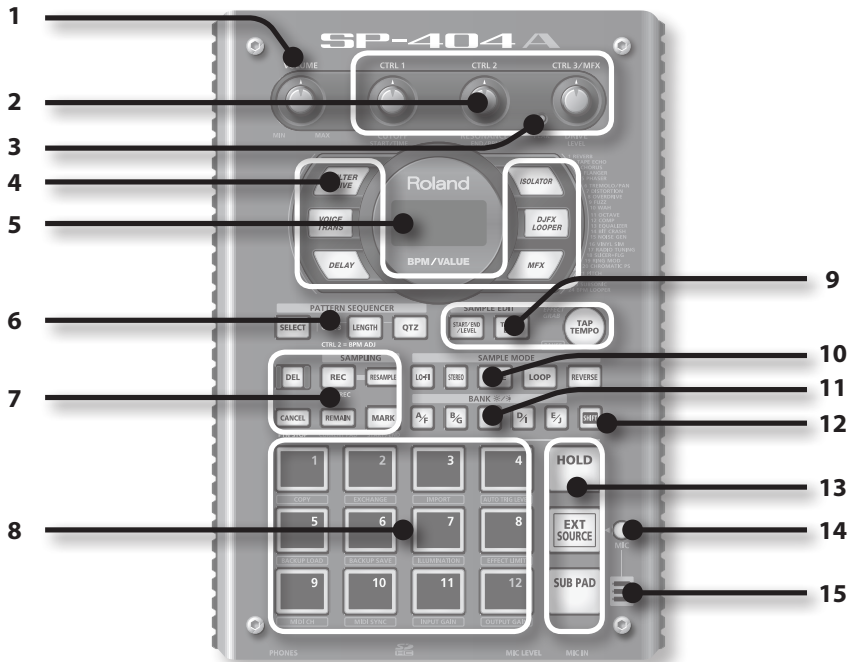
SP-404A

Reference Manual

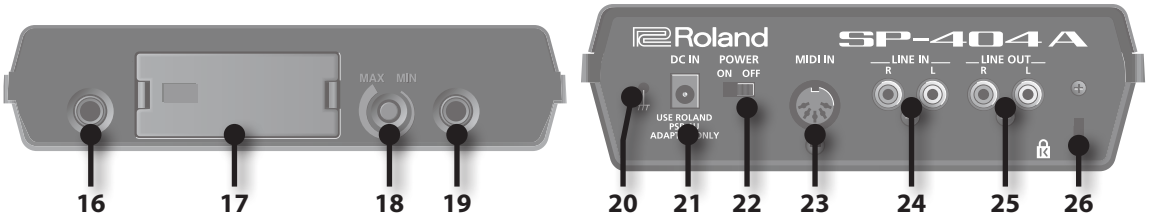
Contents

Panel Descriptions



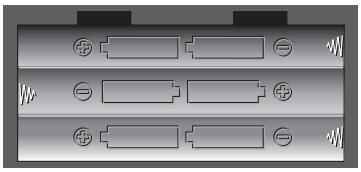
	Name	Description		Page
1	**[VOLUME] knob**	This adjusts the volume.		**p. 9**
2	**[CTRL 1]–[CTRL 3] knobs**	These knobs control effect parameters. You can also use each knob to make the following settings.		**p. 13**
		CTRL 1	The starting location of a sample The playback time of a sample	**p. 29** **p. 30**
		CTRL 2	The BPM (tempo) of the pattern The ending location of a sample	**p. 15** **p. 28**
		CTRL 3/MFX	The type of MFX The sampling level The volume of the sample	**p. 13** **p. 19** **p. 27**
3	**PEAK indicator**	Indicates the analog input level of the LINE IN jacks. Adjust the volume of your connected equipment so that this indicator lights occasionally.		**p. 19**
4	**Effect buttons**	Use these buttons to select the effect you want to use.		**p. 13**
5	**Display**	This shows information such as the BPM (tempo), the values of various settings, and error messages (p. 45).		
	Display illumination	This will blink in synchronization with the pattern's tempo. During sampling, this will light red if the level of the audio signal is excessive.		**p. 40** **p. 19**
6	**[SELECT] button**	Press this when you want to play or record a pattern.		**p. 14**
	[LENGTH] button	Specifies the length of the pattern when recording a pattern.		**p. 32**
	[QTZ] button	Specifies quantization (automatic timing correction) when recording a pattern.		**p. 32**
7	**[DEL] button**	Deletes a sample or pattern.		**p. 21**
	[REC] button	Starts/stops sampling or pattern recording.		**p. 18**
	[RESAMPLE] button	Applies an effect to the sound of a sample and resamples the result.		**p. 26**
	[CANCEL] button	Cancels an operation such as sampling, pattern playback, or recording. By pressing this button four times in rapid succession, you can stop all sounds that are currently playing.		**p. 12**
	[REMAIN] button	Makes the display indicate the remaining time available for sampling. In addition, you can hold down this button and press a pad to specify the sample to which you want to apply an effect, or to specify the sample whose settings you want to edit (modify current pad).		**p. 25** **p. 13**
	[MARK] button	Use this button when you want to play only a portion of a sampled sound.		**p. 27**

	Name	Description	Page
8	Pads [1]–[12]	When you press these pads, you'll hear the samples that are assigned to the pads. If the [SELECT] button is lit, the pads will select patterns.	p. 11 p. 14
9	[START/END/LEVEL] button	Use this button when you want to change the playback start/end points of a sample or to adjust its volume.	p. 27
	[TIME/BPM] button	Use this button when you want to specify a sample's playback time or BPM (tempo).	p. 15
	[TAP TEMPO] button	You can change the tempo by pressing this button several times at the desired timing. To temporarily stop the production of sound, hold down the [SHIFT] button while you press the [TAP TEMPO] (PAUSE) button.	p. 15 p. 12
10	[LO-FI] button	Switches the sample's playback quality (standard/lo-fi).	p. 12
	[STEREO] button	Specifies whether you'll be sampling in monaural or in stereo.	p. 18
	[GATE] button	Switches between Gate playback (the sample will play only while you hold down the pad) and Trigger playback (the sample will alternate between play and stop each time you press the pad).	p. 12
	[LOOP] button	Switches between Loop playback (the sample will play repeatedly) and One-Shot playback (the sample will play only once).	p. 12
	[REVERSE] button	Switches to Reverse playback, in which the sample will play backward.	p. 12
11	[BANK] buttons	Use these buttons to switch between sample or pattern banks.	p. 11
12	[SHIFT] button	Use this button to make various settings.	p. 39
13	[HOLD] pad	This pad allows you to have a sample keep playing even after you take your finger off the pad.	p. 12
	[EXT SOURCE] pad	This pad plays the sound of the external (line or mic) input.	p. 24
	[SUB PAD] pad	This pad plays the sample of the pad you struck most recently.	p. 12
14	[MIC] button	This button switches the mic input on/off.	p. 17
15	Internal mic	This is the SP-404A's built-in mic. If you connect your own mic (sold separately) to the MIC jack of the top panel, this internal mic will not function.	p. 17



	Name	Description	Page
16	PHONES jack	You can connect stereo headphones here to listen to the same sound as from LINE OUT jacks.	p. 8
17	SD card slot	Insert an SD card here. There is a cover on the SD card slot, and this cover is fastened in place with a screw when the SP-404A is shipped from the factory. Remove the screw as described in "Remove the card lock screw to detach the card cover!" (p. 10).	p. 10
18	[MIC LEVEL] knob	This adjusts the volume of the SP-404A's internal mic or a mic connected to the MIC jack.	p. 19
19	MIC IN jack	You can connect a mic (separately sold) to this jack.	p. 17
20	Functional ground terminal	If necessary, connect this terminal to an external electrical ground.	
21	DC IN jack	Connect the included AC adaptor here.	p. 8
22	[POWER] switch	This turns the power on/off.	p. 9
23	MIDI IN jacks	You can connect a MIDI device to this connector.	p. 47
24	LINE IN jacks	Here you can connect your portable music player or other audio source device from which you want to sample.	p. 16
25	LINE OUT connector	Connect your amplified speakers or mixer system here.	p. 8
26	Security slot ( )	**http://www.kensington.com/**	

About Batteries



Remove the battery compartment cover located on the bottom of the SP-404A, and insert the batteries in the correct polarity (direction) as marked inside the battery compartment. Then close the cover securely.

NOTE

- **Battery handling**
  If you handle batteries improperly, you risk explosion and fluid leakage. Make sure that you carefully observe all of the items related to batteries that are listed in "USING THE UNIT SAFELY" and "IMPORTANT NOTES" (leaflet "USING THE UNIT SAFELY" and Owner's manual).
- When turning the unit over, be careful so as to protect the buttons and knobs from damage. Also, handle the unit carefully; do not drop it.

When the batteries run low

When the batteries run low, the display's illumination will turn off, and the dot in the lower right of the display and the [SHIFT] button will start blinking. If the batteries run down completely, "Lo" appears in the display and no further operations will be possible. If this occurs, replace the batteries immediately.

MEMO

When the remaining battery capacity decreases, the sound may be distorted when the [VOLUME] knob is in certain positions. If this occurs, replace the batteries.

Types of Batteries That Can be Used with the SP-404A

You can use the following types of batteries with the SP-404A.
Do not use any other type of batteries.

- Alkaline AA SIZE Dry Battery
- Ni-MH AA SIZE Rechargeable Battery

Specifying the type of batteries used

You'll need to specify the type of batteries you're using (alkaline or Ni-MH rechargeable). The SP-404A will calculate its remaining battery power based on the setting you make here.

1. **While holding down the [SHIFT] button, turn on the power.**
2. **Turn the [CTRL 3] knob to specify the type of batteries you're using.**

   The [REC] button will blink when you turn the knob.

Value	Description
AL	Alkaline dry battery
ni	Ni-MH rechargeable battery

3. **Press the [REC] button to confirm the setting.**

MEMO

This setting will be remembered even while the power is turned off.

Checking the Remaining Battery Power

1. **Make sure that the [SELECT] button is unlit.**

   If it's lit, press the [SELECT] button to turn it off.
2. **Press the [REMAIN] button.**

   While you hold down the button, the remaining battery power is indicated by the number of BANK buttons that are lit. If only the BANK [A/F] button is lit, it's time to replace the batteries. A while after this indication, the display will indicate "Lo," and it will no longer be possible to operate the SP-404A.

MEMO

When the power is on with the AC adaptor connected, all of the [BANK] buttons will be lit.

About Sleep Mode

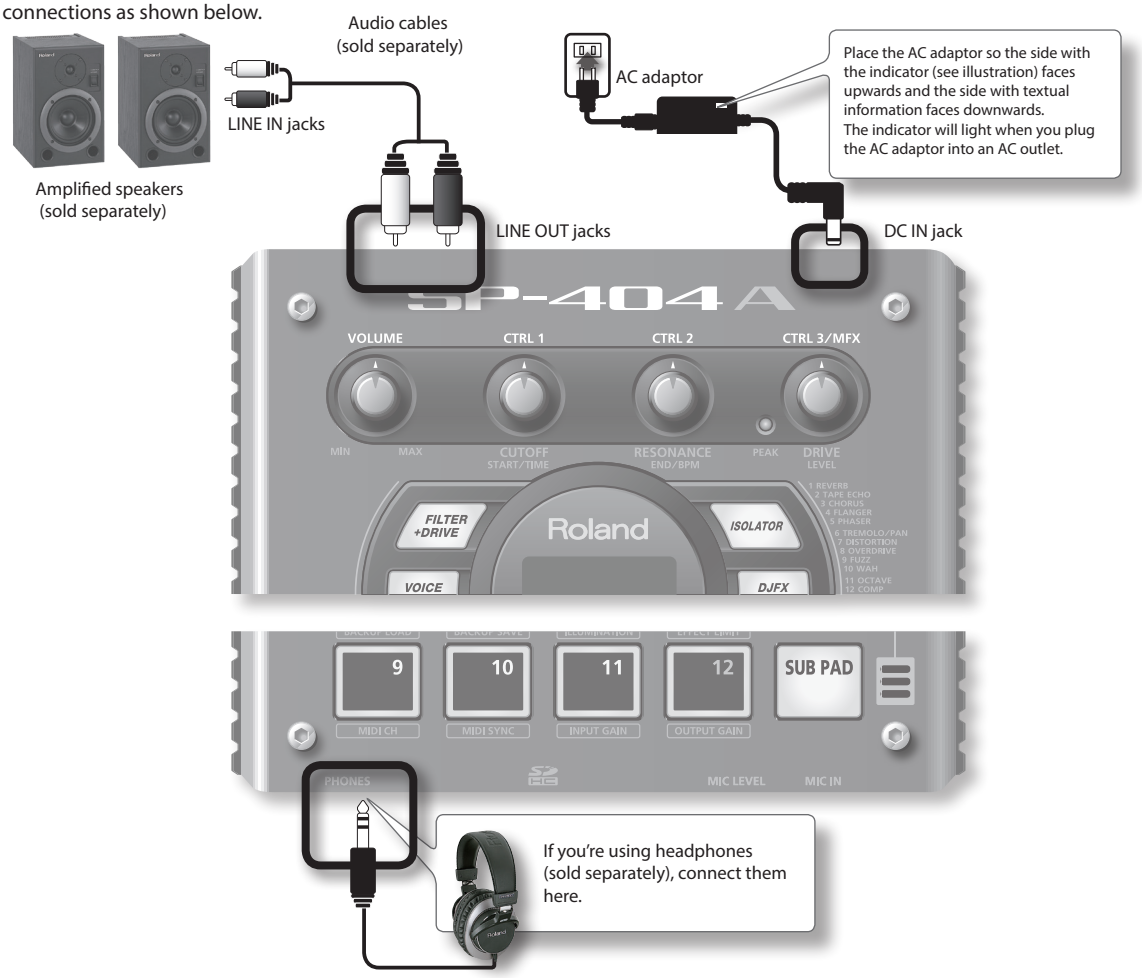
If you've selected the "SLP" (sleep) setting in "Display illumination and sleep settings" (p. 40), all of the SP-404A's buttons will go out when it has not been operated for approximately five minutes, and it will enter Sleep mode. This will extend the battery life when operating on batteries.

MEMO

Basic Operation

Connecting the SP-404A to Your Speakers

Make sure that the SP-404A and your amplified speakers (which we'll simply call "speakers") are powered off, and then make connections as shown below.



NOTE

To prevent malfunction and equipment failure, always turn down the volume, and turn off all the units before making any connections.

Turning the Power On

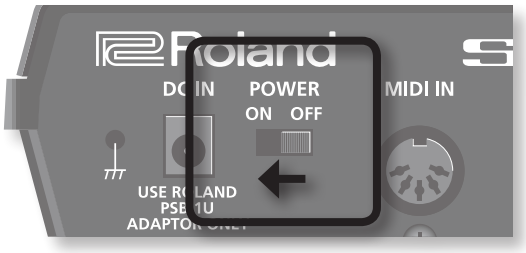
NOTE

Once the connections have been completed, turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunction and/or damage to speakers and other devices.

1. Minimize the volume of the SP-404A and your speakers.

Turn the SP-404A's [VOLUME] knob all the way to the left.

2. Turn the SP-404A's [POWER] switch ON.



NOTE

This unit is equipped with a protection circuit. A brief interval (a few seconds) after power up is required before the unit will operate normally.

3. Turn on the power of your speakers.

4. Adjust the volume.

While striking the pads of the SP-404A to produce sound, slowly turn the [VOLUME] knob toward the right, and adjust the volume on the SP-404A and on your speakers.

Turning the Power Off

1. Minimize the volume of the SP-404A and your speakers.

2. Turn off the power of your speakers.

3. Turn the SP-404A's [POWER] switch OFF.

Auto Off setting

The power to this unit will be turned off automatically after a predetermined amount of time has passed since it was last used for playing music, or its buttons or controls were operated (Auto Off function).

If you do not want the power to be turned off automatically, disengage the Auto Off function .

NOTE

- Any settings that you are in the process of editing will be lost when the power is turned off. If you have any settings that you want to keep, you should save them beforehand.
- To restore power, turn the power on again.

1. While holding down the BANK [A/F] button, turn on the power.

2. Turn the [CTRL 3] knob to select the desired setting for the Auto Off function.

Value	Explanation
oFF	The Auto Off function will not be used.
4Hr	The SP-404A will automatically be switched off four hours after you stop operating the unit.

3. Press the [REC] button to confirm your selection.

MEMO

The setting you make here will be retained even while the power is off.

Inserting an SD card

If you insert a commercially available SD card into the SP-404A, you'll be able to sample for longer times.

This section explains how to insert an SD card; however, when you purchase the SP-404A, an SD card containing the factory-set preload data is already inserted, so the procedure described here won't be necessary.

Remove the card lock screw to detach the card cover!

When the SP-404A is shipped, the card cover is locked by a screw installed at the location marked "CARD LOCK" on the bottom panel. To remove the card cover, you must first use a Phillips screwdriver to remove the CARD LOCK screw. The screw was placed there for stability during transportation from the factory; you can discard it without reusing it.

NOTE

- Take care that the screw you removed is not accidentally swallowed by small children.
- When turning the unit upside-down, get a bunch of newspapers or magazines, and place them under the four corners or at both ends to prevent damage to the buttons and controls. Also, you should try to orient the unit so no buttons or controls get damaged.
- Never insert or remove an SD card while this unit's power is on. Doing so may corrupt the unit's data or the data on the SD card.

1. Remove the card cover from the front panel.

2. Insert the SD card into the slot, and replace the cover.

Carefully insert the SD card all the way in—until it is firmly in place.

SD cards usable with the SP-404A

The SP-404A supports SDHC/SD cards up to a capacity of 32 GB.

Preparing an SD card for use

Before you can use a commercially available SD card with the SP-404A, you must format it as described in "Formatting an SD card" (p. 35). However, **do not format the SD card that was included with the SP-404A**. All of the preload data on the card will disappear if you format the included SD card.

* Some SD card types or SD cards from some manufacturers may not record or play back properly on the unit.

The SD card must be unlocked!

The SP-404A will be unable to function properly if the SD card is locked. ("LOC" will appear in the display.) Make sure that the SD card is not locked.

Removing an SD card

1. Press the SD card inward.

2. Grasp the card and pull it out toward yourself.

Playing Sounds

Playing Samples

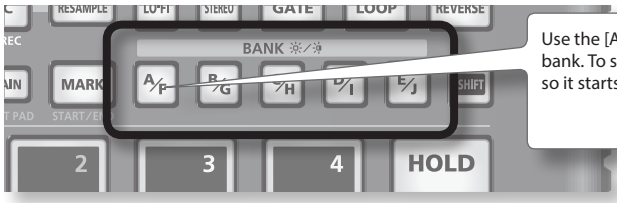
What's a sample?

Samples are pieces of sampled (recorded) sound together with their loop settings, etc. That are assigned to the twelve pads. You can play a sample by pressing the corresponding pad [1]–[12].

When you press a pad, its sample will play. The pad will light red while the sample is playing.

What's a sample bank?

A sample bank is a set of twelve samples assigned to the pads. The SP-404A has ten sample banks, A–J.



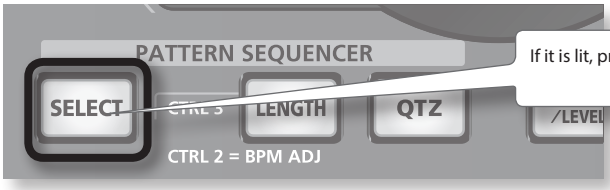
Use the [A/F]–[E/J] buttons to switch the sample bank. To select bank F, Press the [A/F] button twice so it starts blinking.

How many samples can play simultaneously?

The SP-404A can play 12 monaural samples or 6 stereo samples simultaneously.
While resampling (p. 26), the maximum is 4 monaural or 2 stereo samples.

The SD card inserted when the SP-404A is shipped from the factory has samples assigned to pads of some sample banks. You'll probably want to start by listening to these.

1. Make sure that the [SELECT] button is extinguished.



If it is lit, press the button to turn it off.

2. Press the BANK [A/F] button so the button is lit.

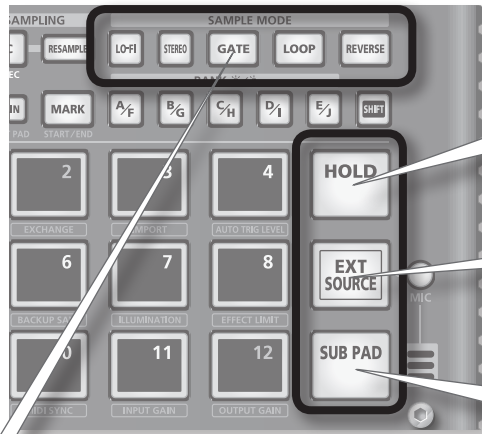
If the button is blinking, bank F is selected. Press the [A/F] button once again so it lights steadily.

3. Press a pad to play its sample.

That pad will blink while its sample is playing.

You can press two or more pads to play them simultaneously.

Try playing samples using the functions described below.



Holding a sample

While holding down a pad, press the [HOLD] pad to make the sample continue playing even after you release the pad. To stop the sample, press the pad once again.

Playing the sound of the external input

This pad plays the sound from the LINE IN jacks or mic input (p. 24).

Repeated strikes

When you press the [SUB PAD] pad, the same sample as the previously pressed pad will play. This makes it easy to use both hands to play rapid notes in succession.

Viewing or editing the sample settings

These buttons indicate the sample settings of the pad you pressed most recently (the "current pad").
You can change the sample settings by pressing these buttons

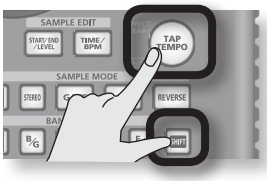
*** With the factory settings, the samples in some banks of the included SD card are protected, and cannot be edited. For details on how to turn off the protect setting, refer to "About the Protect Function" (p. 38).**

Button	When lit	When not lit
LO-FI	Play back with a lo-fi sound	Play back with the standard sound
GATE	Sample playback will stop when you release the pad	Sample playback will continue even if you release the pad
LOOP	Play back repeatedly (looped)	Play back once (not looped)
REVERSE	Play backward	Play normally

Pausing the sound (PAUSE)

Hold down the [SHIFT] button and press the [TAP TEMPO] (PAUSE) button; the sound will pause, and button operations will be disabled except for the operation of resuming playback.

To resume playback, once again hold down the [SHIFT] button and press the [TAP TEMPO] (PAUSE).



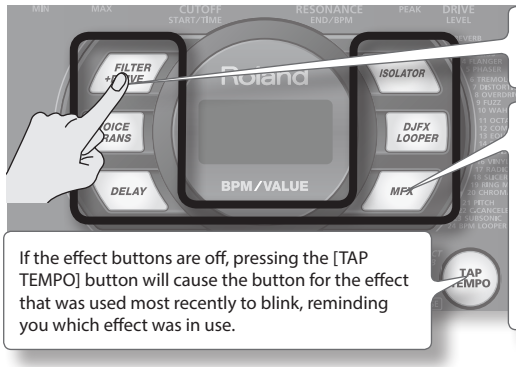
If the sound won't stop!

If the sound won't stop, Press the [CANCEL] button four times in rapid succession. All of the SP-404A's sounds will stop.

Applying Effects

The SP-404A contains 29 types of effects. As an example, here's how to apply the "FILTER + DRIVE" to a sample.

1. **Press a pad to play its sample.**
2. **Press the [FILTER + DRIVE] button.**



Use these buttons to switch effects (to switch an effect off, get the button's light to go out). You can't apply multiple effects simultaneously.

You can use any of the following ways to change the effect selected by MFX.

- Hold down the [MFX] button and turn the [CTRL 3] knob
- Hold down the [MFX] button and press a pad [1]–[12] (MFX 1–12)
- Hold down the [MFX] and [DJFX LOOPER] buttons and press a pad [1]–[12] (MFX 13–24)

If the effect buttons are off, pressing the [TAP TEMPO] button will cause the button for the effect that was used most recently to blink, reminding you which effect was in use.

3. **Turn the [CTRL 1]–[CTRL 3] knobs to adjust the effect.**

Knob	Display	Result
CTRL 1	CoF (CUTOFF)	Adjusts the filter's cutoff frequency.
CTRL 2	rES (RESONANCE)	Adjusts the filter's resonance.
CTRL 3	drU (DRIVE)	Adjusts the amount of drive (distortion).

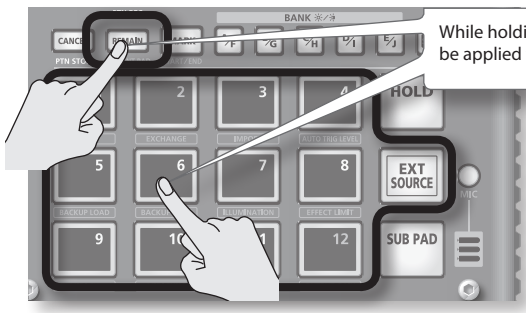
For details on each effect, refer to "Effect List" (p. 42).

Pre-specifying parameters for the effect you'll use next

Hold down the [REMAIN] button and turn the [CTRL 1]–[CTRL 3] knobs to edit the parameters. When you next press an effect button, that effect will be applied with the parameter values you pre-specified.

Applying an effect to multiple samples

Normally, the effect will be applied only to the pad you pressed most recently. However, by making use of [REMAIN] button, you can set it so an effect is applied to multiple samples.

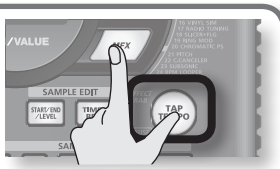


While holding down [REMAIN] button, press the desired pads to have the effect be applied to each pad that is lit.

If you hold down the [REMAIN] button and press the button of the effect you want to use, the effect will be applied to all samples.

Applying an effect only while you hold down the button (EFFECT GRAB)

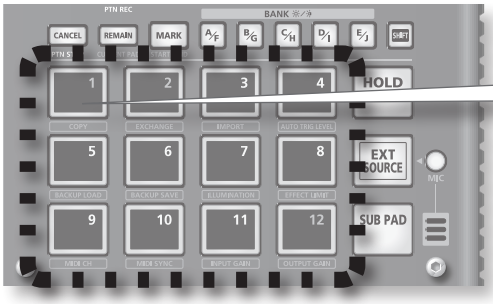
If you hold down the [TAP TEMPO] (EFFECT GRAB) button and press an effect button, the effect will be applied only while you hold down that effect button. This is a way to quickly turn an effect on/off in time with your performance.



Playing Patterns

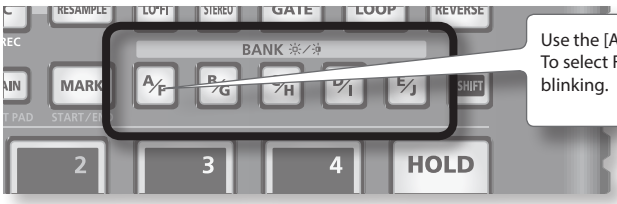
What's a pattern?

The SP-404A lets you successively play several samples by pressing a pad, and create a song by recording this performance. Such a succession of samples is called a "pattern."



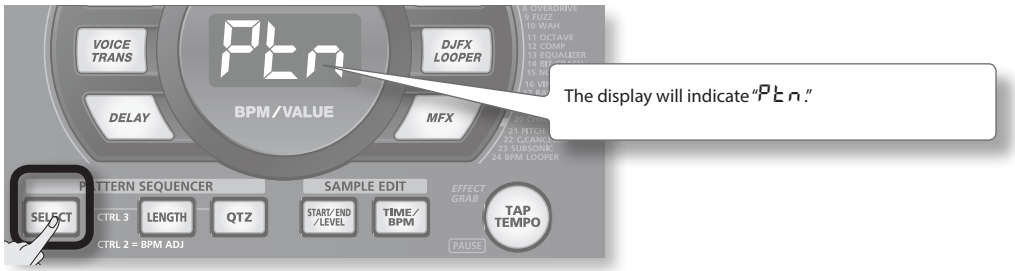
What is a pattern bank?

A "pattern bank" is a set of twelve patterns assigned to the pads. The SP-404A has ten pattern banks, A–J.



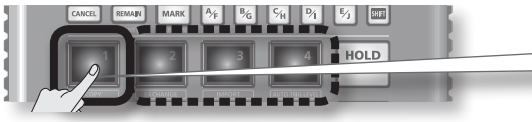
On the factory-installed SD card, patterns are assigned to pads of some pattern banks. You'll probably want to start by listening to these.

1. Press the [SELECT] button so it's lit.



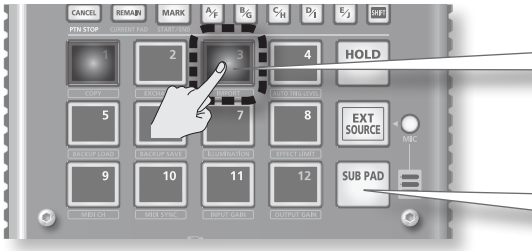
2. Press the BANK [A/F] button so the button is lit.

3. Press a pad, and the pattern will play.



The pad will change from blinking to lit, and the pattern will begin playing.

4. Press another pad to reserve the next pattern.



If you press another pad while a pattern is playing, the pattern to play next will be reserved, and that pad will blink. When the currently playing pattern has finished playing, the reserved pattern will play.

If you hold down the [SUB PAD] pad and press a pad, the pattern will change immediately.

5. Press the currently playing pad, and the pattern will stop playing.

Pattern playback will also stop if you press the [CANCEL] button.

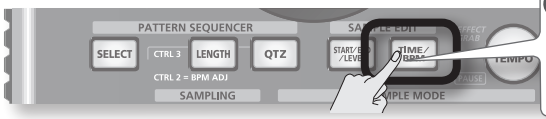
MEMO

For details on how to create a pattern, refer to "Recording a Pattern" (p. 32).

Adjusting the Tempo

Here's how to change the playback tempo of the pattern.

1. Press the [TIME/BPM] button so it's lit.



MEMO

If the [SELECT] button is lit, you'll be changing the pattern's tempo. If the [SELECT] button is extinguished, you'll be changing the current sample's tempo.

2. Turn the [CTRL 2] knob.

The display will indicate the tempo in terms of the BPM, and the pattern playback tempo will change.

Permissible values for the BPM range from 40 up to 200. However, if the BPM is within the 40–60 or 160–180 ranges, it can be set only in even-numbered values. If the BPM is above 180, you can set it to either 180, 183, 186, 190, 193, 196, or 200.

You can also set the tempo by pressing the [TAP TEMPO] button several times at quarter note intervals of the desired tempo.

3. Once you've specified the tempo, press the [TIME/BPM] button to turn it off.

What's BPM?

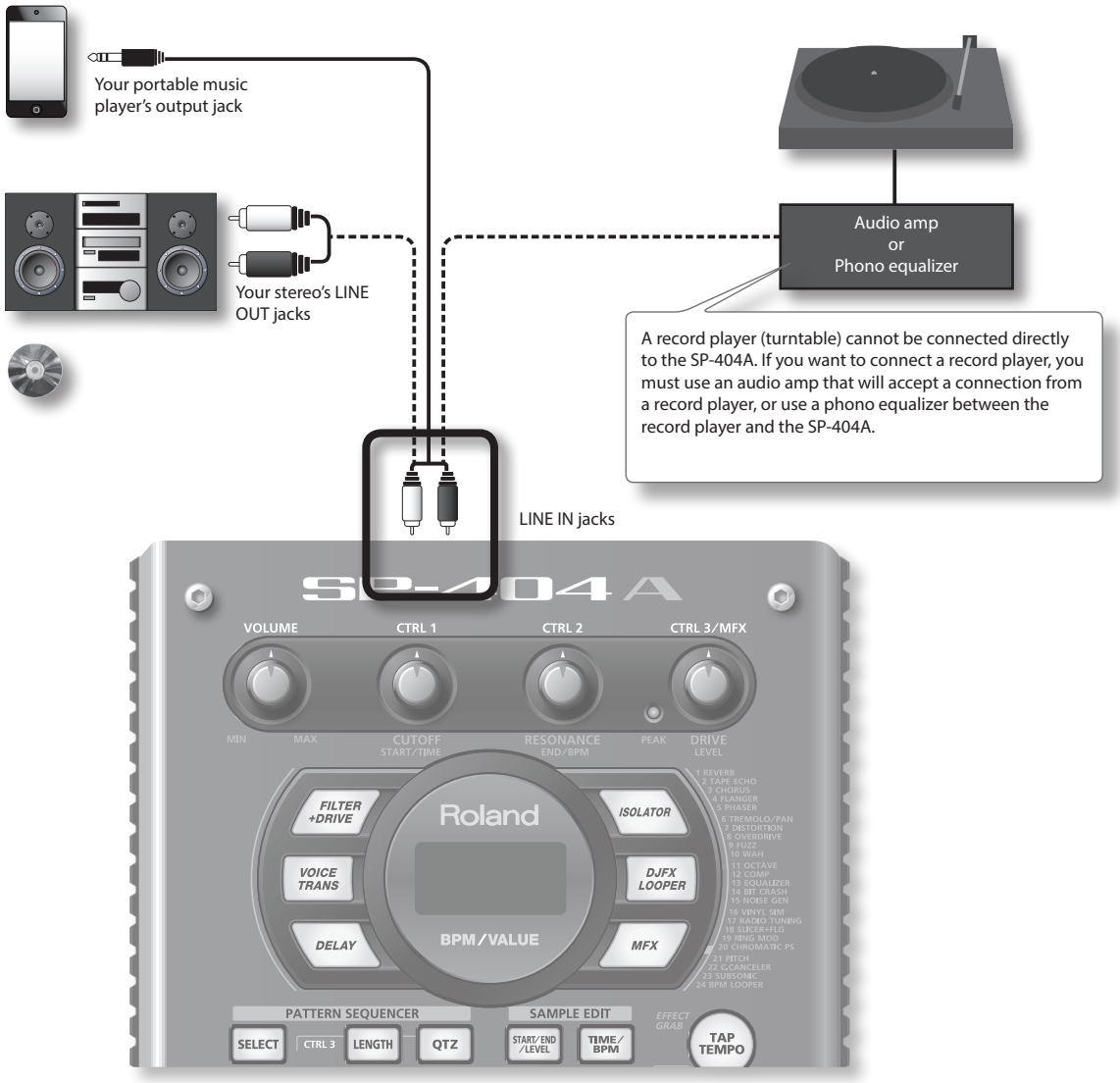
This stands for Beats Per Minute, which is the number of quarter-note beats played in one minute.

Recording Samples— Basic Operation

STEP 1: Connecting Equipment

Connecting a Portable Music Player or Stereo

If you're connecting your portable music player, stereo, or CD player, use audio cables to connect your device's output jacks (LINE OUT jacks, AUX OUT jacks, etc.) to the SP-404A's LINE IN jacks.

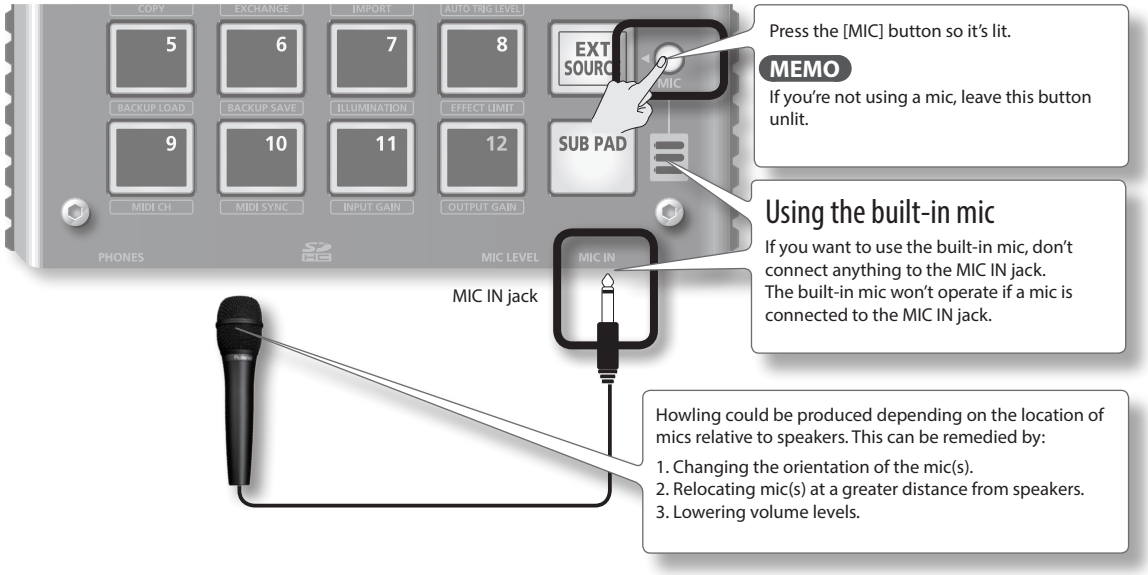


Caution when making connections

- To prevent malfunction and/or damage to speakers or other devices, always turn down the volume, and turn off the power on all devices before making any connections.
- When connection cables with resistors are used, the volume level of equipment connected to the inputs (LINE IN) may be low. If this happens, use connection cables that do not contain resistors.

Connecting a Mic

To use a mic, connect it to the MIC IN jack, then press the [MIC] button so it's lit.



Press the [MIC] button so it's lit.

MEMO

If you're not using a mic, leave this button unlit.

Using the built-in mic

If you want to use the built-in mic, don't connect anything to the MIC IN jack.
The built-in mic won't operate if a mic is connected to the MIC IN jack.

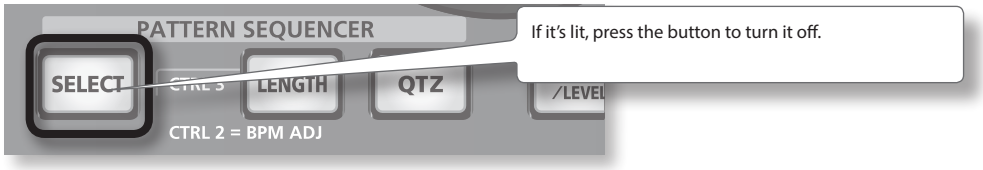
Howling could be produced depending on the location of mics relative to speakers. This can be remedied by:

1. Changing the orientation of the mic(s).
2. Relocating mic(s) at a greater distance from speakers.
3. Lowering volume levels.

STEP 2: Sampling

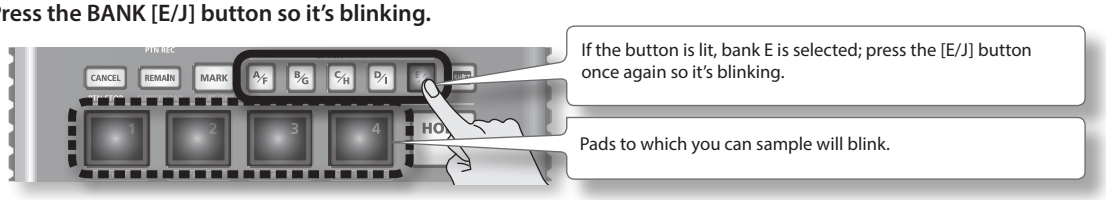
Here we'll explain how to use Sampling to record to pad [1] of bank J.

1. Make sure that the [SELECT] button is extinguished.

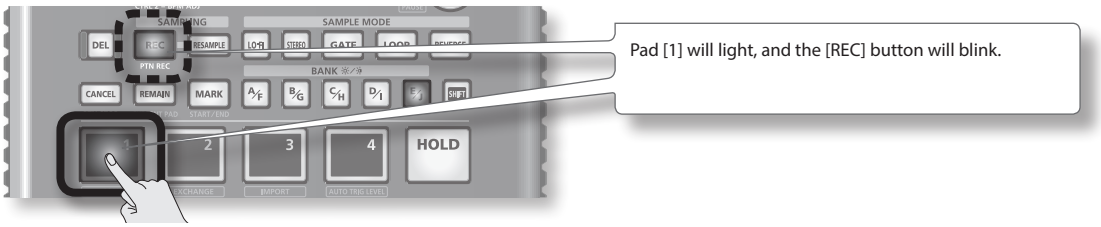


2. Press the [REC] button so the button is lit.

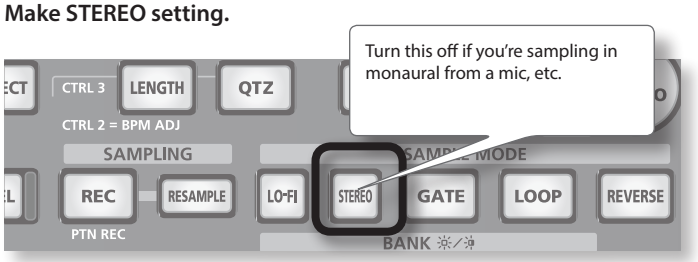
3. Press the BANK [E/J] button so it's blinking.



4. Press the pad [1].



5. Make STEREO setting.



How this affects the sampling time

Sampling in monaural will give you approximately twice as much sampling time as stereo.
Monaural sampling also allows you to play twice as many samples simultaneously (12 monaural samples, or 6 stereo samples).

Applying an effect while you sample

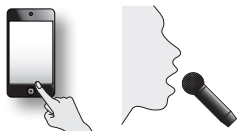
By pressing an effect button at this time, you can sample the sound processed by the effect.

MEMO

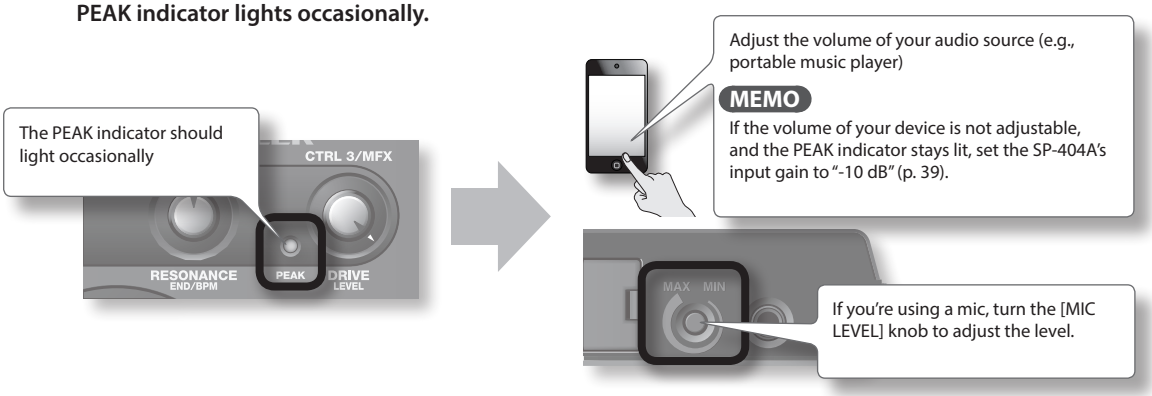
In this case, you can use the [CTRL 1] and [CTRL 2] knobs to adjust the effect settings. Because the [CTRL 3] knob is used to adjust the digital input level, it cannot be used to adjust the effect settings.

6. Adjust the recording level

6-1. Produce sound on the device that's connected to the SP-404A (if you're using a mic, vocalize into the mic).

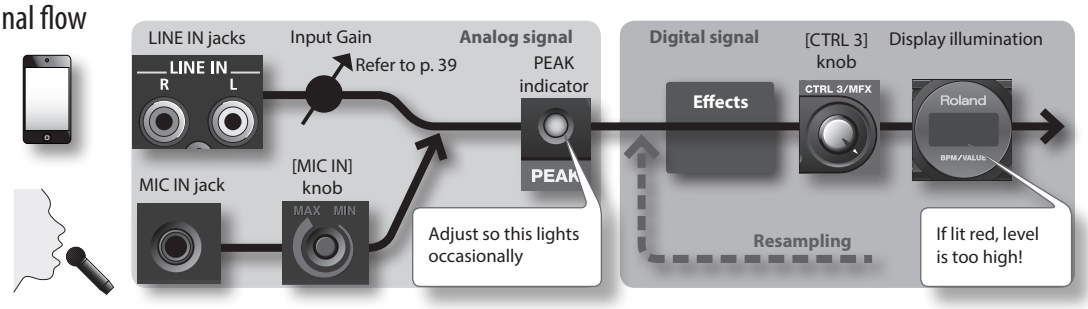


6-2. Adjust the volume of the device (e.g., portable music player) connected to the SP-404A so that the PEAK indicator lights occasionally.

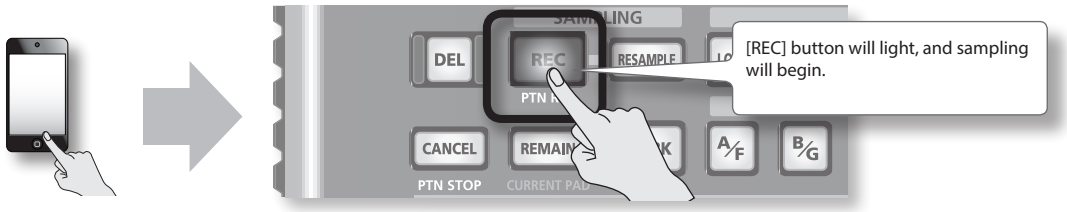


6-3. If the display illumination lights red, the internal digital input level is excessive; turn the [CTRL 3] knob toward the left until the display does not illuminate red.

Signal flow



7. Produce sound on the device that's connected to the SP-404A, and Press the [REC] button when you want to start sampling.



NOTE

Never turn off the power while sampling is in progress. If you turn off the power, not only the sample being recorded but also other samples may also be destroyed.

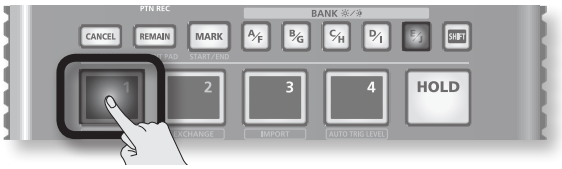
8. When you want to stop sampling, press the [REC] button.

If the display indicates "FUL"

In the following cases, the display will indicate "FUL," and sampling will end automatically.

- When there is no remaining free space on the SD card
- When the sample currently being recorded exceeds 2 GB (approximately 180 minutes in stereo)

9. Press the pad [1] to play back the sound you just sampled.



If the sample included an unwanted portion

If there is unwanted sound or silence at the beginning or end of the sample, you can make settings so that only the desired portion will be heard.

For details, refer to"Adjusting the Playback Region of a Sample" (p. 27).

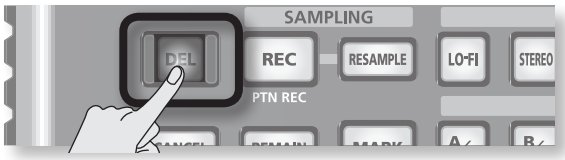
If you want to re-record the sample

Delete the sample as described in "Deleting a Sample" (p. 21) on the following page, and then re-record the sample.

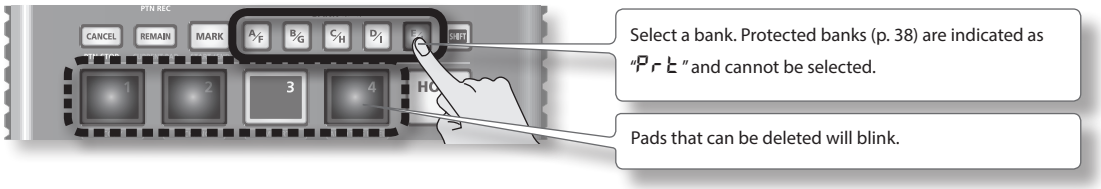
Deleting a Sample

If you are not satisfied with the sound you sampled, use the following procedure to delete it, and then sample the sound again.

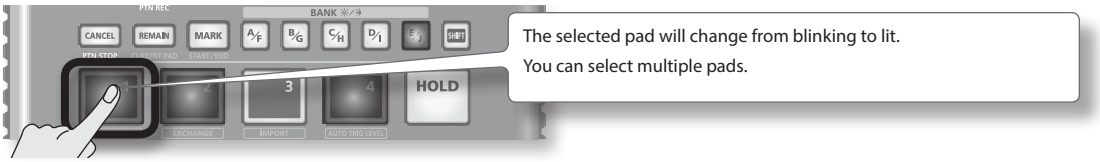
1. Press the [DEL] button.



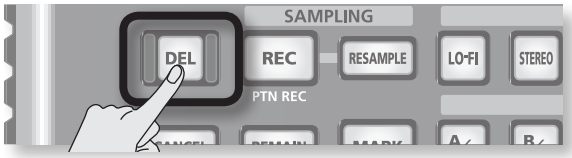
2. The display will indicate "dEL," and the pads that can be deleted will blink.



3. Press the pad that you want to delete.



4. Press the [DEL] button to delete the sample.



NOTE

Never turn off the power before the deletion is complete. When the deletion is complete, the "dAL" indication in the display will disappear.

MEMO

Advanced Operation

Playing an External Input Sound

Audio input from an external source (such as from a portable music player connected to the LINE IN jacks or a mic connected to the MIC IN jack) can be handled much like samples are on the SP-404A; it can be played and effects can be applied to it.

1. **Connect your portable music player or mic to the SP-404A as described in "Connecting a Portable Music Player or Stereo" (p. 16) or "Connecting a Mic" (p. 17).**
2. **Press the [EXT SOURCE] pad so the pad is lit. If you're inputting from a mic, you should also press the [MIC] button so it's lit.**

   The external audio input will be heard while the pad is lit.

   MEMO

   If the [GATE] button is lit, the sound will be heard only while you hold down the [EXT SOURCE] pad.
3. **To switch the external input between stereo and monaural, press the [STEREO] button to make the button light or go dark.**

   Stereo is selected when the button is lit.

   MEMO

   You should have the [STEREO] button lit for sources that are originally stereo, such as a portable music player.
4. **You can apply an effect to the external audio input by pressing one of the effect buttons to make it light (p. 13).**

   MEMO

   If the effect is not applied to the external audio input when you press an effect button to make it light, you should hold down the [REMAIN] (CURRENT PAD) button and press the [EXT SOURCE] pad. This will cause the effect to be applied to the external audio input.

Adjusting the Volume of the EXT SOURCE

You can adjust the volume of the [EXT SOURCE] pad. You should adjust the volume as follows.

1. **Press the [EXT SOURCE] pad so the pad is lit. If you're inputting from a mic, you should also press the [MIC] button so it's lit.**

   The external audio input will be heard.
2. **Press the [START/END/LEVEL] button so it's lit.**
3. **Turn the [CTRL 3] (LEVEL) knob to adjust the volume of the audio input.**

   If the SP-404A's display illumination lights red, the internal digital input level is overloading; turn the [CTRL 3] knob toward the left until the display illumination is no longer lit red.

   MEMO

   - If the volume of the external audio input does not change when you turn the [CTRL 3] (LEVEL) knob, hold down the [REMAIN] button (CURRENT PAD) and press the [EXT SOURCE] pad. (This operation will select the external input as the target for the volume adjustment.)
   - Then press the [START/END/LEVEL] button again and turn the [CTRL 3] (LEVEL) knob to adjust the volume.
4. **Press the [START/END/LEVEL] button once again.**

   The [START/END/LEVEL] button goes out, and the volume is set.

   MEMO

   When the power is turned on, this will always be the default value (127).

MEMO

This section explains more advanced methods of sampling. For basic sampling, refer to "Recording Samples— Basic Operation" (p. 16).

About the Available Sampling Times

The maximum sampling time (size) for a single sample is approximately 180 minutes in stereo (2 GB).

You'll be able to store a larger number of samples if you use a high-capacity SDHC card.

The following table shows the approximate total sampling time of the samples that can be stored on one SD card.

Card capacity	Stereo (mono)	Card capacity	Stereo (mono)
1 GB	Approx. 90 min. (180 min.)	8 GB	Approx. 720 min. (24 hours)
2 GB	Approx. 180 min. (360 min.)	16 GB	Approx. 24 hours (48 hours)
4 GB	Approx. 360 min. (720 min.)	32 GB	Approx. 48 hours (96 hours)

MEMO

Since the 1 GB SD card included with the SP-404A contains preload data, the available sampling time will be less than the time above.

Remaining sampling time

1. When you press the [REMAIN] button, the display will indicate the remaining time.

Min. Sec. Min. x10 Sec. Min. Hours

MEMO

The indication shows the time available for sampling in stereo mode. The remaining time indication is an estimate.

Specifying the Type of Data to Create when Sampling

The data produced when sampling with the SP-404A can be saved in either the WAV (.wav) format or AIFF (.aif) format. If you want to change the format of the data that is created when you sample, carry out the procedure below.

1. Hold down the [RESAMPLE] button and turn on the power.

2. Press the [SELECT] button to switch between WAV and AIF.

Either "UAU" (WAV) or "A, F" (AIFF) appears in the display when you press this button, showing you the current selection.

3. Press the [RESAMPLE] button to confirm your choice of file type.

MEMO

This setting will be remembered even after the power is switched off.

Starting Sampling Automatically (Auto Sampling)

The Auto Sampling function will cause sampling to begin automatically when the input signal (sound) exceeds a specified level. This is convenient when you want to begin sampling from the introduction of a song. Before you enter sampling standby mode, adjust the sampling trigger level as described below.

1. Hold down the [SHIFT] button and press the pad [4] (AUTO TRIG LEVEL).

The [REC] button will blink, and the display will indicate "- 0 -."

2. Turn the [CTRL 3] (LEVEL) knob to set the level.

The sampling trigger level will be the level at which the PEAK indicator lights. Turning the knob toward the right will raise the level. The display will indicate the level you specified (ten stages, 0–9).

MEMO

When "- 0 -" is indicated, conventional sampling will occur (i.e., auto sampling will not be used). Choose the "- 0 -" setting if you don't want to use auto sampling.

3. To check the sampling trigger level, press the [REC] button once again.

When you start sampling with auto sampling specified, the display will indicate "rdY" until a signal exceeding the sampling trigger level is received.

Sampling with a Specified Tempo

If you specify the BPM (tempo) while you're still in sampling standby mode, the end point (the timing at which the sound stops playing) will be automatically set after sampling to a beat of the BPM value you specified.

1. **Prepare for sampling as described in steps 1–6 of "STEP 2: Sampling" (p. 18).**
2. **Adjust the tempo as described in "Adjusting the Tempo" (p. 15).**
3. **Press the [REC] button to start sampling.**
4. **Press the [REC] button once again to stop sampling.**

MEMO

- When sampling ends, the end point will automatically be set according to the BPM, and the [MARK] button will light. Refer to "Adjusting the Playback Region of a Sample" (p. 27).
- If the sampled time is multiple measures or less than one measure, the BPM indication may be double or half. In this case, press the [TIME/BPM] button so the button is lit, then turn the [CTRL 2] (BPM) knob to set the desired value. Refer to "Changing a Sample's BPM" (p. 30).
- The displayed BPM value is an approximation derived from the sampled time, and may not be accurate.
- Depending on the BPM value, the time corresponding to the BPM may not precisely match the time from the start point to the end point. For this reason if you use Loop playback (p. 12) to continuously play a sample for an extended time, the timing will gradually drift.

Using a Count-in

You can add a count-in (1, 2, 3, 4) when you start sampling. This is convenient when you are sampling with a specific tempo or time signature in mind.

1. **Specify the tempo as described in steps 1–2 of "Sampling with a Specified Tempo" (p. 26)**
2. **Press the [START/END/LEVEL] button so the button is lit.**
3. **Press the [REC] button.**

   The metronome will sound, and the display will successively indicate.

   "- 1 -"->"- 2 -"->"- 3 -"->"- 4 -"->"rEC."

   Sampling will begin when the "rEC" indication appears.

Resampling

You can play back a sample with an effect applied, and then newly sample the result. This is called "resampling."

1. **Make sure that the [SELECT] button is extinguished.**

   If it is lit, press the [SELECT] button to turn it off.

2. **Apply an effect to the original sample, and adjust the effect parameters.**
3. **Press the [RESAMPLE] button so the button is lit.**

   The display will indicate "LEU."

4. **Play back the original sample.**
5. **Adjust the [CTRL 3] (LEVEL) knob so that the display illumination does not light red.**

   MEMO

   While the [RESAMPLE] button is lit, you can't use the [CTRL 3] knob to adjust the effect depth. If you want to use the [CTRL 3] knob to adjust the effect depth, press the [CANCEL] button to make the [RESAMPLE] button go out.

6. **Press the [REC] button so the button is blinking.**

   The bank buttons and pads to which resampling is possible will start blinking.

7. **Press the pad to which you want to resample, so the pad is lit.**

   You can also resample to a different bank.

   NOTE

   You can't resample to a pad to which a sample is already assigned.

8. **Use the [STEREO] button to specify the stereo/mono setting.**

   For details, refer to step 5 of p. 18.

9. **Press the [REC] button so the button is lit.**

   Resampling will not yet begin at this point.

10. **Press the pad to which you want to resample.**

    The sample will begin playing, and resampling will start.

    NOTE

    Never turn off the power during resampling. Turning off the power at this time may destroy not only the sample being resampled, but also other samples as well.

11. **When resampling is finished, press the [REC] button.**

    MEMO

    During resampling, you can simultaneously play up to four monaural samples or two stereo samples.

MEMO

For details on setting a sample's GATE, LOOP, REVERSE, and LO-FI parameters, refer to p. 12.

Setting a Sample's Volume

Here's how to adjust the volume of each pad.

1. **Make sure that the [SELECT] button is extinguished. If it is lit, press the [SELECT] button to turn it off.**
2. **Press the pad to which the sample whose volume you want to adjust is assigned.**

   The pad will light, and that sample will play.
3. **Press the [START/END/LEVEL] button so the button is lit.**
4. **Turn the [CTRL 3] (LEVEL) knob to adjust the sample's volume.**
5. **When you've finished making adjustments, press the [START/END/LEVEL] button to turn off its light.**

   Turning the [CTRL 3] (LEVEL) knob toward the left will reduce the volume, and turning it toward the right will increase the volume. A setting of 127 is the maximum volume. The default value immediately after sampling is 127.

MEMO

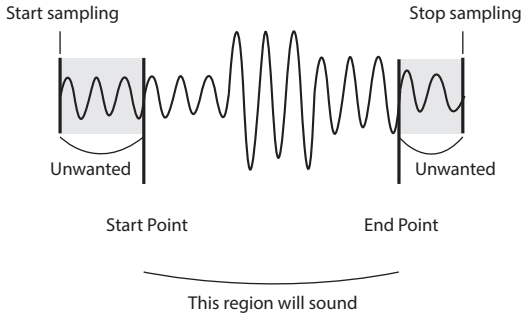
While the [START/END/LEVEL] button is lit, you can adjust not only the volume but also the start point and end point (p. 27) by using the [CTRL 1] and [CTRL 2] knobs. If you've moved the [CTRL 1] or [CTRL 2] knobs by accident, set them back to the center position. The settings will return to their previous values. If you press the [START/END/LEVEL] button to turn off the button's light without returning the knobs to the center, the modified start point and end point settings will be set.

Adjusting the Playback Region of a Sample

For each sample, the SP-404A lets you specify the region within the sample's waveform data that will actually play.

The point within the waveform data at which playback will begin is called the Start Point, and the point at which playback will end is the End Point.

If there is unwanted sound or silence at the beginning of a sampled sound, you can omit this by adjusting the Start Point. If the unwanted material is at the end, you can adjust the End Point.



MEMO

- When you specify the start point or end point, the BPM (tempo) will be automatically calculated according to the newly specified duration, and displayed. If the duration is multiple measures or less than one measure, the displayed BPM value may be half or double the actual value. To set the BPM to the desired value, refer to "Changing a Sample's BPM" (p. 30).
- In some cases, such as if the length of the region is three beats, it may not be possible to calculate or adjust the BPM value correctly.

Canceling the Adjusted Playback Region (Deleting a Marker)

The [MARK] button will light if you've specified either the start point or end point. If you want to cancel these settings, press the lit the [MARK] button during playback to turn off the button's light.

MEMO

By carrying out the procedure explained in "Deleting an Unwanted Portion (Truncate)" (p. 29), you can delete the portions other than the specified playback region, so that the start point and end point are the beginning and end of the sample.

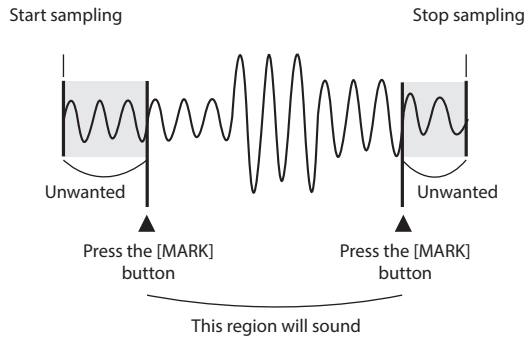
Adjusting Both the Start Point and End Point

1. **Make sure that the [SELECT] button is extinguished. If it is lit, press the [SELECT] button to turn it off.**
2. **Press the pad whose playback region you want to adjust, making it sound.**

MEMO

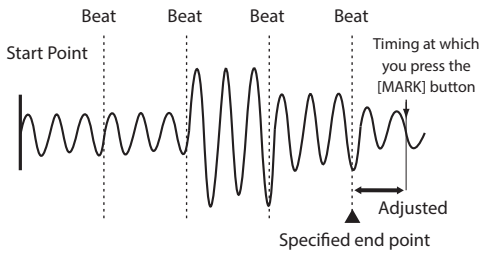
If the [MARK] button is lit, the start point or end point has already been adjusted. In this case, cancel the start point/end point setting (p. 27) before you proceed with the steps below.

3. **While listening to the sound, press the [MARK] button at the timing of the desired start point.**
4. **Press the [MARK] button again at the timing of the desired end point.**



MEMO

If you specify the BPM (tempo) between steps 3 and 4, the end point will automatically be set to the location of the beat that is closest to the timing at which you press the [MARK] button in step 4 (in units of beats of the BPM value, beginning at the start point). To specify the BPM, you can either press the [TIME/BPM] button so the button is lit and then turn the [CTRL 2] knob, or press the [TAP TEMPO] button several times.



Adjusting Only the End Point

1. **Make sure that the [SELECT] button is extinguished. If it is lit, press the [SELECT] button to turn it off.**
2. **Hold down the [MARK] button, and press the pad whose playback region you want to adjust, making it sound.**
3. **When the sound begins to play, release the [MARK] button.**
4. **While the sound plays, press the [MARK] button at the timing of the desired end point.**

MEMO

If you press the [MARK] button to turn off its light while the sound is playing, the change in the start point and end point will be cancelled.

Adjusting Only the Start Point

1. **Make sure that the [SELECT] button is extinguished. If it is lit, press the [SELECT] button to turn it off.**
2. **Press the pad whose playback region you want to adjust, making it sound.**

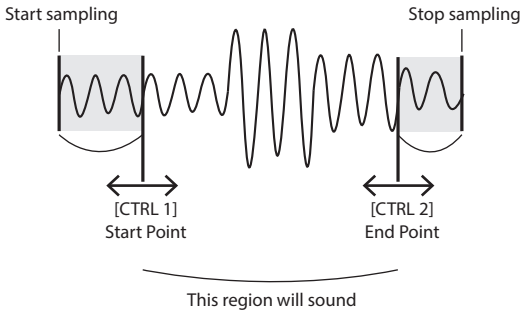
MEMO

If the [MARK] button is lit, the start point or end point has already been adjusted. In this case, cancel the start point/end point setting (p. 27) before you proceed with the steps below.

3. **While listening to the sound, press the [MARK] button at the timing of the desired start point.**
4. **Stop the pad playback.**

Making Fine Adjustments to the Start Point and End Point

1. **Make sure that the [SELECT] button is extinguished. If it is lit, press the [SELECT] button to turn it off.**
2. **Play the pad whose playback region you want to adjust, making it the current pad.**
3. **Press the [START/END/LEVEL] button so the button is lit.**
4. **Use the [CTRL 1] knob to adjust the start point, and the [CTRL 2] knob to adjust the end point.**
5. **When you've finished making adjustments, press the [START/END/LEVEL] button to turn off its light.**

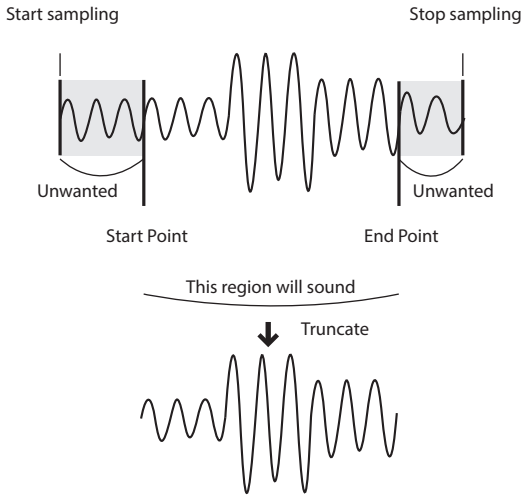


MEMO

- You can press the pad to produce sound even while making adjustments.
- For both the [CTRL 1] and [CTRL 2] knobs, turning the knob toward the left will move the start point/end point toward the beginning of the sound, and turning the knob toward the right will move the point toward the end of the sound.
- You can't adjust the playback region beyond the beginning or end of the sample.
- If you decide to cancel the adjustment, return the [CTRL 1] and [CTRL 2] knobs to the center position so that the indication is "0."
- The range of movement for a single operation is approximately 130 milliseconds before or after the current start point or end point. If you want to adjust the point by a greater amount, repeat the same procedure.
- You can't set the start point and end point closer than approximately 100 milliseconds.
- If your adjustment results in the start point and end point being respectively at the beginning and end of the sample, the [MARK] button will go out.
- If the [MARK] button is extinguished (i.e., if the playback region has not been adjusted), adjusting the sample's start point or end point will cause the [MARK] button to light.
- When you move the start point or end point, the sample's BPM (tempo) will automatically change accordingly. However, there will be a small discrepancy in the BPM.

Deleting an Unwanted Portion (Truncate)

By specifying the start/end points and then deleting the unneeded portion (Truncate), you can make more efficient use of memory.



NOTE

This operation cannot be undone.

1. **Play the pad that you want to truncate, making it the current pad.**
2. **Make sure that the [MARK] button is lit (indicating that the playback region has been adjusted).**
3. **Press the [DEL] button.**
4. **Press the [MARK] button. The display indication will change to "trC."**
5. **Press the [DEL] button, and the truncation process will begin. When "trC" disappears from the display, the operation is complete.**

MEMO

Never turn off the power before this operation has been completed. Doing so will destroy the SD card.

Changing a Sample's BPM

A sample's BPM (tempo) is automatically determined by the length between the sample's start point and end point. However, depending on this length, the calculated BPM value may be half or double the actual BPM. In this case, you can correct the BPM as follows.

1. **Play the pad that you want to change, making it the current pad.**
2. **Press the [TIME/BPM] button so the button is lit.**
3. **Turn the [CTRL 2] (BPM) knob to change the BPM value. Turn the knob toward the left if you want to halve the displayed value, or toward the right if you want to double it.**
4. **When you've made the change, press the [TIME/BPM] button once again to turn off the button's light.**

MEMO

While you're performing this operation, the [CTRL 1] knob will perform the Time Modify function. Be careful not to change it inadvertently.

Changing the Length of a Sample without Changing the Pitch (Time Modify)

If you want to consecutively play samples of differing tempo, you can use the Time Modify function to create natural-sounding transitions so that the tempo is not interrupted.

If you've specified Reverse Playback (p. 12), the Time Modify setting is disabled, and the effect won't be obtained. If you want to use Time Modify, you must turn off Reverse Playback.

1. **Play the pad that you want to change, making it the current pad.**
2. **Press the [TIME/MODIFY] button so the button is lit.**
3. **Turn the [CTRL 1] (TIME) knob to change the length. The display will indicate the sample length in terms of the BPM.**
4. **When you've finished making the change, press the [TIME/BPM] button once again to turn off the button's light.**

MEMO

- Turning the [CTRL 1] (TIME) knob all the way to the left will turn Time Modify off, so that the sample will play at its original length (The display will indicate "oFF.")
- Turning the [CTRL 1] (TIME) knob all the way to the right will cause the sample to play at the tempo of the pattern (The display will indicate "Ptn.")
- The BPM can be adjusted to any value from half to approximately 1.3 times the original BPM. However, the BPM must fall within the 40–200 range.
- If Time Modify is set to "Ptn," the tempo of the sample will change according to the pattern's tempo within a range of between half and approximately 1.3 times the sample's original BPM. If the pattern's tempo is set outside this range, the sample's tempo is limited to the maximum value (200) or minimum value (40).
- Please be aware that a sample for which you've specified Time Modify may sound quavery or noisy.

Deleting All Samples

Here's how to delete the samples of all banks in a single operation.

MEMO

If you want to delete only one or several samples, refer to "Deleting a Sample" (p. 21).

1. **Make sure that the [SELECT] button is extinguished.**

   If it is lit, press the [SELECT] button to turn it off.

2. **While holding down the [CANCEL] button, press the [DEL] button.**

   The display will indicate "dAL," and the [DEL] button will light. The [BANK] buttons will blink.

3. **Press one of the [BANK] buttons.**

MEMO

- If you specify a bank that is protected (p. 38), the display will indicate "Prt" (Protected), and you won't be able to delete anything.
- If you decide to cancel the operation at this point, press the [CANCEL] button.

4. **Press the [DEL] button.**

   When the deletion is complete, the "dAL" indication in the display will disappear.

NOTE

Never turn off the power before the deletion is complete. Doing so will destroy the SD card.

Exchanging Samples between Two Pads

You can exchange samples between two pads. This lets you bring together the desired samples into a single bank.

MEMO

If you decide to cancel this operation during the procedure, press the [CANCEL] button.

1. **Hold down the [SHIFT] button and press the pad [2] (EXCHANGE).**

   The display will indicate "EXG," and the [DEL] button and the [REC] button will light.

2. **Press the pad for one of the samples you want to exchange.**

3. **Press the other pad.**

   MEMO

   You can also select to a different bank.

   When the two pads have been pressed, the [REC] button will blink.

4. **When you press the [REC] button, the exchange will begin.**

   When the "EXG" indication in the display has disappeared, the exchange is complete.

NOTE

- If there is not enough free memory to perform the exchange, the display will indicate "FUL" and the exchange cannot be performed.
- Never turn off the power before the exchange has been completed. Doing so will destroy the SD card.

Copying a Sample to Another Pad

You can copy a sample from one pad to another pad. This lets you create another sample based on an existing sample.

MEMO

If you decide to cancel this operation during the procedure, press the [CANCEL] button.

1. **Hold down the [SHIFT] button and press the pad [1] (COPY).**

   The display will indicate "CPY."

2. **Press the pad for the copy-source sample.**

   Pads that are available as copy sources will blink.

3. **Press the copy-destination pad.**

   MEMO

   You can also select to a different bank.

   When the two pads have been pressed, the [REC] button will blink.

4. **When you press the [REC] button, the copy will begin.**

   When the indication of "CPY" in the display has disappeared, the copy is complete.

NOTE

- If there is not enough free memory to perform the copy, the display will indicate "FUL" and the copy cannot be performed.
- Never turn off the power before the copy has been completed. Doing so will destroy the SD card.

Pattern Sequencer

The SP-404A contains a Pattern Sequencer function that can record sample-playback operations. Another way to use this capability is to combine several phrase samples to create a simple song, or to combine rhythm samples to create rhythm patterns.

MEMO

Here we'll explain how to record into the pattern sequencer, and also describe some advanced uses. For details on playing back the pattern sequencer, refer to "Playing Patterns" (p. 14).

Recording a Pattern

When you play samples and record your performance as a pattern, recording will occur repeatedly for the number of measures you specify (i.e., "loop recording"), allowing you to continue layering (overdubbing) additional samples onto the pattern.

1. Press the [SELECT] button so the button is lit.

The display will indicate "PTn" and the pads to which a pattern is assigned will blink.

2. Press the [REC] button so the button is lit.

All pads to which no pattern is assigned will blink.

3. Press one of the [BANK] buttons to select the pattern bank into which you want to record.

4. Press the pad to which you want to assign the pattern you're going to record.

The pad you pressed will light, and the remaining pads will go out. The [REC] button will blink, and the metronome will begin sounding

5. Press the [START/END/LEVEL] button so the button is lit.

6. Turn the [CTRL 3] (LEVEL) knob to adjust the metronome volume.

7. Press the [TIME/BPM] button so the button is lit.

The display will indicate the pattern tempo (BPM).

8. Specify the pattern tempo, either by turning the [CTRL 2] (BPM) knob, or by pressing the [TAP TEMPO] button several times at the desired tempo.

9. Press the [LENGTH] button so the button is lit.

The display will indicate the length (number of measures) of the pattern that will be recorded.

10. Turn the [CTRL 3] knob to specify the length of the pattern.

The display will indicate the pattern length you specify.

Range: 1–99

If the pattern already contains data, you can't make it shorter than its current length.

You can specify the pattern length in one-measure units for the range of 1–20 measures, and in four-measure units for longer patterns.

11. Press the [QTZ] button so the button is lit.

The [LENGTH] button will go out, and the display will indicate the quantize setting.

MEMO

What is quantization?

Quantization is a function that automatically corrects the slight inaccuracies in timing that can sometimes occur when you are pressing pads and playing samples to produce a recording. Once you've specified a quantize setting, your performance will be recorded at accurate intervals of quarter notes, eighth notes, or sixteenth notes.

12. Turn the [CTRL 3] knob to specify the desired quantize setting.

The display will indicate the quantize setting you specify. The indication has the following significance.

5.8	Quantize to 8th notes using shuffle quantize.
5.16	Quantize to 16th notes using shuffle quantize.
4	Quantize to quarter notes.
4.3	Quantize to quarter-note triplets.
8	Quantize to eighth notes.
8.3	Quantize to eighth-note triplets.
16	Quantize to sixteenth notes.
16.3	Quantize to sixteenth-note triplets.
32	Quantize to thirty-second notes.
oFF	Quantize will not be used. The actual timing at which you pressed the pad will be recorded.

MEMO

If you use shuffle quantize (5.8, 5.16), use the [CTRL 2] knob to specify the amount of "shuffle" for backbeats. A setting of "50" will produce a "straight" rhythm with no shuffle. Settings in a range of 60–66 will usually produce a pleasant shuffle feel.

13. Press the [QTZ] button to extinguish the button.

14. Press the [REC] button.

The [REC] button will change from blinking to lit, and recording will begin.

There will be a one-measure count before recording actually begins, so wait for one measure while listening to the metronome. During this time, the display will indicate a count of -4, -3, -2, -1.

When the count ends, recording will begin, and the display will indicate the measure and beat.

15. Press the pads at the desired timing.

During recording, you can use the pads to play samples. You can also press a bank button to switch sample banks.

The samples of the pads you pressed will play, and will be recorded at the timing specified by the selected quantize setting.

When the measure number shown in the display reaches the pattern length you specified, you will automatically return to measure one, and recording will continue ("loop recording"). The previously recorded performance will play back during this time.

If you press the [REC] button once again so the button is blinking, the display will indicate "rEH" and you'll be in Rehearsal mode. In this state, pressing the pads will play the corresponding samples, but they won't be recorded. When you press the [REC] button once again so the button is lit, you'll exit Rehearsal mode and return to the conventional recording mode.

This gives you a convenient way to find the next sample that you want to play.

16. Press the pads of samples that you want to overdub.

The pad performance that you recorded on the previous pass will be recorded along with your newly added pad performance (overdubbed). You can use this method to gradually build up complex rhythms that would be impossible to play all at once.

During this recording process, you can change the quantization as follows.

1. **Press the [QTZ] button so the button is lit.**
2. **Turn the [CTRL 3] knob to change the quantize setting.**
3. **When you've made the desired setting, press the [QTZ] button to extinguish the button.**

The new quantize setting will be applied immediately.

17. When you want to stop recording, press the [CANCEL] button.

The dot in the display will blink. When the blinking stops, recording is complete.

NOTE

Never turn off the power while the dot is blinking. Doing so may destroy the SD card.

Erasing a Mistake from Your Performance

If you've played a sample by mistake while recording, you can use the corresponding pad to erase it from the recorded pattern.

1. **Press the [SELECT] button so the button is lit.**

   The display will indicate "Ptn" and pads to which a pattern is assigned will blink.

2. **Press the [REC] button so the button is lit.**
3. **Press the pad for the pattern containing the performance from which you want to delete the mistake.**

   The pad you pressed will light, and the other pads will go out. The [REC] button will blink, and the metronome will begin sounding.

4. **Press the [REC] button to start recording.**

   The [REC] button will change from blinking to lit, and recording will begin.

   The recorded performance will play back. If you press the pad of a sample at this time, it will be recorded.

5. **Press the [DEL] button so the button is lit.**

   The display will indicate "Er 5."

6. **Press the pad for the sample that you want to erase, throughout the period where you want the erasure to take place.**

   The dot in the display will blink, and any occurrences of that sample will be erased from the pattern during the duration that you hold down the pad.

   MEMO

   By holding down the [HOLD] pad you can erase the performances of all pads.

7. **Repeat step 6 as desired.**
8. **When you've finished erasing mistakes, press the [DEL] button.**

   The [DEL] button will go out, and the pattern will return to normal recording.

   If you press the pad of a sample at this time, it will be recorded.

9. **Press the [CANCEL] button to carry out the erasure.**

   The dot in the display will blink while the erasure is being carried out. When the blinking stops, the erasure is complete.

   NOTE

   Never turn off the power while the dot is blinking. Doing so may destroy the SD card.

Deleting a Pattern

1. **Press the [SELECT] button so the button is lit.**

   The display will indicate "PTn" and the pads that have been recorded will blink.

2. **Press the [DEL] button so the button is lit.**

   The display will indicate "dEL."

   If the display indicates "EMP," that bank does not contain any pads to which a pattern is assigned.

3. **Press a bank button and a pad to specify the bank and pad of the pattern you want to delete.**

   The selected pad will light, and the [DEL] button will blink.

   MEMO

   - Nothing will happen if you press a pad to which no pattern is assigned (i.e., a pad that is not lit).
   - You can simultaneously select more than one pad if they are in the same bank.
   - If you specify a bank that's protected (p. 38), the display will indicate "PrT" (Protected) and you won't be able to delete a pattern.
   - If you decide not to delete a pattern, press the [CANCEL] button.

4. **Press the [DEL] button to carry out the deletion.**

   During this process, the [DEL] button will change from blinking to lit, and the dot in the display will blink. When the dot stops blinking, deletion has been completed.

   NOTE

   Never turn off the power while the dot is blinking. Doing so may destroy the SD card.

Deleting All Patterns

Here's how to delete the patterns of all banks in a single operation.

1. **Press the [SELECT] button so the button is lit.**

   The display will indicate "PTn," and pads that are recorded will blink.

2. **While holding down the [CANCEL] button, press the [DEL] button.**

   The display will indicate "dAL," and the [DEL] button will light. The [BANK] buttons will blink.

3. **Press one of the [BANK] buttons.**

   MEMO

   - If protection is in effect (p. 38), "PrT" (Protected) will be displayed, and you won't be able to carry out the deletion.
   - If you decide not to delete the patterns, press the [CANCEL] button.

4. **Press the [DEL] button to carry out the deletion.**

   During this process, the [DEL] button will change from blinking to lit, and the dot in the display will blink. When the dot stops blinking, the deletion has been completed.

   NOTE

   Never turn off the power while the dot is blinking. Doing so may destroy the SD card.

Exchanging the Patterns of Two Pads

By exchanging patterns between two pads, you can change the way in which patterns are assigned to the pads.

MEMO

If you decide to cancel this operation during the procedure, press the [CANCEL] button.

1. **Press the [SELECT] button so the button is lit.**

   The display will indicate "PTn."

2. **Exchange the patterns, using the procedure described in "Exchanging Samples between Two Pads" (p. 31).**

   In the procedure, read "pattern" wherever the explanation says "sample."

Copying a Pattern to Another Pad

You can copy a pattern from one pad to another pad. This lets you create a new pattern based on an existing pattern.

MEMO

If you decide to cancel this operation during the procedure, press the [CANCEL] button.

1. **Press the [SELECT] button so the button is lit.**

   The display will indicate "PTn."

2. **Copy the patterns, using the procedure described in "Copying a Sample to Another Pad" (p. 31).**

   In the procedure, read "pattern" wherever the explanation says "sample."

About SD Card

MEMO

For details on recommended SD cards, and on how to insert or remove an SD card, refer to "Inserting an SD card" (p. 10).

For details on SD card capacity and available sampling times, refer to "About the Available Sampling Times" (p. 25).

Formatting an SD card

NOTE

- When you format an SD card, all data on that card will be erased.
- **Do not format the SD card included with the SP-404A!**
  The included SD card contains preload data. All of this data will be lost if you format the included SD card.

Restoring the included SD card to the factory-set condition

To restore the SD card included with the SP-404A to its factory-set condition, refer to "Restoring the Factory Settings (Factory Reset)" (p. 40).

1. **While holding down the [CANCEL] button, press the [REMAIN] button.**

   The [BANK] buttons will blink, and the display will indicate "FMt."

2. **Press any one of the [BANK] buttons.**

   The [BANK] buttons will change from blinking to lit, and the [DEL] button will blink.

   MEMO

   If you decide not to format the card, press the [CANCEL] button.

3. **Press the [DEL] button.**

   The [DEL] button will light, and formatting will begin.

   During the formatting process, the dot in the display will blink.

   When the blinking stops, formatting is complete.

NOTE

- Never turn off the power while the dot is blinking. Doing so may damage the SD card, rendering it unusable.
- Don't modify or delete the files or folders that are created when an SD card is formatted. The SP-404A will not recognize the card correctly if you do so.

Saving the contents of an SD card to your computer

Use a commercially available card reader to copy the entire contents of the SD card to your computer.

Copying to another SD card

For example, if you've used up all the available space on a 1GB SD card, you can copy your data to a higher-capacity card (such as a 16 GB one) that you've purchased. Proceed as follows.

1. **Copy the entire contents of the 1 GB SD card to your computer.**
2. **Format the purchased SD card on the SP-404A (p. 35).**
3. **Using your computer, copy the data you copied in step 1 to the SD card you formatted in step 2, overwriting any files that were on the card.**

Exporting WAVE Files

Data sampled by the SP-404A is saved on the SD card as WAVE files (WAV/AIFF) ("Specifying the Type of Data to Create when Sampling" (p. 25)). You can use a commercially available card reader to copy the contents of the SD card into your computer so that WAVE files (WAV/AIFF) sampled on the SP-404A can be used on your computer.

How WAVE files (WAV/AIFF) are shown

The WAVE files (WAV/AIFF) are located in the following folder of the SD card.

ROLAND/SP-404A/SMPL

When you use your computer to view the contents of the above folder, you'll see the file names of the WAVE files (WAV/AIFF) as follows.

A0000001.WAV
A0000002.WAV
:
A0000012.WAV
B0000001.WAV
:
J0000001.WAV

MEMO

- The letter at the beginning of the file name indicates the bank name, and the number indicates the pad name.
- For example, **B0000003.WAV** is the sample for pad [3] of bank B.

Importing WAVE Files

You can import WAVE files via SD card and assign them to pads.

1. **Using your computer, copy the WAVE file (WAV/AIFF) into the SD card's "/ROLAND/IMPORT" folder.**
2. **Insert the SD card into the SP-404A, then switch on power to the SP-404A.**
3. **Make sure that the [SELECT] button is extinguished.**

   If it is lit, press the [SELECT] button to turn it off.
4. **Hold down the [SHIFT] button and press the pad [3] (IMPORT).**

   The display will indicate "IMP" (File Import), the [REC] button will light, and pads the [1]–the [12] will blink.
5. **Select the import-destination sample bank.**

   Press one of the [BANK] buttons.

   MEMO

   If you specify a bank that is protected (p. 38), the display will indicate "PRT" (Protected), and you won't be able to import the file.
6. **Select the import-destination pad.**

   The pad you pressed will light, and the other pads will stop blinking.

   The [REC] button will also blink. If a sample is assigned to the selected pad (or subsequent pads if you selected more than one pad), it will be overwritten.
7. **Press the [REC] button so the button is lit.**

   The import process will begin. During the import process, the dot in the display will blink. When the blinking dot has disappeared, the import process has been completed.

Rules for importing

- The WAVE files will be imported in the ASCII code order (follows this order: numerals, uppercase letters, then lowercase letters) of their file names.
- If there are multiple files, they will be imported in order of their filename, starting with the pad you selected.
- If samples already exist, they will be overwritten when you import. However, if there are protected banks, those banks will be skipped when importing.
- The WAVE files (WAV/AIFF) in the imported "/ROLAND/IMPORT" folder will be deleted automatically.

Caution when importing

- Use an SD card that was formatted by the SP-404A. If you're using the SD card that was included with the SP-404A, don't format the card.
- Importing will take approximately half as long as the playback time of the WAVE file.
- Once you start the import process, you cannot cancel it before completion.
- A maximum of 120 WAVE files can be handled when importing. If you've placed a larger number of WAVE files than this on the SD card, it won't be possible to import the files in their ASCII code order.
- Loop point settings in an AIFF file will be ignored.

If the display indicates "EMP"

- If there are no WAVE files in the SD card's "/ROLAND/IMPORT" folder, the display will indicate "EMP" (Empty), and import will not be possible.
- You can't use the " . " (period) character at the beginning of a file name. Nor can certain other characters (¥ / : , : * ? " < > |) be used in a file name.

If the display indicates "UNS"

- If you attempt to import a WAV/AIFF file whose format is not supported by the SP-404A, the error message "UNS" (Unsupported) will appear, and you won't be able to import the file.
- Compressed WAVE files cannot be imported.
- In some cases, it may not be possible to import WAVE files of an extremely short duration (shorter than 100 ms).

Saving Backup Data (Backup Save)

This operation will save backup data (all data including sample banks and pattern banks) to the SD card. You can save up to 12 backups.

MEMO

If you've saved numerous samples and patterns on a card, and it doesn't have much space remaining, you'll only be able to save a small number of backup sets.

1. Hold down the [SHIFT] button and press the pad [6] (BACKUP SAVE).

The display will indicate "SAU," and the pads to which backup data has not been saved will blink.

2. Select the desired save-destination pad.

The selected pad will light, the other pads will go out, and the [REC] button will light.

MEMO

If you decide to cancel, press the [CANCEL] button.

3. Press the [REC] button.

The [REC] button will light, and the backup save operation will be executed. During execution, the dot in the display will blink. When the blinking stops, the backup save operation has been completed.

NOTE

Never turn off the power while the dot is blinking. Doing so may destroy the SD card.

Loading Backup Data (Backup Load)

This operation will load backup data (all data including sample banks and pattern banks) from the SD card.

NOTE

Once you execute the Backup Load procedure, all of your existing samples and patterns will be overwritten by the backup data as it is loaded.

1. Hold down the [SHIFT] button and press the pad [5] (BACKUP LOAD).

The display will indicate "Lod," and the pads to which backup data has been saved will blink.

MEMO

- If the memory is protected (p. 38), the display will indicate "Prt" (Protected) and the backup load operation cannot be executed.
- If there is no backup data on the SD card, the display will indicate "EMP" and the backup load operation cannot be executed.

2. Press a pad to select the backup data that you want to load.

The selected pad will light, and the other pads will go out. The [REC] button will blink.

MEMO

If you decide to cancel, press the [CANCEL] button.

3. Press the [REC] button.

The [REC] button will light, and the backup load operation will be executed. During execution, the dot in the display will blink. When the blinking stops, the backup load operation has been completed.

NOTE

Never turn off the power while the dot is blinking. Doing so may destroy the SD card.

Deleting Backup Data (Backup Delete)

This operation will delete backup data on the SD card.

1. Hold down the [SHIFT] button and press the pad [5] (BACKUP LOAD) to access the Backup Load screen.

2. Press the [DEL] button.

The display will indicate "bdL," and the pads to which backup data has been saved will blink.

3. Press a pad to specify the backup data you want to delete.

The selected pad will light, and the other pads will go out.

The [DEL] button will blink.

MEMO

If you decide to cancel, press the [CANCEL] button.

4. Press the [DEL] button.

The [DEL] button will light, and the backup delete operation will be executed. During execution, the dot in the display will blink. When the blinking stops, the Backup Delete operation has been completed; you will return to the Backup Load screen.

NOTE

Never turn off the power while the dot is blinking. Doing so may destroy the SD card.

About the Protect Function

You can protect an SD card so that the samples and patterns on the card cannot be overwritten or deleted accidentally.

NOTE

On the SD card included with the SP-404A, sample banks and pattern banks contain preload data and are protected. If you cancel protection for these banks, it is possible that the data may be overwritten or deleted. If you want to restore the SD card to its factory-set state, refer to "Restoring the Factory Settings (Factory Reset)" (p. 40).

Protecting all Samples and Patterns

1. While holding down the [REMAIN] button, turn on the power.

The display will indicate "P.on," and the samples and patterns of banks A–J will be protected.

NOTE

If you use an SD card with the same SP-404A, the card banks will also be protected, but the card will not be protected when used with your computer.

MEMO

This setting is retained even while the power is turned off.

Cancelling Protection for All Data

1. While holding down the [CANCEL] button, turn on the power.

The display will indicate "P.oF," and protection will be cancelled for the samples and patterns of banks A–J.

MEMO

- Protection will be cancelled for the factory-set samples and patterns.
- This setting is retained even while the power is turned off.

Protecting an Individual Bank

1. Press the [SELECT] button to select the type of data (samples or patterns) that you want to protect.

- To protect sample banks, the [SELECT] button needs to be extinguished.
- To protect pattern banks, the [SELECT] button needs to be lighted.

2. Press the [BANK] button to select the bank that you want to protect.

3. Hold down the [SHIFT] button and press the [REMAIN] button.

The display will indicate "P.on."

The [REC] button will blink.

MEMO

If you decide to cancel, press the [CANCEL] button.

4. Press the [REC] button.

The selected bank will be protected.

Cancelling Protection for an Individual Bank

1. Press the [SELECT] button to select the type of data (samples or patterns) for which you want to cancel protection.

- To cancel protection for a sample bank, the [SELECT] button needs to be extinguished.
- To cancel protection for a pattern bank, the [SELECT] button needs to be lighted.

2. Press the [BANK] button to select the bank for which you want to cancel protection.

3. Hold down the [SHIFT] button and press the [CANCEL] button.

The display will indicate "P.oF."

The [REC] button will blink.

MEMO

If you decide to cancel, press the [CANCEL] button.

4. Press the [REC] button.

Protection will be cancelled for the selected bank.

Other Functions

List of Functions

You can access the following functions by holding down the [SHIFT] button and pressing the corresponding pad.

For details on each function, refer to the page listed in the table below.

Pad	Function	Description	Page
TAP TEMPO	PAUSE	Stops all sound	p. 12
1	COPY	Copies a sample or pattern	p. 31, p. 34
2	EXCHANGE	Exchanges the patterns or samples of pads	p. 31, p. 34
3	IMPORT	Imports WAV/AIFF files from the SD card	p. 36
4	AUTO TRIG LEVEL	Adjusts the trigger level for auto sampling	p. 25
5	BACKUP LOAD	Loads backup data	p. 37
6	BACKUP SAVE	Saves backup data	p. 37
7	ILLUMINATION	Display illumination and sleep settings	p. 40
8	EFFECT LIMIT	Used to make settings for Effect Limit mode	p. 42
9	MIDI CH	Changes the MIDI channel	p. 47
10	MIDI SYNC	Synchronization with an external MIDI device	p. 47
11	INPUT GAIN	Adjusts the input gain	p. 39
12	OUTPUT GAIN	Adjusts the output gain	p. 39

Adjusting the Input Gain

Here's how to adjust the SP-404A's input gain.

MEMO

If the PEAK indicator stays lit and it's not possible to adjust the volume of your audio source device, set the SP-404A's input gain to "-10 dB."

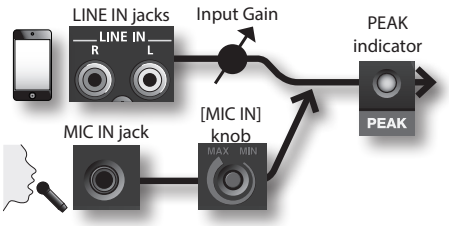
1. **Hold down the [SHIFT] button and press the pad [11] (INPUT GAIN).**
2. **Turn the [CTRL 3] (LEVEL) knob to make the setting.**

   The [REC] button will blink when you turn the knob.

   Range: -10 dB, 0 dB
3. **Press the [REC] button to confirm the setting.**

MEMO

- If you decide to cancel, press the [CANCEL] button.
- This setting is retained even while the power is turned off.



Adjusting the Output Gain

Here's how to adjust the overall volume of the SP-404A.

MEMO

The SP-404A has a maximum polyphony of twelve notes. There will be a major difference in the volume depending on whether one note or twelve notes are being produced. If you are playing only a few pads at a time, or if you have connected the SP-404A to a DJ mixer or other device, and are using it as an effects processor, raising this internal processing level will allow you to output a higher level. If you are playing a larger number of pads simultaneously and the sound is distorting, you should lower this internal processing level.

1. **Hold down the [SHIFT] button and press the pad [12] (OUTPUT GAIN).**
2. **Turn the [CTRL 3] (LEVEL) knob to adjust the setting.**

   The [REC] button will blink when you turn the knob.

   Range: -3 dB, 0 dB, 3 dB, 6 dB, 9 dB, 12 dB
3. **Press the [REC] button to confirm the setting.**

MEMO

- If you decide to cancel, press the [CANCEL] button.
- This setting is retained even while the power is turned off.

Restoring the Factory Settings (Factory Reset)

This operation will restore the SD card's sample and pattern data, as well as the SP-404A's internal settings and data to their factory-set condition. In order to perform this operation, you'll need a computer and a commercially available card reader.

NOTE

When you perform this operation, the sample and pattern data of all banks, as well as the SP-404A's internal settings will all be lost. If you wish to keep any of this data, you must back it up before proceeding (p. 37).

1. Prepare an SD card that has been formatted on the SP-404A (p. 35).

If you're using the SD card that was included with the SP-404A, or an SD card that is currently being used with the SP-404A, there's no need to format the card.

2. While holding down the [CANCEL] button, turn on the power to cancel all protection.

The display will indicate "P.oF" indicating that protection has been turned off for all samples and patterns.

3. Switch off the SP-404A's power.

4. Using your computer, copy the "FCTRY" folder to the root directory (the top level) of the SD card.

MEMO

- The SD card included with the SP-404A already has the "FCTRY" folder, so step 4 will not be necessary.
- For details on downloading the "FCTRY" folder, refer to the Roland website.
  http://www.roland.com/support/
- The "FCTRY" folder contains the factory-set preset data.

5. Insert the SD card into the SP-404A, and while holding down the [CANCEL], [REMAIN], and [DEL] button buttons, turn on the power.

The display will indicate "rnl," and the [REC] button will blink.

MEMO

If you decide not to proceed with this Factory Reset operation, you can simply turn off the power at this point.

6. If you're sure that you want to restore the SP-404A to its factory-set state, press the [REC] button.

The [REC] button will light, and the dot in the display will blink. When the operation has been completed, the blinking will stop.

NOTE

Never turn off the power while the dot is blinking. Doing so may destroy the SD card.

MEMO

If you're using the SD card included with the SP-404A or an SD card that is being used with the SP-404A, and are executing this procedure from step 2, the backup data on the card will not be erased by this procedure.

Erasing the sample/pattern data of all banks

By executing this procedure starting with step 5 with an SD card that has no "FCTRY" folder, you can make the sample and pattern data of all banks be empty. The internal settings of the SP-404A itself will be the factory settings.

Restoring only the SP-404A's internal settings to the factory-set state

By executing step 5 and following without inserting an SD card, you can restore only the internal settings to their factory-set state.

Display Illumination and Sleep Settings

Here's how to specify the color of the illumination around the display, and make Sleep settings.

1. While holding down the [SHIFT] button, press the pad [7] (ILLUMINATION).

2. Turn the [CTRL 3] knob to change the setting.

The [REC] button will blink when you turn the knob.

Setting	Description
oFF	The illumination will not blink. It will not blink even during pattern playback.
r b	The illumination will blink in two colors, red and blue (default setting).
b	The illumination will blink only in blue.
r	The illumination will blink only in red.
SLP	After approximately five minutes have elapsed without any operation being performed, all of the SP-404A's buttons will go out and it will enter Sleep mode. This will extend the battery life if you're running on batteries. • When in Sleep mode, the three dots in the display will blink sequentially. • To exit Sleep mode, press any button. • The display illumination setting will be the same as "oFF." • No sound will be produced while in Sleep mode.

3. Press the [REC] button to confirm the setting.

MEMO

- If you decide to cancel, press the [CANCEL] button.
- This setting is retained even while the power is turned off.

Checking the Version Number

1. While holding down the [MARK] button, turn on the power.

The display will indicate the version number.

MEMO

Press the [CANCEL] button to return to the normal state.

Appendix


SP-404A
VOLUME
CTRL 1
CTRL 2
CTRL 3/MFX
FILTER +DRIVE
ISOLATOR
VOICE TRANS
DJFX LOOPER
DELAY
MFX
Roland
BPM/VALUE
PATTERN SEQUENCER
SAMPLE EDIT
SELECT
LENGTH
QTZ
TAP TEMPO
SAMPLING
SAMPLE MODE
REC
RESAMPLE
GATE
LOOP
REVERSE
CANCEL
REMAIN
MARK
SHIFT
HOLD
EXT SOURCE
SUB PAD
MIC
PHONES
MIC LEVEL
MIC IN

Effect List

Effect Limit Mode

If you turn on Effect Limit mode, the depth of the effect will be limited to prevent unintentionally loud sounds or oscillation. You may find this function convenient in high-volume situations, such as in a club or live performance.

Parameters that are affected by Effect Limit mode are marked by a ★ symbol in the "Effect List."

1. Hold down [SHIFT] button and press the pad [8] (EFFECT LIMIT).

2. Turn the [CTRL 3] knob to make the setting.

The [REC] button will blink.

"L.on": Effect Limit mode is on

"L.oF": Effect Limit mode is off

3. Press the [REC] button to confirm the setting.

MEMO

- If you decide to cancel, press the [CANCEL] button.
- This setting is retained even while the power is turned off.

Effects that You Can Select by Directly Pressing a Button

Type	CTRL 1 function (display)	CTRL 2 function (display)	CTRL 3 function (display)
FILTER+DRIVE	CUTOFF (CoF)	RESONANCE (rES)★	DRIVE (drU)★
A low-pass filter with overdrive. It cuts the high frequencies and adds distortion.	Adjusts the frequency that will be cut.	Adjusts peak frequency response at the cutoff frequency.	Adds distortion.
VOICE TRANS	FORMANT (Frn)	EFFECT LEVEL (EFF)	DIRECT LEVEL (di r)
Processes a human voice to create a variety of characters.	Adjusts the character (formant) of the voice.	Adjusts the volume of the effect sound.	Adjusts the volume of the direct sound.
DELAY	DELAY TIME (t32–t 1)*1	FEEDBACK (Fdb)★	BALANCE (bAL)
Repeats the sound.	Adjusts the interval of the repeats.	Adjusts the number of the repeats.	Adjusts the volume balance between the direct sound and effect sound.
ISOLATOR	LOW (Lo)★	MID (Mi d)★	HIGH (Hi)★
Isolates or removes the low, mid, or high frequency ranges.	Isolates/removes the low-frequency range.	Isolates/removes the mid-frequency range.	Isolates/removes the high-frequency range.
DJFX LOOPER	LENGTH (LEn)★	SPEED (- 1.0– 1.0)	LOOP SW (oFF/on)
Loops a short portion of the input sound. You can vary the playback direction and playback speed of the input sound to add turntable-type effects.	Specifies the length of the loop.	Specifies the playback direction and playback speed. Turning the knob to the left of 12 o'clock produces backward playback, and turning the knob to the right of 12 o'clock produces forward playback. At 12 o'clock, the playback is stopped.	If you turn this on while sound is playing, the sound at that point will be looped. Turn this off to cancel the loop.

MFX

No.	Type	CTRL 1 function (display)	CTRL 2 function (display)	CTRL 3 function (display)
1	REVERB	REVERB TIME (tr n)	TONE (ton)	BALANCE (bAL)
	Adds reverberation to the sound.	Adjusts the reverberation time.	Adjusts the tone of the reverberation.	Adjusts the volume balance between the direct sound and effect sound.
2	TAPE ECHO	RATE (rAt)	INTENSITY (int)★	BALANCE (bAL)
	Simulates a tape-type echo unit of the past.	Specifies the tape speed.	Specifies the amount of echo repeat.	Adjusts the volume balance between the direct sound and effect sound.
3	CHORUS	DEPTH (dPt)	RATE (rAt)	BALANCE (bAL)
	Adds spaciousness and richness to the sound.	Adjusts the depth of modulation.	Adjusts the rate of modulation.	Adjusts the volume balance between the direct sound and effect sound.
4	FLANGER	DEPTH (dPt)	RATE (rAt)	FEEDBACK (Fdb)★
	Creates modulation reminiscent of a jet airplane taking off and landing.	Adjusts the depth of modulation.	Adjusts the speed of modulation.	Adjusts the proportion of effect sound that is returned to the input.

No.	Type	CTRL 1 function (display)	CTRL 2 function (display)	CTRL 3 function (display)
5	PHASER	DEPTH (dPt)★	RATE (rAt)	MANUAL (MAn)
	Creates modulation by adding a phase-shifted sound.	Adjusts the depth of modulation.	Adjusts the speed of modulation.	Adjusts the pitch of the effect sound.
6	TREMOLO/PAN	DEPTH (dPt)	RATE (rAt)	WAVEFORM (trM/PAn)
	Cyclically varies the volume or panning.	Adjusts the amount of change in volume/panning.	Adjusts the speed of volume/ panning change.	Specifies the volume/panning modulation curve. Turn knob to left to vary the volume, or to the right to vary the panning.
7	DISTORTION	DRIVE (drU)★	TONE (ton)★	LEVEL (LEU)★
	Intensely distorts the sound.	Adjusts the degree of distortion.	Adjusts the tone.	Adjusts the volume.
8	OVERDRIVE	DRIVE (drU)★	TONE (ton)★	LEVEL (LEU)★
	Mildly distorts the sound.	Adjusts the degree of distortion.	Adjusts the tone.	Adjusts the volume.
9	FUZZ	DRIVE (drU)★	TONE (ton)★	LEVEL (LEU)★
	Adds overtones and intensely distorts the sound.	Adjusts the degree of distortion.	Adjusts the tone.	Adjusts the volume.
10	WAH	PEAK (PEt)	RATE (rAt)	MANUAL (MAn)
	Produces a wah effect.	Adjusts the width of frequencies to which effect is applied.	Adjust the speed of modulation.	Adjusts the pitch of the effect sound.
11	OCTAVE	-2OCT LEVEL (oC2)	-1OCT LEVEL (oC1)	DIRECT LEVEL (dir)
	Adds a pitch at lower octaves.	Adds a pitch two octaves below.	Adds a pitch one octave below.	Adjusts the volume of the direct sound.
12	COMP	SUSTAIN (SUS)	ATTACK (ATt/rEL)★	LEVEL (LEU)★
	Makes the sound more consistent.	Adjusts the depth of the compressor.	Adjusts the attack. If Limit mode is on (rEL), this adjusts the release.	Adjusts the volume.
13	EQUALIZER	LOW (Lo)★	MID (Mid)★	HIGH (Hi)★
	Adjusts the volume of each frequency region.	Adjusts the low-frequency volume.	Adjusts the mid-frequency volume.	Adjusts the high-frequency volume.
14	BIT CRASH	SAMPLE RATE (rAt)	BIT (bit)★	FILTER (FLt)
	Produces an extreme lo-fi effect.	Adjusts the sample rate.	Adjusts the bit depth.	Adjusts the filter depth.
15	NOISE GEN	WHITE NOISE (WHt)	DISC NOISE (dis)	HUM NOISE (HUM)
	Applies a lo-fi effect, and also adds noises such as white noise and record noise.	Adjusts the volume of the "hiss" noise.	Adjusts the volume of the "pop" noise.	Adjusts the volume of the "hum" noise.
16	VINYL SIM	FREQUENCY RANGE (rnG)	NOISE LEVEL (nos)	WOW/FLUTTER (FLU)
	Simulates sound heard from an analog record.	Adjusts the frequency response of the playback system.	Adjusts the volume of noise.	Adjusts the rotational instability of the analog record.
17	RADIO TUNING	DETUNE (tUn)	NOISE LEVEL (nos)	BALANCE (bAL)
	Simulates sound heard from a radio.	Adjusts the tuning drift of the radio.	Adjusts the volume of noise.	Adjusts the volume balance between the direct sound and effect sound.
18	SLICER+FLG	TIMING PTN (P01–P16) (*2)	RATE (t32–t1) (*1)	FEEDBACK (Fdb)★
	Repeatedly cuts the sound. A flanger is added.	The timing at which the sound is cut.	Adjusts the length of TIMING PTN.	Adjusts the flanger depth.
19	RING MOD	FREQUENCY (Fr9)★	SENS (SEn)★	BALANCE (bAL)
	Gives the sound a metallic character.	Adjusts the pitch of the metallic sound.	Adjusts the depth to which the frequency is modulated.	Adjusts the volume balance between the direct sound and effect sound.
20	CHROMATIC PS	PITCH1 (-12–12)	PITCH2 (-12–12)	BALANCE (bAL)
	A two-voice pitch shifter that changes the pitch in semitone steps.	Changes pitch 1 in semitone steps over a +/-1 octave range.	Changes pitch 2 in semitone steps over a +/-1 octave range.	Adjusts the volume balance between the direct sound and effect sound.
21	PITCH	PITCH (Pit)	FEEDBACK (Fdb)★	BALANCE (bAL)
	Changes the pitch.	Adjusts the amount of pitch change.	Adjusts the amount of pitch-shifted sound that is fed back.	Adjusts the volume balance between the direct sound and effect sound.

Effect List

No.	Type	CTRL 1 function (display)	CTRL 2 function (display)	CTRL 3 function (display)
22	C.CANCELER	L–R BALANCE (L-r)	LOW BOOST (Lo)	HIGH BOOST (Hi)
	Cancels the vocal or other sound located in the center.	Adjusts the point at which maximum cancellation occurs.	Boosts the low-frequency sounds located in the center, such as the bass.	Boosts the high-frequency sounds.
23	SUBSONIC	PITCH (P1tC)	THRESHOLD (tHr)	BALANCE (bAL)
	Adds a low-frequency sine wave based on the volume being input to the effect (*3).	Adjusts the frequency of the sine wave.	Adjusts the volume at which the sine wave will begin sounding.	Adjusts the volume balance between the direct sound and effect sound.
24	BPM LOOPER	LENGTH (LEn)★	TIMING (oFF, 1-8)	LOOP SW (oFF/on)
	Loops the input sound over a short period.	Adjusts the length of the loop.	Specifies the timing at which the looped sound will automatically start sounding (in 8th note intervals) (*4). Set this to "oFF" if you don't want the loop to play automatically.	If you turn this on while the sound is heard, the sound at that point will be looped. Turn this off to defeat looping.

* For FLANGER and PHASER, you can use [MFX] button + [CTRL 1] knob to adjust the volume balance between the direct sound and effect sound.

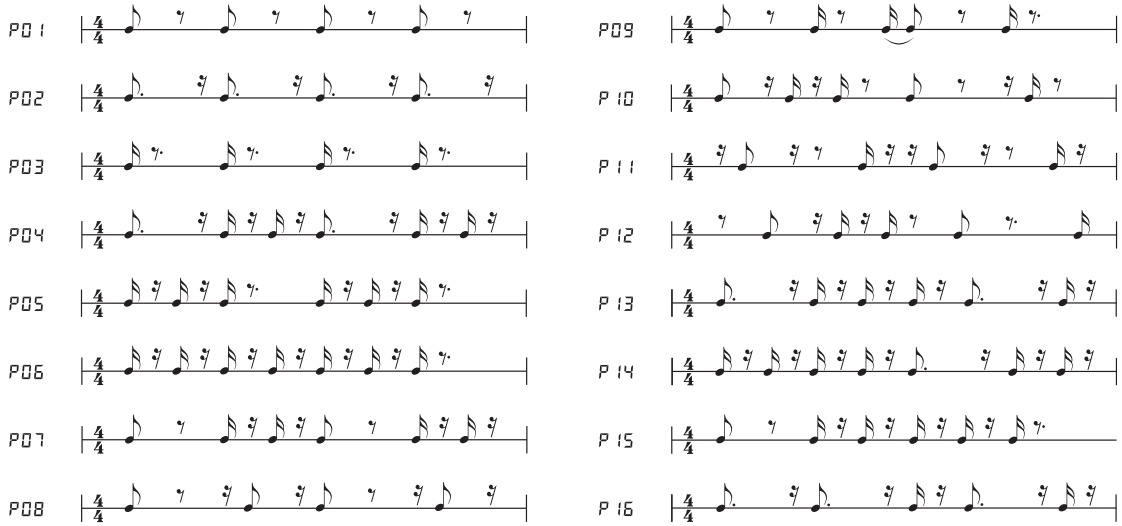
*1: It is specified as a note value relative to the tempo of the longest sample of the samples to which the effect is being applied.

Note values that you can specify:

32nd note (t32) / 16th note (t16) / 8th note triplet (t8t) / dotted 16th note (t16.) / 8th note (t8) / quarter note triplet (t4t) / dotted 8th note (t8.) / quarter note (t4) / half note triplet (t2t) / dotted quarter note (t4.) / half note (t2) / dotted half note (t2.) / whole note (t1)

However, you can't select a setting that would cause the delay time to exceed approximately 2000 milliseconds. If a pattern is playing, the tempo of the pattern is used as the reference.

*2: You can select the following patterns by turning the [CTRL] knob.



The TIMING PTN interval will synchronize to the tempo of the longest sample of the samples to which the effect is being applied. However, if a pattern is playing, the interval will synchronize to the tempo of the pattern.

You can use RATE to adjust the synchronization speed as follows.

RATE maximum (turn the [CTRL 2] knob all the way to the right): One cycle of TIMING PTN corresponds to one measure.

RATE minimum (turn the [CTRL 2] knob all the way to the left): One cycle of TIMING PTN corresponds to a 32nd note.

By turning the [CTRL 2] knob you can change this to any value from a 32nd note up to one measure.

*3: Turn the [CTRL 3] balance toward 12 o'clock, turn the [CTRL 1] knob's pitch all the way to the right, and use the [CTRL 2] knob to adjust the threshold so that the sine wave is sounded appropriately according to the input source. When you've finished setting the threshold, adjust the pitch and balance. This is a convenient way to supplement the kick drum.

*4: The TIMING cycle will synchronize to the tempo of the longest sample to which the effect is being applied. However, if a pattern is playing, it will synchronize to the tempo of the pattern.

Error Message List

Message		Description
EJC	**Eject**	Processing is not possible because the SD card was removed. * Don't remove the card while the power is on.
LoC	**Lock**	The SD card is locked. The SP-404A will be unable to function properly if the SD card is locked. ("LoC" will appear in the display.) Make sure that the SD card is not locked (p. 10).
EMP	**Empty**	There is no sample, pattern, or backup data to delete.
		There is no backup data to load.
		There is no WAV or AIFF to import.
Err	**Error**	Invalid data was found, and it was repaired or deleted.
FUL	**Memory Full**	Processing could not be performed because of insufficient memory. While sampling, the sample exceeded 2 GB (approximately 180 minutes for stereo). Sampling was stopped.
Prt	**Protected**	Processing could not be performed because Protect is enabled. If you want to continue the operation, turn off Protect as described in "About the Protect Function" (p. 38).
UnS	**Unsupported format**	Processing was halted because the WAV or AIFF was in a format not supported by the SP-404A.

Troubleshooting

This section lists some items to check and actions to take if you experience problems. Refer to the section appropriate for your situation.

Problem	Points to check	Action
No sound / Insufficient volume	Has the power to the SP-404A and your connected equipment been turned on?	Use the dedicated AC adaptor. Make sure that fresh batteries are installed.
	Are the SP-404A and your external equipment connected correctly?	Check the connections.
	Could an audio cable be broken?	Replace the cable.
	Could the volume of the connected amp or mixer be turned down?	Adjust the volume to an appropriate level.
	Could the SP-404A's volume be lowered?	Adjust the volume to an appropriate level.
	Check whether you hear sound in your headphones.	If you hear sound in your headphones, the connection cable may be broken, or there may be a problem with the connected amp or mixer. Check the connections and the connected equipment.
	If you're using an SD card, is the card inserted correctly?	Check the SD card.
	If you're attempting to play a sample, is its pad lit?	The sample will play when you press a lit pad. No sample is assigned to a pad that is unlit.
	Could the sample level be lowered?	Adjust the level of the sample (p. 19).
	Could the effect level be lowered?	For some effect types, the level can be adjusted by a control knob. For details on effect types and the control knob assignments, refer to "Effect List" (p. 42).
	Could OUTPUT GAIN be set too low?	Check the setting for OUTPUT GAIN (p. 39).
No sound or insufficient volume from equipment connected to LINE IN jacks	Is [EXT SOURCE] pad lit?	To play sounds from the line input, press the [EXT SOURCE] pad so it's lit.
	Could the volume of the device connected to LINE IN jacks be lowered?	Adjust the level appropriately.
	Is the audio cable connected correctly?	Check the connection.
	Could the audio cable be broken?	Replace the cable.
	Could you be using an audio cable that contains a built-in resistor?	Use a connection cable that does not contain a built-in resistor (such as the Roland PCS series).
	Could INPUT GAIN be set too low?	Check the setting for INPUT GAIN (p. 39).
No sound or insufficient volume from a mic	Is [MIC] button lit?	To play sound from the mic input, press the [MIC] button so it's lit.
	Could the MIC IN level be lowered?	Turn the [MIC IN] knob to adjust the level appropriately.
	Is the mic cable connected correctly?	Check the connections.
	Could the mic cable be broken?	Replace the cable.
The mic picks up noise	The [MIC IN] knob can't be turned down to zero	If you're not using the mic, turn the [MIC] button off.

Problem	Points to check	Action
Acoustic feedback (a whine or howl) is heard	Howling could be produced depending on the location of mics relative to speakers. This can be remedied by:	1. Changing the orientation of the mic(s). 2. Relocating mic(s) at a greater distance from speakers. 3. Lowering volume levels.
Can't sample	Is it possible that your SD card doesn't have any more free space?	If there is insufficient memory, the display will indicate "FUL" (Memory Full) when you attempt to sample. Delete unneeded samples to increase the amount of free memory (p. 21).
	Is the SD card inserted correctly?	Make sure that the SD card is inserted correctly (p. 10).
	Is the SD card formatted correctly?	Format the SD card using the SP-404A (p. 35).
	Are samples assigned to all pads?	You can't sample if there are no vacant pads. Delete unwanted samples to free up some pads (p. 21).
	Could [SELECT] button be lit?	If the [SELECT] button is lit, you're recording patterns, and will not be able to sample. Press the [SELECT] button so its light is turned off.
	Could [DEL] button be lit or blinking?	If the [DEL] button is lit or blinking, you are deleting samples, and will not be able to sample. Press the [CANCEL] button (p. 21).
Excessive noise or distortion in the sampled sound	Is the input level appropriate?	The sampled sound will be distorted if the input level is too high, and if the level is too low there will be excessive noise. Adjust the volume of the connected device so that the PEAK indicator lights occasionally (p. 19).
	Are the effect settings appropriate?	Some types of effect will make the level higher than the original sample, or may distort the sound itself. Some effects also emphasize the noise. Try turning the effect off, and check whether the noise or distortion is present in the original sample itself. Then adjust the effect settings appropriately.
	Could you be playing more than one sample simultaneously?	Even if the level of each sample is appropriate, playing multiple samples simultaneously will raise the overall level excessively, possibly causing distortion. Lower the level of each sample to avoid distortion.
If the sound won't stop!		Press the [CANCEL] button four times in rapid succession. All of the SP-404A's sounds will stop.
Displayed BPM value is wrong	If the sampled time is multiple measures or less than one measure, the BPM indication may be double or half.	Press the [TIME/BPM] button so the button is lit, then turn the [CTRL 2] (BPM) knob to set the desired value. Refer to "Changing a Sample's BPM" (p. 30).
	In some cases, such as if the length of the region is three beats, it may not be possible to calculate or adjust the BPM value correctly.	
An inserted SD card is not recognized, or its data cannot be selected	Is the SD card inserted correctly?	Check the SD card.
	Is the SD card an appropriate type?	Use an SD card or an SDHC card. Other types of cards cannot be used.
	Is the SD card formatted correctly?	SD cards formatted by a device other than the SP-404A cannot be used. Please format the SD card (p. 35).
Data is not saved correctly in the SD card	It is possible that the power was turned off while data was being written into the SD card (i.e., while the dot was blinking in the display). The lost data cannot be recovered.	In this case, it is possible that all data in the SD card has been destroyed. Additional malfunctions may occur if you attempt to continue using the card. Please format the SD card (p. 35). When you format the SD card, all data in the card will be lost.
Pattern sequencer does not synchronize to an external MIDI device	Have you made the correct settings so that the pattern sequencer can synchronize?	Check the settings (p. 21).
	Is the external MIDI device set to transmit MIDI clock messages?	Some devices have a setting that turns MIDI clock transmission on/off. Also, some external devices, such as sequencers, transmit MIDI clock only during playback.
	Does the tempo of the external MIDI device exceed the tempo range to which the SP-404A is able to synchronize?	The SP-404A can synchronize to a tempo in the 40–200 range. It may be unable to synchronize to a tempo that is outside this range.

About MIDI

About MIDI

MIDI stands for Musical Instrument Digital Interface, and is a global standard that allows electronic musical instruments and computers to exchange performance data.

"MIDI Implementation Chart" (p. 48) is a chart that provides an easy way of checking which MIDI messages the SP-404A is able to receive. By comparing the MIDI implementation charts of the SP-404A and some other MIDI device, you can see which messages are compatible between the two devices.

MIDI Channel (Pad Base Ch.) and Note Numbers

Use the following MIDI channels and note numbers when playing the SP-404A's samples from an external MIDI device.

Note	Note #	MIDI Ch	
		Pad Base Ch	Pad Base Ch+1
A2#	46 (0x2E)	EXT SOURCE	
B2 : A3#	47 (0x2F) : 58 (0x3A)	[A] Pad1 : Pad12	[F] Pad1 : Pad12
B3 : A4#	59 (0x3B) : 70 (0x46)	[B] Pad1 : Pad12	[G] Pad1 : Pad12
B4 : A5#	71 (0x47) : 82 (0x52)	[C] Pad1 : Pad12	[H] Pad1 : Pad12
B5 : A6#	83 (0x53) : 94 (0x5E)	[D] Pad1 : Pad12	[I] Pad1 : Pad12
B6 : A7#	95 (0x5F) : 106 (0x6A)	[E] Pad1 : Pad12	[J] Pad1 : Pad12

Changing the MIDI channel (Pad Base Ch.)

1. **Hold down the [SHIFT] button and press the pad [9] (MIDI CH).**
2. **Turn the [CTRL 3] knob to specify the MIDI channel.**
3. **Press the [REC] button to save the setting.**

MEMO

This setting is retained even while the power is turned off.

Synchronizing the SP-404A with another MIDI device

1. **Hold down the [SHIFT] button and press the pad [10] (MIDI SYNC).**
2. **Turn the [CTRL 3] knob to specify the MIDI sync mode.**

MIDI Sync Mode	Description
AUt (Auto Sync)	When MIDI clock is received, the SP-404A will automatically synchronize its own tempo to it. If MIDI start/stop/continue messages are received, the pattern will start/stop playing. MIDI start/stop/continue will not be received during pattern recording.
tAP (Tempo Sync)	When MIDI clock is received, the SP-404A will automatically synchronize its own tempo to it. MIDI start/stop/continue messages will not be received. Select this mode of operation if you want to play the SP-404A's patterns later at the desired timing in synchronization with the performance of your external MIDI sequencer, so that the two performances do not begin at the same time.
oFF (Sync OFF)	MIDI clock and start/stop/continue messages will not be received. Select this mode of operation if you only want to play the SP-404A's samples using note messages sent by your external MIDI sequencer.

With the factory settings this is set to "AUt."

3. **Press the [REC] button so its light is turned off.**

MEMO

This setting is retained even while the power is turned off.

Synchronizing the pattern tempo and playback start/stop with an external sequencer

With the factory settings, the SP-404A (whose MIDI synchronization mode will be set to "AUt") can be connected to your external MIDI sequencer, and the external MIDI sequencer can control the start/stop and tempo of the pattern playback.

1. **Use a MIDI cable to connect your external MIDI sequencer's MIDI OUT to the SP-404A's MIDI IN connector.**
2. **Press the [SELECT] button so the button is lit.**
3. **While holding down the [HOLD] pad, press the pad of the pattern you want to play.**

   If you simply press the pad without pressing the [HOLD] pad, the pattern will begin playing immediately.
4. **When you stop your external MIDI sequencer, the pattern will stop playing.**

   If the pattern playback does not start when you start your external MIDI sequencer, or if the tempo does not synchronize to your external MIDI sequencer, it is possible that your external MIDI sequencer is not transmitting MIDI clock or start/continue/stop messages. Refer to the owner's manual of your external MIDI sequencer and check its settings.

MIDI Implementation Chart

Date : July 01, 2017

Model SP-404A

Version : 1.00

Function...		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	X X	1–16 1–16	
Mode	Default Messages Altered	X X **********	Mode 3 X	
Note Number :	True Voice	X **********	46–106 46–106	
Velocity	Note On Note Off	X X	O X	
After Touch	Key's Channel's	X X	X X	
Pitch Bend		X	X	
Control Change		X	X	
Program Change	: True Number	X **********	X	
System Exclusive		X	X	
System Common	: Song Position : Song Select : Tune Request	X X X	O *1 X X	
System Real Time	: Clock : Commands	X X	O *2 O *1	
Aux Messages	: All Sound Off : Reset All Controllers : Local On/Off : All Notes Off : Active Sensing : System Reset	X X X X X X	O *3 X X X O X	
Notes		* 1 Received if Sync Mode is AUTO. * 2 Received if Sync Mode is AUTO or TEMPO. * 3 All notes will be silenced regardless of their channel.		

Mode 1 : OMNI ON, POLY
Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY
Mode 4 : OMNI OFF, MONO

O : Yes
X : No

Specifications

Roland SP-404A: Linear Wave Sampler

<table>
<tr><td>Maximum Polyphony</td><td>12 voices</td></tr>
<tr><td rowspan="2">Recordable Data</td><td>Samples: 120 (12 samples x 10 banks) (stored on SD card)</td></tr>
<tr><td>Patterns: 120 (12 patterns x 10 banks) (stored on SD card)</td></tr>
<tr><td>Sampling Time
(Total Time for All Samples)</td><td>The maximum sampling time (size) for a single sample is approximately 180 minutes in stereo (2 GB).
The following table shows the approximate total sampling time of the samples that can be stored on one SD card.
<table>
<tr><th>Card capacity</th><th>Stereo (mono)</th><th>Card capacity</th><th>Stereo (mono)</th></tr>
<tr><td>1 GB</td><td>Approx. 90 min. (180 min.)</td><td>8 GB</td><td>Approx. 720 min. (24 hours)</td></tr>
<tr><td>2 GB</td><td>Approx. 180 min. (360 min.)</td><td>16 GB</td><td>Approx. 24 hours (48 hours)</td></tr>
<tr><td>4 GB</td><td>Approx. 360 min. (720 min.)</td><td>32 GB</td><td>Approx. 48 hours (96 hours)</td></tr>
</table>
Since the 1 GB SD card included with the SP-404A contains preload data, the available sampling time will be less than the time above.</td></tr>
<tr><td>Data Format</td><td>16-bit Linear (.wav/aiff)</td></tr>
<tr><td>Sampling Frequency</td><td>44.1 kHz</td></tr>
<tr><td rowspan="4">Pattern Sequencer</td><td>Maximum recordable notes: Approx. 16,000 notes</td></tr>
<tr><td>Resolution: 96 ticks per quarter note</td></tr>
<tr><td>Pattern Length: 1–99 measures</td></tr>
<tr><td>Recording method: Realtime Loop Recording (with shuffle quantize function)</td></tr>
<tr><td>Effects</td><td>29 types</td></tr>
<tr><td>Pads</td><td>12 + Sub pad x 1</td></tr>
<tr><td>Controllers</td><td>Control Knob x 3</td></tr>
<tr><td>Display</td><td>7 segments, 3 characters (LED)</td></tr>
<tr><td>Onboard Mic</td><td>Mono x 1</td></tr>
<tr><td rowspan="7">Connectors</td><td>LINE IN jacks (L, R) (RCA phono type)</td></tr>
<tr><td>LINE OUT jacks (L, R) (RCA phono type)</td></tr>
<tr><td>PHONES jack (Stereo 1/4-inch phone type)</td></tr>
<tr><td>MIC IN jack (1/4 inch phone type)</td></tr>
<tr><td>MIDI IN connector</td></tr>
<tr><td>DC IN jack</td></tr>
<tr><td>SD card slot</td></tr>
<tr><td>Power Supply</td><td>AC Adaptor or Alkaline battery (AA, LR6)/Rechargeable Ni-MH battery (AA, HR6) x 6
* Batteries sold separately</td></tr>
<tr><td rowspan="3">Battery Life for Continuous Use</td><td>Rechargeable Ni-MH battery: Approximately 5 hours (When using batteries having a capacity of 1,900 mAh.)</td></tr>
<tr><td>Alkaline battery: Approximately 4 hours</td></tr>
<tr><td>* These figures will vary depending on the actual conditions of use.</td></tr>
<tr><td>Current Draw</td><td>450 mA</td></tr>
<tr><td>Dimensions</td><td>178 (W) x 257 (D) x 73 (H) mm
7 (W) x 10-1/8 (D) x 2-7/8 (H) inches</td></tr>
<tr><td>Weight</td><td>1.2 kg/2 lbs 11 oz (excluding AC adaptor)</td></tr>
<tr><td rowspan="4">Accessories</td><td>SD Card</td></tr>
<tr><td>AC Adaptor</td></tr>
<tr><td>Leaflet “USING THE UNIT SAFELY”</td></tr>
<tr><td>Owner’s Manual</td></tr>
</table>

*** This document explains the specifications of the product at the time that the document was issued. For the latest information, refer to the Roland website.**

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