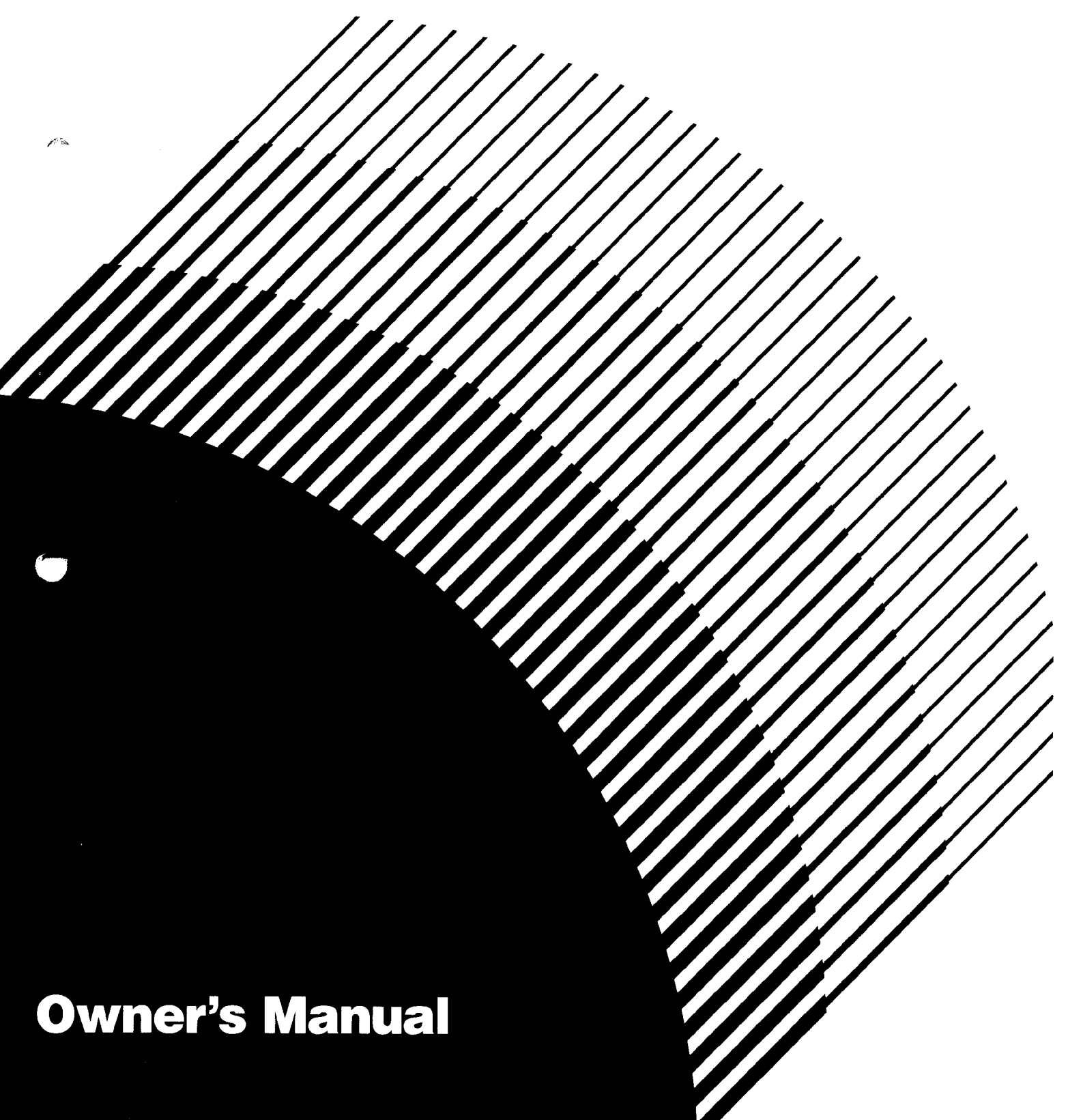


YAMAHA PORTATONE

PSR-210
PSR-310



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 owner's 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:

The 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 old 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

FCC INFORMATION

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.

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.

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 user's 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 branches (circuit breaker or fuse) circuits or install AC line filter/s.
- In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to co-axial type cable.

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

- This applies only to products distributed by Yamaha Corporation of America.

Welcome to Yamaha PortaTone PSR-210 and PSR-310

Congratulations! You are now the proud owner of a powerful new musical instrument capable of inspiring and fueling your musical creativity. This is not just another keyboard. The PortaTone keyboard is the result of passion, vision, and commitment from people who want you to enjoy yourself every time you play the PortaTone. We're sure you'll agree as you discover the limitless possibilities of your new keyboard!

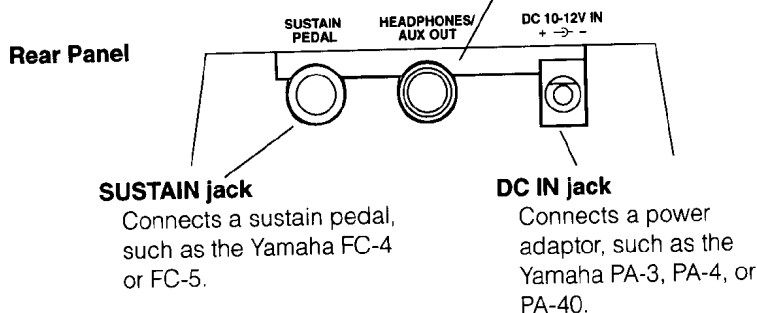
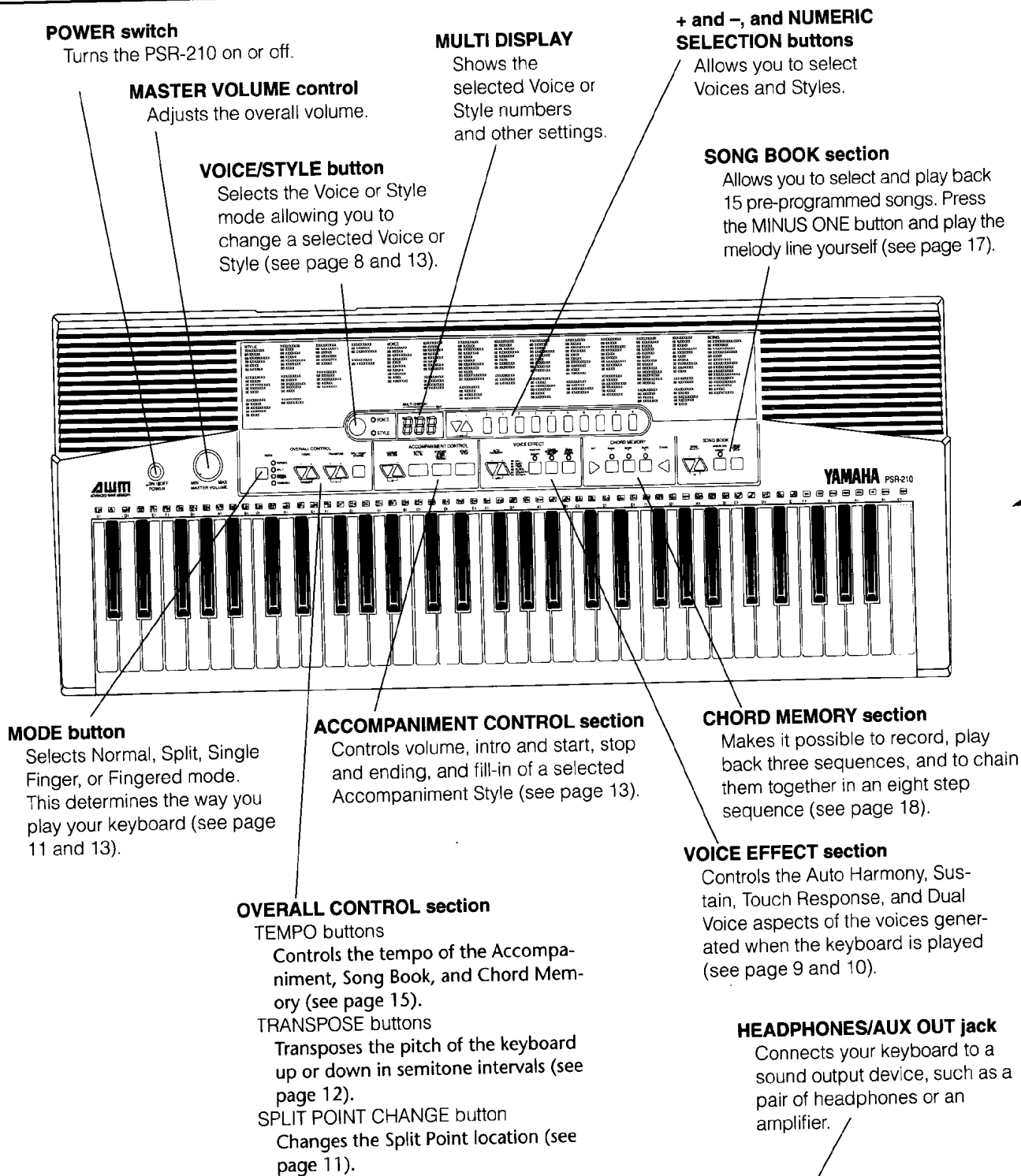
Regarding this Manual

Just as we have taken many hours perfecting this keyboard, we would like to ask you to take some time and read this manual thoroughly. This manual describes the functions and features of your new keyboard and it contains important warnings, installation instructions, and safety information. Please be sure to keep this manual for future reference.

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The PSR-210 at a glance



The PSR-310 at a glance

POWER switch

Turns the PSR-310 on or off.

MASTER VOLUME control

Adjusts the overall volume.

VOICE/STYLE/SOUND EFFECT button

Selects the Voice, Style, or Sound Effect mode allowing you to change a selected Voice, Style, or Sound Effect (see page 8, 13, and 20).

MULTI DISPLAY

Shows the selected Voice, Style, Sound Effect number, or other settings.

+ and -, and NUMERIC SELECTION buttons

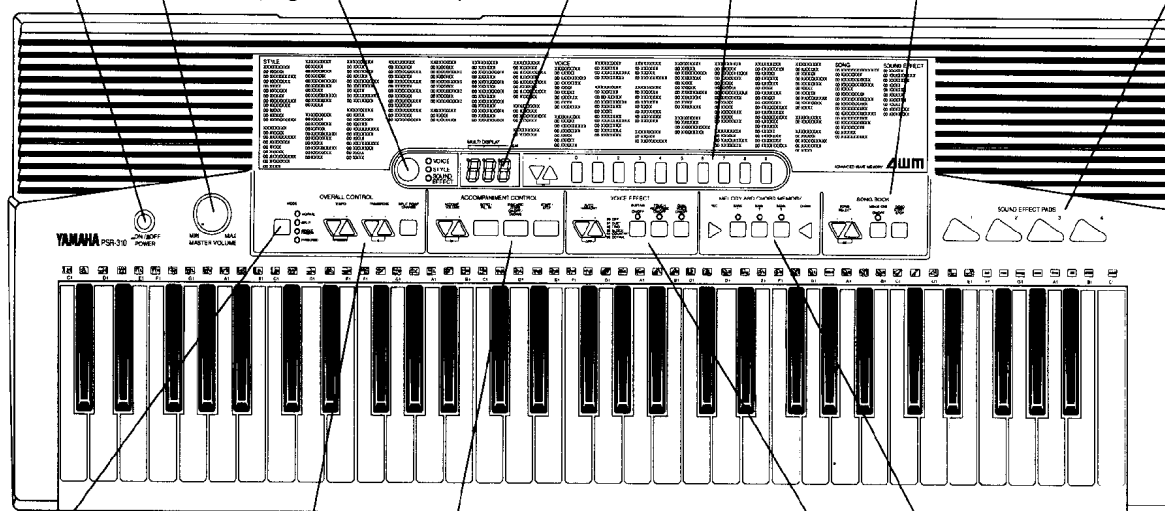
Allows you to select Voices, Styles, and Sound Effects.

SOUND EFFECT PADS

Plays back one of the 40 pre-recorded Sound Effects when pressed (see page 20).

SONG BOOK section

Allows you to select and play back 15 pre-programmed songs. Press the MINUS ONE button and play the melody line yourself (see page 17).



MODE button

Selects Normal, Split, Single Finger, or Fingered mode. This determines the way you play your keyboard (see page 11 and 13).

ACCOMPANIMENT CONTROL section

Controls volume, intro and start, stop and ending, and fill-in of a selected Accompaniment Style (see page 13).

MELODY AND CHORD MEMORY section

Makes it possible to record, play back three sequences, and to chain them together in an eight step sequence (see page 18).

OVERALL CONTROL section

TEMPO buttons

Controls the tempo of the Accompaniment, Song Book, and Melody and Chord Memory (see page 15).

TRANPOSE buttons

Transposes the pitch of the keyboard up or down in semitone intervals (see page 12).

SPLIT POINT CHANGE button

Changes the Split Point location (see page 11).

VOICE EFFECT section

Controls the Auto Harmony, Sustain, Touch Response, and Dual Voice aspects of the voices generated when the keyboard is played (see page 9 and 10).

MIDI ports

MIDI IN

Receives data from another MIDI device.

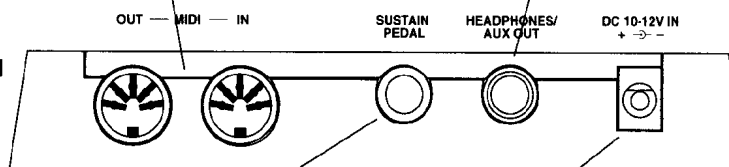
MIDI OUT

Transmits data to another MIDI device.

HEADPHONES/AUX OUT jack

Connects your keyboard to a sound output device, such as a pair of headphones or an amplifier.

Rear Panel



SUSTAIN jack

Connects a sustain pedal, such as the Yamaha FC-4 or FC-5.

DC IN jack

Connects a power adaptor, such as the Yamaha PA-3, PA-4, or PA-40.

Setting Up

Once you've unpacked your PortaTone and connected a power adaptor or inserted batteries, it is ready to use. This part will guide you step by step through the process of actually setting up your PortaTone.

Before you begin setting up your PortaTone, and before connecting other equipment to it, always make sure that all equipment is turned off.

Taking Care of Your PortaTone

You're almost ready to set up your PortaTone, but before you begin, first read these important safety instructions. For your safety and the protection of your equipment always follow these precautions.

Location

- ❑ Avoid exposure to direct sunlight.
- ❑ Do not place your PortaTone in places subject to extreme heat; for example: inside a car, near a window, or near a heater.
- ❑ Do not place your PortaTone in places subject to extreme moisture; for example: near an air conditioner or inside a bathroom.

Interference from Electromagnetic Fields

- ❑ Do not use your PortaTone close to television sets, radios, or similar equipment since this may cause interference noise in the other appliance.

Handling

- ❑ Protect your PortaTone from strong impact. Be careful not to drop it or place heavy objects on top of it. Avoid applying excessive force to the controls, keys, and connections.

When not Using the PortaTone

- ❑ After use, always turn off the POWER switch. When not using your PortaTone for a long time, remove the batteries to avoid damage through battery leakage.

When Using a Power Adaptor

- ❑ Disconnect the power adaptor from the outlet under these conditions:
 - If the power cord is damaged
 - If any liquid is spilled on the PortaTone
 - If there is a threat of lightning
- ❑ Always disconnect the PortaTone's power adaptor by pulling the plug only. Do not pull the cord.
- ❑ If you use an extension cord or power strip, do not exceed its power rating.

Cleaning

- ❑ Clean the exterior with a soft, dry cloth. To remove stubborn stains, use a slightly moistened cloth.
- ❑ Never use alcohol, thinner or other chemical solvent since they will damage the finish. Also do not leave any plastic material on your PortaTone for a long time, since it may adhere to the exterior.

Service

- ❑ Your PortaTone has no user-serviceable parts. Refer any problems to your Yamaha dealer or service center.

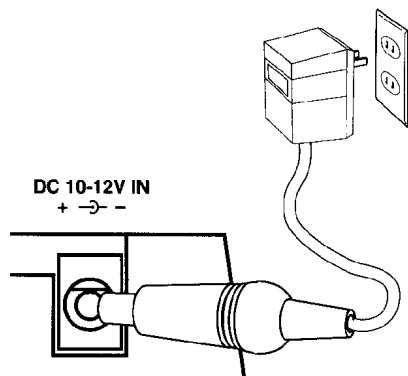
YAMAHA is NOT responsible for damage caused by improper use.

Supplying Power to your Keyboard

Your PSR-210 or PSR-310 will run either from an optional power adaptor or batteries. Follow the instructions below according to the power source you intend to use.

Connecting a Power Adaptor

The PSR-210 or PSR-310 can be powered from an optional power adaptor. To connect a power adaptor follow the steps below.



▼ To connect a power adaptor:

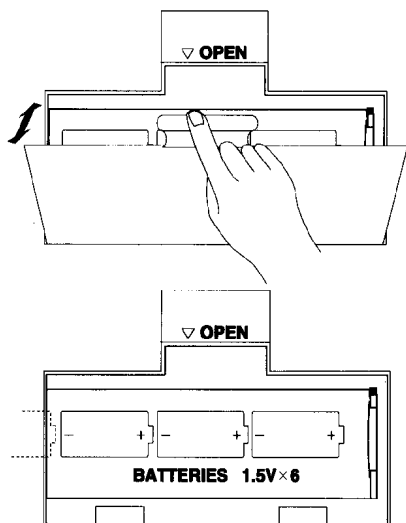
1. Make sure that the **POWER** switch of the keyboard is turned off, and that the power adaptor is not plugged into a wall outlet or power strip.
2. Plug the power adaptor's DC IN plug into the DC IN jack at the rear of the PSR-210 or PSR-310.
3. Plug the power adaptor into a wall outlet or power strip.

Warning:

- ❑ Use **ONLY** a Yamaha PA-3, PA-4, or PA-40 AC Power Adaptor to power your instrument from the AC mains. Other adaptors may cause serious damage to your PSR-210 or PSR-310, and your power adaptor.

Inserting Batteries

The PSR-210 or PSR-310 can also be powered from six 1.5V D size (SUM-1 or R-20) or equivalent batteries.



▼ To insert batteries:

1. Make sure that the **POWER** switch is turned off.
2. Open the battery compartment cover located on the keyboard's bottom panel.
3. Insert the six batteries, being careful to follow the polarity markings on the cabinet.
4. Replace the compartment cover, making sure that it locks firmly in place.

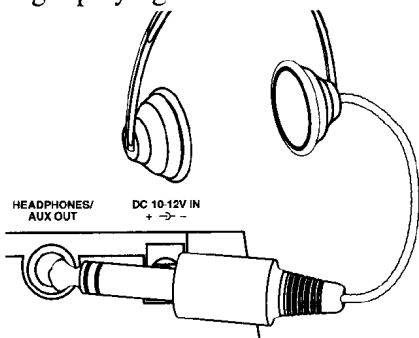
- ❑ No power will be drawn from the batteries when a power adaptor is used.

Warnings:

- ❑ When the batteries run down the sound of your PortaTone may be distorted. Replace them with a complete set of six new batteries. **NEVER** mix old and new batteries together.
- ❑ Do not use different kinds of batteries at the same time.
- ❑ During battery replacement the PSR-210 and PSR-310 memory will be backed up for approximately 1 minute. If the batteries are removed for a longer period, the keyboard will revert to its default factory settings.

Connecting Headphones

A standard pair of stereo headphones, such as Yamaha's HPE-3, can be plugged in for private practice or late-night playing.



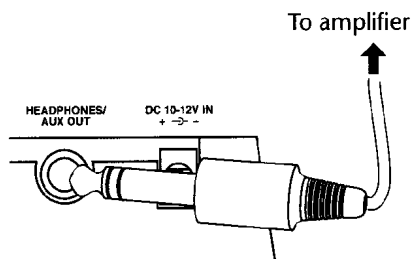
▼ To connect headphones:

Connect the headphones' standard stereo phone plug into the HEADPHONES/AUX OUT jack at the rear of your PSR-210 or PSR-310.

❑ The internal speaker system is automatically shut off when a pair of headphones is plugged into the HEADPHONES/AUX OUT jack.

Connecting an Amplifier

The HEADPHONES/AUX OUT jack can also be used for outputting the sound of the PSR-210 or PSR-310 to a keyboard amplifier, stereo sound system, mixing console or tape recorder.

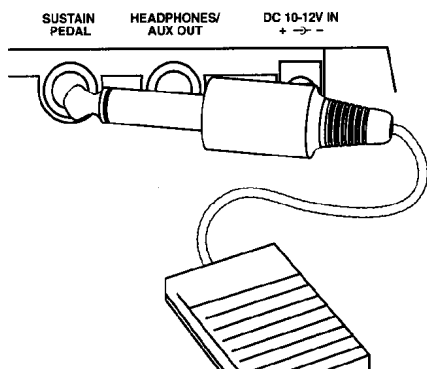


▼ To connect an amplifier:

Plug the cable from the amplifier's input jack into the HEADPHONES/AUX OUT jack at the rear of your PSR-210 or PSR-310.

Connecting a Foot Pedal

A connected foot pedal can be used to function as a damper pedal controlling sustain.



▼ To connect a foot pedal:

Connect the foot pedal's plug into the SUSTAIN PEDAL jack at the rear of your PSR-210 or PSR-310.

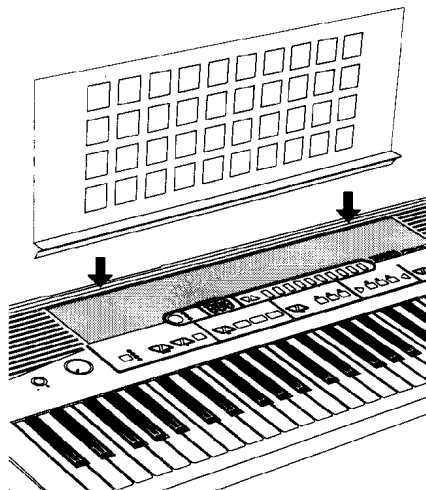
Holding the pedal down sustains the notes you play on the keyboard after you release the keys.

❑ Make sure that the PortaTone is turned off when connecting or disconnecting a foot pedal, FC-4 or FC-5 (optional). Otherwise the Sustain ON/OFF status will be reversed.

Inserting a Music Stand

▼ To insert a music stand:

Insert the bottom edge of the music stand into the slot located at the top of the PortaTone's control panel.



The Basics

Switching the Keyboard On and Off



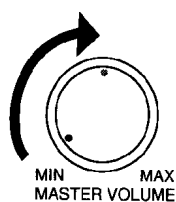
▼ To switch the power on and off:

Press the **POWER** switch once to turn the power on.

To turn the keyboard off, press the **POWER** switch once again.

Adjusting the Master Volume

The overall volume is controlled by the **MASTER VOLUME** control.

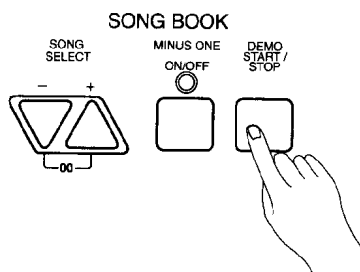


▼ To adjust the master volume:

1. Initially turn the **MASTER VOLUME** control to the half way point.
2. While playing the keyboard adjust it to the desired volume level.

Listening to a Demonstration Song from the Song Book

To give you an idea of the PSR-210 or PSR-310's sophisticated capabilities, it comes with 15 internal demonstration songs that you can select and play back.



▼ To play back demonstration songs:

1. Press the **DEMO START/STOP** button.

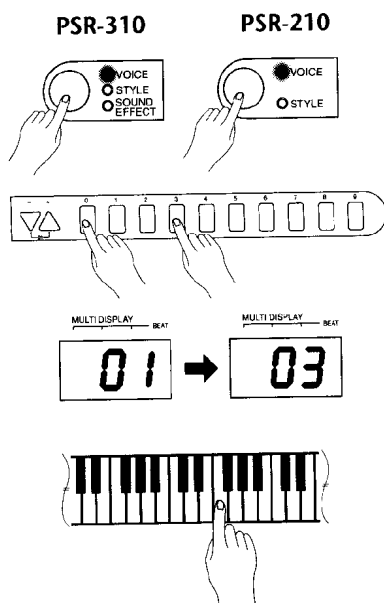
The demo songs will play back, one after the other, from the selected song number. To jump to the next song or to go back and listen to a previous song you can use the **SONG SELECT** + or – buttons.

2. To stop playback, press the **DEMO START/STOP** button again.

☐ See page 17 for more information regarding the Song Book.

Selecting and Playing Voices

Your keyboard contains 100 vivid and realistic voices — instrument or percussion sounds — created by Yamaha's time-proven AWM tone generation technology. Select a voice you like and try playing.



▼ To select and play a voice:

1. If the **VOICE** indicator is not lit, press the **VOICE/STYLE** (/SOUND EFFECT) button once or twice so that it lights.

The number of the currently selected voice will appear on the **MULTI DISPLAY** when the **VOICE** indicator is lit.

2. Choose one of the 100 voices from the **VOICE** list on the panel.
3. Enter the voice number using the **NUMERIC SELECTION** buttons.

To select voice number 03 (**HARPSICHORD**), for example, first press 0 then 3. The number "03" should then appear on the **MULTI DISPLAY**. The + and - **SELECTION** buttons can also be used to increase or decrease the current voice number. Holding down either button increases or decreases the voice number continuously.

4. Play one or more keys on the keyboard to hear the selected voice.

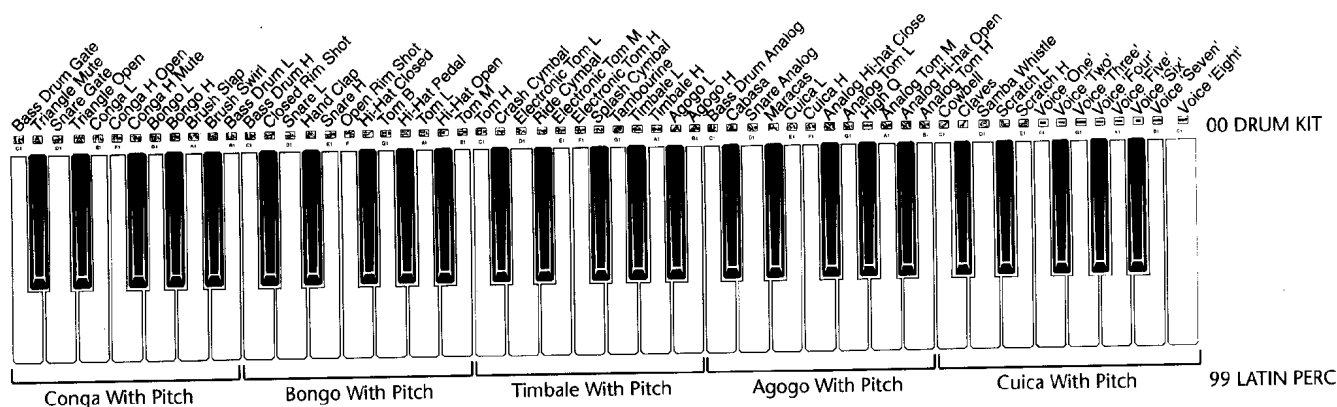
❑ Voice number 01 (**ACOUSTIC PIANO**) is automatically selected as the default voice when the **PortaTone** is turned on.

❑ When using the + and - **SELECTION** buttons the voice numbers cycle in this way: 01 ⇌ 99 ⇌ 00 ⇌ 01 ⇌ 99...

❑ The optimum range is preset for each voice.

Keyboard Percussion

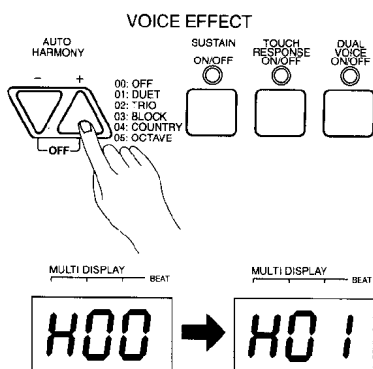
The keyboard keys can be used to play the sounds of drum and percussion instruments. Voice numbers 97 (**TIMPANI**) and 98 (**STEEL DRUM**) can be played like normal voices. Voice number 99 (**LATIN PERC**), however, divides the keyboard into five different instruments, and voice number 00 (**DRUM KIT**) provides a different drum or percussion instrument for each key, 61 sounds in all.



❑ When voice number 00 (**DRUM KIT**) is selected the percussion voices correspond to the symbols above the keys of your **PortaTone**.

Auto Harmony

This sophisticated feature automatically adds appropriate harmony notes to a melody you play on the keyboard. You can choose from 5 different types of harmony.



▼ To select an Auto Harmony type:

1. Press the AUTO HARMONY + or – button.

The first time the AUTO HARMONY + or – button is pressed the letter “H” together with the current Harmony type number will appear on the MULTI DISPLAY and remain for approximately 2 seconds afterwards.

2. Choose one of the five Harmony types from the list next to the HARMONY + and – buttons.

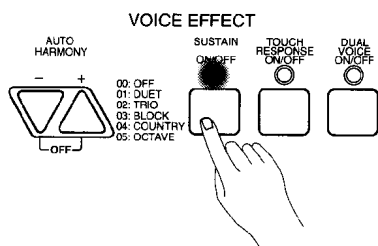
3. While the current Harmony type is still showing on the display, press the AUTO HARMONY + or – button to increase or decrease the Harmony type number.

Holding down either button increases or decreases the Harmony type number continuously.

- ❑ Only a single note can be played at a time on the keyboard (or the right-hand section of the keyboard when in the Split mode) when the Auto Harmony feature is used.
- ❑ In the Single Finger, Fingered, or Split mode, the left-hand chords determine the harmony notes that will be applied to the right-hand melody. Also Auto Harmony is not applied to the left-hand voice in the Split mode and to the Accompaniment sounds.
- ❑ If Auto Harmony is used at the same time as the Dual Voice feature (see page 10), harmony will not be applied to the second “dual” voice.
- ❑ The default Auto Harmony type (00 : OFF) can be recalled at any time by pressing both the AUTO HARMONY + and – buttons at the same time.

Sustain

Sustain causes notes played on the keyboard to fade gradually after you lift your fingers from the keys.



▼ To turn Sustain on:

Press the SUSTAIN button once (the indicator will light).

Press the SUSTAIN button a second time (the indicator light will go out) to turn the sustain effect off.

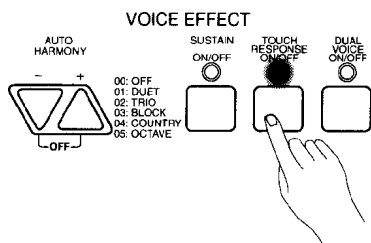
▼ To turn Sustain on independently for the left and right-hand voices in the Split mode:

1. Press a key to the right of the Split Point to select the right-hand voice, then turn Sustain on or off for that voice.
2. Press a key to the left of the Split Point to select the left-hand voice, then turn Sustain on or off for that voice.

- ❑ When the Dual Voice function is used, sustain is applied to both voices.
- ❑ A sustain pedal can be used as well to achieve the same effect. See “Connecting a Foot Pedal” on page 6.
- ❑ Sustain cannot be applied to some of the voices.

Touch Response

Your keyboard is touch responsive. This means that you can control the loudness of the sound to a certain degree according to how hard you play the keys.



▼ To switch Touch Response on:

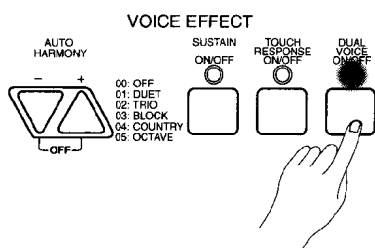
Press the TOUCH RESPONSE ON/OFF button once (the indicator will light).

When on, the notes played on the keyboard will correspond to how hard or soft you play the keys.

Turn the Touch Response feature off by pressing the TOUCH RESPONSE ON/OFF button again (the indicator light will go out).

Dual Voice

The keyboard's Dual Voice feature makes it possible to select and play two voices at the same time.



▼ To activate Dual Voice:

Press the DUAL VOICE button (the indicator will light).

When on, the voice selected prior to turning the Dual Voice on will sound simultaneously with a second "Dual" Voice. Any voice can be selected as the Dual Voice while the DUAL VOICE is on.

Dual Voice can be turned off by pressing the DUAL VOICE button again.

When the Dual Voice function is used in the Split mode (see page 11) different dual voices can be assigned to the left- and right-hand sections of the keyboard. Press a key to the right of the Split Point to select the right-hand voice, then turn Dual Voice on and select the right-hand dual voice. Press a key to the left of the Split Point to select the left-hand voice, then turn Dual Voice on and select the left-hand dual voice.

❑ The default Dual Voice that is automatically selected when the PortaTone is switched ON, is voice number 39 (STRINGS 2 SLOW).

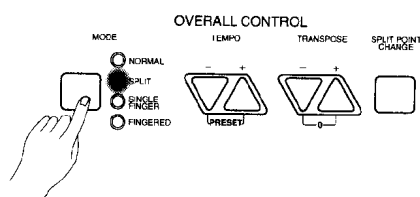
❑ When the Single Finger or Fingered mode is selected, the Dual Voice feature applies only to the right-hand section of the keyboard.

❑ The maximum polyphony of 28 notes is reduced when using Dual Voice. See "Polyphony" on page 23 for more details.

Split

The Split mode on the PSR-210 and PSR-310 allows you to play two voices at once — one with the left hand and one with the right.

Entering the Split Mode



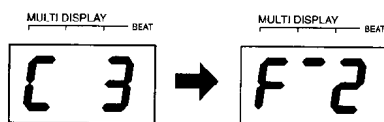
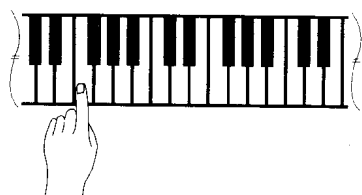
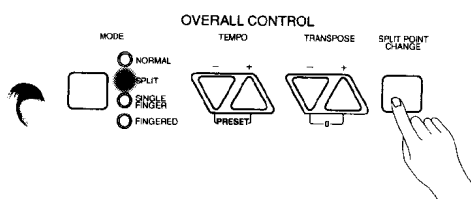
▼ To enter the Split mode:

Press the **MODE** button repeatedly until the **SPLIT** indicator lights up.

This selects the Split mode. The left-hand voice can now be played to the left of the Split Point, and the right-hand voice can be played to the right of the Split Point.

- ❑ The default Split Point in Split mode is C3 (note name). Note names are shown above each white key.

Changing the Split Point



▼ To change the Split Point:

1. Press the **SPLIT POINT CHANGE** button.

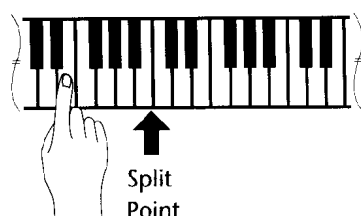
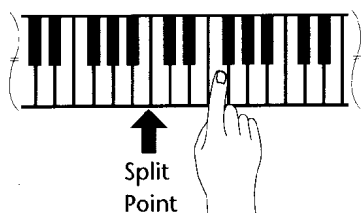
The Split Point is shown on the **MULTI DISPLAY** for as long as the **SPLIT POINT CHANGE** button is held. For example, if the Split Point is C3, the **MULTI DISPLAY** shows "C 3"; if at F#2 the **MULTI DISPLAY** shows "F 2".

2. While holding down the **SPLIT POINT CHANGE** button, press a keyboard key to select the new Split Point.

- ❑ The Split Point can be changed as well in the Single Finger mode and in the Fingered mode; this affects the physical playing range of the Accompaniment. You can assign separate Split Points in the Single Finger mode and in the Fingered mode.
- ❑ The Split Point cannot be changed in Normal mode.
- ❑ Note that the Split Point key is included in the right-hand section of the keyboard.
- ❑ Split Points for the Split, Single Finger, and Fingered modes are separately retained in memory, and will be recalled separately whenever a certain mode is selected. The memory is retained even when the PortaTone is turned off, provided power is supplied to the PortaTone by batteries or a power adaptor.

Selecting Voices in the Split mode:

In the Split mode, voices can be selected and played separately in the left and right-hand sections of the keyboard.



▼ To select left and right-hand voices:

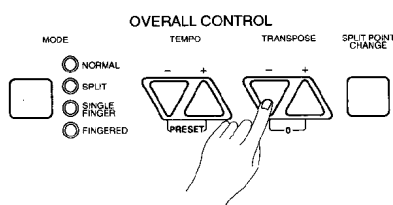
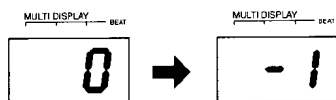
1. If the VOICE indicator is not lit, press the VOICE/STYLE (/SOUND EFFECT) button once or twice so that it lights.
2. To change the right-hand voice press any keyboard key to the right of the Split Point, then select a voice in the normal way.
The current right-hand voice number will be shown on the MULTI DISPLAY and a new right-hand voice can be selected.
3. To change the left-hand voice press any key to the left of the Split Point, then select a voice in the normal way.
The current left-hand voice number will be shown on the MULTI DISPLAY and a new left-hand voice can be selected.

- ❑ When the Split mode is first selected the current voice is assigned to the right-hand section of the keyboard and voice number 87 (WOOD BASS) will be assigned as the default voice to the left-hand section of the keyboard.
- ❑ The left-hand voice is octave-shifted to provide the best sound in the left-hand range.

Transpose

The PSR-210 and PSR-310 TRANPOSE buttons make it possible to shift the pitch of the entire keyboard up or down in semitone intervals up to a maximum of 12 semitones (one octave). Transposing the pitch of the PSR-210 or PSR-310 keyboard makes it easier to play in difficult key signatures, and you can simply match the pitch of the keyboard to the range of a singer or another instrumentalist.

▼ To transpose the keyboard range:



1. Press the TRANPOSE + or – button.

The first time the TRANPOSE + or – button is pressed, the current transpose value will appear on the MULTI DISPLAY and remain for approximately 2 seconds afterwards.

2. While the current transpose value is still showing on the display, press the TRANPOSE + or – button to raise or lower the pitch.

Holding down either button raises or lowers the pitch continuously.

- ❑ The normal transpose value (0) can be recalled at any time by pressing both the TRANPOSE + and – buttons at the same time.
- ❑ Transpose does not affect the voice number 00 (DRUM KIT).

Playing with Accompaniment

Playing along with the PSR-210 or PSR-310 Accompaniment can be exciting. The PSR-210 provides 50 and the PSR-310 provides 100 popular and exciting Accompaniment Styles that can be used to provide fully orchestrated accompaniment.

Selecting an Accompaniment Style

▼ To select an Accompaniment Style:

1. If the **STYLE** indicator is not lit, press the **VOICE/STYLE (/SOUND EFFECT)** button once or twice so that it lights.

The number of the selected style will appear on the **MULTI DISPLAY** when the **STYLE** indicator is lit.

2. Choose one of the Accompaniment Styles from the **STYLE** list on the panel.
3. Enter its number using the **NUMERIC** or **+** and **- SELECTION** buttons.

To select style number 05, for example, first press 0 and then 5. The number "05" should then be displayed on the **MULTI DISPLAY**.

- ❑ A different Accompaniment Style can be selected at any time while the Accompaniment is playing. The style number display will change as soon as the selection is made, but the new style will begin playback from the next measure. The tempo will not change when the new style begins playing.
- ❑ Style number 01 is automatically selected as the default style when the Porta-Tone is turned on.

Selecting an Accompaniment Mode

There are two different Accompaniment modes: Single Finger and Fingered. (See below.)

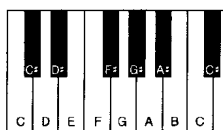
▼ To select an Accompaniment mode:

Select **Single Finger** or **Fingered** mode by pressing the **MODE** button as many times as necessary.

The indicator of the selected mode will light.

Single Finger Mode

Chord roots



The Single Finger mode provides the fastest and easiest means to produce beautifully orchestrated accompaniment, by simply using one, or at most, two or three fingers to play the chords.

- ❑ The default Split Point in Single Finger Mode is D2.

▼ To play a major chord:

Press the root key.

- ❑ The root key is the note that corresponds to the chord's name.



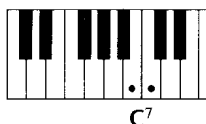
▼ To play a minor chord:

Press the root key and a black key to its left simultaneously.



▼ To play a seventh chord:

Press the root key and a white key to its left simultaneously.



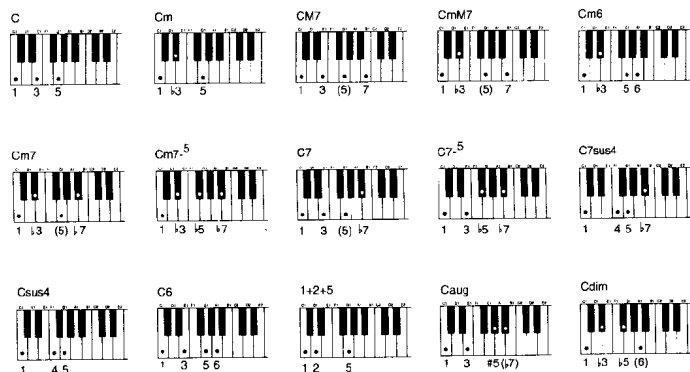
▼ To play a minor-seventh chord:

Press the root key and both a white and black key to its left simultaneously.



Fingered mode

The Fingered mode lets you play a wider range of chord types than the Single Finger mode. Play the notes of the chords yourself in the left-hand section of the keyboard, and the PortaTone will automatically produce an appropriate accompaniment.



Chord	Abbreviation	Normal Voicing*
Major	M	1-3-5
Minor	m	1-b3-5
Major seventh	M7	1-3-(5)-7
Minor major seventh	mM7	1-b3-(5)-7
Minor sixth	m6	1-b3-5-6
Minor seventh	m7	1-b3-(5)-b7
Minor seventh flattened fifth	m7-5	1-b3-b5-b7
Seventh	7	1-3-(5)-b7
Seventh flattened fifth	7-5	1-3-b5-b7
Seventh suspended fourth	7sus4	1-4-5-b7
Suspended fourth	sus4	1-4-5
Major sixth	6	1-3-5-6
One-plus-two-plus-five	1+2+5	1-2-5
Augmented	aug	1-3-#5-(b7)
Diminished	dim	1-b3-b5-(6)

*Notes in parentheses () may be omitted.

❑ The chart above shows the basic fingerings for the chords; however, different voicings can be used as well, with the following exceptions:

- Minor sixth chords will be recognized only if the root is the lowest note.
- Seventh flattened fifth chords will be recognized only if either the root or flattened seventh is the lowest note.
- For diminished and augmented chords, the lowest key pressed is regarded as the root of the chord.
- One-plus-two-plus-five chords and major sixth chords will be properly detected only if they are played in root position.

❑ The default Split Point in Fingered mode is G2.

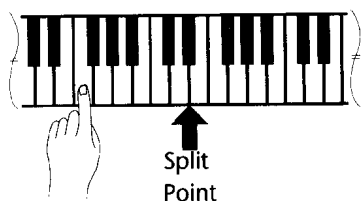
❑ An octave — i.e. two notes played exactly one octave apart — will produce Accompaniment using only that root note.

❑ Full accompaniment can be cancelled if you press three adjoining keys including a black key. At that point only the rhythm accompaniment will continue.

❑ The accompaniment will continue playing even if you lift your fingers from the left-hand section of the keyboard. You only need to press the accompaniment keys when changing chords.

Starting the Accompaniment

▼ To start the Accompaniment:



Press a key, key combination, or chord in the left-hand section of the keyboard to start a fully orchestrated accompaniment.

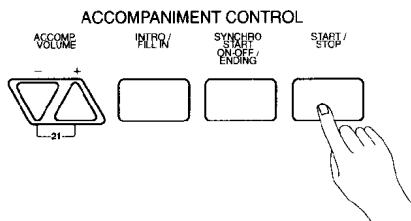
The start is synchronized with the first note or chord played in the left-hand section of the keyboard since the Synchro Start mode is automatically set when selecting Fingered or Single Finger mode.

The Synchro Start mode is indicated by three flashing dots along the top of the MULTI DISPLAY. To cancel Synchro Start mode press the SYNCHRO START/ENDING button.

❑ Chord changes always coincide with a beat.

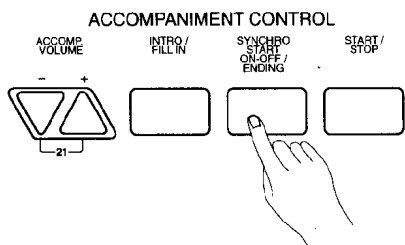
Other ways of starting the Accompaniment

Pressing the START/STOP button



Pressing the START/STOP button immediately starts a rhythm pattern. No bass or chord accompaniment is produced until a chord is detected in the left-hand section of the keyboard.

Pressing the INTRO/FILL IN button



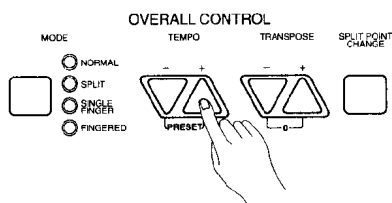
To begin with an introduction, press the INTRO button while in Synchro Start mode. As soon as a note or chord is played in the left-hand section of the keyboard the Intro will start.

If you press the INTRO/FILL IN button while the Synchro Start mode is canceled, the Accompaniment will play an Intro pattern without bass and chord accompaniment. After the Intro pattern a normal rhythm pattern will continue from the next measure. No bass or chord accompaniment is produced until you begin to play in the left-hand section of the keyboard.

- ❑ If you cancel the Synchro Start mode by pressing the SYNCHRO START/ENDING button in SINGLE FINGER or FINGERED mode, and play a chord in the left-hand section of the keyboard, the chord and bass of the selected accompaniment will sound for as long as the chord is held.
- ❑ A " _ " before the style number in the MULTI DISPLAY indicates that the Intro Ready mode is selected.
- ❑ In Normal or Split mode only rhythm patterns can be played.

Setting the Tempo

The tempo of the Accompaniment can be adjusted from 40 to 240 beats per minute.

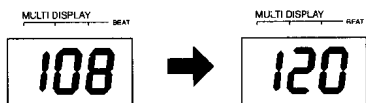


▼ To adjust the tempo:

1. Press the TEMPO + or - button.

The first time the TEMPO + or - button is pressed the current tempo will appear (in quarter-note beats per minute) on the MULTI DISPLAY and remain for approximately 2 seconds afterwards.

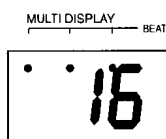
2. While the current tempo value is still showing on the display, press the TEMPO + or - button to increase or decrease the tempo.



- ❑ Each Accompaniment Style has a different default tempo which is automatically set whenever a new style is selected. However, if you select a new style while the Accompaniment is playing, the newly selected style will use the tempo of the previous style.
- ❑ The default tempo for the selected Accompaniment Style can be recalled at any time by simultaneously pressing the TEMPO + and - buttons.

Beat Display

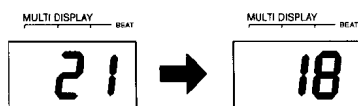
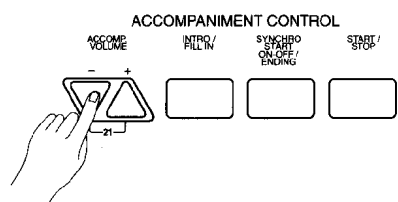
The MULTI DISPLAY provides a visual indication of the beats as shown in the figure below.



	4/4 Time	3/4 Time
1st Beat	● ● ●	● ● ●
2nd Beat	● ○ ○	● ○ ○
3rd Beat	○ ● ○	○ ● ○
4th Beat	○ ○ ●	

Adjusting the Accompaniment Volume

▼ To adjust the Accompaniment volume:



1. Press the ACCOMPANIMENT VOLUME + or – button.

The first time the ACCOMPANIMENT VOLUME + or – button is pressed the current volume value will appear on the MULTI DISPLAY and remain for approximately 2 seconds afterwards.

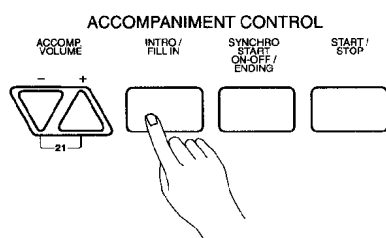
2. While the current volume is still showing on the display, press the ACCOMPANIMENT VOLUME + or – button to increase or decrease the volume.

- ❑ The volume range is from 0 to 24, with 0 being the lowest volume and 24 the highest. The default Accompaniment volume (21) can be recalled at any time by simultaneously pressing both the ACCOMPANIMENT VOLUME + and – buttons.

Adding a Fill-in pattern

You can enhance your performance by adding a Fill-in (rhythm variation) at anytime during the Accompaniment.

▼ To add a Fill-in pattern:



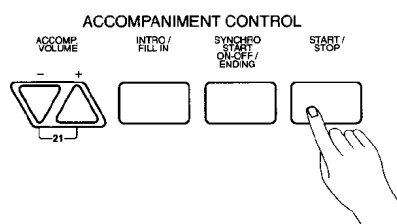
Press the INTRO/FILL IN button.

A Fill-in pattern that matches the selected style will be produced. The normal Accompaniment will then continue from the beginning of the next measure.

- ❑ If the INTRO/FILL IN button is pressed after the last beat of the measure, the Fill-in will start at the beginning of the next measure.

Stopping the Accompaniment

An Accompaniment in progress can be stopped immediately, or it can be stopped with an appropriate ending pattern.



▼ To stop the Accompaniment:

Press the START/STOP button to stop the Accompaniment.

The Accompaniment will end immediately.

Pressing the SYNCHRO START/ENDING button will automatically add a brief ending pattern before stopping the Accompaniment.

- ❑ If the INTRO/FILL IN button is pressed while the ending pattern is playing, a Fill-in pattern will be played, followed by a return to the normal pattern.
- ❑ Some of the PSR-310's Intro and Ending styles have chord progressions. If you finger a major or a minor chord using the accompaniment rules, the appropriate Intro or Ending pattern will play back.

Using the Song Book

The Song Book features 15 popular and exciting demonstration songs for your listening enjoyment. You can also play along with them by using the Minus-one feature.

Playing Back Demonstration Songs from the Song Book

▼ To play back a demonstration song from the SONG BOOK:

1. Refer to the SONG list on the panel and press the SONG SELECT + or – button.

The first time the SONG SELECT + or – button is pressed the letter “d” together with the current song number will appear on the MULTI DISPLAY and remain for approximately 2 seconds afterwards.

2. While the current song number is still showing on the display, select a new song by pressing the SONG SELECT + or – button.
3. Press the DEMO START/STOP button to start playback of the song.

The demonstration will continue to play all songs one after the other until the DEMO START/STOP button is pressed again.

- ❑ You can play along on the keyboard with the demo song.
- ❑ If you change the song number while a song is playing, the newly selected song will start playing immediately.
- ❑ Only the Normal and Split modes can be used during playback of a song. When you press the DEMO START/STOP button while the Fingered or Single Finger mode is active, the Normal mode will automatically be selected.
- ❑ The following different settings can be changed at any time while a song is playing: Split, Dual Voice, Voice selection, Sustain, Tempo, Accompaniment Volume, Transpose, Split Point Change, and Auto Harmony (applies to notes played on the keyboard).

Minus One

The Minus One feature removes the melody part of a demonstration song, allowing you to play that part yourself. Please refer to pages 25 through 35 for the music scores of these songs. The songs are the same as the demo songs, and are selected in the same way.

▼ To play back a song without the melody line:

1. Press the SONG SELECT + or – button.
2. While the current song number is still showing on the display, select a new song by pressing the SONG SELECT + or – button.
3. Press the MINUS ONE button.
The indicator will light.
4. Press the DEMO START/STOP button.
The song will start to play back without the melody line.
5. Play along on the keyboard.

Refer to the melody score of each song in the latter part of this manual. The voice assigned to the keyboard is the same as the original melody voice. Playback of the selected song will continue until the DEMO START/STOP button is pressed again.

- ❑ Split mode and Dual Voice can be used with the Minus One feature.
- ❑ You can press the MINUS ONE button during playback to switch between Minus One and Demonstration song playback.

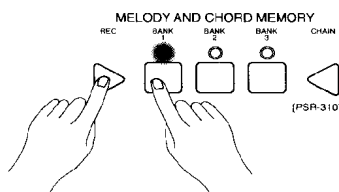
Recording and Playing Back Your Music

The CHORD MEMORY function of the PSR-210 and the MELODY AND CHORD MEMORY function of the PSR-310 allow you to record and play back chord and melody sequences. (Melody sequences can only be recorded and played back by the PSR-310.)

The (MELODY AND) CHORD MEMORY function is also equipped with three separate Banks that can be used to record different sequences. The Banks can be chained — i.e. they will play back in any specified order. This allows you to record a verse and chorus in different Banks, then “chain” them in the desired order for playback.

Recording a Sequence

▼ To record a sequence:



1. Select the Single Finger or Fingered mode and choose an Accompaniment Style that is appropriate for the type of music you want to record.

2. Press one of the BANK buttons while holding the REC button.

This engages the Record Ready mode for the selected Bank. The Bank indicator will flash, the metronome will sound, and three dots along the top of the MULTI DISPLAY will flash at the selected tempo.

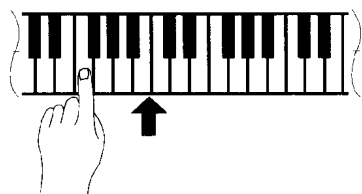
Press the REC button again if you want to disengage the Record Ready mode and perform some other function.

Before actually starting to record, try setting a tempo that will be easy to record by using the TEMPO + and – buttons.

3. Recording will begin as soon as you play a note or chord in the left-hand section of the keyboard (Synchro Start operation).

Recording can also be started by pressing the START/STOP button. In this case the rhythm will begin without bass and chord accompaniment until a chord is detected in the left-hand section of the keyboard.

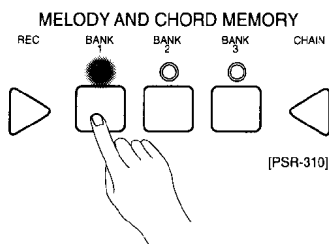
4. Play the required chords and melody (The melody is recorded by the PSR-310 only).
5. Press either the START/STOP button or the SYNCHRO START/ENDING button to stop recording.



- ❑ Sequences recorded with the (MELODY AND) CHORD MEMORY are retained in memory even when the POWER switch is turned off (provided power is supplied to the PortaTone by batteries or a power adaptor).
- ❑ Whenever you record using the (MELODY AND) CHORD MEMORY, any previously recorded data in the same Bank will be erased.
- ❑ The CHORD MEMORY records the following data: Style number, chord timing, chords, Intro, Fill in, and Ending. In addition to these the PSR-310's MELODY AND CHORD MEMORY lets you record the melody performance data from the right-hand section of the keyboard, including the selected voice number.

- ❑ The PSR-210 can record chord sequences that contain a maximum of 60 chords per Bank (with one chord change per measure). The PSR-310 can record melody and chord sequences that contain either a maximum of 1600 notes or 200 chords per Bank (or a reduced combination of both).
- ❑ With the PSR-310, recording will also begin if you play a melody in the right-hand section. Until you press a key in the left-hand section, only the melody will be recorded.
- ❑ You cannot change the Accompaniment Style while recording.
- ❑ If the memory becomes full while recording, “End” will appear on the MULTI DISPLAY, and recording will stop automatically.
- ❑ If the Normal or Split mode is selected, the Fingered mode is automatically selected when the Record Ready mode is engaged.

Playing Back a Recorded Sequence



▼ To play back a recorded sequence:

1. Press the **BANK** button to begin playback.
2. Play along on the keyboard if you like.

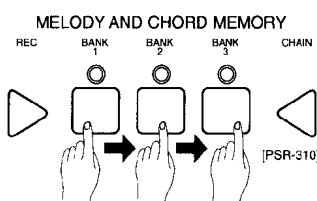
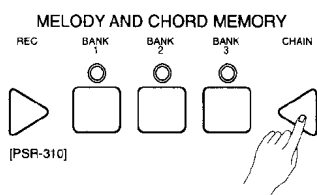
You can also change the voice for the right-hand melody, add fill-ins using the **INTRO/FILL IN** button, or change the tempo during playback.

3. Press the **START/STOP** button to stop playback.

Playback will also stop when you press the **SYNCHRO START/ENDING** button, or it will stop automatically after playback of an ending pattern when the **SYNCHRO START/ENDING** button was used to stop recording.

- ❑ Normal mode will be selected automatically if you press a **BANK** button in **Single Finger** or **Fingered** mode.
- ❑ If you press another **Bank** button during playback, that **Bank's** indicator will start to flash, and playback of that **Bank** will start from the next measure.
- ❑ The maximum polyphony is 28. If more than 28 notes are played at the same time, some notes may not sound, and some may be truncated (cut off). See "Polyphony" on page 23.

Programming a Chain



▼ To program a Chain:

1. Press the **CHAIN** button to engage the Chain Ready mode.

The three recording bank indicators and the three dots along the top of the **MULTI DISPLAY** will flash simultaneously.

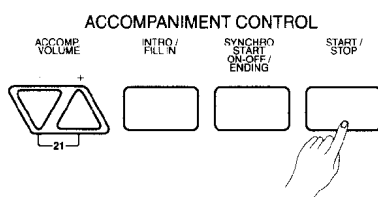
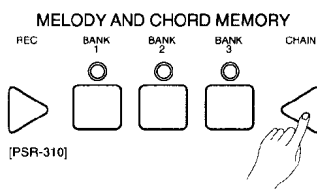
You can disengage the Chain Ready mode by pressing the **CHAIN** button again or the **SYNCHRO START/ENDING** button.

2. Press the **BANK 1**, **BANK 2**, and **BANK 3** buttons in the order that you want them to play back — up to 8 steps can be programmed.

A synthesized voice will announce the order of the programmed Banks each time a **BANK** button is pressed. The voice will stop if you attempt to program more than 8 steps.

3. Press the **CHAIN** button again to exit the Chain Ready mode.

Playing Back a Programmed Chain



▼ To play back a programmed Chain:

1. Press the **CHAIN** button to engage the Chain Ready mode.
2. Press the **START/STOP** button to begin Chain playback.
3. Play along on the keyboard if you like.
4. Press the **START/STOP** button to stop playback.

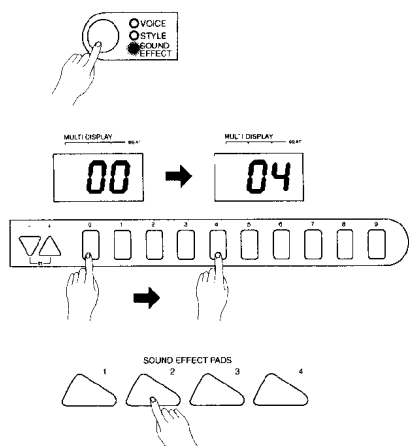
Playback will also stop when you press the **SYNCHRO START/ENDING** button. Playback will automatically stop when an ending pattern in the last bank of a Chain is encountered.

- ❑ The contents of the **CHAIN** memory are retained even when the **PortaTone** is turned off, provided power is supplied to the **PortaTone** by batteries or a power adaptor.
- ❑ You cannot enter **CHAIN** mode during **Accompaniment** play or in **(MELODY AND) CHORD MEMORY** recording ready mode.

Adding Sound Effects (PSR-310 only)

From the sounds of a train to a day on the farm, the PSR-310 provides you with a multitude of sound effects from around the world. Ten different Sound Effect sets are available for each Pad, giving you up to 40 exciting sound effects to choose from.

▼ To select and play a sound effect:

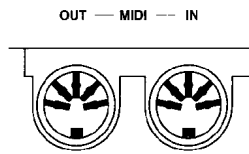


1. If the **SOUND EFFECT** indicator is not lit, press the **VOICE/STYLE/SOUND EFFECT** button once or twice so that it lights.
The number of the selected Sound Effect set will appear on the **MULTI DISPLAY** when the **SOUND EFFECT** indicator is lit.
2. Choose one of the 10 Sound Effect sets from the **SOUND EFFECT** list on the panel.
3. Enter the Sound Effect set number using the **NUMERIC** or **+** and **- SELECTION** buttons.
4. Press one of the four **SOUND EFFECT PADS** to play one of the sound effects.

No.	Sound Effect	1	Note No. (Name)	2	Note No. (Name)	3	Note No. (Name)	4	Note No. (Name)
01	SAFARI	Elephant	36 (C1)	Lion	37 (C#1)	Monkey	38 (D1)	Percussion	39 (D#1)
02	CAR	Brake	40 (E1)	Horn	41 (F1)	Start & Idle	42 (F#1)	Accelerate	43 (G1)
03	FOREST	Chirp	44 (G#1)	Bird 1	45 (A1)	Bird 2	46 (A#1)	Brook	47 (B1)
04	PET	Cat	48 (C2)	Dog 1	49 (C#2)	Dog 2	50 (D2)	Rooster	51 (D#2)
05	OCEAN	Boat	52 (E2)	Marine Horn	53 (F2)	Seagull	54 (F#2)	Wave	55 (G2)
06	SPORTS	Tennis	56 (G#2)	Basketball	57 (A2)	Baseball	58 (A#2)	Golf	59 (B2)
07	TELEPHONE	Push Tones	60 (C3)	Busy Signal	61 (C#3)	Call Signal	62 (D3)	Voice	63 (D#3)
08	TRAIN	Crossing Bell	64 (E3)	Steam Whistle	65 (F3)	Steam Engine	66 (F#3)	Train	67 (G3)
09	WESTERN	Cowboy	68 (G#3)	Horse Gallop	69 (A3)	Horse	70 (A#3)	Cow	71 (B3)
10	STORM	Rain	72 (C4)	Thunder	73 (C#4)	Wind	74 (D4)	Frogs	75 (D#4)

- ❑ Some sound effects keep sounding while you hold down the pad.
- ❑ More than one pad can be played back at the same time (provided the maximum polyphony is not exceeded during Demonstration, Minus One, or Sound Effect playback).
- ❑ MIDI Program Change message no. 100 selects the Sound Effect sets.

MIDI (PSR-310 only)

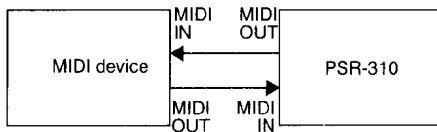


MIDI (Musical Instrument Digital Interface) is a world-standard communication interface that allows MIDI-compatible musical instruments and equipment to share musical information and control one another. This makes it possible to create “systems” of MIDI instruments and equipment that offer far greater versatility and control than is available with isolated instruments.

You will need a MIDI cable if you want to connect the PSR-310 to another MIDI device.

The PSR-310 features two MIDI modes: Remote Control and Multi.

The Remote Control Mode



▼ To select the Remote Control mode:

Hold down the **REC** button and press the **NUMERIC SELECTION 0** button.

Each time 0 is pressed while holding down the REC button, the PSR-310 switches between the Remote Control mode “rc” and the Multi mode “l__”.

❑ The following data is transmitted:

- Velocity data
- Sustain ON/OFF data
- Keyboard performance data
- Program Change messages (Program change numbers 00 through 99 correspond to the PSR-310's voice numbers 01 through 00)
- MIDI START, STOP, and CLOCK messages
- In Split mode both the left and right-hand keyboard sections are transmitted over one MIDI channel.

❑ The following data is not transmitted:

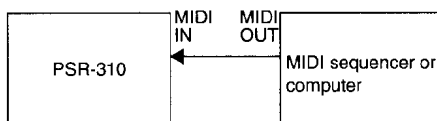
- Transpose settings
- ACCOMPANIMENT, SONG BOOK, MELODY AND CHORD MEMORY performance data.
- Performance data from the left-hand section of the keyboard in Single Finger or Fingered mode.

❑ The following data can be received:

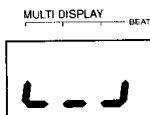
- Performance data for the Accompaniment in Single Finger or Fingered mode
- Sustain ON/OFF data (The panel setting will not change)
- Program Change data (Program change numbers 00 through 99 correspond to the PSR-310's voice numbers 01 through 00)
- MIDI START, STOP, and CLOCK messages. (External CLOCK messages override the PSR-310 TEMPO buttons; if you try to operate them “EC” will appear on the MULTI DISPLAY. If after that no other external CLOCK messages are sent, the PSR-310 settings will become effective.)
- In Split mode, different voices can be produced in the left and right-hand sections of the keyboard when the appropriate MIDI messages are sent over separate channels.

- ❑ When the PSR-310 is set to Single Finger or Fingered mode the PSR-310's accompaniment can be controlled from another MIDI device.

Multi Mode



The Multi mode should be used when the PSR-310 is to be used as a tone generator, for example, receiving data from a second MIDI device. In this mode the PSR-310 can receive on multiple MIDI channels, each channel corresponding to a different voice.



▼ To select the Multi mode:

Hold down the REC button and press the NUMERIC SELECTION 0 button.

Each time 0 is pressed while holding down the REC button the PSR-310 switches between the Remote Control mode "rc" and the Multi mode "L _ J"

❑ The following data is transmitted:

- Velocity data
- Sustain ON/OFF data.
- Keyboard performance data
- Program Change messages (Program change numbers 00 through 99 correspond to the PSR-310's voice numbers 01 through 00)

❑ The following data is not transmitted:

- ACCOMPANIMENT, SONG BOOK, MELODY AND CHORD MEMORY performances data.
- Transpose settings

❑ The following applies to data received:

- Sustain ON/OFF data (The panel setting will not change)
- Program Change messages (with the exception of channel 16, which is reserved for rhythm data) (Program change numbers 00 through 99 correspond to the PSR-310's voice numbers 01 through 00)
- Velocity sensitivity is the same for all voices.
- MIDI START, STOP, and Clock messages are not received.

MIDI Channels

MIDI channels allow communication between individual devices in a MIDI system. Before you can communicate with a particular MIDI device you need to match its MIDI channel. A sending device can send messages on any of 16 MIDI channels. Only the receiving MIDI devices that are set to that channel receive the messages. A MIDI device can also be set to receive MIDI messages on all channels; this is known as the OMNI ON mode.

MIDI Transmission Channel

The PSR-310 can be set to transmit on any of its 16 MIDI channels.

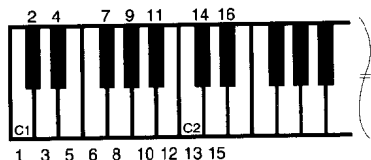
▼ To set the MIDI transmit channel:

1. Hold down the REC button and press the NUMERIC SELECTION 1 button.

The current MIDI channel will appear on the MULTI DISPLAY.

2. While still holding down the REC button press one of the keyboard keys (C1 through E $\flat$ 2) to select a corresponding MIDI channel.

The keys C1 through E $\flat$ 2 correspond to MIDI channels 1 through 16.



MIDI Reception Channels

The PSR-310 can be set to receive on any of the 16 MIDI channels or to ALL MIDI channels (OMNI ON).

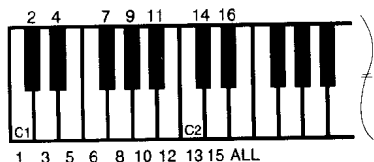
▼ To set the MIDI receive channel:

1. Hold down the REC button and press the NUMERIC SELECTION 2 button.

The current MIDI channel will appear on the MULTI DISPLAY.

2. While still holding down the REC button press one of the keyboard keys (C1 through E2) to select a corresponding MIDI channel.

The keys C1 through E $\flat$ 2 correspond to MIDI channels 1 through 16, and key E2 selects ALL (OMNI ON mode).



❑ OMNI ON is automatically selected when the PSR-310 is first switched on.

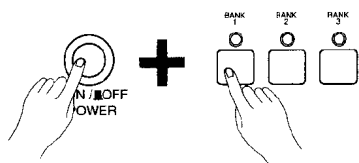
❑ If a MIDI message is not transmitted or received due to a transmission or reception error, no sound will be produced (MIDI error).

❑ If MIDI data is received that exceeds the transmission and reception buffer capacity, no sound will be produced (Buffer full).

Resetting the PortaTone

Each of the following PortaTone functions can be reset separately. These operations restore the original default settings of the instrument.

Resetting the (Melody and) Chord Memory

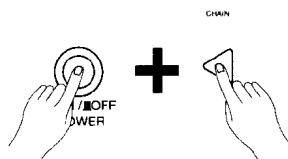


▼ To reset the (Melody and) Chord Memory:

While holding down the **BANK** button, turn the PortaTone on.

Only data of the selected Bank will be deleted. To delete data from the other Banks repeat the same procedure while holding down the other Bank buttons.

Resetting the Chain Memory

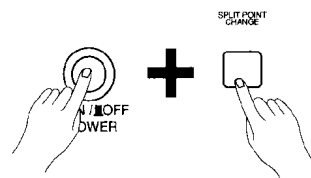


▼ To reset the Chain Memory:

While holding down the **CHAIN** button, turn the PortaTone on.

This deletes all Chain data.

Resetting the Split Point



▼ To reset the Split Point:

While holding down the **SPLIT POINT CHANGE** button, turn the PortaTone on.

All Split Points for the Split, Single Finger and Fingered modes will be reset.

Polyphony

The maximum polyphony of the PSR-210 and PSR-310 is 28 notes. This means that your keyboard can generate a maximum of 28 notes at the same time. This number not only includes notes played by you on the keyboard but also the notes played back by the Accompaniment, (Melody and) Chord Memory, Sound Effects, and the Demonstration Songs. If more than 28 notes are played at the same time, some notes may not sound, and some may be truncated (cut off).

The following is a list of the number of notes used by each voice.

VOICE	POLYPHONY	VOICE	POLYPHONY	VOICE	POLYPHONY	VOICE	POLYPHONY
01 ACOUSTIC PIANO	1	26 DISTORTION GUITAR	1	51 FLUTE	1	76 FANTASY 1	4
02 HONKY-TONK PIANO	2	27 GUITAR HARMONICS	1	52 RECORDER	1	77 FANTASY 2	3
03 HARPSICORD	1	28 EL-ACC GUITAR 1	2	53 PAN FLUTE	1	78 SEQ PAD	4
04 CLAVI	1	29 EL-ACC GUITAR 2	2	54 OCARINA	1	79 ACOUSTIC PIANO PAD	3
05 CELESTA	1	30 BANJO	2	55 SOPRANO SAX	1	80 ELECTRIC PIANO PAD 1	3
06 CHURCH ORGAN	2	31 HARP	1	56 ALTO SAX	1	81 ELECTRIC PIANO PAD 2	3
07 REED ORGAN	1	32 PIZZICATO STRINGS	2	57 TENOR SAX	1	82 ELECTRIC PIANO PAD 3	3
08 ACCORDION	2	33 VIOLIN	2	58 BARITONE SAX	1	83 ELECTRIC PIANO PAD 4	3
09 BANDONEON	2	34 CELLO	2	59 OBOE	1	84 ACOUSTIC GUITAR PAD	3
10 ELECTRIC PIANO 1	2	35 CONTRABASS	1	60 ENGLISH HORN	1	85 BELL STRINGS	4
11 ELECTRIC PIANO 2	2	36 STRINGS 1 FAST	2	61 BASSOON	1	86 ORCHESTRA HIT	1
12 ELECTRIC PIANO 3	3	37 STRINGS 1 SLOW	2	62 CLARINET	1	87 WOOD BASS	1
13 ELECTRIC PIANO 4	3	38 STRINGS 2 FAST	2	63 HARMONICA	1	88 ELECTRIC BASS 1	1
14 ELECTRIC ORGAN 1	2	39 STRINGS 2 SLOW	2	64 SAX ENSEMBLE 1	2	89 ELECTRIC BASS 2	1
15 ELECTRIC ORGAN 2	2	40 CHOIR AHS	2	65 SAX ENSEMBLE 2	2	90 FRETLESS BASS	1
16 ELECTRIC ORGAN 3	2	41 VOICE OOHs	1	66 WOODWIND ENSEMBLE	2	91 SLAP BASS 1	1
17 FOLK GUITAR	1	42 TRUMPET	1	67 VIBRAPHONE	2	92 SLAP BASS 2	1
18 12STRING GUITAR	2	43 TROMBONE	2	68 MARIMBA	1	93 SYNTH BASS 1	1
19 GUT GUITAR	2	44 TUBA	1	69 GLOCKENSPIEL	2	94 SYNTH BASS 2	1
20 JAZZ GUITAR	1	45 MUTE TRUMPET	1	70 SYNTH LEAD	2	95 SYNTH BASS 3	1
21 ELECTRIC GUITAR	2	46 FRENCH HORN	1	71 SYNTH BRASS 1	2	96 MUSIC BOX	2
22 MUTE GUITAR	1	47 BRASS ENSEMBLE 1	2	72 SYNTH BRASS 2	2	97 TIMPANI	1
23 MUTE GUITAR ECHO	2	48 BRASS ENSEMBLE 2	3	73 SYNTH STRINGS 1	2	98 STEEL DRUM	2
24 12STRING ELECTRIC GUITAR 1	2	49 BRASS ENSEMBLE 3	2	74 SYNTH STRINGS 2	2	99 LATIN PERCS W/PITCH	1
25 12STRING ELECTRIC GUITAR 2	2	50 PICCOLO	1	75 SYNTH VOICE	3	00 DRUM KIT	1

Troubleshooting

Problem	Action
☐ Turning the POWER switch on or off produces a "pop" sound.	☐ This is normal and is no cause for alarm.
☐ Accompaniment won't function. No Accompaniment is produced when you play in the left-hand section of the keyboard.	☐ Is the Accompaniment volume turned up high enough? ☐ Accompaniment won't function if the Fingered mode is selected and you're using Single Finger type fingering or improper chord fingering.
☐ The Accompaniment chords don't seem to change properly.	☐ Make sure that you are playing the proper chords in the proper mode (The Single Finger and Fingered mode are each designed to recognize different chords or key combinations.) ☐ Make sure that you completely release the keys of one chord before playing another one.
☐ The sound is distorted or intermittent.	☐ In this case, your batteries are probably depleted and need replacement.
☐ Sustain is on, after disconnecting the foot switch.	☐ Connect the foot switch again, or turn on the power again after turning it off.

Specifications

Keys	61 regular sized keys (C1~C6) with Touch Response
Voices	100 AWM voices Maximum polyphony: 28
Styles	PSR-210: 50 Accompaniment Styles PSR-310: 100 Accompaniment Styles
General controls	POWER switch : ON/OFF MASTER VOLUME: MIN~MAX PSR-210: VOICE/STYLE SELECTION button PSR-310: VOICE/STYLE/SOUND EFFECT SELECTION button NUMERIC SELECTION buttons (0 ~ 9) +/- SELECTION buttons
Overall controls	NORMAL, SPLIT, SINGLE FINGER, FINGERED Selection button TEMPO: 40~240: +/- buttons TRANPOSE: -12~+12: +/- buttons SPLIT POINT CHANGE
Voice effect controls	AUTO HARMONY: 00~05: +/- buttons SUSTAIN : ON/OFF TOUCH RESPONSE: ON/OFF DUAL VOICE: ON/OFF
Accompaniment controls	ACCOMPANIMENT VOLUME: 0~24: +/- buttons INTRO/FILL IN, SYNCHRO START ON-OFF/ENDING, START/STOP
Song Book (Demonstration & Minus One)	15 Songs : 01~15: +/- buttons MINUS ONE: ON/OFF DEMO: START/STOP
Melody and Chord Memory (PSR-310) Chord Memory (PSR-210)	MELODY & CHORD recording: REC button, 3 Banks, CHAIN CHORD recording, REC button, 3 Banks, CHAIN
Sound Effects (PSR-310)	4 x 10 voices
MIDI (PSR-310)	Remote Control mode Multi mode
Built-in ports	DC IN, Headphones/AUX. output, SUSTAIN pedal, MIDI IN and OUT (PSR-310)
Maximum amplifier output	2W x 2 (When AC power adaptor PA-3 is used) 2W x 2 (When batteries are used) HEADPHONES/AUX. OUT: output impedance 50 Ω
Dimensions	908 x 344 x 110 (W x D x H)
Weight	5.1 Kg (without batteries)
Speaker	10cm x 2
Optional Accessories	Headphones HPE-3 Keyboard Stand L-2C AC Power Adaptor PA-3 , PA-4, or PA-40 Foot switch FC-4, FC-5
Supplied Accessories	Music Stand Foot pedal*

*Foot pedal and PA-3 are included only in the PSR-310M package.

Song Book

01: Lazy Afternoon

V: VOICE
H: AUTO HARMONY

$\text{♩} = 100$

V: 36

8va.....

Cm7

D^bm7

Cm7

V: 83

8va.....

D^bm7

Cm7

A^bm7

Cm7

1.

2.

H: 01

H: 00

Fm7

Cm7

H: 01

Fm7

B^b7

G7

V: 14

H: 00

Cm7

3

3

A^bm7

Cm7

3

3

3

3

V: 83

H: 01

Cm7

V: 36

H: 00

H: 01

H: 00

02: Sunset Glow

V: VOICE
H: AUTO HARMONY

$\text{♩} = 64$

C Em7 Dm7 G7 C Em7 Fm7 Em7 Dm7

V: 60

C Bdim Am A^b Dm7 G7 1. C

H: 01

Em7 Dm7 G7 F Fm C

H: 00

E Am Am7 D7 Dm7

H: 01

G7 2. C Em7 Dm7 G7 A^b Dm7 G7 C

03: Tailspin

V: VOICE
H: AUTO HARMONY

$\text{♩} = 100$

Am7 D7 Am7 D7 Am7 D7

V: 71

Am7 1. D7 2. D7 Bm7 E7

to ⊕

Bm7 E7 Am7 D7 Am7 E7

Am7 D7 Am7 D7 Am7

⊕ Coda

D7 Am7 D7 Am7 E7

D.S.

04: Who's My Hero ?

$\text{♩} = 180$ D.S. with repeat V: VOICE H: AUTO HARMONY

V: 64 H: 01

A7 D7 A A7

to Φ

E7 D7 1. 3. A E7 H: 03 (D.S. only)

2. A E7 A H: 00

A7 D7 A

A7 3 E7 D7 A

E7 Φ Coda A

H: 01 D.S.

05: Mambo Step

$\text{♩} = 108$ V: VOICE H: AUTO HARMONY

8va..... CM7 Dm7 CM7

V: 19 C Em E $\flat$ Dm G7 H: 01 (2nd time only) Em

C E $\flat$ Dm G7 CM7

1. D.S. 8va..... FM7 Fm7 Em7 E $\flat$ M7 to Φ Dm7

V: 19 H: 01 (2nd time only) G7 CM7 8va..... G7 2. C7

H: 00 V: 01

FM7 Fm7 Em7 E^bM7
 Dm7 G7 CM7
 (8va) Coda D.S.
 Dm7 G7 CM7 8va
 H: 00

06: Purple Minds

V: VOICE
H: AUTO HARMONY

♩ = 120
 V: 49
 Cm7 Cm7 Fm7
 V: 01
 H: 01 (2nd time only)
 H: 00
 V: 21
 H: 01
 H: 00
 V: 49

Cm7 B^b7 Cm7 B^b7 C7sus4
 B B^b7 Cm7 B^b7
 B^b7 Cm7 B^b7 C7sus4 Cm7
 B^b7 Cm7 B^b7 C7sus4 Cm7

1. 3 3
 2. 3 3

07: Funky Tower

$\text{♩} = 120$

V: VOICE
H: AUTO HARMONY

V: 48

Cm7 Fm7 8va..... A^bM7 B^b G7

Cm7 Fm7 A^bM7 B^b G7 8va

§ Cm7 Fm7 A^bM7 B^b G7 Cm7

V: 16
H: 01 (2nd time only)

Fm7 A^bM7 B^b G7 Cm7

Fm7 A^bM7 B^b G7 Cm7 Fm7 to ⊕ A^bM7 B^b G7

V: 88

⊕ Coda A^bM7 B^b Cm7

D.S.

08: Grooving High

$\text{♩} = 92$

V: = VOICE
H: = AUTO HARMONY

C

§ C

V: 53

F

G7 to ⊕ F

H: 01

F G Am7 G F G F F G

Am7 G F G

⊕ Coda C

D.S.
H: 00

09: Dear Friend

V: VOICE
H: AUTO HARMONY

$\text{♩} = 116$

Em7 E^b7 Dm7 G7 Em7 E^b7 Dm7 G7

V: 67 H: 02

Em7 Am7 Dm7 G7 CM7 Bm7

V: 63 H: 00

E7^b5 E7 Am7 B^b7 Am7 D7 Dm7 G7 A^bM7

G7sus4 G7 Em7 Am7 Dm7 G7 CM7

Gm7 C7 F[#]m7⁻⁵ Fm7 Em7 E^bdim

Dm7 G7 to C[#]M7 G7sus4 G7 Em7 Am7 Dm7

G7 CM7 Bm7 E7^b5 E7

Am7 B^b7 Am7 D7 Dm7

G7 A^bM7 G7sus4 G7 Em7 Am7 Dm7 G7

CM7 Gm7 C7

⊕ Coda

Em7 A7 Dm7

D.S.

G7 Em7 A7 Dm7 G7 A^bM7 D^bM7 CM7

10: Stepping Out

$\text{♩} = 132$

V: VOICE
H: AUTO HARMONY

F6 Gm7 Am7 Gm7 F6 Gm7 Am7 Gm7 Caug F6

V: 65

Gm7 Am7 Gm7 F6 Gm7 C7

F6 F#dim Gm7 Caug F6 Gm7 Am7

Gm7 F6 Gm7 C7 F6 B^b7 F6 Cm7

F7 B^bM7 E^b7 B^bM7 Dm7 G7⁵ 3 Gm7 C7

V: 57
H: 03

F6 Gm7 Am7 Gm7 F6

V: 65
H: 00 to ⊕

Gm7 C7 F6 B^b7 F6 Gm7 Am7 Gm7

V: 45

F6 Gm7 C7 F6 F#dim Gm7 Caug F6

3

Gm7 Am7 Gm7 F6 Gm7 C7

F6 B^b7 F6 Cm7 F7 B^bM7 E^b7

3 3

B^bM7 Dm7 G7 Gm7 C7

V: 65

⊕ Coda

D.S.

Gm7 F6 Gm7 Am7 Gm7 F6 Dm7 Gm7 C7 F6

♩ = 120

11: After Dark

V: VOICE
H: AUTO HARMONY
Cm7



V: 71



V: 85



V: 86

H: 05



V: 72

H: 00



V: 86

V: 00



D.S. V: 85



12: Quiet Shore

♩ = 120

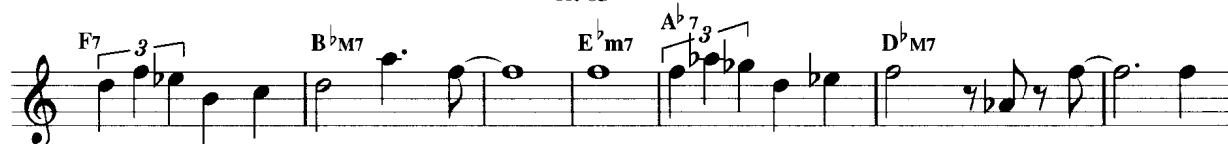
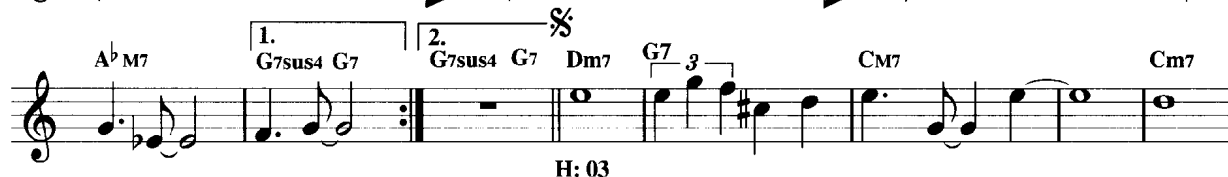
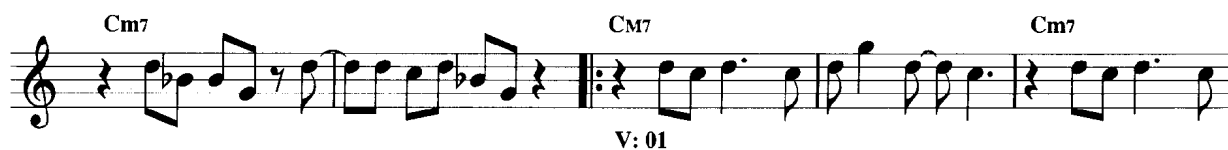
Cm7

Cm7

Cm7

V: VOICE

H: AUTO HARMONY



⊕ Coda

D.S.
H: 03

13: Modern Times

V: VOICE
H: AUTO HARMONY

$\text{♩} = 104$

C Em F

V: 83

Fm6 C Em

F G E^b

V: 03

A^bM7 Fm F

G7 C Em F

V: 53

Fm6 C Em

F G C

Detailed description: This is a musical score for the song 'Modern Times'. It is written in 9/8 time with a tempo of 104 beats per minute. The key signature has one flat (B-flat). The score consists of seven staves of music. The first staff begins with a C major chord, followed by an E minor chord, and then an F major chord. The second staff continues with F minor 6 and C major chords. The third staff features F major, G major, and E-flat major chords. The fourth staff includes A-flat major 7, F minor, and F major chords. The fifth staff has G7, C major, E minor, and F major chords. The sixth staff contains F minor 6, C major, and E minor chords. The seventh staff concludes with F major, G major, and C major chords. Chord symbols are placed above the corresponding measures of music.

14: Someday

V: VOICE
H: AUTO HARMONY
A7

$\text{♩} = 72$

C Dm G7 C

V: 76

F6 G7 C Am Dm7 G7 C

V: 83 V: 84 V: 83

A Dm G7 C Dm

V: 84 V: 83

G7 C A7 F6 G7 C

Detailed description: This is a musical score for the song 'Someday'. It is written in 4/4 time with a tempo of 72 beats per minute. The key signature has one sharp (F-sharp). The score consists of four staves of music. The first staff begins with a C major chord, followed by D minor, G7, and C major chords. The second staff continues with F6, G7, C major, A minor, D minor 7, G7, and C major chords. The third staff features A major, D minor, G7, C major, and D minor chords. The fourth staff concludes with G7, C major, A7, F6, G7, and C major chords. Chord symbols are placed above the corresponding measures of music.

15: Bonjour

V: VOICE
H: AUTO HARMONY

$\text{♩} = 180$

Am

V: 07

Dm

Am

E7

A

Dm

Dm E7 Am F Dm E7 Am

Dm E7 Am F Dm E7 Am

Am Am E7 Am

Remote control mode

YAMAHA [PortaTone]
Model PSR-310

MIDI Implementation Chart

Date : 01/11/1993
Version : 1.0

Function		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1 1 - 16	OMNI ON 1 - 16, OMNI ON	
Mode	Default Messages Altered	3 X *****	1 X X	
Note Number	: True voice	36 - 96 *****	24 - 127 24 - 127	
Velocity	Note ON Note OFF	☐ 9nH, v = 1 - 127 X 9nH, v = 0	☐ 9nH, v = 1 - 127 X 9nH, v = 0, 8nH	
After Touch	Key's Ch's	X X	X X	
Pitch Bend		X	X	
Control Change	10 64	X ☐	☐ ☐	PAN SUSTAIN
Program Change	: True #	☐ 0 - 99 *****	☐ 0 - 99 0 - 99	
System Exclusive		X	X	
System Common	: Song Pos : Song Sel : Tune	X X X	X X X	
System Real Time	: Clock : Commands	☐ ☐	☐ ☐	
Aux Messages	: Local ON/OFF : All Notes OFF : Active Sense : Reset	X X ☐ X	X X ☐ X	
Notes				

Mode 1: OMNI ON, POLY
Mode 3: OMNI OFF, POLY

Mode 2: OMNI ON, MONO
Mode 4: OMNI OFF, MONO

☐ : Yes
X : No

Multi mode

YAMAHA [PortaTone]
Model PSR-310

MIDI Implementation Chart

Date : 01/11/1993
Version : 1.0

Function		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1 - 16 1 - 16	1 - 16 1 - 16	
Mode	Default Messages Altered	3 X *****	1 *1 X X	
Note Number	: True voice	36 - 96 *****	24 - 127 24 - 127	
Velocity	Note ON Note OFF	○ 9nH, v = 1 - 127 X 9nH, v = 0	○ 9nH, v = 1 - 127 X 9nH, v = 0, 8nH	
After Touch	Key's Ch's	X X	X X	
Pitch Bend		X	X	
Control Change	10 64	X ○	○ ○	PAN SUSTAIN
Program Change	: True #	○ 0 - 99 *****	○ 0 - 99 *2 0 - 99	
System Exclusive		X	X	
System Common	: Song Pos : Song Sel : Tune	X X X	X X X	
System Real Time	: Clock : Commands	X X	X X	
Aux Messages	: Local ON/OFF : All Notes OFF : Active Sense : Reset	X X ○ X	X X ○ X	
Notes		*1: 16 channel Multi Timbre *2: Except channel 16		

Mode 1: OMNI ON, POLY
Mode 3: OMNI OFF, POLY

Mode 2: OMNI ON, MONO
Mode 4: OMNI OFF, MONO

○ : Yes
X : No

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