

ELECTRONIC PIANO

P-60

ENGLISH

DEUTSCH

FRANÇAIS

ESPAÑOL

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

Before using the P-60, be sure to read "PRECAUTIONS," on pages 6-7.
Achten Sie darauf, vor Einsatz des P-60 die "VORSICHTSMASSNAHMEN,"
auf Seite 6-7 durchzulesen.
Avant d'utiliser le P-60, lire attentivement la section «PRECAUTIONS
D'USAGE» aux pages 6-7.
Antes de utilizar el P-60, lea las "PRECAUCIONES," que debe tener en
cuenta en las páginas 6-7.

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

Thank you for purchasing the Yamaha P-60 Electronic Piano! We recommend that you read this manual carefully so that you can fully take advantage of the advanced and convenient functions of the P-60.

We also recommend that you keep this manual in a safe and handy place for future reference.

About this Owner's Manual

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

■ Introduction (page 2):

Please read this section first.

■ Reference (page 13):

This section explains how to make detailed settings for the P-60's various functions.

■ Appendix (page 29):

This section introduces reference material.

- * The illustrations of the controls in this owner's manual are for instructional purposes only and actual appearance of the controls may be somewhat different on your instrument.

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- What is MIDI? “About MIDI” on page 22
Connecting the computer “Connecting a Personal Computer” on page 23

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 (PA-5D or an equivalent recommended by Yamaha) 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.
- 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.
- 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.

(3)-7 1/2

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.

Handling caution

- 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 operate the instrument 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.

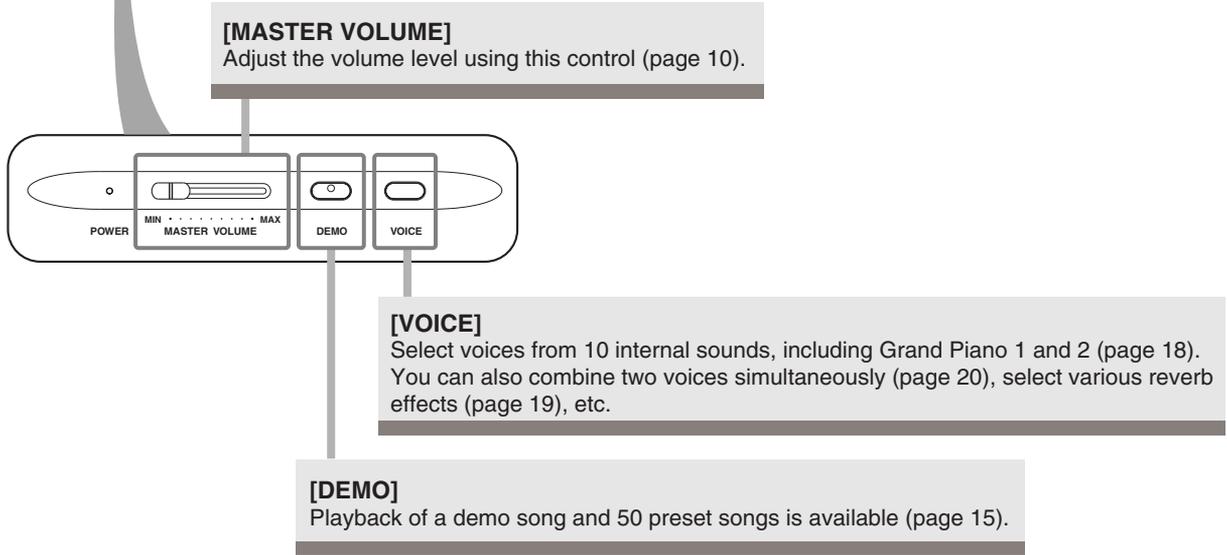
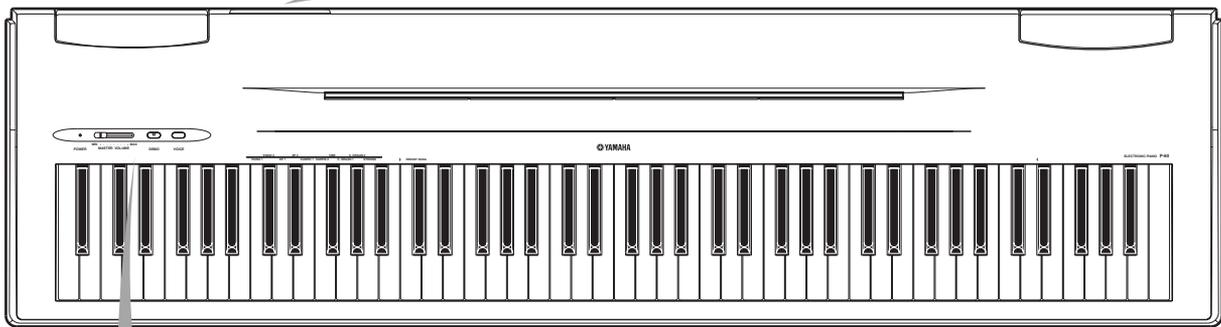
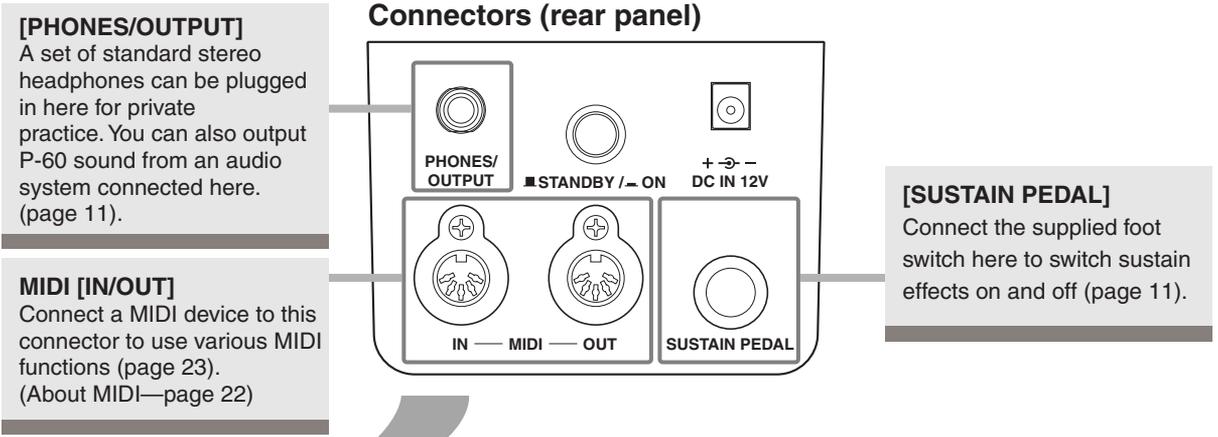
Accessories

- Owner's Manual
This manual contains complete instructions for operating your P-60.
- Quick Operation Guide
- Sustain Pedal
- Music Rest
- Yamaha PA-5D power adaptor

Features

The Yamaha P-60 electronic piano offers unmatched sonic realism and natural grand-piano type playability as well as Yamaha's original "AWM Stereo Sampling" tone-generation technology for rich, musical voices, and a special "Graded Hammer" keyboard that provides graded key weight and response throughout the keyboard range.

The Grand Piano 1 and 2 voices feature totally new samples painstakingly recorded from a full concert grand piano. The E. Piano 1 voice features a single velocity-switched sample and E. Piano 2 voice features two velocity-switched sample. The P-60 sounds much closer to a true acoustic piano.



Before Using the P-60

Power supply connections

1. Make sure that the [STANDBY/ON] switch of the P-60 is set to STANDBY.
2. Connect the AC adaptor's DC cable to the [DC IN 12V] jack.
3. Plug the AC adaptor into an AC outlet.

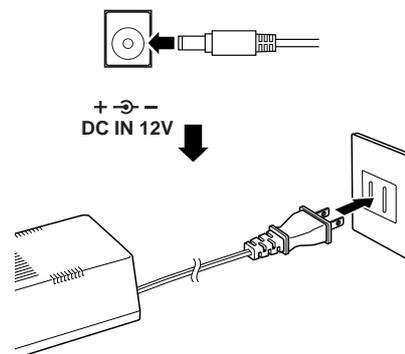
After turning the power OFF, simply reverse the procedure to disconnect the power.

WARNING

Use ONLY a Yamaha PA-5D AC Power Adaptor (or other adaptor specifically recommended by Yamaha) to power your instrument from the AC mains. The use of other adaptors may result in irreparable damage to both the adaptor and the P-60.

WARNING

Unplug the AC Power Adaptor when not using the P-60, or during electrical storms.



Turning the power on

After making sure that the P-60's AC power adaptor is properly plugged into the P-60 itself and plugged into a convenient AC wall outlet, press the [STANDBY/ON] switch located on the rear panel of the P-60.

- The power indicator located on the left of the panel lights up.

When you're ready to turn off the power, press the [STANDBY/ON] switch again.

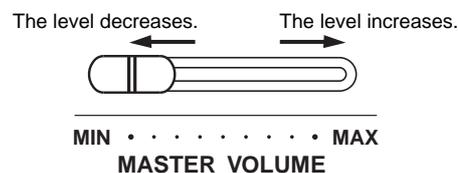
- The power indicator turns off.

CAUTION

Even when the switch is in the "STANDBY" position, electricity is still flowing to the instrument at the minimum level. When you are not using the P-60 for a long time, make sure you unplug the AC power adaptor from the wall AC outlet.

Adjusting the volume

To adjust the volume, use the [MASTER VOLUME] located at the top left of the panel. Play the keyboard to actually produce sound while you adjust the volume.



CAUTION

Do not use the P-60 at a high volume level for a long period of time, or your hearing may be damaged.

TERMINOLOGY MASTER VOLUME: The volume level of the entire keyboard sound

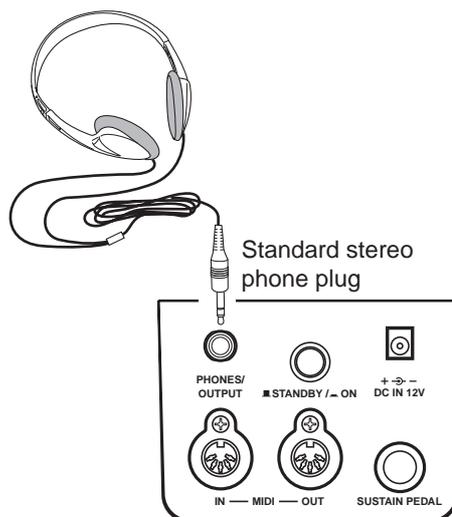
TIP You can also adjust the [PHONES/OUTPUT] output level using the [MASTER VOLUME] control.

Using the [PHONES/OUTPUT] jack

Connect a pair of headphones here.

When a pair of headphones is connected to this jack, the P-60's internal speakers will turn off automatically. This is helpful for private practice or late night playing.

Though the P-60 is equipped with a built-in speaker system, you can also play it through an external amplifier/speaker system. First, make sure the P-60 and any external devices are turned off. Then, connect one end of a stereo audio cable to the LINE IN or AUX IN jack(s) of the other device and the other end to the rear panel [PHONES/OUTPUT] jack on the P-60.



CAUTION

Do not use the P-60 at a high volume level for a long period of time, or your hearing may be damaged.

CAUTION

Connect the P-60 to external equipment only after turning off power for all devices.

Failure to observe these cautions may result in electric shock or equipment damage.

To prevent damage to the speakers, set the volume of the external devices at the minimum setting before connecting them.

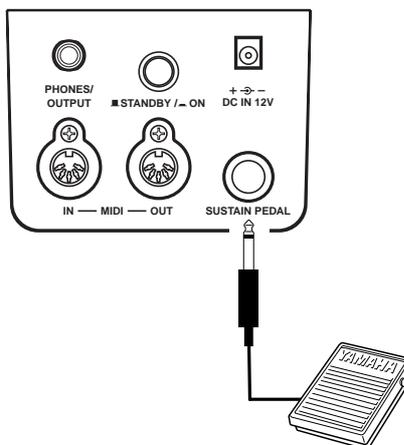
Using the [SUSTAIN PEDAL] jack

This jack is for connecting a supplied foot switch or an optional foot pedal to the P-60.

When you press the foot switch or the foot pedal, the notes you play have a longer sustain.

The supplied foot switch is an on/off switch for sustain.

For the optional foot pedal FC3, the further down the pedal is pressed, the longer the sound will be sustained (can be used like a half pedal effect).



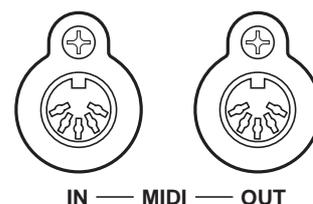
NOTE Connect or disconnect the foot switch or the foot pedal when the power is off.

NOTE Do not turn on the power to the unit while pressing the foot switch or foot pedal. Otherwise, the switch or pedal polarity (on/off) will be reversed.

Using the MIDI connectors

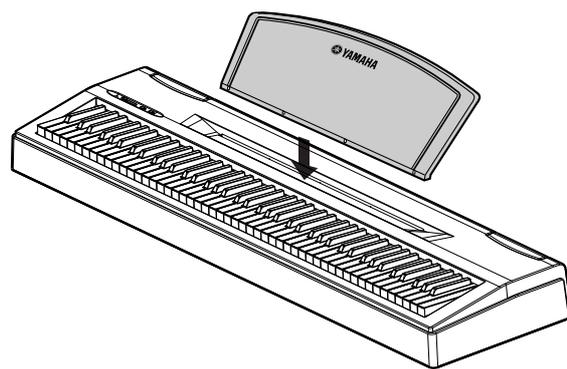
The MIDI IN connector receives MIDI data from an external MIDI device (such as a MIDI sequencer) which can be used to control the P-60. The MIDI OUT connector transmits MIDI data generated by the P-60 (e.g. note and velocity data produced by playing the P-60 keyboard).

More details on MIDI are given in "About MIDI" on page 22.



Music Rest

You can use the supplied music rest by inserting it in the slot on the top panel of the P-60.

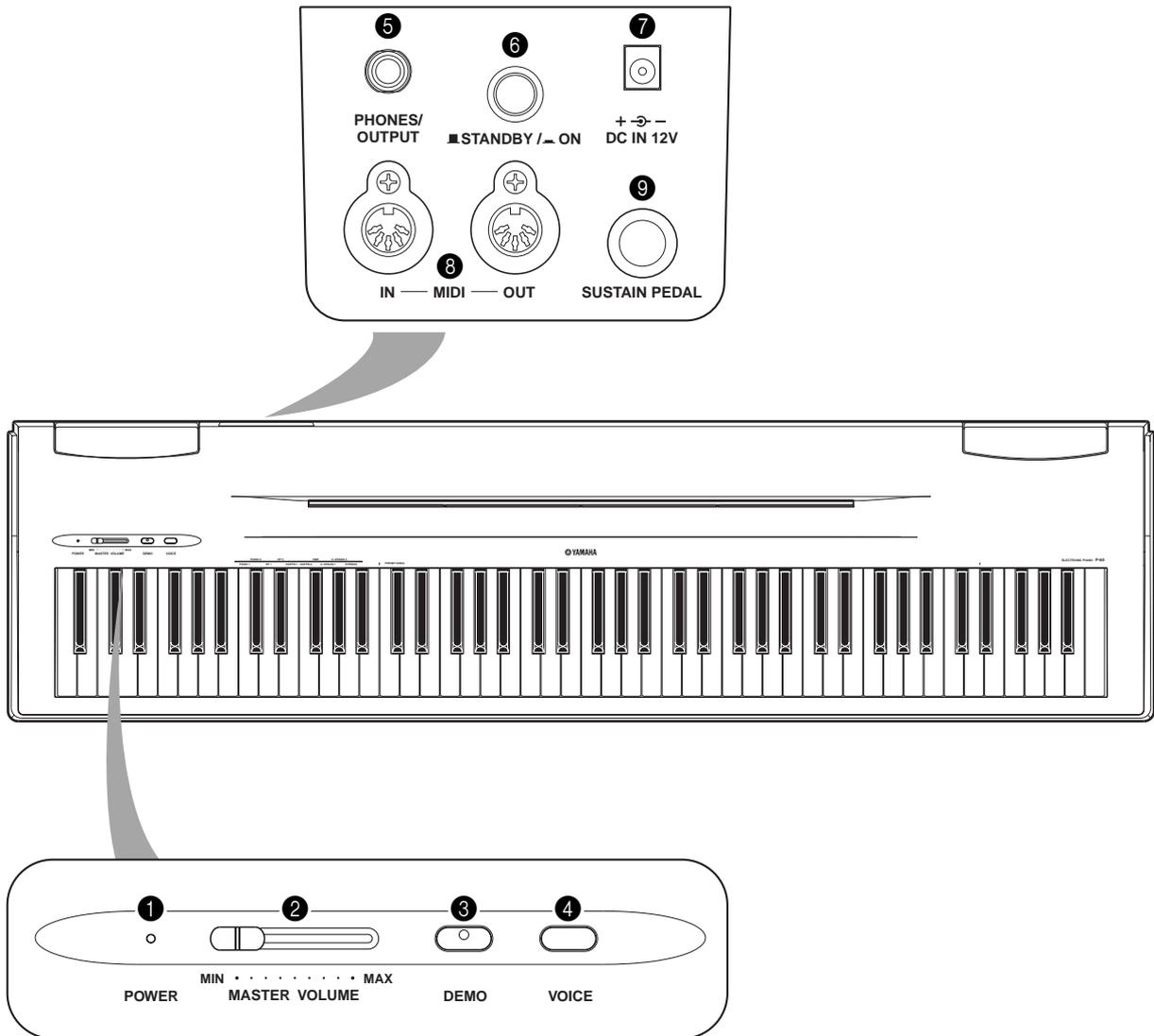


Reference

This section explains how to make detailed settings for the P-60's various functions.

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Part Names



- ① [POWER] P10
- ② [MASTER VOLUME] P11
- ③ [DEMO] P15
- ④ [VOICE] P18–20

- ⑤ [PHONES/OUTPUT] P11
- ⑥ [STANDBY/ON] P10
- ⑦ [DC IN 12V] P10
- ⑧ MIDI [IN] [OUT] P22
- ⑨ [SUSTAIN PEDAL] P11

Listening to the Demo Songs

Demo songs are provided that effectively demonstrate each of the P-60's voices.

Procedure

1. Turn on the power.

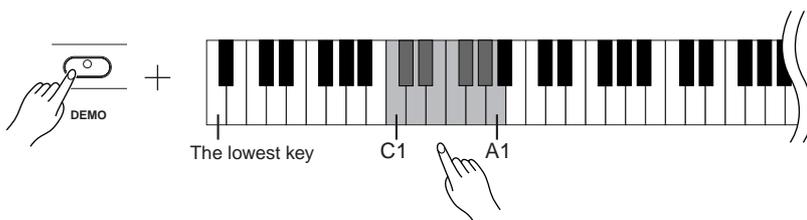
(In case the power is not turned ON) Press the [STANDBY/ON] switch.
When you start playing, adjust the [MASTER VOLUME] control to the most comfortable listening level.

2. Engage Demo mode.

Press the [DEMO] button to engage Demo mode. The [DEMO] button indicator will light.

3. Play a Voice demo.

While holding down the [DEMO] button, press one of the C1–A1 keys to select and start the corresponding demo song. Starting with the selected tune, the demo songs will play in sequence until stopped.



Demo Song List

Demo songs are original (©2002 Yamaha Corporation) except for the three songs listed below.

Refer to the voice list on page 18 for voice key assignments.

The demo songs listed below are short re-arranged excerpts from the original compositions.

Key	Voice Name	Title	Composer
C1	GrandPiano1	Consolation No.3	F. Liszt
E1	Harpsichord1	Gavotte	J.S. Bach
F1	Harpsichord2	Invention No.1	J.S. Bach

Adjusting the Volume

Use the [MASTER VOLUME] control to adjust the volume.

4. Stop the Voice demo.

Press the [DEMO] button to stop playback.

NOTE

Refer to the voice list on page 18 for more information on the characteristics of each pre-set voice.

TERMINOLOGY

Mode:

A mode is a condition or status under which you can execute a certain function. In Demo mode, you can play back demo songs.

NOTE

You cannot adjust the tempo of demo songs.

Listening to 50 Piano Preset Songs

The P-60 provides performance data for 50 piano songs. You can simply listen to these songs.

Procedure

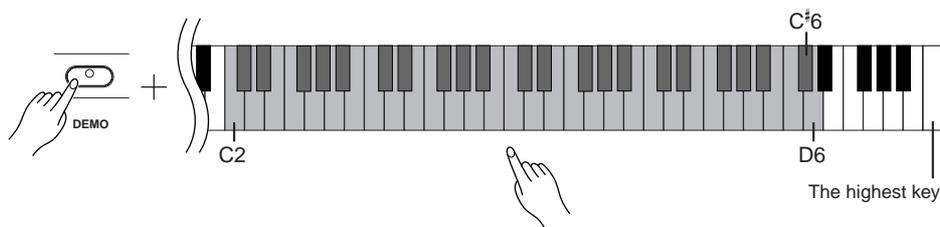
1. Engage Preset Song mode.

Press the [DEMO] button to engage Preset Song mode. The [DEMO] button indicator will light.

2. Play a preset song.

While holding down the [DEMO] button, press one of the C2–C#6 keys to select and start the corresponding tune. To play all preset songs in sequence, while holding down the [DEMO] button, press the D6 key.

For a list of the preset songs, see page 30.



Adjusting the Volume

Use the [MASTER VOLUME] control to adjust the volume.

Adjusting the tempo

See page 17.

3. Stop playback.

Playback will stop automatically when the selected preset song has finished. To stop the song during playback (or continuous playback), press the [DEMO] button.

- To continue playing other songs, see procedure 2 above.

TERMINOLOGY

Song:

On the P-60, performance data is called a "Song." This includes demo songs and piano preset tunes.

TIP

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

TIP

You can adjust the Reverb type (page 19) that is applied to the voice you play on the keyboard and to the preset song playback.

NOTE

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

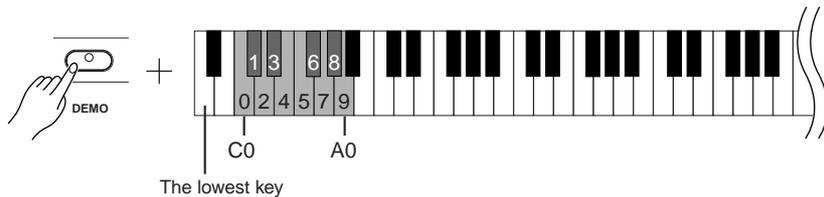
NOTE

MIDI reception is not possible in Piano Song mode. Piano song data is not transmitted via the MIDI connectors.

Adjusting the tempo

The tempo of the preset song playback can be set from 32 to 280 beats per minute.

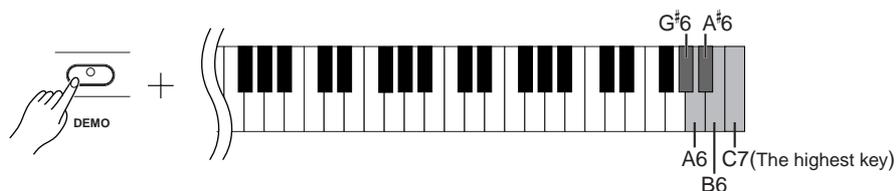
While holding down the **[DEMO]** button, press a sequence of C0-A0 keys to specify a three-digit number. Select a number starting from the left-most digit. For example, to set the tempo “95,” press the C0 (0), A0 (9) and F0 (5) keys in sequence.



To increase the tempo value in steps of one, while holding down the **[DEMO]** button, press the B6 key. To decrease the tempo value in steps of one, while holding down the **[DEMO]** button, press the A6 key.

To increase the tempo value in steps of ten, while holding down the **[DEMO]** button, press the C7 key. To decrease the tempo value in steps of ten, while holding down the **[DEMO]** button, press the G#6 key.

To set the default tempo (the song's original tempo), while holding down the **[DEMO]** button, press the A#6 key.



NOTE

The default tempo is automatically selected whenever a new preset song is selected, and when a new preset song begins playback.

NOTE

During preset song playback, you can set the tempo from 20 to 400 beats per minute, depending on the song data.

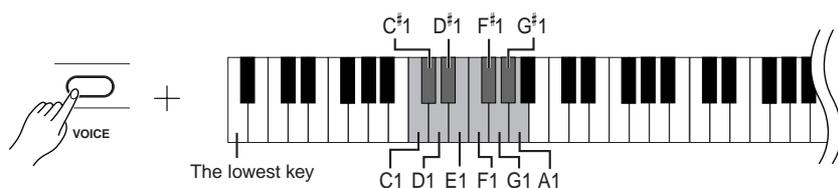
Selecting & Playing Voices

Selecting Voices

Procedure

While holding down the **[VOICE]** button, press one of the C1–A1 keys to select and start the corresponding voice.

Then, when you start playing, adjust the **[MASTER VOLUME]** control to the most comfortable listening level.



TIP

To understand the characteristics of various voices, listen to demo songs for each voice (page 15).

TERMINOLOGY

Voice:

On the P-60, a voice means a “tone” or “tonal color.”

NOTE

Selecting a voice automatically engages the best-suited reverb type and depth (page 19) for that particular voice.

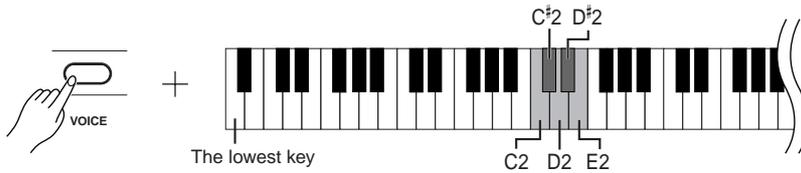
Key	Voice Name (Panel name)	Description
C1	Grand Piano 1 (PIANO1)	Recorded samples from a full concert grand piano. Perfect for classical compositions as well as any other style that requires acoustic piano.
C#1	Grand Piano 2 (PIANO2)	Spacious and clear piano with bright reverb. Good for popular music.
D1	E.Piano 1 (EP1)	An electronic piano sound created by FM synthesis. Good for popular music.
D#1	E.Piano 2 (EP2)	The sound of an electric piano using hammer-struck metallic “tines.” Soft tone when played lightly, and an aggressive tone when played hard.
E1	Harpsichord 1 (HARPSI1)	The definitive instrument for baroque music. Since harpsichord uses plucked strings, there is no touch response.
F1	Harpsichord 2 (HARPSI2)	Mixes the same voice an octave higher for a more brilliant tone.
F#1	Vibraphone (VIBES)	Vibraphone played with relatively soft mallets. It has a tremolo effect that is typical for vibraphone.
G1	Church Organ 1 (C. ORGAN1)	This is a typical pipe organ sound (8 feet + 4 feet + 2 feet). Good for sacred music from the Baroque period.
G#1	Church Organ 2 (C. ORGAN2)	This is the organ’s full coupler sound, often associated with Bach’s “Toccatà and Fugue”.
A1	Strings (STRINGS)	Spacious and large-scale string ensemble. Try combining this voice with piano in DUAL mode.

Adding Variations to the Sound – Reverb

This control enables you to select various digital reverb effects that add extra depth and expression to the sound to create a realistic acoustic ambience.

Procedure

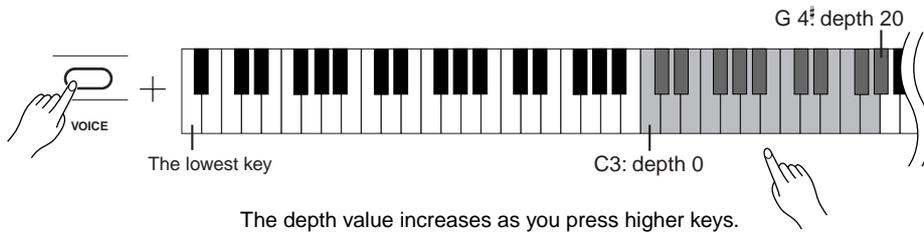
When you select a reverb, the reverb is automatically turned on. While holding down the **[VOICE]** button, press one of the C2–E2 keys to select a reverb type.



Key	Reverb Type	Description
C2	Room	This setting adds a continuous reverb effect to the sound, similar to the acoustic reverberation you would hear in a room.
C#2	Hall1	For a “bigger” reverb sound, use the HALL 1 setting. This effect simulates the natural reverberation of a small-size concert hall.
D2	Hall2	For a truly spacious reverb sound, use the HALL 2 setting. This effect simulates the natural reverberation of a large concert hall.
D#2	Stage	Simulates the reverb of a stage environment.
E2	Off	No effect is applied.

Adjusting Reverb Depth

Adjust the reverb depth for the selected voice by pressing one of the C3–G#4 keys while holding down the **[VOICE]** button. The depth range is from 0 through 20.



TIP

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

TIP

depth 0: no effect
 depth 20: maximum reverb depth

Combining Two Voices (Dual mode)

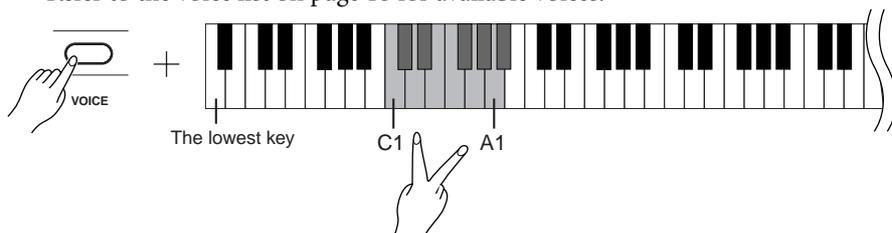
You can play two voices simultaneously across the entire range of the keyboard. In this way, you can simulate a melody duet or combine two similar voices to create a thicker sound.

Procedure

1. Engage Dual mode.

While holding down the [VOICE] button, press two of the C1–A1 keys at simultaneously (or press one key while holding another).

Refer to the voice list on page 18 for available voices.



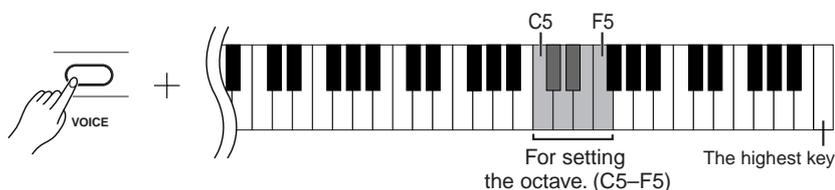
According to the voice priority shown in the voice list (page 18), the voice assigned to the lower keyboard will be designated as Voice 1 (the other voice will be designated as Voice 2).

You can make the following settings only in Dual mode:

Setting the Octave

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 mode, the combination may sound better if one of the voices is shifted up or down an octave.

While holding down the [VOICE] button, press one of the C5–F5 keys.



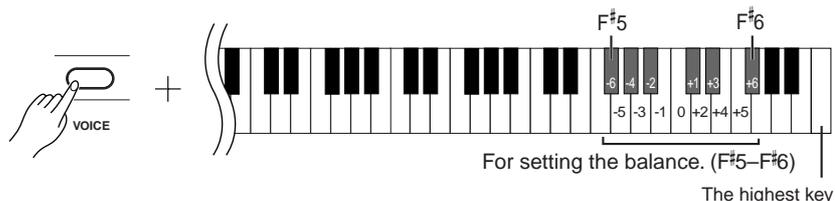
C5 key: -1 (Voice 1), C#5 key: 0 (Voice 1), D5 key: +1 (Voice 1),
D#5 key: -1 (Voice 2), E5 key: 0 (Voice 2), F5 key: +1 (Voice 2)

Setting the Balance

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

While holding down the [VOICE] button, press one of the F#5–F#6 keys.

A setting of "0" produces an equal balance between the two Dual mode voices. Settings below "0" increases the volume of Voice 2 in relation to Voice 1, and settings above "0" increases the volume of Voice 1 in relation to Voice 2.



2. Exit Dual mode and return to normal play mode.

While holding down the [VOICE] button, press one of the C1–A1 keys.

NOTE

You cannot assign the same voice to Voice 1 and Voice 2 simultaneously in Dual mode.

TIP

Reverb in Dual Mode

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.) Reverb depth setting (page 19) will be applied only to Voice 1.

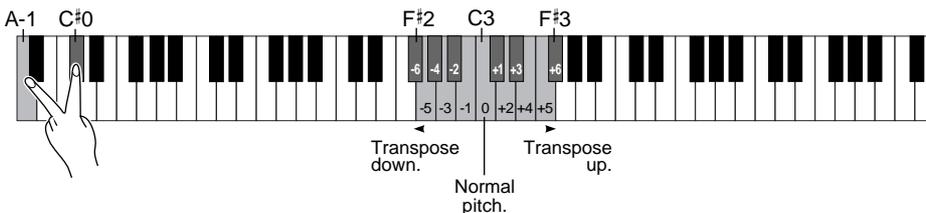
Transposition

The P-60's Transpose function makes it possible to shift the pitch of the entire keyboard up or down in semitone intervals up to a maximum of six semitones, and lets 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 P-60 will transpose it to the key of F.

Procedure

While holding down the A-1 and C#0 keys, press one of the F#2-F#3 keys to set the desired amount of transposition.



Pressing the C3 key produces normal keyboard pitch. Pressing the key to the left of C3 (=B2) transposes the pitch of the keyboard down a semitone, the next key to the left (=Bb2) transposes down a whole tone (two semitones), etc., down to the F#2 key, which transposes down six semitones. Upward transposition is accomplished in the same way using the keys to the right of C3, up to F#3, which transposes up six semitones.

Fine-tuning the Pitch

You can fine-tune the pitch of the entire instrument. This function is useful when you play the P-60 along with other instruments or CD music.

Procedure

To tune up (in about 0.2Hz steps):

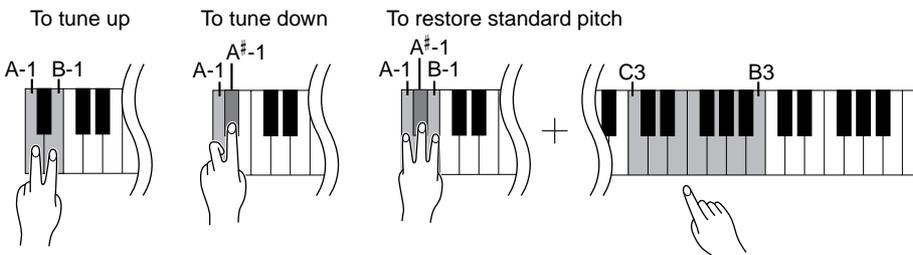
Hold down the A-1 and B-1 keys simultaneously and press any key between C3 and B3.

To tune down (in about 0.2Hz steps):

Hold down the A-1 and A#-1 keys simultaneously and press any key between C3 and B3.

To restore standard pitch:

Hold down the A-1, A#-1 and B-1 simultaneously and press any key between C3 and B3.



Setting range: 427.0-453.0 Hz

Standard pitch: 440.0 Hz

TERMINOLOGY

Transpose:

Changing the key signature of a song. On the P-60, transposing shifts the pitch of the entire keyboard.

TIP

Notes below and above the A-1 ... C7 range of the P-60 sound one octave higher and lower, respectively.

TERMINOLOGY

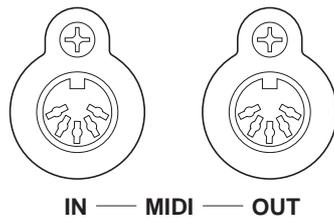
Hz (Hertz):

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

About MIDI

MIDI (Musical Instrument Digital Interface) is a standard format for data transmission and 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 P-60, or control the P-60 from a connected MIDI device or computer.

MIDI connectors



MIDI [IN]: Receives MIDI data.

MIDI [OUT]: Transmits MIDI data.

MIDI cables

Prepare dedicated MIDI cables.

TIP

MIDI performance data and commands are transferred in the form of numeric values.

TIP

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 P-60's MIDI Implementation Chart appears on page 35.

TIP

You can also obtain detailed information about MIDI from various music books and other publications.

Connecting a Personal Computer

You can enjoy computer music data on the P-60 by connecting a computer to the MIDI connector.

NOTE When the P-60 is used as a tone module, performance data with voices that are not found on the P-60 will not be played correctly.

There are two methods by which to connect the P-60 to a personal computer:

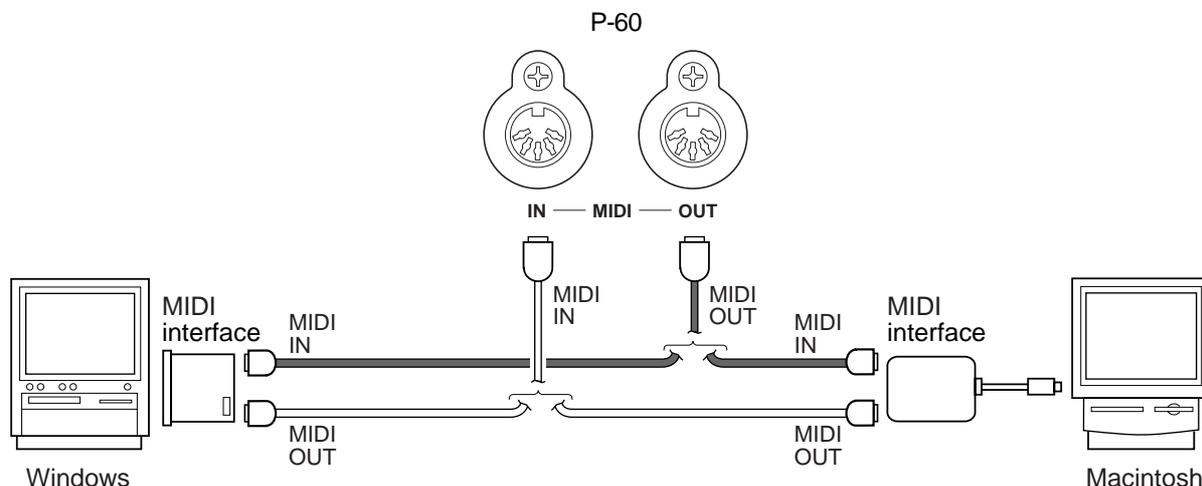
1. Use a MIDI interface and the P-60's MIDI connectors.
2. Use the USB port on the computer and a USB interface (model UX16, UX96, or UX256).

NOTE Before you connect the P-60 to a personal computer, first turn off the power to both the P-60 and the computer. After you make the connections, turn on the power to the computer first, then turn on the power to the P-60.

1. Using a MIDI interface and the P-60's MIDI connectors

Connection

Use a MIDI interface to connect a computer to the P-60 using special MIDI cables.

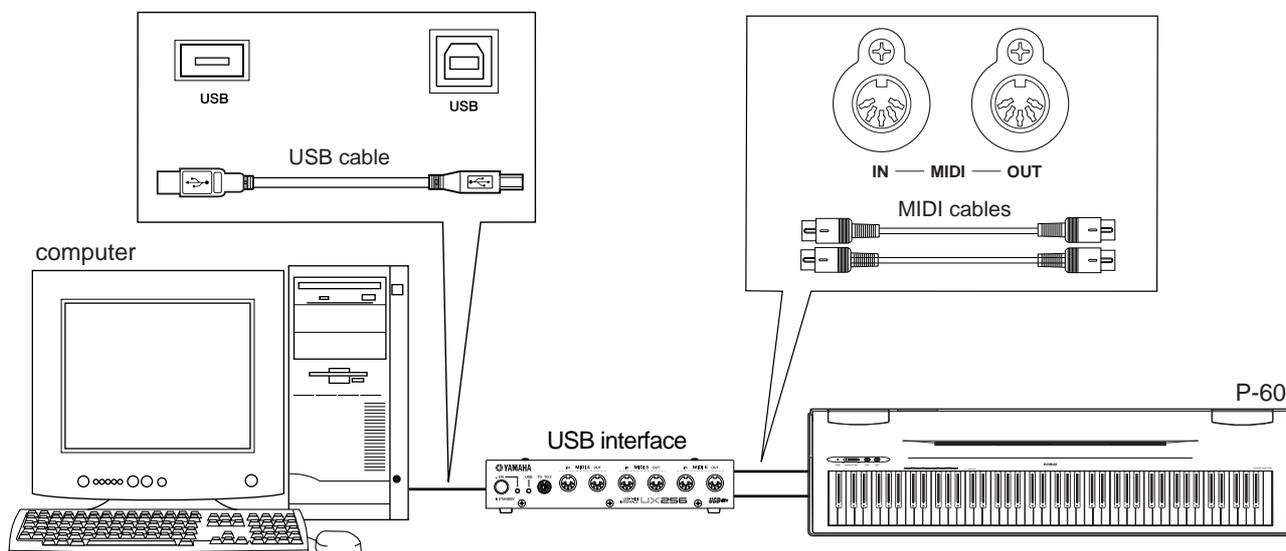


2. Connecting the computer's USB port to the P-60 via a USB interface, such as the UX16, UX96, or UX256

Connect the computer's USB port to the USB interface (such as the UX16, UX96, or UX256) using a USB cable. Install the driver (that came with the USB interface) on the computer, and connect the USB interface to the P-60 using a serial cable or MIDI cables.

For more information, refer to the instruction manual for the USB interface.

An example of connecting the USB interface to the P-60 using MIDI cables



MIDI Functions

You can make detailed adjustments to MIDI settings.

For more information about MIDI, see the “About MIDI” section (page 22).

MIDI Transmit/Receive Channel Selection

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

This parameter enables you to specify the channel on which the P-60 transmits or receives MIDI data.

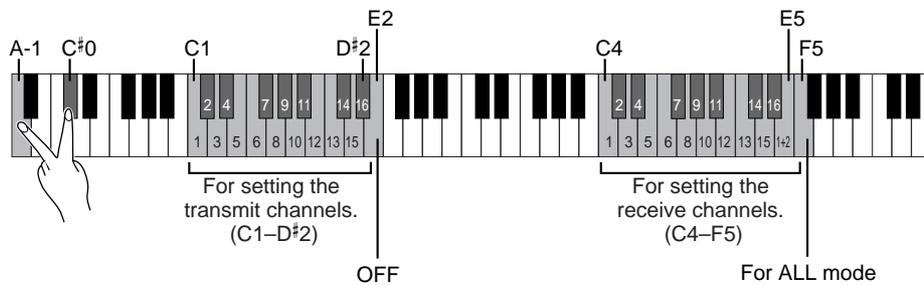
Procedure

Setting the transmit channel

While holding down the A-1 and C[#]0 keys, press one of the C1–E2 keys.

Setting the receive channel

While holding down the A-1 and C[#]0 keys, press one of the C4–F5 keys.



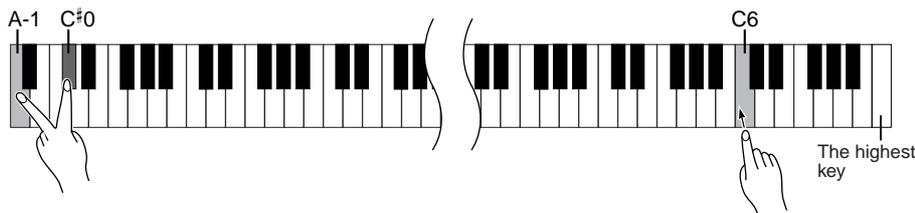
Local Control ON/OFF

“Local Control” refers to the fact that, normally, the P-60 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 P-60 keyboard does not play the internal voices, but the appropriate MIDI information is still transmitted via the MIDI OUT connector when notes are played on the keyboard. At the same time, the internal tone generator responds to MIDI information received via the MIDI IN connector.

Procedure

While holding down the A-1 and C[#]0 keys, press the C6 key.



NOTE

Demo and preset song data are not transmitted via MIDI.

NOTE

In Dual mode, Voice 1 data is transmitted on its specified channel and Voice 2 data is transmitted on the next greater channel number relative to the specified channel. In this mode, no data is transmitted if the transmit channel is set to “OFF.”

TIP

ALL:

A “Multi-timbre” Receive mode is available. It allows simultaneous reception of different parts on all 16 MIDI channels, enabling the P-60 to play multi-channel song data received from a music computer or sequencer.

1+2:

A “1+2” Receive mode is available. It allows simultaneous reception on channels 1 and 2 only, enabling the P-60 to play 1 and 2 channel song data received from a music computer or sequencer.

TIP

Program change and other like channel messages received will not affect the P-60’s panel settings or the notes you play on the keyboard.

NOTE

The P-60 does not receive MIDI data when it is in Demo or Preset Song mode.

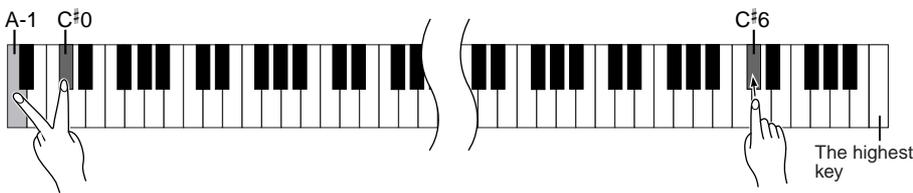
Program Change ON/OFF

Normally the P-60 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 P-60 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 P-60 without affecting the external MIDI device.

Procedure

While holding down the A-1 and C#0 keys, press the C#6 key.



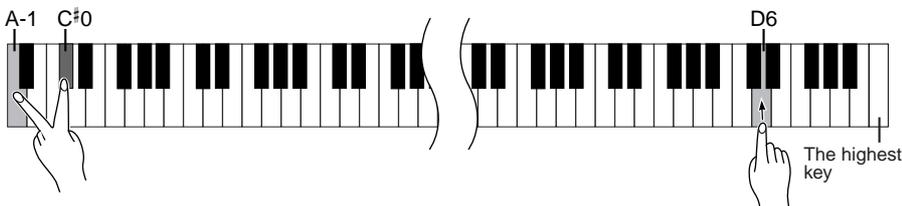
Control Change ON/OFF

Normally the P-60 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 P-60 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 P-60’s pedal and other controls can be operated without affecting an external MIDI device.

Procedure

While holding down the A-1 and C#0 keys, press the D6 key.



TIP

For information on program change numbers for each of the P-60’s voices, refer to page 34 in the MIDI Data Format section.

TIP

For information on control changes that can be used with the P-60, refer to the MIDI Data Format on page 31.

Troubleshooting

Problem	Possible Cause and Solution
The P-60 does not turn on.	The P-60 has not been plugged in properly. Insert the adaptor plug into an AC outlet and the adaptor socket into the unit securely. (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 from the speakers or headphones is audible.	The noise may be due to interference caused by the use of a mobile phone in close proximity to the P-60. Turn off the mobile phone, or move it further away from the P-60.
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] control.• Make sure a pair of headphones is not connected to the headphones jack.• Make sure that Local Control (page 24) is ON.
The foot switch has no effect, or the sound continuously sustains even when the foot switch is not pressed.	The pedal cord may not be properly connected. Make sure to securely insert the pedal cord into the [SUSTAIN PEDAL] jack (page 11).
The foot switch seems to produce the opposite effect. For example, pressing the foot switch cuts off the sound and releasing it sustains the sounds.	The polarity of the foot switch is reversed. Make sure that the foot switch plug is properly connected to the [SUSTAIN PEDAL] jack before turning on the power. Do not press the pedal while turning the power on.

Options

- Foot Pedal FC3
- Foot Switch FC4
- Keyboard Stand L-120 (for P-60; black and mahogany two-tone finish)
L-60W (for P-60S; silver and cherry two-tone finish)

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MEMO

ENGLISH

Appendix / Anhang / Annexe / Apéndice

This section introduces reference material.

In diesem Abschnitt finden Sie Referenzmaterial.

Cette section présente le matériel de référence.

En esta sección se incluye material de referencia.

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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

No.	Title	Composer
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.Dvorák
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	Golliwog's Cakewalk	C.A.Debussy

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 P-60.

Falls Sie bereits mit MIDI vertraut sind oder einen Computer zur Erzeugung von MIDI-Steuermeldungen für die Instrumente verwenden, können Sie sich zur Steuerung des P-60 nach den im folgenden Abschnitt aufgeführten Spezifikationen richten.

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

* If received value exceeds the supported range for the selected voice, the note is adjusted by the necessary number of octaves.

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) Main Volume (reception only)

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

(3) Expression (reception only)

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

(4) Damper

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

(5) Sostenuto (reception only)

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

(6) Soft Pedal (reception only)

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

(7) Effect1 Depth (Reverb Send Level)

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

Adjusts the reverb send level.

(8) Effect4 Depth (Variation Effect Send Level) (reception only)

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

Si vous êtes très familier avec l'interface MIDI ou si vous utilisez un ordinateur pour commander votre matériel de musique au moyen de messages MIDI générés par ordinateur, les données suivantes vous seront utiles et vous aideront à commander le P-60.

Si usted está ya familiarizado con MIDI, o si emplea una computadora para controlar sus aparatos musicales con mensajes MIDI generados por computadora, los datos proporcionados en esta sección le ayudarán a controlar la P-60.

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

Switches off all sound from the channel. Does not reset Note On and Hold On conditions established by Channel Messages.

(2) Reset All Controllers

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

Resets controllers as follows.

Controller	Value
Expression	127 (max)
Damper 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 damper 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 reception is turned OFF, control change data will not be transmitted or received except for Bank Select and Mode messages.
- 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.
- The Multi-timbre and Poly modes are always active. No change occurs when OMNI ON, OMNI OFF, MONO, or POLY mode messages are received.

4. PROGRAM CHANGE

Data format: [CnH] -> [ppH]

CnH = Program event (n = channel number)

ppH = Program change number

P.C.#=Program Change number

P-60	MSB	LSB	P.C.#
Grand Piano 1	0	122	0
Grand Piano 2	0	112	0
E.Piano 1	0	122	5
E.Piano 2	0	122	4
Harpsichord 1	0	122	6
Harpsichord 2	0	123	6
Vibraphone	0	122	11
Church Organ 1	0	123	19
Church Organ 2	0	122	19
Strings	0	122	48

- When program change reception is turned OFF, no program change data is transmitted or received. Also, Bank MSB/LSB is not transmitted or received.

5. SYSTEM REALTIME MESSAGES

[rrH]

FEH: Active sensing

Data	Transmission	Reception
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 Damper, Sostenuto, and Soft effects for all channels are turned off and an All Note Off occurs.

6. SYSTEM EXCLUSIVE MESSAGES (Universal System Exclusive)

(1) Universal Realtime Message

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

//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 = don't care

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

01H = Sub-ID #2=Master Volume

//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 = don't care

09H = Sub-ID #1=General MIDI Message

01H = Sub-ID #2=General MIDI On

F7H = End of Exclusive

When the 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.

7. SYSTEM EXCLUSIVE MESSAGES (XG Standard)

(1) XG Native Parameter Change

Data format: [F0H] -> [43H] -> [1nH] -> [4CH] -> [hhH] -> [mmH] -> [//H] -> [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
 //H = Address Low
 ddH = Data
 |
 F7H = End of Exclusive

Data size must match parameter size (2 or 4 bytes).

When the 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] -> [//H] -> [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 = ByteCount
 bbH = ByteCount
 hhH = Address High
 mmH = Address Mid
 //H = 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 P-60 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.

8. SYSTEM EXCLUSIVE MESSAGES (Electronic Piano MIDI Format)

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

F0H = Exclusive status
 43H = Yamaha ID
 73H = Electronic Piano ID
 01H = Product ID (electronic piano common)
 or
 7F = Extended Product ID
 2FH = Product ID
 nnH = Substatus
 nn Control
 02H Internal MIDI clock
 03H External MIDI clock
 06H Bulk Data (the bulk data follows 06H)
 F7H = End of Exclusive

* When nn=02H or 03H, Electronic common ID (01H) is recognized as well as 75H.

9. SYSTEM EXCLUSIVE MESSAGES (Special Control)

Data format: [F0H] -> [43H] -> [73H] -> [66H] -> [11H] -> [0nH] -> [ccH] -> [vvH] -> [F7H]

F0H = Exclusive status
 43H = Yamaha ID
 73H = Electronic Piano ID
 7FH = Extended Product ID
 2FH = Product ID
 11H = Special control
 0nH = Control MIDI change (n=channel number)
 cc = Control number
 vv = Value
 F7H = End of Exclusive

Control	Channel	ccH	vvH
Channel Detune ch:	00H-0FH	43H	(Sets the Detune value for each channel) 00H-7FH
Voice Reserve ch:	00H-0FH	45H	00H : Reserve off 7FH : on*

* When Volume, Expression is received for Reserve On, they will be effective from the next Key On. Reserve Off is normal.

10. SYSTEM EXCLUSIVE MESSAGES (Others)

Data format: [F0H] -> [43H] -> [1nH] -> [27H] -> [30H] -> [00H] -> [00H] -> [mmH] -> [//H] -> [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
 //H = Master Tune LSB
 ccH = don't care (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(*1)	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
05	1	—	—		
06	1	34 - 4C(*2)	TRANPOSE	-12 - +12[semitones]	40
7E		00	XG SYSTEM ON	00=XG system ON	
7F		00	RESET ALL PARAMETERS	00=ON (receive only)	
TOTAL SIZE 07					

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

*2: Values from 28H through 33H are interpreted as -12 through -1. Values from 4DH through 58H are interpreted as +1 through +12.

<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

EFFECT

	MSB	LSB
CHORUS	42H	10H
PHASER	48H	10H
TREMOLO	46H	10H
DELAY	05H	10H

Function		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1 1 - 16	1 1 - 16	
Mode	Default Messages Altered	3 X *****	1 X X	*1 Poly Mode only
Note Number	: True voice	9 - 120 *****	0 - 127 0 - 127	
Velocity	Note ON Note OFF	O 9nH, v=1 - 127 O 9nH, v=0	O 9nH, v=1 - 127 O 9nH, v=0 or 8nH	
After Touch	Key's Ch's	X X	X X	
Pitch Bender		X	X	
Control Change	0, 32 7 11 64 66 67 91 94	O O X O X X O X	O O O O O O O O	Bank Select Volume Expression Damper Sostenuto Soft pedal Reverb Depth Effect Depth
Program Change	: True #	O *****	O	
System Exclusive		O	O	
Common	: Song Position : Song Select : Tune	X X X	X X X	
System Real Time	: Clock : Commands	O O	O O	
Aux Messages	: All sounds off : Reset All Controllers : Local ON/OFF : All Notes OFF : Active Sense : Reset	O O X O O X	O (120, 126, 127) O (121) O (122) O (123 - 125) O X	
Notes : *1 = Recieve Mode is always multi timbre and Poly mode.				

Specifications / Technische Daten / Caractéristiques techniques / Especificaciones

Item	P-60
Keyboard	88 keys (A-1 - C7)
Sound Source	AWM Stereo Sampling
Polyphony	32 Notes Max.
Voice Selection	10
Effect	Reverb
Volume	Master Volume
Controls	Dual, Transpose
Pedal	Sustain
Demo Songs	10 voice Demo Songs, 50 preset Songs
Jacks/Connectors	PHONE/OUTPUT, DC IN 12V, MIDI (IN/OUT), SUSTAIN PEDAL
Main Amplifiers	8W × 2
Speakers	Oval (12cm × 6cm) × 2
Power Supply	Yamaha PA-5D power adaptor (or an equivalent recommended by Yamaha)
Dimensions (W × D × H) (with music rest)	1342mm × 354mm × 138mm [52-13/16" × 13-15/16" × 5-7/16"] (1342mm × 354mm × 329mm [52-13/16" × 13-15/16" × 12-15/16"])
Weight	16kg (36lbs., 4oz)
Accessories	Owner's Manual, Quick Operation Guide, Sustain Pedal, Music Rest, Yamaha PA-5D power adaptor (included or optional depending on locale)

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

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(class B)

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