**Roland** VP-03 Vocoder    Owner's Manual

English

In order to use this device correctly, please carefully read "USING THE UNIT SAFELY" and "IMPORTANT NOTES" (the "USING THE UNIT SAFELY" leaflet) before use.
After reading, keep these instructions at hand for immediate reference.

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# Introduction

The VP-03 is a sound module that uses cutting-edge modeling technology to faithfully model the Roland VP-330 which went on sale in 1979. In addition to its compact size, it allows battery-powered operation and contains a small speaker. It lets you enjoy full-fledged vocoder sound anywhere.
In the same way as on the original VP-330, you can use a combination of the vocoder section, the human voice section which electronically synthesizes a voice, and the strings section. To these sections, we've newly added a step sequencer and a chord memory function.

* The VP-03 can operate on batteries or on USB bus power. If you are using batteries, insert four AA batteries, making sure that the batteries are oriented correctly.
* 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").
* 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, the LED above the Ribbon Controller C1 blinks.** Install new batteries.

## Using the VP-03 in conjunction with the K-25m keyboard unit (sold separately) or DK-01 Boutique Dock (sold separately)
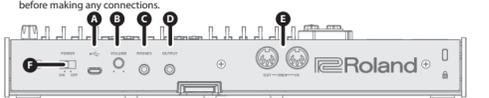
➡ For installation, refer to the K-25m/DK-01's Owner's Manual.

## Playing the VP-03 via MIDI or USB

You can also play the VP-03 via MIDI or USB. For details, refer to "Connecting Your Equipment."

## Connecting Your Equipment

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

**A** Micro USB (•←→) port
Use a commercially available USB 2.0 cable (A-microB) to connect this port to your computer. ➡ "Connecting via USB"

**B** [VOLUME] knob
Adjusts the volume.

**C** PHONES jack
Connect headphones (sold separately) here.

**D** OUTPUT jack
Connect this jack to your amp or monitor speakers.

**E** MIDI connectors
You can play the VP-03 by connecting a MIDI device via a commercially available MIDI cable.

MIDI OUT    MIDI IN
MIDI keyboard    VP-03

## Turning the Power On

**F** [POWER] switch
This turns the power on/off.
* After you've made connections correctly, be sure to **turn on the power in the order of the VP-03 first, and then the connected system.** Powering-on in the incorrect order may cause malfunctions or damage. When turning the power off, **power-off the connected system first, and then the VP-03**.
* Before turning the unit on/off, always be sure to turn the volume down. Even with the volume turned down, you might hear some sound when switching the unit on/off. However, this is normal and does not indicate a malfunction.

## Connecting a Microphone
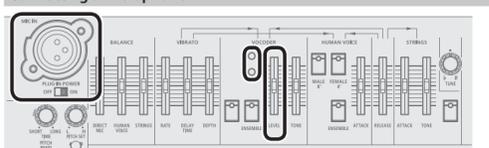
1. **Connect the included microphone to the MIC IN connector.**
2. **Set the [PLUG-IN POWER] switch to "ON".**

| Setting | Explanation |
|---|---|
| ON | Included mic (plug-in power). If this is ON, 3 V power is supplied via the MIC IN jack. |
| OFF | Commercially available dynamic microphone |

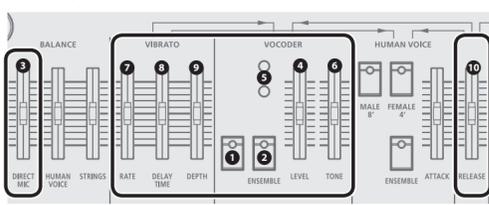3. **Use the VOCODER [LEVEL] slider to adjust the volume of the microphone.**
Adjust this so that when loud sound is input from the mic, the red indicator does not light, but the green indicator stays lit.
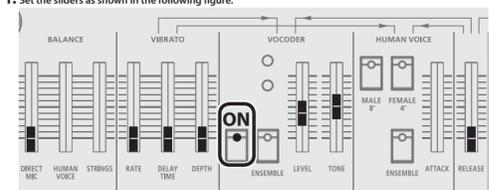* Pin assignment of the MIC IN connector

2: HOT    1: GND
3: GND

## What's a Vocoder?

The "vocoder" was invented by the physicist H. Dudley in 1939 as a technology for compressing a voice communication signal. Subsequently, musical instruments based on this technology were developed, allowing you to play melodies and harmonies using a human voice.

If we ignore differences of loudness, pitch, and variation between individuals, the waveform produced by our vocal cords is essentially identical regardless of what you're saying (e.g., "ahh" or "eeh"). We can distinguish spoken or sung words because of the various resonances (formants) created by our vocal tract (the shape of our throat and the movement of the larynx and mouth) and additional sounds called "fricatives," "plosives," and "sibilants" that are added in varying ways over time. The effect of the waveform created by the vocal cords actually has a rather minimal effect on what the listener hears.
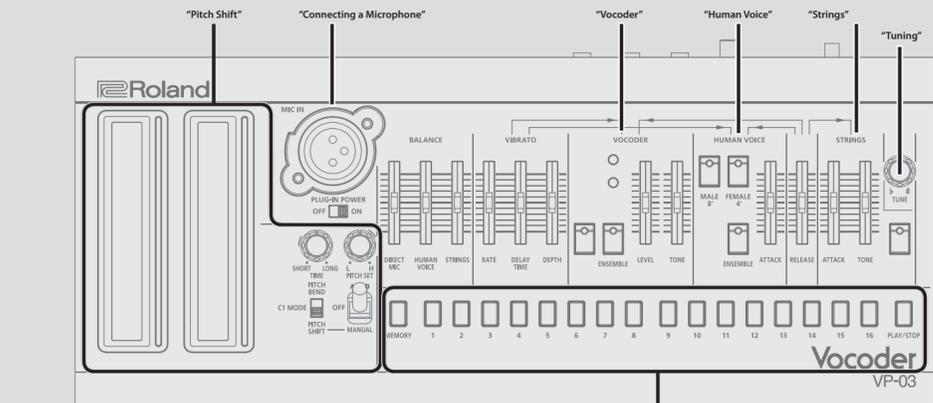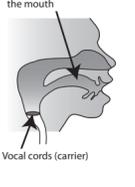
A vocoder analyzes these time-varying changes, electrically synthesizes the shape of the throat and movements of the mouth (the formant movements), and uses these formants to modulate a musical signal (the carrier) rather than the waveform produced by the vocal cords.

Resonances (formants) produced by the vocal tract (shape of the throat and larynx) and movements of the mouth

Vocal cords (carrier)

## Performance tips

Vocoder is constructed so that elements other than pitch are expressed by your voice via the microphone. You play the keyboard to control the pitch.
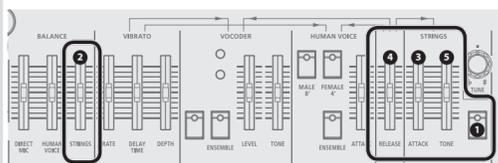
Vocoder won't produce sound if you are only vocalizing into the microphone or only playing the keyboard. This means that in order to take advantage of Vocoder, the timing at which you play the keyboard and vocalize into the microphone is extremely important.

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"Pitch Shift"    "Connecting a Microphone"    "Vocoder"    "Human Voice"    "Strings"    "Tuning"

"Chord Memory" / "Step Sequencer" / "Settings"

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# Strings

This provides a smooth and sustaining strings ensemble.

| Controller | Explanation |
|---|---|
| 1 STRINGS switch | Turns on/off the strings. |
| 2 BALANCE [STRINGS] slider | Adjusts the volume of the strings. |
| 3 [ATTACK] slider | Adjusts the attack of the sound. |
| 4 [RELEASE] slider | Adjusts the decay that occurs after you release the key. |
| 5 [TONE] slider | Adjusts the brightness of the sound. |

# Tuning

Adjusts the VP-03's overall pitch.

♭  #
TUNE

# Vocoder

While vocalizing into the mic, play the keyboard (or ribbon controller).

| Controller | Explanation |
|---|---|
| 1 VOCODER switch | Turns on/off the vocoder. |
| 2 [ENSEMBLE] switch | Adds a chorus effect to the vocoder. |
| 3 BALANCE [DIRECT MIC] slider | Adjusts the volume of the direct microphone. Raise this slider if you want the voice from the mic to be layered on the vocoder sound. |
| 4 [LEVEL] slider | Adjusts the volume of the microphone. |
| 5 Peak indicator | Adjust this so that when loud sound is input from the mic, the red indicator does not light, but the green indicator stays lit. |
| 6 [TONE] slider | Adjusts the tone of the vocoder. |
| 7 VIBRATO [RATE] slider | Determines the speed of the vibrato. |
| 8 VIBRATO [DELAY TIME] slider | Specifies the time from when the tone sounds until the vibrato reaches its maximum amplitude. |
| 9 VIBRATO [DEPTH] slider | Determines the width of the vibrato pitch change. |
| 10 [RELEASE] slider | Adjusts the decay that occurs after you release the key. |

## Vocoder performance example

1. **Set the sliders as shown in the following figure.**

ON

2. **Connect the microphone and adjust the level (refer to "Connecting a Microphone").**
3. **While vocalizing into the mic, play the keyboard (or ribbon controller).**
4. **Adjust the [TONE] slider to get the desired sound.**
5. **Use the VIBRATO slider to adjust the vibrato.**

## Vocoder hold

You can use CC66 (Sostenuto Pedal) messages from an external MIDI device to hold the vocal character (formant) that is being input from the mic. The formant is held when the CC66 is 64 or higher. While vocoder hold is active, you can perform even without inputting your voice from the mic.

## Formant (ribbon controller C2)

➡ Refer to "System Settings"-"Ribbon Controller C2 Mode"

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# Pitch Shift

**1 2** Ribbon controller (C1/C2), **3** [C1 MODE] switch

**When using the VP-03 by itself**

| | |
|---|---|
| 1 C1 | Preview (notes) |
| 2 C2 | Octave shift |

**When a keyboard is connected**

| | **3** [C1 MODE] switch settings | |
|---|---|---|
| | PITCH BEND | PITCH SHIFT |
| 1 C1 | The ribbon controller C1 operates as a conventional pitch bend.<br>• The pitch is controlled up or down, with the center as zero.<br>• When you release your finger, the pitch returns to the center.<br>• You can change the bend range in the system settings. | The ribbon controller C1 operates in the same way as the PITCH SHIFT slider of the original VP-330.<br>• **It operates only when the 4 pitch shift switch is in "MANUAL" mode.**<br>• The top is zero; the controller controls the pitch only downward.<br>• The value is held even if you release your finger.<br>• Use the 6 [PITCH SET] knob to specify the range in which the pitch will change. |
| 2 C2 | Modulation / Formant<br>➡ Refer to "System Settings"-"Ribbon Controller C2 Mode" | |

**4** Pitch shift switch

Pitch shift varies the pitch during the attack of the note, either automatically or manually (using **1** ribbon controller C1). In particular when using the vocoder or human voice, this is an effective way to express a human feeling of unsteadiness at the beginning of the note.

| Controller | Explanation | |
|---|---|---|
| 4 Pitch shift switch | AUTO | Auto pitch shift occurs at the speed specified by the 5 [TIME] knob. The starting pitch of the pitch shift is specified by the 6 [PITCH SET] knob.<br><br>Example setting:<br>This is an example of pitch shift settings that realistically reproduce the character of a human voice. This is appropriate for use with the vocoder or human voice.<br>* The markings on the panel are general guidelines. The appropriate settings depend on the combination of other settings such as attack, so try different settings to get the sound that you want. |
| | MANUAL | Use 1 ribbon controller C1 to control pitch shift.<br><br>Set the 3 [C1 MODE] switch to "PITCH SHIFT." Use the 6 [PITCH SET] knob to set the range of pitch change.<br><br>Example setting:<br>You can use ribbon controller C1 to shift the pitch downward. |
| | OFF | You can use CC4 (Foot Controller) messages from an external MIDI device to control the pitch. When the CC4 value is 64 or higher, the pitch is as specified by the 6 [PITCH SET] knob. |
| 5 [TIME] knob | Specifies the time over which the pitch changes when using the AUTO setting. | |
| 6 [PITCH SET] knob | Specifies the starting pitch (variable range) of the pitch shift. | |

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# Human Voice

This is the human voice section which electronically synthesizes a voice.

| Controller | Explanation |
|---|---|
| 1 [MALE 8'] switch | Turns male (male voice) 8' on/off. |
| 2 [FEMALE 4'] switch | Turns female (female voice) 4' (male 4' in the lower region) on/off.<br>* This sound produces a female voice in the region (upper) above the split point, and a male voice in the region (lower) below the split point. You can change the split point in "System Settings." |
| 3 [ENSEMBLE] switch | Adds a chorus effect to the human voice. |
| 4 BALANCE [HUMAN VOICE] slider | Adjusts the volume of the Human Voice. |
| 5 VIBRATO [RATE] switch | Determines the speed of the vibrato. |
| 6 VIBRATO [DELAY TIME] slider | Specifies the time from when the tone sounds until the vibrato reaches its maximum amplitude. |
| 7 VIBRATO [DEPTH] slider | Determines the width of the vibrato pitch change. |
| 8 [ATTACK] slider | Adjusts the attack of the sound. |
| 9 [RELEASE] slider | Adjusts the decay that occurs after you release the key. |

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# Chord Memory

Chord memory is a function that lets you sound a previously-registered chord simply by playing a single key. The VP-03 lets you register 16 chord memories.

## Using the chord memory function

1. **Press the [MEMORY] button to make it light.**
The VP-03 is in chord memory mode.
2. **Press one of the [1]–[16] buttons to make it light.**
The selected chord memory is active.

For details, refer to "VP-03 Chord Memory List" (PDF).
➡ http://www.roland.com/manuals/

3. **Play a single note on the keyboard.**
You hear the chord that's registered in the selected chord memory.
If you're not using the keyboard, you can also use ribbon controller C1 to perform.
4. **To turn off the chord memory function, press the lit number button ([1]–[16]) to make it go dark.**

## Registering a chord memory

In addition to using the chord memory function to produce chords with the factory-set notes, you can also overwrite these with your own chords.

1. **Press the [MEMORY] button to make it light.**
The VP-03 is in chord memory mode.
2. **Hold down the chord memory button ([1]–[16]) in which you want to register your own chord, and press the [PLAY/STOP] button.**
The selected button ([1]–[16]) blinks.
3. **Play a chord on the keyboard.**
Specify the chord that is heard when you play middle C (C4).
While the button is blinking, you can press other notes to add them to the chord. Up to six notes can be registered in the chord.
4. **To complete the chord memory registration, press the button that's blinking ([1]–[16]) to make it light steadily.**
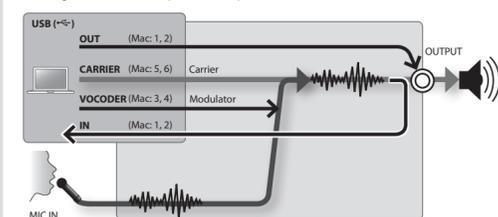
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# Connecting via USB

Use a commercially available USB 2.0 cable (A-microB) to connect this port to your computer.
It can be used to transfer USB MIDI and USB audio data. **You must install the USB driver when connecting the VP-03 to your computer.**
Download the USB driver from the Roland website. For details, refer to Readme.htm which is included in the download.
➡ http://www.roland.com/support/
* Do not use a micro USB cable that is designed only for charging a device. Charge-only cables cannot transmit data.

## Using USB audio as the carrier/modulator

**Carrier**
The carrier is the signal (tonality and pitch) that is the basis of the sound. The sound of an external synthesizer that's input via the USB port "**CARRIER**" can be used as the carrier.

**Modulator**
The vocal characteristics (formants) are extracted from the mic input, and these formants are used to modulate the carrier signal. The sound that's input via the USB port "**VOCODER**" can be used as the modulator.

USB (•←→)
OUT    (Mac: 1, 2)
CARRIER    (Mac: 5, 6)    Carrier
VOCODER    (Mac: 3, 4)    Modulator
IN    (Mac: 1, 2)
OUTPUT
MIC IN

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# Step Sequencer

The step sequencer lets you input a note and voice at each of up to 16 steps, and play back the notes as a loop. You can change the number of steps between 1 and 16. Up to 16 patterns can be stored.

1. **Press the [MEMORY] button, to make it go dark.**
The VP-03 is in step sequencer mode.
* You can also operate the [PLAY/STOP] button even when the VP-03 is not in step sequencer mode.

| Function | Controller |
|---|---|
| Play start/stop | [PLAY/STOP] |
| Tempo | [PLAY/STOP] + C1 |
| Set the gate time of all steps | [PLAY/STOP] + C2 |
| On/off status of each step | [1]–[16] |
| Enter a note | [1]–[16] + C1 (or keyboard) |
| Enter a voice | [1]–[16] + [PLAY/STOP] + Voice input from the microphone |
| Enter a tie | Step button + Next step button (e.g.: [1] + [2]) |
| Enter a gate time | [1]–[16] + C2 |
| Select a pattern (1–16) | [MEMORY] + [1]–[16] |
| Write the pattern (1–16) | [MEMORY] + [1]–[16] (long-press) |

**Pattern settings**

| | |
|---|---|
| Number of steps (1–16) | [PLAY/STOP] + [1] ➡ [1]–[16] |
| Shuffle | [PLAY/STOP] + [2] ➡ [4]–[12] (default: [8]) |
| Scale | [PLAY/STOP] + [3] ➡ (default: [2]) |
| Sample playback mode | [PLAY/STOP] + [4] ➡ [1] NOTE + VOICE (default)<br>[2] NOTE only<br>[3] VOICE only |

**Sequencer settings *1**

| | |
|---|---|
| Step order type | [PLAY/STOP] + [15] ➡ [1] Normal (default), [2] Even/Odd reverse, [3] Odd only, [4] Even only, [5] Odd only ➡ Even only, [6] Even only ➡ Odd only, [7] Random |
| Off step mode | [PLAY/STOP] + [16] ➡ [1] Rest (default), [2] Skip |

*1 Sequencer settings return to the default setting when the power is turned off.

## Inputting steps

1. **Hold down the step button ([1]–[16] buttons) at which you want to enter a note.**
2. **While holding down the step button, play the keyboard. Alternatively, use the C1 ribbon controller to specify the note.**
* You can also enter chords as well as single notes.
* To enter audio, hold down a step button ([1]–[16]) and the [PLAY/STOP] button, and input audio via the mic. When sound enters the mic, recording starts automatically (the indicator is lit green). When the sound ends, recording also stops automatically.
* To delete the audio from a step, hold down the button ([1]–[16]) and press the [PLAY/STOP] button, and then release the [PLAY/STOP] button without inputting audio from the mic.
* To specify the gate time, hold down the step button and use ribbon controller C2.
* To delete the note at a step, turn off a step button ([1]–[16]) that contains a note (making the button go dark).
3. **Press the [PLAY/STOP] button to play back.**
4. **To save the pattern, hold down the [MEMORY] button and long-press the save-destination step button ([1]–[16]).**

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# Restoring the Factory Settings (Factory Reset)

Here's how to return the VP-03 to its factory-set state.
1. **While holding down the [2] button, turn on the power.**
The [PLAY/STOP] button blinks.
If you decide to cancel the factory reset, turn off the power.
2. **Press the [PLAY/STOP] button to execute the factory reset.**
3. **When all buttons blink, turn the VP-03's power off, then on again.**

## Data Backup/Restore

### Backup

1. **Connect your computer to the VP-03's USB port via USB cable.**
2. **While holding down the [MEMORY] button, turn on the power.**
3. **Open the "VP-03" drive on your computer.**
4. **Copy the backup files into your computer.**
5. **After copying is complete, eject the USB drive and then disconnect the USB cable.**
**Windows**
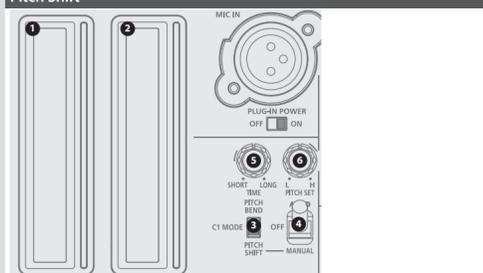Right-click on the "VP-03" icon in "Computer" and execute "Eject."
**Mac OS**
Drag the "VP-03" icon to the Trash icon in the Dock.
6. **Turn the VP-03 power off.**

### Restore

1. **As described in the procedure for "Backup" Step 1–3, open the "VP-03" drive on your computer.**
2. **Copy the VP-03 backup files into the "BACKUP" folder of the "VP-03" drive.**
* If "Not Enough Space" message appears, delete all files in the "BACKUP" folder of the "VP-03" drive first, and then copy the VP-03 backup files into the "BACKUP" folder.
3. **After copying is completed, eject the USB drive and then press the [PLAY/STOP] button.**
4. **After the LEDs have completely stopped blinking, turn off the power.**

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# Settings

## Portamento

1. **Press the [MEMORY] button to make it light.**
2. **While holding down the [MEMORY] button, specify the value by using the C1/C2 ribbon controller.**

| Parameter | Value setting | Explanation |
|---|---|---|
| Portamento Switch | C1 (OFF/ON) | Creates a smooth change in pitch between one key and the next key played. |
| Portamento Time | C2 (0–100) | Adjusts the time required for the pitch change. |

## System Settings

1. **Press the [MEMORY] button to make it light.**
2. **While holding down the [MEMORY] button, press one of the numeric buttons shown in the following table to select the parameter.**
* Keep holding down the [MEMORY] button.
3. **Press a numeric button to select the value, and release the [MEMORY] button to confirm the value.**

| Parameter | Select | Value setting | Explanation |
|---|---|---|---|
| Master Tune | [MEMORY] + [1] | [1]–[16] (433–448 Hz) | Specifies the master tuning. For the 440 Hz (default) setting, [8] is lit. |
| MIDI Channel | [MEMORY] + [2] | [1]–[16] | Specifies the MIDI transmit/receive channel (1–16). |
| MIDI Clock Source | [MEMORY] + [3] | [1] (AUTO) | If MIDI clock is being input to the MIDI IN connector or the USB port, the VP-03's tempo will automatically synchronize to MIDI clock (default). |
| | | [2] (INTERNAL) | The VP-03 operates at the tempo specified on the unit itself. Choose the "INTERNAL" setting if you don't want to synchronize to an external device. |
| Transpose *1 | [MEMORY] + [4] | [1]–[16] (-6–+5) | Transposes the keyboard range in semitones. For the ±0 (default) setting, [8] is lit. |
| Key Velocity *1 | [MEMORY] + [5] | [1] (TOUCH) | Adjusts the velocity value that will be transmitted when you play the keyboard.<br>* The velocity of the VP-03's own sound generator is always fixed.<br>Actual keyboard velocity will be transmitted. |
| | | [2] (64)<br>[3] (127) | A fixed velocity value (64 or 127) will be transmitted regardless of how you play. |
| Velocity Curve *1 | [MEMORY] + [6] | [1] (LIGHT)<br>[2] (MEDIUM)<br>[3] (HEAVY) | Sets the keyboard's touch.<br>Sets the keyboard to a light touch.<br>Sets the keyboard to the standard touch.<br>Sets the keyboard to a heavy touch. |
| Auto Off | [MEMORY] + [7] | [1] (OFF)<br>[2] (30 min) | The power does not turn off automatically.<br>The power turns off automatically after 30 minutes (default).<br>* Auto Off does not occur while USB-connected. |
| LED Demo | [MEMORY] + [8] | [1] (OFF)<br>[2] (1 min)<br>[3] (3 min)<br>[4] (10 min) | Specifies the time until the LED DEMO is shown. |
| Octave Shift *1 | [MEMORY] + [9] | [5]–[11] (-3–+3) | Shifts the keyboard range in steps of one octave. For the ±0 (default) setting, [8] is lit. |
| Ribbon Controller C2 Mode | [MEMORY] + [10] | [1] (MOD) | Modulation (default) |
| | | [2] (FORMANT) | Adjusts the formant. Negative ("-") settings produce a masculine character; positive ("+") produce a feminine character. |
| Bend Range | [MEMORY] + [11] | [1]–[12], [13] (2 oct), [16] (OFF) | If the [C1 MODE] switch is set to "PITCH BEND," this sets the pitch bend range of ribbon controller C1 in semitone units. (default: [2]) |
| Mic Gain | [MEMORY] + [12] | [1]–[16] | Adjusts the input gain of the mic. If the level of the connected mic does not reach the maximum even when the VOCODER [LEVEL] slider is maximized, raise the mic gain value. If the level of the connected mic is too loud, lower the mic gain value. (default: [8]) |
| Split Point | [MEMORY] + [13] | Press the MIDI keyboard | Specifies the split point for the human voice. (default: C4) All of the number buttons [1]–[16] are blinked. When you press the MIDI keyboard, the split point is set (the specified note is included in the upper), and you exit the setting mode. |

*1 Only when using the K-25m keyboard unit (sold separately)

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## Main Specifications Roland VP-03: Vocoder

| | | |
|---|---|---|
| Power Supply | Rechargeable Ni-MH battery (AA, HR6) x 4, Alkaline battery (AA, LR6) x 4, USB bus power | |
| Current Draw | 500 mA (USB bus power) | |
| Dimensions | 300 (W) x 128 (D) x 46 (H) mm | 11-13/16 (W) x 5-1/16 (D) x 1-13/16 (H) inches |
| Weight | 940 g (including batteries) | 2 lbs 2 oz |
| Accessories | Dedicated microphone, Owner's Manual, Leaflet "USING THE UNIT SAFELY", Alkaline battery (AA, LR6) x 4 | |
| Options (sold separately) | Keyboard unit: K-25m, Boutique Dock: DK-01 | |

* 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.