

DIGITAL PIANO
P-85/85S

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

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.

M	od	e
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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.

(class B)

OBSERVERA!

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

ADVARSEL: Netspæendingen til dette apparat er IKKE afbrudt, sålæenge netledningen siddr i en stikkontakt, som er t endt — også selvom der or slukket på apparatets afbryder.

VAROITUS: Laitteen toisiopiiriin kytketty käyttökytkin 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 makings 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-Kemble Music (U.K.) Ltd. (2 wires)

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

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, PA-150 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. 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.

(3)-11 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

- 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.

Saving data

Saving and backing up your data

Some data will be saved to internal memory of the instrument. The data is
maintained even when the power is turned off.
 Saved data may be lost due to malfunction or incorrect operation. Save
important data to a computer (page 27).

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.

(3)-11 2/2

Introduction

Thank you for purchasing the Yamaha P-85/P-85S!

We recommend that you read this manual carefully so that you can fully take advantage of the advanced and convenient functions of the P-85/P-85S.

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

Main Features

■ Graded Hammer Standard 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. This Graded Hammer technology also enables the P-85 to provide authentic touch in a lightweight instrument.

■ AWM Stereo Sampling

The Yamaha P-85 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.

In particular, the Grand Piano 1 and 2 voices feature samples painstakingly recorded from a full concert grand piano, while the Electric Piano 1 and 2 voice features multiple samples for different velocities (Dynamic Sampling); in other words, it uses different samples depending on the strength of your playing.

About this Owner's Manual

The documentation for this instrument includes: Owner's Manual (this document), Quick Operation Guide, and Data List.

■ Owner's Manual

• Introduction (page 6):

Please read this section first.

• Reference (page 14):

This section explains how to make detailed settings for the instrument's various functions.

● Appendix (page 34):

This section features a variety of essential, detailed information on the instrument.

Quick Operation Guide

This explains the button/key assignments of the instrument and how to use them.

Data List

The Data List contains MIDI related information. The Data List is available for downloading from the Yamaha Manual Library.

Yamaha Manual Library

http://www.yamaha.co.jp/manual/

- * The illustrations as shown in this owner's manual are for instructional purposes only, and may appear somewhat different from those on your instrument.
- * 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.
- * For the sake of simplicity, both models P-85 and P-85S are hereafter referred to in this Owner's Manual as P-85.

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.

 The company names and product names in this Owner's Manual are the trademarks or registered trademarks of their respective companies.

Accessories

Owner's Manual

This manual contains complete instructions for operating your instrument.

- Quick Operation Guide
- Music Rest
- Pedal (FC5)
- AC Power Adaptor (PA-5D, PA-150 or an equivalent*)
 - * May not be included depending on your particular area. Please check with your Yamaha dealer.

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Table of Contents

Introduction	
Main Features	6
About this Owner's Manual	7
Accessories	7
Application Index	9
Panel Controls and Terminals	
Before Using	
Turning the Power On	
Setting the Volume	
Using the Pedal	12
Using Headphones	13
Music Rest	13
Reference	
Listening to the Demo Songs	14
Listening to the Piano Preset Songs	
Using the Metronome	
Selecting & Playing Voices	
Selecting Voices	
Combining Voices (Dual)	
Adding Variations to the Sound – Reverb	20
Transposition	21
Fine tuning of the Pitch	21
Touch Sensitivity	22
Recording Your Performance	23
Recording a performance	23
Play back the recorded performance	
Changing the Initial Settings (Data recorded at the beginning of a song)	25
Connecting MIDI Instruments	26
Connecting MIDI [IN] [OUT] terminals	26
MIDI Capabilities	
Connecting a Personal Computer	
Transferring Data between the Computer and the Instrument	
MIDI Functions	
MIDI Transmit/Receive Channel Selection	
Local Control ON/OFF	
Program Change ON/OFF	
Control Change ON/OFF	
Troubleshooting	
Optional Equipment	
Index	32
Appendix	
Preset Song List	34 25
NOCITICATIONS	2.5

Application Index

Use this index to find reference pages that may be helpful for your particular application and situation.

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				-		7

Listening to demo songs with different voices	Listening to the Demo Songs on page 14
Listening to piano preset songs	Listening to the Piano Preset Songs on page 15
Disting	
Playing	

_ , 3	
Using the sustain pedal	Using the Pedal on page 12
Changing the key of the P-85 to facilitate playing in difficult/unfamiliar key signatures	Transposition on page 21
Fine tuning the pitch of the entire instrument when you play the instrument along with ot	her instruments or CD music
	Fine tuning of the Pitch on page 21
Selecting a touch sensitivity type	
Using a built-in metronome	Using the Metronome on page 16

Changing voices

Viewing the list of voices	Selecting Voices on page 18
Simulating a concert hall	Adding Variations to the Sound – Reverb on page 20
Combining two voices	

Recording

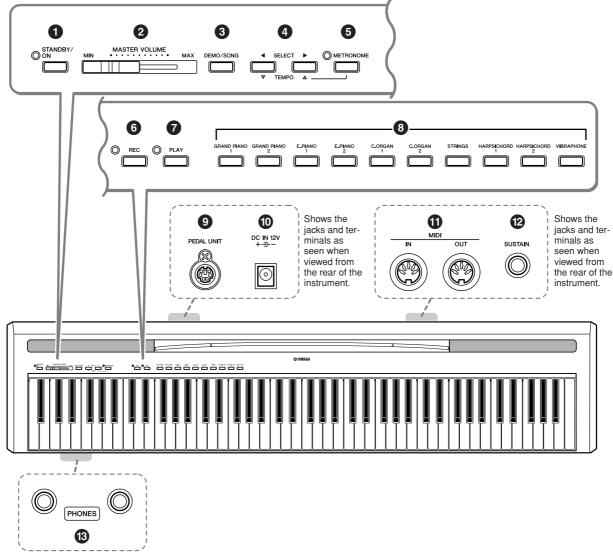
Recording your performance on page 23

Connecting the P-85 to other devices

What is MIDI?	About MIDI on page 26
Connecting a computer	Connecting a Personal Computer on page 27

P-85 Owner's Manual

Panel Controls and Terminals



- **1** [STANDBY/ON] switch page 11 For turning the power on or off.
- **2** [MASTER VOLUME] slider page 11 For adjusting the volume level of the entire sound.
- **3** [DEMO/SONG] buttonpages 14, 15 For playing the demo songs and the piano preset songs.
- **4** SELECT [**4**] [**▶**]/TEMPO [∇] [△] buttonspages 14, 15

While playing a voice demo or piano preset song, pressing these buttons lets you select the next or previous song. These buttons can also be used to change the song tempo.

- **(5)** [METRONOME] button...... page 16 For using the metronome.
- **7** [PLAY] button page 24 For playing back the recorded performance.

- **9** [PEDAL UNIT] jack.....page 12 For connecting an optional pedal unit (LP-5).
- **10** [DC IN 12V] jack.....page 11 For connecting the power adaptor.
- MIDI [IN] [OUT] terminalspage 26
 For connecting external MIDI devices, allowing the use of various MIDI functions.
- For connecting an included pedal (FC5), optional FC3 foot pedal or FC4 foot switch.
- [PHONES] jack......page 13
 For connecting a set of standard stereo headphones, allowing private practice.

Before Using

Turning the Power On

- 1. Connect the AC adaptor to the power supply jack.
- **2.** Plug the AC adaptor into an AC outlet.



Use ONLY a Yamaha PA-5D/PA-150 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-85.

\triangle CAUTION

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

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

The power indicator located to the left of the [STANDBY/ON] switch lights up.

Pressing the switch again turns the power off.

CAUTION

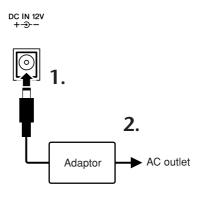
Even when the instrument is turned off, electricity is still flowing to the instrument at the minimum level. When you are not using the instrument for a long time, make sure you unplug the AC power adaptor from the wall AC outlet.

Setting the Volume

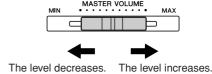
Initially set the [MASTER VOLUME] slider about halfway between the "MIN" and "MAX" settings. Then, when you start playing, re-adjust the [MASTER VOLUME] slider to the most comfortable listening level.



The volume level of the entire keyboard sound







Using the Pedal

[SUSTAIN] jack

This jack is for connecting the included pedal (FC5). The pedal functions in the same way as a damper pedal on an acoustic piano. Connect an optional pedal to this jack and press the pedal to sustain the sound. An optional FC3 foot pedal or FC4 foot switch can also be connected to this jack.

Do not press the footswitch while turning the power on. Doing this changes the recognized polarity of the footswitch, resulting in reversed footswitch operation.

If you connect an optional pedal of FC3, the half pedal function* can be used.

* half pedal function

While you playing the piano with SUSTAIN and if you need to delete the cloudy sound, release the foot from pedal to half position.

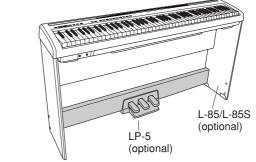


This jack is for connecting an optional LP-5 pedal unit. When connecting the pedal unit, make sure to also assemble the unit on an optional keyboard stand (L-85/L-85S).



Make sure that power is OFF when connecting or disconnecting the pedal.





SUSTAIN



The optional pedal unit has three foot pedals that produce a range of expressive effects similar to those produced by the pedals on an acoustic piano.

Damper (Right) Pedal

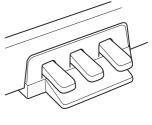
The damper pedal functions in the same way as a damper pedal on an acoustic piano. When the damper pedal is pressed, notes sustain longer. Releasing the pedal immediately stops (damps) any sustained notes. When you select the GRAND PIANO 1 voice on the P-85, pressing the damper pedal activates the instrument's special "Sustain Samples" to accurately recreate the unique resonance of an acoustic grand piano's soundboard and strings. A "half-pedal" effect lets you use the damper pedal to create partial sustain effects, depending on how far down you press the pedal.

Sostenuto (Center) Pedal

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

Soft (Left) 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 when it is pressed.





When you press the damper pedal here, the notes you play before you release the pedal have a longer sustain.



When you press the sostenuto pedal here while holding the note, the note will sustain as long as you hold the pedal.

Using Headphones

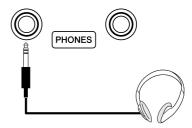
Connect a set of headphones to one of the [PHONES] jacks.

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.)

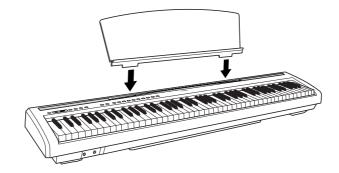


To protect your hearing, avoid listening to the P-85 at a high volume level for long periods of time.



Music Rest

The P-85 includes a music rest that can be attached to the instrument by inserting it into the slot at the top of the control panel.



Speakers are built into the instrument at the bottom.

Though you can enjoy playing the instrument even when putting it on a desk or table, we recommend that you use an optional keyboard stand for better sound.

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Listening to the Demo Songs

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

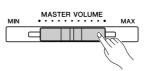
1. Press the [STANDBY/ON] switch to turn the power on.

When the power is turned ON, the power indicator located to the left of the [STANDBY/ON] switch lights up.



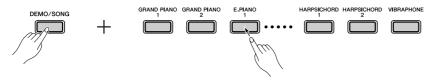
2. Adjust the volume.

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



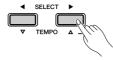
3. While holding down the [DEMO/SONG] button, press one of the voice buttons to listen to the demo songs.

The demo song will start. Demo songs provided for each voice will play back in sequence until you press the [DEMO/SONG] button.



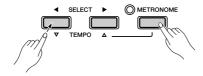
Changing a Demo Song

You can change to another demo song during playback by pressing the **SELECT** $[\blacktriangleleft]/[\blacktriangleright]$ button.



You can also change to another demo song during playback by pressing any one of the voice buttons.

While holding down the [METRONOME] button, use the TEMPO $[\nabla]/[\Delta]$ buttons to change the playback tempo.



Demo Song List

Voice Name	Title	Composer
HARPSICHORD 1	Gavotte	J.S. Bach
HARPSICHORD 2	Invention No. 1	J.S. Bach

- The demonstration pieces listed above are short rearranged excerpts of the original compositions.
- All other songs are original (© 2007 Yamaha Corporation).

4. Press the [DEMO/SONG] button to stop the voice demo.





Refer to the voice list on page 18 for more information on the characteristics of each preset voice.



The demo songs will not be transmitted via MIDI.



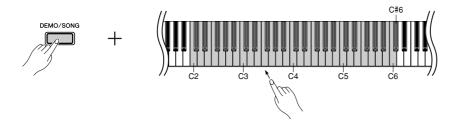
Simply by pressing the [DEMO/ SONG] button, you can start the GRAND PIANO 1 demo song and the other demo songs provided for each voice will play back in

Listening to the Piano Preset Songs

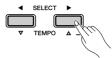
The P-85 provides performance data for piano songs as well as voice demo songs, for your listening pleasure.

1. While holding down the [DEMO/SONG] button, press one of the C2–C#6 keys to select a song to play back.

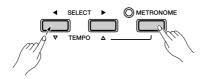
The number of each piano preset song is assigned to the C2–C#6 keys. Refer to the Quick Operation Guide for details on key assignments. The preset songs will play back consecutively in sequence until you press the **[DEMO/SONG]** button.



Press the **SELECT** [◀] **or** [▶] button to change to the next piano song.



While holding down the **[METRONOME]** button, use the **TEMPO** $[\nabla]/[\Delta]$ buttons to change the playback tempo.



2. Press the [DEMO/SONG] button to stop playback.

To continue playing other songs, see step 1 above.



TERMINOLOGY

Song:

On the P-85, performance data is called a "Song." This includes demonstration tunes and piano preset tunes.

Preset:

Preset Data supplied with the internal memory of the P-85 shipped from the factory.



The Preset Song List appears on page 34.



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



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



The piano preset songs are not transmitted via MIDI.

13

Using the Metronome

This instrument features a built-in metronome (a device that keeps an accurate tempo) that is convenient for practicing.

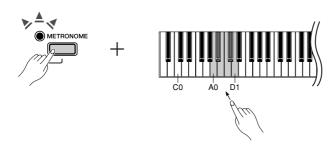
1. Press the [METRONOME] button to turn on the metronome.

Start the metronome.

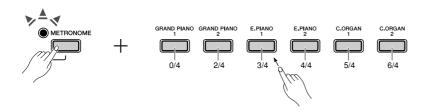


Determine the time signature

While holding down the **[METRONOME]** button, press one of the A0–D1 keys. The first beat is accented with a bell sound and the rest with clicks. Default set is 0/4 (A0). In this setting, clicks sound in all beats.



The time signature can also be changed by the following operation. While holding down the **[METRONOME]** button, press one of the voice buttons (GRAND PIANO 1–C.ORGAN 2).



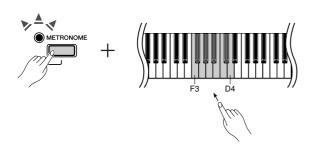
Adjust the Tempo

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

A number is assigned to each of the following keys.

While holding down the **[METRONOME]** button, press a sequence of F3–D4 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 F3 (0), D4 (9) and A#3 (5) keys in sequence.



Key Time signature	
A0	0/4
A#0	2/4
В0	3/4
C1	4/4
C#1	5/4
D1	6/4

TERMINOLOGY

Default setting:

The "Default setting" refers to the factory setting obtained when you first turn on the power to the P-85.

Increasing the tempo value in steps of one:

While holding down the [METRONOME] button, press the F#4 key.

Decreasing the tempo value in steps of one:

While holding down the [METRONOME] button, press the E4 key.

Increasing the tempo value in steps of ten:

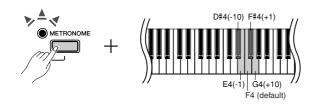
While holding down the [METRONOME] button, press the G4 key.

Decreasing the tempo value in steps of ten:

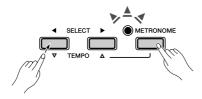
While holding down the [METRONOME] button, press the D#4 key.

Resetting the tempo to default:

While holding down the [METRONOME] button, press the F4 key.



The tempo value can also be changed by the following operation. While holding down the [METRONOME] button, use the TEMPO $[\nabla]/[\Delta]$ button to increase or decrease in single steps.



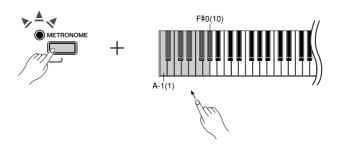
While holding down the **[METRONOME]** button, press both **TEMPO** $[\nabla]$ / $[\Delta]$ buttons simultaneously to restore the default tempo.

Adjusting the volume

You can change the volume of the metronome sound.

While holding down the **[METRONOME]** button, press one of the A-1–F#0 keys to determine the volume.

Pressing a higher key in the key range results in a higher volume, while pressing a lower key results in lower volume.



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





Metronome volume range:

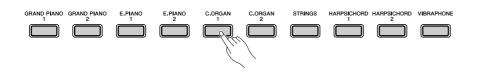
A-1 (1)-F#0 (10)

Default setting: D#0 (7)

Selecting & Playing Voices

Selecting Voices

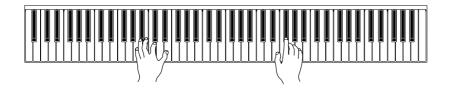
1. Press one of the voice buttons.



Voice Name	Description
Grand Piano 1	Recorded samples from a full concert grand piano. Perfect for classical compositions as well as any other style that requires acoustic piano.
Grand Piano 2	Clear piano with bright reverb. Good for popular music.
E.Piano 1	An electronic piano sound created by FM synthesis. Good for popular music.
E.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.
C.Organ 1	This is a typical pipe organ sound (8' + 4' + 2'). Good for sacred music from the Baroque period.
C.Organ 2	This is the organ's full coupler sound, often associated with Bach's "Toccata and Fugue."
Strings	Spacious and large-scale string ensemble. Try combining this voice with piano in DUAL.
Harpsichord 1	The definitive instrument for baroque music. Since the strings of a harpsichord are plucked, there is no touch response.
Harpsichord 2	Mixes the same voice an octave higher for a more brilliant tone.
Vibraphone	The sound of a vibraphone played with relatively soft mallets.

2. Adjust the volume.

Re-adjust the **[MASTER VOLUME]** slider for the most comfortable listening level during your performance.





To familiarize yourself with the characteristics of the voices, listen to the demo songs for each voice (page 14).

TERMINOLOGY

Voice:

On the P-85, the term "voice" means "instrument sound."

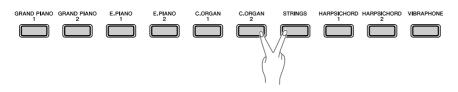


When you select a voice, an appropriate reverb type will be selected automatically (page 20).

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 simultaneously to engage



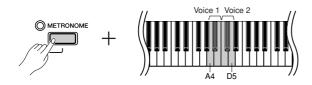
According to the voice button position on the panel, the voice on the left will be designated as Voice 1, and the other will be designated as Voice 2.

You can make the following settings for Voices 1 and 2 in Dual:

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

While holding down the [METRONOME] button, press one of the A4–D5 keys.



	A4	-1		C5	-1
Voice 1	A#4	0	Voice 2	C#5	0
	B4	+1		D5	+1

Setting the Balance

You can adjust the volume balance between two voices. For example, you can set one voice as the main voice with a louder setting, and make the other voice softer. While holding down the [METRONOME] button, press one of the F#5–F#6 keys. A setting of "0" produces an equal balance between the two Dual voices. Settings below "0" increase the volume of Voice 2 in relation to Voice 1, and settings above "0" increase the volume of Voice 1 in relation to Voice 2.



2. Press one of the voice buttons to exit Dual and return to the normal single-voice play.



Reverb in Dual

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

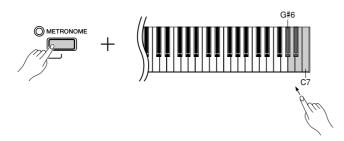
Adding Variations to the Sound – Reverb

This control enables you to select four different types of reverb effect that add extra depth and expression to the sound to create a realistic acoustic ambience.

Key	Reverb Type	Description
G#6	Room	This setting adds a continuous reverb effect to the sound, similar to the acoustic reverberation you would hear in a room.
A6	Hall1	For a "bigger" reverb sound, use the HALL 1 setting. This effect simulates the natural reverberation of a small-size concert hall.
A#6	Hall2	For a truly spacious reverb sound, use the HALL 2 setting. This effect simulates the natural reverberation of a large concert hall.
B6	Stage	Simulates the reverb of a stage environment.
C7	Off	No effect is applied.

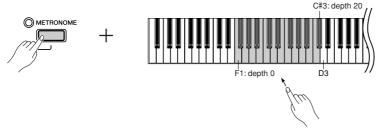
Selecting a Reverb Type

While holding down the **[METRONOME]** button, press one of the G#6–C7 keys to select a reverb type.



Adjusting Reverb Depth

While holding down the [METRONOME] button, press one of the F1–C#3 keys to adjust the reverb depth for the selected voice.



The depth value increases as you press higher keys.

While holding down the **[METRONOME]** button, press the D3 key to set the reverb to the depth most suitable for the selected voice.



Reverb depth range:

0 (no effect)– 20 (maximum depth)



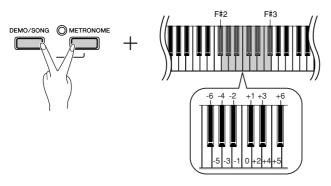
The default reverb type (including OFF) and depth settings are different for each voice.

Transposition

The 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 P-85 will transpose it to the key of F.

Setting the amount of transposition

While holding down the **[DEMO/SONG]** and **[METRONOME]** buttons, press one of the F#2–F#3 keys to set the desired amount of transposition.



To transpose the pitch down (in semitone steps)

While holding down the [DEMO/SONG] and [METRONOME] buttons, press any key between F#2 and B2.

To transpose the pitch up (in semitone steps)

While holding down the [DEMO/SONG] and [METRONOME] buttons, press any key between C#3 and F#3.

To restore the normal pitch

While holding down the [DEMO/SONG] and [METRONOME] buttons, press the C3 key.

TERMINOLOGY

Transpose:

Changing the key signature. On the P-85, transposing shifts the pitch of the entire keyboard.



Transposition range:

F#2 (-6 semitones)– C3 (normal pitch)– F#3 (+6 semitones)

Fine tuning of the Pitch

You can fine tune the pitch of the entire instrument. This function is useful when you play the P-85 along with other instruments or CD music.

Setting the Pitch

To raise the pitch in about 1cent steps (100 cents = 1 semitone):

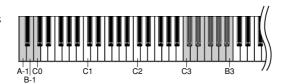
Hold down the A-1, B-1 and C0 keys simultaneously and press any key between C3 and B3.

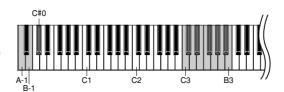
To lower the pitch in about 1cent steps (100 cents = 1 semitone):

Hold down the A-1, B-1 and C#0 keys simultaneously and press any key between C3 and B3.

To restore standard pitch:

Hold down the A-1, B-1, C0 and C#0 keys simultaneously and press any key between C3 and B3.









Setting range: -65-+65 cents

The default setting (0 cent) is A3=440Hz. In the 440Hz region, 1Hz=approximately 4 cents. Pressing the key 8 times for example, will set A3 at approximately 442Hz.

TERMINOLOGY

Default setting:

The "Default setting" refers to the factory setting obtained when you first turn on the power to the P-85.

9

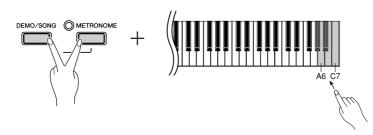
Touch Sensitivity

You can adjust the volume level that changes depending on how fast or strong you hit the keys. The following four settings are available.

Key	Touch Sensitivity	Description
A6	FIXED	The volume level does not change at all regardless of whether you play the keyboard soft or hard.
A#6	SOFT	The volume level does not change much when you play the keyboard soft or hard.
B6	MEDIUM	This is the standard piano touch response (default setting).
C7	HARD	The volume level changes very widely from pianissimo to fortissimo to facilitate dynamic and dramatic expression. You have to hit the keys hard to produce a loud sound.

Setting the Touch Sensitivity Type

While holding down the **[DEMO/SONG]** button and the **[METRONOME]** button, press one of the A6–C7 keys to select the desired touch sensitivity.





The touch sensitivity settings may have little or no effect with C.ORGAN 1, 2 and Harpsichord 1, 2 voices that are not normally responsive to keyboard dynamics.

Default setting: B6

Recording Your Performance

The ability to record and play back what you've played on the P-85 keyboard can be an effective practice aid.

The P-85's Song Recorder allows the recording of one User song.

TERMINOLOGY

Recording vs. Saving:

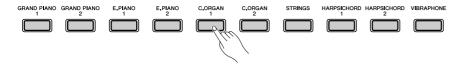
The format of performance data recorded on a cassette tape differs from that of data recorded on the P-85. A cassette tape records audio signals. The P-85 "saves" information regarding note timing, voices, and a tempo value, but not audio signals. When you play back recorded songs, the P-85 produces sound based on the saved information. Therefore, recording on the P-85 may be more accurately called "saving information." However, this book often uses the word "recording" because it seems to make more sense.

Recording a performance

1. Make all the initial settings.

Before you begin to record, select the voice you want to record (or voices if you will be using Dual mode). Make any other desired settings (reverb, tempo, etc.) as well. You might also want to set the volume.

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



NOTE

NOTE

engaged.

Recording capacity

P-85 can record up to 65KB (approximately 11,000 notes).

When the instrument is playing back a demo song or preset

song, Record mode cannot be

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

The [REC] lamp will flash.



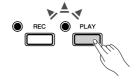
You can turn on the metronome in this step, and adjust the tempo by using the **TEMPO** $[\nabla]/[\Delta]$ buttons. (Range: 32–280)

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] button.

The [REC] lamp will light, and the [PLAY] lamp flashes at the current tempo while 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.



For more recording information, see page 24.

7

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

When recording is stopped, the [REC] lamp and the [PLAY] lamp flash to indicate that the recorded data is being saved to the instrument automatically. After the data is saved, the [REC] lamp will turn off and the [PLAY] lamp will light.

A CAUTION

Do not turn off the power of the instrument when the lamps are flashing. Doing so may prevent saving of the song data which you have recorded.

The user song recorder records the following data:

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

- · Notes played
- Voice selection
- Pedal (Sustain/Soft/Sostenuto)
- Reverb depth
- Dual mode voices
- · Dual balance
- Dual octave shift
- Tempo
- Reverb type (including OFF)



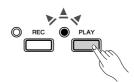
Both the [REC] lamp and the [PLAY] lamp will begin to flash when the recorder memory is almost full. If the memory becomes full, recording will stop automatically. (All recorded data up to that point will be retained.)



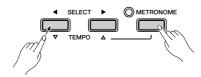
You can save the recorded data to a computer. You can also load the recorded data back from a computer and play it back on this instrument (page 27).

Play back the recorded performance

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



While holding down the **[METRONOME]** button, use the **TEMPO** $[\nabla]/[\Delta]$ buttons to change the playback tempo.





Pressing the [REC] button to start recording, then pressing the [PLAY] button to stop recording will erase all previously- recorded data.



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

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.

- Voice selection
- Dual mode voices
- Sustain/soft pedal depth
- Tempo

1. Press the [REC] button to engage Record Ready

The [REC] lamp will flash.



2. Change the settings via the panel controls.

For example, if you wish to change the recorded voice from [E.PIANO 1] to [E.PIANO 2], press the [E.PIANO 2] button. When you wish to change the damper/soft pedal depth, press and hold the pedal.

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

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

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

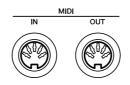
Connecting MIDI Instruments

The P-85 features MIDI IN/OUT terminals, allowing you to connect the P-85 to other instruments and devices—including computers—and take advantage of the various performance and recording capabilities in MIDI applications.

Connecting MIDI [IN] [OUT] terminals

MIDI [IN] [OUT] terminals

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



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 P-85, or control the P-85 from a connected MIDI device or computer.



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 MIDI Implementation Chart is included in the Data List, which can be found at the Yamaha website (See page 7).

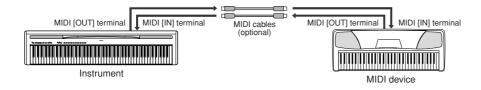
MIDI Capabilities

MIDI functions enable you to transfer performance data between MIDI devices.

A CAUTION

Before connecting the instrument to other electronic components, turn off the power of all the components.

 Transferring performance data to and from another MIDI device

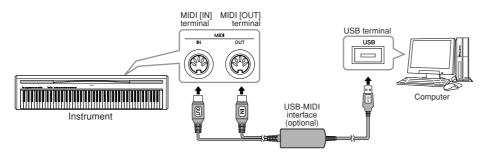


NOTE

You cannot transmit the voice demo songs and the piano preset songs from the P-85 to another MIDI device.

For MIDI connections, use a standard (optional) MIDI cable, available at most musical instrument stores.

Transferring MIDI data to and from a computer



Connecting a Personal Computer

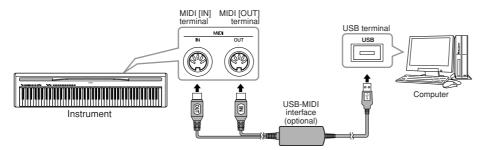
By connecting a computer to the MIDI terminals, you can transfer data between the P-85 and the computer via MIDI.

AL CAUTION

When connecting the P-85 to a computer, first turn off the power to both the P-85 and the computer before connecting any cables. After making connections, turn on the power to the computer first, then to the P-85.

Connecting the USB port on the computer to the P-85 via an optional USB-MIDI interface (such as the Yamaha UX16)

Use a USB-MIDI interface device to connect the USB port on your computer to the P-85's MIDI terminals. You must install the USB-MIDI interface (such as the UX16) driver. For more information, refer to the user's manual that came with the USB-MIDI interface device.





When the P-85 is used as a tone module, performance data with voices that are not found on the P-85 will not be played correctly.



You must install a software application on the computer to be able to transfer MIDI data between the P-85 and a computer.

Transferring Data between the Computer and the Instrument

You can save backup data of this instrument, such as recorded songs, etc., to a computer, as well as load the saved data back to the instrument from the computer.

To transfer the backup data, you must first download Musicsoft Downloader (free software) from Yamaha website at the following URL, and install it on your computer.

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

Please visit the URL above to get the information on the computer system requirement for Musicsoft Downloader.

For more information on transferring data, please refer to "Transferring Data Between the Computer and Instrument (for unprotected data)" in the Help file that came with Musicsoft Downloader.

riangle 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.



Do not rename the backup file on the computer. If you do so, it will not be recognized when transferred to the instrument.

Initializing the settings

Turn off the power to the instrument. Then turn the power on while holding the C7 key (right-most key on the keyboard). When you initialize the settings, all data will be initialized and reset to the factory default settings.

CAUTION

Do not turn off the power to this instrument while it is initializing the data in its internal memory (that is, while the [REC] and [PLAY] button indicators are flashing).



Backup Data

The following data will be stored in flash memory on this instrument. This data will be kept after you turn off the power to the instrument.

- Metronome volume
- Metronome tempo
- Touch sensitivity
- Tuning
- Recorded performance data



The backup data file is automatically named "NPP88.BUP".



Keep in mind that the [REC] and [PLAY] indicators are lit when Musicsoft Downloader is being



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



If this instrument somehow becomes disabled or malfunctions, turn off the power to the instrument, then perform the initialization procedure.

MIDI Functions

You can make detailed adjustments to MIDI settings.

MIDI Transmit/Receive Channel Selection

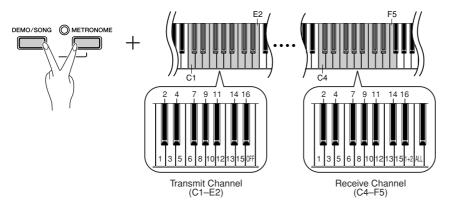
In any MIDI control setup, the MIDI channels of the transmitting and receiving devices must be matched for proper data transfer. This parameter enables you to specify the channel on which the P-85 transmits or receives MIDI data.

Setting the Transmit Channel

While holding down the [DEMO/SONG] and [METRONOME] buttons, press one of the C1–E2 keys.

Setting the Receive Channel

While holding down the [DEMO/SONG] and [METRONOME] buttons, press one of the C4–F5 keys.





In Dual, 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 case, no data is transmitted if the transmit channel is set to "OFF"

ALL:

"Multi-timbre" Receive. This allows simultaneous reception of different parts on all 16 MIDI channels, enabling the P-85 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 P-85 to play 1 and 2 channel song data received from a music computer or sequencer.

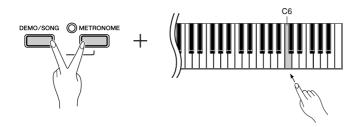
Program change and other like channel messages received will not affect the P-85's panel settings or the notes you play on the keyboard.

Data for the demo song and piano preset songs cannot be transmitted via MIDI.

Local Control ON/OFF

"Local Control" refers to the fact that, normally, the P-85 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-85 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.

While holding down the [DEMO/SONG] and [METRONOME] buttons, press the C6 key. Pressing the C6 key repeatedly toggles between Local Control On and Off.

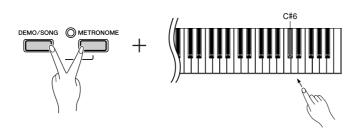


Default setting: ON

Program Change ON/OFF

Normally the P-85 will respond to MIDI program change numbers received from an external keyboard or other MIDI device, causing the same numbered voice to be selected on the corresponding channel (the keyboard voice does not change). The P-85 will normally also send a MIDI program change number whenever one of its voices is selected, causing the same 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-85 without affecting the external MIDI device.

While holding down the [DEMO/SONG] and [METRONOME] buttons, press the C#6 key. Pressing the C#6 key repeatedly toggles between Program Change On and Off.



Default setting: ON

PROGRAM CHANGE

Data format: [CnH] -> [ppH]

CnH = Program event (n = channel number)

ppH = Program change number

Voice Name	MSB	LSB	P.C.#
Grand Piano 1	0	122	1
Grand Piano 2	0	112	1
E.Piano 1	0	122	6
E.Piano 2	0	122	5
C.Organ 1	0	123	20
C.Organ 2	0	122	20
Strings	0	122	49
Harpsichord 1	0	122	7
Harpsichord 2	0	123	7
Vibraphone	0	122	12

P.C.# = Program Change number

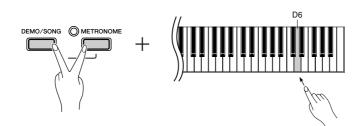
- When program change reception is turned OFF, no program change data is transmitted or received.
- When you specify a program change as a number in the range of 0–127, specify a number that is one less than the program change number listed above. For example, to specify program change number 1, you would specify a value of 0.

Control Change ON/OFF

Normally the P-85 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-85 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-85's pedal and other controls can be operated without affecting an external MIDI device.

While holding down the [DEMO/SONG] and [METRONOME] buttons, press the D6 key. Pressing the D6 key repeatedly toggles between Control Change On and Off.





For information on control changes that can be used with the P-85, refer to the MIDI Data Format section in the Data List, which can be found at the Yamaha website (See page 7).

Default setting: ON

Troubleshooting

Problem	Possible Cause and Solution
The P-85 does not turn on.	The P-85 has not been plugged in properly. Securely insert the female plug into the jack on the P-85, and the male plug into a proper AC outlet (page 11).
Noise is heard from the speakers or head-phones.	The noise may be due to interference caused by the use of a mobile phone in close proximity to the P-85. Turn off the mobile phone, or use it further away from the P-85.
The grandly along is law or no count is	The Master Volume is set too low; set it to an appropriate level using the [MASTER VOLUME] control (page 11).
The overall volume is low, or no sound is heard.	Make sure a pair of headphones is not connected to the headphones jack (page 13).
	Make sure that Local Control (page 28) is ON.
The pedal has no effect.	The pedal cable/plug may not be properly connected. Make sure to securely insert the pedal plug into the SUSTAIN/PEDAL UNIT jack (page 12).

Optional Equipment

Foot Pedal (FC3/FC4) Keyboard Stand (L-85/L-85S) Pedal Unit (LP-5) USB-MIDI interface (UX16) Headphones (HPE-150/HPE-30)

Index

В
Backup Data27
С
Combining Voices (Dual)19
Connecting a Personal Computer27
Control Change ON/OFF30
D
DC IN 12V11
Default setting21
Demo Songs14
[DEMO/SONG] button14, 15
Dual
L
Local Control ON/OFF28
М
[MASTER VOLUME] slider11
Metronome16
MIDI [IN] [OUT]26
MIDI terminals
MIDI Transmit/Receive Channel Selection28
Music Rest13
Musicsoft Downloader27
0
Optional Equipment31
Р
Panel Controls and Terminals10
[PEDAL UNIT] jack12
[PHONES] jack
Piano Preset Songs
[PLAY] button24
PRECAUTIONS4, 5
Preset songs → Piano Preset Songs15, 34
Program Change ON/OFF 29

[ppoli	
[REC] button	
Recording	
Reverb	20
S	
SELECT [◀] [▶] buttons	14, 15
Song	15
Specifications	35
[STANDBY/ON] switch	11
Start/stop playback	15
Demo songs	
Piano Preset Songs	15
[SUSTAIN] jack	
Т	
$\frac{T}{\text{TEMPO}\left[\nabla\right]\left[\Delta\right]\text{ buttons}}$	14, 15
TEMPO $[\nabla]$ $[\Delta]$ buttons	22
TEMPO $[\nabla]$ $[\Delta]$ buttons	21
TEMPO $[\nabla]$ $[\Delta]$ buttons Touch Sensitivity Transposition	21
TEMPO [∇] [Δ] buttons Touch Sensitivity Transposition Troubleshooting Tuning →Fine tuning of the Pitc	21 31 h21
TEMPO [∇] [Δ] buttons Touch Sensitivity Transposition Troubleshooting Tuning →Fine tuning of the Pitc	21 31 h21

Memo

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	Golliwog's Cakewalk	C.A.Debussy

Specifications / Technische Daten / Caractéristiques techniques / Especificaciones

Keyboard	88 keys (A-1-C7)
Sound Source	AWM Stereo Sampling
Polyphony (Max.)	64
Voice Selection	10
Effect	Reverb
Volume	Master Volume
Controls	Dual, Metronome, Transpose, Tuning, Touch (Hard/Medium/Soft/Fixed)
Pedal	SUSTAIN PEDAL*
Demo Songs	10 Voice Demo Songs, 50 Piano Preset Songs
Recording/Playback	one song: 65 KB (approx. 11,000 notes)
MIDI	Local On/Off, Transmit/Recieve channel, Program change On/Off, Control change On/Off
Jacks/Connectors	MIDI (IN/OUT), PHONES, DC IN 12V, SUSTAIN, PEDAL UNIT
Main Amplifiers	6 W + 6 W
Speakers	(12 cm × 6 cm) × 2
Dimensions (W \times D \times H)	1,326mm × 295mm × 151.5mm [52-3/16" × 11-5/8" × 5-15/16"]
Weight	11.6 kg (25 lbs., 9 oz.)
Power Supply	Adaptor: PA-5D, PA-150, or an equivalent recommended by Yamaha
Power Consumption	20 W
Accessories	Owner's Manual, Quick Operation Guide, AC Power Adaptor, Pedal (FC5), Music Rest

- · When an optional FC3 Foot Pedal or an optional LP-5 Pedal Unit is connected, the half pedal effect can be used.
- Wenn ein optionales Fußpedal FC3 oder eine optionale Pedaleinheit LP-5 angeschlossen wird, kann der Halbpedal-Effekt verwendet werden.
- Lorsqu'une pédale au pied FC3 ou une unité de pédales LP-5 fournies en option sont connectées, il est possible d'utiliser l'effet de pédale à mi-course.
- · Si se conecta un pedal FC3 o una unidad de pedal LP-5 opcionales, se puede utilizar el efecto de medio pedal.
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