

**ACHIEVE  
MASTERY!**

**GAIA**  
SYNTHESIZER SH-01

# ENJOY CREATING SOUNDS WITH YOUR SYNTHESIZER



**Sound synthesis made easy!  
Learn the basics of sound creation on Roland's  
new GAIA SH-01 synthesizer!**

# Introducing the Controls

## D Beam

By moving your hand above the D Beam controller you can change the sound's pitch, volume, or brightness.

## LFO

This modulates the sound.

## Oscillator (OSC)

This determines the sound's pitch. The oscillator is the heart of a synthesizer, and is where you select the waveform that forms the basis of the sound.

## USB Memory

You can save your patches to USB memory.

## Tone

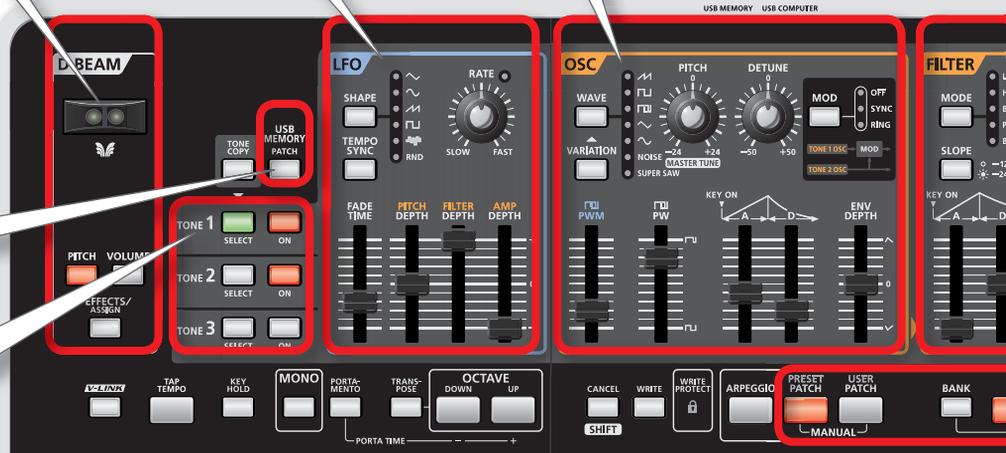
You can layer three tones to be played simultaneously.

Here's where you select the tone you want to edit.

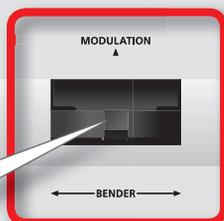
## Lever

Move this to left or right to change the sound's pitch.

Move this away from yourself to apply modulation.



Roland **GAIA**  
SYNTHESIZER SH-01



## A NOTE OF ADVICE



## What are the Three Elements of Sound?

The three elements of sounds are pitch, brightness, and volume. On a synthesizer, these elements are controlled by the following three sections.

1. **Pitch = Oscillator (OSC)**
2. **Brightness = Filter (FILTER)**
3. **Volume = Amplifier (AMP)**

# ENJOY CREATING SOUNDS WITH YOUR SYNTHESIZER

## Filter

This determines the sound's brightness.

## Amp

This determines the sound's volume. This is also where the sound's attack and decay are adjusted.

## Effects

Here you can apply reverb to give the sound more depth, or add other effects.

## EXT IN

You can connect a portable audio player here.

## Volume

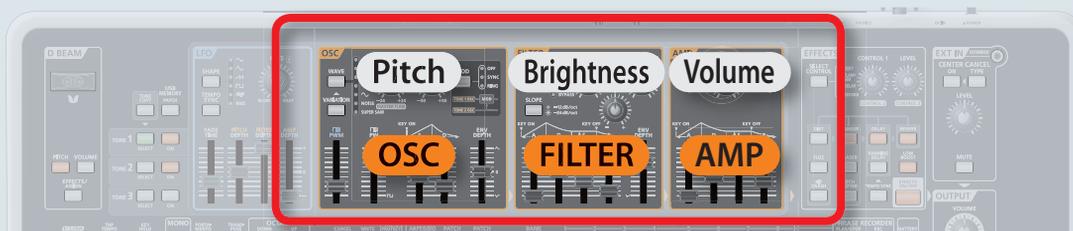
This adjusts the overall volume.

## Patch

Here you can call up patches.



Roland's GAIA SH-01 synthesizer is designed so that these three elements of sound are arranged on the panel in an intuitive layout, making the sound-creating process easy.

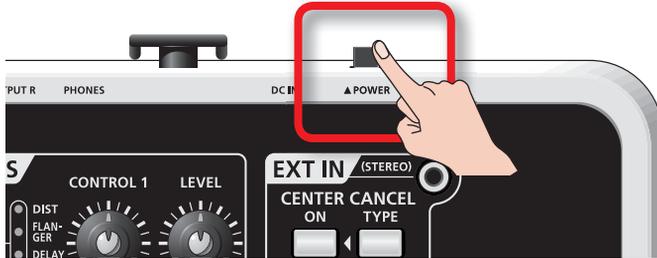


# STEP 1

# Play a Sound!

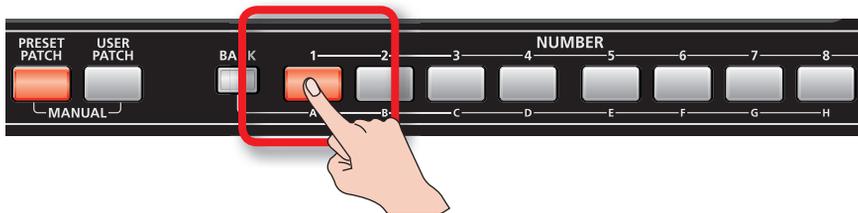
The GAIA SH-01 lets you start playing as soon as you turn on the power.

## 1. Turn on the power.

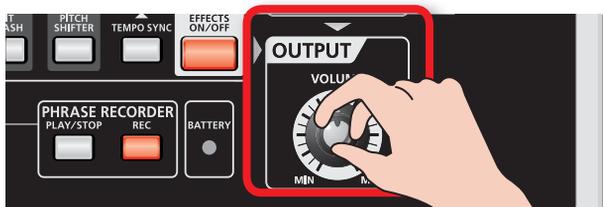


## 2. Press the NUMBER [1] button.

In this example we've selected sound (patch) number 1. On the following page we'll explain more about how to select "patches."



## 3. Use the [VOLUME] knob to adjust the volume.



## 4. Play the keyboard.



Did you hear sound? Now read the next page, and select and play other sounds (patches).

## What is a “Patch”?

The GAIA SH-01 lets you save the sounds you create.

Each sound you save is called a “patch.”

You can think of the locations that store the patches as being like shelves.

You’ll select the desired patch by GROUP, BANK, and NUMBER.

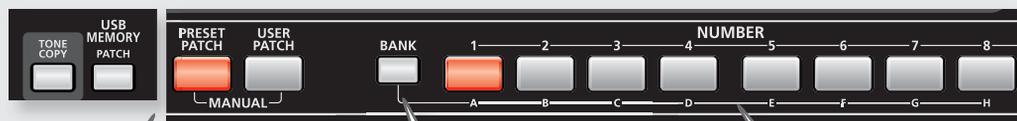


You can use these patches to store the original sounds you’ve created.

## Select Other Patches!

A sound you’ve saved can be easily recalled simply by pressing a button.

Go ahead and try out each patch to get an idea of what kind of sounds the GAIA SH-01 can produce.



Select a **GROUP**  
PRESET PATCH  
USER PATCH  
USB MEMORY PATCH

Select a **BANK**  
Press the **[BANK]**  
and then press one  
of the **[1]–[8]** buttons

Select a **NUMBER**  
Press one of the **[1]–[8]** buttons

### A NOTE OF ADVICE



## How to Think About Sound Programming

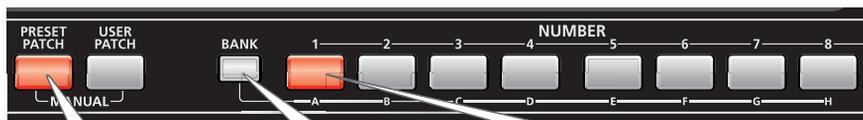
As you take a closer look at the factory-set patches (preset patches), you’ll notice all sorts of clever tricks that were used to create the sounds. Remember these tricks, and use them to create new sounds from scratch.

As you create your own sounds by modifying the preset patches, you’ll learn various ways in which the sound can be changed.

# STEP 2

# Create a Sound! Create a Bass Sound

**1.** Call up the “PRESET B-1” patch.



Press the [PRESET PATCH] button

Press the [BANK] button and then press the [2] (B) button

Press the [1] button

**2.** Press the [KEY HOLD] button so it's blinking.



**3.** Press the second C key from the bottom.

You'll hear an arpeggiated techno bass.



**4.** Turn the FILTER [RESONANCE] knob to the maximum position.



**5.** Slowly turn the FILTER [CUTOFF] knob from the maximum position down to the minimum.

It's effective to make this change in sync with the tempo.

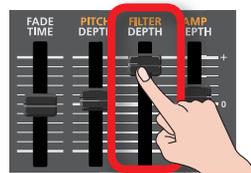


**6.** Set the [RESONANCE] knob at 10 o'clock, and the [CUTOFF] knob at 12 o'clock.



**7.** In sync with the tempo, raise the LFO [FILTER DEPTH] slider, and then bring it back to the center.

For the LFO DEPTH, the center is 0.



**A NOTE OF  
ADVICE**

## Use the [CUTOFF] Knob to Fatten the Sound!

Moving the [CUTOFF] knob will make the sound fatter or brighter. Once you've familiarized yourself with its function, try moving the [CUTOFF] knob between 10 o'clock and one o'clock while you raise and lower the LFO [FILTER DEPTH] slider. It's effective to do this in sync with the tempo.

Let's try playing an arpeggiated synth bass sound.  
Turn the filter knob to make the sound change.

## How Do I Stop the Sound?

Press the [KEY HOLD] button to stop the sound.



## Add More Low End!

Turn on the [TONE 3] button, and play the keyboard.

Layering three tones produces an even fatter sound.



## Save The Patch You've Created

The GAIA SH-01 has internal memory in which you can store 64 patches that you've created.

By using USB memory (sold separately), you'll be able to store 64 more patches.

To save your patch, press the [WRITE] button and then select the save-destination patch number; finally press the [WRITE] button once again.

Press the **[WRITE]** button

Select the **GROUP**  
USER PATCH  
USB MEMORY PATCH

Select a **BANK**  
Press the **[BANK]**  
and then press one  
of the **[1]–[8]** buttons

Select a **NUMBER**  
Press one of the **[1]–[8]**  
buttons



## Layer Tones to Create Fat Sounds!

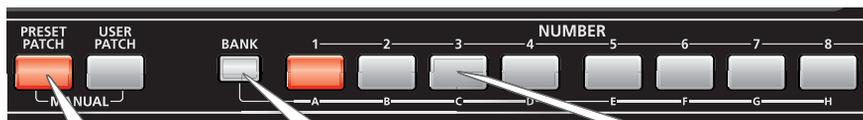
The GAIA SH-01 lets you layer three tones together, allowing you to create incredibly fat sounds. Use the TONE buttons to turn each tone on/off.



# STEP 3

# Create a Pad Sound

**1.** Call up the “PRESET A-3” patch.



Press the [PRESET PATCH] button

Press the [BANK] button and then press the [1] (A) button

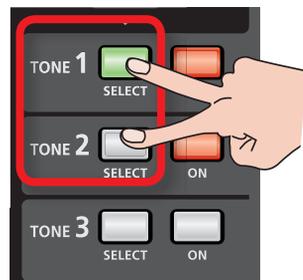
Press the [3] button

**2.** Press the [KEY HOLD] button so it's blinking.



**3.** Simultaneously press the TONE 1 and TONE 2 [SELECT] buttons so they're lit.

You can use the [SELECT] buttons to select the tone that you want to edit.



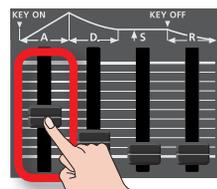
**4.** Play a chord.



**5.** While playing a chord, set the AMP [ATTACK] slider in the range of about 2–5.

The attack sound will become more gentle.

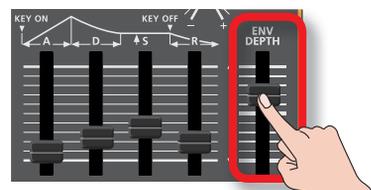
While you play, adjust the slider to get the desired attack.



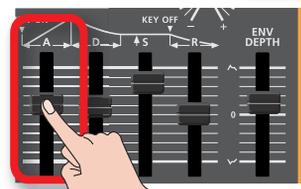
**6.** Next, try pressing the TONE 3 [SELECT] button and adjusting the sound of TONE 3.



**7.** Raise the FILTER [ENV DEPTH] slider from the center position to 2. The soft sound will become brighter.



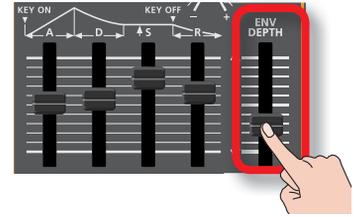
**8.** Set the FILTER [ATTACK] slider to 6. Now the sound of TONE 3 will slowly become brighter after you play the key.



Here we'll try playing a polyphonic pad sound. This is a synth pad that combines an attack sound with a softer sound.

## 9. Lower the FILTER [ENV DEPTH] slider downward from the center. The sound of TONE 3 will disappear.

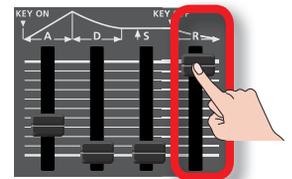
For additional expressive possibilities, you can move the FILTER [ENV DEPTH] slider while you play.



## Turn off the [KEY HOLD] button, and raise the TONE 3 AMP [R] (RELEASE) slider to the maximum position.

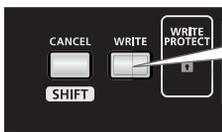
The time over which the sound of TONE 3 disappears will lengthen.

You can change how the sound varies over time by adjusting the ADSR, so you may want to adjust these settings until you get the sound you like.



## Save the Patch You've Created

To save your patch, press the [WRITE] button, then select the save-destination patch number, and finally press the [WRITE] button once again.



Press the [WRITE] button

### A NOTE OF ADVICE

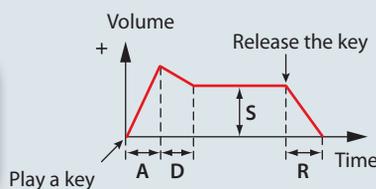
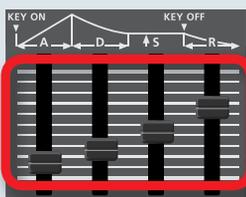


## Adjust the Envelope!

For example, if you want to create a gradual attack, such as for strings, try raising the [A] slider. If you want the sound to linger for a while after you take your hand off the keyboard, raise the [R] slider.

The sound's attack and decay are created in the ENV (envelope generator) section.

Raise or lower the [A] [D] [S] [R] sliders, and notice how they affect the sound.



Symbol	Name	Volume change
A	Attack time	Duration of the attack
D	Decay time	Duration of the decay
S	Sustain level	Level while sustained
R	Release time	Duration of the release

# STEP 4

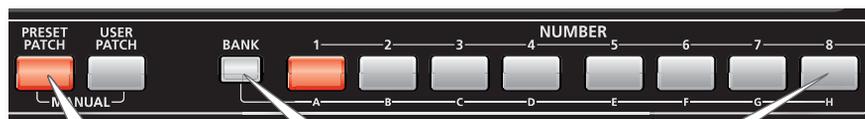
## Create a Wind Sound

Let's try playing a wind sound that was created using noise. Noise allows you to produce this type of sound. We'll try controlling the character of the wind while listening to it.

1. Turn the **FILTER [CUTOFF]** knob all the way to the left.



2. Call up the "PRESET A-8" patch.



Press the **[PRESET PATCH]** button

Press the **[BANK]** button and then press the **[1 (A)]** button

Press the **[8]** button

3. Press the **[KEY HOLD]** button so it's blinking.



4. Press and hold any key. The wind will start blowing.

The sound of trickling water will also begin.



5. While holding down the key to make the wind continue blowing, turn the **FILTER [CUTOFF]** knob toward the right, and move it between the 10 o'clock and 1 o'clock positions.

This lets you control the character of the wind.

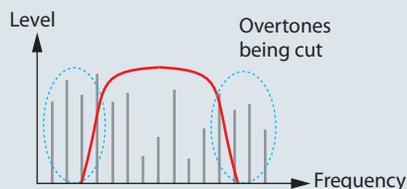


### A NOTE OF ADVICE



### Use Cutoff to Control the Character of the Wind

As you turn the **[CUTOFF]** knob toward the left, the sound will become more muffled. When the knob is turned all the way toward the left, the sound will be nearly inaudible. This is because most of the frequency range is not being allowed to pass.



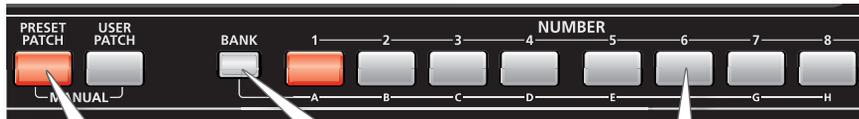
# STEP 5

# Create A Distorted Guitar Sound

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SOUNDS  
WITH YOUR  
SYNTHESIZER

The GAIA SH-01 contains a powerful effects section that lets you use five effects simultaneously. Let's try creating the sound of a distorted guitar.

## 1. Call up the "PRESET A-6" patch.

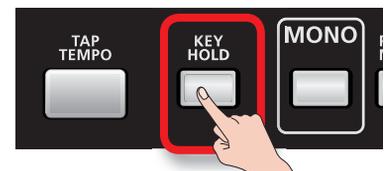


Press the [PRESET PATCH] button

Press the [BANK] button and then press the [1] (A) button

Press the [6] button

## 2. Press the [KEY HOLD] button to turn off its illumination.



## 3. First, let's listen to the undistorted sound.

Press the EFFECTS [DIST] button so its light is off, and play the keyboard.

You'll hear the undistorted sound.

Press the [DIST] button so its light goes out



## 4. Press the EFFECTS [DIST] button so it's lit, and play the keyboard again.

Play two-fingered chords to simulate the performance of a rock guitarist.

If you hold a note for a while, you'll hear the feedback that's typical of a guitar amp played at high volume.



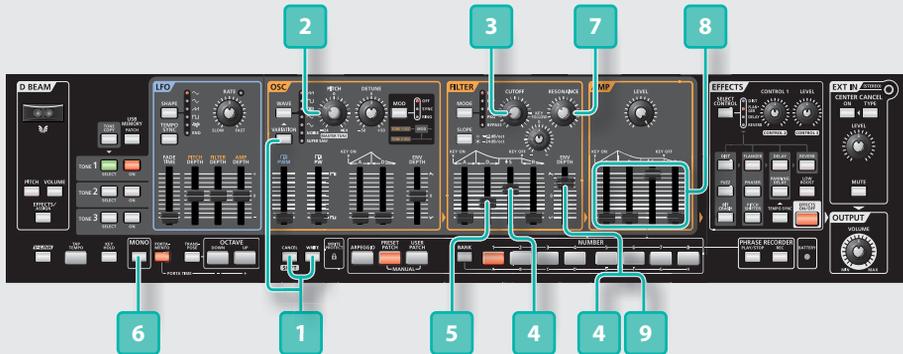
### A NOTE OF ADVICE



## GAIA's Amazing Effects!

The GAIA SH-01 contains five effects processors: distortion (DIST), modulation (FLANGER), delay (DELAY), reverb (REVERB), and low boost (LOW BOOST). Using the DIST or FUZZ effects located in the leftmost column will distort the sound, making it more aggressive. DELAY and REVERB let you create lush, spacious sounds. Go ahead and try out various effects to hear what they do.

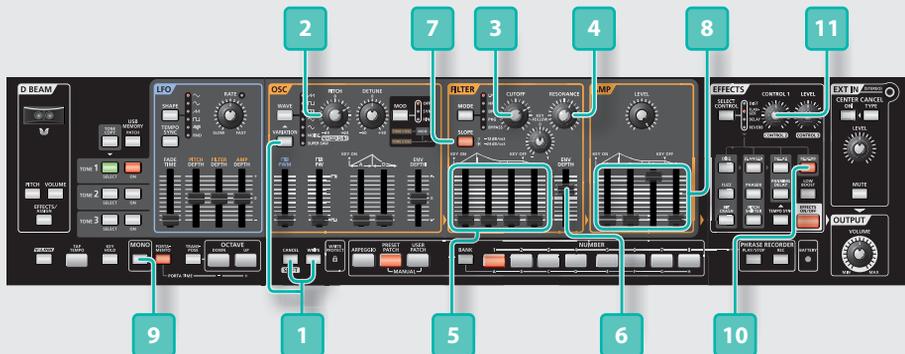
## Synth Bass (PRESET PATCH: H-1)



- 1 Press the **[CANCEL/SHIFT]** button and **[WRITE]** button to recall the initialized sound. The sawtooth wave is selected. Press the **[VARIATION]** button to light the **[WAVE]** button into red.
- 2 Since the bass usually sounds in the lower registers, turn the **[PITCH]** knob to the left so the sound is lowered by an octave.
- 3 Set the FILTER **[CUTOFF]** knob between 8 and 9 o'clock. The sound will diminish.
- 4 Next, you need to specify the character of the sound's sustained portion. Set the FILTER ENV **[ENV DEPTH]** slider to the 60% position. Set the FILTER ENV **[S]** slider to the 65% position. The sound will be somewhat muted.
- 5 Now you're ready to create the attack. Set the FILTER ENV **[D]** slider to the 35% position. The attack will be softened.
- 6 To simulate the effect of keeping a finger on the string and sliding to a different fret, press the **[MONO]** button so it's lit.
- 7 Set the **[RESONANCE]** knob to the 11 o'clock position, giving the sound a distinctive character.
- 8 Set the AMP ENV **[S]** slider to the maximum position, and set the **[A]** **[D]** **[R]** sliders to the minimum position.
- 9 Make fine adjustments to the FILTER ENV **[ENV DEPTH]** slider to determine the overall tonal character.

This synth bass is similar to the sound in chapter 2 "Recall and Edit Presets," chapter 5 "How to Make a Sound" of the  DVD.

## Synth Lead (PRESET PATCH: H-7)

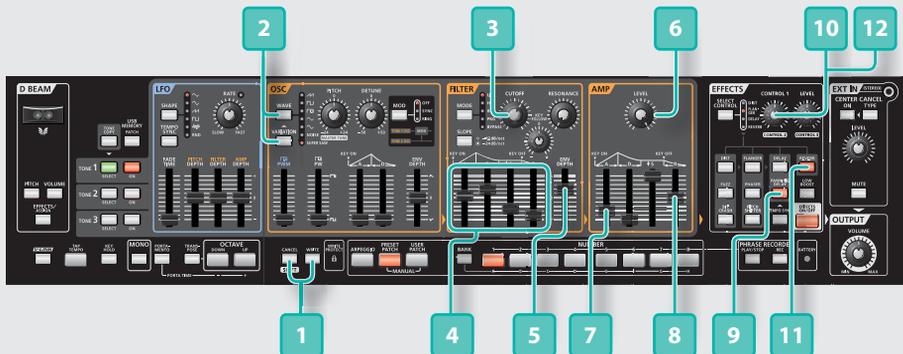


- 1 Press the **[CANCEL/SHIFT]** button and **[WRITE]** button to recall the initialized sound. The sawtooth wave is selected. Press the **[VARIATION]** button to light the **[WAVE]** button into red.
- 2 Turn the **[PITCH]** knob to the right so the sound is raised by an octave.
- 3 Set the FILTER **[CUTOFF]** knob to the 2 o'clock position.
- 4 Set the FILTER **[RESONANCE]** knob to the 8 o'clock position.
- 5 Now you're ready to create the attack. Set the FILTER ENV **[A] [D] [S] [R]** sliders all to the lowest position.
- 6 Next, you need to determine the overall tonal character. Slightly raise the FILTER ENV **[ENV DEPTH]** slider.
- 7 Press the FILTER **[SLOPE]** button to select -24 dB. The sound will become a bit softer.
- 8 Set the AMP ENV **[S]** slider to the maximum position, and set the **[A] [D] [R]** sliders to the minimum position.
- 9 To get a more appropriate lead feeling, press the **[MONO]** button so it's lit.  
With this setting, the patch will play only single notes, and if you press a key while still holding the previous key, the sound will change smoothly to the new pitch.
- 10 Press the **[REVERB]** button so it's lit.
- 11 Turn the **[CONTROL 1]** knob to add reverberation to the lead sound.

This synth lead is similar to the sound in chapter 2 "Recall and Edit Presets" of the  DVD.

# Examples of Creating Sounds

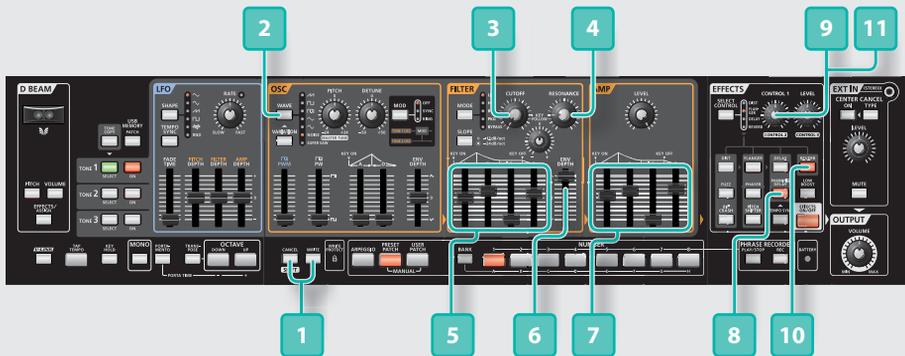
## Synth Pad (PRESET PATCH: H-2)



- 1 Press the **[CANCEL/SHIFT]** button and **[WRITE]** button to recall the initialized sound. The sawtooth wave is selected.
- 2 Press the OSC **[WAVE]** button to select SUPER SAW. Press the **[VARIATION]** button to light the **[WAVE]** button into red.
- 3 Set the FILTER **[CUTOFF]** knob to the 1 o'clock position. The sound will become a bit darker.
- 4 Now you're ready to specify the overall character of the sound. Set the FILTER ENV **[A]** slider to 55%, the **[D]** slider to 70%, the **[S]** slider to 25%, and the **[R]** slider to 10%.
- 5 Raise the FILTER ENV **[ENV DEPTH]** slider from 0 to the second mark to specify the overall character.
- 6 Turn the AMP **[LEVEL]** knob all the way to the right (MAX).
- 7 Set the AMP ENV **[A]** slider to the 20% position. The attack will become slower.
- 8 Raise the AMP ENV **[R]** slider to about the middle position. Now the sound will linger for a while even after you take your finger off the key.
- 9 Press the **[PANNING DELAY]** button so it's lit.
- 10 Set the EFFECTS **[CONTROL 1]** knob to the 10 o'clock position to add a sense of spaciousness.
- 11 Press the **[REVERB]** button so it's lit.
- 12 Set the EFFECTS **[CONTROL 1]** knob to the 1 o'clock position to add reverberation.

This synth pad is similar to the sound in chapter 5 "How to Make a Sound" of the  DVD.

## Sound Effect (PRESET PATCH: H-5)



Here's how to create a sound effect that might be appropriate for a spaceship taking off.

\* These settings may produce a sudden, loud sound. Turn the knobs slowly to avoid damaging your hearing or your speakers.

- 1 Press the **[CANCEL/SHIFT]** button and **[WRITE]** button to recall the initialized sound. The sawtooth wave is selected.
- 2 Press the OSC **[WAVE]** button to select NOISE.
- 3 Turn the FILTER **[CUTOFF]** knob all the way to the left (MIN). You will no longer hear sound.
- 4 Set the FILTER **[RESONANCE]** knob to the 9 o'clock position.
- 5 Set the FILTER ENV **[A]** slider to 50%, the **[D]** slider to 65%, and the **[R]** slider to 60%. Lower the **[S]** slider all the way to the bottom.
- 6 Slowly raise the FILTER ENV **[ENV DEPTH]** slider to the maximum position.
- 7 Set the AMP ENV **[A]** slider to 55%, the **[D]** slider to 65%, and the **[R]** slider to 70%. Lower the **[S]** slider all the way to the bottom.
- 8 Press the **[PANNING DELAY]** button so it's lit.
- 9 Set the EFFECTS **[CONTROL 1]** knob to the 11 o'clock position to add some spaciousness.
- 10 Press the **[REVERB]** button so it's lit.
- 11 Set the EFFECTS **[CONTROL 1]** knob to the 12 o'clock position to add reverb.

This sound effect is similar to the sound in chapter 5 "How to Make a Sound" of the  DVD.

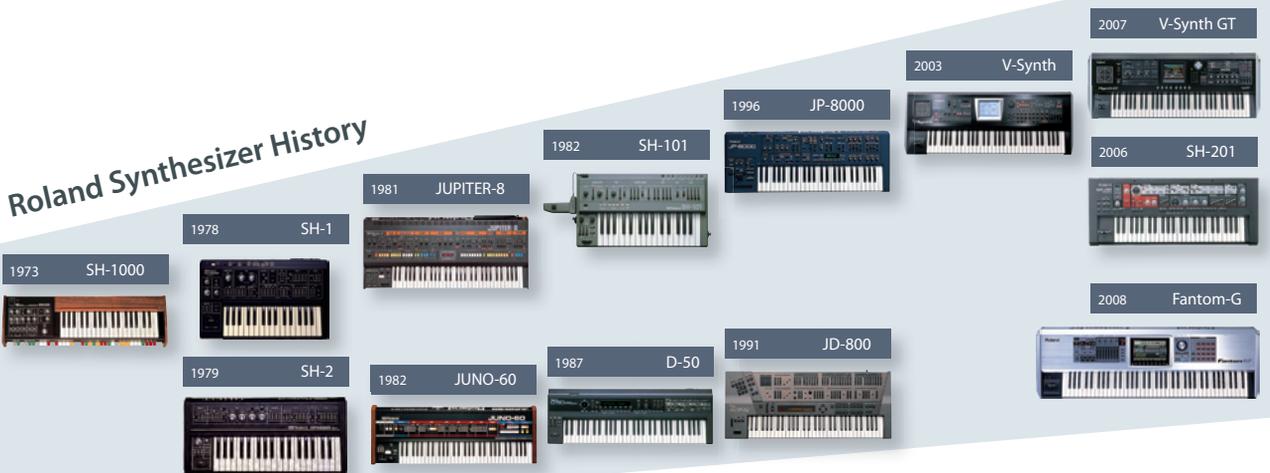
# Experience the magic of creating your own sounds.

For more than a quarter century, Roland has defined and redefined the state of the art in synthesizers.

Today, the fundamentals for sound creation remain the same for most synthesizers.

By understanding the fundamentals, anyone can enjoy creating sound for virtually any type of synthesizer.

## Roland Synthesizer History



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RAM-4520