YAMAHA

PortaSound

PSS-31
PSS-21
PSS-11

Owner's Manual

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Congratulations on your purchase of the Yamaha PortaSound!

You now own a portable keyboard that packs advanced functions and great sound in a highly compact size. Its outstanding features also make it an exceptionally expressive and versatile instrument.

Read this Owner's Manual carefully while playing your new PortaSound, and you will soon be able to make full use of its various features.

Main Features

The PortaSound is a sophisticated musical instrument with the following features and functions:

- **100 AWM** (Advanced Wave Memory) **Voices, utilizing digital recordings of actual instruments.** (See VOICE, p.4.)
- **Versatile music styles** (50 on the PSS-31, 25 on the PSS-21/11). (See STYLE, p.5.)
- **Demonstration Songs** (Songs for playing along with when using the **Minus-one** function; 20 on the PSS-31, 15 on the PSS-21/11). (See SONG, p.8.)
- **Specially programmed rhythms and chord progressions** (20 on the PSS-31, 15 on the PSS-21/11). (See JAM TRACK, p.8.)
- **Drum and percussion sounds for playing** (PSS-31 and PSS-21). (See DRUM PADS, p.9.)
- **High-quality amplifier/speaker system** (stereo for the PSS-31/21).

Precautions–Taking Care of Your PortaSound

Your new PortaSound 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 PortaSound close to television sets, radios or similar equipment since this may cause interference noise in the other appliance.

Handling

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

When Not Using the PortaSound

- After use, always turn off the POWER switch. When not using your PortaSound for long periods, be sure to remove the batteries to avoid damage through battery leakage.

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 PortaSound for a long time, since it may adhere to the exterior.

Note:
Yamaha is not responsible for damage caused by improper usage.

Power Requirements

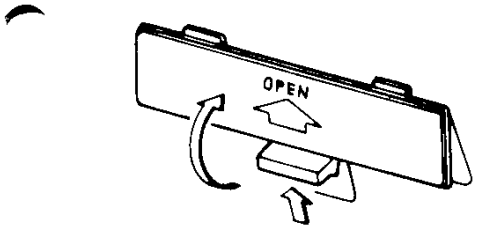
Your PortaSound can run either on batteries (sold separately) or on normal household current by using one of the optional Yamaha PA-1/1B/3 Power Adaptors.

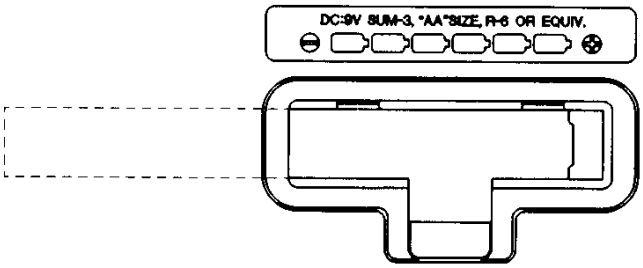
Using an AC Power Adaptor

To connect your PortaSound to a wall socket, you will need one of the optionally available Yamaha PA-1/1B/3 Power Adaptors. **Use of other AC adaptors could result in damage to the PortaSound and/or Power Adaptor, so be sure to ask fof the right kind.** Plug the adaptor into a convenient wall socket and its connector into the DC 9-12V IN jack on the back of your PortaSound.

Inserting Batteries

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





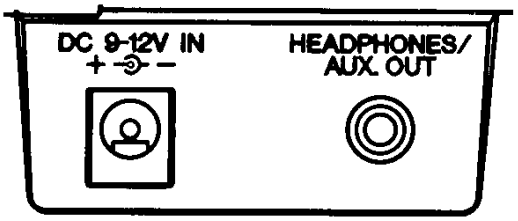
When the Batteries Run Down

When the batteries run low and the battery voltage drops below a certain level, the PortaSound may not sound or function properly. As soon as this happens, replace them with a complete set of six new batteries. NEVER mix old and new batteries.

Accessory Jacks

Using Headphones

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



Connecting a Keyboard Amplifier or Stereo System

After making sure the PortaSound and any external devices are turned off, 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 HEADPHONES/AUX. OUT jack of the PortaSound.

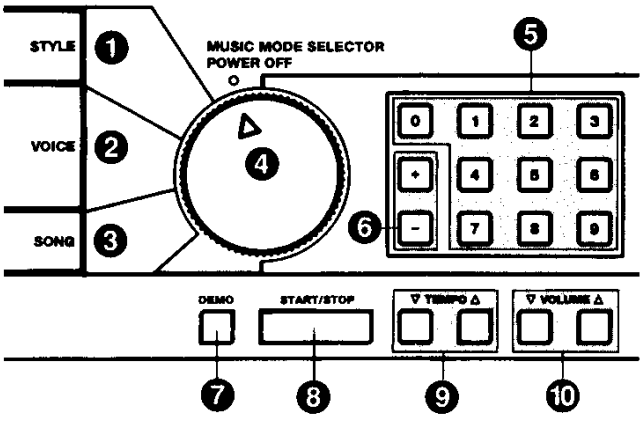
Playing Your New PortaSound

This section briefly shows you how to select from among the various Voices and Styles by using the Numeric Keypad.

Selecting Modes

Your PortaSound can be made to operate in three different ways or "Modes": STYLE, VOICE and SONG. You should select the Mode according to how you want to use your PortaSound. STYLE ❶ lets you select and play a setting that includes a rhythm/accompaniment pattern plus a suitable Voice for that pattern. VOICE ❷ lets you select and play a Voice. SONG ❸ lets you select and play either a Song or a Jam Track pattern.

To select one of the Modes:
Turn the MUSIC MODE SELECTOR ❹ to the desired Mode. For now, select SONG ❸ .



Playing a Demonstration Song

A variety of Demonstration Songs have been recorded to your PortaSound to give you a taste of what you can do with the instrument.

To select and play one of the Songs:

1. With the MUSIC MODE SELECTOR set to SONG ❸ , use the Numeric Keypad ❺ to enter the desired Song number. Be sure to enter a two-digit number, as is printed next to each song on the panel. For example, to select Song 09, first press "0" on the Numeric Keypad, then "9."

   You can skip this step and go on to step 2 below if you wish to play all songs continuously in succession, starting with Song 00.

Using the +/- Buttons

You can also use the +/- buttons ❻ on the Numeric Keypad to step up or down through the preset numbers. (Number 00 is automatically selected in all of the Modes when you turn the power on.)
Note that the +/- buttons have a "wrap around" feature. For example, pressing the + button from the last number in SONG returns to Song 00.

2. To play the selected Song, press the DEMO button ❼ .
3. You can adjust the volume of the Song by using the VOLUME buttons ❿ .

If you want to set the volume back to its original default setting, press both VOLUME buttons simultaneously.

4. To stop the Song, press the DEMO button again. (The START/STOP button ❽ can also be used.)

More About the Numeric Keypad

1. A "click" sound comes from the speaker each time you enter a number from the Numeric Keypad. Actually, there are two click sounds: one low pitched sound for the first number you enter, then a high pitched sound for the second and final number. Since you must enter two digits, the high pitched sound is a clear indication that the entire number has been properly entered. (The VOLUME buttons, TEMPO buttons and DRUM PAD SELECT buttons [PSS-31/21] also produce a "click" sound.)

2. You should enter numbers on the Numeric Keypad relatively quickly. If you don't enter the second digit of a number within about ten seconds after entering the first digit, the first digit will be cancelled. Entry of a first digit is also automatically cancelled if any other button on the panel (except for those on the Numeric Keypad ❺) is pressed before entering the second digit.

3. The PortaSound also automatically ignores invalid numbers – numbers that are higher than each range of Styles or Songs shown on the panel.

VOICE

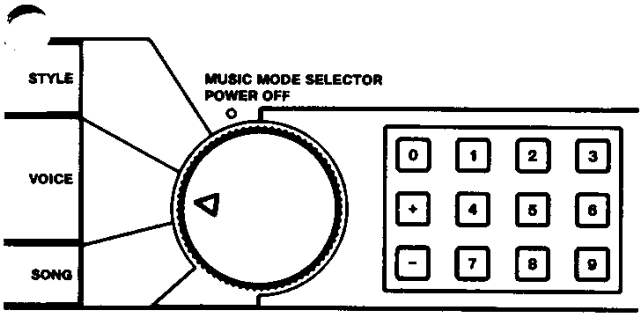
The VOICE Mode features 100 authentic Voices. Many of these Voices have special preset characteristics or embellishments.

DUAL Voices have two Voices layered together for ensemble sounds. As with DUAL, SPLIT Voices have two Voices, but rather than being layered, each is played from a different range of the keyboard. SUSTAIN Voices extend the sound by adding a natural, slow release. HARMONY Voices have an additional one-, two- or three-note harmony added to the original monophonic Voice. Finally, ECHO Voices have an echo effect that adds delayed repeats to the original Voice.

Included in the Voices is a special PERCUSSION Voice (#39) that lets you play various drum and percussion sounds from the keyboard. (Refer to the Percussion Assign List, page 9.)

Selecting a Voice

1. Turn the MUSIC MODE SELECTOR to select VOICE.



2. Use the Numeric Keypad to select the desired Voice number.

   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 newly selected Voice. If you want 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 when in the STYLE Mode will be played.

About the HARMONY Voices

1. A single note can be played when several notes are pressed for the HARMONY Voice. If several notes are played together, only the last note played will determine the harmony notes.

2. The type of harmony depends on the type of Voice selected. When the VOICE Mode is selected, HARMONY's basic chord is always C. when in the STYLE Mode, changing the chord played in the left hand also changes the harmony, when in the SONG Mode, HARMONY notes change according to the chord of the Song/Jam Track.

Note:
The PortaSound 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.

STYLE

The STYLE Mode provides an ideal combination of a Voice and rhythm/accompaniment pattern for various popular music styles, as listed on the panel. The Auto Accomp. function adds excitement to your performance, and it effectively splits the keyboard into two sections: the upper for playing a melody line, and the lower for using the Auto Accomp. function. The split point is indicated on the panel, above the keyboard.

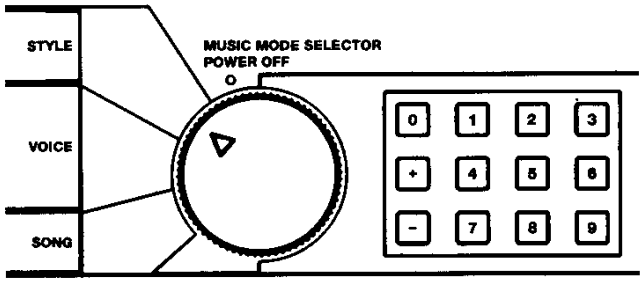
About BASS CHORD HOLD

STYLE also includes a BASS CHORD HOLD setting (the last preset number) which works without a rhythm pattern. BASS CHORD HOLD does as its name implies: it generates a chord and bass based on the note or notes you play in the lower part of the keyboard and "holds" it while the chord is being played.

Note:
When BASS CHORD HOLD is selected, the Synchro Start function does not work, nor does the rhythm run, even if the START/STOP button is pressed. If you select BASS CHORD HOLD while a rhythm pattern is playing, the rhythm will stop.

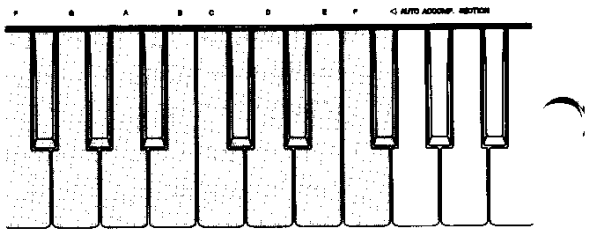
Selecting a Style

1. Turn the MUSIC MODE SELECTOR to select STYLE.



2. Use the Numeric Keypad to select the desired Style number.

3. Your PortaSound has a Synchro Start function that allows you to start the rhythm by simply pressing a key in the AUTO ACCOMP. SECTION to the left of the split point. (Selecting STYLE sets the PortaSound to stand-by status.)



● You can also start the rhythm by pressing the START/ STOP button.



A rhythm Pattern of the Style you've selected will begin playing. Try playing along with this rhythm.

4. With the rhythm running, you're ready to try out the Auto Accomp. function. Try playing a few single notes with your left hand, and notice how the bass and chord accompaniment change with each key you play.

5. Use the TEMPO buttons to change the tempo of the Style as it's playing.



6. To stop the rhythm, press the START/STOP button again.

   Pressing the START/STOP button again produces a simple ending phrase. This also applies to playing Jam Track patterns in the SONG Mode.

Using the Auto Accomp. Function

The Auto Accomp. function automatically generates bass and chord accompaniment for you to play along with. You can change the chords of the accompaniment by using a "Single Finger" technique in the AUTO ACCOMP. SECTION of the keyboard – simply by playing a one-, two- or three-finger chord indication. (The PSS-31 also features a Fingered mode for playing full chords; see "Multi Fingering Operation" below.)

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 as an example; other keys follow the same rules.)

Single Finger Chords

C



Press the root note of the chord.

C 7



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

Cm



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

Cm7



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

Note:
The "black key" keys follow the same rules; for example, Bb7 could be played as Bb and A (the white key to the left of it).

Multi Fingering Operation (PSS-31)

The PSS-31 features Multi Fingering Auto Accomp. operation. This lets you use the accompaniment by playing either simplified "Single Finger" chord indications or full "Fingered" conventional chords – the PortaSound automatically "understands" what chord you indicate and then generates the accompaniment.

Though this operation is automatic, you can set Auto Accomp. to function exclusively in either the Single Finger or Fingered mode.

To set Auto Accomp. to "Single Finger," turn the power off, then hold down the "1" key on the Numeric Keypad and simultaneously turn the power on.

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

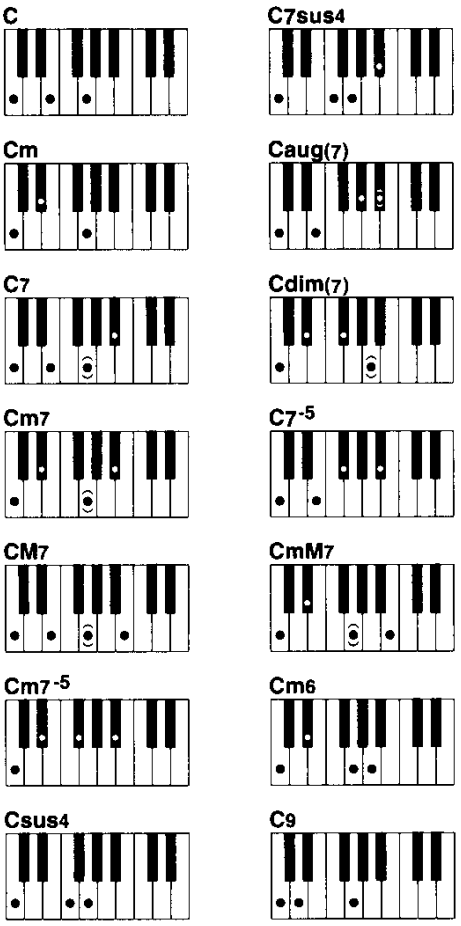
To set Auto Accomp. to "Fingered," follow the same steps, holding down the "0" key instead.

To switch back to Multi Fingering operation, simply turn the power off and on again.

Fingered Chords

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

Examples for "C" Chords



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

Note:

If the chord is inverted (i.e., C-E-G is played as G-C-E), the PortaSound will recognize it as a C chord. However, 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 flatted 7th. Minor 6th and 9th chords must be played with the lowest note as the root.

Note:

The following chords can not be detected: B augmented, A#m6 and Bm6.

Note:

For certain chords in some of the music Styles, the accompaniment chord may remain the same even though different chord indications are played.

Note:

If CHORD CANCEL (pressing of any three consecutive notes; for example, C-C#-D) is played, the chord accompaniment will stop, but the rhythm will continue playing.

More About the STYLE Mode

1. Although the Voice is automatically selected for each Style, you can change the Voice for the upper part while the rhythm is running by switching to the VOICE Mode and selecting the desired Voice. (As for each default Voice in the STYLE Mode, refer to the list on page 10.)
2. If you change to another Style while one Style is playing, the newly selected Style changes at the beginning of the next measure and the Voice of the newly selected Style automatically changes as well. The tempo setting of the previous Style is kept, however. (When the rhythm is off, changing the Style changes the tempo to the default setting.)

About the Tempo Controls

The tempo can be adjusted by using the TEMPO buttons. Turning the power on automatically sets the tempo to the default setting of Style 00. You can restore the default setting of the currently selected pattern at any time by pressing both TEMPO buttons simultaneously.

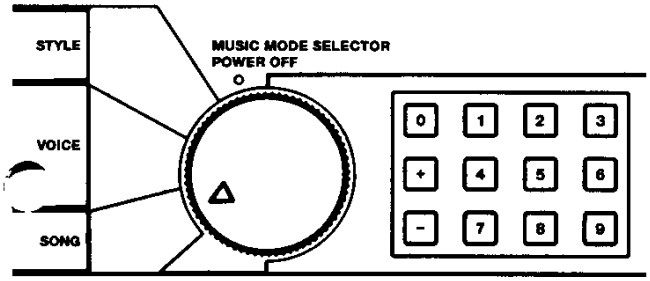
SONG

The SONG Mode features Demonstration Songs and Jam Track patterns that have been specially created using the rich sounds and sophisticated accompaniment functions of the PortaSound.

The Songs in the SONG Mode are generally for your listening enjoyment; however, you can also play along with them by using the Minus-one function. Minus-one, as its name implies, takes away the melody part of the song, allowing you to play that part yourself. The Jam Track patterns in this Mode let you "jam" or play along with a variety of dynamic rhythm styles and chord changes.

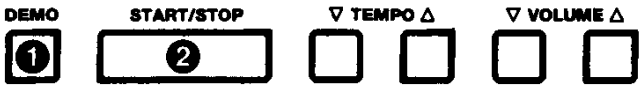
Selecting a Song or Jam Track Pattern

1. Turn the MUSIC MODE SELECTOR to select SONG.



2. Use the Numeric Keypad to select the desired Song or Jam Track pattern number.

3. To playback the complete Song, including the melody part, press the DEMO button. To use the Minus-one function with the selected Song or to playback a Jam Track pattern, press the START/STOP button.



❶ Press DEMO to playback entire Song. (Songs repeat in order indefinitely until DEMO or START/STOP is pressed.)

❷ Press START/STOP for the selected Song/ Pattern when using Minus-one or Jam Track. (Selected Jam Track pattern repeats until START/STOP is pressed.)

You can also start the selected Song (Minus-one) or Jam Track pattern with the Synchro Start function (as in STYLE) by simply pressing any key on the keyboard.

Note:
The DEMO button cannot be used to start a Jam Track pattern. If you press the DEMO button while a Jam Track is selected, the number will automatically change to 00 and begin playback.

4. If you want to change to another Song or Jam Track pattern, repeat step 2 above.

5. To stop the Song or pattern, press the START/STOP button again. (The DEMO button can also be used to stop Songs, but not patterns or Songs used with Minus-one.)

More About the SONG Mode

The Voice for the melody of each Song is automatically selected and you can play the keyboard using the same Voice as the one used for the melody. You can also change the Voice while the Song/Jam Track is playing by switching to the VOICE Mode and selecting the desired Voice. (Voice changes of the preset Song will automatically affect both the melody of that Song and the Voice you play on the keyboard. You can start each Song /JamTrack pattern [except Demonstrations]with your selected Voice by selecting the Voice in the VOICE Mode and switching back to the SONG Mode.)However, changing to another Song/JamTrack automatically switches to that new one's default preset Voice and the preset tempo.

Note:
Starting a Song also automatically changes the Style number.

DRUM PADS (PSS-31 and PSS-21)

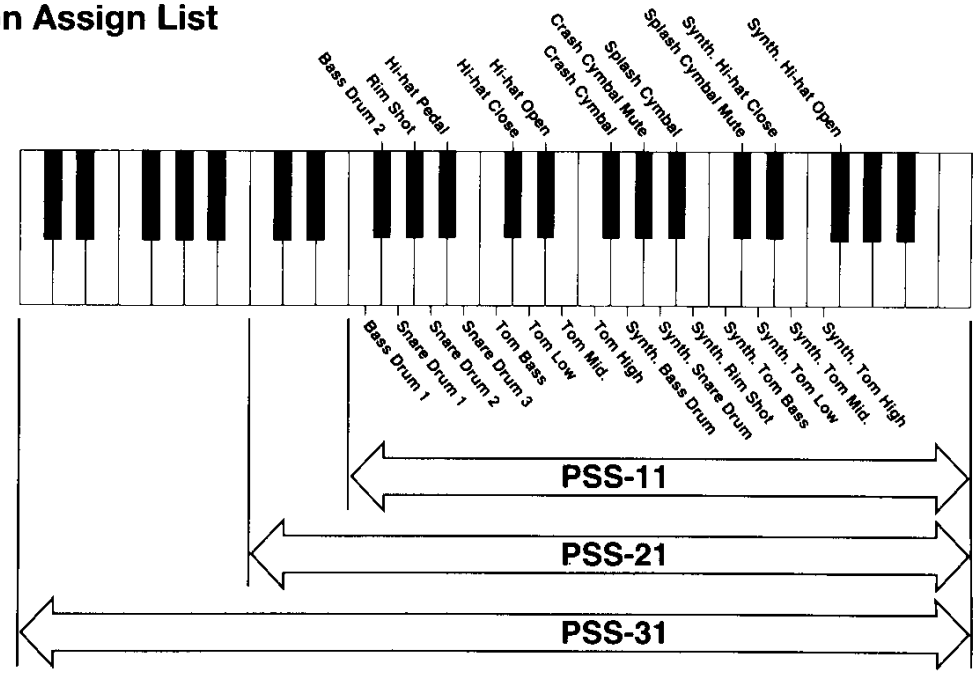
The DRUM PADS let you play selected drum and percussion sounds. The Pads can be played in any of the Modes. You can play them alone to try out your own rhythms, or play them along with the rhythm patterns. Four different sounds or Sets are available for each Pad, represented by the graphic symbols printed above each Pad.

When the power is turned on, the first Set (represented by the leftmost symbol above each pad) is automatically selected. Use the DRUM PAD SELECT buttons to change the Set. Changing the Set changes the sounds of all the DRUM PADS at the same time.



Note:
Up to two DRUM PADS can be played simultaneously.

Percussion Assign List



Voice List for the STYLE/JAM TRACK Mode

STYLE

Style No.		Voice No.	Voice Name
PSS-31	PSS-21/11		
00	00	00	PIANO
01	—	49	E. PIANO PAD
02	02	48	PIANO & VIBES
03	—	23	BRASS ENS.
04	—	50	E. PNO & VIBES
05	—	51	FOLK GTR PAD
06	01	17	ORCHESTRA HIT
07	03	23	BRASS ENS.
08	—	54	FANTASY 1
09	—	29	PANFLUTE
10	—	41	CHORUS E. PNO
11	—	51	FOLK GTR PAD
12	04	49	E. PIANO PAD
13	05	03	CLAVI
14	06	41	CHORUS E. PNO
15	—	47	PIANO PAD
16	07	53	BRASS ENS.
17	—	04	E. ORGAN
18	08	21	TROMBONE
19	09	29	PANFLUTE
20	10	51	FOLK GTR PAD
21	11	23	BRASS ENS.
22	—	28	TENOR SAX
23	—	12	DIST. GUITAR
24	—	40	HONKY-TONK
25	12	04	E. ORGAN
26	13	71	VIBRAPHONE
27	14	47	PIANO PAD
28	—	49	E. PIANO PAD
29	15	83	FLUTE DUET
30	16	32	SY. LEAD
31	—	84	CLARINET TRIO
32	—	21	TROMBONE
33	17	52	JAZZ GTR PAD
34	18	81	TRUMPET DUET
35	19	47	PIANO PAD
36	—	21	TROMBONE
37	—	53	BRASS ENS.
8	20	06	ACCORDION
39	21	47	PIANO PAD

Style No.		Voice No.	Voice Name
PSS-31	PSS-21/11		
40	—	81	TRUMPET DUET
41	—	21	TROMBONE
42	—	77	VIOLIN CNTRY
43	—	81	TRUMPET DUET
44	22	26	CLARINET
45	23	54	FANTASY 1
46	—	16	STRINGS
47	—	82	HORN DUET
48	—	47	PIANO PAD
49	24		

JAM TRACK for PSS-31

Jam Track No.	Voice No.	Voice Name
20	47	PIANO PAD
21	17	ORCHESTRA HIT*
22	48	PIANO & VIBES*
23	28	TENOR SAX
24	00	PIANO
25	12	DIST. GUITAR
26	00	PIANO
27	04	E. ORGAN
28	53	BRASS ENS.
29	49	E. PIANO PAD
30	65	PNO/VIBES*
31	28	TENOR SAX*
32	41	CHORUS E. PNO*
33	25	FLUTE*
34	81	TRUMPET DUET*
35	06	ACCORDION*
36	21	TROMBONE
37	77	VIOLIN CNTRY*
38	20	TRUMPET*
39	49	PIANO PAD

JAM TRACK for PSS-21/11

Jam Track No.	Voice No.	Voice Name
15	47	PIANO PAD
16	17	ORCHESTRA HIT*
17	48	PIANO & VIBES*
18	04	E. ORGAN*
19	00	PIANO
20	04	E. ORGAN
21	53	BRASS ENS.
22	49	E. PIANO PAD
23	65	PNO/VIBES*
24	41	CHORUS E. PNO*
25	25	FLUTE*
26	81	TRUMPET DUET*
27	06	ACCORDION*
28	20	TRUMPET*
29	16	STRINGS*

** The default voices change to other voices during the chord progressions.*

Troubleshooting

Problem	Cause	Solution
When the PortaSound is turned on or off, a buzzing sound is temporarily produced.	Power current is flowing into the PortaSound.	This is not a malfunction.
The rhythm suddenly stops or the selected Voice is suddenly changed to the Piano Voice.	The battery power is too low.	Replace the batteries.
Not all notes are heard when playing a number of notes simultaneously.	Too many keys are pressed at the same time.	The PortaSound is polyphonic up to a maximum of 12 notes. (See the note on page 4.)

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

ENVIRONMENTAL ISSUES:

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

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

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

When installing batteries, do not mix 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 branch (circuit breaker or fuse) circuits or install AC line filter/s.
- In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to co-axial type cable.

If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Corporation of America, Electronic Service Division, 6600 Orangethorpe Ave, Buena Park CA, 90620

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

Specifications

		PSS-31	PSS-21	PSS-11
KEYBOARD	Number of Keys	49	37	32
	Key Size	Mini		
	Register	$C_1 \sim C_5$	$C_2 \sim C_5$	$F_2 \sim C_5$
VOICE	Tone Generation	AWM		
	Number of Voices	100		
	Polyphony (Maximum)	12		
STYLE	Number of Styles	50	25	
	Auto Accompaniment	○		
	Chord Detection	Multi	Single	
	Bass Chord Hold	○		
SONG (DEMONSTRATION)	Number of Songs	20	15	
	Songs for Music Minus-one	20	15	
	Jam Tracks	20	15	
PERCUSSION	Drum Pads	4×4		—
CONTROL		MUSIC MODE SELECTOR (POWER OFF/STYLE/VOICE/SONG), Numeric Keypad (0~9), ±Buttons, START/STOP, TEMPO ▲,▼, VOLUME ▲,▼, DEMO, PADS SELECT (PSS-31/21)		
OTHER FITTINGS		DC IN, HEADPHONES/AUX. OUT		
OPTIONAL ACCESSORIES		HPE-3/5 Headphones, PA-1/1B/3 Power Adaptors		
SOUND SYSTEM		Stereo		Mono
	Amplifier(s)	2W×2		0.7W×1
	Speaker(s)	10cm×2	8cm×2	8cm×1
RATED POWER SUPPLY		DC 9-12V: AA/R-6/SUM-3 (1.5V)×6, PA-1/1B/3 Power Adaptors		
BATTERY LIFE		3 hours (when playing the Demo Songs)	2.5 hours (when playing the Demo Songs)	5 hours (when playing the Demo Songs)
POWER CONSUMPTION		During AC power adaptor: 1.8W During battery use: 1.3W	During AC power adaptor: 2.6W During battery use: 1.4W	During AC power adaptor: 2.5W During battery use: 0.8W
DIMENSIONS (W×D×H)		805×195×68mm (31⅝″×7⅝″×2⅝″)	611×195×68mm (24″×7⅝″×2⅝″)	495×195×68mm (19½″×7⅝″×2⅝″)
WEIGHT		2.08kg (4 lbs., 9 oz.)	1.54kg (3 lbs., 6 oz.)	1.20kg (2 lbs., 10 oz.)
CASING		Polystyrene		

Specifications are subject to change without notice.

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

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

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

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

NORTH AMERICA

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

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

MIDDLE & SOUTH AMERICA

MEXICO
Yamaha De Mexico S.A. De C.V., Departamento de ventas
Javier Rojo Gomez No.1149, Col. Gpe Del Moral, Deleg. Iztapalapa, 09300 Mexico, D.F.
Tel: 686-00-33

BRASIL
Yamaha Musical Do Brasil LTDA.
Ave. Reboucas 2636, São Paulo, Brasil
Tel: 55-11 853-1377

PANAMA
Yamaha De Panama S.A.
Edificio Interseco, Calle Elvira Mendez no.10, Piso 3, Oficina #105, Ciudad de Panama, Panama
Tel: 507-69-5311

OTHER LATIN AMERICAN COUNTRIES AND CARIBBEAN COUNTRIES
Yamaha Music Latin America Corp.
6101 Blue Lagoon Drive, Miami, Florida 33126, U.S.A.
Tel: 305-261-4111

EUROPE

THE UNITED KINGDOM/IRELAND
Yamaha-Kemble Music(U.K.) Ltd.
Sherbourne Drive, Tilbrook, Milton Keynes, MK7 8BL England
Tel: 0908-366700

GERMANY/SWITZERLAND
Yamaha Europa GmbH.
Siemensstraße 22-34, D-2084 Rellingen, F.R. of Germany
Tel: 04101-3030

AUSTRIA/HUNGARY
Yamaha Music Austria GmbH.
Schleiergasse 20, A-1100 Wien Austria
Tel: 0222-60203900

THE NETHERLANDS
Yamaha Music Benelux B.V., Verkoop Administratie
Kanaalweg 18G, 3526 KL Utrecht, The Netherlands
Tel: 030-828411

BELGIUM/LUXEMBOURG
Yamaha Music Benelux B.V., Administration des Ventes
Rue de Bosnie 22, 1060 Brusseles, Belgium
Tel: 02-5374480

FRANCE
Yamaha Musique France, Division Claviers
BP 70-77312 Marne-la-Valée Cedex 2, France
Tel: 01-64-61-4000

ITALY
Yamaha Musica Italia S.P.A., Home Keyboard Division
Viale Italia 88, 20020 Lainate(Milano), Italy
Tel: 02-937-4081

SPAIN
Yamaha-Hazen Electronica Musical, S.A.
Jorge Juan 30, 28001, Madrid, Spain
Tel: 91-577-7270

PORTUGAL
Valentim de Carvalho CI SA
Estrada de Porto Salvo, Paço de Arcos 2780 Oeiras, Portugal
Tel: 01-443-3398/4030/1823

GREECE
Philippe Nakas S.A.
Navarinou Street 13, P.Code 10680, Athens, Greece
Tel: 01-364-7111

SWEDEN
Yamaha Scandinavia AB
J. A. Wettergrens gata 1, Box 30053, 400 43 Göteborg, Sweden
Tel: 031-496090

DENMARK
Yamaha Scandinavia Filial Danmark
Finsensvej 86, DK-2000 Frederiksberg, Denmark
Tel: 31-87 30 88

FINLAND
Fazer Music Inc.
Länsituulentie 1A, SF-02100 Espoo, Finland
Tel: 90-435 011

NORWAY
Narud Yamaha AS
Østerndalen 29, 1345 Østerås
Tel: 02-24 47 90

ICELAND
Páll H. Pálsson
P.O. Box 85, Reykjavik, Iceland
Tel: 01-19440

EAST EUROPEAN COUNTRIES (Except HUNGARY)
Yamaha Europa GmbH.
Siemensstraße 22-34, D-2084 Rellingen, F.R. of Germany
Tel: 04101-3030

AFRICA

MOROCCO
Yamaha-Hazen Electronica Musical, S.A.
Jorge Juan 30, 28001, Madrid, Spain
Tel: 91-577-7270

OTHER COUNTRIES
Yamaha Musique France, Division Export
BP 70-77312 Marne-la-Valée Cedex 2, France
Tel: 01-64-61-4000

MIDDLE EAST ASIA

ISRAEL
R.B.X. International Co., Ltd.
P.O. Box 11136, Tel-Aviv 61111, Israel
Tel: 3-298-251

OTHER COUNTRIES
Yamaha Musique France, Division Export
BP 70-77312 Marne-la-Valée Cedex 2, France
Tel: 01-64-61-4000

ASIA

HONG KONG
Tom Lee Music Co., Ltd.
15/F., World Shipping Centre, Harbour City, 7 Canton Road, Kowloon, Hong Kong
Tel: 3-722-1098

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

KOREA
Inkel Corporation Ltd.
63 Dobong-Dong Dobong-ku, Seoul, Korea
Tel: 2-764-3377

MALAYSIA
Yamaha Music Malaysia Sdn., Bhd.
16-28, Jalan SS 2/72, Petaling Jaya, Selangor Malaysia
Tel: 3-717-8977

PHILIPPINES
Yupangco Music Corporation
339 Gil J. Puyat Avenue, Makati, Metro Manila 1200, Philippines
Tel: 2-85-7070

SINGAPORE
Yamaha Music Asia Pte., Ltd.
80 Tannery Lane, Singapore 1334, Singapore
Tel: 747-4374

TAIWAN
Kung Hsue She Trading Co., Ltd.
KHS Fu Hsing Building, 322, Section 1, Fu-Hsing S. Road, Taipei 10640, Taiwan. R.O.C.
Tel: 2-709-1266

THAILAND
Siam Music Yamaha Co., Ltd.
933/1-7 Rama I Road, Patumwan, Bangkok, Thailand
Tel: 2-215-0030

THE PEOPLE'S REPUBLIC OF CHINA AND OTHER ASIAN COUNTRIES
Yamaha Corporation, Asia Oceania Group
Nakazawa-cho 10-1, Hamamatsu, Japan 430
Tel: 81(Country Code)-53-460-2311

OCEANIA

AUSTRALIA
Yamaha Music Australia Pty. Ltd.
17-33 Market Street, South Melbourne, Vic. 3205, Australia
Tel: 3-699-2388

NEW ZEALAND
Music Houses of N.Z. Ltd.
146/148 Captain Springs Road, Te Papapa, Auckland New Zealand
Tel: 9-640-099

COUNTRIES AND TRUST TERRITORIES IN PACIFIC OCEAN
Yamaha Corporation, Asia Oceania Group
Nakazawa-cho 10-1, Hamamatsu, Japan 430
Tel: 81(Country Code)-53-460-2311

HEAD OFFICE **Yamaha Corporation, Electronic Musical Instrument Division**
Nakazawa-cho 10-1, Hamamatsu, Japan 430
Tel: 81(Country Code)-53-460-3273

YAMAHA

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