PORTATONE
PSR-190
PSR-78

OWNER'S MANUAL
BEDIENUNGSANLEITUNG
MODE D'EMPLOI
MANUAL DE INSTRUCCIONES

YAMAHA

ENGLISH – Contents

DEUTSCH – Inhalt

FRANÇAIS – Table des matières

ESPAÑOL – Índice

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 an remarkably expressive and versatile instrument.

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

Main Features

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

Exceptionally realistic sounds with 100 AWM (Advanced Wave Memory) Voices, utilizing digital recordings of actual instruments.

100 dynamic auto accompaniment Styles, each with different Intro, Main A and B, four Fill-ins, and Ending sections. Each of the 100 Styles also has its own Jam Track section, featuring specially programmed chord progressions and accompaniment that matches the selected musical Style.

Large custom LCD gives you easy, at-a-glance confirmation of all important settings.

Convenient control over accompaniment Styles — including Tempo, independent Accompaniment Volume, and even accompaniment "size" (LARGE/SMALL control).

20 Songs, for listening enjoyment or for playing along with when using the Minus One function.

One Touch Setting, for automatically calling up an appropriate Voice for playing with the Style or Song you select.

High-quality amplifier/speaker system (stereo for the PSR-190).

Precautions
— Taking Care of Your PortaTone

Your new PortaTone is a fine musical instrument — and should be treated as such. Handle it with care and common sense, and it will give you years of enjoyment.

Location

• Avoid exposure to direct sunlight or other sources of heat. Never leave it inside a car where it can get very hot. Also avoid highly humid or dusty places.

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 it. Avoid applying excessive force to the controls and keys.

When Not Using the PortaTone

• After use, always turn off the POWER switch. When not using your PortaTone for long periods, be sure to remove the batteries to avoid damage through battery leakage. When using the PortaTone with an AC adaptor, unplug the adaptor from the electrical outlet, if the instrument is not to be used for a long period of time, or during electrical storms.

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 solvents, since they will damage the finish. Also, do not leave vinyl chloride material on the PortaTone for a long time, since it may adhere to the exterior.

NOTE Yamaha is not responsible for damage caused by improper usage.

Setting Up

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

Power Requirements

Your PortaTone can run either on batteries (sold separately) or on normal household current by using the optional Yamaha PA-3/3B Power Adaptor (or another adaptor specifically recommended by Yamaha).

Using an AC Power Adaptor

To connect your PortaTone to a wall socket, you will need the optionally available Yamaha PA-3/3B Power Adaptor. Use of other AC adaptors could result in damage to the instrument, so be sure to ask for the right kind. Plug the adaptor into a convenient wall outlet and its connector into the DC IN 10-12V jack on the back of your PortaTone.

DC IN 10-12V

Using Batteries

Inserting Batteries

Turn the instrument upside-down and remove the battery compartment lid. Insert six 1.5-volt size "D" batteries as shown in the illustration, making sure that the positive and negative terminals are properly aligned, and replace the lid.
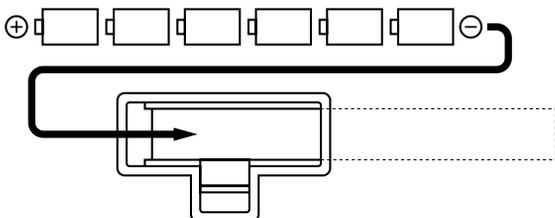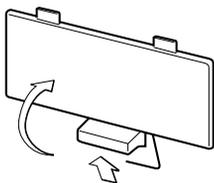
When the Batteries Run Down

When the batteries run low and the battery voltage drops below a certain level, the PortaTone may not sound or function properly or may be reset to the default status. As soon as this happens, replace them with a complete set of six new batteries. Never mix old and new batteries or different types of batteries (e.g., alkaline and manganese).

NOTE▶ To prevent possible damage from battery leakage, remove the batteries from the instrument if it is not to be used for an extended period of time.

Accessory Jack

Using Headphones

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

PHONES /
AUX OUT

Connecting a Keyboard Amplifier or Stereo System

Though the PortaTone is equipped with a built-in speaker system, you can also play it through an external amplifier/speaker system. First, make sure the PortaTone 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/AUX OUT jack on the PortaTone.

Music Stand

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

Playing the Demo Songs

The PortaTone has a variety of Demo Songs, specially recorded to showcase the dynamic sounds and rhythms and give you an idea of what you can do with the instrument.

1. First, turn on the power.

Press the POWER ON/OFF button. Whenever the power is turned on, the Voice mode is automatically called up and set to play Voice 01 (PIANO).

2. Set the Volume.

Initially, turn the VOLUME control about a third of the way up. You can adjust the control for optimum level once you start playing.

3. Press the DEMO button.

The Demo Songs will play from the Song number 01 in sequence. You can play along on the keyboard with the Songs. (Scores for the Demo Songs are provided on pages 11~20)

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

> **NOTE** The Style section and the accompaniment LARGE/SMALL will change according to the Style data while the Demo Song plays.

The Panel Display

The PortaTone features a large multi-function display that shows all important settings for the instrument. The section below briefly explains the various icons and indications in the display.
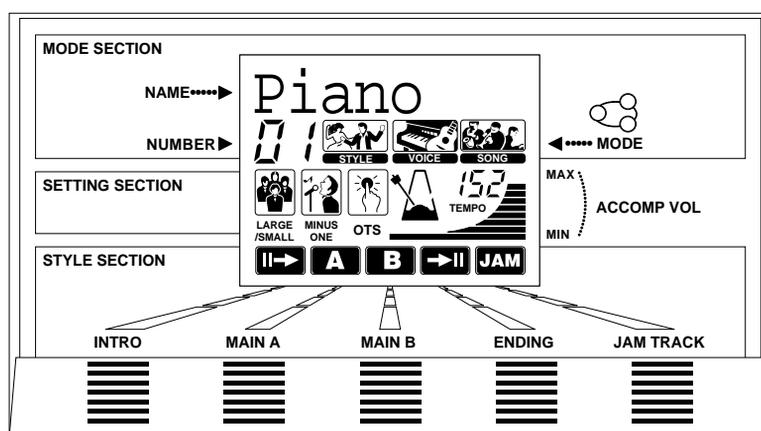
MODE SECTION

This section indicates which mode is selected — Voice, Style, or Song — and shows the name and number of the selected Voice/Style/Song. To select the desired mode, press the corresponding button: VOICE, STYLE, or SONG.

SETTING SECTION

This section indicates important settings related to the Style and/or Song modes. These include LARGE/SMALL (page 7), MINUS ONE (page 10), OTS (One Touch Setting; page 9, 10), TEMPO (page 6), and Accompaniment Volume (page 7).

To turn the Large/Small, Minus One, and One Touch Setting functions on/off, press the corresponding button: LARGE/SMALL , MINUS ONE, or OTS. To control Tempo and Accompaniment Volume, use the TEMPO and ACCOMP VOL controls, respectively.

STYLE SECTION

This indicates playback of the Styles, or the rhythm/accompaniment patterns. Each Style has different "sections" — Intro, Main A and B, 4 Fill-ins, Ending, and Jam Track — each of which is indicated in the display as it plays. These can be played by pressing the appropriate button during accompaniment playback. (See page 6, 7)

Selecting and Playing Voices —
The Voice Mode

The Voice mode features 100 authentic Voices.
Many of these Voices have special preset characteristics or embellishments.

The Voices are divided into various categories depending on their characteristics or the effects used.

Harmony Voices (#45 - #58) automatically add a one-, two- or three-note harmony to the original monophonic Voice. Split Voices (#69 - #79) feature two Voices, each playable from separate sections of the keyboard — the lower Voice playable up to B2 and the upper Voice from C3 (middle C). Echo Voices (#80 - #94) provide an echo effect that adds delayed repeats to the original Voice. Finally, Sustain Voices (#95 - #99) extend the sound by adding a natural, slow release.

Also included are special Percussion Voices — #94 (with Echo) and #00 — that let you play various drum and percussion sounds from the keyboard. (Refer to the Percussion Voice chart on page 5) Symbols are also printed above the keyboard, conveniently indicating which sounds are played from which keys.

> **NOTE** **About the Harmony Voices**
> Since Harmony Voices are designed to automatically play two or more notes with the notes you play on the keyboard, only one note can be played on the keyboard at a time. If several notes are played together, only the last note or highest note played will be heard.
>
> The type of harmony used depends on the particular Voice that is selected. When an Auto Accompaniment Style or Song is not playing, the basic key for the harmony is always C. When an Auto Accompaniment Style is playing (or when the Stopped Accompaniment function is active), the harmony changes according to the chord played in the AUTO ACCOMP SECTION of the keyboard, or according to the chord changes in the Intro, Ending, and Jam Track sections. In the Song mode, the harmony changes according to the chord progression of the Song.

Selecting and Playing a Voice

1. Select the Voice mode.

Press the VOICE button.
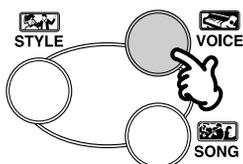
VOICE button

VOICE icon in display

2. Select the desired Voice number.

Use the numeric keypad. Available Voices are listed on the upper right of the panel.

You can either enter the Voice number directly with the number keys, or step up and down through the Voices by using the +/- keys.

Using the number keys

Be sure to enter a two-digit number, as is printed next to each Voice name on the panel. For example, to select Voice 09, first press "0" on the numeric keypad, then "9."
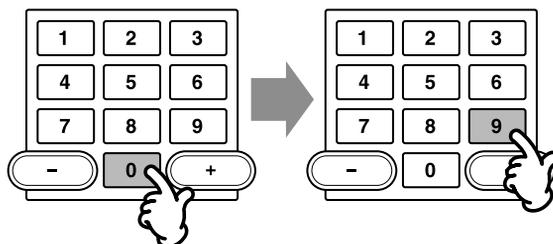
Using the +/- keys

Press the + key to select the next Voice, and press the - key to select the previous Voice. Holding down either key continuously scrolls up or down through the numbers. The +/- keys have a "wrap around" feature. For example, pressing the + key from the last number returns to Voice 01.

> **NOTE**
> • To reset the selected voice to it's default (Voice 01), Simultaneously press the +/- keys.
> • 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.

3. Play the selected Voice.

To change to another Voice, repeat step 2 above.

You can also play rhythm Styles in the Voice mode by simply pressing the START/STOP button. The Style last selected from the Style mode will be played.

> **NOTE** The PortaTone is polyphonic up to a maximum of 12 notes. (Depending on the Voice selected, fewer notes may be available.) This includes not only the Voices played from the keyboard, but also the notes in a Style pattern, and so on. Thus, if you play too many notes at one time, some may not sound and/or others may be cancelled.

Percussion Voice Chart
(Voices 94 and 00)

Top labels (left to right): Snare Drum 1, Rim Shot, Hi-hat Pedal, Hi-hat Close, Hi-hat Open, Crash Cymbal, Synth Rim Shot, Crash Cymbal Mute, Synth Hi-hat Close, Synth Hi-hat Open

Bottom labels (left to right): Bass Drum 1, Bass Drum 2, Snare Drum 2, Snare Drum 3, Tom Bass, Tom Low, Tom Mid, Tom High, Splash Cymbal, Synth Bass Drum, Synth Snare Drum, Synth Tom Bass, Synth Tom Low, Synth Tom Mid, Synth Tom High, Splash Cymbal Mute

PSR-78
PSR-190

Selecting and Playing Styles —
The Style Mode

The Style mode provides dynamic rhythm/accompaniment patterns — as well as Voice settings appropriate for each pattern — for various popular music styles, as listed on the panel.

A total of 100 different Styles are available, in fifteen different categories. Each Style is made up of different "sections" — Intro, Main A and B, 4 Fill-ins, Ending, and Jam Track — letting you call up different accompaniment patterns as you perform.

Each Style's Jam Track section features specially programmed chord progressions and accompaniment that are ideal for the selected musical Style. If you're a novice and not familiar with playing chords, the convenient Jam Track section automatically plays stylistically appropriate chord changes for you to "jam" over.

The Auto Accompaniment features that are built into the rhythms add the excitement of instrumental backing to your performance, letting you control the accompaniment by the chords you play. Auto Accompaniment effectively splits the keyboard into two sections: The upper is used for playing a melody line, and the lower (labeled "AUTO ACCOMP SECTION") is for the Auto Accompaniment function.

Selecting and Playing a Style

1. Select the Style mode.

Press the STYLE button.
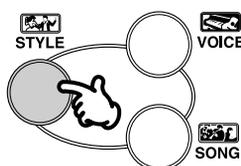
STYLE button   STYLE icon in display

2. Select the desired Style number.

Use the numeric keypad. Available Styles are listed on the upper left of the panel.
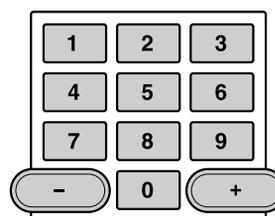
You can either enter the Style number (two digits) directly with the number keys, or step up and down through the Styles by using the +/- keys.

# 3. Start the selected Style.

You can do this in one of three ways:

• Pressing the START/STOP button

The rhythm starts playing immediately without bass and chord accompaniment. The currently selected Main A or B section will play. (You can select either pattern by pressing the appropriate button — MAIN/AUTO FILL A or B — before pressing the START/STOP button.)

START/STOP

▶/■
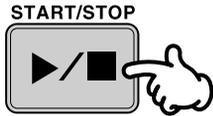
• Using Synchro Start

The PortaTone also has a Synchro Start function that allows you to start the rhythm/accompaniment by simply pressing a key on the keyboard. To use Synchro Start, first press the SYNC-START button (the metronome icon flashes to indicate Synchro Start stand-by), then press one of the keys in the AUTO ACCOMP SECTION of the keyboard.

SYNC-START

≡
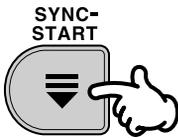
> **NOTE** Synchro Start is automatically set to stand-by when you select the Style mode.

• Using Synchro Start with an Intro pattern

First, press one of the section buttons — MAIN/AUTO FILL A, B, or JAM — to select which pattern follows the Intro. Next, press the INTRO button, followed by the SYNC-START button. (The INTRO indication in the display lights, and the metronome icon and the MAIN A /B/JAM indication flashes to indicate Synchro Start stand-by.) To actually start the Intro pattern and accompaniment, play one of the keys in the AUTO ACCOMP SECTION of the keyboard.

4. Change chords using the Auto Accompaniment feature.

Try playing a few successive single notes with your left hand, and notice how the bass and chord accompaniment change with each key you play. (Refer to the boxed sections on pages 8 for more information on how to use Auto Accompaniment.)

> **NOTE** Chords played in the AUTO ACCOMP SECTION of the keyboard are also detected and played when the accompaniment is stopped. In this condition (Stopped Accompaniment function), the Voices used for the bass and chords are automatically selected.

5. Change the tempo of the Style, if you wish.

Use the TEMPO buttons to change the tempo of the Style.

TEMPO

RESET

− +

▼ ▲
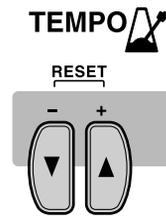
Press TEMPO ▲ to increase the speed and TEMPO ▼ to decrease it; holding down the appropriate button continuously increases/decreases the speed. The tempo value appears in the display. Tempo range is from 40 to 240 bpm (in 1 bpm steps).

To reset the tempo to its original default setting, press both TEMPO buttons simultaneously.

> **NOTE** Default Tempos — Each Song and Style has been given a default or standard tempo. If you change the tempo, you can set it back to the original default setting, by pressing both TEMPO buttons simultaneously. Also, the tempo of a Song or Style returns to the default setting when selecting a different Song or Style. If the style is playing and the One Touch Setting function is off (see page 9), the tempo remains even if you select a different style. When you turn on the power of the PortaTone, the tempo is automatically set to the default setting of Style 01.


About the METRONOME Icon

The METRONOME icon in the display flashes in time with the current tempo during playback of a Style (or Song). The flashing pattern provides a visual indication of both the tempo and time signature of the Style or Song.

3/4 Time
1   2   3   1   2   3

4/4 Time
1   2   3   4

Synchro Start waiting
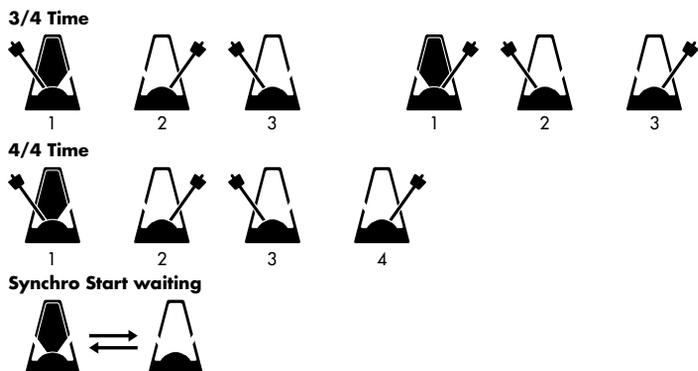
6. Change the Style section (Main A , Main B, or Jam Track), if you wish.

• Main A and Main B

While the Style is playing, you can add variation in the rhythm/accompaniment by pressing the MAIN/AUTO FILL A or B button. This automatically plays one of four Fill-in patterns, and smoothly leads into the next section — even if it is the same section.
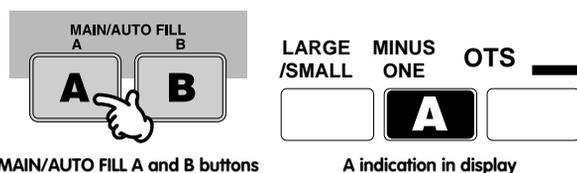
MAIN/AUTO FILL A and B buttons   **A indication in display**

The A or B indication appears in the display, flashing before playback of the pattern and staying lit during playback.

• Jam Track

The Jam Track is a special accompaniment pattern that includes automatic and chord progressions that match the selected Style. Press the JAM TRACK button during playback, and the accompaniment will continue, changing chords according to the programmed progression, letting you "jam" or play along with the changes. The Jam Track accompaniment pattern depends on the Main A or Main B section that has been selected just before pressing the Jam Track button.
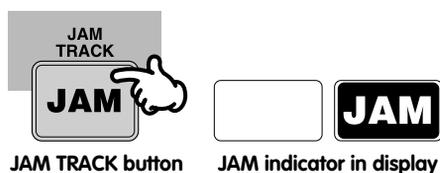
JAM TRACK button   **JAM indicator in display**

The JAM indicaton appears in the display, flashing before playback of the pattern and staying lit during playback.

Since the Jam Track progression is based on the last chord played, you may want to play the root chord before pressing JAM TRACK. (For example, if you are playing a song in the key of E, play an E chord before pressing JAM TRACK.)

NOTE
●If you press the MAIN A or B button, the Fill-in will begin immediately, and the new section will actually begin playing from the top of the next measure, unless the MAIN A or B button is pressed during the last beat of the measure — in which case the Fill-in will begin from the first beat of the next measure.
●The section buttons can not be used during song playback or when the SONG mode is selected.

7. Set the Accompaniment Volume, if you wish.

You may want to adjust the accompaniment volume, separate from the overall instrument volume. To do this, use the ACCOMP VOL buttons.

Press ACCOMP VOL ▲ to increase the volume and ACCOMP VOL▼ to decrease it; holding down the appropriate button continuously increases/decreases the volume. The level is shown in the display.
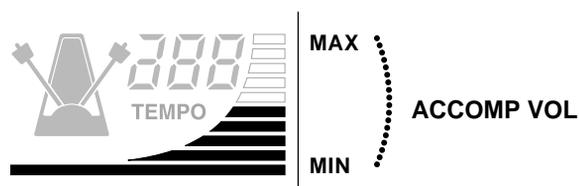
To reset the accompaniment volume to its original default setting, press both ACCOMP VOL buttons simultaneously.

NOTE The ACCOMP VOL buttons can not be used during song playback or when the SONG mode is selected.

8. Change the accompaniment ensemble "size" (LARGE/SMALL), if you wish.

Press the LARGE/SMALL button.
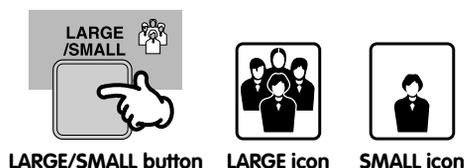
LARGE/SMALL button   **LARGE icon**   **SMALL icon**

This switches between "large" ensemble and "small" ensemble accompaniment, allowing you change the instrumental texture and dynamics of the Auto Accompaniment as you play. (The icon shows four people when set to LARGE, and one person when set to SMALL.)

9. Stop the Style.

You can do this in one of two ways:

• Pressing the START/STOP button

The rhythm/accompaniment stops playing immediately.

• Using an Ending pattern

Press the ENDING button (the ENDING indication in the display flashes). An ending pattern plays from the next measure, then playback stops.

About Multi Fingering

The Auto Accompaniment function automatically generates bass and chord accompaniment for you to play along with, by using Multi Fingering operation. You can change the chords of the accompaniment by playing keys in the AUTO ACCOMP SECTION of the keyboard using either the "Single Finger" or "Fingered" method. With Single Finger you can simply play a one-, two- or three-finger chord indication (see Single Finger Chords below). The Fingered technique is that of conventionally playing all the notes of the chord. Whichever method you use, the PortaTone "understands" what chord you indicate and then automatically generates the accompaniment.

Though detection of the Single Finger and Fingered methods is automatic with Multi Fingering, you can set Auto Accompaniment to function exclusively in either the Single Finger or Fingered mode.

To set Auto Accompaniment to Single Finger:

Turn the power off, then hold down the "-" key on the numeric keypad and simultaneously turn the power on. ("SINGLE" briefly appears in the display.)

To set Auto Accompaniment to Fingered:

Follow the same steps as above, holding down the "+" key instead. ("FINGERED" briefly appears in the display.) To switch back to Multi Fingering operation, simply turn the power off and on again.

Single Finger Chords

Chords that can be produced in Single Finger operation are major, minor, seventh and minor seventh. The illustration below shows how to produce the four chord types. (The key of C is used here as an example; other keys follow the same rules. For example, B♭7 is played as B♭ and A.)

Major chord:

C

Press the root note of the chord.

Seventh chord:

C7

Press the root note together with any white key to the left of it.

Minor chord:

Cm
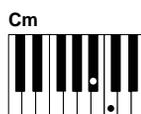
Press the root note together with any black key to the left of it.

Minor seventh chord:

Cm7
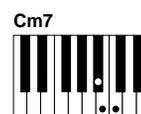
Press the root note together with any white and black key to the left of it (three keys altogether).

**NOTE** In Single Finger, the AUTO ACCOMP SECTION is set between the C1 key (the lowest key) and the C#2 key.

Fingered Chords

Using the key of C as an example, the chart below shows the types of chords that can be recognized in the Fingered mode.

Fingered Chords in the Key of C

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

C   **C7sus4**   **Cm**   **Caug(7aug)**   **C7**   **Cdim(dim7)**   **Cm7**

C7 5   **CM7**   **CmM7**   **Cm7 5**   **Cm6**   **Csus4**   **C1+2+5**
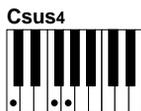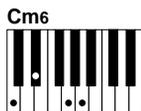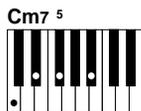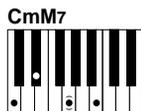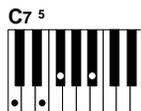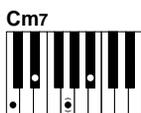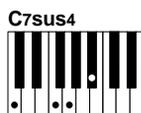
NOTE
• If the chord is inverted (i.e., C-E-G is played as G-C-E), the PortaTone will still recognize it as a C chord.
• Minor 6th chords are recognized only in root position, however; all other inversions are interpreted as minor 7th/flatted 5th.
• If augmented and diminished 7th chords are inverted, the lowest note will be recognized as the root.
• 7th flatted 5th chords may be played with the lowest note as the root or the 7th.

• 1+2+5 chords are recognized only in root position; all other inversions are interpreted as suspended 4th.
• 7th Augmented and diminished 7th chords are interpreted as simple augmented and diminished.
• Chord Cancel function
When the auto accompaniment is set to Fingered, The PortaTone also has a Chord Cancel function to stop the chord accompaniment but allow the rhythm pattern to continue playing.
To use Chord Cancel, simultaneously press any three consecutive notes in the AUTO ACCOMP SECTION; for example, C, C# and D.

One Touch Setting in the Style Mode

The One Touch Setting function automatically selects an appropriate Voice, Tempo, Accompaniment volume and Large/Small for playing with the Style you select. In other words, when One Touch Setting is on, the Voice, Tempo and Accompaniment Volume automatically changes when you change the Style.

To turn on the One Touch Setting function, press the ONE TOUCH SETTING button. (The OTS icon appears in the display.)

To turn the function off, press the button again.

ONE TOUCH SETTING button

O T S
OTS icon in display
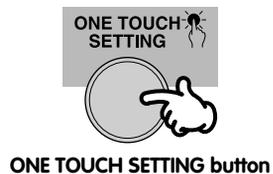
Selecting and Playing Songs —
# The Song Mode

The Song mode features special Songs that have been created using the rich and dynamic sounds of the PortaTone.

The Songs are generally for your listening enjoyment; however, you can also play along with them on the keyboard. Also, by using the Minus One function, you can "mute" the original melody and play it manually on the keyboard yourself.

Selecting and Playing a Song

1. Select the Song mode.

Press the SONG button.

STYLE   VOICE

SONG

SONG

SONG button   **SONG icon in display**
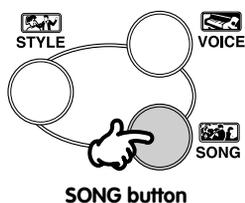
2. Select the desired Song number.

Use the numeric keypad. Available Songs are listed on the upper right of the panel.

| 1 | 2 | 3 |
4	5	6
7	8	9
–	0	+
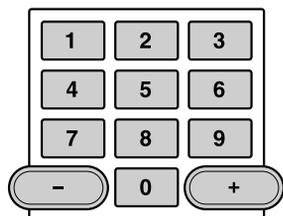
numeric keypad

You can either enter the Song number (two digits) directly with the number keys, or step up and down through the Songs by using the +/- keys.

3. Start the selected Song.

Press the START/STOP button.

▶/■

START/STOP
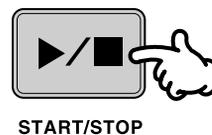
NOTE You can play along with the Song using the currently selected Voice, or even select a different Voice for playing along. Simply call up the Voice mode while the Song is playing back and select the desired Voice . Changing Voices in this manner overrides the Voice changes that have been programmed into the Song.

4. If you want to change to another Song, repeat step 2 above.

5. Stop the Song.

Press the START/STOP button. If playback was started by pressing the START/STOP button, the selected Song stops automatically at the end.

NOTE If Minus One is on, the selected Song repeats playback indefinitiely. Also, if you start Song playback with the DEMO button, all Songs play back repeatedly in succession from the song number 01, indefinitely.

Minus One

Minus One, as its name implies, takes away the melody part of the Song, allowing you to play that part yourself. You can turn Minus One on before starting a Song, or do it even while a Song is playing. To help you play the "missing" melody, scores for all Songs have been provided; see pages 11.

To use the Minus One function with the selected Song, press the MINUS ONE button. (The Minus One icon appears in the display.)

MINUS ONE button

MINUS ONE icon in display

One Touch Setting in the Song Mode

The One Touch Setting function works with the Minus One function and automatically selects an appropriate Voice for playing the melody along with the Song you select.

To turn on the One Touch Setting function, press the ONE TOUCH SETTING button. (The OTS icon appears in the display.)

ONE TOUCH SETTING button

OTS icon in display

To turn the function off, press the button again.

NOTE Keep in mind that even with the One Touch Setting function on, there are some Songs which change the selected Voice in the middle of the Song.

Troubleshooting

Problem	Possible Cause and Solution
When the PortaTone is turned on or off, a buzzing sound is temporarily produced.	This is normal and indicates that the PortaTone is receiving electrical power.
The sound of the Voices or rhythms seems unusual or strange. The PSR-190/78 is suddently reset to the default status.	The battery power is too low. Replace the batteries. (See page 2)
Not all notes are heard when playing a number of notes simultaneously.	Too many keys are pressed at the same time. The PortaTone is polyphonic up to a maximum of 12 notes. (See the note on page 4)
The sound of the Voice changes from note to note.	The AWM tone generation method uses multiple recordings (samples) of an instrument across the range of the keyboard; thus, the actual sound of the Voice may be slightly different from note to note.
There is no sound even when the keyboard is played or when a Song is being played back.	Check that nothing is connected to the PHONES/AUX OUT jack on the rear panel. When a set of headphones is plugged into this jack, no sound is output.

Specifications / Technische Daten
Caractéristiques techniques / Especificaciones

		PSR-190	PSR-78
Keyboard	Number of Keys	61	49
	Key Size	Regular	
	Register	C1 - C6	C1 - C5
Voice	Tone Generation	AWM	
	Number of Voices	100	
	Maximum Polyphony	12 notes	
Effect	Dual	Included in Voice	
	Split	Included in Voice	
	Sustain	Included in Voice	
	Harmony/Echo	Included in Voice	
Style	Number of Styles	100	
	Auto Accompaniment	Yes	
	Chord Detection	Multi Fingering (Single Finger, Fingered)	
	Sections	Intro, Main A, Main B, Fill-in x 4, Ending	
	Jam Track	Yes (1 per Style)	
Song	Number of Songs	20	
	Minus One	Yes	
One Touch Setting		Yes	
Controls		POWER, VOLUME, DEMO, TEMPO, ACCOMP VOL, SYNC-START, START/STOP,INTRO, MAIN/AUTO FILL A and B, ENDING, JAM TRACK, LARGE/SMALL (MINUS ONE), ONE TOUCH SETTING, STYLE, VOICE, SONG, Numeric Keypad	
Other Terminals & Fittings		DC IN 10-12V jack, PHONES/AUX OUT jack, Music Stand	
Amplifier		Stereo; 3.2 W + 3.2 W (with PA-3B adaptor); 4.5 W + 4.5 W (with batteries)	Mono; 5.5 W (with PA-3B adaptor); 3.8 W (with batteries)
PHONES/AUX OUT Output		77 Ω ± 5% impedance	50 Ω ± 5% impedance
Speakers		10 cm x 2	
Power Consumption		12 W (with PA-3B adaptor)	7 W (with PA-3B adaptor)
Rated Power Supply		DC 10-12 V: 6 "D" size/R-20/SUM-1 (1.5 V) batteries, or PA-3/3B Power Adaptor	
Dimensions (W x D x H)		930× 358× 116 mm 36-5/8"× 14"× 4-1/2"	948× 313× 107 mm 37-3/8"× 12-3/8"× 4-1/4"
Weight		4.4 kg (9.7 lbs.)	3.8 kg (8.4 lbs.)
Casing		Polystyrene	
Supplied Accessories		Music Stand, Owner's Manual	
Optional Accessories		Headphones (HPE-3 or HPE-150); AC Power Adaptor (PA-3 or PA-3B), Keyboard Stand (L-2L or L-2C)	

Specifications are subject to change without notice.
Änderung der Technischen Daten ohne vorherige Ankündigung vorbehalten.
Les caractéristiques et la présentation peuvent être modifiées sans avis préalable.
Especificaciones sujetas a cambios sin aviso previo.

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

Model No. PSR

Serial No.

**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.

YAMAHA