receive the setup data.
3. Engage the Function and select **F 77**.
4. Press the **[+/YES]** button to transmit the panel/status data.

End will appear on the display when the data has been successfully transmitted.

The following data can be sent.

- Voice selection
- [REVERB] type
- [REVERB] depth
- [EFFECT] type
- [EFFECT] depth
- Split point
- Tuning (F1)
- Dual detune (F3.2)

F8. Backup Functions

You can back up some settings, such as voice selection and reverb type, so that they will not be lost when you turn off the power to the instrument. If the backup function is turned on, the settings at power off are effective. If the backup function is turned off, the settings in memory are erased when you turn off the power. In this case, when you turn on the power to the unit, the default settings (the initial settings) will be used. (The factory setting default list is found on page 61.)

However, the backup settings themselves, the contents of the user song recorder memory, and character code setting are always backed up. Refer to “Data Backup Using a Computer” on page 52.

You can turn the backup function on or off for each function group. Different Backup Groups are provided for the different function categories of the instrument: Voice, MIDI, Tuning and Others.

F8.1 Voice

Setting range: ON/OFF

Default setting: OFF

- Voice (Keyboard, Dual, and Split)
- Dual (ON/OFF, Voice, and Dual Functions for each voice combination)
- Split (ON/OFF, Voice, and Split Functions for each voice combination)
- Reverb (ON/OFF, Type, and Depth for each voice)
- Effect (ON/OFF, Type, and Depth for each voice)
- Touch Sensitivity (including the FIXED volume)
- Metronome Beat, Volume (F5) settings)

F8.2 MIDI

Setting range: ON/OFF

Default setting: ON

The MIDI functions (F7*) settings)

(expect for F75 F77)

F8.3 Tuning

Setting range: ON/OFF

Default setting: ON

- Transpose
- Tuning (F1) settings)
- Scale (including base note) (F2*) settings)

F8.4 Others

Setting range: ON/OFF

Default setting: ON

- Other functions (F5*) settings)
- BRILLIANCE setting

F8.5 Character Code

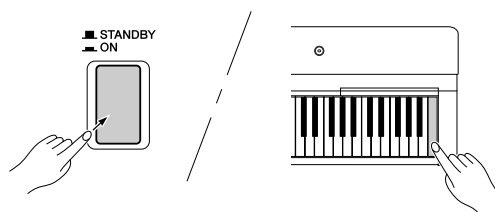
If the song cannot be loaded, you may need to change the character code setting.

Setting range: Int (English)/JA (Japanese)

Default setting: Int (English)

Factory Preset Recall

All settings affected by the Functions (F1–F8) can be restored to their original factory preset values by turning the [STANDBY/ON] switch ON while holding the C7 key (right-most-key on the keyboard). This operation also erases all user song data. The factory preset values are listed on page 61.



CAUTION

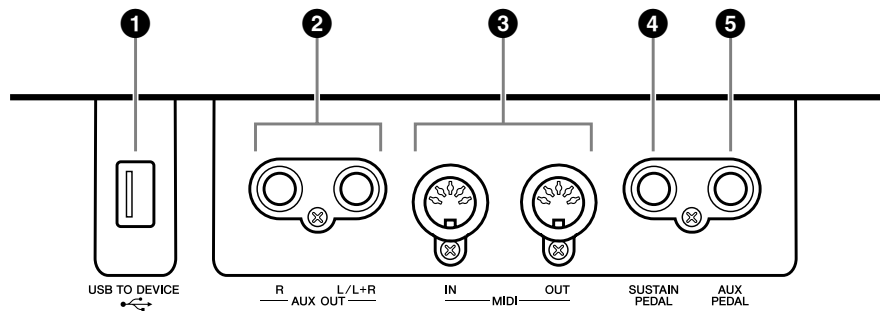
After turning the [STANDBY/ON] switch ON while holding the C7 key (right-most-key on the keyboard), “Err” appears in the display. Never attempt to turn off the power while “Err” appears in the display. Turning the power off in this state may cause the system to freeze.

Connections

Connectors

⚠ CAUTION

Before connecting the instrument to other electronic components, turn off the power to all the components. Before turning the power on or off to all components, set all volume levels to minimum (0). Otherwise, electrical shock or damage to the components may result.



1 USB [TO DEVICE] terminal

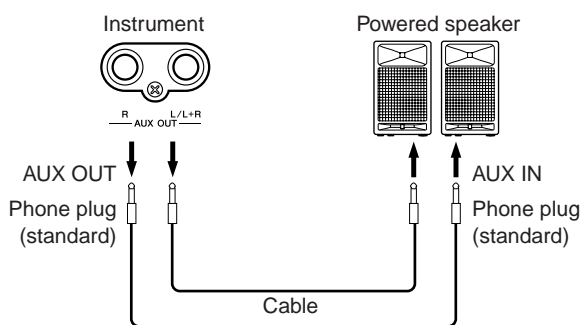
This terminal allows connection to USB storage devices.
Refer to “Connecting to a USB storage device” on page 49.

2 AUX OUT [L/L+R] [R] jacks

These jacks let you connect the instrument to external powered speaker systems, for playing in larger venues at higher volumes.

⚠ CAUTION

When the instrument’s AUX OUT jacks are connected to an external system, first turn on the power to the instrument, then to the external system. Reverse this order when you turn the power off.



The instrument’s [MASTER VOLUME] setting will affect the sound that is output from the AUX OUT jacks.



Use audio cables and adaptor plugs with zero resistance.



If you want to take a mono signal via the AUX OUT jack, connect a cable to the [L/L+R] jack.

3 MIDI [IN] [OUT] terminals

Use MIDI cables to connect external MIDI devices to these connectors.

MIDI [IN]: Receives MIDI data.

MIDI [OUT]: Transmits MIDI data.

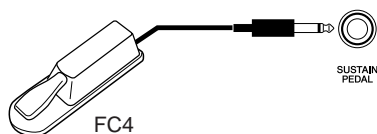
Refer to the “Connecting a Personal Computer” on page 50.

About MIDI

MIDI (Musical Instrument Digital Interface) is a standard format for data transmission/reception. It enables the transfer of performance data and commands between MIDI devices and personal computers. Using MIDI, you can control a connected MIDI device from the instrument, or control the instrument from a connected MIDI device or computer.

4 SUSTAIN PEDAL Jack

This jack is for connecting an included foot switch FC4 here. An optional FC3 foot pedal or FC5 foot switch can also be connected to this jack.

**CAUTION**

Make sure that power is OFF when connecting or disconnecting the pedal. Do not turn on the power to the unit while pressing the foot switch or foot pedal. Otherwise, the switch or pedal type (on/off) will be reversed.

5 AUX PEDAL Jack

This jack is for connecting an optional FC3 foot pedal, FC5 foot switch or FC7 foot controller. An included foot switch FC4 can also be connected to this jack. A wide range of functions such as the Soft Pedal function, etc. can be assigned to this jack. Use the Function settings to assign the function. (page 43)

**CAUTION**

Make sure that power is OFF when connecting or disconnecting the pedal. Do not turn on the power to the unit while pressing the foot switch, foot pedal, or foot controller. Otherwise, the switch or pedal type (on/off) will be reversed.



Since MIDI data that can be transmitted or received varies depending on the type of MIDI device, check the “MIDI Implementation Chart” to find out what MIDI data and commands your devices can transmit or receive. The instrument’s MIDI Implementation Chart appears on page 66.



Depending upon the pedal that is connected to the SUSTAIN PEDAL jack, the effect produced by operating the pedal (ON/OFF, dynamics, etc.) might be reversed. If this happens, refer to the “SUSTAIN PEDAL Type” section (page 43).



Depending upon the pedal that is connected to the AUX PEDAL jack, the effect produced by operating the pedal (ON/OFF, dynamics, etc.) might be reversed. If this happens, refer to the “AUX PEDAL Type” section (page 43).

Connecting to a USB storage device

To connect to a USB storage device, be sure to read the section “Precautions when using the USB [TO DEVICE] terminal” on page 53.

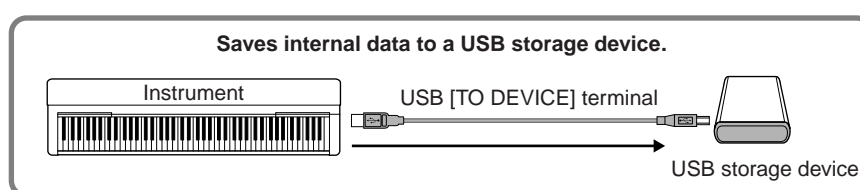
To display the data in the USB storage device

To view the data of the USB storage device on the display, press the [SONG SELECT] button a few times until the “USB” indicator lights. If the “USB” indicator is lit before connecting the USB storage device, press the [EXIT] button to exit from “USB” and re-engage “USB.”

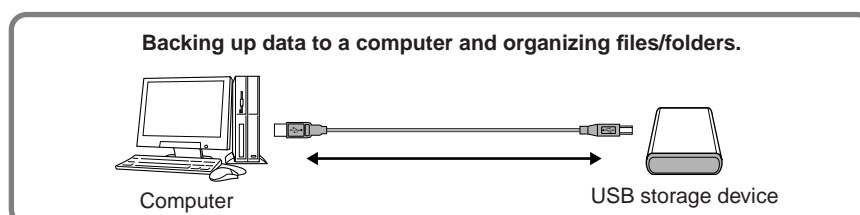
Backing up your data to a computer

■ Backing up the instrument data to a computer

Once you’ve saved data to a USB storage device, you can copy the data to the hard disk of your computer, then archive and organize the files as desired. Simply reconnect the device as shown below.



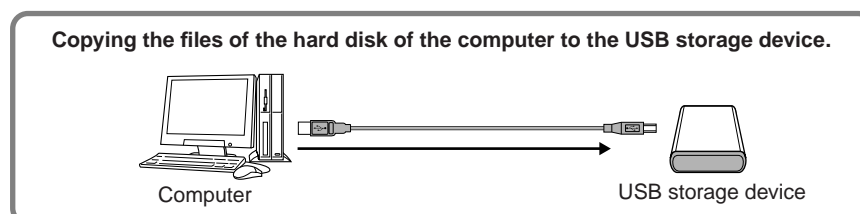
Disconnect the USB storage device from the instrument and connect it to the computer.



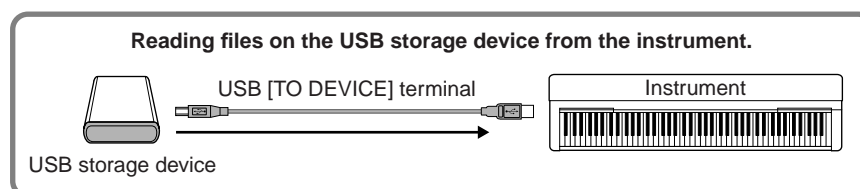
■ Copying files from a computer hard disk to a USB storage device

Files contained on the hard disk of a computer can be transferred to the instrument by first copying them to the storage media, then connecting/inserting the media to the instrument.

Not only files created on the instrument itself but also Standard MIDI files created on other devices can be copied to a USB storage device from the hard disk of the computer. Once you’ve copied the data, connect the device to the USB [TO DEVICE] terminal of the instrument, and play back the data on the instrument.



Disconnect the USB storage device from the computer and connect it to the instrument.



Connecting a Personal Computer

By connecting a computer to the MIDI terminals, you can transfer data between the instrument and the computer via MIDI. To do this, install the USB MIDI interface driver and Musicsoft Downloader software.

There are two ways you can connect the instrument to a computer:

1. Connecting the USB port on the computer to the instrument via a USB MIDI interface.
2. Using a MIDI interface and the instrument's MIDI terminals.

For more information, see below.

CAUTION

When connecting the instrument to a computer, first turn off the power to both the instrument and the computer before connecting any cables. After making connections, turn on the power to the computer first, then to the instrument.



Optional USB MIDI interface
UX16

TERMINOLOGY

Driver:

A driver is software that provides a data-transfer interface between the computer's operating system and a connected hardware device.



You can download the USB MIDI interface driver and Musicsoft Downloader (MSD). Please check the following URL for the latest version.

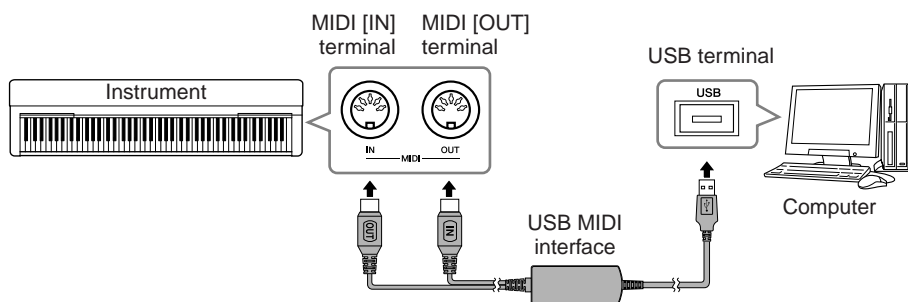
<http://music.yamaha.com/download/>



For information on setting up your sequence software, refer to the owner's manual of the relevant software.

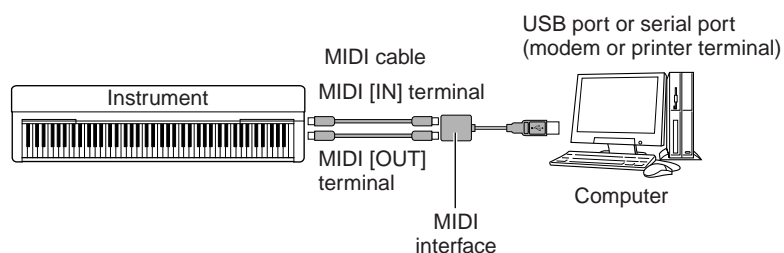
Connecting the USB port on the computer to the instrument via a USB MIDI interface

Use a USB MIDI interface device to connect the USB port on your computer to the instrument's MIDI terminals.



Using a MIDI interface and the instrument's MIDI terminals

Use a MIDI interface device to connect a computer to the instrument using MIDI cables.



Transmitting Song Data between the Computer and the Instrument

In addition to the demo songs and the 50 piano preset songs stored in this instrument, you can play data for other song by loading it from a connected computer. To be able to use this function, you must first download Musicsoft Downloader from Yamaha website.

<http://music.yamaha.com/download/>

System requirement for Musicsoft Downloader

- OS : Windows 2000/XP Home Edition/XP Professional/Vista
* For XP and Vista, the 32-bit version is supported, but not the 64-bit version.
- CPU : Intel® Pentium® or Celeron® chip of 233MHz or Higher (500 MHz or higher is recommended) or higher
- Memory : 64MB or more (256MB or more is recommended)
- Available hard : at least 128MB of free space (at least 512MB of free space is recommended) disk capacity
- Display : 800 x 600 High Color (16-bit)
- Others : Microsoft® Internet Explorer® version 5.5 or higher

Loading Song Data from a Computer to the Instrument

You can load piano song data from a computer to this instrument. Also, after you record your performance on this instrument and save the recording to a computer, you can load the recording back to the instrument.

This instrument can read MIDI data in SMF Format 0. However, if such data includes any information for functions that are not supported by this instrument, the instrument will not play the data correctly.

For more information on loading song data from a computer to this instrument, please refer to “Transferring Data Between the Computer and Instrument (for unprotected data)” in the Help file that came with Musicsoft Downloader.

Requirements for song data that can be loaded from a computer to this instrument

- Songs : Recorded songs (loaded from instrument), SMF Format 0 songs
- Maximum data size : 748KB
- Data format : SMF Format 0
- Backup data (loaded from instrument)
File name
09P-M.BUP

You can play the loaded Songs (page 36).

CAUTION

Do not turn off the power to this instrument or unplug the instrument during data transmission. Otherwise, the data being transmitted will not be saved. Furthermore, flash memory operation may become unstable, causing the entire memory to be erased when you turn the power to the instrument on or off.

Transmitting Song Data from the Instrument to a Computer

Musicsoft Downloader enables you to transfer the recorded song in this instrument to a computer. For more information on transferring song data from this instrument to a computer, please refer to “Transferring Data Between the Computer and Instrument (for unprotected data)” in the Help file that came with Musicsoft Downloader.

Data you can transfer from this instrument to a computer

- Your recorded songs
- Back up data : panel settings
- Song data (once it has been loaded from the computer)



You can download free Musicsoft Downloader from the Yamaha website.



Do not manually change the file name by using a computer; doing so will render the file unable for loading on the instrument.

TERMINOLOGY

SMF (Standard MIDI File):

This file features a popular sequence format (for recording performance data). This file is sometimes called a “MIDI file.” The file extension is MID.

You can play the SMF format song using music software or a sequencer that supports SMF. This instrument also supports SMF.



Before you use this instrument, close the Musicsoft Downloader window and quit the application.

Data Backup Using a Computer

For maximum data security Yamaha recommends that you save your important data to your computer by using the Musicsoft Downloader (MSD) software. This provides a convenient backup if the internal memory is damaged.

Data that can be saved

● Panel settings and recorded songs

Panel settings are the same data that can be backed up using the Backup Functions (page 46). You can save the panel settings and recorded songs as one file.

● External songs received via computer.

1. Install the USB MIDI driver and MSD to your computer (Windows), then connect the computer and the instrument.

For connection, see page 50.

2. Save the data to the computer.

Using MSD, save the “09P-M.BUP” file from “System Drive” under “Electronic Musical Instruments” to the computer.

The “09P-M.BUP” file contains the panel settings and recorded songs. Also, if you store the external songs in the instrument from the computer, save the songs from “Flash Memory” under “Electronic Musical Instruments” to the computer via the MSD.

For instructions on using MSD, see the Help in the MSD.

To recall the settings and load songs to the instrument, save the “09P-M.BUP” file and the External songs under the folders to which you saved the files.



You can download the USB MIDI interface driver and Musicsoft Downloader (MSD). Please check the following URL for the latest version.

<http://music.yamaha.com/download/>



When MSD is started on a computer connected to the instrument, “COM (computer connection)” appears in the display. When this indication appears, you cannot operate the instrument.



The Musicsoft Downloader cannot be used when the instrument is in the following state:

- During Demo playback.
- During song playback.
- During Record mode.
- During File operations



The panel settings and recorded songs (09P-M.BUP file) remain in the instrument after being saved to the computer.

Precautions when using the USB [TO DEVICE] terminal

This instrument features a built-in USB [TO DEVICE] terminal. When connecting a USB device to the terminal, be sure to handle the USB device with care. Follow the important precautions below.



For more information about the handling of USB devices, refer to the owner's manual of the USB device.

Compatible USB devices

- USB storage devices (flash memory, floppy disk drive, hard disk drive, etc.)

The instrument does not necessarily support all commercially available USB devices. Yamaha cannot guarantee operation of USB devices that you purchase. Before purchasing a USB device for use with this instrument, please visit the following web page:

<http://music.yamaha.com/download/>



Other USB devices such as a computer keyboard or mouse cannot be used.

Connecting USB device

- When connecting a USB device to the USB [TO DEVICE] terminal, make sure that the connector on the device is appropriate and that it is connected in the proper direction.
- Though the instrument supports the USB 1.1 standard, you can connect and use a USB 2.0 storage device with the instrument. However, note that the transfer speed is that of USB 1.1.

Using USB Storage Devices

By connecting the instrument to a USB storage device, you can save data you've created to the connected device, as well as read data from the connected device.



Although CD-R/RW drives can be used to read data to the instrument, they cannot be used for saving data.

Number of USB storage devices that can be used

Only one USB storage device can be connected to the USB [TO DEVICE] terminal.

Formatting USB storage media

When a USB storage device is connected or media is inserted, a message may appear prompting you to format the device/media. If so, execute the Format operation (page 35).

CAUTION

The format operation overwrites any previously existing data. Make sure that the media you are formatting does not contain important data.

To protect your data (write-protect)

To prevent important data from being inadvertently erased, apply the write-protect provided with each storage device or media. If you are saving data to the USB storage device, make sure to disable write-protect.

Connecting/removing USB storage device

Before removing the media from the device, make sure that the instrument is not accessing data (such as in the Save and Delete operations).

CAUTION

Avoid frequently turning the power on/off to the USB storage device, or connecting/disconnecting the device too often. Doing so may result in the operation of the instrument "freezing" or hanging up. While the instrument is accessing data (such as during Save, Delete, Load and Format operations) or is mounting the USB storage device (shortly after the connection), do NOT unplug the USB connector, do NOT remove the media from the device, and do NOT turn the power off to either device. Doing so may corrupt the data on either or both devices.

Handling the Floppy Disk Drive (FDD) and Floppy Disks (Optional)

An optional floppy disk drive can be installed to this instrument.

The floppy disk drive lets you save original data you've created on the instrument to floppy disk, and allows you to load data from floppy disk to the instrument.

Be sure to handle floppy disks and treat the disk drive with care. Follow the important precautions below.

Floppy Disk Compatibility

3.5" 2DD and 2HD type floppy disks can be used.

Formatting a Floppy Disk

If you find that you are unable to use new, blank disks or old disks that have been used with other devices, you may need to format them. For details on how to format a disk, see pages 35. Keep in mind that all data on the disk will be lost after formatting. Make sure to check beforehand whether or not the disk contains important data.



Floppy disks formatted on this device may or may not be useable as is on other devices.

Inserting/Removing Floppy Disks

Inserting a Floppy Disk into the Disk Drive:

Hold the disk so that the label of the disk is facing upward and the sliding shutter is facing forward, towards the disk slot. Carefully insert the disk into the slot, slowly pushing it all the way in until it clicks into place and the eject button pops out.



Never insert anything but floppy disks into the disk drive. Other objects may cause damage to the disk drive or floppy disks.

Removing a Floppy Disk

After checking that the instrument is not accessing* the floppy disk (checking that the use lamp on the floppy disk drive is off), firmly press the eject button at the upper right of the disk slot all the way in. When the floppy disk is ejected, pull it out of the drive. If the floppy disk cannot be removed because it is stuck, do not try to force it, but instead try pressing the eject button again, or try re-inserting the disk and attempt to eject it again.

* Access of the disk indicates an active operation, such as playback or deletion of data. If a floppy disk is inserted while the power is on, the disk is automatically accessed, since the instrument checks whether the disk has data.



CAUTION

Do not remove the floppy disk or turn off the instrument itself while the disk is being accessed. Doing so may result not only in loss of data on the disk but also damage to the floppy disk drive.

Be sure to remove the floppy disk from the disk drive before turning off the power. A floppy disk left in the drive for extended periods can easily pick up dust and dirt that can cause data-read and -write errors.

Cleaning the Disk Drive Read/Write Head

Clean the read/write head regularly. This instrument employs a precision magnetic read/write head which, after an extended period of use, will pick up a layer of magnetic particles from the disks used that will eventually cause read and write errors.

To maintain the disk drive in optimum working order Yamaha recommends that you use a commercially-available dry-type head cleaning disk to clean the head about once a month. Ask your Yamaha dealer about the availability of proper head cleaning disks.

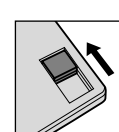
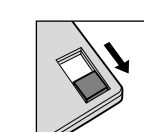
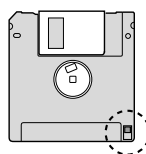
About Floppy Disks

Handle floppy disks with care, and follow these precautions:

- Do not place heavy objects on a disk or bend or apply pressure to the disk in any way. Always keep floppy disks in their protective cases when they are not in use.
- Do not expose the disk to direct sunlight, extremely high or low temperatures, or excessive humidity, dust or liquids.
- Do not open the sliding shutter and touch the exposed surface of the floppy disk inside.
- Do not expose the disk to magnetic fields, such as those produced by televisions, speakers, motors, etc., since magnetic fields can partially or completely erase data on the disk, rendering it unreadable.
- Never use a floppy disk with a deformed shutter or housing.
- Do not attach anything other than the provided labels to a floppy disk. Also make sure that labels are attached in the proper location.

To Protect Your Data (Write-protect Tab):



To prevent accidental erasure of important data, slide the disk's write-protect tab to the "protect" position (tab open). When saving data, make sure that the disk's write-protect tab is set to the "overwrite" position (tab closed).



Write-protect tab
ON (locked or
write protected)

Write-protect tab
OFF (unlocked or
write enabled)

Message List

Message	Comment
<i>CLr</i>	<p>Displayed after factory presets are recalled.</p> <p> CAUTION</p> <p>Do not turn off the power of the instrument when “<i>CLr</i>” appears in the display. Doing so may delete all song data in the instrument, including external songs (page 36).</p>
<i>con</i>	Displayed when Musicsoft Downloader is started on a computer connected to the instrument. When this message appears, you cannot operate the instrument.
<i>EO1</i>	Indicates failure in accessing the USB storage device because the device or media is damaged.
<i>EO2</i>	Displayed when the song data is damaged or not recognized.
<i>EO4</i>	Indicates that the song data is too large to be loaded.
<i>End</i>	Displayed when the current operation is completed.
<i>Err</i>	Displayed when the MIDI/USB cable is disconnected while starting Musicsoft Downloader on a computer connected to the instrument.
<i>FCL</i>	<p>Indicates that internal memory has been cleaned up. Recorded songs and external songs which have been loaded from a computer are cleared, because the power has been turned off before the song save or load operations were completed.</p> <p> CAUTION</p> <p>Do not turn off the power of the instrument when “<i>FCL</i>” appears in the display. Doing so may cause the instrument to malfunction.</p>
<i>For</i>	Indicates that the instrument has engaged format mode for the USB storage device.
<i>FUL</i>	Displayed when internal memory becomes full during song recording.
	Displayed when the USB storage device becomes full and the song cannot be saved.
	Displayed when the total amount of files has become too large.
<i>Lod</i>	Displayed when a protected song is loading.
<i>n Y</i>	Confirms whether each operation is executed or not.
<i>n ~Y</i>	Reconfirms whether the overwriting, delete or format operation is executed or not.
<i>Pro</i>	Indicates that the USB storage device or media is protected.

Troubleshooting

Problem	Possible Cause and Solution
The instrument does not turn on.	The instrument has not been plugged in properly. Securely insert the female plug into the socket on the instrument, and the male plug into a proper AC outlet (page 10).
A click or pop is heard when the power is turned on or off.	This is normal when electrical current is being applied to the instrument.
Noise is heard from the speakers or headphones.	The noise may be due to interference caused by the use of a mobile phone in close proximity to the instrument. Turn off the mobile phone, or use it further away from the instrument.
The overall volume is low, or no sound is heard.	<ul style="list-style-type: none"> • The Master Volume is set too low; set it to an appropriate level using the [MASTER VOLUME] dial. • Make sure a pair of headphones is not connected to the headphones jack (page 11). • Make sure that Local Control (page 44) is ON.
The sustain pedal has no effect.	The pedal cable/plug may not be properly connected. Make sure to securely insert the pedal plug into the proper jack (page 48).
The foot pedal seems to produce the opposite effect. For example, pressing the foot pedal cuts off the sound and releasing it sustains the sounds.	The type of the foot pedal is reversed. If this happens, use F5.6 or F5.7 to correct the pedal type (pages 39, 43).
The USB storage device is not recognized by the instrument.	<p>The USB storage device may not be recognized by the instrument depending on the timing of the device connection.</p> <p>If the [USB] indicator is already lit by pressing of the [SONG SELECT] button, re-select the [USB] indicator after turning the [USB] indicator off by pressing the [SONG SELECT] button.</p> <p>If the device is still not recognized, it may not be supported by Yamaha. Only use devices supported by Yamaha (pages 53).</p>
The USB storage device has hung up (stopped).	<p>The USB storage device is not compatible with the instrument. Only use devices whose compatibility has been confirmed by Yamaha (pages 53).</p> <p>The USB storage device does not operate properly. Disconnect the device and connect it to the instrument again.</p>
The three LEDs of "SAVE TO USB," "LOAD TO USER" and "DEL./FORMAT" at the [FILE] button flash simultaneously when a storage device is connected.	Disconnect the USB storage device and turn the power of the instrument off. The USB storage device is not compatible with the instrument. Only use devices whose compatibility has been confirmed by Yamaha (pages 53).
The three LEDs of "SAVE TO USB," "LOAD TO USER" and "DEL./FORMAT" at the [FILE] button flash simultaneously for five seconds when the USB storage device is operated.	Disconnect the USB storage device and connect it again.

Preset Voice List

○ : Yes / — : No

Voice Number	Voice Name	Stereo Sampling	Touch Response	Dynamic Sampling *1	Key-Off Sampling *2	Voice Descriptions	
1	GRAND PIANO 1	○	○	○	○	Recorded samples from a full concert grand piano. Also includes four levels of dynamic sampling, sustain samples, and key-off samples for exceptionally realistic acoustic grand piano sound. Perfect for classical compositions as well as any other style that requires acoustic piano.	
2	GRAND PIANO 2	○	○	—	—	Spacious and clear piano with bright reverb. Good for popular music.	
3	ELECTRIC PIANO 1	—	○	○	—	An electronic piano sound created by FM synthesis. Exceptional musical response with varying timbre according to keyboard dynamics. Good for standard popular music.	
4	ELECTRIC PIANO 2	—	○	○	○	The sound of an electric piano using hammer-struck metallic tines. Soft tone when played lightly, and an aggressive tone when played hard.	
5	JAZZ ORGAN	—	—	—	—	The sound of a tonewheel type electric organ. Often heard in jazz and rock idioms.	
6	CHURCH ORGAN 1	○	—	—	—	This is a typical pipe organ sound (8 feet + 4 feet + 2 feet). Good for sacred music from the Baroque period.	
STRINGS/OTHERS							
Voice Number	Display	Voice Name	Stereo Sampling	Touch Response	Dynamic Sampling *1	Key-Off Sampling *2	Voice Descriptions
7	◻ 1	STRINGS 1	○	○	—	—	Stereo-sampled, large-scale strings ensemble with realistic reverb. Try combining this voice with piano in the DUAL.
8	◻ 2	STRINGS 2	○	○	—	—	Spacious strings ensemble with a slow attack. Try combining this voice with a piano or electric piano in the DUAL.
9	◻ 3	CHURCH ORGAN 2	○	—	—	—	This is the organ's full coupler sound often associated with Bach's "Toccatina and Fugue."
10	◻ 4	HARPSICHORD	○	—	—	○	The definitive instrument for baroque music. Since harpsichord uses plucked strings, there is no touch response. There is, however, a characteristic additional sound when the keys are released.
11	◻ 5	E.CLAVICHORD	—	○	—	○	A hammer-struck keyboard instrument that utilizes an electric pickup that is often heard in funk and soul music. Its tone is noted for the unique sound produced when the keys are released.
12	◻ 6	VIBRAPHONE	○	○	○	—	Vibraphone played with relatively soft mallets. The tone becomes more metallic the harder you play.
13	◻ 7	CHOIR	—	○	—	—	A big, spacious choir voice. Perfect for creating rich harmonies in slow pieces.
14	◻ 8	GIUITAR	○	○	○	—	Warm and natural-sounding nylon guitar. Enjoy the quiet ambience of nylon strings.
15	◻ 9	WOOD BASS	—	○	○	—	An upright bass played fingerstyle. Ideal for jazz and Latin music.
16	◻ 10	BASS & CYMBAL	—	○	—	—	Adds a soft ride cymbal to the bass sound. Ideal for walking bass lines in jazz tunes.
17	◻ 11	E.BASS	—	○	—	—	Electric bass for a wide range of music styles, jazz, rock, popular, and more.

*1. Dynamic Sampling provides multiple velocity-switched samples to accurately simulate the timbral response of an acoustic instrument.

*2. Contains a very subtle sample that is produced when the keys are released.

Index

Numerics

50 Piano Preset Songs 13

A

A-B Repeat 15

Adjust

Tempo (50 Piano Preset Songs) 13

Tempo (Recorded Songs) 37

Volume (Metronome) 44

ALL (display) 13

AUX OUT [L/L+R] [R] jacks 47

AUX Pedal 11, 43

[AUX PEDAL] jack 48

B

Backup (data) 52

Backup Functions 46

[BRILLIANCE] button 20

C

CLr (display) 55

Combining Voices (Dual) 17

con (display) 55

Connecting a Personal Computer 50

Connections 47

Computer 50

MIDI interface 50

Connectors 47

D

Damper Resonance 21

Default setting 18, 38

DEL./FORMAT 34

Delete 34

[DEMO] button 12

Detailed Settings (FUNCTION) 38

Display 10

Dual 17, 41

E

E01 (display) 55

E02 (display) 55

E04 (display) 55

[EFFECT] button 21

Effects 21

End (display) 55

Err (display) 55

Export 31

F

Factory Setting List 61

FCL (display) 55

[FILE] button 32

Fine Tuning of the Pitch 40

Floppy Disk 54

For (display) 55

Format 35

FUL (display) 55

FUNCTION 40–46

Basic Procedure 39

Functions 38

H

Hz (Hertz) 40

L

[LEFT] button 14, 28

Left part 14, 28

List

Factory Setting 61

Functions 38

Message List 55

Preset Song 60

Preset Voice 57

Load 31, 33

LOAD TO USER 33

Lod (display) 55

M

[MASTER VOLUME] dial 10

Message List 55

[METRONOME] button 24

Metronome Volume 44

MIDI 48

MIDI [IN] [OUT] 48

MIDI Data Format 62

MIDI Functions 44

MIDI Implementation Chart 66

Music Rest 11

N

n y (display)	55
n-Y (display)	55

O

Other Functions	43
-----------------------	----

P

Part Cancel.....	14
Part Playback On and Off.....	37
Pedal Type	43
Pedals	11
[PHONES] jack	11
Pitch → Fine Tuning of the Pitch.....	40
[PLAY/PAUSE] button	13, 37
Play/Pause playback	
Demo Songs.....	12
Recorded Songs	36
Playing Back Songs.....	36
Practicing a One-Hand Part Using the 50 Preset Songs	14
PRECAUTIONS	4
Preset.....	13
“Preset” Song.....	13
Preset Song List	60
Preset songs → 50 Piano Preset Songs	13
Preset Voice List	57
Pro (display)	55

R

[REC] button.....	25
Recording.....	25
Initial Settings.....	30
Repeat	13, 15
Re-recording.....	27
[REVERB] button	20
[RIGHT] button.....	14, 28
Right part	14, 28
rnd (display)	13

S

Save	31, 32
SAVE TO USB.....	32
Scale.....	40
SMF (Standard MIDI File)	31, 36, 51
Soft Pedal	43
Song.....	13
Song playback.....	36

[SONG SELECT] button.....	13, 37
Sostenuto pedal.....	43
Specifications.....	68
SPLIT	18, 42
[STANDBY/ON] switch.....	10
[STOP] button	13, 37
[STRINGS/OTHERS] button.....	16
Sustain Pedal	42, 43, 48
[SUSTAIN PEDAL] jack.....	11
Sync.....	14
Sync Start.....	14

T

TEMPO.....	13, 37
TEMPO (METRONOME)	24
[TEMPO/FUNCTION] button.....	24, 39
[TOUCH] button.....	22
Touch Sensitivity.....	22
[TRANSPOSE] button.....	23
Troubleshooting.....	56
Tuning → Fine Tuning of the Pitch.....	40

U

“USB” Song.....	36
USB Storage Device	35
USB [TO DEVICE] terminal.....	47, 53
“USER” Song.....	36

V

VOICE	16
Voice group buttons	16

Preset Song List / Liste der voreingestellten Songs / Liste des morceaux prédéfinis / Lista de canciones preseleccionadas

No.	Title	Composer
1	Invention No. 1	J.S.Bach
2	Invention No. 8	J.S.Bach
3	Gavotte	J.S.Bach
4	Prelude (Wohltemperierte Klavier I No.1)	J.S.Bach
5	Menuett G dur BWV.Anh.114	J.S.Bach
6	Le Coucou	L-C.Daquin
7	Piano Sonate No.15 K.545 1st mov.	W.A.Mozart
8	Turkish March	W.A.Mozart
9	Menuett G dur	W.A.Mozart
10	Little Serenade	J.Haydn
11	Perpetuum mobile	C.M.v.Weber
12	Ecossaise	L.v.Beethoven
13	Für Elise	L.v.Beethoven
14	Marcia alla Turca	L.v.Beethoven
15	Piano Sonate op.13 "Pathétique" 2nd mov.	L.v.Beethoven
16	Piano Sonate op.27-2 "Mondschein" 1st mov.	L.v.Beethoven
17	Piano Sonate op.49-2 1st mov.	L.v.Beethoven
18	Impromptu op.90-2	F.P.Schubert
19	Moments Musicaux op.94-3	F.P.Schubert
20	Frühlingslied op.62-2	J.L.F.Mendelssohn
21	Jägerlied op.19b-3	J.L.F.Mendelssohn
22	Fantaisie-Impromptu	F.F.Chopin
23	Prelude op.28-15 "Raindrop"	F.F.Chopin
24	Etude op.10-5 "Black keys"	F.F.Chopin
25	Etude op.10-3 "Chanson de l'adieu"	F.F.Chopin
26	Etude op.10-12 "Revolutionary"	F.F.Chopin
27	Valse op.64-1 "Petit chien"	F.F.Chopin
28	Valse op.64-2	F.F.Chopin
29	Valse op.69-1 "L'adieu"	F.F.Chopin
30	Nocturne op.9-2	F.F.Chopin
31	Träumerei	R.Schumann
32	Fröhlicher Landmann	R.Schumann
33	La prière d'une Vierge	T.Badarzewska
34	Dolly's Dreaming and Awakening	T.Oesten
35	Arabesque	J.F.Burgmüller
36	Pastorale	J.F.Burgmüller
37	La chevaleresque	J.F.Burgmüller
38	Liebesträume Nr.3	F.Liszt
39	Blumenlied	G.Lange
40	Barcarolle	P.I.Tchaikovsky
41	Melody in F	A.Rubinstein
42	Humoresque	A.Dvořák
43	Tango (España)	I.Albéniz
44	The Entertainer	S.Joplin
45	Maple Leaf Rag	S.Joplin
46	La Fille aux Cheveux de Lin	C.A.Debussy
47	Arabesque 1	C.A.Debussy
48	Clair de lune	C.A.Debussy
49	Rêverie	C.A.Debussy
50	Cakewalk	C.A.Debussy

Factory Setting List / Liste der Vorgabeeinstellungen / Liste des réglages / Lista de ajustes de fábrica

	Default	Backup Group
Voice	GRAND PIANO 1	F8.1
Dual	OFF	
Split	OFF	
Split Left Voice	WOOD BASS	
Brilliance	NORMAL	F8.4
Reverb Type	Preset for each voice	F8.1
Reverb Depth	Preset for each voice	
Effect Type	Preset for each voice	
Effect Depth	Preset for each voice	
Touch Sensitivity	MEDIUM	
Volume in the FIXED	64	
Metronome	OFF	—
Metronome Time Signature	0 (no accent)	F8.1
Tempo	120	—
Transpose	0	F8.3

MIDI Data Format / MIDI-Datenformat / Format des données MIDI / Formato de datos MIDI

If you're already very familiar with MIDI, or are using a computer to control your music hardware with computer-generated MIDI messages, the data provided in this section can help you to control the instrument.

Wenn Sie mit MIDI bereits sehr vertraut sind, oder wenn Sie einen Computer verwenden, um Ihre Musik-Hardware mit MIDI-Meldungen vom Computer aus anzusteuern, sind die Daten in diesem Abschnitt hilfreich für die Steuerung des Instruments.

Si vous êtes connaissez déjà la norme MIDI ou que vous utilisez un ordinateur pour contrôler votre matériel musical avec des messages MIDI générés par l'ordinateur, les données fournies dans cette section pourront vous aider à commander l'instrument.

Si ya está familiarizado con MIDI o utiliza un ordenador para controlar su hardware de música con mensajes MIDI generados por ordenador, la información suministrada en esta sección puede ayudarle a controlar el instrumento.

1. NOTE ON/OFF

Data format: [9nH] -> [kk] -> [vv]

9nH = Note ON/OFF event (n = channel number)
kk = Note number (Transmit: 09H–78H = A-2–C8 /
Receive: 00H–7FH = C-2–G8)
vv = Velocity (Key ON = 01H–7FH, Key OFF = 00H)

Data format: [8nH] -> [kk] -> [vv] (reception only)

8nH = Note OFF event (n = channel number)
kk = Note number: 00H–7FH = C-2–G8)
vv = Velocity

2. CONTROL CHANGE

Data format: [BnH] -> [cc] -> [vv]

BnH = Control change (n = channel number)
cc = Control number
vv = Data Range

(1) Bank Select

ccH	Parameter	Data Range (vvH)
00H	Bank Select MSB	00H:Normal
20H	Bank Select LSB	00H...7FH

Bank selection processing does not occur until receipt of next Program Change message.

(2) Modulation

01H	Modulation	00H...7FH
-----	------------	-----------

(3) Main Volume

ccH	Parameter	Data Range (vvH)
07H	Volume MSB	00H...7FH

(4) Expression

ccH	Parameter	Data Range (vvH)
0BH	Expression MSB	00H...7FH

(5) Sustain

ccH	Parameter	Data Range (vvH)
40H	Sustain MSB	00H...7FH

(6) Sostenuto

ccH	Parameter	Data Range (vvH)
42H	Sostenuto	00H-3FH:off, 40H-7FH:on

(7) Soft Pedal

ccH	Parameter	Data Range (vvH)
43H	Soft Pedal	00H-3FH:off, 40H-7FH:on

(8) Effect1 Depth (Reverb Send Level)

ccH	Parameter	Data Range (vvH)
5BH	Effect1 Depth	00H...7FH

Adjusts the reverb send level.

(9) Effect3 Depth (Chorus Send Level)

ccH	Parameter	Data Range (vvH)
5DH	Effect4 Depth	00H...7FH

(10) RPN

65H	RPN	MSB
64H	RPN	LSB
06H	Data Entry	MSB
26H	Data Entry	LSB
60H	Data	Increment
61H	Data	Decrement

* Parameters that are controllable with RPN

- Coarse Tune
- Fine Tune
- Pitch Bend Range

3. MODE MESSAGES

Data format: [BnH] -> [cc] -> [vv]

BnH = Control event (n = channel number)
cc = Control number
vv = Data Range

(1) All Sound Off

ccH	Parameter	Data Range (vvH)
78H	All Sound Off	00H

(2) Reset All Controllers

ccH	Parameter	Data Range (vvH)
79H	Reset All Controllers	00H

Resets controllers as follows.

Controller	Value
Expression	127 (max)
Sustain Pedal	0 (off)
Sostenuto	0 (off)
Soft Pedal	0 (off)

(3) Local Control (reception only)

ccH	Parameter	Data Range (vvH)
7AH	Local Control	00H (off), 7FH (on)

(4) All Notes Off

ccH	Parameter	Data Range (vvH)
7BH	All Notes Off	00H

Switches OFF all the notes that are currently ON on the specified channel. Any notes being held by the sustain or sostenuto pedal will continue to sound until the pedal is released.

(5) Omni Off (reception only)

ccH	Parameter	Data Range (vvH)
7CH	Omni Off	00H

Same processing as for All Notes Off.

(6) Omni On (reception only)

ccH	Parameter	Data Range (vvH)
7DH	Omni On	00H

Same processing as for All Notes Off.

(7) Mono (reception only)

ccH	Parameter	Data Range (vvH)
7EH	Mono	00H

Same processing as for All Sound Off.

(8) Poly (reception only)

ccH	Parameter	Data Range (vvH)
7FH	Poly	00H

Same processing as for All Sound Off.

- When Control Change is turned OFF, Control Change messages will not be transmitted or received.
- Local on/off, OMNI on/off are not transmitted. (The appropriate note off number is supplied with "All Note Off" transmission).
- When a voice bank MSB/LSB is received, the number is stored in the internal buffer regardless of the received order, then the stored value is used to select the appropriate voice when a program change message is received.
- Poly mode is always active. This mode will not change when the instrument receives MONO/POLY mode message.

4. PROGRAM CHANGE

Data format: [CnH] -> [ppH]

CnH = Program event (n = channel number)

ppH = Program change number

P.C.#=Program Change number

VoiceName	MSB	LSB	P.C.#
GRAND PIANO 1	0	122	1
GRAND PIANO 2	0	112	1
ELECTRIC PIANO 1	0	122	6
ELECTRIC PIANO 2	0	122	5
JAZZ ORGAN	0	122	17
CHURCH ORGAN 1	0	123	20
STRINGS 1	0	122	49
STRINGS 2	0	125	50
CHURCH ORGAN 2	0	122	20
HARPSICHORD	0	122	7
E.CLAVICHORD	0	122	8
VIBRAPHONE	0	122	12
CHOIR	0	122	53
GUITAR	0	122	25
WOOD BASS	0	122	33
BASS & CYMBAL	0	124	33
E.BASS	0	122	34

- Some devices use a "0 to 127" numbering system for program change messages. Since the instrument uses a "1 to 128" numbering system, you will need to subtract 1 from the transmitted program change numbers to select the appropriate sound: e.g. send P.C.#1 in the list above, transmit program change number 0.

5. PITCH BEND CHANGE

[EnH] -> [ccH] -> [ddH]

ccH = LSB

ddH = MSB

6. SYSTEM REALTIME MESSAGES

[rrH]

F8H: Timing clock

FAH: Start

FCH: Stop

FEH: Active sensing

Data	Transmission	Reception
F8H	Transmitted every 96 clocks	Received as 96-clock tempo timing when MIDI clock is set to External.
FAH	Song start	Song start Not received when the MIDI clock is set to Internal.
FCH	Song stop	Song stop Not received when the MIDI clock is set to Internal.
FEH	Transmitted every 200 milliseconds	If a signal is not received via MIDI for more than 400 milliseconds, the same processing will take place for All Sound Off, All Notes Off and Reset All Controllers as when those signals are received.

- Caution: If an error occurs during MIDI reception, the Sustain, Sostenuto, and Soft effects for all channels are turned off and an All Note Off message occurs.

7. SYSTEM EXCLUSIVE MESSAGES

(Yamaha MIDI Format)

Panel Data Transmit

Data format: [F0H] -> [43H] -> [0nH] -> [7CH] -> ... -> [F7H]

F0H, 43H, 0nH, 7CH (n: channel number)

00H, LLH (data length)

43H, 4CH, 20H, 20H (CL)

43H, 4CH, 50H, 27H, 30H, 38H

3xH, 3yH (version x.y)

[PANEL DATA]

[CHECK SUM (1byte)] = 0-(43H+4CH+20H+.....+Data end)

F7H (End of Exclusive)

• Panel Data Contents

- | | |
|--------------------------------|-------------------------------|
| (1) 1'st Voice | (19) Reverb Type 1 |
| (2) Dual On/Off | (20) Reverb Type 2 |
| (3) Dual Voice | (21) Reverb Depth 1 |
| (4) Dual Balance | (22) Reverb Depth 2 |
| (5) Dual Detune | (23) Effect Type 1 |
| (6) Dual Voice1 Octave | (24) Effect Type 2 |
| (7) Dual Voice2 Octave | (25) Effect Depth |
| (8) Dual Voice1 Effect Depth | (26) — |
| (9) Dual Voice2 Effect Depth | (27) Touch Sensitivity |
| (10) Split On/Off | (28) Fixed Data |
| (11) Split Voice | (29) AUX Pedal |
| (12) Split Point | (30) Soft Pedal Depth |
| (13) Split Balance | (31) Absolute tempo low byte |
| (14) Split Voice1 Octave | (32) Absolute tempo high byte |
| (15) Split Voice2 Octave | (33) Key-Off Sampling Depth |
| (16) Split Voice1 Effect Depth | (34) Damper Resonance On/Off |
| (17) Split Voice2 Effect Depth | (35) Damper Resonance Depth |
| (18) Split Sustain Mode | |

- Panel data send requests cannot be received.

8. SYSTEM EXCLUSIVE MESSAGES

(Universal System Exclusive)

(1) Universal Realtime Message

Data format: [F0H] -> [7FH] -> [XnH] -> [04H] -> [01H] ->

[lIH] -> [mmH] -> [F7H]

MIDI Master Volume

- Simultaneously changes the volume of all channels.
- When a MIDI master volume message is received, the volume only has affect on the MIDI receive channel, not the panel master volume.

F0H = Exclusive status

7FH = Universal Realtime

7FH = ID of target device

04H = Sub-ID #1=Device Control Message

01H = Sub-ID #2=Master Volume

l/H = Volume LSB

mmH = Volume MSB

F7H = End of Exclusive

or

F0H = Exclusive status

7FH = Universal Realtime

XnH = When n is received n=0-F, whichever is received.

X = irrelevant

04H = Sub-ID #1=Device Control Message

01H = Sub-ID #2=Master Volume

l/H = Volume LSB

mmH = Volume MSB

F7H = End of Exclusive

(2) Universal Non-Realtime Message (GM On)**General MIDI Mode On**

Data format: [F0H] -> [7EH] -> [XnH] -> [09H] -> [01H] -> [F7H]

F0H = Exclusive status
 7EH = Universal Non-Realtime
 7FH = ID of target device
 09H = Sub-ID #1=General MIDI Message
 01H = Sub-ID #2=General MIDI On
 F7H = End of Exclusive

or

F0H = Exclusive status
 7EH = Universal Non-Realtime
 XnH = When received, n=0–F.
 X = irrelevant
 09H = Sub-ID #1=General MIDI Message
 01H = Sub-ID #2=General MIDI On
 F7H = End of Exclusive

When a General MIDI mode ON message is received, the MIDI system will be reset to its default settings. This message requires approximately 50ms to execute, so sufficient time should be allowed before the next message is sent.

9. SYSTEM EXCLUSIVE MESSAGES (XG Standard)**(1) XG Native Parameter Change**

Data format: [F0H] -> [43H] -> [1nH] -> [4CH] -> [hhH] -> [mmH] -> [lH] -> [ddH] ->...-> [F7H]

F0H = Exclusive status
 43H = YAMAHA ID
 1nH = When received, n=0–F.
 When transmitted, n=0.
 4CH = Model ID of XG
 hhH = Address High
 mmH = Address Mid
 lH = Address Low
 ddH = Data

|
 |
 F7H = End of Exclusive

Data size must match parameter size (2 or 4 bytes).
 When an XG System On message is received, the MIDI system will be reset to its default settings. The message requires approximately 50ms to execute, so sufficient time should be allowed before the next message is sent.

(2) XG Native Bulk Data (reception only)

Data format: [F0H] -> [43H] -> [0nH] -> [4CH] -> [aaH] -> [bbH] -> [hhH] -> [mmH] -> [lH] -> [ddH] ->...-> [ccH] -> [F7H]

F0H = Exclusive status
 43H = YAMAHA ID
 0nH = When received, n=0–F.
 When transmitted, n=0.
 4CH = Model ID of XG
 aaH = Byte Count
 bbH = Byte Count
 hhH = Address High
 mmH = Address Mid
 lH = Address Low
 ddH = Data

| |
 | |
 ccH = Check sum
 F7H = End of Exclusive

- Receipt of the XG SYSTEM ON message causes reinitialization of relevant parameters and Control Change values. Allow sufficient time for processing to execute (about 50 msec) before sending the instrument another message.
- XG Native Parameter Change message may contain two or four bytes of parameter data (depending on the parameter size).
- For information about the Address and Byte Count values, refer to Table 1 below. Note that the table's Total Size value gives the size of a bulk block. Only the top address of the block (00H, 00H, 00H) is valid as a bulk data address.

10. SYSTEM EXCLUSIVE MESSAGES (P-155 MIDI Format)

Data format: [F0H] -> [43H] -> [73H] -> [01H] -> [nnH] -> [F7H]

F0H = Exclusive status
 43H = Yamaha ID
 73H = P-155 ID
 01H = Product ID (CLP common)
 nnH = Substatus
 nn Control
 02H Internal MIDI clock
 03H External MIDI clock
 F7H = End of Exclusive

11. SYSTEM EXCLUSIVE MESSAGES (Others)

Data format: [F0H] -> [43H] -> [1nH] -> [27H] -> [30H] -> [00H] -> [00H] -> [mmH] -> [lH] -> [ccH] -> [F7H]

Master Tuning (XG and last message priority) simultaneously changes the pitch of all channels.

F0H = Exclusive Status
 43H = Yamaha ID
 1nH = When received, n=0–F.
 When transmitted, n=0.
 27H = Model ID of TG100
 30H = Sub ID
 00H =
 00H =
 mmH = Master Tune MSB
 lH = Master Tune LSB
 ccH = irrelevant (under 7FH)
 F7H = End of Exclusive

<Table 1>

MIDI Parameter Change table (SYSTEM)

Address (H)	Size (H)	Data (H)	Parameter	Description	Default value (H)
00 00 00	4	020C - 05F4*	MASTER TUNE	-50 - +50[cent]	00 04 00 00
01				1st bit 3 - 0 → bit 15 - 12	400
02				2nd bit 3 - 0 → bit 11 - 8	
03				3rd bit 3 - 0 → bit 7 - 4	
				4th bit 3 - 0 → bit 3 - 0	
04	1	00 - 7F	MASTER VOLUME	0 - 127	7F
7E		00	XG SYSTEM ON	00=XG system ON	
7F		00	RESET ALL PARAMETERS	00=ON (receive only)	
TOTAL SIZE	07				

*Values lower than 020CH select -50 cents. Values higher than 05F4H select +50 cents.

<Table 2>

MIDI Parameter Change table (EFFECT 1)

Refer to the "Effect MIDI Map" for a complete list of Reverb, Chorus and Variation type numbers.

Address (H)	Size (H)	Data (H)	Parameter	Description	Default value (H)
02 01 00	2	00-7F	REVERB TYPE MSB	Refer to Effect MIDI Map	01 (=HALL1)
		00-7F	REVERB TYPE LSB	00 : basic type	00
02 01 40	2	00-7F	VARIATION TYPE MSB	Refer to Effect MIDI Map	00(=Effect off)
		00-7F	VARIATION TYPE LSB	00 : basic type	00

• "VARIATION" refers to the EFFECT on the panel.

<Table 3>

MIDI Parameter Change table (MULTI PART)

Address (H)	Size (H)	Data (H)	Parameter	Description	Default value (H)
08 nn 11	1	00 - 7F	DRY LEVEL	0 - 127	7F

nn = Part Number

• **Effect MIDI Map****REVERB**

	MSB	LSB
ROOM	02H	10H
HALL 1	01H	10H
HALL 2	01H	11H
STAGE	03H	10H
OFF	00H	00H

EFFECT

	MSB	LSB
CHORUS	41H	08H
PHASER	48H	11H
TREMOLO	77H	00H
ROTARY SP	42H	12H
OFF	00H	00H

YAMAHA [Digital Piano]
P-155 MIDI Implementation Chart
Date : 24-JUN-2008
Version : 1.0

Function...	Transmitted	Recognized	Remarks
Basic Channel	1 - 16 1 - 16	1 - 16 1 - 16	
Mode	3 X ***** *****	3 X X	
Note Number : True voice	0 - 127 *****	0 - 127 0 - 127	
Velocity	Note ON Note OFF 0 9nH, v=1-127 X 9nH, v=0	0 9nH, v=1-127 X	
After Touch	Key's Ch's X X	X X	
Pitch Bend	X *1	0 0-24 semi	
Control Change	0, 32 1 7 10 11 6, 38 64, 66, 67 71-74 84 91, 93 96-97 100-101	0 *1 0 *1 0 *1 0 *1 0 *1 0 *1 0 *1 0 *1 0 *1 0 *1 0 *1	Bank Select Modulation Main Volume Panpot Expression Data Entry Pedal Portament Control Effect Depth RPN Inc, Dec RPN LSB, MSB

Prog Change : True #	<input type="radio"/> 0 - 127 *****	<input type="radio"/> 0 - 127	
System Exclusive	<input type="radio"/>	<input type="radio"/>	
Common : Song Pos. : Song Sel. : Tune	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	
System : Clock Real Time : Commands	<input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/>	
Aux : All Sound Off : Reset All Cntrl's : Local ON/OFF Mes- : All Notes OFF sages: Active Sense : Reset	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="radio"/> (120,126,127) <input type="radio"/> (121) <input type="radio"/> (122) <input type="radio"/> (123-125) <input type="radio"/> <input checked="" type="checkbox"/>	
Notes:	*1 Although these control change messages are not transmitted by panel operations, they may be transmitted during a song performance.		

Mode 1 : OMNI ON , POLY Mode 2 : OMNI ON , MONO : Yes
 Mode 3 : OMNI OFF , POLY Mode 4 : OMNI OFF , MONO : No

Specifications / Technische Daten / Caractéristiques techniques / Especificaciones

Model		P-155		
Size/Weight	Dimensions (with music rest)	Width	1,334 mm [52-1/2"]	
		Height	140 mm [5-1/2"] (332 mm) [13-1/16"]	
		Depth	351 mm [13-13/16"] (357 mm) [14-1/16"]	
	Weight	Weight	18.6 kg (37 lbs., 1 oz.)	
Control Interface	Keyboard	Number of Keys	88	
		Type	Graded Hammer (GH) Keyboard	
		Touch Sensitivity	Hard/Medium/Soft/Fixed	
	Display	Type	LED	
		Size	7-segment, 3-digit	
Panel	Language	English		
Voices	Tone Generation	Tone Generating Technology	AWM Dynamic Stereo Sampling	
		Number of Dynamic Levels	4	
		Stereo Sustain Samples	Yes	
		Key-off Samples	Yes	
	Polyphony	Number of Polyphony (Max.)	128	
Preset	Number of Voices	17		
Effects	Types	Reverb	Yes	
		Chorus	Yes	
		Brilliance	3 types	
		Damper Resonance	Yes	
	Functions	Dual/Layers	Yes	
Split		Yes		
Songs	Preset	Number of Preset Songs	50	
	Recording	Number of Songs	3	
		Number of Tracks	2	
		Data Capacity	300 KB (100 KB for each song) for "USER" Song, 447 KB for External Songs	
	Compatible Data Format	Recording Function	Yes	
Playback		SMF (Format 0 & 1)		
Functions	Overall Controls	Recording	SMF (Format 0)	
		Metronome	Yes	
		Tempo Range	32–280	
		Transpose	-12 to 0, 0 to +12	
		Tuning	Yes	
Storage and Connectivity	Connectivity	Scale Type	7 types	
		Storage	Internal Memory	300 KB (100 KB for each song) for "USER" Song, 447 KB for External Songs
		DC IN	DC IN 16V	
		Headphones	x 2	
		Sustain Pedal	Yes	
		MIDI	[In][Out]	
		AUX OUT	[L/L+R][R]	
AUX Pedal	Yes			
Amplifiers and Speakers	Amplifiers	USB TO DEVICE	Yes	
		Speakers	12 W x 2 (12 cm x 6 cm) x 2	
Power Supply	Power Supply	Adaptor (PA-301/PA-300 or an equivalent recommended by Yamaha)		
Accessories	Included Accessories	Owner's Manual, Foot Switch FC4, Music Rest, AC power adaptor PA-301 (not for sale), PA-300 or an equivalent recommended by Yamaha, My Yamaha Product User Registration		
Optional Equipment		Stereo Headphones	HPE-150	
		Foot Pedal	FC3/FC4/FC5/FC7	
		Keyboard Stand	L-140/L-140S	
		USB MIDI Interface	UX16	
		Power Adaptor	PA-300 or an equivalent recommended by Yamaha	
	Floppy Disk Drive	UD-FD01		

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[For business users in the European Union]

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[Information on Disposal in other Countries outside the European Union]

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DE

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[Information für geschäftliche Anwender in der Europäischen Union]

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[Entsorgungsinformation für Länder außerhalb der Europäischen Union]

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FR



Information concernant la Collecte et le Traitement des déchets d'équipements électriques et électroniques

Le symbole sur les produits, l'emballage et/ou les documents joints signifie que les produits électriques ou électroniques usagés ne doivent pas être mélangés avec les déchets domestiques habituels. Pour un traitement, une récupération et un recyclage appropriés des déchets d'équipements électriques et électroniques, veuillez les déposer aux points de collecte prévus à cet effet, conformément à la réglementation nationale et aux Directives 2002/96/EC.

En vous débarrassant correctement des déchets d'équipements électriques et électroniques, vous contribuez à la sauvegarde de précieuses ressources et à la prévention de potentiels effets négatifs sur la santé humaine qui pourraient advenir lors d'un traitement inapproprié des déchets.

Pour plus d'informations à propos de la collecte et du recyclage des déchets d'équipements électriques et électroniques, veuillez contacter votre municipalité, votre service de traitement des déchets ou le point de vente où vous avez acheté les produits.

[Pour les professionnels dans l'Union Européenne]

Si vous souhaitez vous débarrasser des déchets d'équipements électriques et électroniques veuillez contacter votre vendeur ou fournisseur pour plus d'informations.

[Information sur le traitement dans d'autres pays en dehors de l'Union Européenne]

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ES



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[Para usuarios de negocios en la Unión Europea]

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Die Einzelheiten zu Produkten sind bei Ihrer unten aufgeführten Niederlassung und bei Yamaha Vertragshändlern in den jeweiligen Bestimmungsländern erhältlich.

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Yamaha Musical do Brasil Ltda.
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Buenos Aires, Argentina
Tel: 011-4119-7000

PANAMA AND OTHER LATIN AMERICAN COUNTRIES/ CARIBBEAN COUNTRIES

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Yamaha Scandinavia AB
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S-400 43 Göteborg, Sweden
Tel: 031 89 34 00

DENMARK

YS Copenhagen Liaison Office
Generatorvej 6A, DK-2730 Herlev, Denmark
Tel: 44 92 49 00

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F-Musiikki Oy
Kluuvikatu 6, P.O. Box 260,
SF-00101 Helsinki, Finland
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Norsk filial av Yamaha Scandinavia AB
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