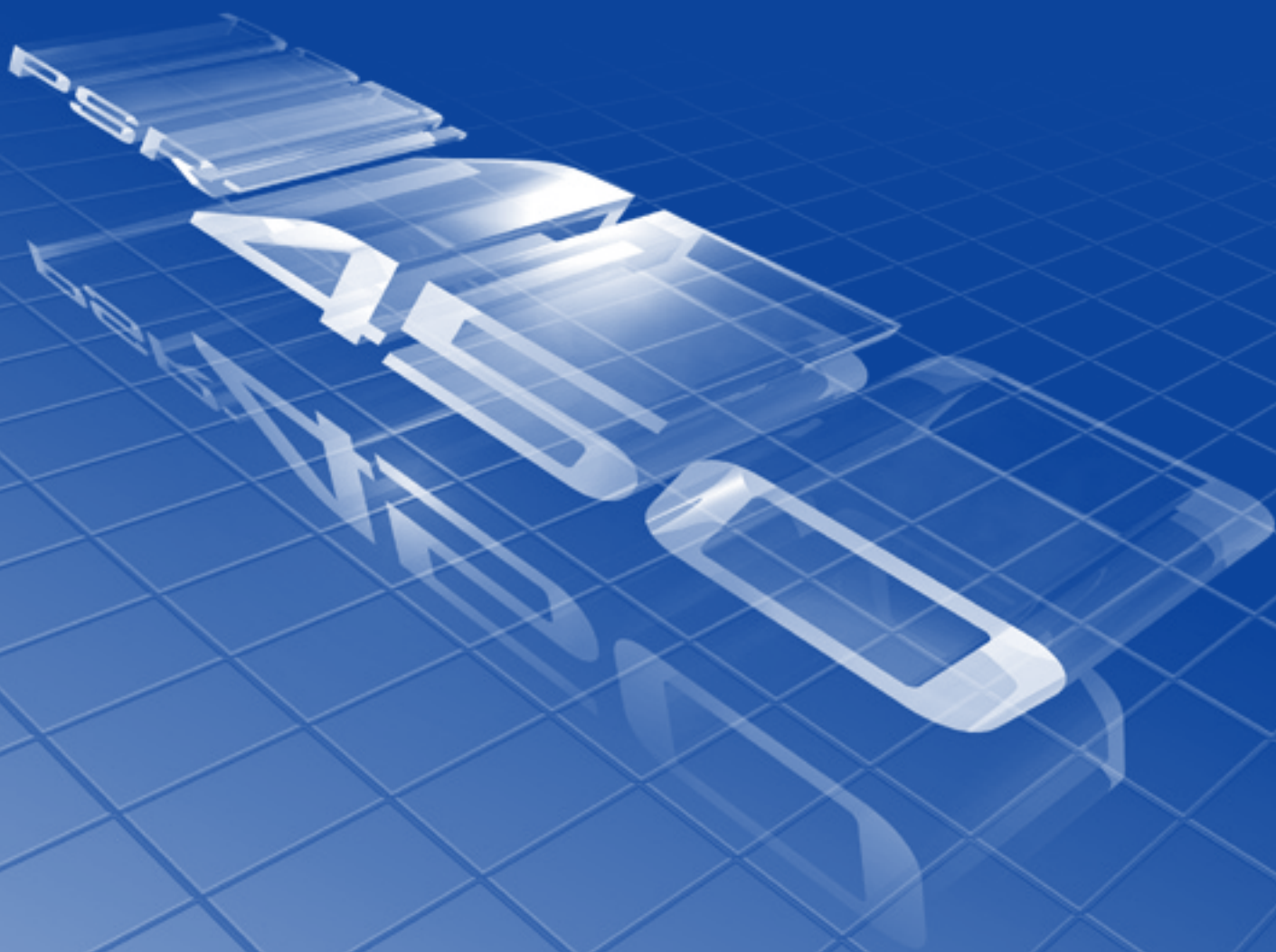




PORTATONE

PSR-450



Owner's Manual



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.

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.

NOTICE:

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

ENVIRONMENTAL ISSUES:

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

Battery Notice:

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

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

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

Warning:

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

Disposal Notice:

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

NAME PLATE LOCATION:

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

Model

Serial No.

Purchase Date

PLEASE KEEP THIS MANUAL

92-BP (bottom)

FCC INFORMATION (U.S.A.)

1. IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!

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

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

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

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

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

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

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

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

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

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

(class B)

OBSERVERA!

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

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

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

(standby)

Entsorgung leerer Batterien (nur innerhalb Deutschlands)

Leisten Sie einen Beitrag zum Umweltschutz. Verbrauchte Batterien oder Akkumulatoren dürfen nicht in den Hausmüll. Sie können bei einer Sammelstelle für Altbatterien bzw. Sondermüll abgegeben werden. Informieren Sie sich bei Ihrer Kommune.

(battery)

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-5C 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.

Battery

- Always make sure all batteries are inserted in conformity with the +/- polarity markings. Failure to do so might result in overheating, fire, or battery fluid leakage.
- Always replace all batteries at the same time. Do not use new batteries together with old ones. Also, do not mix battery types, such as alkaline batteries with manganese batteries, or batteries from different makers, or different types of batteries from the same maker, since this can cause overheating, fire, or battery fluid leakage.
- Do not dispose of batteries in fire.
- Do not attempt to recharge batteries that are not intended to be charged.

- When the batteries run out, or if the instrument is not to be used for a long time, remove the batteries from the instrument to prevent possible leakage of the battery fluid.
- Keep batteries away from children.
- If the batteries do leak, avoid contact with the leaked fluid. If the battery fluid should come in contact with your eyes, mouth, or skin, wash immediately with water and consult a doctor. Battery fluid is corrosive and may possibly cause loss of sight or chemical burns.

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.

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 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.

Saving data

Saving and backing up your data

For instruments with RAM that retains data by using dry cell batteries or a power adaptor

- As long as dry cell batteries are installed or the power adaptor is connected, the instrument retains the internal data when the power is turned off. If you remove the batteries and disconnect the adaptor, the data will be lost. Save important data to a floppy disk/external media such as the Yamaha MDF3 MIDI data filer. Keep the power adaptor connected while you replace the batteries to prevent loss of data.

Backing up the floppy disk

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

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.

When using a power adaptor, 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.

Make sure to discard used batteries according to local regulations.

The illustrations and LCD screens as shown in this owner's manual are for instructional purposes only, and may be different from the ones on your instrument.

● COPYRIGHT NOTICE

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, styles files, MIDI files, WAVE data 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.**

Handling the floppy disk drive (FDD) and floppy disks

This instrument features a built-in floppy disk drive (on the front panel). It lets you save original data you've created on the instrument to floppy disk, and allows you to load data from floppy disk to the instrument.

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

■ Floppy disk compatibility

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

■ Formatting a floppy disk

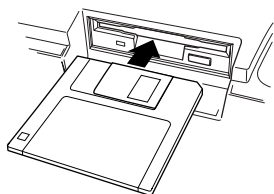
- If you find that you are unable to use new, blank disks or old disks that have been used with other devices, you may need to format them. For details on how to format a disk, see page 59. Keep in mind that all data on the disk will be lost after formatting. Make sure to check beforehand whether or not the disk contains important data.



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

■ Inserting/removing Floppy Disks

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



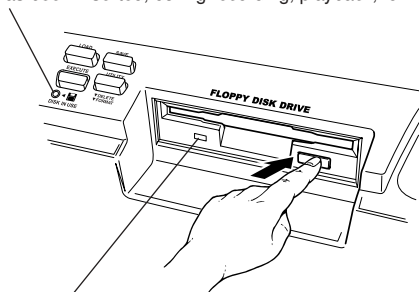
- *When the power is turned on, the drive lamp (at the bottom left of the drive) lights to indicate the drive can be used.*
- *Never insert anything but floppy disks into the disk drive. Other objects may cause damage to the disk drive or floppy disks.*

- Removing a floppy disk:
 - After checking that the instrument is not accessing* the floppy disk, firmly press the eject button at the lower right of the disk slot all the way in.

When the floppy disk is ejected, pull it out of the drive. If the floppy disk cannot be removed because it is stuck, do not try to force it, but instead try pressing the eject button again, or try re-inserting the disk and attempt to eject it again.

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

This lamp lights during disk read/write operations, such as when a disk has been inserted, during recording, playback, formatting, etc.



This lamp is always on when the power is on, regardless of Disk operation.

⚠ CAUTION

- *Do not remove the floppy disk or turn off the instrument itself while the disk is being accessed. Doing so may result not only in loss of data on the disk but also damage to the floppy disk drive. Be sure to remove the floppy disk from the disk drive before turning off the power. A floppy disk left in the drive for extended periods can easily pick up dust and dirt that can cause data-read and -write errors.*

■ Cleaning the disk drive read/write head

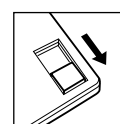
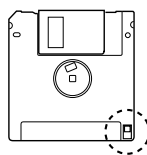
- Clean the read/write head regularly. This instrument employs a precision magnetic read/write head which, after an extended period of use, will pick up a layer of magnetic particles from the disks used that will eventually cause read and write errors.

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

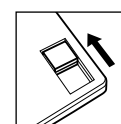
■ About floppy disks

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

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



Write protect tab
ON (locked or
write protected)



Write protect tab
OFF (unlocked or
write enabled)

- Data backup
 - For maximum data security Yamaha recommends that you keep two copies of important data on separate floppy disks. This gives you a backup if one disk is lost or damaged.

The Panel Logos

The PSR-450 is compatible with commercially available music software (floppy disk) that bears any of the logos shown below.

CAUTION

- *Use of a power adaptor is recommended when performing floppy disk operations. If you use batteries and the batteries fail during an operation, the PSR-450 and/or floppy disk data can be corrupted or lost.*



GM System Level 1

“GM System Level 1” is an addition to the MIDI standard which ensures that any GM-compatible music data can be accurately played by any GM-compatible tone generator, regardless of manufacturer. The GM mark is affixed to all software and hardware products that support GM System Level.



STYLE FILE

The Style File Format “SFF” is Yamaha’s original style file format which uses a unique conversion system to provide high-quality automatic accompaniment based on a wide range of chord types. The PSR-450 uses the SFF data internally, reading from optional SFF style disks.

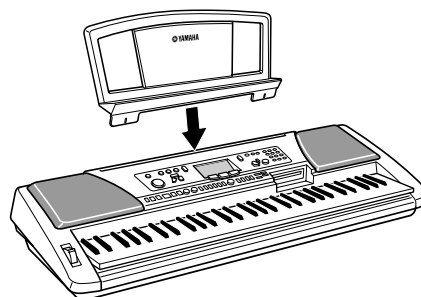


XGlite

As its name implies, “XGlite” is a simplified version of Yamaha’s high-quality XG tone generation format. Naturally, you can play back any XG song data using an XGlite tone generator. However, keep in mind that some songs may play back differently compared to the original data, due to the reduced set of control parameters and effects.

● **Music Rest**

Insert the bottom edge of the included music rest into the slot located at the top rear of the PSR-450 control panel.



● **Included Accessories**

The PSR-450 package includes the following items. Please check that you have them all.

- Music Rest
- Floppy disk (style data)
- Owner’s Manual

● **Trademarks**

- Apple and Macintosh are trademarks of Apple Computer, Inc., registered in the U.S. and other countries.
- Windows is the registered trademark of Microsoft® Corporation.

All other trademarks are the property of their respective holders.

Congratulations on your purchase of the Yamaha PSR-450 !

You now own a portable keyboard that combines advanced functions, great sound and exceptional ease-of-use in a highly compact package. Its outstanding features also make it a remarkably expressive and versatile instrument.

Read this Owner's Manual carefully while playing your new PSR-450 in order to take full advantage of its various features.

Main Features

The PSR-450 is a sophisticated yet easy-to-use keyboard with the following features and functions:

■ **Music Database..... page 16**

The Music Database automatically selects the optimum style and voice for the type of music you want to play.

■ **Floppy Disk Drive..... page 54**

Recordings of your own keyboard performances (user songs) and other data created on the PSR-450 can be saved to floppy disk (page 55). User songs can also be saved as GM-compatible SMF (Standard MIDI File) format files that will play back with the correct voice assignments on any GM-compatible instrument (page 57). Furthermore, commercially available GM songs can be played directly from floppy disk without having to be loaded into the instrument's memory (page 54).

■ **Grand Piano page 24**

Voice, style and song selections can be optimized for piano practice at the touch of a button.

■ **Easy Performer page 50**

When you want to play a certain song but can't yet manage to play it properly, the Easy Performer can help you play quickly.

● **[L] Left Hand, [R] Right Hand page 50**

Select the part you want to practice — press the [L] button for left-hand or the [R] button for right-hand — and play the keyboard with the correct rhythm. As long as you play with the correct rhythm the correct chords and melody will sound ... even if you play wrong notes.

● **Dictionary..... page 46**

Easy access to graphic chord fingering displays.

- 61-keyboard with touch response for delicate dynamic nuances.
- 135 high-quality voices + 12 drum kits + 480 XG voices. Maximum polyphony of 32 notes.
- 140 superb styles covering a wide range of musical genres.
- Up to 16 complete panel setups (voice and style selections, etc.) can be stored in "registration memory" and instantly recalled while playing.
- Sound-enhancing digital effects including reverb, DSP, and harmony built in.
- Song memory allows you to record your own performances – up to 5 songs with 6 tracks each (5 melody tracks + 1 style track).
- Large LCD panel shows panel settings, chord displays, and other data.
- MIDI functions for expanded musical capabilities (GM System Level 1 compliant).
- Tap tempo feature lets you set tempos the way you feel them.

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Setting Up

This section contains information about setting up your PSR-450 for playing. Make sure to read this section carefully before using the instrument.

Power Requirements

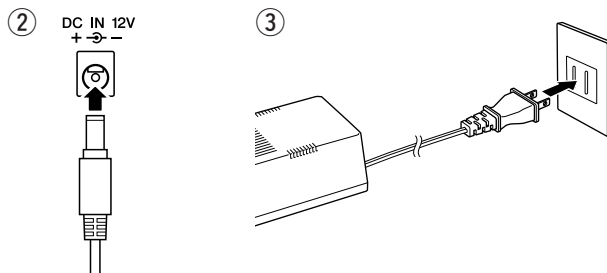
Although the PSR-450 will run either from an AC adaptor or batteries, Yamaha recommends use of an AC adaptor whenever possible. An AC adaptor is more environmentally friendly than batteries and does not deplete resources.

⚠ CAUTION

- Never interrupt the power supply (e.g. remove the batteries or unplug the AC adaptor) during any PSR-450 record operation! Doing so can result in a loss of data.

■ Using an AC Power Adaptor.....

- ① Make sure that the [STANDBY/ON] switch of the PSR-450 is set to STANDBY.
- ② Connect the AC adaptor (PA-5D, PA-5C or other adaptor specifically recommended by Yamaha) to the power supply jack.
- ③ Plug the AC adaptor into an AC outlet.



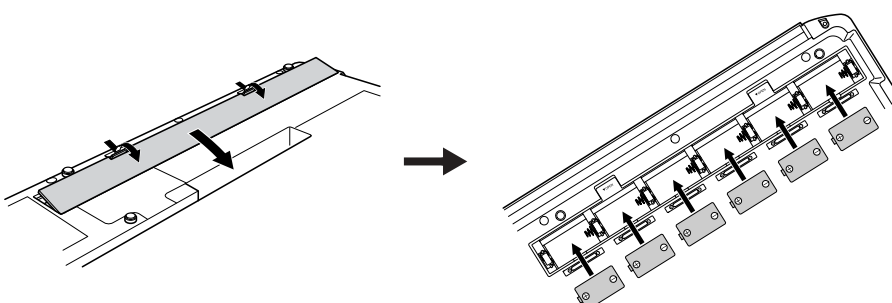
⚠ WARNING

- Use ONLY a Yamaha PA-5D, PA-5C 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 PSR-450.
- Unplug the AC Power Adaptor when not using the PSR-450, or during electrical storms.

■ Using Batteries.....

For battery operation the PSR-450 requires six 1.5V “D” size, R20P (LR20) or equivalent batteries. (Alkaline batteries are recommended.) When the batteries need to be replaced, the volume may be reduced, the sound may be distorted, and other problems may occur. When this happens, turn the power off and replace the batteries, as described below

- ① Turn the instrument upside-down on the soft cloth, then open the battery compartment cover located on the instrument’s bottom panel.
- ② Insert the six new batteries as shown in the illustration, making sure that the positive and negative terminals are properly aligned.
- ③ Replace the compartment cover, making sure that it locks firmly in place.

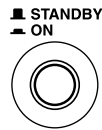


⚠ CAUTION

- When the batteries run down, replace them with a complete set of six new batteries. NEVER mix old and new batteries.
- Do not use different kinds of batteries (e.g. alkaline and manganese) at the same time.
- If the instrument is not to be in use for a long time, remove the batteries from it, in order to prevent possible fluid leakage from the battery.
- Use of a power adaptor is recommended when performing floppy disk operations. If you use batteries and the batteries fail during an operation, the PSR-450 and/or floppy disk data can be corrupted or lost.

Turning On the Power

With the AC power adaptor connected or with batteries installed, simply press the power switch until it locks in the ON position. When the instrument is not in use, be sure to turn the power off. (Press the switch again so that it pops up.)



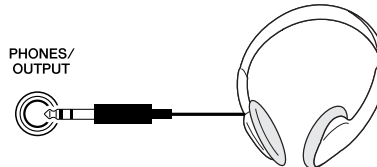
CAUTION

- 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 PSR-450 for a long time, make sure you unplug the AC power adaptor from the wall AC outlet, and/or remove the batteries from the instrument.

Accessory Jacks

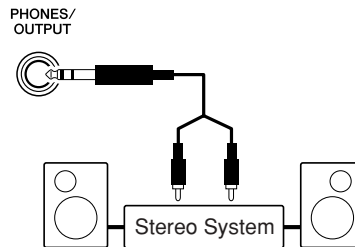
■ Using Headphones

For private practicing and playing without disturbing others, connect a set of stereo headphones to the rear panel PHONES/OUTPUT jack. Sound from the built-in speaker system is automatically cut off when you insert a headphone plug into this jack.



■ Connecting a Keyboard Amplifier or Stereo System

Though the PSR-450 is equipped with a built-in speaker system, you can also play it through an external amplifier/speaker system. First, make sure the PSR-450 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 PSR-450.



CAUTION

- To prevent damage to the speakers, set the volume of the external devices at the minimum setting before connecting them. Failure to observe these cautions may result in electric shock or equipment damage. Also, be sure to set the volumes of all devices at their minimum levels and gradually raise the volume controls while playing the instrument to set the desired listening level.

■ Using a Footswitch

This feature lets you use a footswitch (Yamaha FC4 or FC5) to sustain the sound of the voices. The footswitch functions the same way as a damper pedal on an acoustic piano — press and hold down the footswitch as you play the keyboard to sustain the sound.

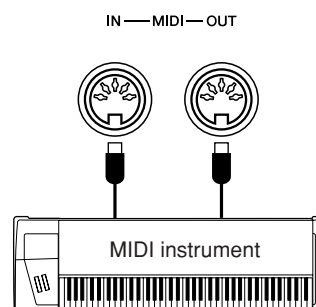


NOTE

- Make sure that the footswitch plug is properly connected to the FOOT SWITCH jack before turning on the power.
- Do not press the footswitch while turning the power on. Doing this changes the recognized polarity of the footswitch, resulting in reversed footswitch operation.

■ Using the MIDI Terminals

The PSR-450 also features MIDI terminals, allowing you to interface the PSR-450 with other MIDI instruments and devices. (For more information, see page 64.)



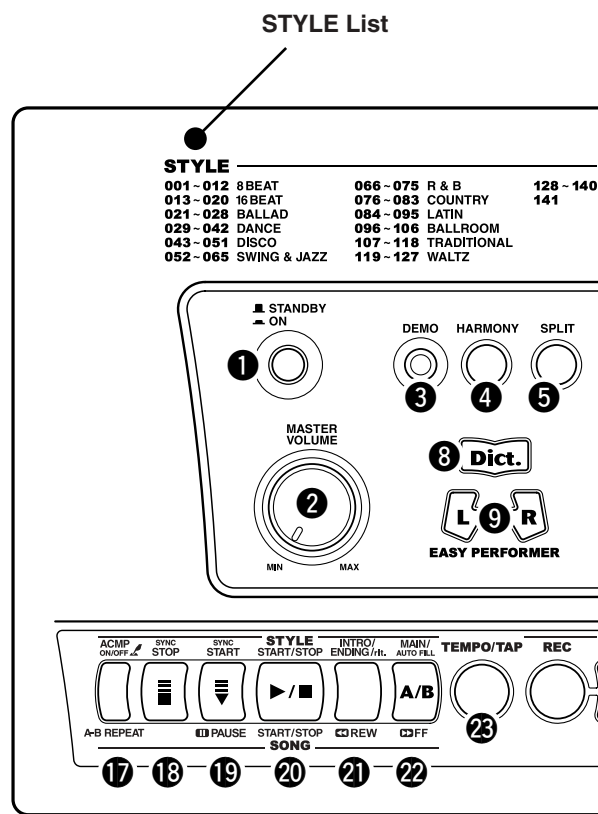
Panel Controls and Terminals

■ Front Panel

- ① [STANDBY/ON] switch.....page 11
- ② [MASTER VOLUME] dial.....page 38
- ③ [DEMO] buttonpage 14
- ④ [HARMONY] buttonpage 31
- ⑤ [SPLIT] button.....page 28
- ⑥ [LEFT MENU], [RIGHT MENU] buttonspage 38
- ⑦ [DUAL], [SETTING ▲/▼] buttonspage 29
- ⑧ [Dict.] (DICTIONARY) button.....page 46
- ⑨ [EASY PERFORMER] buttonpage 50
- ⑩ [SONG] buttonpage 14
- ⑪ [STYLE] buttonpage 18
- ⑫ [VOICE] button.....page 26
- ⑬ [PORTABLE GRAND] buttonpage 24
- ⑭ [METRONOME] buttonpage 24
- ⑮ [TOUCH] buttonpage 42
- ⑯ Number buttons [0] ~ [9],
[+ / YES] and [- / NO] buttonspage 39
- ⑰ [ACMP ON/OFF] button
[A-B REPEAT] buttonpages 19, 49
- ⑱ [SYNC STOP] buttonpage 22
- ⑲ [SYNC START] button
[PAUSE] buttonpages 22, 15
- ⑳ [START/STOP] button.....pages 15, 18
- ㉑ [INTRO/ENDING/rit.] button
[REW] button.....pages 15, 21
- ㉒ [MAIN/AUTO FILL] button
[FF] button.....pages 15, 20
- ㉓ [TEMPO/TAP] buttonpage 22
- ㉔ SONG MEMORY
[REC], [1] ~ [5], [A] buttons.....page 34
- ㉕ [M.D.B.] (MUSIC DATABASE) button.....page 16
- ㉖ REGIST. MEMORY
[MEMORY], [1], [2], [BANK] buttonspage 52
- ㉗ FLOPPY DISK DRIVE.....page 54
- ㉘ [PITCH BEND] wheelpage 30

■ Rear Panel

- ㉙ MIDI IN/OUT terminals.....page 11
- ㉚ FOOT SWITCH jack.....page 11
- ㉛ PHONES/OUTPUT jack.....page 11
- ㉜ DC IN 12V jackpage 10



MUSIC DATABASE List

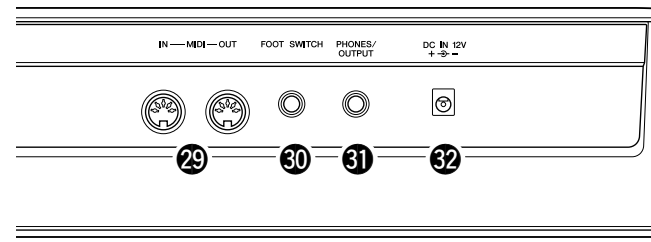
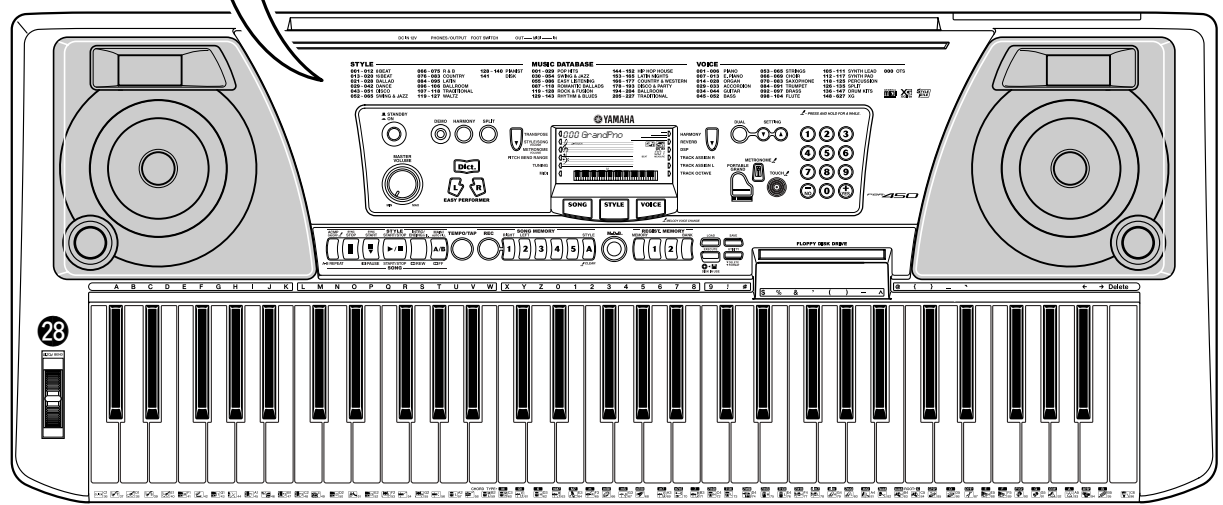
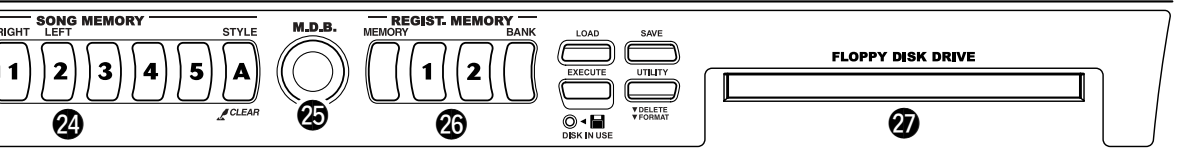
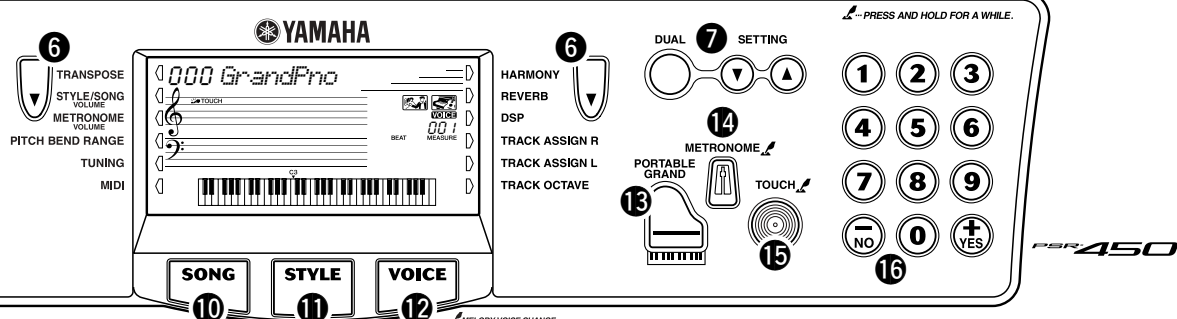
VOICE List

MUSIC DATABASE

001 - 029 POP HITS	144 - 152 HIP HOP HOUSE
030 - 054 SWING & JAZZ	153 - 165 LATIN NIGHTS
055 - 086 EASY LISTENING	166 - 177 COUNTRY & WESTERN
087 - 118 ROMANTIC BALLADS	178 - 193 DISCO & PARTY
119 - 128 ROCK & FUSION	194 - 204 BALLROOM
129 - 143 RHYTHM & BLUES	205 - 227 TRADITIONAL

VOICE

001 - 006 PIANO	053 - 065 STRINGS	105 - 111 SYNTH LEAD	000 OTS
007 - 013 E. PIANO	066 - 069 CHOIR	112 - 117 SYNTH PAD	
014 - 028 ORGAN	070 - 083 SAXOPHONE	118 - 125 PERCUSSION	
029 - 033 ACCORDION	084 - 091 TRUMPET	126 - 135 SPLIT	
034 - 044 GUITAR	092 - 097 BRASS	136 - 147 DRUM KITS	
045 - 052 BASS	098 - 104 FLUTE	148 - 627 XG	

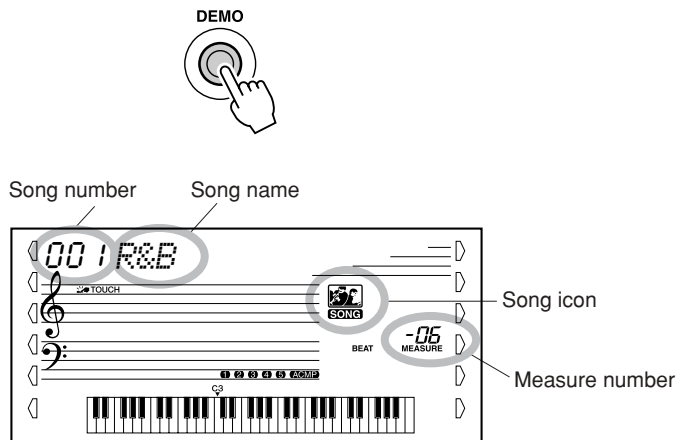


Playing Songs

The PSR-450 includes 5 demonstration songs. Let's start by playing the demonstration songs.

Listen To the Demo Songs

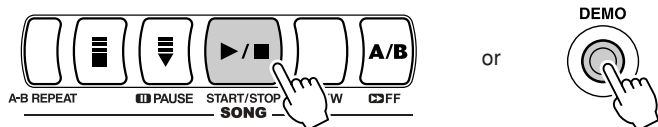
Press the [DEMO] button.
The demonstration songs will play back in sequence.



[Song List]

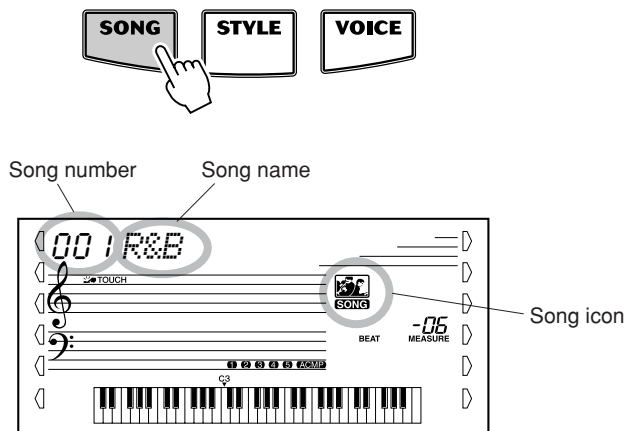
Song No.	Song Name
001	R&B
002	Pop Ballad
003	Dance
004	Bossa
005	Trad Swing

Press the [START/STOP] button or the [DEMO] button to stop playback.

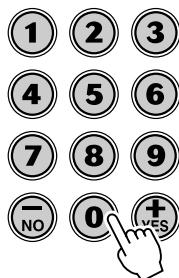


Select and Play One Song

1 Press the [SONG] button.



2 Use the number buttons [0] ~ [9] or the [+] and [-] buttons to select a song number.

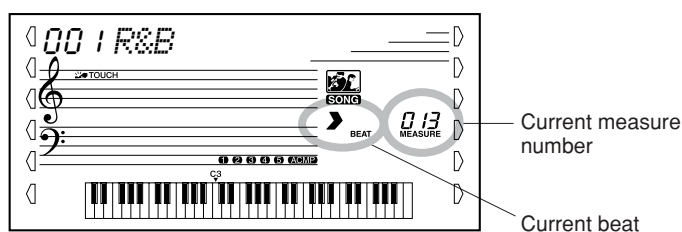
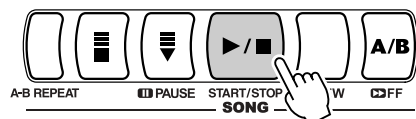


001 ~ 005	Demonstration songs (See page 14).
006 ~ 010	User songs (songs you record yourself).
011 ~ 109	Disk songs (When a disk containing SMF song files is inserted in the PSR-450 disk drive these song numbers become available. See page 54 for information on SMF files).




3 Start and stop song playback.

Press the [START/STOP] button to start playback of the selected song. You can play along on the keyboard while the song plays.

Press the [START/STOP] button a second time to stop playback.



● Other Operations

- [ PAUSE] button Temporarily stops playback. Press this button a second time to resume playback from the point at which it was stopped.
- [ FF] button Fast-forwards the song if pressed during playback. Increments the measure number if pressed while playback is stopped.
- [ REW] button Fast-reverses the song if pressed during playback (no sound is heard during fast reverse). Decrements the measure number if pressed while playback is stopped.

STEP
2

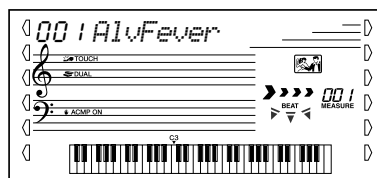
Play Using the Music Database

You want to play music in your favorite style, but you're not sure how to select the best voice and style for the type of music you want to play ... simply select the appropriate style from the Music Database. The PSR-450 panel settings will automatically be adjusted to give the ideal combination of sounds and style!

Music Database

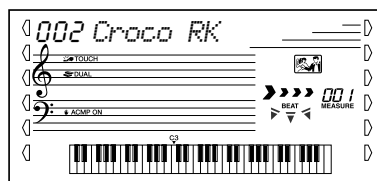
1 Press the [M.D.B.] button.

A Music Database name will appear in the display.



2 Select a Music Database.

Referring to the list on the PSR-450 panel or at the end of the manual, use the number buttons [0] ~ [9] or the [+] and [-] buttons to select a music database. Select one that matches the image of the song you intend to play.

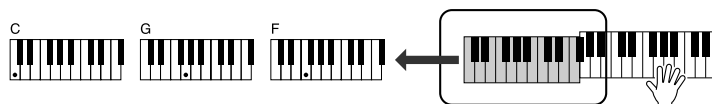
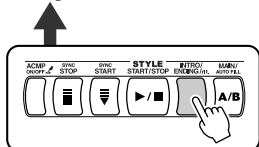


Try selecting "227" and playing the song below.

Silent Night

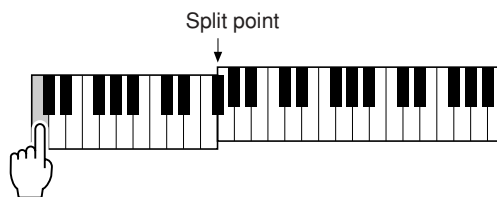
♩ = 100

C



3 The style will start playing when you play a left-hand chord.

Try playing a C chord, for example.

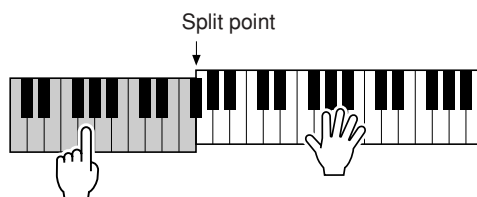


NOTE

- The left- and right-hand sections of the keyboard are divided at the "split point" (page 28).

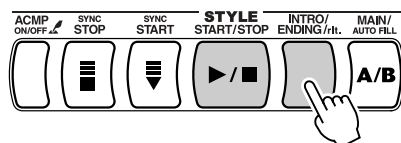
4 Following the score, play the chords with your left hand and melody with your right.

Refer to page 44 for information about playing chords.



5 Press the [START/STOP] button or the [INTRO/ENDING/rit.] button to stop playback.

Refer to page 20 for information on using endings.



Settings Included In the Music Database

■ Voice Settings

- Main : Voice, Volume, Reverb Depth, DSP Depth.....page 29
- Dual : On/Off, Voice, Octave, Volume, Reverb Depth, DSP Depthpage 29
- Reverb Typepage 32
- DSP Typepage 33
- Harmony On/Off.....page 31
- Harmony Typepage 31
- Transpose.....page 43

■ Style Settings

- Synchro Start = On*page 22
- Style Numberpage 18
- Split Point.....page 28
- Main A/Main B.....page 20
- Tempopage 24
- Style Volumepage 23

* Can only be set when style playback is stopped.

STEP
3

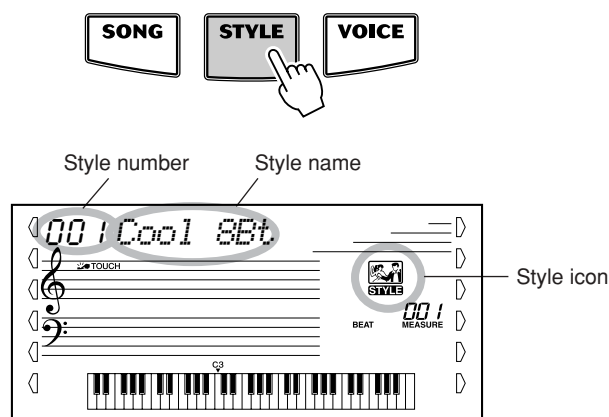
Play Using a Style

This instrument features an auto-accompaniment (Style) function that can produce complete accompaniments based on left-hand chords you play. You can select from 140 different musical styles.

The supplied floppy disk also contains style files that you can load into the PSR-450 and use as style number 141 in the same way as you use the internal styles. See page 57 for information on loading the style data.

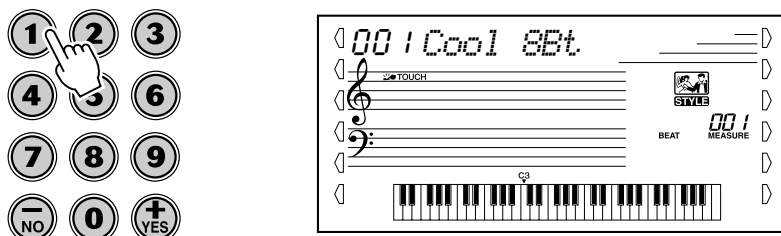
Rhythm-only Accompaniment

1 Press the [STYLE] button.

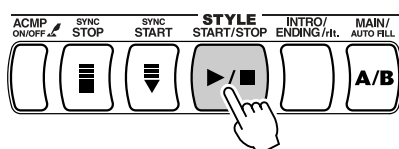


2 Select a style.

Referring to the style list on the PSR-450 panel or at the end of the manual (page 76), use the number buttons [0] ~ [9] or the [+] and [-] buttons to select a style.



3 Press the [START/STOP] button to start playback of the selected style's rhythm tracks. Press the [START/STOP] button again to stop playback.



NOTE

- Since the pianist styles (128 ~ 140) and the guitar serenade style (121) have no rhythm parts, no sound will be produced if you start rhythm-only playback. To use these styles turn the style on and play on the keyboard (the non-rhythm accompaniment parts will sound). Refer to page 19 for information on turning styles on and off.

Full Accompaniment With Left-hand Chords

1 Press the [STYLE] button.

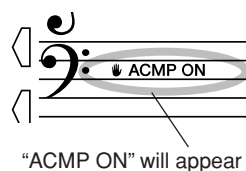
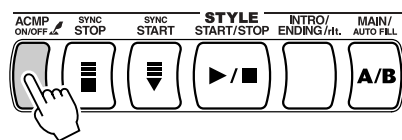
2 Select a style.

3 Turn the style on.

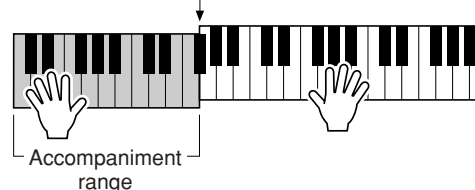
Press the [ACMP ON/OFF] button. The left-hand section of the keyboard is now the “accompaniment range” in which you will play the chords that define the accompaniment.

NOTE

- The left-hand “accompaniment range” and the right-hand “melody range” of the keyboard are divided at the split point. See page 28 for information on how to change the split point.

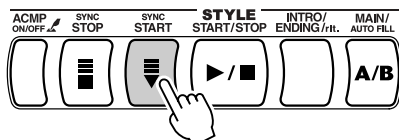


The initial default split point is 54 (F#2)



4 Engage synchro start.

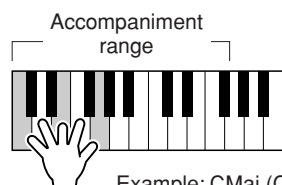
Press the [SYNC START] button.



Flashes when synchro start is engaged

When synchro start is engaged the style is in “standby” mode, and will start playing as soon as you begin playing in the left-hand accompaniment range of the keyboard.

5 Play a left-hand chord to start playback.

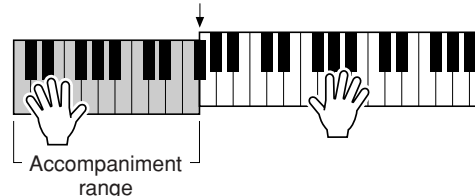


Example: CMaj (C Major) chord.

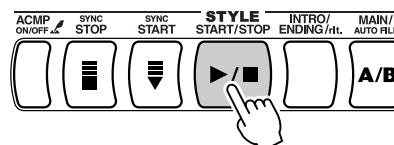
6 Try playing a variety of left-hand chords.

Refer to page 44 for information on playing left-hand chords.

The initial default split point is 54 (F#2)

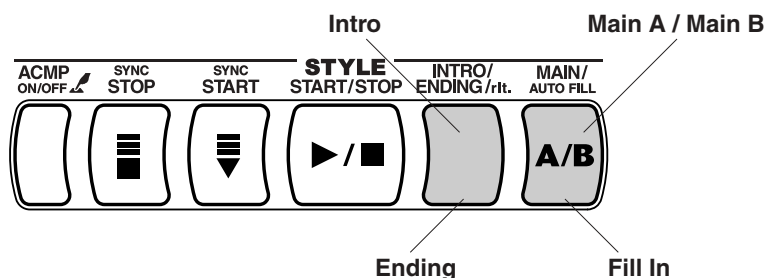


7 Press the [START/STOP] button to stop style playback.



Adding Variations To the Style (Sections)

Each style includes a number of “sections” that can be used to add variation to your performance. The sections are described below.



● INTRO Section

This section provides an ideal introduction for the selected style. Playback automatically switches to the MAIN section once the INTRO has finished. The length of the introduction varies from style to style.

● MAIN Section

This section is used for the main body of your song. The MAIN section — a 2 ~ 4 measure pattern — will repeat continuously until you select a different section. The MAIN section has “A” and “B” variations which will be automatically arranged to match the left-hand chords you play.

● FILL IN Section

The FILL IN section can be used to add a fill-in or “break” to your performance. If you press the [MAIN/AUTO FILL] button during playback the AUTO FILL section will play through once, then playback will automatically revert to the MAIN A or B section. If MAIN A was playing before the fill in, MAIN B will begin playing after the fill in, and vice versa.

● ENDING Section

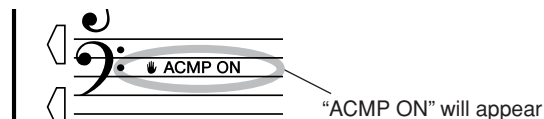
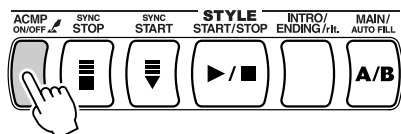
Adds an appropriate ending to the auto accompaniment. Style playback will stop when the ENDING section has played all the way through. The length of the ENDING section varies from style to style.

1 Press the [STYLE] button.

2 Use the number buttons [0] ~ [9] or the [+] and [-] buttons to select a style.

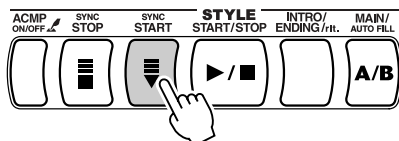
3 Turn the Accompaniment on.

Press the [ACMP ON/OFF] button.

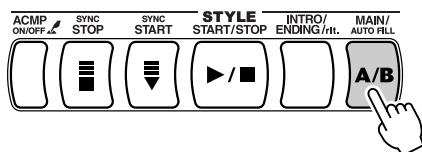


4 Engage synchro start.

Press the [SYNC START] button.



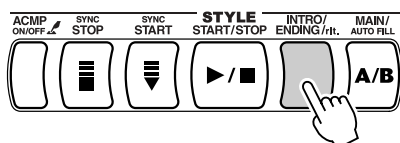
5 Press the [MAIN/AUTO FILL] button.



The name of the selected section — MAIN A or MAIN B — will be displayed

Select the MAIN section to follow the INTRO section — A or B.

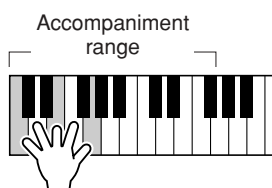
6 Press the [INTRO/ENDING/rit.] button.



7 Play a left-hand chord to start playback from the INTRO section of the selected style.

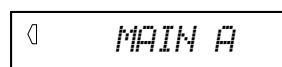
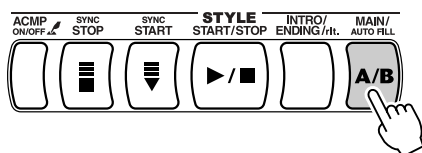
Example: CMaj (C Major) chord.

Refer to page 44 for information on playing left-hand chords.



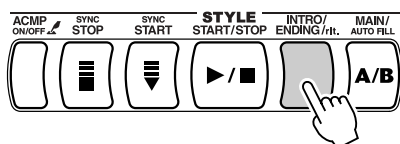
The MAIN section selected in step 5 above will begin playing after the INTRO section finishes.

8 Use the [MAIN/AUTO FILL] button to add fill-ins as required.



If MAIN A was playing before the fill in, MAIN B will begin playing after the fill in, and vice versa.

9 Press the [INTRO/ENDING/rit.] button.



The ending section will begin playing. Playback will stop when the ending has played all the way through. If you press the [INTRO/ENDING/rit.] button a second time (while the ending is playing) the ending will play **ritardando** (the tempo will gradually get slower).

Handy Style Playback Functions

■ Ways To Start Style Playback

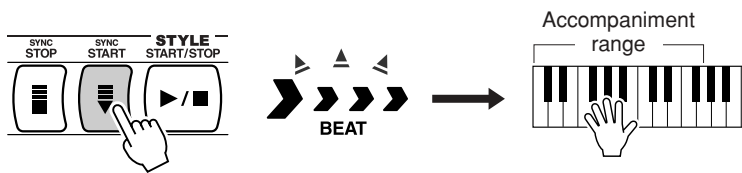
There are three different ways to start style playback, listed below. Whichever method you choose you can press the [INTRO/ENDING/rit.] button before starting playback to begin your performance an introduction which will automatically switch to the MAIN section when finished.

● Immediate Start

Press the [START/STOP] button to begin rhythm-only playback of the selected style. The bass and chords will begin playing as soon as you play a chord in the accompaniment range of the keyboard.

● Keyboard Start

Press the [SYNC START] button and the beat indicator in the display will begin flashing, indicating that synchro start “standby” mode has been engaged. If the [ACMP ON/OFF] button has been turned on, the style will begin playing as soon as you play a chord in the accompaniment range of the keyboard. If the [ACMP ON/OFF] function is off, playing any key anywhere on the keyboard will start rhythm-only accompaniment.



● Tap Start

You can supply a count-in at any tempo you like to start playback. Simply tap the [TEMPO/TAP] button at any tempo — 4 times for time signatures in 4, and 3 times for time signatures in 3 — and the selected style will begin playing at the tapped tempo.

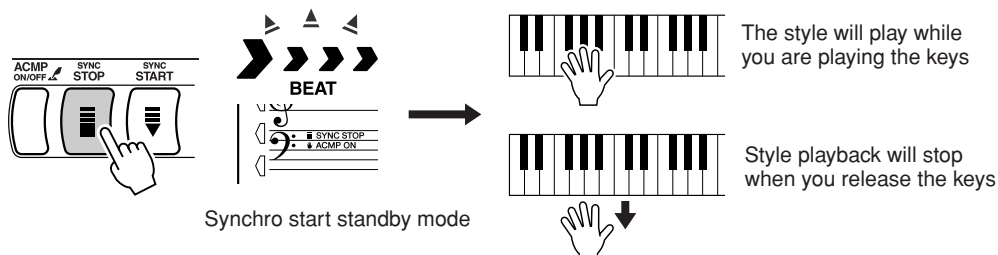


● Synchro Stop

When this function is selected the accompaniment style will only play while you are playing chords in the accompaniment section of the keyboard. Accompaniment playback will stop when you release the keys.

Use the [ACMP ON/OFF] button to turn accompaniment on — the ACMP ON indicator will appear in the display.

Press the [SYNC STOP] button. The instrument will now function the same as in the synchro start standby mode. Style playback will begin as soon as you play a chord in the accompaniment range of the keyboard, but then accompaniment will stop (the synchro start standby mode will be re-engaged) when you release the left-hand keys. Style playback will continue only while you are actually playing in the keyboard's accompaniment range.

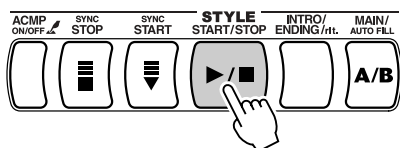


■ Ways To Stop Style Playback

The following three methods can be used to stop style playback.

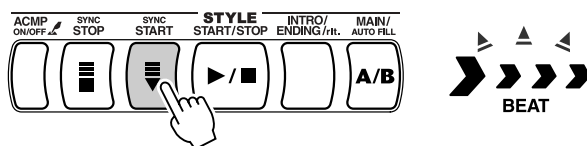
● Immediate Stop

Playback will stop as soon as you press the [START/STOP] button.



● Stop and Enter Synchro Start Mode

If you press the [SYNC START] button during style playback, playback will stop immediately and the synchro start standby mode will be engaged (the beat indicator will flash).



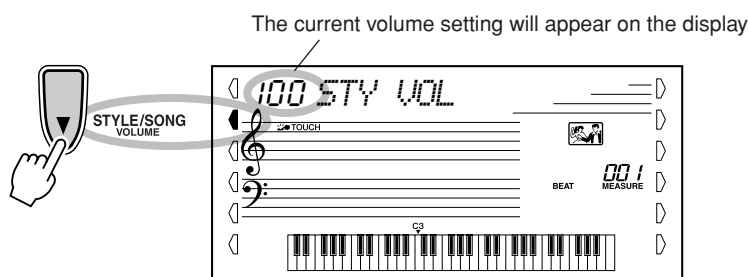
● Play the Ending and Stop

Press the [INTRO/ENDING/rit.] button to begin playing ending section. Playback will stop when the ending has played all the way through. If you press the [INTRO/ENDING/rit.] button a second time (while the ending is playing) the ending will play ritardando (the tempo will gradually get slower).

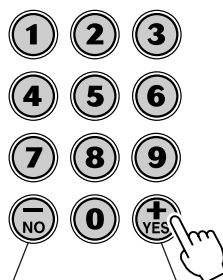
■ Setting the Style Volume

You can adjust the overall volume of the accompaniment sound to achieve the best balance with the keyboard sound.

1 Use the [LEFT MENU] button to select STYLE/SONG VOLUME.



2 Use the number buttons [0] ~ [9] or the [+] and [-] buttons to set the volume from 000 to 127, as required.



Reduces the volume setting, resulting in lower volume

Increases the volume setting, resulting in higher volume

NOTE

- The default volume setting of "100" can be instantly reset by pressing the [+] and [-] buttons simultaneously.
- The style volume can be set when a style is selected.

Try Out the Various Instrument Voices

Play the Grand Piano Voice

The PSR-450 has a dazzling range of features and functions, but when you simply want to practice or play piano just press the [PORTABLE GRAND] button.

When you press the [PORTABLE GRAND] button all of the PSR-450 settings are instantly optimized for playing the piano.

● Settings Made By the [PORTABLE GRAND] Button

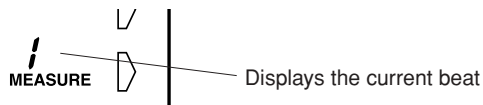
- Voice Grand Piano
- Touch Response On
- Metronome Off
- Harmony Off
- Split Point 54 (F#2)
- ACMP Off
- Dual Off

Play With the Metronome

The PSR-450 includes an indispensable practice aid — a metronome with adjustable tempo and time signature.

■ Starting and Stopping the Metronome

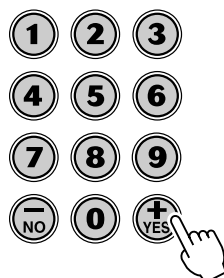
Press the [METRONOME] button to start playback of the metronome. The metronome features a chime sound on the first beat of each measure.



Press the [METRONOME] button a second time to stop the metronome.

■ Setting the Metronome Tempo

To set the metronome tempo first press the [TEMPO/TAP] button and then use the number buttons [0] ~ [9] or the [+] and [-] buttons to set the required tempo.



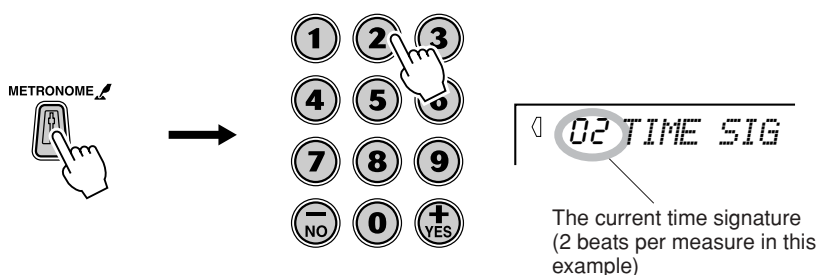
NOTE

- The default metronome tempo can be instantly reset by pressing the [+] and [-] buttons simultaneously.

■ Setting the Metronome Time Signature

The metronome time signature is automatically set to match the selected song or style. To set the metronome to a time signature that is different from that of the current song or style, follow the procedure below.

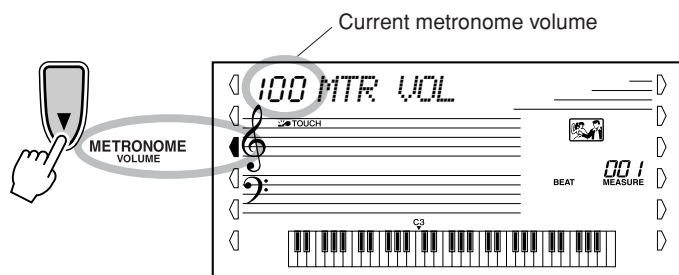
- 1 Press and hold the [METRONOME] button for longer than a second, until the metronome time signature setting display appears.
- 2 Use the number buttons [0] ~ [9] or the [+] and [-] buttons to set the required time signature.



Number Button	Time Signature
00	— (no chime sound)
01	1 beat (the chime will sound on every beat)
02	2 beats per measure
03	3 beats per measure
04	4 beats per measure
05	5 beats per measure
06	6 beats per measure
07	7 beats per measure
.	.
.	.
15	15 beats per measure

■ Setting the Metronome Volume

- 1 Use the [LEFT MENU] button to select METRONOME VOLUME.



- 2 Use the number buttons [0] ~ [9] or the [+] and [-] buttons to set the volume from 000 to 127, as required.



NOTE

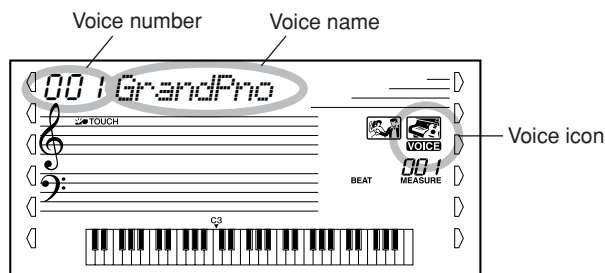
• The default volume setting of "100" can be instantly reset by pressing the [+] and [-] buttons simultaneously.

Select and Try Out a Variety Of Voices

The PSR-450 employs advanced AWM (Advanced Wave memory) technology to deliver a range of 627 top-quality voices.

- 001 ~ 125.....Original PSR-450 voices.
- 126 ~ 135.....Different voices will sound in the left- and right-hand ranges of the keyboard (see page 68).
- 136 ~ 147.....Drum kits with different drum and percussion instruments assigned to each key of the keyboard. (see pages 27, 74).
- 148 ~ 627.....XG standard voices (see page 69).

1 Press the [VOICE] button.



NOTE

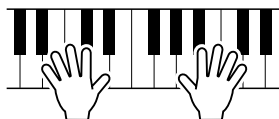
- Each voice is automatically called up with the most suitable octave range setting. Thus, playing middle C with one voice may sound higher or lower than another voice at the same key.

2 Select a voice.

Referring to the list on the instrument panel or at the end of the manual, use the number buttons [0] ~ [9] or the [+] and [-] buttons to select a voice.

3 Play.

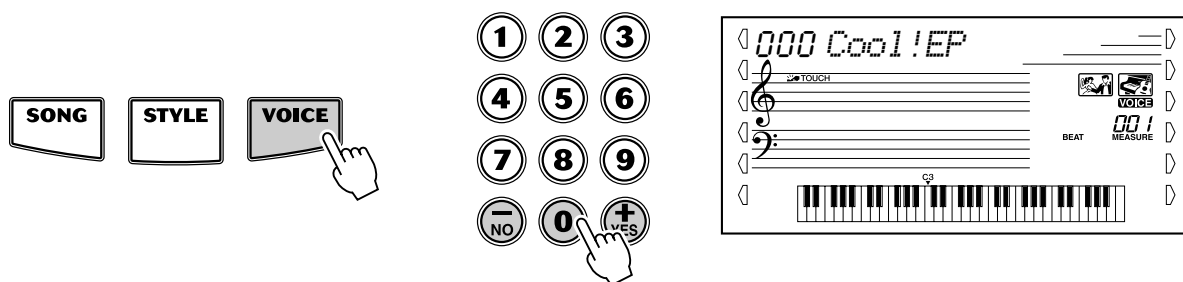
Try selecting and playing a variety of voices.



Use One-touch Setting To Automatically Select Voices

The One-touch Setting feature automatically selects the ideal voice for you when you select a style or song. Simply select voice number “000” to activate this feature.

- 1 Press the [VOICE] button and then use the number button [0] or the [+] and [-] buttons to select voice number “000.”



This turns the One-touch Setting feature on. One-touch Setting will be turned off if you select any other voice number.

Try Out the Drum Kits

Select any of the drum kit voices (voices 136 ~ 147), and you can play a variety of drum and percussion instruments on the keyboard.

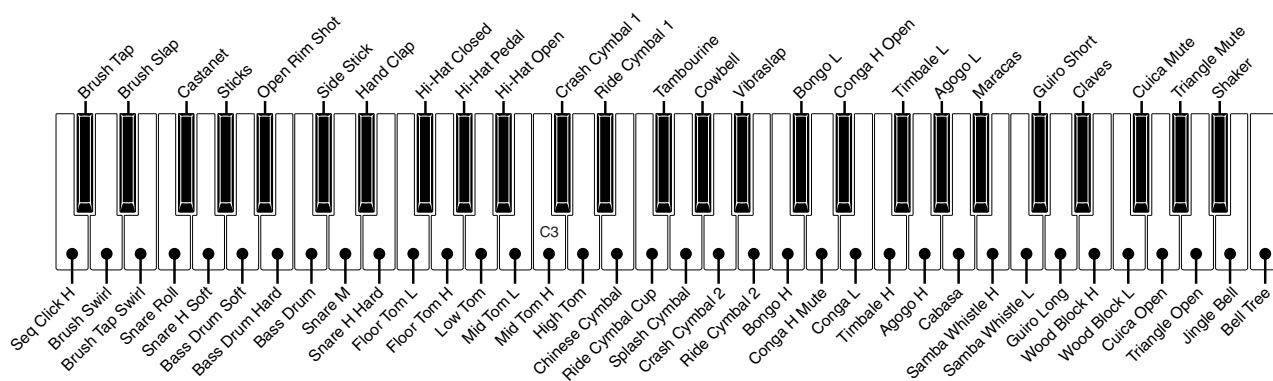


• Details on the instruments and key assignments of each drum kit can be found on page 74.

[Drum Kit List]

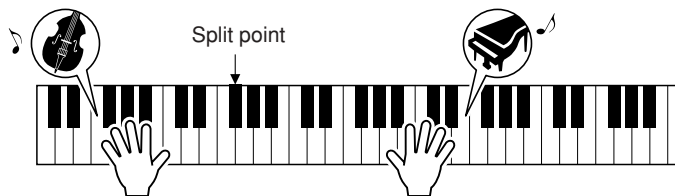
136	Standard Kit 1	140	Electronic Kit	144	Brush Kit
137	Standard Kit 2	141	Analog Kit	145	Symphonic Kit
138	Room Kit	142	Dance Kit	146	SFX Kit 1
139	Rock Kit	143	Jazz Kit	147	SFX Kit 2

Example: 136 Standard Kit 1



Play Different Voices With the Left and Right Hands

When you select any of the “split” voices (126 ~ 135) different voices will sound in the left-hand and right-hand ranges of the keyboard. If you select voice number 126, for example, you can play acoustic bass with the left hand and grand piano with the right.



As shown in the above illustration the key that divides the left- and right-hand keyboard ranges is known as the “split point.” The initial default split point is set at key number 54 (F#2), but you can change this setting to suit your own playing style by following the procedure described in “Changing the Split Point,” below.

One-touch Split Voice Selection

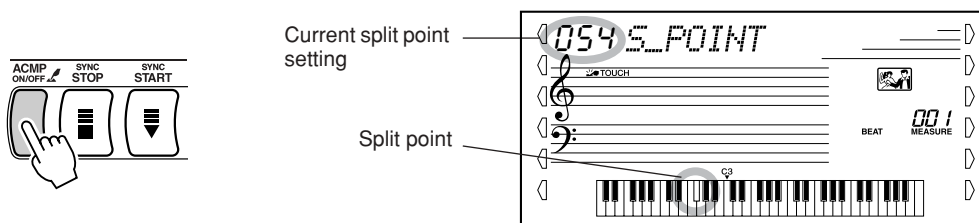
As mentioned above, selecting a voice number between 126 and 135 will split the keyboard allowing you to play different voices with the left and right hands. When any other voice is selected you can instantly recall the last split voice selected (126 ~ 135) simply by pressing the [SPLIT] button.



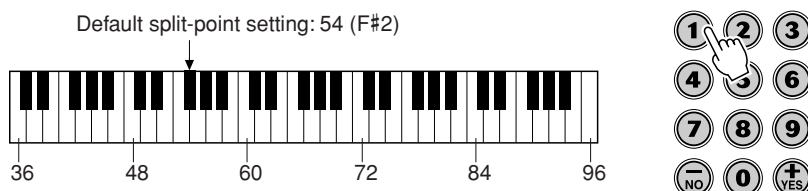
Changing the Split Point

The keyboard is divided into left- and right-hand ranges at the “split point.” When a style is selected and accompaniment is on, the keys to the left of the split point function as the accompaniment range in which you play chords to define the accompaniment (page 19). When accompaniment is off, the split point separates the left- and right-hand instruments in the split voices (126 ~ 135). The initial default split point is set at key number 54 (F#2), but you can change this setting to suit your own playing requirements.

- 1 Press the [STYLE] button, and then press and hold the [ACMP ON/OFF] button for longer than a second so that the split point setting display appears.



- 2 Use the number buttons [0] ~ [9] or the [+] and [-] buttons to set the split point at the desired key.



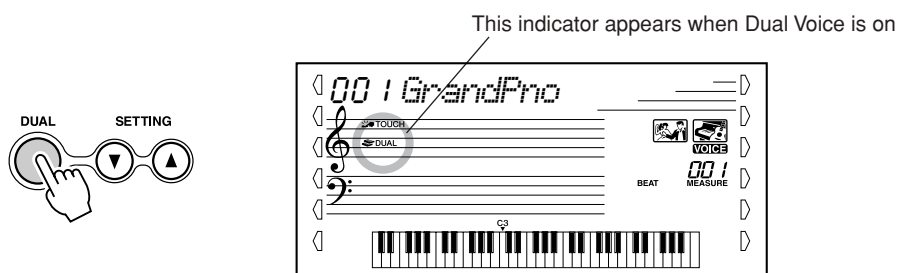
Each key is assigned a number as shown in the above illustration. Refer to the illustration when setting the split point. The currently set split point is shown highlighted (inverted) in the keyboard illustration in the display.

NOTE

- The default split point of 54 (F#2) can be instantly reset by simultaneously pressing the [+] and [-] buttons.

Play Two Voices At the Same Time (Dual Voice)

If you press the [DUAL] button to activate the dual-voice mode, you can play a second voice “layered” on the main voice. The second voice is called the “dual voice,” while the original voice is called the “main voice.”

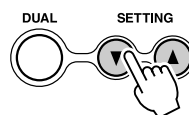


Main and Dual Voice Settings

Use the procedure described below the voice to be used as the dual voice, adjust the balance between the main and dual voices, and make other adjustments.

- 1 Use the [SETTING ▲/▼] buttons to select the item you want to adjust.

Refer to the following list.



- 2 Use the number buttons [0] ~ [9] or the [+] and [-] buttons to set the item as required.

- 3 Press the [DUAL] button to exit from the Dual Voice setting mode.

[Main and Dual Voice Menu Items]

Item	Display	Range	
Main Voice Volume	M.Volume	0 ~ 127	Adjusts the volume of the main voice, and therefore the balance with the dual voice.
Dual Voice DSP	D.DspLvl	0 ~ 127	Sets the dual voice DSP depth.
Main Voice DSP	M.DspLvl	0 ~ 127	Sets the main voice DSP depth.
Dual Voice Reverb	D.RevLvl	0 ~ 127	Sets the dual voice reverb depth.
Main Voice Reverb	M.RevLvl	0 ~ 127	Sets the main voice reverb level.
Dual Voice Octave	D.Octave	-2 ~ 2	Sets the octave of the dual voice.
Dual Voice	Dual Voice Name	1 ~ 627	Allows selection of the dual voice by voice number.
Dual Voice Volume	D.Volume	0 ~ 127	Adjusts the volume of the dual voice, and therefore the balance with the main voice.

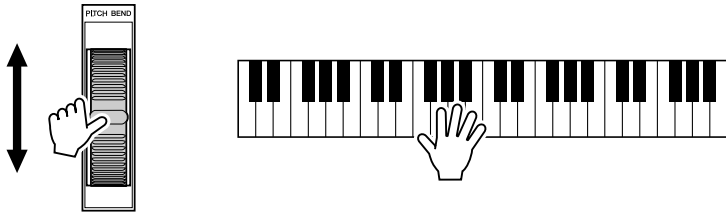
STEP
5

Play With a Variety Of Effects

Pitch Variation With the Pitch bend Wheel

The [PITCH BEND] wheel can be used to add smooth pitch variations to notes you play on the keyboard.

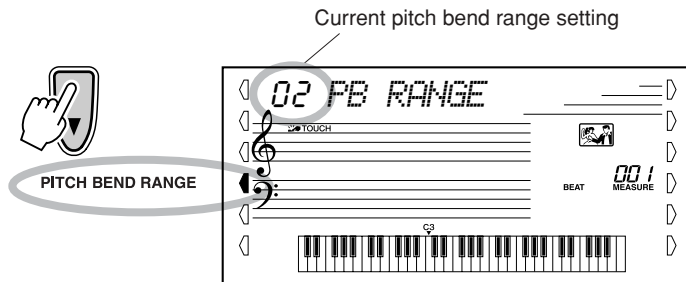
Roll the wheel upward to raise the pitch, or downward to lower the pitch. When you release the wheel it will automatically return to center position and the keyboard pitch will return to normal.



Adjust the Pitch bend Range

The range of the pitch bend wheel can be adjusted in semitone increments. When the pitch bend range is set to “2,” for example, rolling the wheel all the way up will produce a maximum pitch rise of 2 semitones (one whole tone), and rolling it all the way down will produce a maximum pitch drop of the same amount (2 semitones — one whole tone). With the highest possible pitch bend range setting of “12,” the pitch bend range becomes ± 1 octave.

1 Use the [LEFT MENU] button to select PITCH BEND RANGE.



2 Use the number buttons [0] ~ [9] or the [+] and [-] buttons to set the pitch bend range as required.



NOTE

• The default pitch bend range setting of “02” can be instantly reset by simultaneously pressing the [+] and [-] buttons.

Add Harmony To the Right-hand Melody

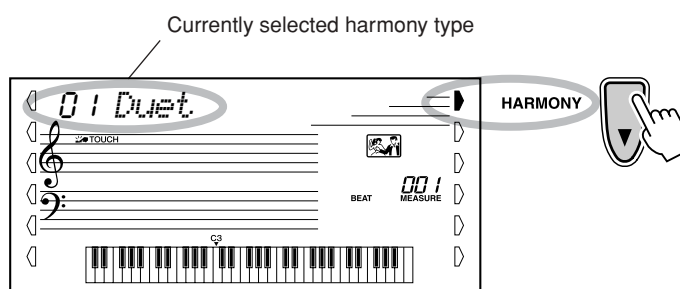
Press the [HARMONY] button to turn the harmony function on to automatically add harmony, trills, tremolo, and echo effects to right-hand notes.



Select the Harmony Type

A total of 26 harmony types are provided, and the optimum one is automatically selected whenever you select a voice, but you can change the harmony type selection as required by following the procedure below.

1 Use the [RIGHT MENU] button to select HARMONY.



NOTE

- Harmony will be turned off if the dictionary function is used.
- The default harmony selection for the currently selected voice can be instantly recalled by simultaneously pressing the [+] and [-] buttons.

2 Use the number buttons [0] ~ [9] or the [+] and [-] buttons to select the desired harmony type.

A complete harmony type list is provided on page 79.

● Harmony Types (01 ~ 05)

These types are effective when a style is selected and accompaniment is on.

Harmony notes are added to single notes you play in the right-hand range of the keyboard, based on chords you play in the left-hand range. Harmony is only applied to the last right-hand note played.

● Trill Types (06 ~ 12)

A trill will be produced at the current tempo setting using the last two notes played in the right-hand range of the keyboard.

● Tremolo Types (13 ~ 19)

All notes played in the right-hand keyboard range will be played tremolo style (repeated) at the current tempo setting.

● Echo types (20 ~ 26)

An echo effect will be added to all notes played in the right-hand keyboard range at the current tempo setting.

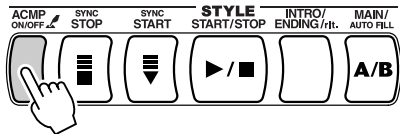
STEP 5 • Play With a Variety Of Effects

Play With Harmony

1 Press the [STYLE] button.



2 Press the [ACMP ON/OFF] button to turn accompaniment on.



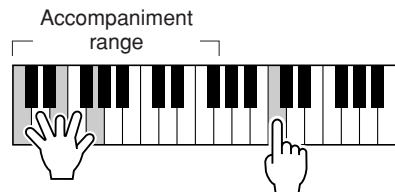
ACMP ON will appear in the display

3 Press the [HARMONY] button to turn harmony on.



4 Play a melody in the right-hand keyboard range while playing chords in the left-hand range.

Try playing a CMaj (C Major) chord, for example.

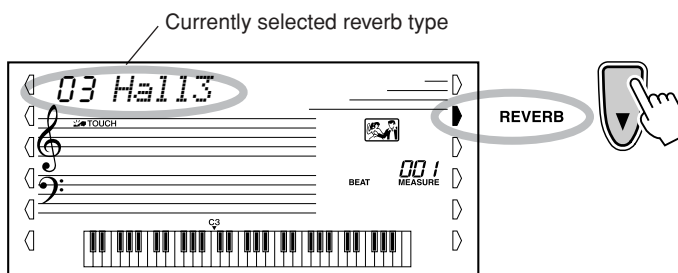


5 Press the [HARMONY] button a second time to turn harmony off.

Add Reverb

Reverb adds concert-hall or club ambience to what you play on the keyboard as well as the song and style playback sound. A total of 9 reverb types are provided, and the ideal type is automatically selected whenever you select a song or style, but you can select any of the available reverb types by following the procedure outlined below.

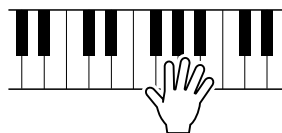
1 Use the [RIGHT MENU] button to select REVERB.



2 Use the number buttons [0] ~ [9] or the [+] and [-] buttons to select the desired reverb type.

A complete reverb type list is provided on page 78.

3 Play the keyboard to hear the selected reverb sound added to the voice.



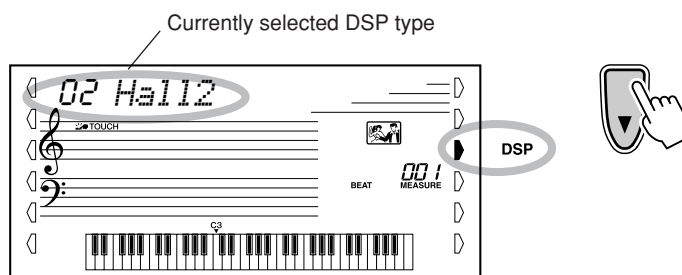
NOTE

- If you do not want any reverb added to your sound, select reverb type 10 (Off).
- The default reverb selection for the currently selected song or style can be instantly recalled by simultaneously pressing the [+] and [-] buttons.
- Reverb depth can be individually adjusted for the main and dual voices (page 29).

Add DSP Effects

In addition to the reverb effects described above, the PSR-450 has a range of DSP effects that you can add to your sound. A total of 39 DSP effects are provided, ranging from reverb-like ambience effects to distortion that can be very effective when added to guitar voices, for example. The ideal DSP type is automatically selected whenever you select a voice, but you can select any of the available types by following the procedure outlined below. If you do not want to add any DSP effect, select DSP type number 40 (Off).

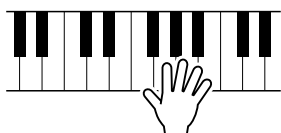
1 Use the [RIGHT MENU] button to select DSP.



2 Use the number buttons [0] ~ [9] or the [+] and [-] buttons to select the desired DSP type.

A complete DSP type list is provided on page 78.

3 Play the keyboard to hear the selected DSP effect added to the voice.



NOTE

- The default DSP selection for the currently selected voice can be instantly recalled by simultaneously pressing the [+] and [-] buttons.
- DSP depth can be individually adjusted for the main and dual voices (page 29).

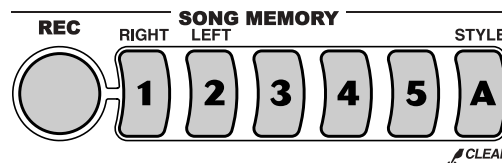
STEP
6

Record Your Performance

Using the song memory you can record up to 5 different songs (song numbers 006 ~ 010: User 1 ~ 5). Songs you record can be played back in the same way as the preset songs.

Each user song can be recorded using 6 tracks.

- **Melody Tracks [1] ~ [5]**
These tracks record the melody parts.
- **Style Track [A]**
The style track records the left-hand chords and accompaniment.



● Recordable Data

◆ Melody Tracks 1 ~ 5

- Note on/off (key presses and releases)
- Velocity (key dynamics)
- Voice number
- Reverb type*
- DSP type*
- Harmony type on/off
- Sustain on/off
- Tempo**/time signature* (only when the style track is not recorded)
- Pitch bend
- Pitch bend range

◆ Style Track

- Chord changes and timing
- Style pattern changes
- Style number*
- Reverb type*
- DSP type*
- Tempo
- Time signature*

NOTE

- **Recordable capacity**
If you record using only the melody tracks, approximately 10,000 notes can be recorded. Approximately 5,500 chord changes can be recorded if you record using only the style track.

* These settings are recorded once at the beginning of the song and cannot be changed during the song.

** These settings are recorded at the beginning of the song. Changes can be made during the song, but the changes will not be recorded.

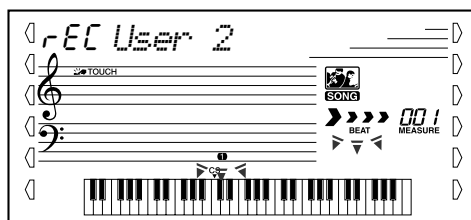
Recording Procedure

1 Engage the record ready mode.

After press the [STYLE] button, the following steps will automatically select the lowest-numbered unrecorded user song (song number 006 ~ 010) available for recording and engage the record ready mode.

● To Record 1 Melody Track and Style Track Together

Step 1-1. Press the track button of the melody track you want to record (1 ~ 5) while holding the [REC] button. The number of the selected track will flash in the display.



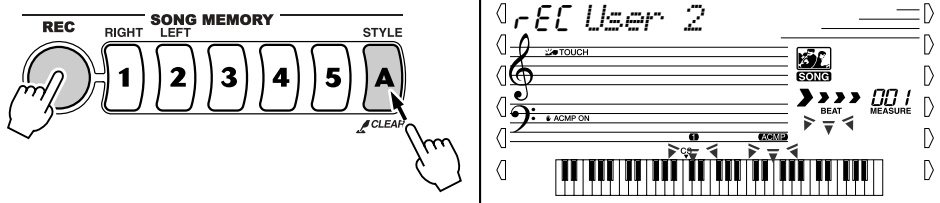
CAUTION

- If all user songs (song numbers 006 ~ 010) contain recorded data song number 006 will automatically be selected. In this case you will record over and erase any previous data in song 006, so be careful that you won't be erasing any material you want to keep!

NOTE

- If you want to select the song you will be recording (song number 006 ~ 010), or select a specific song to modify, select the desired song number by using the [+] and [-] buttons before performing step 1-1.

Step 1-2. Press the [A] button while holding the [REC] button. **ACMP** will flash in the display.



● To Record Only a Melody Track

Press the track button of the melody track you want to record (1 ~ 5) while holding the [REC] button. The number of the selected track will flash in the display.

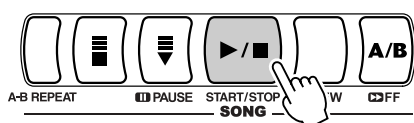
2 Start recording.

Recording will begin when you start playing on the keyboard. You can also start recording by pressing the [START/STOP] button.

The current measure number will be shown in the display during recording.

3 Stop recording.

Stop recording either by pressing the [START/STOP] button or the [REC] button.



OR



If you press the [INTRO/ENDING/rit.] button while recording the style track the ending section will play through and then recording will stop automatically.

When recording finishes the current measure will return to measure number 001 and the number of the recorded track will appear continuously in the display.

● To Record a New Track

Repeat steps 2 through 4 to record additional tracks.

By pressing the SONG MEMORY [1] ~ [5] and [A] buttons you can monitor playback of recorded tracks (the track numbers will appear continuously in the display) while recording additional tracks. You can also mute recorded tracks (the track numbers will disappear) while recording additional tracks.

● To Re-record a Track

Select the track you want to re-record for recording in the normal way. The new recording will overwrite any previous data in the track.

4 Save important data to floppy disk (see page 54).

NOTE

- When the style track is selected for recording accompaniment is automatically turned on.
- Accompaniment cannot be turned on or off once recording has started.
- If a split voice is selected for recording notes lower than the split point will not record.

NOTE

- If accompaniment is turned on and the style track has not been recorded, the style track will automatically be selected for recording when a melody track is selected. In this case you will need to turn the style track off if you want to record only a melody track.
- To cancel recording press the track button corresponding to the flashing track number in the display so that the flashing track number disappears.

CAUTION

- If power to the instrument is shut off for any of the reasons listed below during recording, all data in the song being recorded will be lost.
 - The [STANDBY/ON] switch is pressed.
 - The AC power adaptor is unplugged when no batteries are installed in the instrument.
 - The batteries become depleted.

CAUTION

- If the AC adaptor is unplugged and the batteries are removed after turning the power off, all user song data will be lost. Be sure to save all data you want to keep to floppy disk to prevent loss due to accidental erasure.

Clearing User Song Data

Recorded data in the user songs (song numbers 006 ~ 010) can be cleared when it is no longer needed.

Two methods of clearing song data are provided: “song clear” clears all data from the specified song, and “track clear” clears the data from a specified track in a song.

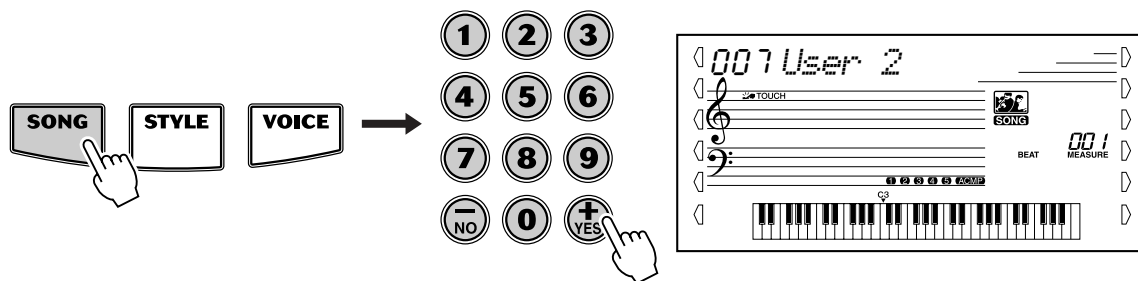
■ Song Clear

Clears all the recorded data from a specified song.

- 1 After pressing the [SONG] button, use the number buttons [0] ~ [9] or the [+] and [–] buttons to select the number of the song you want to clear (song number 006 ~ 010).

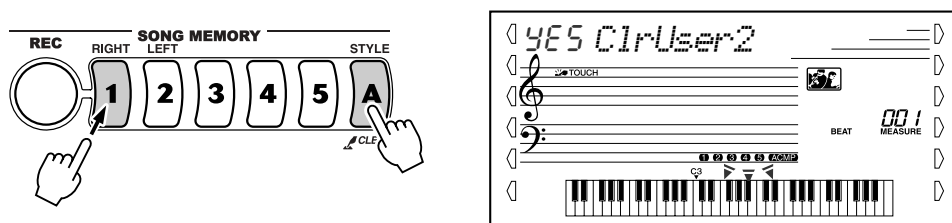
NOTE

• Song numbers 001 ~ 005 cannot be cleared.



- 2 Press and hold the SONG MEMORY [1] button for longer than a second while holding the [A] button.

All track numbers — **1** ~ **5**, **ACMP** — will flash in the display.



- 3 Press the [+ / YES] button in the number button group.

“Sure?” will appear in the display.

- 4 Press the [+ / YES] button a second time to actually clear the data.

All data in the selected song will be cleared and “Clear” will appear in the display.

You can abort the clear operation by pressing the [– / NO] button.

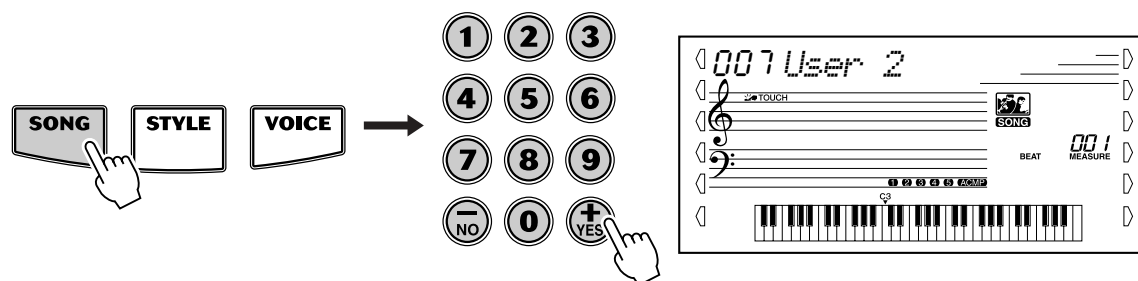
Track Clear.....

Clears data from the single specified track in the specified song.

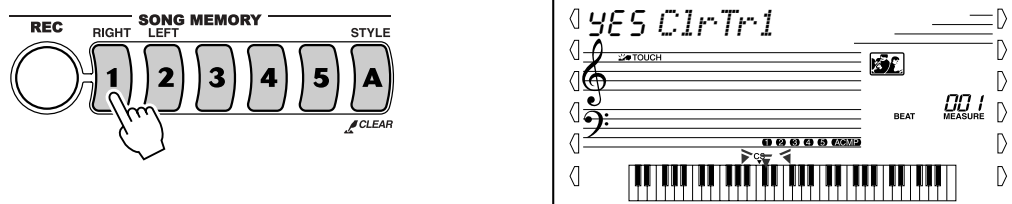
- 1 After pressing the [SONG] button, use the number buttons [0] ~ [9] or the [+] and [-] buttons to select the number of the song containing the track you want to clear (song number 006 ~ 010).

NOTE

• Song numbers 001 ~ 005 cannot be cleared.



- 2 Press and hold the SONG MEMORY button corresponding to the track you want to clear — [1] ~ [5], [A] — for longer than a second.



- 3 Press the [+ / YES] button in the number button group.

“Sure?” will appear in the display.

- 4 Press the [+ / YES] button a second time to actually clear the data.

All data in the selected track will be cleared and “Clear” will appear in the display.

You can abort the clear operation by pressing the [- / NO] button.

Basic Operation and LCD Display

[PRESS AND HOLD FOR A WHILE] indication



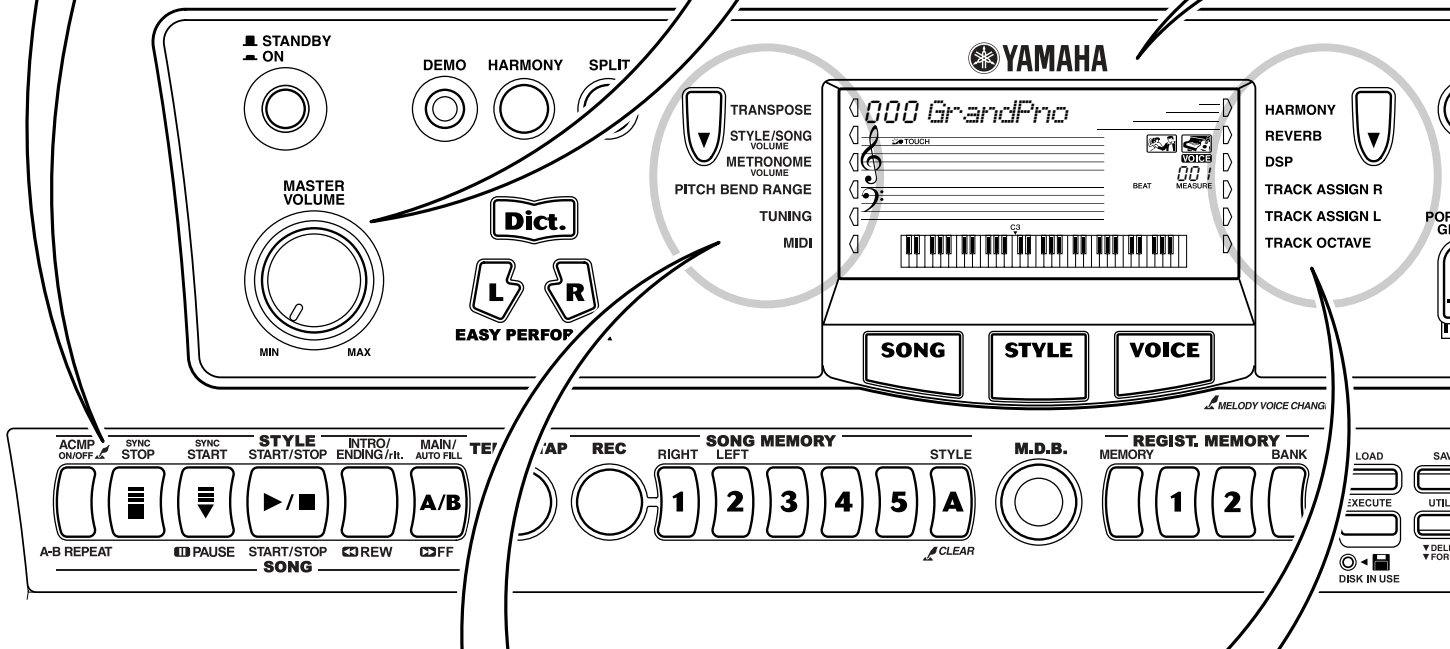
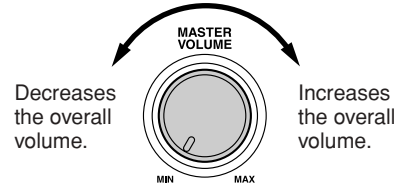
Buttons having this indication can be used to call up an alternate function when the relevant button is pressed and held.

Hold down this button until the function calls up.

- [ACMP ON/OFF] button..... Split point setting
- [CLEAR] button..... Song clear, Track clear
- [METRONOME] button..... Time signature setting
- [TOUCH] button..... Touch sensitivity setting
- [VOICE] button..... Melody voice change

Adjusting the Volume

Turn the [MASTER VOLUME] dial.



Function setting and indications

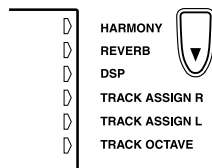
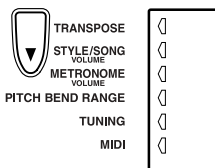
These buttons let you call up the various function settings.

[MENU L]

- TRANSEPOSE..... page 43
- STYLE/SONG VOLUMEpages 23, 48
- METRONOME VOLUME page 25
- PITCH BEND RANGE..... page 30
- TUNING..... page 43
- MIDI..... page 62

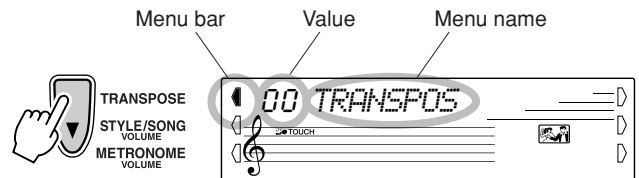
[MENU R]

- HARMONY.....page 31
- REVERBpage 32
- DSP.....page 33
- TRACK ASSIGN R.....page 51
- TRACK ASSIGN Lpage 51
- TRACK OCTAVEpage 55



Note that the menu bar (◀, ▶) in the LCD indicates the menu category (TRANSEPOSE, STYLE/SONG VOL, etc.) when you select each menu, and the currently selected menu name and value appears in the LCD.

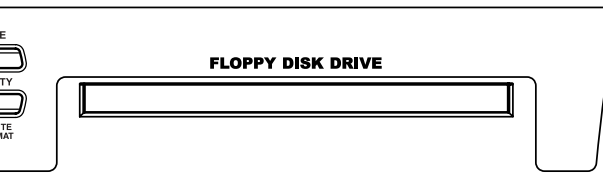
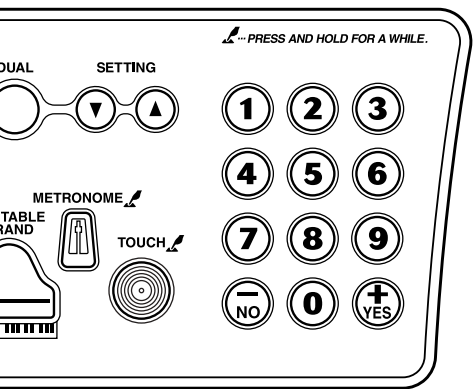
For example, when Transpose is selected:



Name and Number indication (Song/Style /Voice)

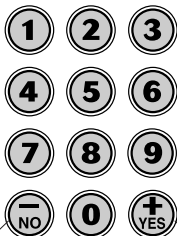
Currently selected name and number (Song, Style or Voice) appear here.

For example, when song is selected:



Setting values

Use the number buttons [0] ~ [9] or the [+] and [-] buttons.



Decreases the number by one step.

Increases the number by one step.

To continuously change the number up or down, press and hold the appropriate [+] and [-] button. To input a negative value, simultaneously hold the [-] button and enter the number.

Entering one of the modes (Song, Style or Voice)

- Pressing one of the buttons below calls up the appropriate mode — Song, Style or Voice, and the indicator in the display appears the currently selected mode.



[SONG]



Using the number buttons sect song number.

[STYLE]



Using the number buttons sect style number.

[VOICE]



Using the number buttons sect voice number.

- The following indications appear when you press the [VOICE] button in the Song or Style mode.

[SONG] → [VOICE]



Using the number buttons sect voice number.
[START/STOP] button starts **song** playback.

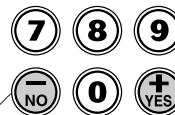
[STYLE] → [VOICE]



Using the number buttons sect voice number.
[START/STOP] button starts **style** playback.

Entering numbers

- Use the [+] and [-] buttons when you want to change the number in single steps.



Decreases the number by one step.

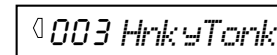
Increases the number by one step.

To continuously change the number up or down, press and hold the appropriate [+] and [-] button.

- To directly enter the desired number, use the number buttons [0] ~ [9].

For example, Voice number 003: Hnky Tonk

Press the number buttons [0], [0], [3] in order.

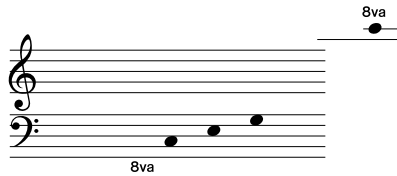


NOTE

- If the first digit or first two digits of the number are "0," (ex., 074 or 005), pressing the [0] button is unnecessary. However, pressing the [0] button is necessary if "0" is part of the number (ex., 105).

Notation

Displays the melody and chord notes of a song when the Easy Performer function is in use, or the notes of chords you specify when the Dictionary function is in use. At other times the notes you play on the keyboard are displayed.



NOTE

- Any notes occurring below or above the staff are indicated by "8va" in the notation.
- For a few specific chords, not all notes may be shown in the notation section of the display. This is due to space limitations in the display.

Measure Display

Indicates the current song or style measure number, or the metronome beat. "F ㄥ" appears when a free-tempo song is selected.



Chord Display

Shows the name of the chord currently being played back, or the name of the chord being played on the keyboard.



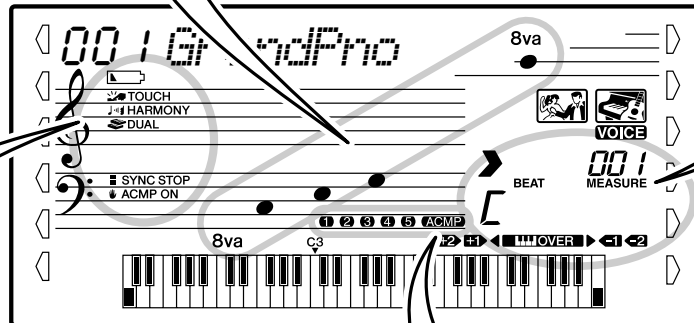
Beat Display

Indicates the current style or song beat with flashing arrows.



Octave Display

The "OVER" indicator and an arrow will flash when notes higher or lower than the instrument's keyboard range are played during disk song playback. When you have shifted the pitch of the keyboard up or down for playback, the selected octave shift will also be shown: +1, +1, -1, or -2.



Battery Level Indicator

This appear when battery power is too low to ensure proper operation. (see page 10)



TOUCH

Indicates that the Touch is turned on.



HARMONY

Indicates that the Harmony is turned on.



DUAL

Indicates that the Dual voice is turned on.



SYNC STOP

Indicates that the SYNC STOP is turned on.



Song Track Display

Information related to the song tracks is shown here.



- You can press the SONG MEMORY [1] ~ [5], [A] buttons to turn playback of the corresponding tracks on or off.
- When 1 ~ 5 or ACMP is showing, the corresponding track contains data.
- When 1 ~ 5 or ACMP is not showing, the corresponding track either contains no data or is turned off (muted).
- When 1 ~ 5 or ACMP is flashing, the corresponding track is selected for recording.

Accompaniment On (ACMP ON)

Indicates that the Accompaniment is turned on.



Data Backup & Initialization

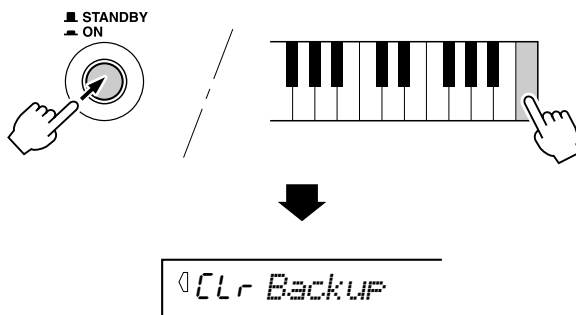
Data Backup

Except for the data listed below, all PSR-450 panel settings are reset to their initial settings whenever the power is turned on. The data listed below are backed up — i.e. retained in memory — as long as an AC adaptor is connected or a set of batteries is installed.

<ul style="list-style-type: none">• User Song Data• Song Volume• Registration Memory Data• Registration Memory Bank Number	<ul style="list-style-type: none">• Metronome Volume• Touch On/Off• Tuning
---	--

Data Initialization

All data can be initialized and restored to the factory preset condition by turning on the power while holding the highest (rightmost) white key on the keyboard. “CLr Backup” will appear briefly on the display.



CAUTION

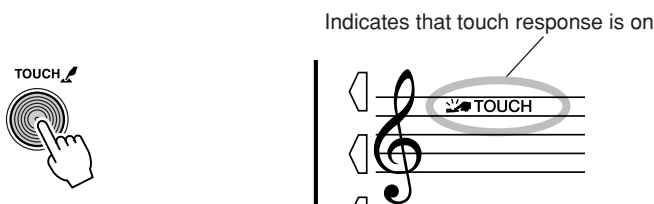
- All Registration Memory and User song data, plus the other settings listed above, will be erased and/or changed when the data initialization procedure is carried out.
- Carrying out the data initialization procedure will usually restore normal operation if the PSR-450 freezes or begins to act erratically for any reason.

Performance Features

Touch Response for Keyboard Dynamics Control

Touch response On/Off

Keyboard touch response can be turned on by pressing the [TOUCH] button. When touch response is on you can control the volume of notes according to how hard you play the keys.

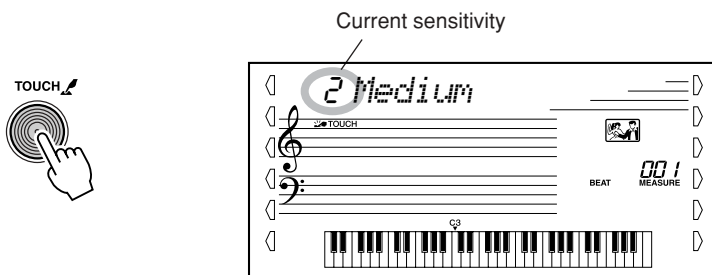


Press the [TOUCH] button a second time to turn touch response off. When touch response is off the same volume will be produced no matter how hard you play the keys.

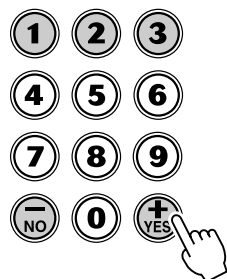
Touch Response Sensitivity Adjustment

The sensitivity of the keyboard's touch response can be adjusted in three steps (1 ~ 3). The higher the number, the greater the volume variation produced by the same variation in how hard you play the keys — i.e. the keyboard becomes more “sensitive.”

Press and hold the [TOUCH] button for longer than a second until the touch response sensitivity setting display appears.



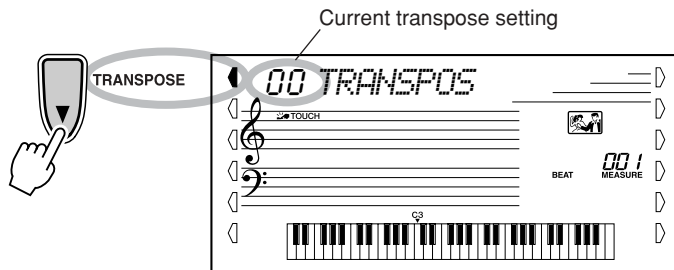
Use the number buttons [1] ~ [3] or the [+] and [-] buttons to set the touch response sensitivity as required.



Transpose Pitch up or Down in Semitone Increments

This function allows you to transpose the overall pitch of the instrument in semitone increments.

- 1 Use the [LEFT MENU] button to select TRANSPOSE.



- 2 Use the number buttons [0] ~ [9] or the [+] and [-] buttons to set the amount of transposition from -12 ~ 12 (semitone increments) as required. A setting of "00" produces normal pitch (no transposition).



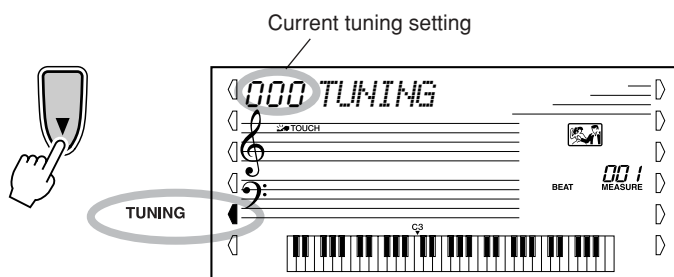
NOTE

- To enter negative values press the number buttons [0] ~ [9] while holding the [-] button.
- The initial default setting of "00" can be instantly recalled by pressing the [+] and [-] buttons simultaneously.
- Transposition cannot be applied to any of the drum kit voices (136 ~ 147).

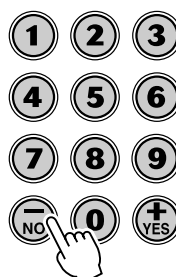
Fine Pitch Tuning

This function allows fine tuning of the instrument's overall pitch.

- 1 Use the [LEFT MENU] button to select TUNING.



- 2 Use the number buttons [0] ~ [9] or the [+] and [-] buttons to set the amount of transposition from -100 ~ 100 (cent increments) as required. A setting of "000" produces normal pitch.



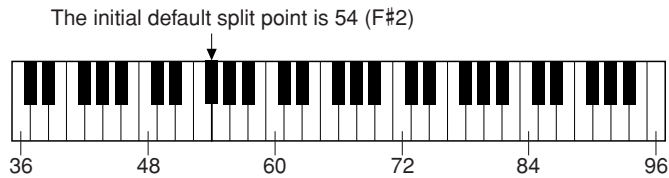
NOTE

- Tuning is adjusted in cent increments (100 cents = 1 semitone).
- The initial default setting of "000" can be instantly recalled by pressing the [+] and [-] buttons simultaneously.
- To enter negative values press the number buttons [0] ~ [9] while holding the [-] button.
- Tuning cannot be applied to any of the drum kit voices (136 ~ 147).

Playing Style (Accompaniment) Chords

When the [ACMP ON/OFF] button has been used to turn style accompaniment on the following chords can be played in the accompaniment range of the keyboard (to the left of the split point) to produce accompaniment.

- Simple chords using just 1 ~ 3 fingers.
- Properly fingered full chords.



NOTE

- All the chord fingerings here are illustrated using C as the root.
- See page 28 for details on how to set the split point.

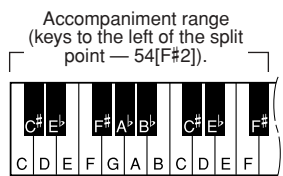
Simple Chords Using 1 ~ 3 Fingers

Major, minor, seventh, and minor seventh chords can be played using the simple fingerings shown below.

<p>C</p> <ul style="list-style-type: none"> • To play a major chord Press the root note of the chord. 	<p>C7</p> <ul style="list-style-type: none"> • To play a seventh chord Press the root note together with the nearest white key to the left of it.
<p>Cm</p> <ul style="list-style-type: none"> • To play a minor chord Press the root note together with the nearest black key to the left of it. 	<p>Cm7</p> <ul style="list-style-type: none"> • To play a minor seventh chord Press the root note together with the nearest white and black keys to the left of it (three keys altogether).

NOTE

- The keyboard keys corresponding to the chord roots are as follows:



Full Chords

The recognized chord fingerings are as shown below.

C	C(9)	C6	C6(9)	CM7	CM7(9)	CM7(#11)	C(b5)	CM7b5
Csus4	Caug	CM7aug	Cm	Cm(9)	Cm6	Cm7	Cm7(9)	Cm7(11)
CmM7	CmM7(9)	Cm7b5	CmM7b5	Cdim	Cdim7	C7	C7(b9)	C7(b13)
C7(9)	C7(#11)	C7(13)	C7(#9)	C7b5	C7aug	C7sus4	C1+2+5	

* Notes enclosed in parentheses are optional; the chords will be recognized without them.

■ Recognized Chord Chart

Chord Name / [Abbreviation]	Normal Voicing	Chord (C)	Display
Major [M]	1 - 3 - 5	C	C
Add ninth [(9)]	1 - 2 - 3 - 5	C(9)	C(9)
Sixth [6]	1 - (3) - 5 - 6	C6	C6
Sixth ninth [6(9)]	1 - 2 - 3 - (5) - 6	C6(9)	C6(9)
Major seventh [M7]	1 - 3 - (5) - 7 or 1 - (3) - 5 - 7	CM7	CM7
Major seventh ninth [M7(9)]	1 - 2 - 3 - (5) - 7	CM7(9)	CM7(9)
Major seventh add sharp eleventh [M7(#11)]	1 - (2) - 3 - #4 - 5 - 7 or 1 - 2 - 3 - #4 - (5) - 7	CM7(#11)	CM7(#11)
Flatted fifth [(b5)]	1 - 3 - b5	C(b5)	Cb5
Major seventh flatted fifth [M7b5]	1 - 3 - b5 - 7	CM7b5	CM7b5
Suspended fourth [sus4]	1 - 4 - 5	Csus4	Csus4
Augmented [aug]	1 - 3 - #5	Caug	Caug
Major seventh augmented [M7aug]	1 - (3) - #5 - 7	CM7aug	CM7aug
Minor [m]	1 - b3 - 5	Cm	Cm
Minor add ninth [m(9)]	1 - 2 - b3 - 5	Cm(9)	Cm(9)
Minor sixth [m6]	1 - b3 - 5 - 6	Cm6	Cm6
Minor seventh [m7]	1 - b3 - (5) - b7	Cm7	Cm7
Minor seventh ninth [m7(9)]	1 - 2 - b3 - (5) - b7	Cm7(9)	Cm7(9)
Minor seventh add eleventh [m7(11)]	1 - (2) - b3 - 4 - 5 - (b7)	Cm7(11)	Cm7(11)
Minor major seventh [mM7]	1 - b3 - (5) - 7	CmM7	CmM7
Minor major seventh ninth [mM7(9)]	1 - 2 - b3 - (5) - 7	CmM7(9)	CmM7(9)
Minor seventh flatted fifth [m7b5]	1 - b3 - b5 - b7	Cm7b5	Cm7b5
Minor major seventh flatted fifth [mM7b5]	1 - b3 - b5 - 7	CmM7b5	CmM7b5
Diminished [dim]	1 - b3 - b5	Cdim	Cdim
Diminished seventh [dim7]	1 - b3 - b5 - 6	Cdim7	Cdim7
Seventh [7]	1 - 3 - (5) - b7 or 1 - (3) - 5 - b7	C7	C7
Seventh flatted ninth [7(b9)]	1 - b2 - 3 - (5) - b7	C7(b9)	C7(b9)
Seventh add flatted thirteenth [7(b13)]	1 - 3 - 5 - b6 - b7	C7(b13)	C7(b13)
Seventh ninth [7(9)]	1 - 2 - 3 - (5) - b7	C7(9)	C7(9)
Seventh add sharp eleventh [7(#11)]	1 - (2) - 3 - #4 - 5 - b7 or 1 - 2 - 3 - #4 - (5) - b7	C7(#11)	C7(#11)
Seventh add thirteenth [7(13)]	1 - 3 - (5) - 6 - b7	C7(13)	C7(13)
Seventh sharp ninth [7(#9)]	1 - #2 - 3 - (5) - b7	C7(#9)	C7(#9)
Seventh flatted fifth [7b5]	1 - 3 - b5 - b7	C7b5	C7b5
Seventh augmented [7aug]	1 - 3 - #5 - b7	C7aug	C7aug
Seventh suspended fourth [7sus4]	1 - 4 - (5) - b7	C7sus4	C7sus4
One plus two plus five [1+2+5]	1 - 2 - 5	C1+2+5	C

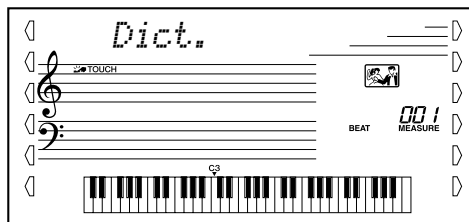
NOTE 

- Notes in parentheses can be omitted.
- Playing two same root keys in the adjacent octaves produces accompaniment based only on the root.
- A perfect fifth (1 + 5) produces accompaniment based only on the root and fifth which can be used with both major and minor chords.
- The chord fingerings listed are all in "root" position, but other inversions can be used — with the following exceptions:
 - m7, m7b5, 6, m6, sus4, aug, dim7, 7b5, 6(9), 1+2+5
- Inversion of the 7sus4 and m7(11) chords are not recognized if the notes shown in parentheses are omitted.
- The auto accompaniment will sometimes not change when related chords are played in sequence (e.g. some minor chords followed by the minor seventh).
- Two-note fingerings will produce a chord based on the previously played chord.

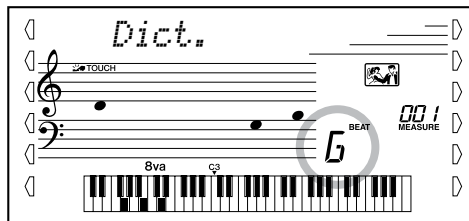
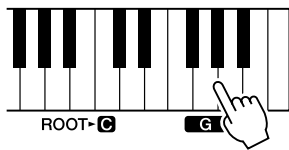
Looking Up Chords Using the Dictionary

If you know a chord name but aren't sure how to finger the chord on the keyboard, you can look it up using the "dictionary" function.

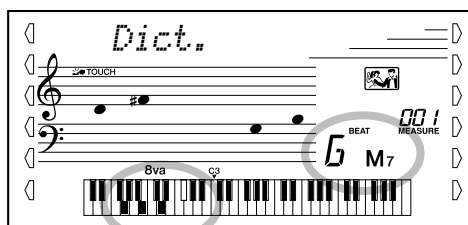
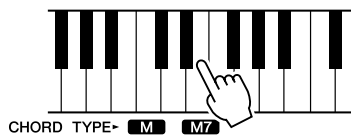
- 1 Press the [Dict.] button.



- 2 For this example let's look up the fingering for GM7. Find the **ROOT** keys (labeled beneath the keyboard) and press the G key (no sound will be produced). The root G will appear in the display.



- 3 Find the **CHORD TYPE** keys (labeled beneath the keyboard) and press the M7 key (no sound will be produced). The fingering for the specified chord — root + chord type — will appear on both the score and the graphic keyboard in the display.



Referring to the display, try fingering the chord on the keyboard. If you play the chord correctly the chord name in the display will flash.

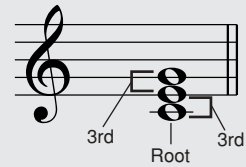
NOTE

- Major chords are usually indicated by the root name only. For example "C" on a score refers to a "C Major" chord. To look up the fingering for a major chord press the root key and then the M chord type key.

■ About chords

Playing two or more notes together simultaneously creates a “chord.”

Playing a note together with two other notes spaced three notes (steps) apart — such as the notes C, E and G — creates a harmonious sound. Chords like these are called “triads” and they play an important role in most music.



Taking the chord above as an example, the lowest note of this triad is called the “root note.” This is the central note sound, and it supports or anchors the rest of the notes chord.

You’ll notice that the middle note of the chord above (E) is the third step in the succession of scale notes — C, D, then E. There are two types of “thirds” in chords: major thirds and minor thirds.

Major third — four half steps from the root

Minor third — three half steps from the root

We’ll also alter the top note of our original chord and make three additional chords, as shown below. (The captions indicate the intervals between each of the notes.)

◆ Major chord
C_M

◆ Minor chord
C_m

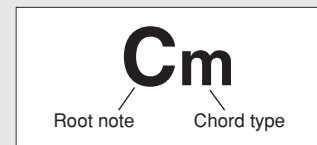
◆ Augmented chord
C_{aug}

◆ Diminished chord
C_{dim}

The basic characteristics of the chord sound are same, no matter if we change the order of the notes from bottom to top, or if we add other same name notes in different octaves. Beautiful sounding harmonies can be built in this manner, and emotional music can be created by playing different chords one after the other according to commonly accepted rules. Harmony determines the nature of chords, and music is created based on harmony.

● Chord names

From the chord name, you can tell at a glance what type of chord it is and which notes make up the chord. Understanding the basic structure of chords is very useful — once you’re familiar with this, you’ll be quickly and easily play chords by looking at the names that appear above the notation.



● Chord types (These chords are among those that can be recognized by the Fingered method.)

Suspended 4th
C_{sus4}

7th
C₇

Minor 7th
C_{m7}

Major 7th
C_{M7}

Minor/major 7th
C_{mM7}

7th, flatted 5th
C_{7(b5)}

Minor 7th, flatted 5th
C_{m7(b5)}

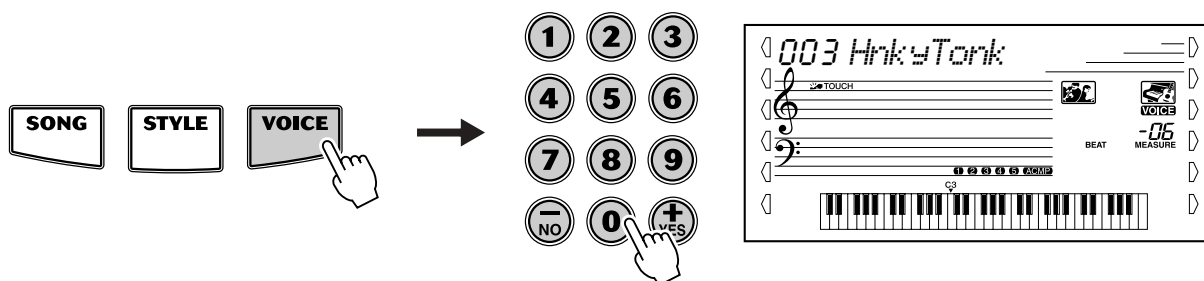
7th, suspended 4th
C_{7sus4}

Song Playback Functions

Changing the Melody Voice of a Song

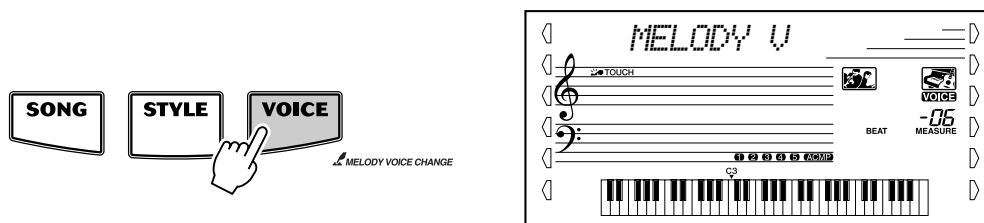
You can change a song's melody voice to any other voice you prefer.

- 1 Press the [SONG] button and then select the song for which you want to select a different melody voice.
- 2 Press the [VOICE] button and use the number buttons [0] ~ [9] or the [+] and [-] buttons to select the desired voice.



The selected voice will sound when you play the keyboard.

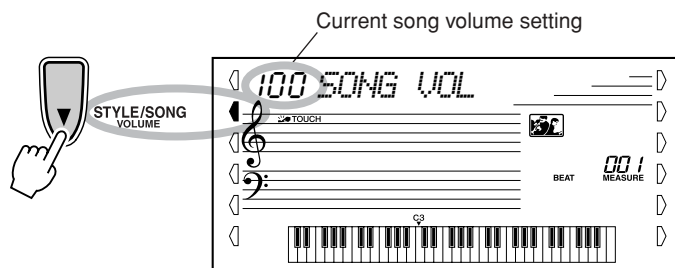
- 3 Press and hold the [VOICE] button for longer than a second. MELODY VOICE CHANGE will appear in the display and the voice you selected in step 2 will replace the selected song's original voice.



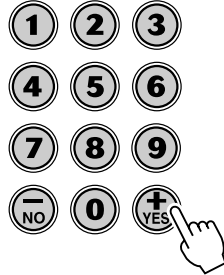
Song Volume

You can adjust the song playback volume to achieve the best balance with the keyboard sound.

- 1 Use the [LEFT MENU] button to select STYLE/SONG VOLUME.



2 Use the number buttons [0] ~ [9] or the [+] and [-] buttons to set the song volume from 000 to 127 as required.



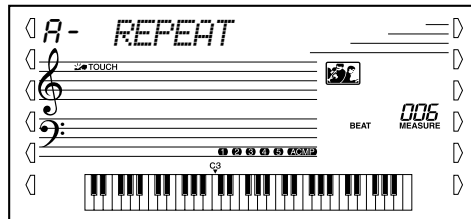
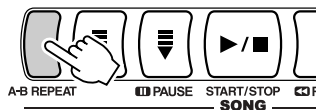
NOTE

- The default song volume value of “100” can be instantly recalled by simultaneously pressing the [+] and [-] buttons.
- Song volume can be adjusted when a song is selected.

Repeat Playback

You can specify a section of a song — “A” is the start point and “B” is the end point — for repeat playback.

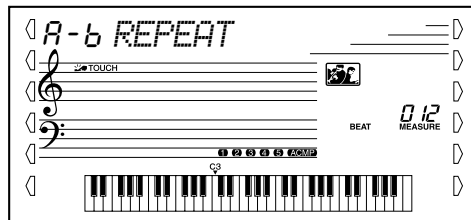
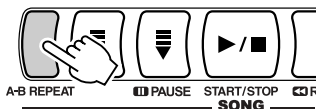
1 Play the song and press the [A-B REPEAT] button at the beginning of the section you want to repeat (the “A” point).



NOTE

- The repeat start and end points can be specified in one-measure increments.
- If you want to set the start point “A” at the very beginning of the song press the [A-B REPEAT] button before starting playback of the song.

2 Press the [A-B REPEAT] button a second time at the end of the section you want to repeat (the “B” point). The specified A-B section of the song will now play repeatedly.



You can stop repeat playback by pressing the [A-B REPEAT] button while “A-b REPEAT” is being shown on the display.

Play With Easy Performer

Easy Performance makes it easy for you to play songs that can't yet play by yourself.

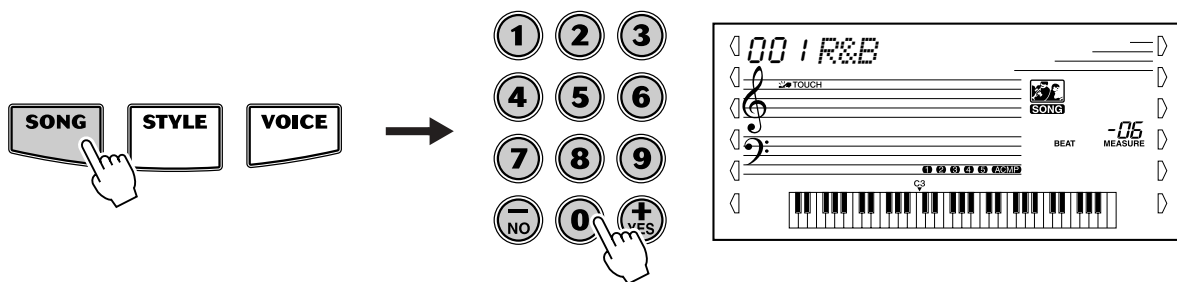
When Easy performer is on the melody or accompaniment can be muted so you can play just one part. And Easy Performer will correct wrong notes for you, as long as you play the keyboard at the correct timing.

NOTE

- When using a Disk Song, you can select a specific track to be performed by Easy Performer (page 51).

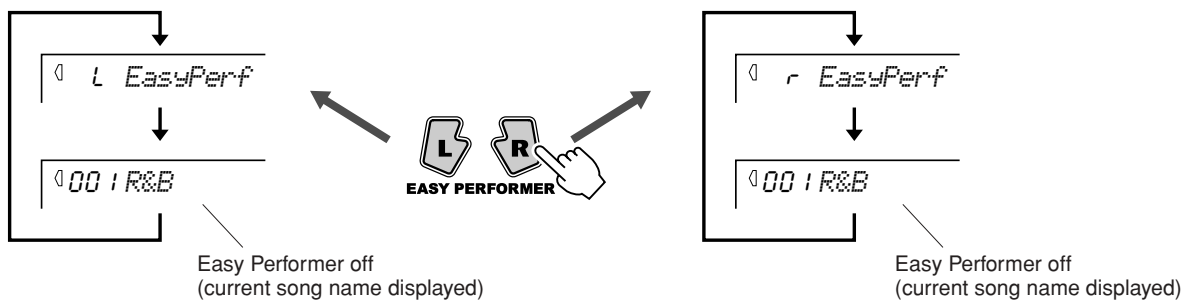
1 Select the song you want to play.

Press the [SONG] button and then use the number buttons [0] ~ [9] or the [+] and [-] buttons select a song.



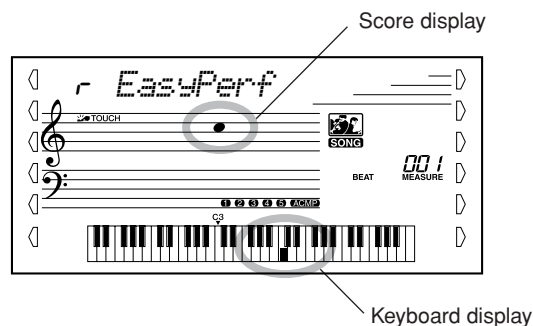
2 Select the right- or left-hand part.

Press the [R] button if you want to play the right hand part, or the [L] button if you want to play the left-hand part. Song playback will start automatically.



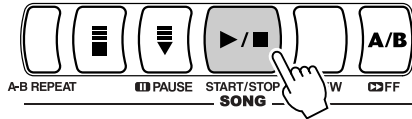
3 Play the keyboard with the correct timing.

The sound of the part you selected in step 2, above, will be muted. Watch the score and keyboard in the display, and play the indicated notes with the correct timing. If you play a wrong note the PSR-450 will play the correct note for you.



4 Stop the performance.

Press the [START/STOP] button.



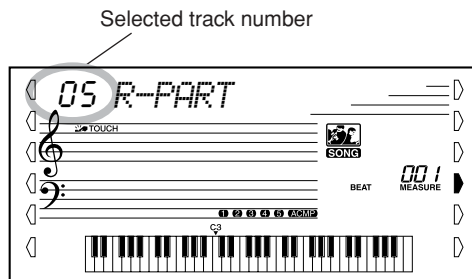
● Track Selection

When using a Disk Song with Easy performer you can select the track you want to be muted (the part you will play). Do the following after step 1 — “Select the song you want to play.” — on page 50.

- 1 To select a right-hand track use the [RIGHT MENU] button to select TRACK ASSIGN R, or to select a left-hand track select TRACK ASSIGN L.
- 2 Use the number buttons [0] ~ [9] or the [+] and [-] buttons to select the desired track.

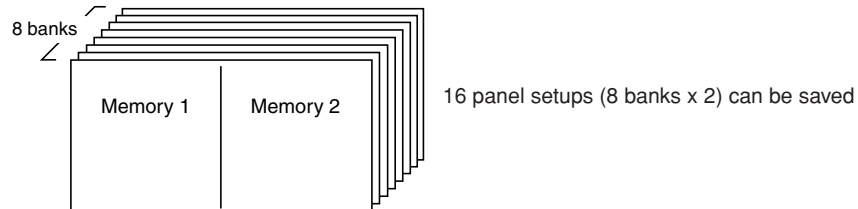
NOTE

- This function works only with SMF Format 0 song files (refer to page 57 for information about SMF files).
- Be sure to select the track you want to play while song playback is stopped.



Save the Panel Settings (Registration Memory)

The current panel settings (voice, style, and other settings made via the instrument's panel) can be saved and recalled whenever needed. Up to 16 complete panel setups — 8 banks of 2 memories — can be saved.



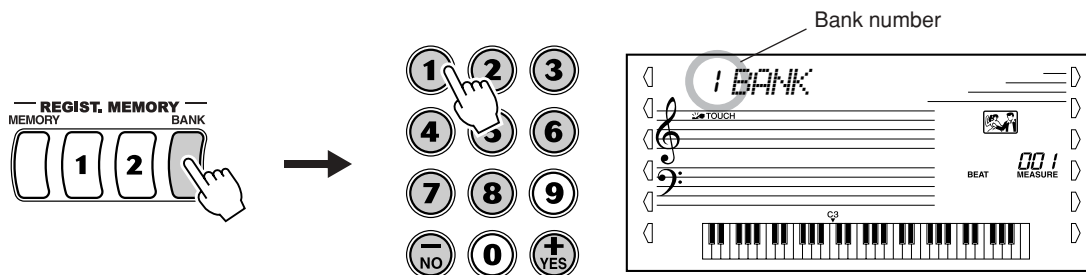
Saving the Current Panel Settings

● Settings Saved By the Registration Memory

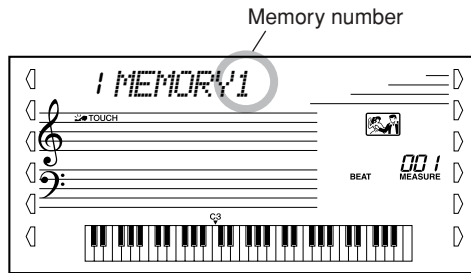
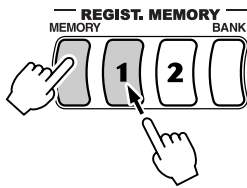
- Main Voice number
- Main Voice Volume
- Main Voice Reverb Level
- Main Voice DSP Level
- Dual Voice on/off
- Dual Voice number
- Dual Voice Octave
- Dual Voice Volume
- Dual Voice Reverb Level
- Dual Voice DSP Level
- Split Point
- Reverb Type
- DSP Type
- Harmony on/off, Harmony Type
- Style number*
- Accompaniment on/off*
- Main A/B*
- Style Volume*
- Tempo*
- Transpose
- Pitch Bend Range

* Cannot be saved in the song play mode (when the SONG icon is showing). These parameters can be saved after pressing the [VOICE] or [STYLE] button.

- 1 Set the panel controls as required (voice, style, etc.).
- 2 Press the [BANK] button and then use the number buttons [1] ~ [8] or the [+] and [-] buttons to select the bank you want to save the settings to.



- Press REGIST. MEMORY [1] or [2] button while holding the [MEMORY] button to actually save the data.

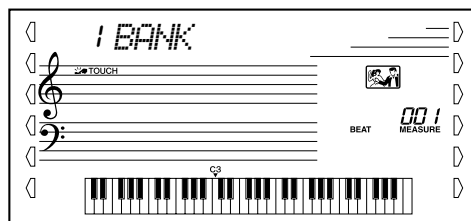


CAUTION

- If you save the panel settings to a memory location that contains previous data, the previous data will be overwritten by the new settings.

Recall the Save panel Settings

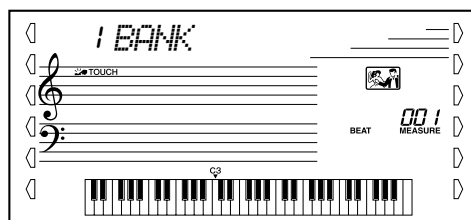
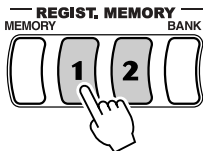
- Press the [BANK] button and then use the number buttons [1] ~ [8] or the [+] and [-] buttons to select the bank containing the settings you want to recall.



CAUTION

- All current panel settings will be overwritten when a registration memory is recalled. If you want to keep the settings you will need to save them to a free registration memory location before recalling the saved settings.

- Press the REGIST. MEMORY [1] or [2] button containing the settings you want to recall. The panel settings will change accordingly



Floppy Disk Save and Load

Data that Can be Saved and Loaded with the PSR-450

Extension	Data type	Save	Load
.USR	User song User style Registration memory	Yes	Yes
.STY	Style file	No	Yes

NOTE

- User songs, Disk Style data (style number 141) and Registration Memory are saved and loaded as a single file on the PSR-450.

Playing Disk Songs

Optional GM songs, piano-player songs, or songs recorded in SMF (Standard MID File) format can be played directly from floppy disk without actually having to load the data into the PSR-450.

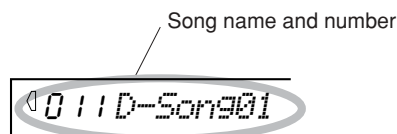
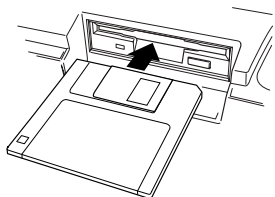
NOTE

- Some song data may play notes outside the 61-key range of the PSR-450.

1 Insert the floppy disk into the disk drive.

Insert the floppy disk containing the song data into the floppy disk drive shutter-first and with the label side facing upward. Be sure to insert the disk all the way until it “clicks” into place.

The PSR-450 will automatically switch to the song playback mode when a floppy disk containing playable songs is inserted.

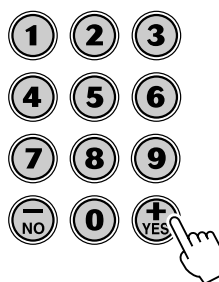


NOTE

- The tempo setting of some commercially available disk songs is fixed. These songs are called “free-tempo software.” When playing back free-tempo song data on the PSR-450, the measure display shows “F t” and the beat display does not flash. Also, the measure number in the display does not match the actual measure number of playback, and only gives you an indication of how much of the song has played back.

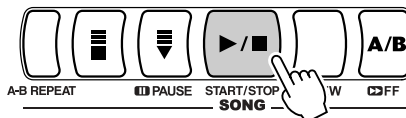
2 Select the song you want to hear.

Use the number buttons [0] ~ [9] or the [+] and [-] buttons to select a song.



3 Start song playback.

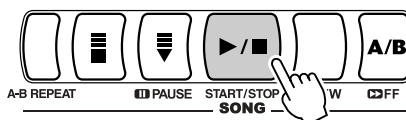
Press the [START/STOP] button to begin playback of the selected song.



4 Go back to step 2 when you want to select a different song.

5 Stop song playback.

Press the [START/STOP] button to stop playback.



Change the Playback Octave Of a Track

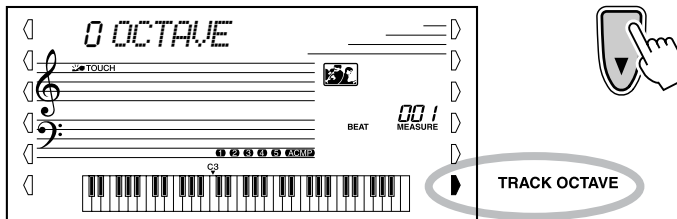
When playing disk songs, the range of some songs might exceed the range of the PSR-450 keyboard (C1 ~ C6). In such cases the out-of-range notes will not appear in the display score or keyboard, but the **OUT OF RANGE** icon will appear with an arrow ◀/▶ indication whether the notes are above or below the PSR-450 range. If you want the out-of-range notes to be displayed, use the procedure outlined below to change the octave of the out-of-range track. The pitch of the track will also be shifted accordingly. The maximum octave change range is plus or minus 2 octaves.

NOTE

- Track octave shift affects the track selected via the "Track Selection" procedure described on page 51.



1 Stop playback and use the [RIGHT MENU] button to select TRACK OCTAVE.



2 Select the track octave value.

Press the [0], [1], or [2] number button to specify the octave change. When you shift the octave up **+1** or **+2** will appear to the left of the **OUT OF RANGE** icon. And when you shift the octave down **-1** or **-2** will appear to the right of the **OUT OF RANGE** icon.

NOTE

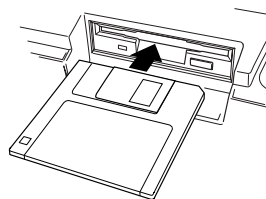
- The octave can only be set while playback is stopped.
- To enter negative values press the [1] or [2] number button while holding the [-] button.

Save

All user songs (song numbers 006 ~ 010) and the user style (style number 141) can be saved to a floppy disk in one operation.

1 Insert a formatted floppy disk in the disk drive.

Refer to "Format" on page 59 for formatting information.

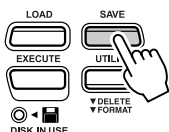


2 Press the [SAVE] button.

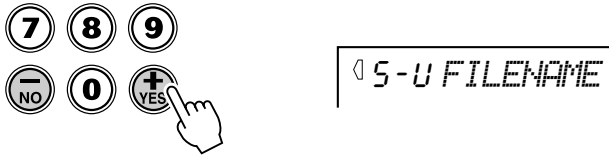
The name of the new file to be saved will appear in the display (e.g. UF_00nnn). The file name will be automatically generated by the PSR-450. You can cancel the save operation by pressing the [SAVE] button two more times to exit from the save display.

NOTE

- If the [SAVE] button is pressed when there is no floppy disk inserted into the disk drive, a "No disk" message appears at the top of the display, and all disk operations will be disabled.
- When the floppy disk's write-protect tab is set to ON (page 6) or the disk is a purposely "copy-protected" disk, a "Protect" message appears, indicating that the Save function is not possible.



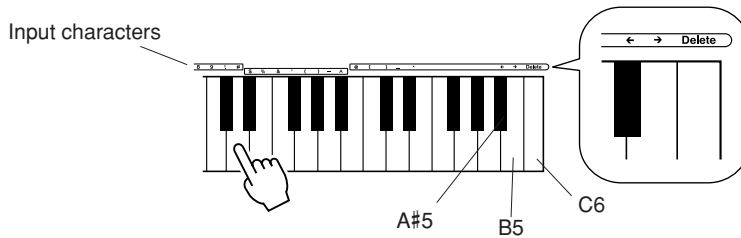
- To overwrite an existing file on the disk use the [+] and [-] buttons to select the name of the file you want to overwrite.



3 Change the file name if necessary.

The file name shown in the display can be changed via the keyboard. File names can have a maximum of 8 characters.

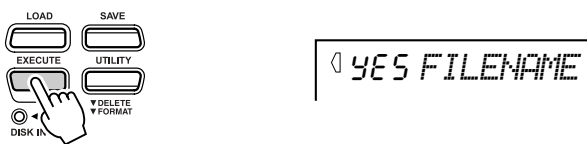
- When a key is pressed the character above that key will be inserted at the current cursor location.
- Press the A#5 key to move the cursor to the left, or the B5 key to move the cursor to the right.
- Press the C6 key to erase the character at the cursor and leave a space.



NOTE

- If you change the file name the file will be saved as a new file.

4 Press the [EXECUTE] button.



NOTE

- If you have selected a file to which data has already been saved, "yES Over Wr?" will appear on the top line of the display.

5 Execute the save operation.

Press the [+ / YES] button to begin execution of the save operation. "Saving" will appear on the display while the file is being saved.



CAUTION

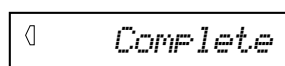
- While the file is being saved ("Saving" message appears on the display), never eject the floppy disk or turn the power off.

NOTE

- If there isn't enough space on the disk, a "DiskFull" message appears, and you will not be able to save any data. You can delete unneeded files on the disk (page 58), or replace the disk with a new one and repeat the save operation.
- If a write error occurs during a save operation, an "Error" message appears. If the error reoccurs after repeating the save operation, there could be something wrong with the disk. Insert a different disk in the drive and retry the save operation.

You can abort the save operation by pressing the [- / NO] button. Exit from the save mode by pressing the [UTILITY] button.

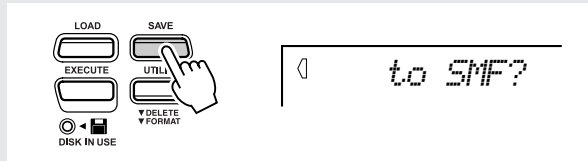
"Complete" will appear on the display when the save operation has been completed.



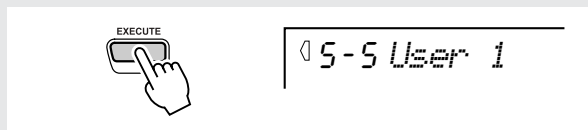
■ Saving SMF (Standard MIDI Format) Format 0 Files

SMF format is a standard format for saving MIDI music data. To save PSR-450 song data in SMF Format 0, perform the following steps after performing step 2 on page 55.

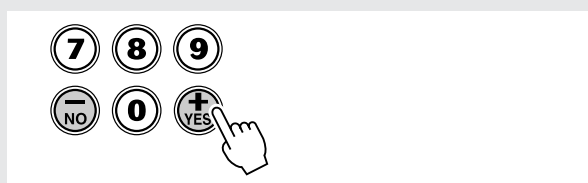
2-1 In step 2 on page 55 of the above Save operation, after pressing the [SAVE] button, press the [SAVE] button again to call up the SMF Save mode.



2-2 Press the [EXECUTE] button.



2-3 Select a song for saving, if necessary, using the [+] and [-] buttons.



2-4 Press the [EXECUTE] button.



Continue with step 3 on page 56 of the Save operation above.

Load

This procedure loads user songs you have to floppy disk or style data from the supplied floppy disk into the PSR-450 for use.

1 Insert the floppy disk into the disk drive.

Insert the floppy disk containing the data you want to load.

2 Press the [LOAD] button.

A file name will appear on the display.

You can exit from the load mode at this point by pressing the [LOAD] button a second time.



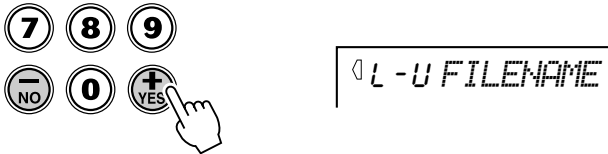
This type of file name will appear when the file is an user file.
Style files appear as "L - 5".

NOTE

- If the [LOAD] button is pressed when there is no floppy disk inserted into the disk drive, a "No disk" message appears at the top of the display, and all disk operations will be disabled.

3 Select the file you want to load.

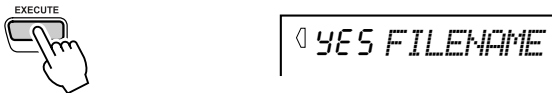
Use the [+] and [-] buttons to select the name of the file you want to load.



NOTE

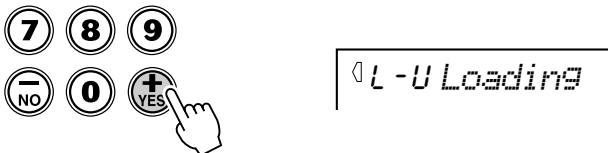
- If the disk contains no file, the display shows “No file” indicating that the Load function is not possible.

4 Press the [EXECUTE] button.



5 Execute the load operation.

Press the [+ / YES] button to begin execution of the load operation. “Loading” will appear on the display while the file is being loaded.



CAUTION

- While the file is being loaded (“Loading” message appears on the display), never eject the floppy disk or turn the power off.

You can abort the load operation by pressing the [- / NO] button. Exit from the load mode by pressing the [LOAD] button.

“Complete” will appear on the display when the load operation has been completed.



NOTE

- When data is loaded from a floppy disk to the PSR-450, the data already in the memory of the PSR-450 will be replaced by the data on the disk. Save important data into a disk file before doing the operation.

Delete

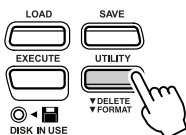
This operation deletes a selected file from a floppy disk.

1 Insert the floppy disk into the disk drive.

Insert the floppy disk containing the data you want to delete.

2 Press the [UTILITY] button.

A file name will appear on the display.



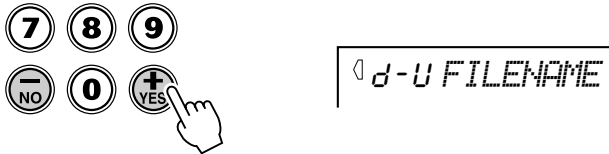
A user file is selected. SMF files appear as “d-5”.

NOTE

- If the [UTILITY] button is pressed when there is no floppy disk inserted into the disk drive, a “No disk” message appears at the top of the display, and all disk operations will be disabled.
- When the floppy disk’s write-protect tab is set to ON (see page 6) or the disk is a purposely “copy-protected” disk, a “Protect” message appears, indicating that the Delete function is not possible.
- Only files that were created on the PSR-450 and were saved as files (User song, etc.) can be deleted. When there are no files on disk that the PSR-450 can delete, the FORMAT display appears instead of DELETE, when the [UTILITY] button is pressed.

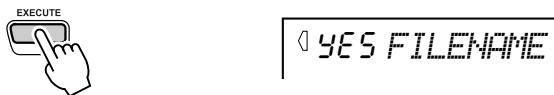
3 Select the file you want to delete.

Use the [+] and [-] buttons to select the name of the file you want to delete.



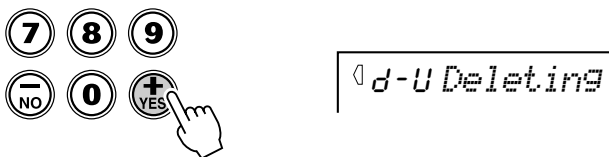
You can abort the delete operation by pressing the [UTILITY] button twice.

4 Press the [EXECUTE] button.



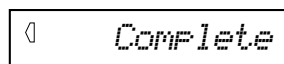
5 Execute the delete operation.

Press the [+ / YES] button to begin execution of the delete operation. "Deleting" will appear on the display while the file is being deleted.



You can abort the delete operation by pressing the [- / NO] button.
Exit from the delete mode by pressing the [UTILITY] button twice.

"Complete" will appear on the display when the delete operation has been completed.



NOTE

- If the disk contains no file, the display shows "No file" indicating that the Delete function is not possible.

CAUTION

- While the file is being deleted ("Deleting" message appears on the display), never eject the floppy disk or turn the power off.

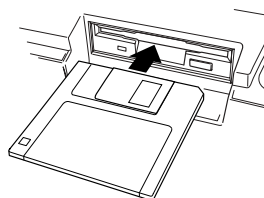
Format

Standard floppy disks (3.5-inch 2HD or 2DD types) must be formatted by the PSR-450 before they can be used for saving PSR-450 data.

Formatting an Unformatted Floppy Disk

1 Insert a new unformatted floppy disk in the disk drive.

The PSR-450 will automatically enter the format mode when an unformatted disk is inserted in the drive.



NOTE

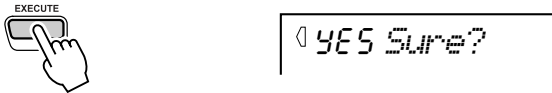
- When the floppy disk's write-protect tab is set to ON (see page 6) or the disk is a purposely "copy-protected" disk, a "Protect" message appears, indicating that the Format function is not possible.

CAUTION

- If a disk that cannot be read by the PSR-450 is inserted into the disk drive, it will be treated the same as an unformatted floppy disk. Take care not to erase important data by accidentally formatting a disk.

2 Press the [EXECUTE] button.

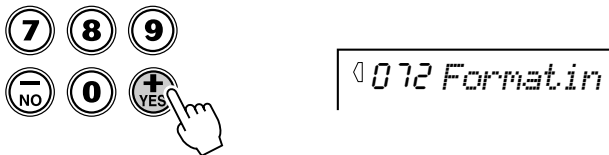
“yES Sure?” will appear on the display, asking you to confirm that you want to proceed with the format operation.



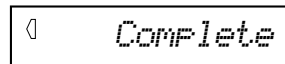
You can abort the format operation by pressing the [-/NO] button. Exit from the format mode by pressing the [UTILITY] button.

3 Execute the format operation.

Press the [+ / YES] button to begin execution of the format operation. “Formatin” will appear on the display while the disk is being formatted.



“Complete” will appear on the display when the format operation has been completed.



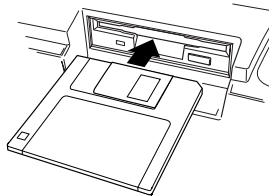
CAUTION

- While the file is being Formatted (“Formatin” message appears on the display), never eject the floppy disk or turn the power off.

Formatting an Already Formatted Floppy Disk

This function is useful for quickly deleting unnecessary files from an already formatted disk.

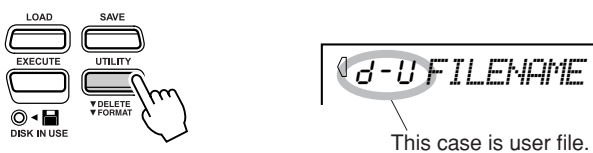
1 Insert the formatted floppy disk in the disk drive.



CAUTION

- If data is already saved on the disk, be careful not to format it. If you format the disk, all the previously recorded data will be deleted.

2 Press the [UTILITY] button.



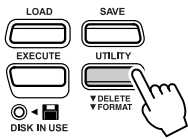
NOTE

- If the [UTILITY] button is pressed when there is no floppy disk inserted into the disk drive, a “No disk” message appears at the top of the display, and all disk operations will be disabled.

If the inserted floppy disk does not contain any files the PSR-450 will automatically proceed to step 3.

3 Press the [UTILITY] button again.

You can exit from the format mode by pressing the [UTILITY] button one more time.

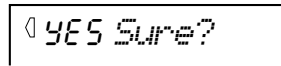


NOTE

- When the floppy disk's write-protect tab is set to ON (see page 6) or the disk is a purposely "copy-protected" disk, a "Protect" message appears, indicating that the Format function is not possible.

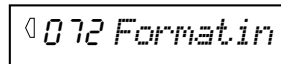
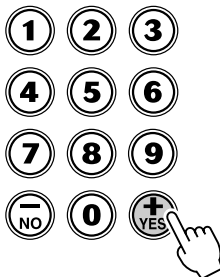
4 Press the [EXECUTE] button.

"yES Sure?" will appear on the display, asking you to confirm that you want to proceed with the format operation.



5 Execute the format operation.

Press the [+ / YES] button to begin execution of the format operation. "Formatin" will appear on the display while the disk is being formatted.

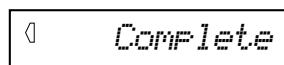


CAUTION

- While the file is being Formatted ("Formatin" message appears on the display), never eject the floppy disk or turn the power off.

You can abort the format operation by pressing the [- / NO] button. Exit from the format mode by pressing the [UTILITY] button.

"Complete" will appear on the display when the format operation has been completed.



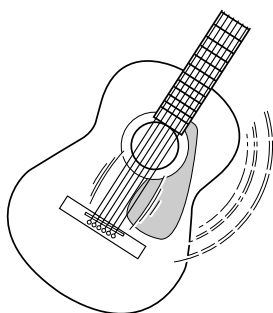
MIDI Functions

The PSR-450 is MIDI-compatible, featuring MIDI IN and MIDI OUT terminals and providing a variety of MIDI-related controls. By using the MIDI functions you can expand your musical possibilities. This section explains what MIDI is, and what it can do, as well as how you can use MIDI on your PSR-450.

What Is MIDI?

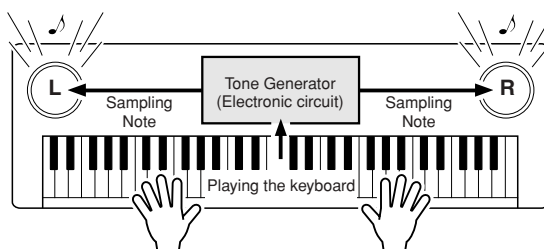
No doubt you have heard the terms “acoustic instrument” and “digital instrument.” In the world today, these are the two main categories of instruments. Let’s consider an acoustic piano and a classical guitar as representative acoustic instruments. They are easy to understand. With the piano, you strike a key, and a hammer inside hits some strings and plays a note. With the guitar, you directly pluck a string and the note sounds. But how does a digital instrument go about playing a note?

● Acoustic guitar note production



Pluck a string and the body resonates the sound.

● Digital instrument note production



Based on playing information from the keyboard, a sampling note stored in the tone generator is played through the speakers.

As shown in the illustration above, in an electronic instrument the sampling note (previously recorded note) stored in the tone generator section (electronic circuit) is played based on information received from the keyboard. So then what is the information from the keyboard that becomes the basis for note production?

For example, let’s say you play a “C” quarter note using the grand piano sound on the PSR-450 keyboard. Unlike an acoustic instrument that puts out a resonated note, the electronic instrument puts out information from the keyboard such as “with what voice,” “with which key,” “about how strong,” “when was it pressed,” and “when was it released.” Then each piece of information is changed into a number value and sent to the tone generator. Using these numbers as a basis, the tone generator plays the stored sampling note.

[Example of Keyboard Information]

Voice number (with what voice)	001 (Grand Piano)
Note number (with which key)	60 (C3)
Note on (when was it pressed) and note off (when was it released)	Timing expressed numerically (quarter note)
Velocity (about how strong)	120 (strong)

MIDI is an acronym that stands for Musical Instrument Digital Interface, which allows electronic musical instruments to communicate with each other, by sending and receiving compatible Note, Control Change, Program Change and various other types of MIDI data, or messages. The PSR-450 can control a MIDI device by transmitting note related data and various types of controller data. The PSR-450 can be controlled by the incoming MIDI messages which automatically determine tone generator mode, select MIDI channels, voices and effects, change parameter values and of course play the voices specified for the various parts.

MIDI messages can be divided into two groups: Channel messages and System messages. Below is an explanation of the various types of MIDI messages which the PSR-450 can receive/transmit.

● Channel Messages

The PSR-450 is an electronic instrument that can handle 16 channels. This is usually expressed as “it can play 16 instruments at the same time.” Channel messages transmit information such as Note ON/OFF, Program Change, for each of the 16 channels.

Message Name	PSR-450 Operation/Panel Setting
Note ON/OFF	Messages which are generated when the keyboard is played. Each message includes a specific note number which corresponds to the key which is pressed, plus a velocity value based on how hard the key is struck.
Program Change	Voice number (along with corresponding bank select MSB/LSB settings, if necessary).
Control Change	Messages that are used to change some aspect of the sound (volume, pan, etc.).

● System Messages

This is data that is used in common by the entire MIDI system. System messages include messages like Exclusive Messages that transmit data unique to each instrument manufacturer and Realtime Messages that control the MIDI device.

Message Name	PSR-450 Operation/Panel Setting
Exclusive Message	Reverb/DSP type settings, etc.
Realtime Messages	Start/stop operation

The messages transmitted/received by the PSR-450 are shown in the MIDI Implementation Chart on page 80.

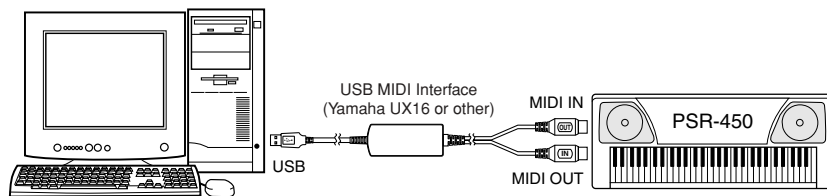
Things You Can Do With MIDI

- Connect to other MIDI devices via a MIDI cable and send and receive performance data.
- Connect to a computer via a MIDI cable and send and receive performance data.
- Local on/off: Determine whether or not notes played on the PSR-450 are sounded by the PSR-450's internal tone generator.
- Initial send: When recording a PSR-450 performance to an external sequencer or similar equipment, this function sends the current PSR-450 panel settings so that when the sequence is played back the original panel settings are automatically restored.
- Clock settings: Allow other MIDI equipment to be synchronized with the PSR-450 for playback.

Connecting to a Personal Computer

By connecting the PSR-450 to a computer you can record and manage PSR-450 data on the computer, and receive performance data from the computer that will play back on the PSR-450.

- The computer's USB connector and the PSR-450 MIDI connectors are connected to a USB MIDI interface unit.



NOTE

- Special MIDI cables (sold separately) must be used for connecting to MIDI devices. They can be bought at music stores, etc.
- Never use MIDI cables longer than about 15 meters. Cables longer than this can pick up noise which can cause data errors.

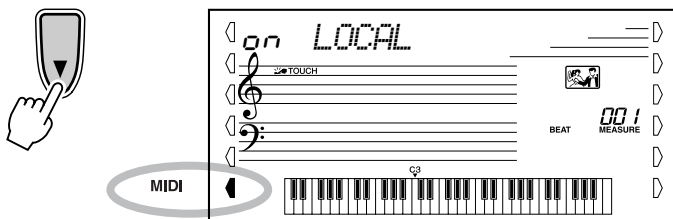
With this type of setup you will need to have the appropriate USB MIDI driver installed on your computer.

Local On/Off

This function can be used to turn local control on or off. Local control determines whether or not notes played on the PSR-450 are sounded by its internal tone generator system: the internal tone generator is active when local control is on, and inactive when local control is off.

- **on (Local on)** This is the normal setting in which notes played on the PSR-450 keyboard are sounded by the internal tone generator system. MIDI data received via the MIDI IN connector will also be played by the internal tone generator.
- **oFF (Local off)** With this setting the PSR-450 itself produces no sound, but the performance data is transmitted via the MIDI OUT connector. MIDI data received via the MIDI IN connector will be played by the internal tone generator.

1 Use the [LEFT MENU] button to select MIDI.



If "LOCAL" is already showing on the display skip ahead to step **3**.

2 Select the local control setting mode.

Press the number button [1] to select “LOCAL”.



3 Turn local control on or off.

Use the [+ / YES] button to turn local control on, or the [- / NO] button to turn local control off.

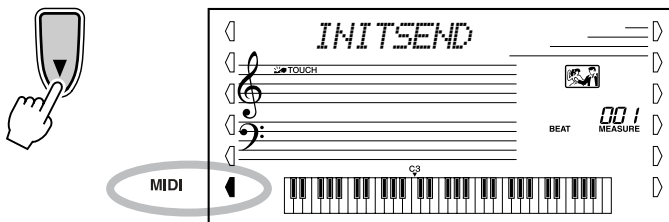


PSR-450 Panel Setting Transmission (Initial Send)

Sends the PSR-450 panel settings to an external MIDI device.

When recording a PSR-450 performance to an external sequencer or similar equipment, you can use this function to send the current PSR-450 panel settings so that when the sequence is played back the original panel settings are automatically restored.

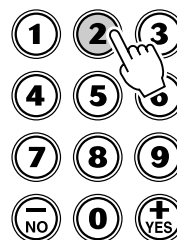
1 Use the [LEFT MENU] button to select MIDI.



If “INITSEND” is already showing on the display skip ahead to step 3.

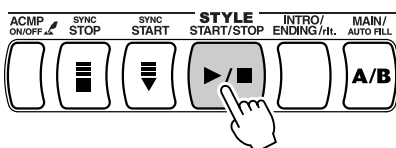
2 Select the initial send setting mode.

Press the number button [2] to select “INITSEND”.

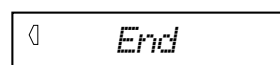


3 Transmit the panel settings.

Press the [START/STOP] button to begin transmission of the panel settings.



“End” will appear on the display when the transmission is complete.



Clock Settings

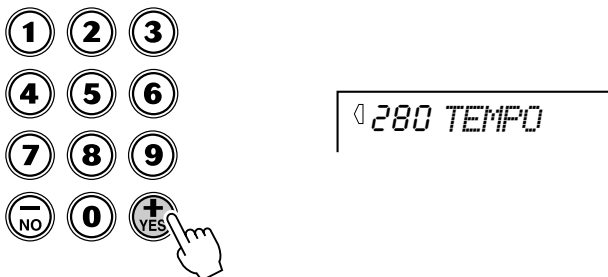
These settings are used when synchronizing external MIDI equipment with PSR-450 song, style, or metronome playback.

- **Internal clock**.....This is the normal PSR-450 setting.
- **External clock**.....The PSR-450's time based functions will be synchronized to the MIDI clock from an external MIDI device.
If no MIDI clock signal is being received from an external device the PSR-450 song, style, and metronome functions will not work.

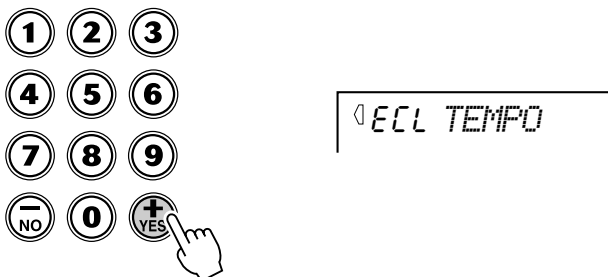
1 Press the [TEMPO/TAP] button.



2 Press and hold the [+] button until the TEMPO value reaches 280.



3 Press the [+] button one more time.



When "ECL" appears on the display the PSR-450 is in the external clock mode. To go back to the internal clock mode press the [-] button to return to an internal tempo setting.

Voice List

Voice No.	Bank Select		MIDI Program Numbers	Voice Name
	MSB	LSB		
067	000	113	053	Vocal Ensemble
068	000	112	054	Vox Humana
069	000	112	055	Air Choir
SAXOPHONE				
070	000	117	067	Sweet! Tenor Sax
071	000	114	066	Sweet! Alto Sax
072	000	113	065	Sweet! Soprano Sax
073	000	114	072	Sweet! Clarinet
074	000	118	067	GrowlSax
075	000	112	068	Baritone Sax
076	000	112	067	Tenor Sax
077	000	112	066	Alto Sax
078	000	112	065	Soprano Sax
079	000	114	067	Breathy Tenor Sax
080	000	112	069	Oboe
081	000	112	072	Clarinet
082	000	112	070	English Horn
083	000	112	071	Bassoon
TRUMPET				
084	000	115	057	Sweet! Trumpet
085	000	117	058	Sweet! Trombone
086	000	112	060	Muted Trumpet
087	000	112	057	Trumpet
088	000	112	058	Trombone
089	000	113	058	Trombone Section
090	000	112	061	French Horn
091	000	112	059	Tuba
BRASS				
092	000	112	062	Brass Section
093	000	113	062	Big Band Brass
094	000	119	062	Mellow Horns
095	000	112	063	Synth Brass
096	000	113	063	80's Brass
097	000	114	063	Techno Brass
FLUTE				
098	000	114	074	Sweet! Flute
099	000	113	076	Sweet! Pan Flute
100	000	112	074	Flute
101	000	112	073	Piccolo
102	000	112	076	Pan Flute
103	000	112	075	Recorder
104	000	112	080	Ocarina
SYNTH LEAD				
105	000	112	081	Square Lead
106	000	112	082	Sawtooth Lead
107	000	112	086	Voice Lead
108	000	112	099	Star Dust
109	000	112	101	Brightness
110	000	115	082	Analogon
111	000	119	082	Fargo

Voice No.	Bank Select		MIDI Program Numbers	Voice Name
	MSB	LSB		
SYNTH PAD				
112	000	118	089	SweetHeaven
113	000	112	089	Fantasia
114	000	113	101	Bell Pad
115	000	112	092	Xenon Pad
116	000	112	095	Equinox
117	000	113	090	Dark Moon
PERCUSSION				
118	000	112	012	Vibraphone
119	000	112	013	Marimba
120	000	112	014	Xylophone
121	000	112	115	Steel Drums
122	000	112	009	Celesta
123	000	112	011	Music Box
124	000	112	015	Tubular Bells
125	000	112	048	Timpani
SPLIT				
126	–	–	–	Acoustic Bass/Grand Piano
127	–	–	–	Finger Bass /Bright Piano
128	–	–	–	Fretless Bass/DX Modern Electric Piano
129	–	–	–	Acoustic Bass/Vibraphone
130	–	–	–	Fretless Bass/Brass Section
131	–	–	–	Analogon/Sawtooth Lead
132	–	–	–	Slap Bass/Clavi
133	–	–	–	Classical Guitar/Sweet! Flute
134	–	–	–	String Ensemble/Grand Piano
135	–	–	–	Vox Humana/Choir
DRUM KITS				
136	127	000	001	Standard Kit 1
137	127	000	002	Standard Kit 2
138	127	000	009	Room Kit
139	127	000	017	Rock Kit
140	127	000	025	Electronic Kit
141	127	000	026	Analog Kit
142	127	000	028	Dance Kit
143	127	000	033	Jazz Kit
144	127	000	041	Brush Kit
145	127	000	049	Symphony Kit
146	126	000	001	SFX Kit 1
147	126	000	002	SFX Kit 2

● XG Voice List

Voice No.	Bank Select		MIDI Program Numbers	Voice Name
	MSB	LSB		
PIANO				
148	000	000	001	Grand Piano
149	000	001	001	Grand Piano KSP
150	000	018	001	Mellow Grand Piano
151	000	040	001	Piano Strings
152	000	041	001	Dream
153	000	000	002	Bright Piano
154	000	001	002	Bright Piano KSP
155	000	000	003	Electric Grand Piano
156	000	001	003	Electric Grand Piano KSP
157	000	032	003	Detuned CP80
158	000	040	003	Layered CP 1
159	000	041	003	Layered CP 2
160	000	000	004	Honky-tonk Piano
161	000	001	004	Honky-tonk Piano KSP
162	000	000	005	Electric Piano 1
163	000	001	005	Electric Piano 1 KSP
164	000	018	005	Mellow Electric Piano 1
165	000	032	005	Chorus Electric Piano 1
166	000	040	005	Hard Electric Piano
167	000	045	005	Velocity Crossfade Electric Piano 1
168	000	064	005	60's Electric Piano 1
169	000	000	006	Electric Piano 2
170	000	001	006	Electric Piano 2 KSP
171	000	032	006	Chorus Electric Piano 2
172	000	033	006	DX Electric Piano Hard
173	000	034	006	DX Legend
174	000	040	006	DX Phase Electric Piano
175	000	041	006	DX + Analog Electric Piano
176	000	042	006	DX Koto Electric Piano
177	000	045	006	Velocity Crossfade Electric Piano 2
178	000	000	007	Harpsichord
179	000	001	007	Harpsichord KSP
180	000	025	007	Harpsichord 2
181	000	035	007	Harpsichord 3
182	000	000	008	Clavi
183	000	001	008	Clavi KSP
184	000	027	008	Clavi Wah
185	000	064	008	Pulse Clavi
186	000	065	008	Pierce Clavi
CHROMATIC				
187	000	000	009	Celesta
188	000	000	010	Glockenspiel
189	000	000	011	Music Box
190	000	064	011	Orgel
191	000	000	012	Vibraphone
192	000	001	012	Vibraphone KSP
193	000	045	012	Hard Vibraphone
194	000	000	013	Marimba

Voice No.	Bank Select		MIDI Program Numbers	Voice Name
	MSB	LSB		
195	000	001	013	Marimba KSP
196	000	064	013	Sine Marimba
197	000	097	013	Balimba
198	000	098	013	Log Drums
199	000	000	014	Xylophone
200	000	000	015	Tubular Bells
201	000	096	015	Church Bells
202	000	097	015	Carillon
203	000	000	016	Dulcimer
204	000	035	016	Dulcimer 2
205	000	096	016	Cimbalom
206	000	097	016	Santur
ORGAN				
207	000	000	017	DrawOrg
208	000	032	017	Detuned DrawOrg
209	000	033	017	60's DrawOrg 1
210	000	034	017	60's DrawOrg 2
211	000	035	017	70's DrawOrg 1
212	000	036	017	DrawOrg 2
213	000	037	017	60's DrawOrg 3
214	000	038	017	Even Bar
215	000	040	017	16+2'2/3
216	000	064	017	Organ Bass
217	000	065	017	70's DrawOrg 2
218	000	066	017	Cheezy Organ
219	000	067	017	DrawOrg 3
220	000	000	018	Percussive Organ
221	000	024	018	70's Percussive Organ
222	000	032	018	Detuned Percussive Organ
223	000	033	018	Light Organ
224	000	037	018	Percussive Organ 2
225	000	000	019	Rock Organ
226	000	064	019	Rotary Organ
227	000	065	019	Slow Rotary
228	000	066	019	Fast Rotary
229	000	000	020	Church Organ
230	000	032	020	Church Organ 3
231	000	035	020	Church Organ 2
232	000	040	020	Notre Dame
233	000	064	020	Organ Flute
234	000	065	020	Tremolo Organ Flute
235	000	000	021	Reed Organ
236	000	040	021	Puff Organ
237	000	000	022	Accordion
238	000	032	022	Accord It
239	000	000	023	Harmonica
240	000	032	023	Harmonica 2
241	000	000	024	Tango Accordion
242	000	064	024	Tango Accordion 2

Voice List

Voice No.	Bank Select		MIDI Program Numbers	Voice Name
	MSB	LSB		
GUITAR				
243	000	000	025	Nylon Guitar
244	000	016	025	Nylon Guitar 2
245	000	025	025	Nylon Guitar 3
246	000	043	025	Velocity Guitar Harmonics
247	000	096	025	Ukulele
248	000	000	026	Steel Guitar
249	000	016	026	Steel Guitar 2
250	000	035	026	12-string Guitar
251	000	040	026	Nylon & Steel Guitar
252	000	041	026	Steel Guitar with Body Sound
253	000	096	026	Mandolin
254	000	000	027	Jazz Guitar
255	000	018	027	Mellow Guitar
256	000	032	027	Jazz Amp
257	000	000	028	Clean Guitar
258	000	032	028	Chorus Guitar
259	000	000	029	Muted Guitar
260	000	040	029	Funk Guitar 1
261	000	041	029	Muted Steel Guitar
262	000	043	029	Funk Guitar 2
263	000	045	029	Jazz Man
264	000	000	030	Overdriven Guitar
265	000	043	030	Guitar Pinch
266	000	000	031	Distortion Guitar
267	000	040	031	Feedback Guitar
268	000	041	031	Feedback Guitar 2
269	000	000	032	Guitar Harmonics
270	000	065	032	Guitar Feedback
271	000	066	032	Guitar Harmonics 2
BASS				
272	000	000	033	Acoustic Bass
273	000	040	033	Jazz Rhythm
274	000	045	033	Velocity Crossfade Upright Bass
275	000	000	034	Finger Bass
276	000	018	034	Finger Dark
277	000	027	034	Flange Bass
278	000	040	034	Bass & Distorted Electric Guitar
279	000	043	034	Finger Slap Bass
280	000	045	034	Finger Bass 2
281	000	065	034	Modulated Bass
282	000	000	035	Pick Bass
283	000	028	035	Muted Pick Bass
284	000	000	036	Fretless Bass
285	000	032	036	Fretless Bass 2
286	000	033	036	Fretless Bass 3
287	000	034	036	Fretless Bass 4
288	000	096	036	Synth Fretless
289	000	097	036	Smooth Fretless
290	000	000	037	Slap Bass 1
291	000	027	037	Resonant Slap
292	000	032	037	Punch Thumb Bass

Voice No.	Bank Select		MIDI Program Numbers	Voice Name
	MSB	LSB		
293	000	000	038	Slap Bass 2
294	000	043	038	Velocity Switch Slap
295	000	000	039	Synth Bass 1
296	000	018	039	Synth Bass 1 Dark
297	000	020	039	Fast Resonant Bass
298	000	024	039	Acid Bass
299	000	035	039	Clavi Bass
300	000	040	039	Techno Synth Bass
301	000	064	039	Orbiter
302	000	065	039	Square Bass
303	000	066	039	Rubber Bass
304	000	096	039	Hammer
305	000	000	040	Synth Bass 2
306	000	006	040	Mellow Synth Bass
307	000	012	040	Sequenced Bass
308	000	018	040	Click Synth Bass
309	000	019	040	Synth Bass 2 Dark
310	000	032	040	Smooth Synth Bass
311	000	040	040	Modular Synth Bass
312	000	041	040	DX Bass
313	000	064	040	X Wire Bass
STRING				
314	000	000	041	Violin
315	000	008	041	Slow Violin
316	000	000	042	Viola
317	000	000	043	Cello
318	000	000	044	Contrabass
319	000	000	045	Tremolo Strings
320	000	008	045	Slow Tremolo Strings
321	000	040	045	Suspense Strings
322	000	000	046	Pizzicato Strings
323	000	000	047	Orchestral Harp
324	000	040	047	Yang Chin
325	000	000	048	Timpani
ENSEMBLE				
326	000	000	049	Strings 1
327	000	003	049	Stereo Strings
328	000	008	049	Slow Strings
329	000	024	049	Arco Strings
330	000	035	049	60's Strings
331	000	040	049	Orchestra
332	000	041	049	Orchestra 2
333	000	042	049	Tremolo Orchestra
334	000	045	049	Velocity Strings
335	000	000	050	Strings 2
336	000	003	050	Stereo Slow Strings
337	000	008	050	Legato Strings
338	000	040	050	Warm Strings
339	000	041	050	Kingdom
340	000	064	050	70's Strings
341	000	065	050	String Ensemble 3
342	000	000	051	Synth Strings 1

Voice No.	Bank Select		MIDI Program Numbers	Voice Name
	MSB	LSB		
343	000	027	051	Resonant Strings
344	000	064	051	Synth Strings 4
345	000	065	051	Synth Strings 5
346	000	000	052	Synth Strings 2
347	000	000	053	Choir Aahs
348	000	003	053	Stereo Choir
349	000	016	053	Choir Aahs 2
350	000	032	053	Mellow Choir
351	000	040	053	Choir Strings
352	000	000	054	Voice Oohs
353	000	000	055	Synth Voice
354	000	040	055	Synth Voice 2
355	000	041	055	Choral
356	000	064	055	Analog Voice
357	000	000	056	Orchestra Hit
358	000	035	056	Orchestra Hit 2
359	000	064	056	Impact
BRASS				
360	000	000	057	Trumpet
361	000	016	057	Trumpet 2
362	000	017	057	Bright Trumpet
363	000	032	057	Warm Trumpet
364	000	000	058	Trombone
365	000	018	058	Trombone 2
366	000	000	059	Tuba
367	000	016	059	Tuba 2
368	000	000	060	Muted Trumpet
369	000	000	061	French Horn
370	000	006	061	French Horn Solo
371	000	032	061	French Horn 2
372	000	037	061	Horn Orchestra
373	000	000	062	Brass Section
374	000	035	062	Trumpet & Trombone Section
375	000	040	062	Brass Section 2
376	000	041	062	High Brass
377	000	042	062	Mellow Brass
378	000	000	063	Synth Brass 1
379	000	012	063	Quack Brass
380	000	020	063	Resonant Synth Brass
381	000	024	063	Poly Brass
382	000	027	063	Synth Brass 3
383	000	032	063	Jump Brass
384	000	045	063	Analog Velocity Brass 1
385	000	064	063	Analog Brass 1
386	000	000	064	Synth Brass 2
387	000	018	064	Soft Brass
388	000	040	064	Synth Brass 4
389	000	041	064	Choir Brass
390	000	045	064	Analog Velocity Brass 2
391	000	064	064	Analog Brass 2

Voice No.	Bank Select		MIDI Program Numbers	Voice Name
	MSB	LSB		
REED				
392	000	000	065	Soprano Sax
393	000	000	066	Alto Sax
394	000	040	066	Sax Section
395	000	043	066	Hyper Alto Sax
396	000	000	067	Tenor Sax
397	000	040	067	Breathy Tenor Sax
398	000	041	067	Soft Tenor Sax
399	000	064	067	Tenor Sax 2
400	000	000	068	Baritone Sax
401	000	000	069	Oboe
402	000	000	070	English Horn
403	000	000	071	Bassoon
404	000	000	072	Clarinet
PIPE				
405	000	000	073	Piccolo
406	000	000	074	Flute
407	000	000	075	Recorder
408	000	000	076	Pan Flute
409	000	000	077	Blown Bottle
410	000	000	078	Shakuhachi
411	000	000	079	Whistle
412	000	000	080	Ocarina
SYNTH LEAD				
413	000	000	081	Square Lead
414	000	006	081	Square Lead 2
415	000	008	081	LM Square
416	000	018	081	Hollow
417	000	019	081	Shroud
418	000	064	081	Mellow
419	000	065	081	Solo Sine
420	000	066	081	Sine Lead
421	000	000	082	Sawtooth Lead
422	000	006	082	Sawtooth Lead 2
423	000	008	082	Thick Sawtooth
424	000	018	082	Dynamic Sawtooth
425	000	019	082	Digital Sawtooth
426	000	020	082	Big Lead
427	000	024	082	Heavy Synth
428	000	025	082	Waspy Synth
429	000	040	082	Pulse Sawtooth
430	000	041	082	Dr. Lead
431	000	045	082	Velocity Lead
432	000	096	082	Sequenced Analog
433	000	000	083	Calliope Lead
434	000	065	083	Pure Pad
435	000	000	084	Chiff Lead
436	000	064	084	Rubby
437	000	000	085	Charang Lead
438	000	064	085	Distorted Lead

Voice List

Voice No.	Bank Select		MIDI Program Numbers	Voice Name
	MSB	LSB		
439	000	065	085	Wire Lead
440	000	000	086	Voice Lead
441	000	024	086	Synth Aahs
442	000	064	086	Vox Lead
443	000	000	087	Fifths Lead
444	000	035	087	Big Five
445	000	000	088	Bass & Lead
446	000	016	088	Big & Low
447	000	064	088	Fat & Perky
448	000	065	088	Soft Whirl
SYNTH PAD				
449	000	000	089	New Age Pad
450	000	064	089	Fantasy
451	000	000	090	Warm Pad
452	000	016	090	Thick Pad
453	000	017	090	Soft Pad
454	000	018	090	Sine Pad
455	000	064	090	Horn Pad
456	000	065	090	Rotary Strings
457	000	000	091	Poly Synth Pad
458	000	064	091	Poly Pad 80
459	000	065	091	Click Pad
460	000	066	091	Analog Pad
461	000	067	091	Square Pad
462	000	000	092	Choir Pad
463	000	064	092	Heaven
464	000	066	092	Itopia
465	000	067	092	CC Pad
466	000	000	093	Bowed Pad
467	000	064	093	Glacier
468	000	065	093	Glass Pad
469	000	000	094	Metallic Pad
470	000	064	094	Tine Pad
471	000	065	094	Pan Pad
472	000	000	095	Halo Pad
473	000	000	096	Sweep Pad
474	000	020	096	Shwimmer
475	000	027	096	Converge
476	000	064	096	Polar Pad
477	000	066	096	Celestial
SYNTH EFFECTS				
478	000	000	097	Rain
479	000	045	097	Clavi Pad
480	000	064	097	Harmo Rain
481	000	065	097	African Wind
482	000	066	097	Carib
483	000	000	098	Sound Track
484	000	027	098	Prologue
485	000	064	098	Ancestral
486	000	000	099	Crystal
487	000	012	099	Synth Drum Comp

Voice No.	Bank Select		MIDI Program Numbers	Voice Name
	MSB	LSB		
488	000	014	099	Popcorn
489	000	018	099	Tiny Bells
490	000	035	099	Round Glockenspiel
491	000	040	099	Glockenspiel Chimes
492	000	041	099	Clear Bells
493	000	042	099	Chorus Bells
494	000	064	099	Synth Mallet
495	000	065	099	Soft Crystal
496	000	066	099	Loud Glockenspiel
497	000	067	099	Christmas Bells
498	000	068	099	Vibraphone Bells
499	000	069	099	Digital Bells
500	000	070	099	Air Bells
501	000	071	099	Bell Harp
502	000	072	099	Gamelimba
503	000	000	100	Atmosphere
504	000	018	100	Warm Atmosphere
505	000	019	100	Hollow Release
506	000	040	100	Nylon Electric Piano
507	000	064	100	Nylon Harp
508	000	065	100	Harp Vox
509	000	066	100	Atmosphere Pad
510	000	067	100	Planet
511	000	000	101	Brightness
512	000	064	101	Fantasy Bells
513	000	096	101	Smokey
514	000	000	102	Goblins
515	000	064	102	Goblins Synth
516	000	065	102	Creeper
517	000	066	102	Ring Pad
518	000	067	102	Ritual
519	000	068	102	To Heaven
520	000	070	102	Night
521	000	071	102	Glisten
522	000	096	102	Bell Choir
523	000	000	103	Echoes
524	000	008	103	Echoes 2
525	000	014	103	Echo Pan
526	000	064	103	Echo Bells
527	000	065	103	Big Pan
528	000	066	103	Synth Piano
529	000	067	103	Creation
530	000	068	103	Star Dust
531	000	069	103	Resonant & Panning
532	000	000	104	Sci-Fi
533	000	064	104	Starz
WORLD				
534	000	000	105	Sitar
535	000	032	105	Detuned Sitar
536	000	035	105	Sitar 2
537	000	096	105	Tambra

Voice No.	Bank Select		MIDI Program Numbers	Voice Name
	MSB	LSB		
538	000	097	105	Tamboura
539	000	000	106	Banjo
540	000	028	106	Muted Banjo
541	000	096	106	Rabab
542	000	097	106	Gopichant
543	000	098	106	Oud
544	000	000	107	Shamisen
545	000	000	108	Koto
546	000	096	108	Taisho-kin
547	000	097	108	Kanoon
548	000	000	109	Kalimba
549	000	000	110	Bagpipe
550	000	000	111	Fiddle
551	000	000	112	Shanai
552	000	064	112	Shanai 2
553	000	096	112	Pungi
554	000	097	112	Hichiriki
PERCUSSIVE				
555	000	000	113	Tinkle Bell
556	000	096	113	Bonang
557	000	097	113	Altair
558	000	098	113	Gamelan Gongs
559	000	099	113	Stereo Gamelan Gongs
560	000	100	113	Rama Cymbal
561	000	101	113	Asian Bells
562	000	000	114	Agogo
563	000	000	115	Steel Drums
564	000	097	115	Glass Percussion
565	000	098	115	Thai Bells
566	000	000	116	Woodblock
567	000	096	116	Castanets
568	000	000	117	Taiko Drum
569	000	096	117	Gran Cassa
570	000	000	118	Melodic Tom
571	000	064	118	Melodic Tom 2
572	000	065	118	Real Tom
573	000	066	118	Rock Tom
574	000	000	119	Synth Drum
575	000	064	119	Analog Tom
576	000	065	119	Electronic Percussion
577	000	000	120	Reverse Cymbal
SOUND EFFECTS				
578	000	000	121	Fret Noise
579	000	000	122	Breath Noise
580	000	000	123	Seashore
581	000	000	124	Bird Tweet
582	000	000	125	Telephone Ring
583	000	000	126	Helicopter
584	000	000	127	Applause
585	000	000	128	Gunshot
586	064	000	001	Cutting Noise

Voice No.	Bank Select		MIDI Program Numbers	Voice Name
	MSB	LSB		
587	064	000	002	Cutting Noise 2
588	064	000	004	String Slap
589	064	000	017	Flute Key Click
590	064	000	033	Shower
591	064	000	034	Thunder
592	064	000	035	Wind
593	064	000	036	Stream
594	064	000	037	Bubble
595	064	000	038	Feed
596	064	000	049	Dog
597	064	000	050	Horse
598	064	000	051	Bird Tweet 2
599	064	000	055	Ghost
600	064	000	056	Maou
601	064	000	065	Phone Call
602	064	000	066	Door Squeak
603	064	000	067	Door Slam
604	064	000	068	Scratch Cut
605	064	000	069	Scratch Split
606	064	000	070	Wind Chime
607	064	000	071	Telephone Ring 2
608	064	000	081	Car Engine Ignition
609	064	000	082	Car Tires Squeal
610	064	000	083	Car Passing
611	064	000	084	Car Crash
612	064	000	085	Siren
613	064	000	086	Train
614	064	000	087	Jet Plane
615	064	000	088	Starship
616	064	000	089	Burst
617	064	000	090	Roller Coaster
618	064	000	091	Submarine
619	064	000	097	Laugh
620	064	000	098	Scream
621	064	000	099	Punch
622	064	000	100	Heartbeat
623	064	000	101	Footsteps
624	064	000	113	Machine Gun
625	064	000	114	Laser Gun
626	064	000	115	Explosion
627	064	000	116	Firework

Drum Kit List

- “ ” indicates that the drum sound is the same as “Standard Kit 1”.
- Each percussion voice uses one note.
- The MIDI Note # and Note are actually one octave lower than keyboard Note # and Note. For example, in “136: Standard Kit 1”, the “Seq Click H” (Note# 36/ Note C1) corresponds to (Note# 24/Note C0).
- Key Off: Keys marked “O” stop sounding the instant they are released.
- Voices with the same Alternate Note Number (*1 ... 4) cannot be played simultaneously. (They are designed to be played alternately with each other.)

		Voice No.					136	137	138	139	140	141	
		MSB/LSB/PC					127/000/001	127/000/002	127/000/009	127/000/017	127/000/025	127/000/026	
		Keyboard		MIDI		Key Off	Alternate assign	Standard Kit 1	Standard Kit 2	Room Kit	Rock Kit	Electronic Kit	Analog Kit
		Note#	Note	Note#	Note								
		25	C# 0	13	C# -1		3	Surdo Mute					
		26	D 0	14	D -1		3	Surdo Open					
		27	D# 0	15	D# -1			Hi Q					
		28	E 0	16	E -1			Whip Slap					
		29	F 0	17	F -1		4	Scratch Push					
		30	F# 0	18	F# -1		4	Scratch Pull					
		31	G 0	19	G -1			Finger Snap					
		32	G# 0	20	G# -1			Click Noise					
		33	A 0	21	A -1			Metronome Click					
		34	A# 0	22	A# -1			Metronome Bell					
		35	B 0	23	B -1			Seq Click L					
		36	C 1	24	C 0			Seq Click H					
C1	C#1	37	C# 1	25	C# 0			Brush Tap					
D1	D#1	38	D 1	26	D 0	O		Brush Swirl					
E1		39	D# 1	27	D# 0			Brush Slap					
F1	F#1	40	E 1	28	E 0	O		Brush Tap Swirl				Reverse Cymbal	Reverse Cymbal
G1	G#1	41	F 1	29	F 0	O		Snare Roll					
A1	A#1	42	F# 1	30	F# 0			Castanet				Hi Q 2	Hi Q 2
B1		43	G 1	31	G 0			Snare H Soft	Snare H Soft 2		SD Rock H	Snare L	SD Rock H
C2	C#2	44	G# 1	32	G# 0			Sticks					
D2	D#2	45	A 1	33	A 0			Bass Drum Soft				Bass Drum H	Bass Drum H
E2		46	A# 1	34	A# 0			Open Rim Shot	Open Rim Shot 2				
F2	F#2	47	B 1	35	B 0			Bass Drum Hard			Bass Drum H	BD Rock	BD Analog L
G2	G#2	48	C 2	36	C 1			Bass Drum	Bass Drum 2		BD Rock	BD Gate	BD Analog H
A2	A#2	49	C# 2	37	C# 1			Side Stick					Analog Side Stick
B2		50	D 2	38	D 1			Snare M	Snare M 2	SD Room L	SD Rock L	SD Rock L	Analog Snare 1
C3	C#3	51	D# 2	39	D# 1			Hand Clap					
D3	D#3	52	E 2	40	E 1			Snare H Hard	Snare H Hard 2	SD Room H	SD Rock Rim	SD Rock H	Analog Snare 2
E3		53	F 2	41	F 1			Floor Tom L		Room Tom 1	Rock Tom 1	E Tom 1	Analog Tom 1
F3	F#3	54	F# 2	42	F# 1	1		Hi-Hat Closed					Analog HH Closed 1
G3	G#3	55	G 2	43	G 1			Floor Tom H		Room Tom 2	Rock Tom 2	E Tom 2	Analog Tom 2
A3	A#3	56	G# 2	44	G# 1	1		Hi-Hat Pedal					Analog HH Closed 2
B3		57	A 2	45	A 1			Low Tom		Room Tom 3	Rock Tom 3	E Tom 3	Analog Tom 3
C4	C#4	58	A# 2	46	A# 1	1		Hi-Hat Open					Analog HH Open
D4	D#4	59	B 2	47	B 1			Mid Tom L		Room Tom 4	Rock Tom 4	E Tom 4	Analog Tom 4
E4		60	C 3	48	C 2			Mid Tom H		Room Tom 5	Rock Tom 5	E Tom 5	Analog Tom 5
F4	F#4	61	C# 3	49	C# 2			Crash Cymbal 1					Analog Cymbal
G4	G#4	62	D 3	50	D 2			High Tom		Room Tom 6	Rock Tom 6	E Tom 6	Analog Tom 6
A4	A#4	63	D# 3	51	D# 2			Ride Cymbal 1					
B4		64	E 3	52	E 2			Chinese Cymbal					
C5	C#5	65	F 3	53	F 2			Ride Cymbal Cup					
D5	D#5	66	F# 3	54	F# 2			Tambourine					
E5		67	G 3	55	G 2			Splash Cymbal					
F5	F#5	68	G# 3	56	G# 2			Cowbell					Analog Cowbell
G5	G#5	69	A 3	57	A 2			Crash Cymbal 2					
A5	A#5	70	A# 3	58	A# 2			Vibraslap					
B5		71	B 3	59	B 2			Ride Cymbal 2					
C6		72	C 4	60	C 3			Bongo H					
		73	C# 4	61	C# 3			Bongo L					
		74	D 4	62	D 3			Conga H Mute					Analog Conga H
		75	D# 4	63	D# 3			Conga H Open					Analog Conga M
		76	E 4	64	E 3			Conga L					Analog Conga L
		77	F 4	65	F 3			Timbale H					
		78	F# 4	66	F# 3			Timbale L					
		79	G 4	67	G 3			Agogo H					
		80	G# 4	68	G# 3			Agogo L					
		81	A 4	69	A 3			Cabasa					
		82	A# 4	70	A# 3			Maracas					Analog Maracas
		83	B 4	71	B 3	O		Samba Whistle H					
		84	C 5	72	C 4	O		Samba Whistle L					
		85	C# 5	73	C# 4			Guiro Short					
		86	D 5	74	D 4	O		Guiro Long					
		87	D# 5	75	D# 4			Claves					Analog Claves
		88	E 5	76	E 4			Wood Block H					
		89	F 5	77	F 4			Wood Block L					
		90	F# 5	78	F# 4			Cuica Mute				Scratch Push	Scratch Push
		91	G 5	79	G 4			Cuica Open				Scratch Pull	Scratch Pull
		92	G# 5	80	G# 4		2	Triangle Mute					
		93	A 5	81	A 4		2	Triangle Open					
		94	A# 5	82	A# 4			Shaker					
		95	B 5	83	B 4			Jingle Bell					
		96	C 6	84	C 5			Bell Tree					
		97	C# 6	85	C# 5								
		98	D 6	86	D 5								
		99	D# 6	87	D# 5								
		100	E 6	88	E 5								
		101	F 6	89	F 5								
		102	F# 6	90	F# 5								
		103	G 6	91	G 5								

		Voice No.				136	142	143	144	145	146	147
		MSB/LSB/PC				127/000/001	127/000/028	127/000/033	127/000/041	127/000/049	126/000/001	126/000/002
		Keyboard		MIDI		Key Off	Alternate assign					
		Note#	Note	Note#	Note							
		25	C# 0	13	C# -1		3	Surdo Mute				
		26	D 0	14	D -1		3	Surdo Open				
		27	D# 0	15	D# -1			Hi Q				
		28	E 0	16	E -1			Whip Slap				
		29	F 0	17	F -1		4	Scratch Push				
		30	F# 0	18	F# -1		4	Scratch Pull				
		31	G 0	19	G -1			Finger Snap				
		32	G# 0	20	G# -1			Click Noise				
		33	A 0	21	A -1			Metronome Click				
		34	A# 0	22	A# -1			Metronome Bell				
		35	B 0	23	B -1			Seq Click L				
		36	C 1	24	C 0			Seq Click H				
C1	C#1	37	C# 1	25	C# 0			Brush Tap				
D1	D#1	38	D 1	26	D 0	O		Brush Swirl				
E1		39	D# 1	27	D# 0			Brush Slap				
F1	F#1	40	E 1	28	E 0	O		Brush Tap Swirl	Reverse Cymbal			
G1	G#1	41	F 1	29	F 0	O		Snare Roll				
A1	A#1	42	F# 1	30	F# 0			Castanet	Hi Q 2			
B1		43	G 1	31	G 0			Snare H Soft	AnSD Snappy	SD Jazz H Light	Brush Slap L	
C2	C#2	44	G# 1	32	G# 0			Sticks				
D2	D#2	45	A 1	33	A 0			Bass Drum Soft	AnBD Dance-1		Bass Drum L	
E2		46	A# 1	34	A# 0			Open Rim Shot	AnSD OpenRim			
F2	F#2	47	B 1	35	B 0			Bass Drum Hard	AnBD Dance-2		Gran Cassa	
G2	G#2	48	C 2	36	C 1			Bass Drum	AnBD Dance-3	BD Jazz	BD Jazz	Gran Cassa Mute
A2	A#2	49	C# 2	37	C# 1			Side Stick	Analog Side Stick			Cutting Noise
B2		50	D 2	38	D 1			Snare M	AnSD Q	SD Jazz L	Brush Slap	Marching Sn M
C3	C#3	51	D# 2	39	D# 1			Hand Clap				Cutting Noise 2
D3	D#3	52	E 2	40	E 1			Snare H Hard	AnSD Ana+Acoustic	SD Jazz M	Brush Tap	Marching Sn H
E3		53	F 2	41	F 1			Floor Tom L	Analog Tom 1	Jazz Tom 1	Brush Tom 1	Jazz Tom 1
F3	F#3	54	F# 2	42	F# 1	1		Hi-Hat Closed	Analog HH Closed 3			
G3	G#3	55	G 2	43	G 1			Floor Tom H	Analog Tom 2	Jazz Tom 2	Brush Tom 2	Jazz Tom 2
A3	A#3	56	G# 2	44	G# 1	1		Hi-Hat Pedal	Analog HH Closed 4			
B3		57	A 2	45	A 1			Low Tom	Analog Tom 3	Jazz Tom 3	Brush Tom 3	Jazz Tom 3
C4	C#4	58	A# 2	46	A# 1	1		Hi-Hat Open	Analog HH Open 2			
D4	D#4	59	B 2	47	B 1			Mid Tom L	Analog Tom 4	Jazz Tom 4	Brush Tom 4	Jazz Tom 4
E4		60	C 3	48	C 2			Mid Tom H	Analog Tom 5	Jazz Tom 5	Brush Tom 5	Jazz Tom 5
F4	F#4	61	C# 3	49	C# 2			Crash Cymbal 1	Analog Cymbal			Hand Cym. L
G4	G#4	62	D 3	50	D 2			High Tom	Analog Tom 6	Jazz Tom 6	Brush Tom 6	Jazz Tom 6
A4	A#4	63	D# 3	51	D# 2			Ride Cymbal 1				Hand Cym.Short L
B4		64	E 3	52	E 2			Chinese Cymbal				Flute Key Click
C5	C#5	65	F 3	53	F 2			Ride Cymbal Cup				Car Engine Ignition
D5	D#5	66	F# 3	54	F# 2			Tambourine				Car Tires Squeal
E5		67	G 3	55	G 2			Splash Cymbal				Car Passing
F5	F#5	68	G# 3	56	G# 2			Cowbell	Analog Cowbell			Car Crash
G5	G#5	69	A 3	57	A 2			Crash Cymbal 2				Siren
A5	A#5	70	A# 3	58	A# 2			Vibraslap				Hand Cym. H
B5		71	B 3	59	B 2			Ride Cymbal 2				Train
C6	C#6	72	C 4	60	C 3			Bongo H				Hand Cym.Short H
D6	D#6	73	C# 4	61	C# 3			Bongo L				Starship
E6		74	D 4	62	D 3			Conga H Mute	Analog Conga H			Burst
F6	F#6	75	D# 4	63	D# 3			Conga H Open	Analog Conga M			Roller Coaster
G6	G#6	76	E 4	64	E 3			Conga L	Analog Conga L			Submarine
A6	A#6	77	F 4	65	F 3			Timbale H				
B6		78	F# 4	66	F# 3			Timbale L				
C7	C#7	79	G 4	67	G 3			Agogo H				
D7	D#7	80	G# 4	68	G# 3			Agogo L				Shower
E7		81	A 4	69	A 3			Cabasa				Thunder
F7	F#7	82	A# 4	70	A# 3			Maracas	Analog Maracas			Wind
G7	G#7	83	B 4	71	B 3	O		Samba Whistle H				Stream
A7	A#7	84	C 5	72	C 4	O		Samba Whistle L				Bubble
B7		85	C# 5	73	C# 4			Guiro Short				Feed
C8	C#8	86	D 5	74	D 4	O		Guiro Long				
D8	D#8	87	D# 5	75	D# 4			Claves	Analog Claves			
E8		88	E 5	76	E 4			Wood Block H				
F8	F#8	89	F 5	77	F 4			Wood Block L				
G8	G#8	90	F# 5	78	F# 4			Cuica Mute	Scratch Push			
A8	A#8	91	G 5	79	G 4			Cuica Open	Scratch Pull			
B8		92	G# 5	80	G# 4		2	Triangle Mute				
C9	C#9	93	A 5	81	A 4		2	Triangle Open				
D9	D#9	94	A# 5	82	A# 4			Shaker				
E9		95	B 5	83	B 4			Jingle Bell				
F9	F#9	96	C 6	84	C 5			Bell Tree				Dog
G9	G#9	97	C# 6	85	C# 5							Horse
A9	A#9	98	D 6	86	D 5							Bird Tweet 2
B9		99	D# 6	87	D# 5							Explosion
C10	C#10	100	E 6	88	E 5							Firework
D10	D#10	101	F 6	89	F 5							
E10		102	F# 6	90	F# 5							Ghost
F10	F#10	103	G 6	91	G 5							Maou

Style List

Serial No.	Style Name
8 BEAT	
001	Cool8Beat
002	8BeatModern
003	8BeatAdria
004	60'sGuitarPop
005	BubblegumPop
006	60's8Beat
007	8Beat
008	OffBeat
009	60'sRock
010	HardRock
011	RockShuffle
012	8BeatRock
16 BEAT	
013	16Beat
014	PopShuffle1
015	PopShuffle2
016	GuitarPop
017	16BeatUptempo
018	KoolShuffle
019	JazzRock
020	HipHopLight
BALLAD	
021	PianoBallad
022	LoveSong
023	6/8ModernEP
024	6/8SlowRock
025	OrganBallad
026	PopBallad
027	16BeatBallad1
028	16BeatBallad2
DANCE	
029	EuroTrance
030	Ibiza
031	HouseMusik
032	SwingHouse
033	TechnoPolis
034	Clubdance
035	ClubLatin
036	Garage1
037	Garage2
038	TechnoParty
039	UKPop
040	HipHopGroove
041	HipShuffle
042	HipHopPop
DISCO	
043	70'sDisco1
044	70'sDisco2
045	DiscoPhilly
046	SaturdayNight

Serial No.	Style Name
047	LatinDisco
048	DiscoChocolate
049	DiscoHands
050	DiscoFox
051	SchlagerPop
SWING & JAZZ	
052	BigBandFast
053	BigBandMedium
054	OrchestraSwing
055	BigBandBallad
056	BigBandShuffle
057	JazzClub
058	Swing1
059	Swing2
060	Five/Four
061	JazzBallad
062	Dixieland
063	Ragtime
064	AfroCuban
065	Charleston
R & B	
066	Soul
067	DetroitPop1
068	60'sRock&Roll
069	6/8Soul
070	CrocoTwist
071	Rock&Roll
072	DetroitPop2
073	BoogieWoogie
074	ComboBoogie
075	6/8Blues
COUNTRY	
076	Country8Beat
077	CountryPop
078	CountrySwing
079	Country2/4
080	CowboyBoogie
081	CountryShuffle
082	Bluegrass
083	WildWest
LATIN	
084	BrazilianSamba
085	BossaNova
086	PopBossa
087	Tijuana
088	DiscoLatin
089	Mambo
090	Salsa
091	Beguine
092	GuitarRumba
093	RumbaFlamenca

Serial No.	Style Name
094	Rumbalsland
095	Reggae
BALLROOM	
096	VienneseWaltz
097	EnglishWaltz
098	Slowfox
099	Foxtrot
100	Quickstep
101	Tango
102	Pasodoble
103	Samba
104	ChaChaCha
105	Rumba
106	Jive
TRADITIONAL	
107	USMarch
108	6/8March
109	GermanMarch
110	PolkaPop
111	OberPolka
112	IrishDance
113	Tarantella
114	ScottishReel
115	Hawaiian
116	Showtune
117	ChristmasSwing
118	ChristmasWaltz
WALTZ	
119	ItalianWaltz
120	MariachiWaltz
121	GuitarSerenade
122	SwingWaltz
123	JazzWaltz1
124	JazzWaltz2
125	CountryWaltz
126	OberWaltzer
127	Musette
PIANIST	
128	Stride
129	PianoSwing
130	PianoBoogie
131	PianoRag
132	Arpeggio
133	Musical
134	Habanera
135	SlowRock
136	8BeatPianoBallad
137	PianoMarch
138	6/8PianoMarch
139	PianoWaltz
140	PianoBeguine

Music Database List

MDB No.	MDB Name	MDB No.	MDB Name	MDB No.	MDB Name	MDB No.	MDB Name
POP HITS		058	CiaoCpri	117	WhisprSx	172	Jambala
001	AlvFever	059	Close2U	118	WomanLov	173	LondonSt
002	Croco Rk	060	DAmorStr	ROCK & FUSION		174	LooseEL
003	DayPdise	061	DolanesM	119	DavAgain	175	MagSeven
004	EasySday	062	ElCondor	120	JumpRock	176	TopWorld
005	GoMyWay	063	Entrtain	121	OyComCha	177	YlwRose
006	HowDeep!	064	Frippers	122	PickUpPc	DISCO & PARTY	
007	HurryLuv	065	LoveLove	123	RdRiverR	178	AlhHwaii
008	I breath	066	LuckySax	124	SatsfyGt	179	Babylon
009	I'm Torn	067	LuvStory	125	Sheriff	180	Barbado1
010	Imagine	068	MyPrince	126	SmokeWtr	181	Barbado2
011	ISurvive	069	OSoleMio	127	TwistAgn	182	BirdySyn
012	JustCall	070	PalomaGt	128	VenusPop	183	FestaMex
013	JustWay	071	PuppetBr	RHYTHM & BLUES		184	HandsPty
014	LoveMeT	072	Raindrop	129	AmazingG	185	LuvTheme
015	My Baby	073	RedMouln	130	BoogiePf	186	ModrnTlk
016	NikitTrp	074	R'ticGtr	131	Clock Rk	187	MovStar
017	NoMatter	075	Schiwago	132	CU later	188	NxtAlice
018	ProudGtr	076	ShadowGt	133	GreenDor	189	Obaladi
019	SailingSx	077	SingRain	134	HappyDay	190	PalomaFl
020	Sept.Pop	078	SmallWld	135	JohnnyB	191	PubPiano
021	SultanSw	079	SpkSoft	136	MercyBrs	192	Tijuana
022	SweetLrd	080	SpnishEy	137	OldHouse	193	Why MCA?
023	ThnkMsic	081	StrangeN	138	RisingSn	BALLROOM	
024	TitanicH	082	TieRibbn	139	S Preems	194	BrazilBr
025	WantToBe	083	TimeGoes	140	ShookUp	195	CherryBr
026	WatchGrl	084	WhteXmas	141	SuperStv	196	CherryOr
027	WhatALoo	085	WishStar	142	TeddyBer	197	DanubeWv
028	WhitePle	086	WondrWld	143	Yeh Orgn	198	MantoStr
029	YestDGtr	ROMANTIC BALLADS		HIP HOP HOUSE		199	SandmnFx
SWING & JAZZ		087	AdelineB	144	2 of US	200	SundyNvr
030	Alex Rag	088	ArgenCry	145	B Leave	201	TangoPiz
031	Blue Set	089	BeautBdy	146	Back St	202	Tea4Two
032	DayOfW&R	090	Bl Bayou	147	FunkyTwn	203	TulipWtz
033	HighMoon	091	CatMemry	148	KillSoft	204	YesSirQk
034	MistySax	092	CavaSolo	149	MiamiTrn	TRADITIONAL	
035	MoonLit	093	E Weiss	150	Nine PM	205	AlpenTri
036	New York	094	ElvGhett	151	SingBack	206	Balalaik
037	PanthrSw	095	Feeling	152	StrandD	207	Ceilidh
038	PatrolBr	096	Fly Away	LATIN NIGHTS		208	CielPari
039	PatrolSx	097	Fnl Date	153	BambaBrs	209	Ci Polka
040	PetiteCl	098	GreenSlv	154	BambaFlt	210	Comrades
041	RedRoses	099	GtCncert	155	BeHappy!	211	DnceLord
042	SaintMch	100	HrdToSay	156	CopaLola	212	Funiculi
043	SatinWd	101	LonlyPan	157	DayNight	213	HappyPlk
044	SaxMood	102	MBoxDnce	158	Ipanema	214	Herzlin
045	SF Heart	103	Mn Rivr	159	MarinaAc	215	HornPipe
046	ShearJz	104	Norw.Flt	160	MuchoTrb	216	JinglBel
047	Showbiz	105	OnMyMnd	161	SmoothLt	217	Kufstein
048	SplnkyTb	106	OverRbow	162	SunOfLif	218	LindoMex
049	SunnySde	107	Red Lady	163	Sunshine	219	MexiHat
050	TstHoney	108	ReleseMe	164	Tico Org	220	MickyFlt
051	TwoFoot5	109	SavingLv	165	TrbWave	221	NavyAway
052	WhatsNew	110	Shore Cl	COUNTRY & WESTERN		222	RlBarrel
053	Wild Cat	111	SierraMd	166	BCountry	223	SnowWtz
054	WondrLnd	112	SilverMn	167	BlownWnd	224	StarMrch
EASY LISTENING		113	SmokyEye	168	Bonanza	225	WashPost
055	BlackFst	114	SndOfSil	169	BoxerGtr	226	WdCuttrs
056	ByeBlues	115	TblWater	170	CntryRds	227	XmasWalz
057	CaliBlue	116	WhereLov	171	GreenGrS		

Effect Type List






















[Reverb Type List]

No.	Reverb Type	Display Name
01	Hall 1	Hall1
02	Hall 2	Hall2
03	Hall 3	Hall3
04	Room 1	Room1
05	Room 2	Room2
06	Stage 1	Stage1
07	Stage 2	Stage2
08	Plate 1	Plate1
09	Plate 2	Plate2
10	Off	Off

[DSP Type List]

No.	DSP Type	Display Name
01	Hall 1	Hall1
02	Hall 2	Hall2
03	Hall 3	Hall3
04	Room 1	Room1
05	Room 2	Room2
06	Stage 1	Stage1
07	Stage 2	Stage2
08	Plate 1	Plate1
09	Plate 2	Plate2
10	Early Reflection 1	ER1
11	Early Reflection 2	ER2
12	Gate Reverb	Gate1
13	Reverse Gate	Gate2
14	Chorus 1	Chorus1
15	Chorus 2	Chorus2
16	Flanger 1	Flanger1
17	Flanger 2	Flanger2
18	Symphonic	Symphony
19	Phaser	Phaser
20	Rotary Speaker 1	Rotary1
21	Rotary Speaker 2	Rotary2
22	Tremolo 1	Tremolo1
23	Tremolo 2	Tremolo2
24	Guitar Tremolo	Guitar Tremolo
25	Auto Pan	AutoPan
26	Auto Wah	AutoWah
27	Delay Left - Center - Right	DelayLCR
28	Delay Left - Right	DelayLR
29	Echo	Echo
30	Cross Delay	CrossDly
31	Karaoke	Karaoke
32	Distortion Hard	D Hard
33	Distortion Soft	D Soft
34	Overdrive	Overdrv
35	Amp Simulation	AmpSimu
36	EQ Disco	EQ Disco
37	EQ Telephone	EQ Tel
38	3Band EQ	3BandEQ
39	2Band EQ	2BandEQ
40	No Effect	Off

[Harmony Type List]

No.	Harmony Type	Display Name	
01	Duet	Duet	
02	Trio	Trio	
03	Block	Block	
04	Country	Country	
05	Octave	Octave	
06	Trill 1/4 note	Tril1/4	
07	Trill 1/6 note	Tril1/6	
08	Trill 1/8 note	Tril1/8	
09	Trill 1/12 note	Tril1/12	
10	Trill 1/16 note	Tril1/16	
11	Trill 1/24 note	Tril1/24	
12	Trill 1/32 note	Tril1/32	
13	Tremolo 1/4 note	Trem1/4	
14	Tremolo 1/6 note	Trem1/6	
15	Tremolo 1/8 note	Trem1/8	
16	Tremolo 1/12 note	Trem1/12	
17	Tremolo 1/16 note	Trem1/16	
18	Tremolo 1/24 note	Trem1/24	
19	Tremolo 1/32 note	Trem1/32	
20	Echo 1/4 note	Echo1/4	
21	Echo 1/6 note	Echo1/6	
22	Echo 1/8 note	Echo1/8	
23	Echo 1/12 note	Echo1/12	
24	Echo 1/16 note	Echo1/16	
25	Echo 1/24 note	Echo1/24	
26	Echo 1/32 note	Echo1/32	

MIDI Implementation Chart

YAMAHA [Portable Keyboard]
 Model PSR-450 MIDI Implementation Chart

Date:12-DEC-2003
 Version : 1.0

Function...	Transmitted	Recognized	Remarks
Basic Default Channel Changed	1 - 16 x	1 - 16 x	
Mode Default Messages Altered	3 x *****	3 x x	
Note Number : True voice	0 - 127 *****	0 - 127 0 - 127	
Velocity Note ON Note OFF	o 9nH,v=1-127 x 9nH,v=0	o 9nH,v=1-127 x 9nH,v=0 or 8nH	
After Key's Touch Ch's	x x	x x	
Pitch Bend	o	o	
Control Change	0,32 o 1 x *1 5 x 7,10 o 11 x *1 6,38 o 64 o 66,67 x 71-74 x *1 84 x *1 96-97 x 98-99 x 100-101 o	o o x o o o x o o x x o	Bank Select Modulation Wheel Portamento Time Volume/Panpot Expression Data Entry Sustain Sostenuto/Soft Sound Controller Portamento Control RPN Inc,Dec NRPN LSB,MSB RPN LSB,MSB
Prog Change : True #	o 0 - 127 *****	o 0 - 127	
System Exclusive	o *2	o *2	
Common : Song Pos. : Song Sel. : Tune	x x x	x x x	
System : Clock Real Time: Commands	o o	o o	
Aux :All Sound OFF :Reset All Cntrls :Local ON/OFF :All Notes OFF Mes- :Active Sense sages:Reset	o x x x o x	o(120,126,127) o(121) o(122) o(123-125) o x	

*1 Refer to #2 on page 81. *2 Refer to #3 on page 81.

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

NOTE:

- 1 By default (factory settings) the PSR-450 ordinarily functions as a 16-channel multi-timbral tone generator, and incoming data does not affect the panel voices or panel settings. However, the MIDI messages listed below do affect the panel voices, styles, and songs.
 - MIDI Master Tuning
 - System exclusive messages for changing the Reverb Type, Chorus Type, and DSP Type.
- 2 Messages for these control change numbers cannot be transmitted from the PSR-450 itself. However, they may be transmitted when playing the style, song or using the Harmony effect.
- 3 Exclusive
 - <GM System ON> F0H, 7EH, 7FH, 09H, 01H, F7H
 - This message automatically restores all default settings for the instrument, with the exception of MIDI Master Tuning.
 - <MIDI Master Volume> F0H, 7FH, 7FH, 04H, 01H, II, mm, F7H
 - This message allows the volume of all channels to be changed simultaneously (Universal System Exclusive).
 - The values of "mm" is used for MIDI Master Tuning. (Values for "II" are ignored.)
 - <MIDI Master Tuning> F0H, 43H, 1nH, 27H, 30H, 00H, 00H, mm, II, cc, F7H
 - This message simultaneously changes the tuning value of all channels.
 - The values of "mm" and "II" are used for MIDI Master Tuning.
 - The default value of "mm" and "II" are 08H and 00H, respectively. Any values can be used for "n" and "cc."
 - <Reverb Type> F0H, 43H, 1nH, 4CH, 02H, 01H, 00H, mmH, IIH, F7H
 - mm : Reverb Type MSB
 - II : Reverb Type LSBRefer to the Effect Map (page 82) for details.
 - <Chorus Type> F0H, 43H, 1nH, 4CH, 02H, 01H, 20H, mmH, IIH, F7H
 - mm : Chorus Type MSB
 - II : Chorus Type LSBRefer to the Effect Map (page 82) for details.
 - <DSP Type> F0H, 43H, 1nH, 4CH, 02H, 01H, 40H, mmH, IIH, F7H
 - mm : DSP Type MSB
 - II : DSP Type LSBRefer to the Effect Map (page 82) for details.
 - <DRY Level> F0H, 43H, 1nH, 4CH, 08H, 0mH, 11H, IIH, F7H
 - II : Dry Level
 - 0m : Channel Number
- 4 When the style is started, an FAH message is transmitted. When style is stopped, an FCH message is transmitted. When the clock is set to External, both FAH (style start) and FCH (style stop) are recognized.
- 5 Local ON/OFF
 - <Local ON> Bn, 7A, 7F
 - <Local OFF> Bn, 7A, 00Value for "n" is ignored.

■ Effect map

- * If the received value does not contain an effect type in the TYPE LSB, the LSB will be directed to TYPE 0.
- * The numbers in parentheses in front of the Effect Type names correspond to the number indicated in the display.
- * By using an external sequencer, which is capable of editing and transmitting the system exclusive messages and parameter changes, you can select the Reverb, Chorus and DSP effect types which are not accessible from the PSR-450 panel itself. When one of the effects is selected by the external sequencer, “ - ” will be shown on the display.

● REVERB

TYPE MSB	TYPE LSB									
	00	01	02	08	16	17	18	19	20	
000	No Effect									
001	(1)Hall1				(2)Hall2	(3)Hall3				
002	Room					(4)Room1		(5)Room2		
003	Stage				(6)Stage1	(7)Stage2				
004	Plate				(8)Plate1	(9)Plate2				
005~127	No Effect									

● CHORUS

TYPE MSB	TYPE LSB									
	00	01	02	08	16	17	18	19	20	
000~064	No Effect									
065	Chorus		Chorus2							
066	Celeste					Chorus1				
067	Flanger			Flanger1		Flanger2				
068~127	No Effect									

● DSP

TYPE MSB	TYPE LSB									
	00	01	02	08	16	17	18	19	20	
000	No Effect									
001	(1)Hall1				(2)Hall2	(3)Hall3				
002	Room					(4)Room1		(5)Room2		
003	Stage				(6)Stage1	(7)Stage2				
004	Plate				(8)Plate1	(9)Plate2				
005	Delay L,C,R				(27)Delay L,C,R					
006	(28)Delay L,R									
007	(29)Echo									
008	(30)Cross Delay									
009	(10)Early Reflection1	(11)Early Reflection2								
010	(12)Gate Reverb									
011	(13)Reverse Gate									
012~019	No Effect									
020	(31)Karaoke									
021~064	No Effect									
065	Chorus		(15)Chorus2							
066	Celeste					(14)Chorus1				
067	Flanger			(16)Flanger1		(17)Flanger2				
068	Symphonic				(18)Symphonic					
069	Rotary Speaker				(20)Rotary Speaker1					
070	Tremolo				(22)Tremolo1					
071	Auto Pan				(25)Auto Pan		(21)Rotary Speaker2	(23)Tremolo2	(24)Guitar Tremolo	
072	(19)Phaser									
073	Distortion									
074	(34)Overdrive									
075	(35)Amp Simulation				(32)Distortion Hard	(33)Distortion Soft				
076	(38)3Band EQ				(36)EQ Disco	(37)EQ Telephone				
077	(39)2Band EQ									
078	Auto Wah				(26)Auto Wah					
079~127	No Effect									

Troubleshooting

Symptom	Cause	Solution
A “pop” sound occurs when the [STANDBY/ON] switch is pressed to turn the instrument on.	The initial surge of power in the instrument.	This is normal and is not a cause for concern.
<ul style="list-style-type: none"> The volume has become lower. The sound quality has become worse. The rhythm stops. Recorded song data is not played back properly. The display disappears suddenly and the panel settings are reset. 	The batteries are drained.	Replace the batteries with a complete set of 6 new batteries, or plug in the power adaptor.
Noise is heard from the PSR-450.	This can happen if a mobile telephone (or other wireless equipment) is being used or is ringing near the instrument.	Turn mobile phones near the instrument off. Using a mobile phone near the PSR-450, including receiving calls, can produce unwanted noise.
No sound from the PSR-450 speakers when the keyboard is played.	A pair of headphones or a connecting cable may be plugged into the instrument’s PHONES/OUTPUT jack.	Unplug the headphones or connecting cable.
	The Dictionary function may be ON.	Turn the Dictionary function OFF.
	The MIDI LOCAL mode may be set to OFF.	Turn the MIDI LOCAL mode ON.
<ul style="list-style-type: none"> Some notes don’t sound when a number of keys are played simultaneously. Auto-accompaniment or song playback is interrupted. 	This can occur if the PSR-450’s maximum polyphony (the maximum number of playback notes) is exceeded.	The maximum polyphony of the PSR-450 is 32 notes. Make sure that the maximum number of notes being played — including auto-accompaniment or song playback — is 32 or less.
Rhythm accompaniment does not play when the [START/STOP] button is pressed.	A style number between 128 and 140 (Pianist category) or number 121 (Guitar Serenade) is selected.	This is not a malfunction. The Pianist and Guitar Serenade styles do not include rhythm parts.
Auto-accompaniment will not start.	The MIDI CLOCK may be set to EXTERNAL and the instrument is not receiving an external clock signal.	Refer to the clock setting instructions on page 66, and set the clock to INTERNAL.
Auto-accompaniment does not play properly.	The style volume may be turned all the way down.	Refer to the instructions on page 23 and set the style volume to an appropriate level.
	The keyboard split point is not set appropriately for the chords you are playing.	Refer to the instructions on page 28 and set the split point at an appropriate key.
Footswitch operation is reversed.	The instrument’s power was turned on while the footswitch was pressed.	Turn the power off, and then turn it on again without pressing the footswitch.
The timbre and volume of the sound produced varies according to the keys played.	In order to reproduce realistic instrument sound and response, the PSR-450’s AWM tone generator system employs “multi-sampling” in which different instrument samples are assigned to different key ranges. This can result in slight differences in the sound.	This is not a malfunction.

Specifications

Keyboards

- 61 standard-size keys (C1 - C6), with Touch Response.

Display

- Large multi-function LCD display (backlit)

Setup

- STANDBY/ON
- MASTER VOLUME : MIN - MAX

Panel Controls

- LEFT MENU, RIGHT MENU, SONG, STYLE, VOICE, M.D.B., PORTABLE GRAND, METRONOME, [0] ~ [9], [+ / YES], [- / NO], DEMO, TOUCH, HARMONY, SPLIT, DUAL, [▲], [▼], Dict., EASY PERFORMER [L], [R], TEMPO/TAP, PITCH BEND

Voice

- 135 panel voices + 12 drum kits + 480 XG voices
- Polyphony : 32

Style

- 140 styles + Disk
- Style Control : ACMP ON/OFF, SYNC STOP, SYNC START, START/STOP, INTRO/ENDING/rit., MAIN/AUTO FILL
- Style Volume

Music Database

- 227

Dictionary

One Touch Setting

- Voice (for each style or song)

Menu controls

- Transpose
- Style/Song Volume
- Metronome Volume
- Pitch Bend Range
- Tuning
- MIDI
- Harmony
- Reverb
- DSP
- Track Assign R
- Track Assign L
- Track Octave

Effects

- Reverb : 9 types
- DSP : 39 types
- Harmony : 26 types

Song

- 5 Songs + 5 User Songs
- Song Volume

Recording

- Song
 - User Song : 5 Songs
 - Recording Tracks : 1, 2, 3, 4, 5, STYLE
- Song Clear, Track Clear

Disk

- Song Playback
- Load
- Save
- Execute
- Delete
- Format
- SMF Save

MIDI

- Clock
- Initial Send
- Local on/off

Auxiliary jacks

- PHONES/OUTPUT, DC IN 12V, MIDI IN/OUT, FOOTSWITCH

Amplifier

- 6 W + 6 W

Speakers

- 12cm x 2 + 3cm x 2

Power Consumption

- 20 W (when using PA-5D power adaptor)

Power Supply

- Adaptor : Yamaha PA-5D AC power adaptor
- Batteries : Six "D" size, R20P (LR20) or equivalent batteries

Dimensions (W x D x H)

- 952 x 387 x 169 mm (37-1/2" x 15-1/4" x 6-2/3")

Weight

- 8.5 kg (18 lbs., 12 oz.)

Supplied Accessories

- Music Rest
- Data Disk
- Owner's Manual

Optional Accessories

- Headphones : HPE-150
- AC power adaptor : PA-5D, PA-5C
- Footswitch : FC4, FC5
- Keyboard stand : L-6, L-7

* Specifications and descriptions in this owner's manual are for information purposes only. Yamaha Corp. reserves the right to change or modify products or specifications at any time without prior notice. Since specifications, equipment or options may not be the same in every locale, please check with your Yamaha dealer.

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Limited Warranty

90 DAYS LABOR

1 YEAR PARTS

Yamaha Corporation of America, hereafter referred to as Yamaha, warrants to the original consumer of a product included in the categories listed below, that the product will be free of defects in materials and/or workmanship for the periods indicated. This warranty is applicable to all models included in the following series of products:

PSR SERIES OF PORTATONE ELECTRONIC KEYBOARDS

If during the first 90 days that immediately follows the purchase date, your new Yamaha product covered by this warranty is found to have a defect in material and/or workmanship, Yamaha and/or its authorized representative will repair such defect without charge for parts or labor.

If parts should be required after this 90 day period but within the one year period that immediately follows the purchase date, Yamaha will, subject to the terms of this warranty, supply these parts without charge. However, charges for labor, and/or any miscellaneous expenses incurred are the consumers responsibility. Yamaha reserves the right to utilize reconditioned parts in repairing these products and/or to use reconditioned units as warranty replacements.

THIS WARRANTY IS THE ONLY EXPRESS WARRANTY WHICH YAMAHA MAKES IN CONNECTION WITH THESE PRODUCTS. ANY IMPLIED WARRANTY APPLICABLE TO THE PRODUCT, INCLUDING THE WARRANTY OF MERCHANT ABILITY IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY. YAMAHA EXCLUDES AND SHALL NOT BE LIABLE IN ANY EVENT FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Some states do not allow limitations that relate to implied warranties and/or the exclusion of incidental or consequential damages. Therefore, these limitations and exclusions may not apply to you.

This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

CONSUMERS RESPONSIBILITIES

If warranty service should be required, it is necessary that the consumer assume certain responsibilities:

1. Contact the Customer Service Department of the retailer selling the product, or any retail outlet authorized by Yamaha to sell the product for assistance. You may also contact Yamaha directly at the address provided below.
2. Deliver the unit to be serviced under warranty to: the retailer selling the product, an authorized service center, or to Yamaha with an explanation of the problem. Please be prepared to provide proof purchase date (sales receipt, credit card copy, etc.) when requesting service and/or parts under warranty.
3. Shipping and/or insurance costs are the consumers responsibility.* Units shipped for service should be packed securely.

*Repaired units will be returned PREPAID if warranty service is required within the first 90 days.

IMPORTANT: Do NOT ship anything to ANY location without prior authorization. A Return Authorization (RA) will be issued that has a tracking number assigned that will expedite the servicing of your unit and provide a tracking system if needed.

4. Your owners manual contains important safety and operating instructions. It is your responsibility to be aware of the contents of this manual and to follow all safety precautions.

EXCLUSIONS

This warranty does not apply to units whose trade name, trademark, and/or ID numbers have been altered, defaced, exchanged removed, or to failures and/or damages that may occur as a result of:

1. Neglect, abuse, abnormal strain, modification or exposure to extremes in temperature or humidity.
2. Improper repair or maintenance by any person who is not a service representative of a retail outlet authorized by Yamaha to sell the product, an authorized service center, or an authorized service representative of Yamaha.
3. This warranty is applicable only to units sold by retailers authorized by Yamaha to sell these products in the U.S.A., the District of Columbia, and Puerto Rico. This warranty is not applicable in other possessions or territories of the U.S.A. or in any other country.

Please record the model and serial number of the product you have purchased in the spaces provided below.

Model _____ Serial # _____ Sales Slip # _____

Purchased from _____ Date _____
(Retailer)

YAMAHA CORPORATION OF AMERICA
Electronic Service Division
6600 Orangethorpe Avenue
Buena Park, CA 90620

KEEP THIS DOCUMENT FOR YOUR RECORDS. DO NOT MAIL!

For details of products, please contact your nearest Yamaha representative or the authorized distributor listed below.

Pour plus de détails sur les produits, veuillez-vous adresser à Yamaha ou au distributeur le plus proche de vous figurant dans la liste suivante.

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

Para detalles sobre productos, contacte su tienda Yamaha más cercana o el distribuidor autorizado que se lista debajo.

NORTH AMERICA

CANADA

Yamaha Canada Music Ltd.
135 Milner Avenue, Scarborough, Ontario,
M1S 3R1, Canada
Tel: 416-298-1311

U.S.A.

Yamaha Corporation of America
6600 Orangethorpe Ave., Buena Park, Calif. 90620,
U.S.A.
Tel: 714-522-9011

CENTRAL & SOUTH AMERICA

MEXICO

**Yamaha de Mexico S.A. De C.V.,
Departamento de ventas**
Javier Rojo Gomez No.1149, Col. Gpe Del
Moral, Deleg. Iztapalapa, 09300 Mexico, D.F.
Tel: 55-5804-0600

BRAZIL

Yamaha Musical do Brasil LTDA.
Av. Rebouças 2636, São Paulo, Brasil
Tel: 011-3085-1377

ARGENTINA

**Yamaha Music Latin America, S.A.
Sucursal de Argentina**
Viamonte 1145 Piso2-B 1053,
Buenos Aires, Argentina
Tel: 1-4371-7021

PANAMA AND OTHER LATIN AMERICAN COUNTRIES/ CARIBBEAN COUNTRIES

Yamaha Music Latin America, S.A.
Torre Banco General, Piso 7, Urbanización Marbella,
Calle 47 y Aquilino de la Guardia,
Ciudad de Panamá, Panamá
Tel: +507-269-5311

EUROPE

THE UNITED KINGDOM

Yamaha-Kemble Music (U.K.) Ltd.
Sherbourne Drive, Tilbrook, Milton Keynes,
MK7 8BL, England
Tel: 01908-366700

IRELAND

Danfay Ltd.
61D, Sallynoggin Road, Dun Laoghaire, Co. Dublin
Tel: 01-2859177

GERMANY

Yamaha Music Central Europe GmbH
Siemensstraße 22-34, 25462 Rellingen, Germany
Tel: 04101-3030

SWITZERLAND/LIECHTENSTEIN

**Yamaha Music Central Europe GmbH,
Branch Switzerland**
Seefeldstrasse 94, 8008 Zürich, Switzerland
Tel: 01-383 3990

AUSTRIA

**Yamaha Music Central Europe GmbH,
Branch Austria**
Schleiergasse 20, A-1100 Wien, Austria
Tel: 01-60203900

THE NETHERLANDS

**Yamaha Music Central Europe,
Branch Nederland**
Clarissenhof 5-b, 4133 AB Vianen, The Netherlands
Tel: 0347-358 040

BELGIUM/LUXEMBOURG

**Yamaha Music Central Europe GmbH,
Branch Belgium**
Rue de Geneve (Genevastraat) 10, 1140 - Brussels,
Belgium
Tel: 02-726 6032

FRANCE

Yamaha Musique France
BP 70-77312 Marne-la-Vallée Cedex 2, France
Tel: 01-64-61-4000

ITALY

Yamaha Musica Italia S.P.A.
Viale Italia 88, 20020 Lainate (Milano), Italy
Tel: 02-935-771

SPAIN/PORTUGAL

Yamaha-Hazen Música, S.A.
Ctra. de la Coruna km. 17, 200, 28230
Las Rozas (Madrid), Spain
Tel: 91-639-8888

GREECE

Philippos Nakas S.A. The Music House
147 Skiathou Street, 112-55 Athens, Greece
Tel: 01-228 2160

SWEDEN

Yamaha Scandinavia AB
J. A. Wettergrens Gata 1
Box 30053
S-400 43 Göteborg, Sweden
Tel: 031 89 34 00

DENMARK

YS Copenhagen Liaison Office
Generatorvej 8B
DK-2730 Herlev, Denmark
Tel: 44 92 49 00

FINLAND

F-Musiikki Oy
Kluuvikatu 6, P.O. Box 260,
SF-00101 Helsinki, Finland
Tel: 09 618511

NORWAY

Norsk filial av Yamaha Scandinavia AB
Grini Næringspark 1
N-1345 Østerås, Norway
Tel: 67 16 77 70

ICELAND

Skifan HF
Skeifan 17 P.O. Box 8120
IS-128 Reykjavik, Iceland
Tel: 525 5000

OTHER EUROPEAN COUNTRIES

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Tel: +49-4101-3030

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Tel: 04101-3030

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LB21-128 Jebel Ali Freezone
P.O.Box 17328, Dubai, U.A.E.
Tel: +971-4-881-5868

ASIA

THE PEOPLE'S REPUBLIC OF CHINA

Yamaha Music & Electronics (China) Co.,Ltd.
25/F., United Plaza, 1468 Nanjing Road (West),
Jingan, Shanghai, China
Tel: 021-6247-2211

HONG KONG

Tom Lee Music Co., Ltd.
11/F., Silvercord Tower 1, 30 Canton Road,
Tsimshatsui, Kowloon, Hong Kong
Tel: 2737-7688

INDONESIA

**PT. Yamaha Music Indonesia (Distributor)
PT. Nusantik**
Gedung Yamaha Music Center, Jalan Jend. Gatot
Subroto Kav. 4, Jakarta 12930, Indonesia
Tel: 21-520-2577

KOREA

Yamaha Music Korea Ltd.
Tong-Yang Securities Bldg. 16F 23-8 Yoido-dong,
Youngdungpo-ku, Seoul, Korea
Tel: 02-3770-0660

MALAYSIA

Yamaha Music Malaysia, Sdn., Bhd.
Lot 8, Jalan Perbandaran, 47301 Kelana Jaya,
Petaling Jaya, Selangor, Malaysia
Tel: 3-78030900

PHILIPPINES

Yupangco Music Corporation
339 Gil J. Puyat Avenue, P.O. Box 885 MCPO,
Makati, Metro Manila, Philippines
Tel: 819-7551

SINGAPORE

Yamaha Music Asia Pte., Ltd.
No.11 Ubi Road 1, No.06-02,
Meiban Industrial Building, Singapore
Tel: 747-4374

TAIWAN

Yamaha KHS Music Co., Ltd.
3F, #6, Sec.2, Nan Jing E. Rd. Taipei.
Taiwan 104, R.O.C.
Tel: 02-2511-8688

THAILAND

Siam Music Yamaha Co., Ltd.
891/1 Siam Motors Building, 15-16 floor
Rama 1 road, Wangmai, Pathumwan
Bangkok 10330, Thailand
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Victoria 3006, Australia
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Music Houses of N.Z. Ltd.
146/148 Captain Springs Road, Te Papapa,
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