

USING THE UNIT SAFELY

INSTRUCTIONS FOR THE PREVENTION OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

About ⚠ WARNING and ⚠ CAUTION Notices

⚠ WARNING	Used for instructions intended to alert the user to the risk of death or severe injury should the unit be used improperly.
⚠ CAUTION	Used for instructions intended to alert the user to the risk of injury or material damage should the unit be used improperly. * Material damage refers to damage or other adverse effects caused with respect to the home and all its furnishings, as well to domestic animals or pets.

About the Symbols

	The ⚠ symbol alerts the user to important instructions or warnings. The specific meaning of the symbol is determined by the design contained within the triangle. In the case of the symbol at left, it is used for general cautions, warnings, or alerts to danger.
	The ⚡ symbol alerts the user to items that must never be carried out (are forbidden). The specific thing that must not be done is indicated by the design contained within the circle. In the case of the symbol at left, it means that the unit must never be disassembled.
	The ⚡ symbol alerts the user to things that must be carried out. The specific thing that must be done is indicated by the design contained within the circle. In the case of the symbol at left, it means that the power-cord plug must be unplugged from the outlet.

ALWAYS OBSERVE THE FOLLOWING

⚠ WARNING

- Before using this unit, make sure to read the instructions below, and the Owner's Manual.

- Do not open or perform any internal modifications on the unit.

- Do not attempt to repair the unit, or replace parts within it (except when this manual provides specific instructions directing you to do so). Refer all servicing to your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page.

- Never use or store the unit in places that are:
 - Subject to temperature extremes (e.g., direct sunlight in an enclosed vehicle, near a heating duct, on top of heat-generating equipment); or are
 - Damp (e.g., baths, washrooms, on wet floors); or are
 - Humid; or are
 - Exposed to rain; or are
 - Dusty; or are
 - Subject to high levels of vibration.

- This unit should be used only with a rack or stand that is recommended by Roland.

- When using the unit with a rack or stand recommended by Roland, the rack or stand must be carefully placed so it is level and sure to remain stable. If not using a rack or stand, you still need to make sure that any location you choose for placing the unit provides a level surface that will properly support the unit, and keep it from wobbling.

⚠ WARNING

- Make sure you always have the unit placed so it is level and sure to remain stable. Never place it on stands that could wobble, or on inclined surfaces.

- The unit should be connected to a power supply only of the type described in the operating instructions, or as marked on the unit.

- Use only the attached power-supply cord.

- Do not excessively twist or bend the power cord, nor place heavy objects on it. Doing so can damage the cord, producing severed elements and short circuits. Damaged cords are fire and shock hazards!

- This unit, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level, or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should immediately stop using the unit, and consult an audiologist.

- Do not allow any objects (e.g., flammable material, coins, pins); or liquids of any kind (water, soft drinks, etc.) to penetrate the unit.

USING THE UNIT SAFELY

⚠ WARNING

- Immediately turn the power off, remove the power cord from the outlet, and request servicing by your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the “Information” page when:
 - The power-supply cord, or the plug has been damaged; or
 - If smoke or unusual odor occurs
 - Objects have fallen into, or liquid has been spilled onto the unit; or
 - The unit has been exposed to rain (or otherwise has become wet); or
 - The unit does not appear to operate normally or exhibits a marked change in performance.
- In households with small children, an adult should provide supervision until the child is capable of following all the rules essential for the safe operation of the unit.
- Protect the unit from strong impact. (Do not drop it!)
- Do not force the unit’s power-supply cord to share an outlet with an unreasonable number of other devices. Be especially careful when using extension cords—the total power used by all devices you have connected to the extension cord’s outlet must never exceed the power rating (watts/amperes) for the extension cord. Excessive loads can cause the insulation on the cord to heat up and eventually melt through.
- Before using the unit in a foreign country, consult with your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the “Information” page.

⚠ CAUTION

- The unit should be located so that its location or position does not interfere with its proper ventilation.
- This (VK-88) for use only with Roland stand KS-88, Roland rack RKS-88, Roland monitor speaker DS-50A and DS-30A. Use with other stands, racks, and monitor speaker are capable of resulting in instability causing possible injury.
- Always grasp only the plug on the power-supply cord when plugging into, or unplugging from, an outlet or this unit.

⚠ CAUTION

- Any accumulation of dust between the power plug and the power outlet can result in poor insulation and lead to fire. Periodically wipe away such dust with a dry cloth. Also, disconnect the power plug from the power outlet whenever the unit is to remain unused for an extended period of time.
- Try to prevent cords and cables from becoming entangled. Also, all cords and cables should be placed so they are out of the reach of children.
- Never climb on top of, nor place heavy objects on the unit.
- Never handle the power cord or its plugs with wet hands when plugging into, or unplugging from, an outlet or this unit.
- If you need to move the instrument, take note of the precautions listed below. At least two persons are required to safely lift and move the unit. It should be handled carefully, all the while keeping it level. Make sure to have a firm grip, to protect yourself from injury and the instrument from damage.
 - Check to make sure the knob bolts and screws securing the unit to the stand have not become loose. Fasten them again securely whenever you notice any loosening.
 - Disconnect the power cord.
 - Disconnect all cords coming from external devices.
 - Remove the music stand.
- Before cleaning the unit, turn off the power and unplug the power cord from the outlet (p. 19).
- Whenever you suspect the possibility of lightning in your area, pull the plug on the power cord out of the outlet.
- Should you remove knob bolt and screws for stand, make sure to put them in a safe place out of children’s reach, so there is no chance of them being swallowed accidentally.

IMPORTANT NOTES

In addition to the items listed under “IMPORTANT SAFETY INSTRUCTIONS” and “USING THE UNIT SAFELY” on pages 2, 3 and 4, please read and observe the following:

Power Supply

- Do not use this unit on the same power circuit with any device that will generate line noise (such as an electric motor or variable lighting system).
- Before connecting this unit to other devices, turn off the power to all units. This will help prevent malfunctions and/or damage to speakers or other devices.

Placement

- Using the unit near power amplifiers (or other equipment containing large power transformers) may induce hum. To alleviate the problem, change the orientation of this unit; or move it farther away from the source of interference.
- This device may interfere with radio and television reception. Do not use this device in the vicinity of such receivers.
- Noise may be produced if wireless communications devices, such as cell phones, are operated in the vicinity of this unit. Such noise could occur when receiving or initiating a call, or while conversing. Should you experience such problems, you should relocate such wireless devices so they are at a greater distance from this unit, or switch them off.
- Do not expose the unit to direct sunlight, place it near devices that radiate heat, leave it inside an enclosed vehicle, or otherwise subject it to temperature extremes. Also, do not allow lighting devices that normally are used while their light source is very close to the unit (such as a piano light), or powerful spotlights to shine upon the same area of the unit for extended periods of time. Excessive heat can deform or discolor the unit.
- When moved from one location to another where the temperature and/or humidity is very different, water droplets (condensation) may form inside the unit. Damage or malfunction may result if you attempt to use the unit in this condition. Therefore, before using the unit, you must allow it to stand for several hours, until the condensation has completely evaporated.
- Do not allow rubber, vinyl, or similar materials to remain on the unit for long periods of time. Such objects can discolor or otherwise harmfully affect the finish.
- Do not put anything that contains water (e.g., flower vases) on the unit. Also, avoid the use of insecticides, perfumes, alcohol, nail polish, spray cans, etc., near the unit. Swiftly wipe away any liquid that spills on the unit using a dry, soft cloth.
- Do not allow objects to remain on top of the keyboard. This can be the cause of malfunction, such as keys ceasing to produce sound.
- Do not paste stickers, decals, or the like to this instrument. Peeling such matter off the instrument may damage the exterior finish.

Maintenance

- To clean the unit, use a dry, soft cloth; or one that is slightly dampened. Try to wipe the entire surface using an equal amount of strength, moving the cloth along with the grain of the wood. Rubbing too hard in the same area can damage the finish.
- Never use benzine, thinners, alcohol or solvents of any kind, to avoid the possibility of discoloration and/or deformation.

Additional Precautions

- Please be aware that the contents of memory can be irretrievably lost as a result of a malfunction, or the improper operation of the unit. To protect yourself against the risk of losing important data, we recommend that you periodically save a backup copy of important data you have stored in the unit's memory in another MIDI device (e.g., a sequencer).
- Unfortunately, it may be impossible to restore the contents of data that was stored in another MIDI device (e.g., a sequencer) once it has been lost. Roland Corporation assumes no liability concerning such loss of data.
- Use a reasonable amount of care when using the unit's buttons, sliders, or other controls; and when using its jacks and connectors. Rough handling can lead to malfunctions.
- When connecting / disconnecting all cables, grasp the connector itself—never pull on the cable. This way you will avoid causing shorts, or damage to the cable's internal elements.
- A small amount of heat will radiate from the unit during normal operation.
- To avoid disturbing your neighbors, try to keep the unit's volume at reasonable levels. You may prefer to use headphones, so you do not need to be concerned about those around you (especially when it is late at night).
- When you need to transport the unit, package it in the box (including padding) that it came in, if possible. Otherwise, you will need to use equivalent packaging materials.
- Use only the specified expression pedal (EV-7; sold separately). By connecting any other expression pedals, you risk causing malfunction and/or damage to the unit.
- Use a cable from Roland to make the connection. If using some other make of connection cable, please note the following precautions.
 - Some connection cables contain resistors. Do not use cables that incorporate resistors for connecting to this unit. The use of such cables can cause the sound level to be extremely low, or impossible to hear. For information on cable specifications, contact the manufacturer of the cable.

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Main Features

Organ Features

Virtual Tonewheel Sound Generator

The VK-88 features a Virtual Tonewheel sound generator that perfectly simulates the sound-production mechanism of traditional tone wheel organs. The rapid attack is particularly evident when playing glissandos. Since all parts — upper, lower, and pedal — are completely polyphonic, notes aren't cut off regardless of your performance technique.

Rotary Sound

An effect algorithm using Roland's COSM technology creates a faithful rotary speaker simulation that's essential for a great organ sound. Enjoy the realistic rotary sound simply by connecting headphones, a keyboard amp (such as the KC-1000) or stereo system.

Overdrive Sound

The VK-88 accurately simulates not only the special characteristics of the rotary speaker's vacuum tube circuitry and the speaker cabinet's acoustic properties, it provides a variety of simulated amp types as well. Switch among the various amp types to enjoy performing with a wide range of sounds, from tones that are just right for jazz to the heavy overdrive sound of rock music.

Waterfall Keyboard

The VK-88 features the same keyboard feel as traditional tone wheel organs. This keyboard is especially designed for optimal performance of glissando and other organ techniques.

Intuitive Operation

The VK-88 is designed with an emphasis on operability, with harmonic bars, rotary knobs, and large buttons. The VIBRATO AND CHORUS and PERCUSSION controls feature the same operation and placement as on traditional tone wheel organs.

Tone wheel Type, Leakage Noise, Amp Simulator, and other elements vital to creating a great organ sound can be edited directly and intuitively from the front panel just as if you were adjusting the sound on a guitar amp.

Natural Wood Cabinet

The cabinet is built of wood, echoing the construction of traditional tone wheel organs. The side panels feature beautifully finished natural wood that will gain luster with years of use.

Built-in Orchestral Tones Complement the Organ Sound Generator

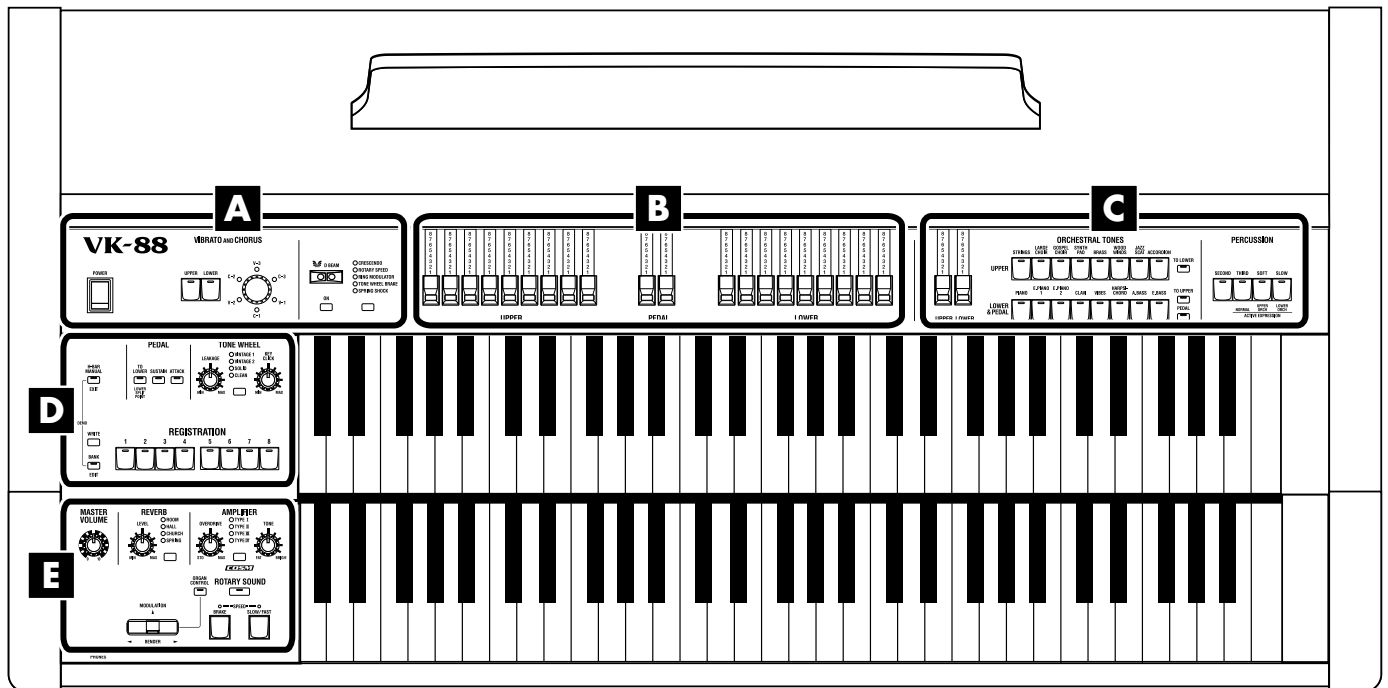
The VK-88 includes an ORCHESTRAL TONES feature that is separate from the organ sound generator, providing high-quality internal strings, piano sounds, and other tones. Use these in combination with the organ to further enhance expression in your performances.

The VK-88 also is equipped with ORCHESTRAL TONES harmonic bars, allowing you to control these tones in the same manner as the organ.

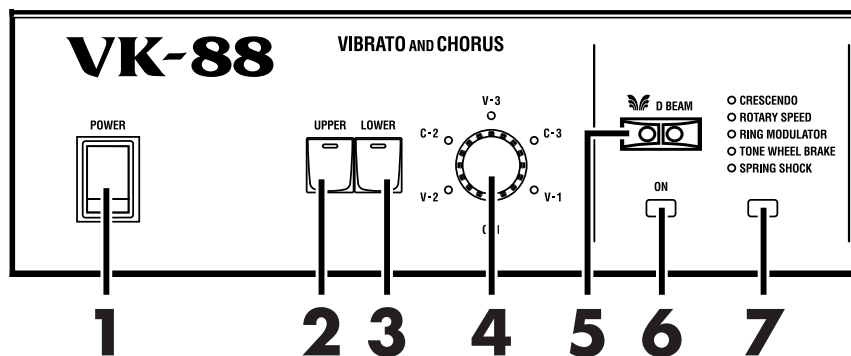
Other Features

- You can use the D BEAM controller to create performance gestures unique to traditional tone wheel organs, such as turning the tone wheel motor off or producing the "splash" of a quick kick to a spring reverb unit. You can also confirm the effect by the change in color of the color LEDs. Take advantage of the D BEAM controller to heighten the excitement of your performances onstage.
- A dedicated rotary speaker connector is provided. Rotary speakers with an eleven-pin connector can be connected directly to the VK-88.
- The VK-88's MIDI IN and OUT connectors let you enjoy performances using an external sound module or sequencer.
- You can also enjoy performing with a pedalboard by connecting an external pedalboard to the PEDAL IN jack.
- User Registration memory lets you store 64 different panel settings.
- In addition to Expression Pedal and Hold Pedal jacks, a Control Pedal jacks are provided that can be assigned a variety of functions. By connecting an expression pedal or pedal switch, you can enjoy a wide range of performance possibilities.

Panel Descriptions

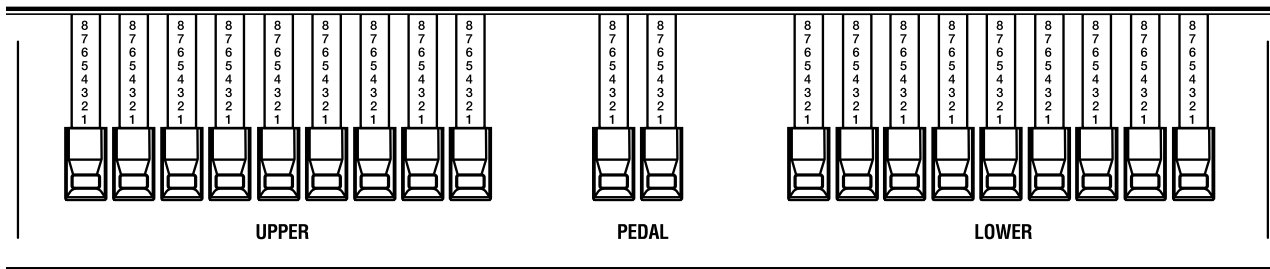


A



- 1. [POWER] switch**
Turn the power on/off (p. 26).
- **VIBRATO AND CHORUS**
- 2. VIBRATO AND CHORUS [UPPER] button**
Turns the Upper Part's vibrato or chorus effect on and off (p. 39).
- 3. VIBRATO AND CHORUS [LOWER] button**
Turns the Lower Part's vibrato or chorus effect on and off (p. 39).
- 4. [VIBRATO AND CHORUS] knob**
Switches the type of vibrato or chorus effect (p. 39).
- **D BEAM**
- 5. D BEAM controller**
You can modify the sound by moving your hand over the D Beam controller (p. 42).
- 6. D BEAM [ON] button**
Switches the D Beam controller on/off (p. 42).
- 7. [D BEAM] button**
Selects the effect that will be controlled by the D Beam controller (p. 42).

B

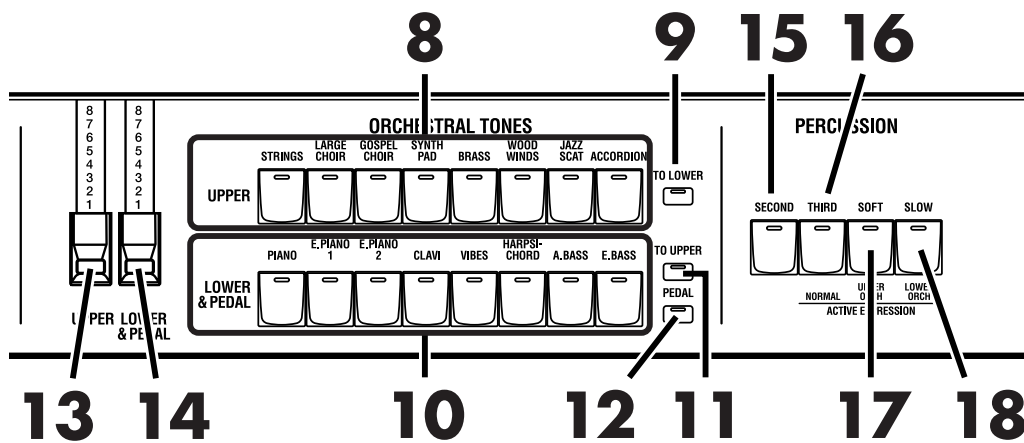


■ HARMONIC BAR

These bars create the tonality of the organ voice for the upper, pedal and lower keyboard. You can modify the tone in real time as you play (p. 31).

- UPPER Changes the Upper Organ Tone
- PEDAL Changes the Pedal Organ Tone
- LOWER Changes the Lower Organ Tone

C



■ ORCHESTRAL TONES

- 8. UPPER ORCHESTRAL TONES button**
Selects the Upper Orchestral Tones (p. 50).
- 9. UPPER ORCHESTRAL TONES [TO LOWER] button**
Plays the Upper Orchestral Tones on the lower manual (p. 50).
- 10. LOWER & PEDAL ORCHESTRAL TONES button**
This button is used to select either the Lower Orchestral Tones or the Pedal Orchestral Tones (p. 50). When the ORCHESTRAL TONES [PEDAL] button is not lit, the buttons here are used for selecting the Lower Orchestral Tones; when the ORCHESTRAL TONES [PEDAL] button is flashing, these buttons select the Pedal Orchestral Tones.
- 11. LOWER ORCHESTRAL TONES [TO UPPER] button**
Plays the Lower Orchestral Tones on the upper manual (p. 50).
- 12. ORCHESTRAL TONES [PEDAL] button**
When the ORCHESTRAL TONES [PEDAL] button is flashing, the LOWER & PEDAL ORCHESTRAL TONES

buttons are used for selecting the Pedal Orchestral Tones, and the LOWER & PEDAL ORCHESTRAL TONES harmonic bars adjust the volume of the Pedal Orchestral Tones (p. 50).

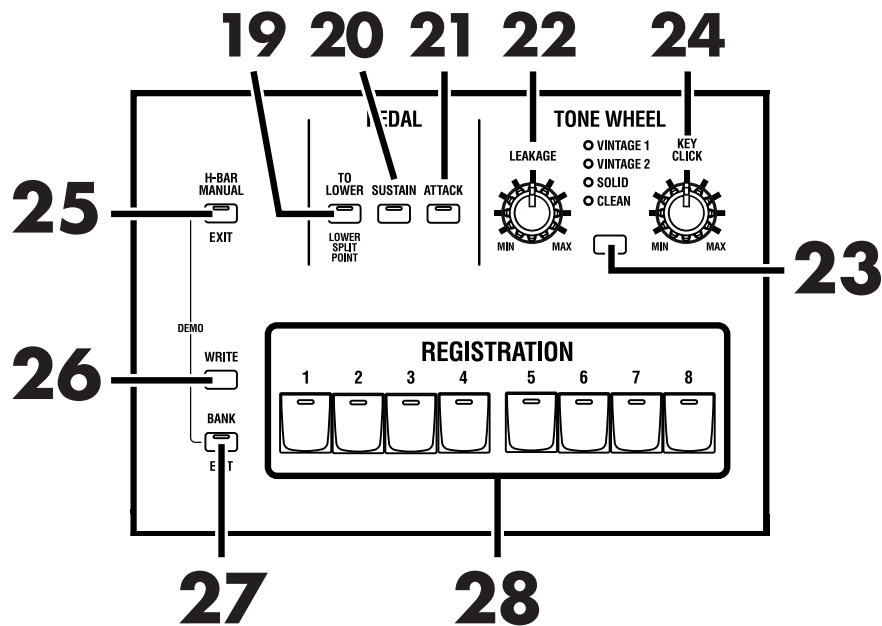
- 13. UPPER ORCHESTRAL TONES HARMONIC BAR**
Adjusts the volume of the Upper Orchestral Tones (p. 50).
- 14. LOWER & PEDAL ORCHESTRAL TONES HARMONIC BAR**
Adjust the volume of the Lower Orchestral Tones or Pedal Orchestral Tones (p. 50).

■ PERCUSSION

- 15. [SECOND] button**
This adds second percussion (same pitch as the 4' harmonic bar) to the organ voice (p. 36).
- 16. [THIRD] button**
This adds third percussion (same pitch as the 2-2/3' harmonic bar) to the organ voice (p. 36).
- 17. [SOFT] button**
This switches the volume of the percussion (p. 37).
- 18. [SLOW] button**
This switches the decay time of the percussion (p. 38).

Panel Descriptions

D



■ PEDAL

19. PEDAL [TO LOWER] button

Splits the lower manual into two ranges, with the Pedal Tones placed in the left range (p. 46).

20. PEDAL [SUSTAIN] button

Adds sustain to the sound of the organ's Pedal part and Pedal Orchestrated Tones (p. 47).

21. PEDAL [ATTACK] button

Adds attack to the organ's Pedal part sound (p. 47).

■ TONE WHEEL

22. [LEAKAGE] knob

Allows you to independently add leakage noise, separately from the leakage noise selected by the wheel type (p. 35).

23. [TONE WHEEL] button

Select the type of the virtual tonewheel (p. 35).

24. [KEY CLICK] button

Adjusts the key click volume (p. 35).

25. [H-BAR MANUAL] (Harmonic Bar Manual) button

When this function is used, the harmonic bar settings will change from the settings of the registration to the positions (settings) of the harmonic bars on the panel (p. 30).

■ REGISTRATION

26. [WRITE] button

Saves the panel settings as a registration (p. 48, 49).

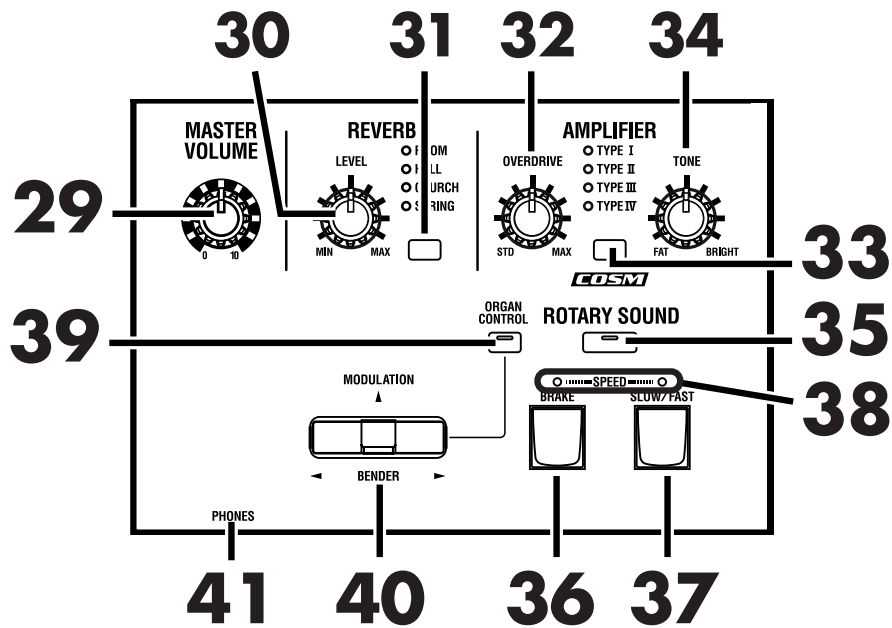
27. [BANK] button

Selects the registration bank (p. 29, 48, 49).

28. [1]–[8] button

Allows the [1]–[8] buttons to be used for selecting registrations.

E



29. [MASTER VOLUME] knob
Adjust the overall volume (p. 26).

■ REVERB

30. REVERB [LEVEL] knob
Adjust the depth of reverb (p. 45).

31. [REVERB] button
Select the type of reverb (p. 45).

■ AMPLIFIER

32. [OVERDRIVE] knob
Adjust the depth of overdrive (p. 41).

33. [AMPLIFIER] button
Switches the frequency response and cabinet resonance of the virtual amp (p. 41).

34. [TONE] knob
Adjust the tonal character of the organ voice (p. 41).

■ ROTARY SOUND

35. ROTARY SOUND [ON] button
This button switches the rotary effect on/off for the organ sound (p. 40).

36. [BRAKE] button
This button switches the rotation of the rotary sound. When this is turned on, the rotation will gradually stop. When it is turned off, the rotation will gradually resume (p. 40).

37. [SLOW/FAST] button
This button switches the speed of rotation for the rotary sound (p. 40).

38. SPEED indicator
The left and right indicators blink alternately, indicating the speed of the rotary speaker (p. 40).

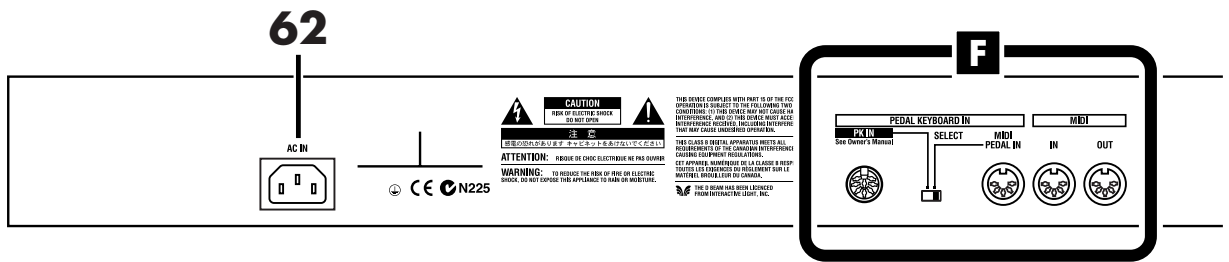
ROTARY SPEED Indicators	Explanation
Rapid blinking	Fast rotation
Slow blinking	Slow rotation

39. [ORGAN CONTROL] button
This button selects whether the [BENDER/MODULATION] lever will be used as an organ controller or as a controller for orchestral tones and external MIDI devices (p. 62).

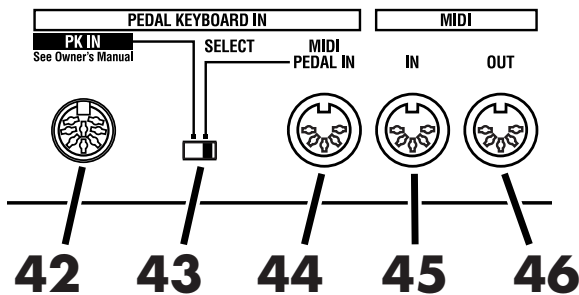
40. [BENDER/MODULATION] lever.
When using this as an organ voice controller, you can assign the function, such as rotary effect, Tone wheel, overdrive, or other function to be controlled (p. 62).
When this is used as a controller for the orchestral tones, it can control the pitch of the sound or modulate the pitch (p. 61).
When this is used to control external MIDI sound modules, movements of the lever will transmit pitch bend messages and modulation messages respectively.

41. PHONES jack
An optional set of headphones can be connected here (p. 20).

Panel Descriptions



F



42. PK IN button

If your pedal keyboard unit (PK-25/PK-7, etc.; sold separately) has a PK OUT connector, connect it to this connector (p. 22, 85).

43. PEDAL KEYBOARD IN [SELECT] switch

Set the switch to specify the connector you have used to connect your pedal keyboard unit (p. 22, 23, 85).

Turn off the power before changing the setting of this select switch.

44. MIDI PEDAL IN connector

A pedal keyboard can be connected here, allowing you to play the pedals (p. 23, 85).

45. MIDI IN connector

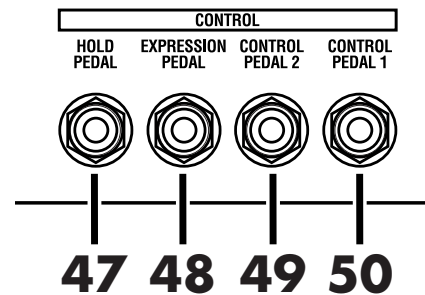
You can connect an external keyboard and play the VK-88's sounds from the external keyboard (p. 84).

You could also connect an external sequencer here, and get the VK-88 to play the music the sequencer sends it (p. 86).

46. MIDI OUT connector

An external MIDI device can be connected here to receive MIDI data transmitted from the VK-88 (p. 86, 87).

G



47. HOLD PEDAL jack

A pedal switch can be connected here. While you depress the pedal, the organ voice or Orchestral Tones you are playing will be sustained (p. 24, 60).

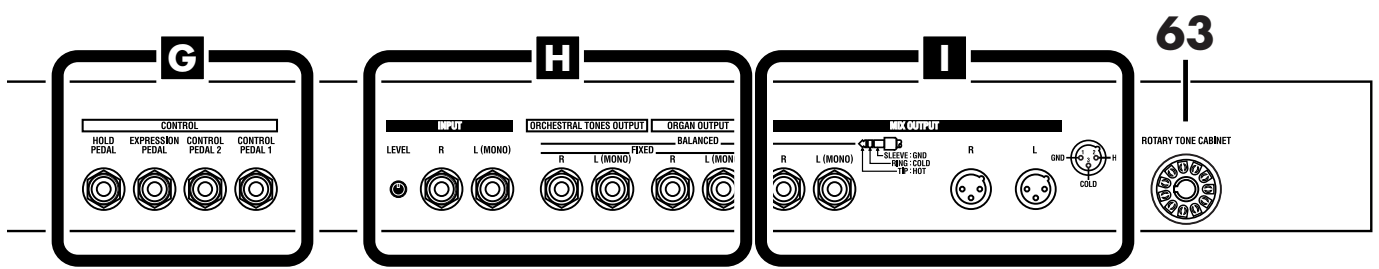
48. EXPRESSION PEDAL jack

An expression pedal (EV-7; sold separately) can be connected here (p. 24, 56).

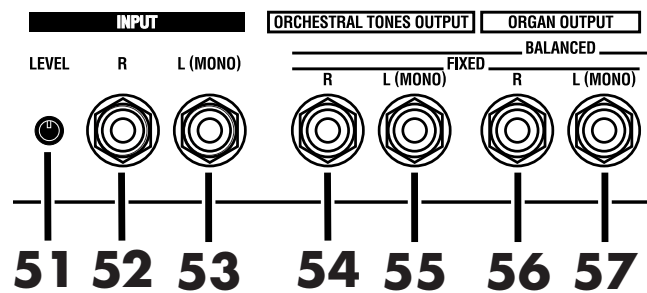
49. CONTROL PEDAL 1 jack

50. CONTROL PEDAL 2 jack

Accepts connection of a pedal switch or expression pedal. The desired function can be assigned to the pedal (p. 24, 57).



H



51. INPUT [LEVEL] knob

Adjust the volume level of the sound input from the INPUT jack (p. 90).

52. INPUT R jack

53. INPUT L (MONO) jack

You can play the sounds input from the sound module mixed with the VK-88's sounds (p. 90). If you are inputting in mono, connect the L(MONO) jack. Sounds input from the INPUT jacks are output from the MIX OUTPUT jacks.

54. ORCHESTRAL TONES OUTPUT R jack

55. ORCHESTRAL TONES OUTPUT L (MONO) jack

The Orchestral Tone's audio signals are output from audio systems or amps in stereo. They support both unbalanced and balanced output. If you are outputting in mono, connect the L(MONO) jack.

* The volume of the ORCHESTRAL TONES OUTPUT jack cannot be adjusted by the [Master Volume] knob.

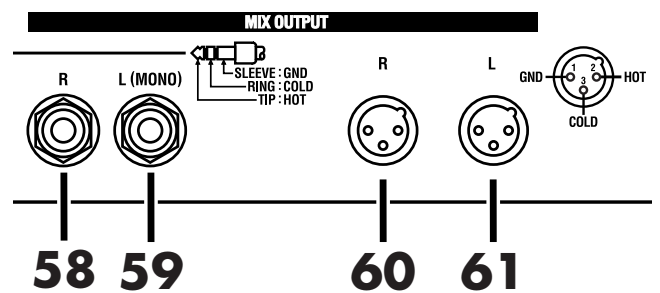
56. ORGAN OUTPUT R jack

57. ORGAN OUTPUT L (MONO) jack

The Organ voice's audio signals are output from audio systems or amps in stereo. They support both unbalanced and balanced output. If you are outputting in mono, connect the L(MONO) jack.

* The volume of the ORGAN OUTPUT jack cannot be adjusted by the [Master Volume] knob.

I



58. MIX OUTPUT R jack

59. MIX OUTPUT L (MONO) jack

These jacks output the audio signal from the entire VK-88 to your audio system or amp in stereo L/R. They support both unbalanced and balanced output. If you are outputting in mono, connect the L(MONO) jack.

60. MIX OUTPUT R jack (XLR type)

61. MIX OUTPUT L (MONO) jack (XLR type)

These jacks output the audio signal from the entire VK-88 to your audio system or amp in stereo L/R.

62. AC Inlet

Connect the included power cord to this inlet (p. 19).

63. ROTARY TONE CABINET connector

Rotary speaker can be connected (p. 91).

How the VK-88 Works

■ About the Virtual Tonewheel Sound Generator

A traditional tone wheel organ produces the sound by 91 toothed wheels called “tone wheels.” Each tone wheel produces a different pitch. A motor is used to rotate these tone wheels past electromagnetic coils, and as the teeth of each wheel pass by the corresponding electromagnetic coil, an audio signal is generated. The combination of harmonic bars and the notes that are pressed then select the audio signals that are output, producing the sound of the organ.

The virtual tonewheel sound generator of the VK-88 uses digital technology to precisely re-create the sound-production mechanism of a tone wheel organ. The 91 toothed wheels are constantly “rotating” digitally, and are able to produce sound at any time. The sound produced by these virtual tonewheels is determined by the combination of harmonic bars and the state of the notes played on the keyboard—exactly as on traditional tone wheel organs.

■ How the Organ Sound are Created

Tone Wheels

Tone wheels rotate constantly, and will therefore “speak” the instant you play a note. The virtual tonewheel sound generator of the VK-88 is also producing sound constantly, allowing very rapid response when you play a note. This rapid response is especially valuable when you use characteristic organ performance techniques such as glissando.

The organ sound consists of a fundamental and eight harmonics, and these are mixed according to the combination of the harmonic bars. You can use the harmonic bars to modify the tone even while you play, allowing a high degree of expressive flexibility.

Percussion

Tone wheel percussion is used when you want to add an attack to the notes you play, making the sound more crisp. Relative to the pitch of the note you play, you can specify either the second (SECOND) or third (THIRD) partial as the pitch of the percussion sound, and you can decrease the percussion volume (SOFT) or lengthen its decay (SLOW).

The percussion on tone wheel organs is of a type called “single-trigger,” meaning that percussion was not applied to all the notes that were played, but only to the note that was pressed first. If you release the currently-played key(s), percussion will sound for the next-played note. If you play legato (with notes smoothly connected), percussion will be applied only to the first note, and not to subsequent notes. If you play staccato, percussion will be applied to all notes. If you play rapidly when using percussion, the percussion circuit may not keep up with your playing, causing the percussion sound to become softer. However, the VK-88 allows you to adjust the speed of recovery so that it will keep up even with rapid playing (p. 67). On a tone wheel organ, the way in which percussion is applied is a very important element in enhancing the expressiveness of the performance.

On tone wheel organs, the 1' harmonic bar was used to produce the percussion sound. This means that when you add percussion, the sound of the 1' harmonic bar will no longer be heard. Also, percussion will be applied only to the Upper Part.

On tone wheel organs, turning off percussion [SOFT] button would lower the volume of the organ, but the VK-88 allows you to adjust it so the volume of the organ won't change when percussion [SOFT] button is switched on/off (p. 67).

Key Click

The first generations of traditional tone wheel organs produced a “blip” noise (separately from percussion) when a note was pressed or released. Initially, this click noise was considered a problem, but blues and rock musicians came to utilize it in their performances, and the key click became an indispensable part of the organ sound in jazz as well.

On the VK-88 you can independently adjust the volume of the key click for key-on and key-off (p. 82).

Vibrato and Chorus

Traditional tone wheel organs provided a total of six different effects: three kinds of vibrato (V-1, V-2, V-3) and three kinds of chorus (C-1, C-2, C-3).

Vibrato is an effect that cyclically modulates the pitch, and chorus is an effect that modulates the pitch to produce spaciousness and depth.

Harmonic Bars

The harmonic bars of a tone wheel organ are arranged in ascending order of pitch, from left to right. Borrowing some inspiration from the pipes of a pipe organ, the bars are labeled in “feet,” with 8’ being the fundamental.

There is one exception in the ordering of the harmonic bars, and that is the 5-1/3’ bar located second from the left. According to the pitch order, this should be the third from the left, but since 5-1/3’ is an overtone of 16’, and blends with the 16’ sound, it is placed beside the 16’ bar.

The harmonic bars are color-coded in three colors. The bars whose pitches are in octave relation to 8’ are white, the bars that are not octave harmonics are black, and the lower pitch range is brown.

On tone wheel organs, the highest feet were repeated (“reused”) in the high keyboard range, and the lowest feet were repeated in the low range. This is called “fold-back.”

If an organ had 109 tone wheels, all nine harmonics of the harmonic bars could be sounded by all 61 keys of a tone wheel organ. However, if this were the case, the upper range would be unpleasantly screechy, and the lower range would be excessively low and muddy-sounding.

For this reason, fold-back is used on the VK-88 to produce a well-balanced sound.

Amp Type (Rotary, Overdrive, Tone)

The VK-88 features four different amp types, reproducing everything from warm tube sound to the cabinets’ sonic characteristics.

Even if you are using a keyboard amp or monitor speakers, amp modeling gives you the sound of an actual rotating speaker or a guitar amp sound, allowing you to enjoy performing with a wider variety of sounds.

What’s more, you can make settings for the rotary speaker volume, for the time used in switching between the fast and slow rotation speeds, as well as the fast and slow rotation speeds themselves, and separate tweeter and woofer settings for a greater sense of breadth in the sound.

Reverb

Reverb is an effect that adds reverberation to the sound. Reverb types ROOM, HALL, and CHURCH add the reverberation of differently sized acoustical spaces. The SPRING reverb type simulates a reverb circuit that used springs, and was often found on traditional organs.

With the VK-88, you can change the reverberation time (p. 82), adjust the reverb volume by turning the REVERB [LEVEL] knob (p. 45), and change the connection between the rotary and reverb (p. 79).

How the VK-88 Works

■ About the ORCHESTRAL TONES

The VK-88 also contains sounds other than organ sounds. These are referred to as “ORCHESTRAL TONES.”

You can play the Orchestral Tones in the Upper, Lower, and Pedal Parts.

ORCHESTRAL TONES provide the following sounds.

PEDAL ORCHESTRAL TONES	LOWER ORCHESTRAL TONES	UPPER ORCHESTRAL TONES
PIANO		STRINGS
E.PIANO 1 (Electric Piano 1)		LARGE CHOIR
E.PIANO 2 (Electric Piano 2)		GOSPEL CHOIR
CLAVI		SYNTH PAD (Synthesizer Pad)
VIBES (Vibraphone)		BRASS
HARPSICHORD		WOOD WINDS
A.BASS (Acoustic Bass)		JAZZ SCAT
E.BASS (Electric Bass)		ACCORDION

■ About the Memories

System Memory

Settings that affect the entire VK-88 are referred to as “system memory” (p. 63).

Registration Memory

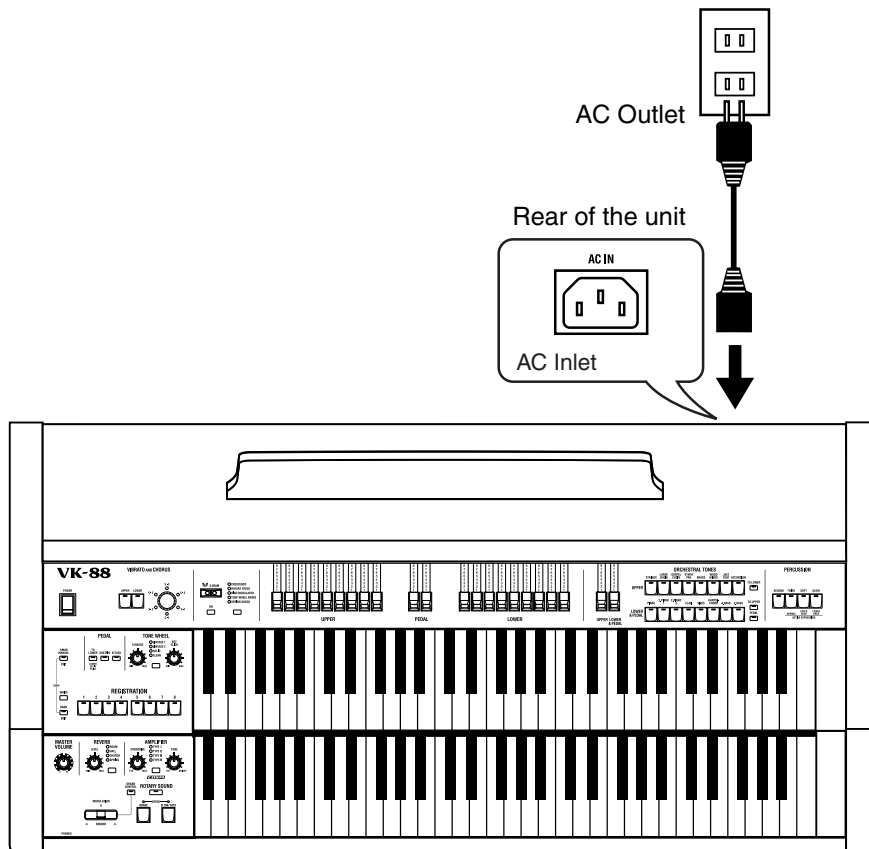
Settings that are stored independently for each registration number, such as harmonic bar and panel settings, are called “registration memory” (p. 63).

There are a total of 64 registration memories, and each of them can be edited (p. 48).

Before You Begin Playing

Connecting the Power Cord

- 1** Before making a connection, make sure that the VK-88 is turned off.
- 2** Connect supplied power cord to the VK-88, and plug the other end into a power outlet.



NOTE

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.

NOTE

Before connecting the power cord, remove the rear cover (p. 25) and then confirm the power voltage and power consumption printed on nameplate, and read the caution printed on rear panel.

NOTE

Be sure to use the supplied power cord.

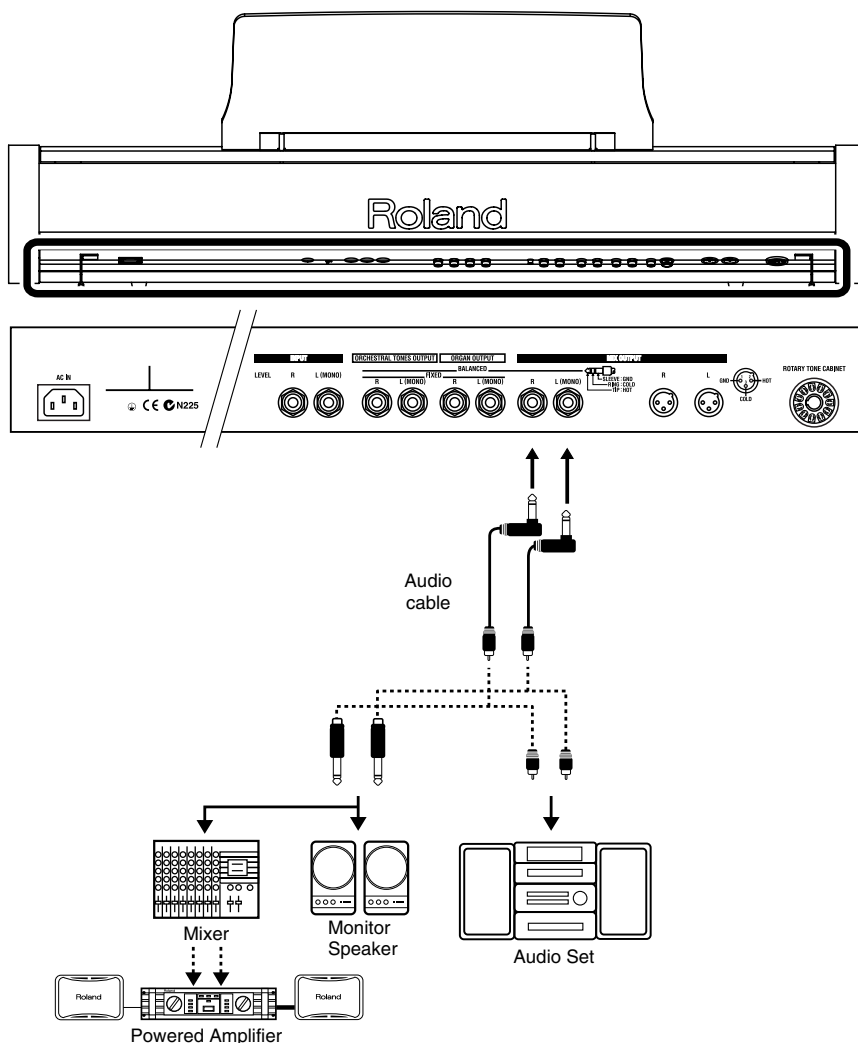
Before You Begin Playing

Connecting Your Amp, Speakers, or Headphones

The VK-88 is not equipped with an amplifier or speakers. In order to hear the sound, you will need to connect audio equipment such as a monitor speaker system or stereo set, or use headphones.

- 1** Before making any connections, make sure that all the devices are turned off.
- 2** Connect an amp or speakers to the VK-88's MIX OUTPUT L (MONO)/R jacks, or connect a pair of headphones to the PHONES jack.

To output the organ and Orchestral Tones sounds separately, connect your amp or speakers to the ORCHESTRAL TONES OUTPUT jack and ORGAN OUTPUT jack.



Use audio cables to connect audio equipment, such as an amp or speakers.

NOTE

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.

MEMO

Connect to the MIX OUTPUT (XLR) jack when using XLR-type cables.

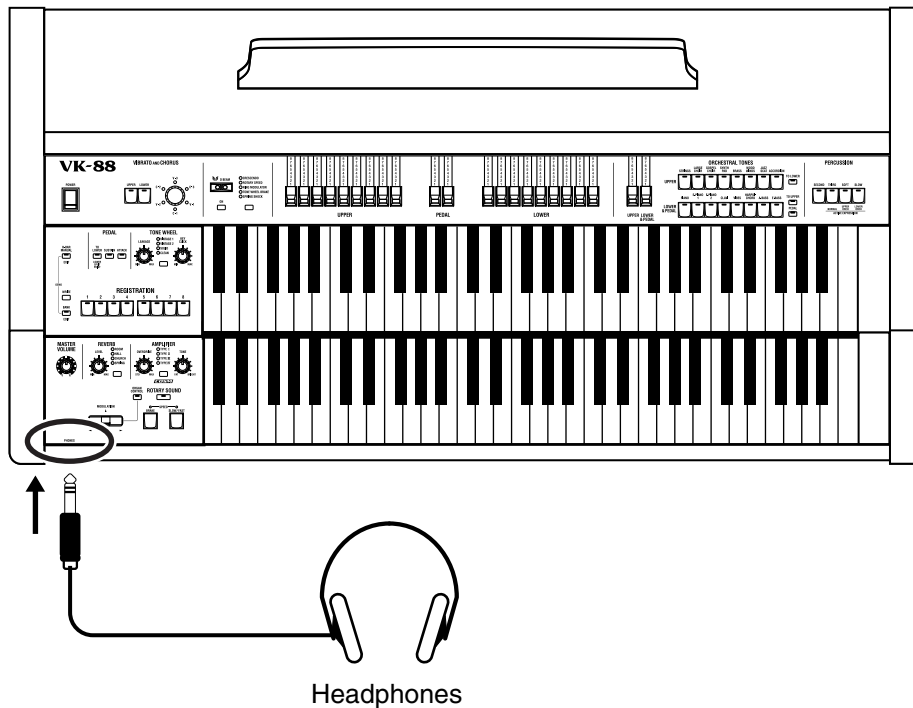
MEMO

Audio cables and headphones are not included. You will need to provide these separately.

MEMO

In order to take full advantage of the VK-88's performance, we recommend using a stereo amp/speaker system. If you are using a mono system, make the connections to the OUTPUT L (MONO) jack.

When you are using headphones, plug them into the PHONES jack.



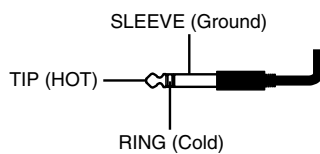
NOTE

In consideration of live concert situations, the VK-88's PHONES jack is designed to produce a higher volume level than that of other electronic instruments. Extended listening at high volume levels may damage your hearing, so use caution when adjusting the volume.

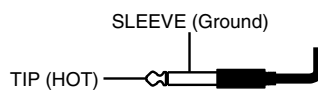
About a OUTPUT jacks

The VK-88's OUTPUT jacks support both balanced output and unbalanced output. To use balanced output, use a cable with a balanced (TRS type) phone plug. To use unbalance output, use a cable with an unbalanced (TS type) phone plug.

TRS

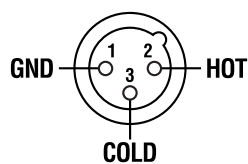


TS



About a XLR type connectors

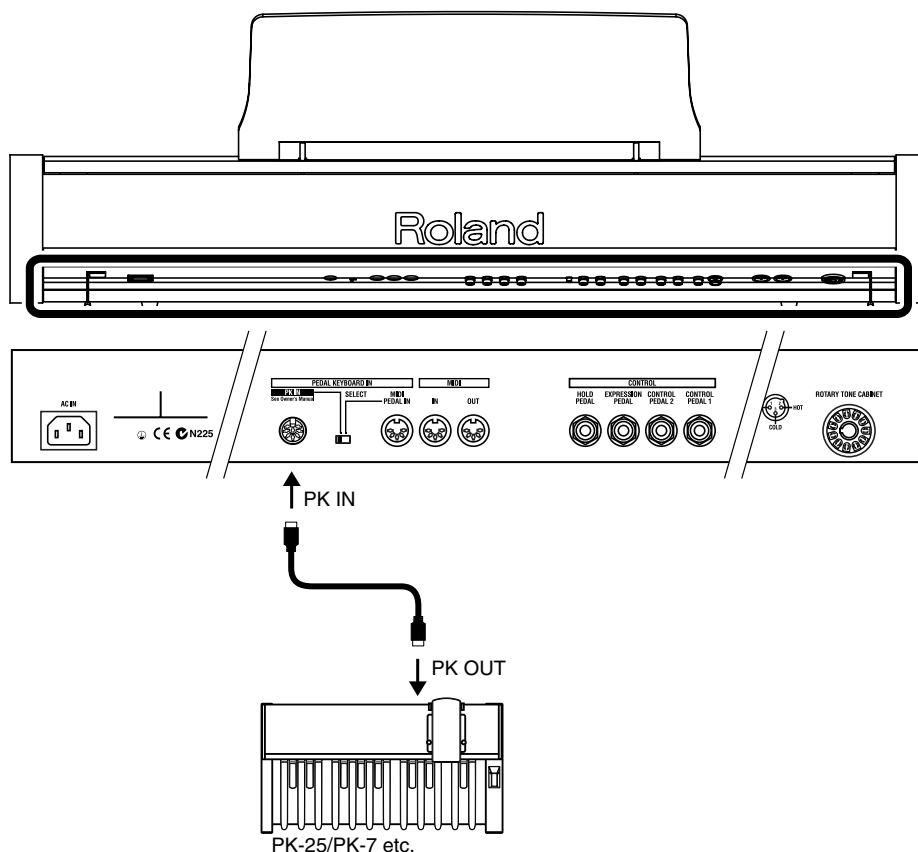
The pin assignment for the XLR type connectors is as shown below. Before making any connections, make sure that this pin assignment is compatible with that of all your other devices.



Connecting the Pedal Keyboard

■ Connecting a Pedal Keyboard Unit which Has a PK OUT Connector

- 1** Before making any connections, make sure that all the devices are turned off.
- 2** Set the PEDAL KEYBOARD IN [SELECT] switch of the rear panel to the PK IN position.
- 3** Using the special cable that was included with the VK-88, connect the VK-88's PK IN connector to the PK OUT connector of your pedal keyboard unit.



- 4** Turn on the power of the VK-88.

NOTE

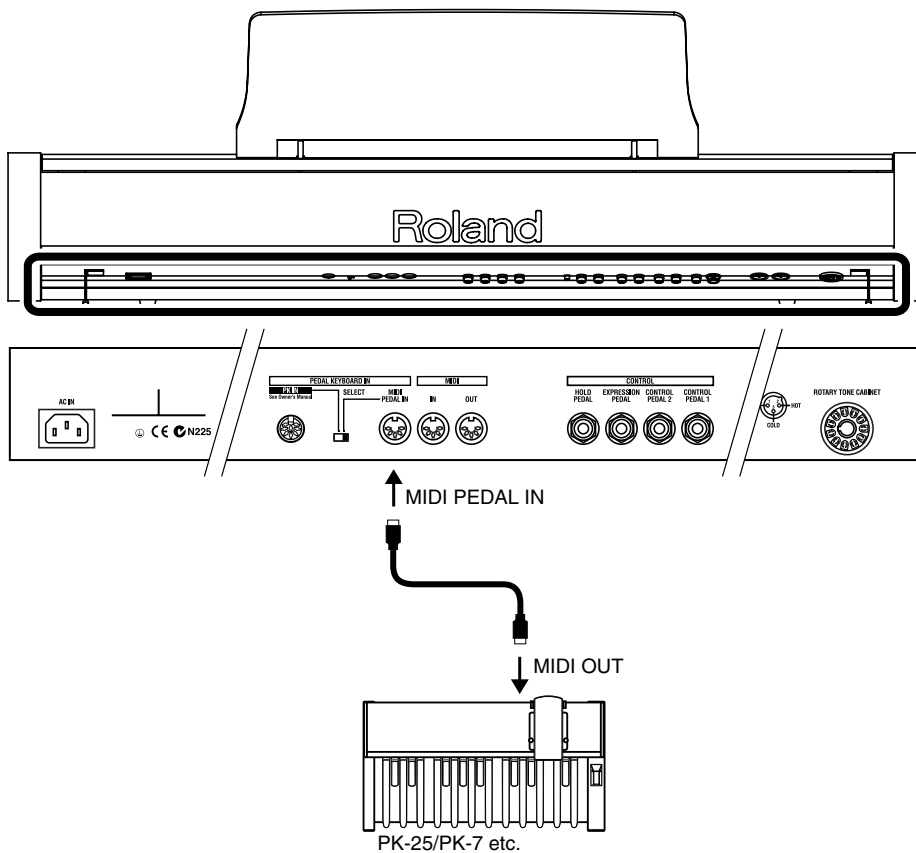
To prevent malfunction and/or damage to speakers or other devices, always turn down the volume, and turn off the power on all devices before making any connections.

MEMO

If the special cable is connected, it is not necessary to turn the power of the pedal keyboard unit on/off.

■ Connecting a MIDI Pedal Keyboard Unit

- 1** Before making any connections, make sure that all the devices are turned off.
- 2** Set the PEDAL KEYBOARD IN [SELECT] switch of the rear panel to the MIDI PEDAL IN position.
- 3** Use a commercially available MIDI cable to connect the VK-88's MIDI PEDAL IN connector to the MIDI OUT connector of your MIDI pedal keyboard unit.



- 4** Turn on the MIDI pedal keyboard unit.
- 5** Turn on the power of the VK-88.

NOTE

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.

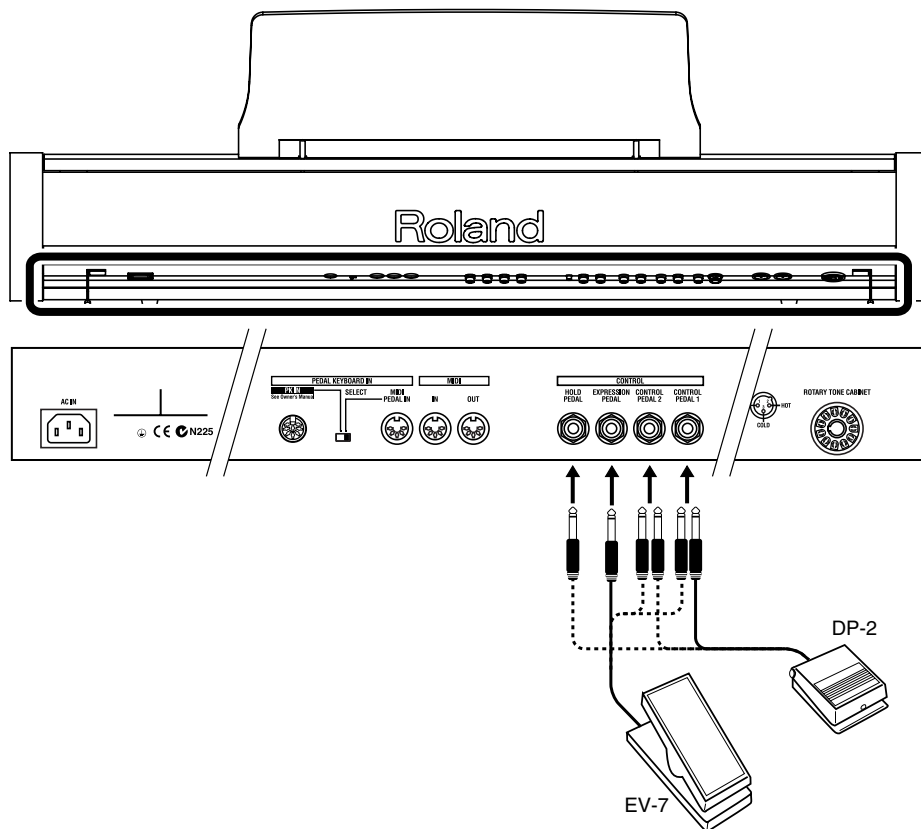
NOTE

The power switch of your MIDI pedal keyboard unit must be turned on before the power switch of the VK-88. When you turn off the power, first turn off the power of the VK-88, and then turn off the power of your MIDI pedal keyboard.

Before You Begin Playing

Connecting an Expression Pedal or Pedal Switch

You can connect an expression pedal or pedal switch to the rear panel EXPRESSION PEDAL jack, HOLD PEDAL jack, CONTROL PEDAL 1, or CONTROL PEDAL 2 jack.

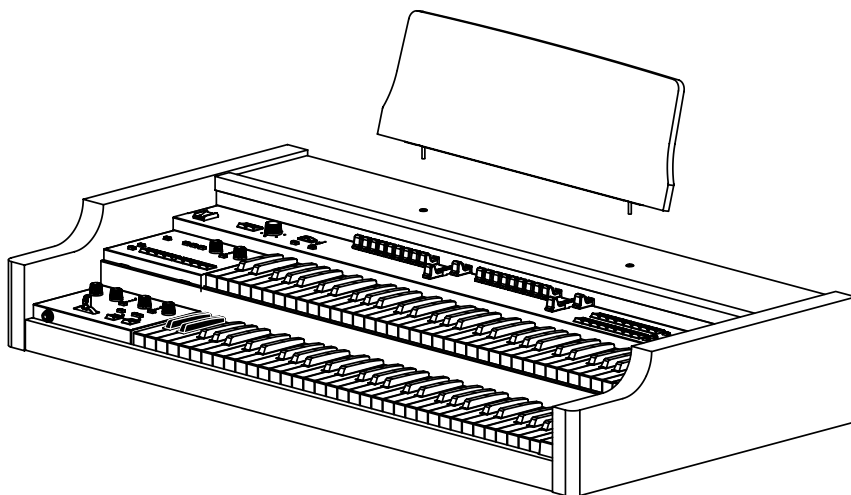


NOTE

Use only the specified expression pedal (EV-7; sold separately). By connecting any other expression pedals, you risk causing malfunction and/or damage to the unit.

Setting Up the Music Stand

- 1 Attach the music stand by inserting it into the two holes.

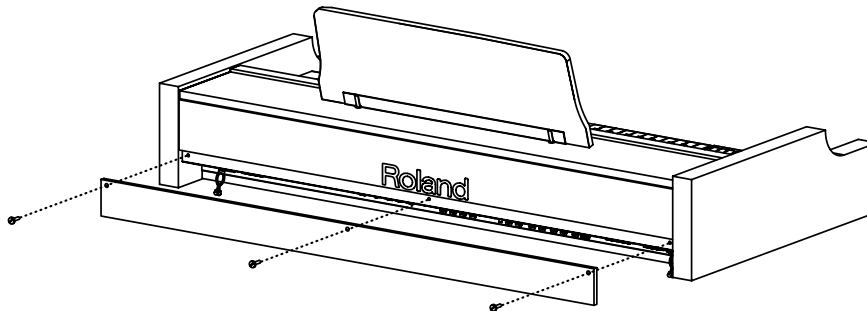


Attaching the Rear Cover

You can attach the rear cover to the VK-88's rear panel to hide the jack panel.

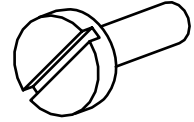
- 1 Use the screws included to attach the rear cover to the VK-88's rear panel as shown in the figure below.

These 3 screws can perform enough securement for Rear Board by hand.



MEMO

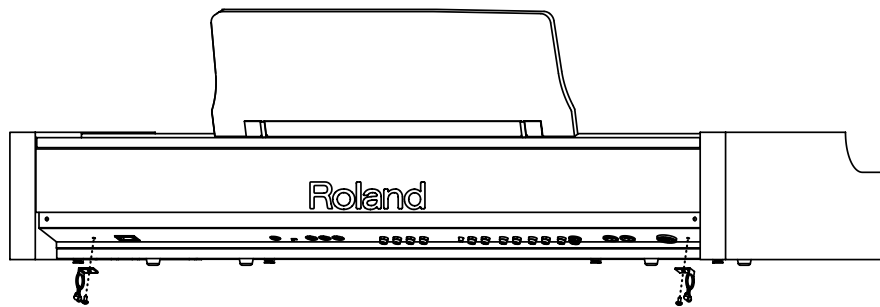
Rear Cover Screw



Attaching the Cord Clamp

You can attach the cord clamp and then pull on the cable.

- 1 Use the screws included to attach the cord clamp to the underside of the VK-88 as shown in the figure below.



NOTE

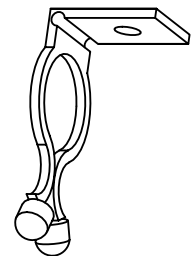
Bundle all of the cord with the cord clamp.

MEMO

Cord Clamp Screw



Cord Clamp



Before You Begin Playing

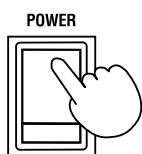
Turning the Power On

1 Before turning on the VK-88's power, make sure that:

- The VK-88 is correctly connected to the desired peripheral devices.
- The volume of the VK-88 and any connected audio equipment or speakers is turned to the minimum position.

2 Press the upper portion of the VK-88's [POWER] switch to turn on the power.

When the power is on, the indicators for the [REVERB] button and other buttons on the panel will light.



3 Turn on the power of the connected amp or audio system.

4 Rotate the [MASTER VOLUME] knob clockwise to adjust the volume of the VK-88.



5 Adjust the volume of the device connected to the VK-88.

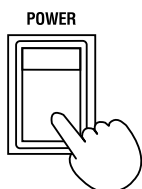
Turning Off the Power

1 Before switching off the power, confirm the following:

- The volume of the VK-88 and any connected equipment is turned to the minimum position.
- Any sound data you have created has been saved.

2 Turn off the power of the equipment connected to the VK-88.

3 Press the lower portion of the VK-88's [POWER] switch to turn off the power.



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.

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.

NOTE

Be careful not to raise the volume excessively. Excessive volume may damage your amp/speaker system/headphones or could cause hearing problems.

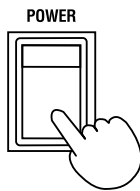
NOTE

If you turn off the power while you are making sound settings, the settings that you are modifying will be lost. If you wish to keep your modified settings, you must save them before turning off the power. For details, refer to "Saving Your Settings (Registration)" (p. 48).

Restoring the Factory Settings (Factory Reset)

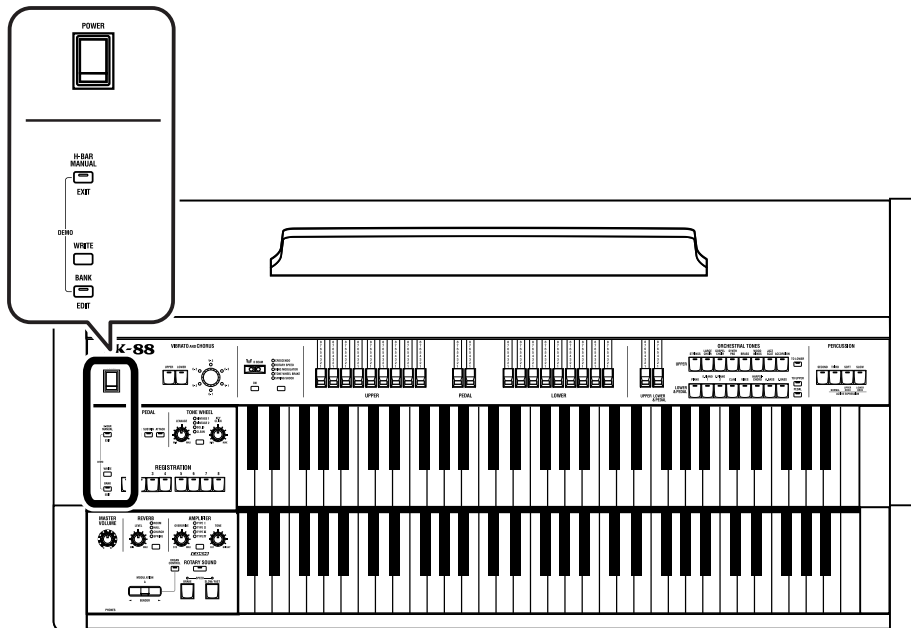
This function resets all the VK-88's settings to their factory default values.

- 1** Make sure that the volume is turned to the minimum position.
- 2** Press the lower portion of the VK-88's [POWER] switch to turn off the power.



- 3** While holding down the [BANK] button, [WRITE] button and [H-BAR MANUAL] button, press the upper portion of the [POWER] switch to turn on the power.
- 4** Press the [BANK] button, [WRITE] button and [H-BAR MANUAL] button until all of the panel indicators light.

All settings will be restored to what they were when the instrument first left the factory.



NOTE

When you perform the Factory Reset operation, all the data you created will be lost from the VK-88's internal memory. If the VK-88 contains important data that you wish to keep, use the Bulk Dump operation to save the data on an external MIDI sequencer, etc. before you perform the Factory Reset operation (p. 87).

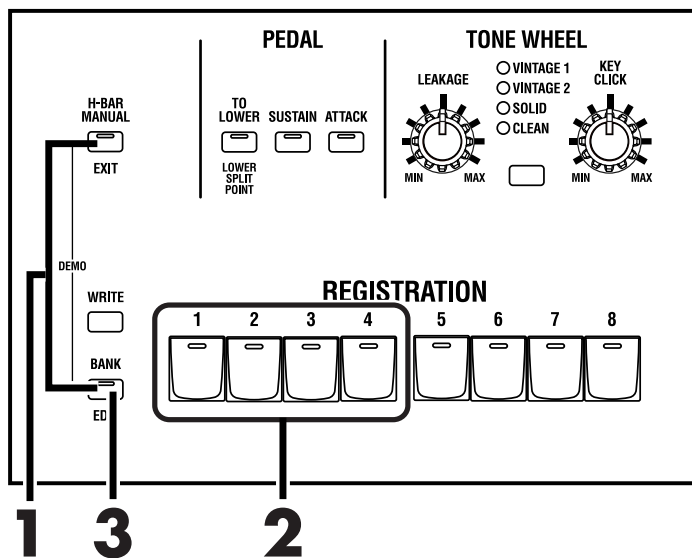
NOTE

Never turn off the power while Factory Reset is being performed.

Before You Begin Playing

Listening to the Demo Songs

The VK-88 contains four demo songs. Here's how to listen to the demo songs and experience the various organ sounds and effects.



- 1** Press the [BANK] button and the [H-BAR MANUAL] button at the same time.

Enter Demo mode.

- 2** Press any of the REGISTRATION buttons [1]–[4] to select a demo song.

Chain Play of the demo songs begins from the selected song.

When the selected song is finished, playback continues with the next song in the sequence. When the last song finishes playing, playback will return to the first song and continue.

- 3** Press the [BANK] button.

Demo song playback will stop.

You will exit Demo mode.

Demo Song Number	Song Name	Copyright
1	Joyful Peace for All.	© 2003 Roland Corporation
2	Sunset Blvd	© 2002 Roland Corporation
3	Beach Life	© 2003 Roland Corporation
4	Blue Forest	© 2002 Roland Corporation

NOTE

All rights reserved.
Unauthorized use of this material for purposes other than private, personal enjoyment is a violation of applicable laws.

NOTE

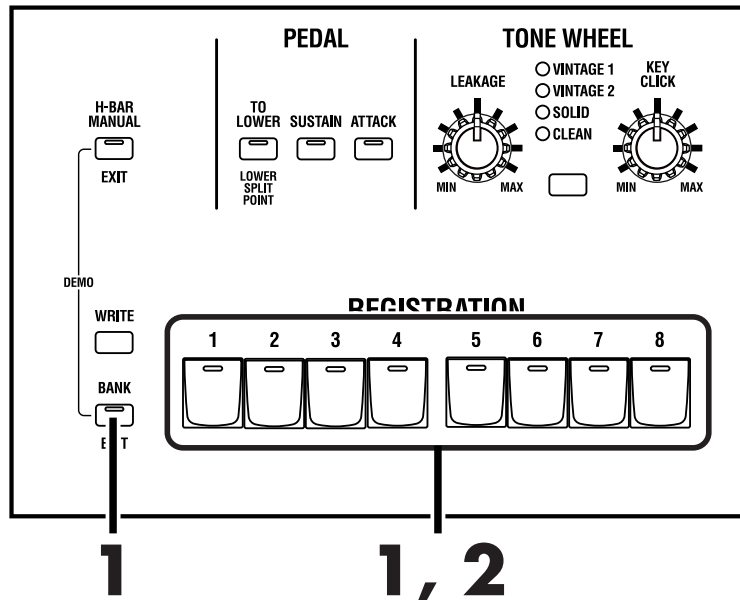
No data for the music that is played will be output from MIDI OUT.

Playing the Organ

Listening to Various Sounds

The VK-88 comes with 64 registrations stored onboard. Here's how to switch registrations to hear the various sounds. There are eight banks of registrations, with eight sounds in each bank.

Switch between the registrations to hear the various sounds.



- 1** Hold down the [BANK] button and press one of the buttons from [1] through [8] to select the bank number.
- 2** Press one of the buttons from [1] through [8] to select a registration number.
The indicator of the number button you've selected will light.
- 3** Play the keyboard to hear the sound you selected.

Example:

- **Switching from registration 11 to registration 18**

Press the [8] button.

- **Switching from registration 11 to registration 35**

Hold down the [BANK] button and press the [3] button. Take your finger off the [BANK] button and [3] button, and press the [5] button.



If you want to select a registration from the same bank, step 1 is not necessary.



While you are pressing the [BANK] button, the indicator of the selected bank will light.

About the Organ Voice

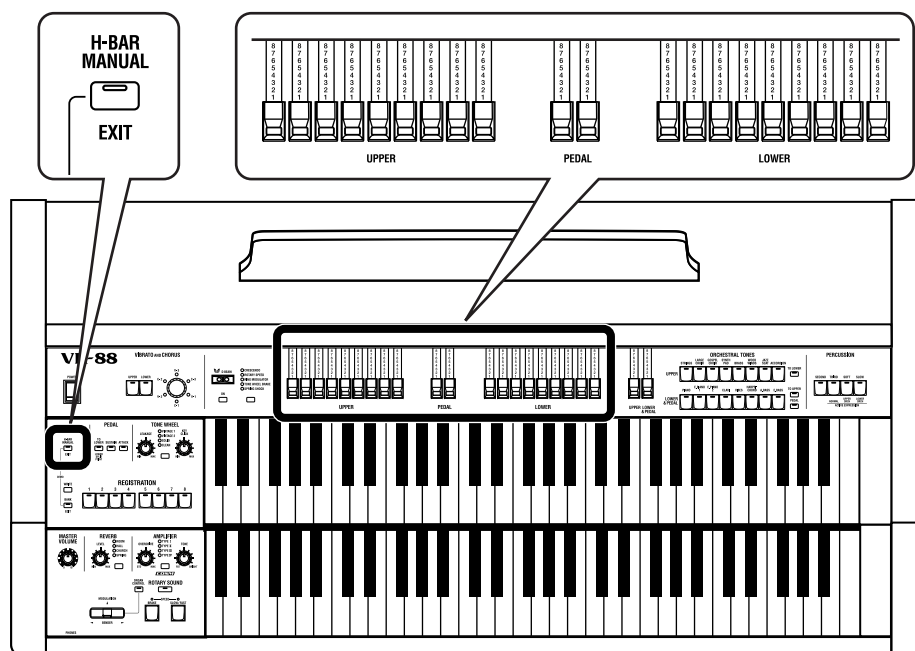
The organ voice has three parts: “upper,” “lower,” and “pedal.”

When you play the upper manual on the VK-88, the Upper Part is played; the Lower Part is played when you play the lower manual.

You can also play the VK-88 in the following ways.

- Divide the lower keyboard of the VK-88 into two zones, and play the sound of the Lower organ part in the right-hand zone, and the sound of the Pedal organ part in the left-hand zone (p. 46).
- Connect an external pedal keyboard, and play the sound of the Upper and Lower organ part on the VK-88, and the sound of the Pedal organ part on the pedal keyboard (p. 85).

The sounds of the Upper, Lower, and Pedal parts of an organ voice can be edited using the harmonic bars.



1 Press the [H-BAR MANUAL] button to make its indicator light.

When the [H-BAR MANUAL] button's indicator is dark, the harmonic bar settings will be the harmonic bar settings of the organ voice of the selected registration (p. 29, 48).

2 Change the tones by moving the harmonic bars for the tone you want to set (p. 31).

A sound you've edited can be saved as a registration (p. 48).



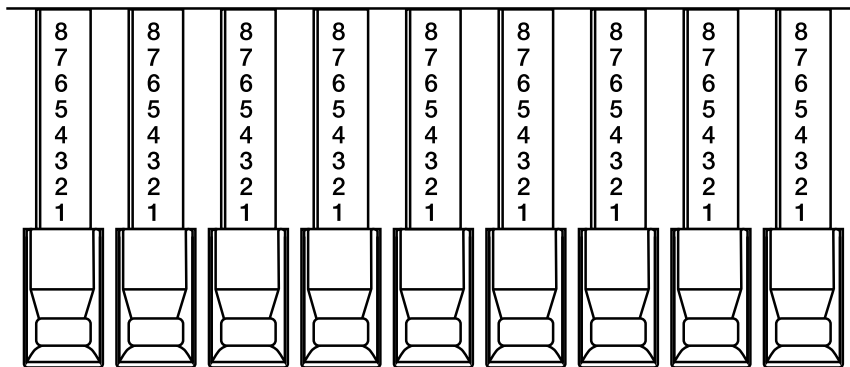
To hear the sound of the Pedal part, you can either select Pedal To Lower function (p. 46) and play the sound of the Pedal part in the left-hand zone of the keyboard, or connect an external pedal keyboard (p. 85).

Adjusting the Sound in Real Time (Harmonic Bars)

The harmonic bars are controllers for creating the basic structure of the organ sound.

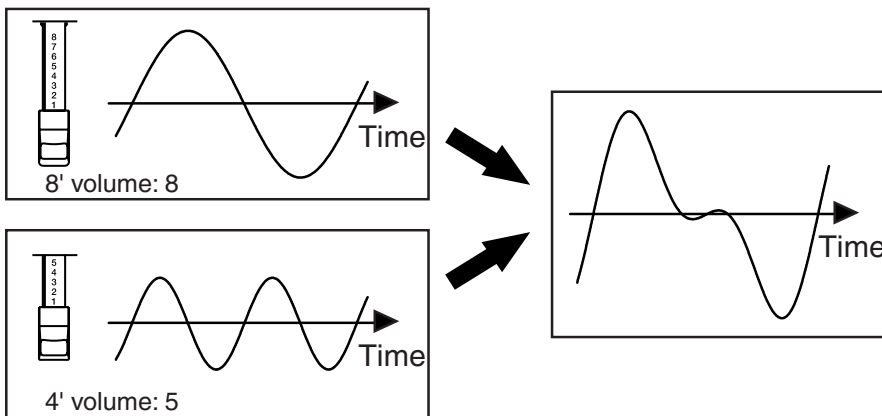
The VK-88 provides nine harmonic bars for the upper part and lower part respectively, and two harmonic bars for the pedal part. By sliding the harmonic bars in and out you can create a variety of tonalities.

In addition to creating the tone, the harmonic bars are also used to adjust the volume balance between the upper, lower and pedal parts.



The numbers appearing on the harmonic bars allow you to rapidly set the bars to the desired setting. If you push a harmonic bar inward until no number is visible, its volume will be "0," and no sound will be heard. If you pull a harmonic bar all the way out, the volume will be at the maximum.

A sine wave (pure tone) of differing pitch is assigned to each of the harmonic bars, and you can create a variety of sounds by mixing these sine waves.



MEMO

When percussion is on, the 1' pitch will not be produced.

Percussion sounds are applied only to the Upper Part.

NOTE

When all of the harmonic bars are pushed in, which sets the volume to "0," no sound is played even when you play the keyboard. However, when you play crescendo using the D BEAM Controller or other effects, the organ's Upper and Lower Parts are played, and the crescendo effect is applied.

Playing the Organ

The numbers (16', 5-1/3', etc.) printed on the knob of each harmonic bar indicate the pitch of that bar in "feet." The pitch of each harmonic bar plays an important role in creating the tone. The 8' pitch is the basic pitch of the sound, and the sound is created based on this 8' pitch.

The pitches of the harmonic bars are related as follows.

When the middle C (C4) note is pressed, each harmonic bar will sound the following notes.

8 7 6 5 4 3 2 1	8 7 6 5 4 3 2 1	8 7 6 5 4 3 2 1	8 7 6 5 4 3 2 1	8 7 6 5 4 3 2 1	8 7 6 5 4 3 2 1	8 7 6 5 4 3 2 1	8 7 6 5 4 3 2 1	8 7 6 5 4 3 2 1
16'	5 1/3'	8'	4'	2 2/3'	2'	1 3/5'	1 1/3'	1'
one octave below	5th	root	8th	12th	15th	17th	19th	22nd

8' =

What Are “Feet?”

Historically, the “feet” (“ ’ ” symbol) indications of the harmonic bars originate in the length of the pipes of a pipe organ. The length of pipe used to produce the reference pitch (the fundamental) for the keyboard is eight feet. Reducing the pipe to half its length produces a pitch one octave higher; conversely, doubling the pipe length creates a pitch one octave lower. Therefore, a pipe producing a pitch one octave below that of the reference of 8' (eight feet) would be 16'; for one octave above the reference, the pipe would be 4', and to take the pitch up yet another octave it would be shortened to 2'.

On tone wheel organs, the pitch relationship shown in the diagram does not hold true in a certain region of the keyboard (p. 32). In the high range of the keyboard, high-pitched feet are “wrapped around” one octave down. High footages will be “folded back” for high notes, while low footages will be folded back for low notes. Folding back the high-frequency portion prevents the high-frequency sounds from being unpleasantly shrill, and folding back the low-frequency portion prevents the sound from becoming “muddy.” On the VK-88 faithfully simulates this characteristic.

As you can see from the relation of the pitches, the 5-1/3' pitch is unique in that it is not arranged in order of pitch. The reason is that the 5-1/3' sound blends not with the 8' (fundamental), but with the 16' pitch. Acoustic instruments produce sound consisting of frequencies at integer multiples of the fundamental frequency; double, triple, and so on. These are called “integer harmonics.” Relative to the 8' pitch that is the basic pitch of an organ, the 5-1/3' pitch is not an integer multiple, and does not blend.

However, relative to the 16' pitch (which is one octave lower), 5-1/3' is an integer multiple and therefore does blend. (Starting at 16', the 5-1/3' pitch is three times higher.) Because 5-1/3' blends with 16', these two harmonic bars are colored differently than the other harmonic bars, and are placed together.

Changing the Organ Sound (Wheel Type, Leakage Level, Key Click)

Tone Wheel, Leakage Noise, and Key Click are important elements in creating tone wheel organ sounds.

Tone Wheel

Tone wheels are the ninety-one metal disks that produce the sound on tone wheel organs. Teeth are cut into the edge of each disk, and sound is generated by rotating the disks past an electrical coil at a fixed speed. The VK-88 digitally simulates the tone wheel mechanism of a tone wheel organ, and thus provides the rapid response and full polyphony that characterize these instruments.

The sounds that are produced by the tone wheels of a tone wheel organ are not precisely pure sine waves, since they are affected by the manufacturing precision of the wheel and by the characteristics of the analog circuitry. However, it is these imperfections in the waveform that give a tone wheel organ its unique character.

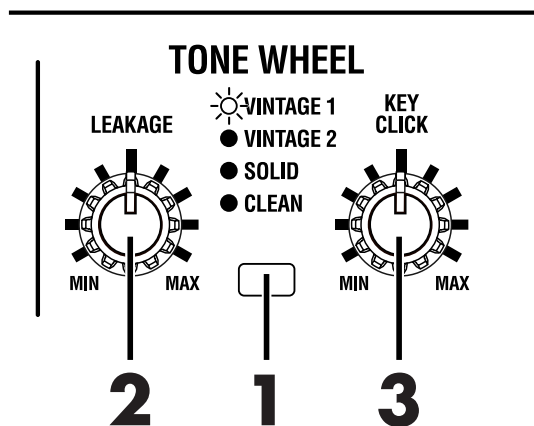
Leakage Noise

On tone wheel organs, the sound of the note that was pressed was slightly “contaminated” by audio signals from tone wheels not related to that note.

Formerly, this was seen as a problem, but today this idiosyncrasy is considered an important element of the distinctive sound of a traditional organ.

Key Click

Key Click is the “blip” noise that is heard when a note is pressed or released on a traditional organ.



Tone Wheel type

Selects the type of tone wheel.

1 Press the [TONE WHEEL] button to select the type of tone wheel.

Each time you press the [TONE WHEEL] button, the tone wheel will switch between the following settings.

Type	Explanation
VINTAGE 1	A tone wheel that simulates the tone wheel organs of the 70's.
VINTAGE 2	A tone wheel that simulates the tone wheel organs of the 60's.
SOLID	Harmonics are added to the VINTAGE 1 tone wheel's lower range. This tone wheel boosts the low range.
CLEAN	A tone wheel with no leakage noise.

Leakage Noise

Separately from the leakage noise selected by the Tone Wheel Type, you can add leakage noise independently.

2 Turn the [LEAKAGE] knob.

Turning the knob toward the left will decrease the volume of the leakage noise, and turning it toward the right will increase the volume of the leakage noise.

Key Click

This adjusts the level of the key click sound.

3 Turn the [KEY CLICK] knob.

Turning the knob toward the left will decrease the volume of the key click, and turning it toward the right will increase the volume of the key click.

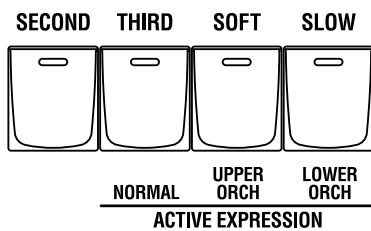
NOTE

If the "VINTAGE1," "VINTAGE2" or "SOLID" wheel type is selected, there will still be some leakage noise even if the [LEAKAGE] knob is turned all the way to the left.

Adding Crispness to the Sound (Percussion)

Percussion adds an attack-type sound to the beginning of the note to give the sound more crispness. When you play legato (smoothly and connectedly), percussion will be added only to the first-played note. When you play staccato (articulating each note separately), percussion will be added to all notes.

PERCUSSION



[SECOND] (Second Percussion) button

This button switches Second Percussion on/off.

Button	Explanation
<p>SECOND</p> <p>Lit (ON)</p>	Percussion will sound at the same pitch as the 4' harmonic bar.
<p>SECOND</p> <p>Dark (OFF)</p>	Second percussion will not sound.

[THIRD] (Third Percussion) button

This button switches Third Percussion on/off.

Button	Explanation
<p>THIRD</p> <p>Lit (ON)</p>	Percussion will sound at the same pitch as the 2-2/3' harmonic bar.
<p>THIRD</p> <p>Dark (OFF)</p>	Third percussion will not sound.



When percussion is on, the 1' pitch will not be produced.





Percussion can be added only to the upper part of organ voices. It cannot be added to the lower part of organ voices, nor to the pedal part or Orchestral tones.



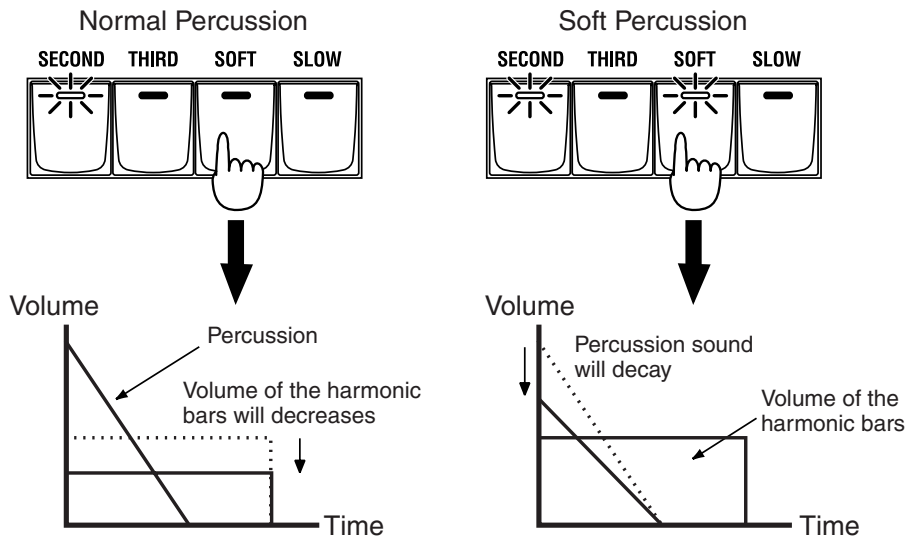
It is not possible to select both [SECOND] and [THIRD] buttons simultaneously.

[SOFT] (Soft Percussion) button

Switches the volume of the percussion.

Button	Explanation
<p>SOFT</p>  <p>Lit (ON)</p>	The percussion sound will be softer.
<p>SOFT</p>  <p>Dark (OFF)</p>	The percussion sound will be normal.



When you turn the [SOFT] button off to strengthen the percussion sound, the organ sound specified by the harmonic bars will become lower. This reproduces the behavior of tone wheel organs. If the organ volume decreases when you turn the [SOFT] button off, you can make settings (p. 68). You can also specify the percussion volumes that will be selected by the Percussion Normal/Soft settings (p. 67).



Playing the Organ

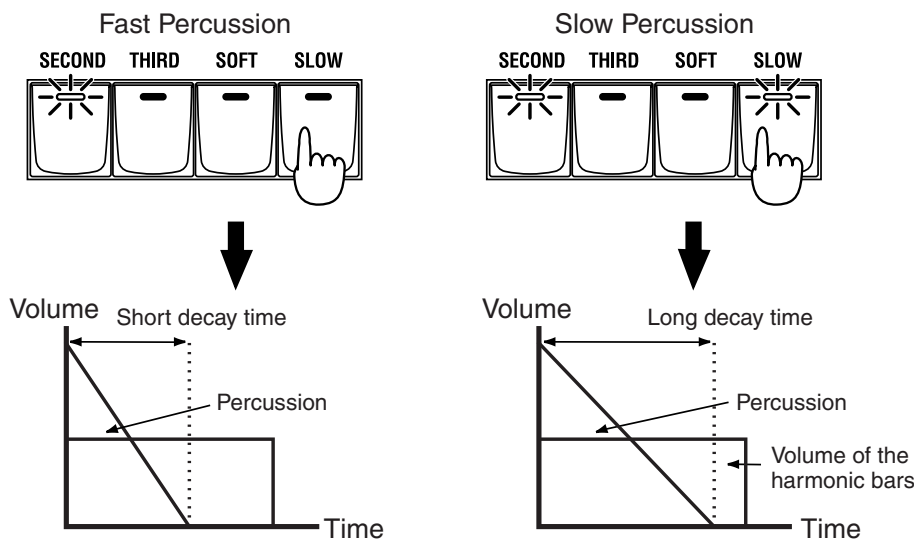
[SLOW] (Slow Percussion) button

Switches the speed at which the percussion sound will decay.

Button	Explanation
<p>SLOW</p>  <p>Lit (ON)</p>	The percussion sound will disappear slowly. The percussion will have a more gentle attack.
<p>SLOW</p>  <p>Dark (OFF)</p>	The percussion sound will disappear quickly. The percussion will have a sharper attack.

MEMO

You can specify the speed at which the percussion sound decays (p. 67).



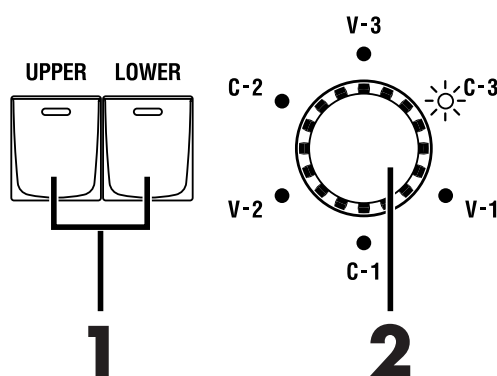
Percussion on a tone wheel organ (Single Trigger Algorithm)

The percussion on tone wheel organs did not apply to all notes that were played. It was applied only to notes which were played simultaneously from a condition where no notes were being played. When notes were played legato (smoothly and connectedly), percussion was applied only to the first-played note. When notes were played staccato (articulating each note separately), percussion was applied to all notes. This method is referred to as single trigger algorithm, and is a very important element in organ performance. On tone wheel organs, percussion was produced by an analog circuit. For this reason, when there was only a very short time interval from when one key was released until the next key was pressed, the percussion circuit was unable to recharge fully, causing the percussion to sound at a lower volume. The VK-88 simulates this behavior, and also allows you to modify the organ voice settings to adjust the recharge time characteristics of the circuit (p. 67).

Adding Modulation to the Sound (Vibrato and Chorus)

The vibrato effect cyclically modulates the pitch of organ voice sounds. The chorus effect mixes the normal sound of the organ with a sound to which vibrato has been applied, adding richness and spaciousness to the sound.

VIBRATO AND CHORUS



- 1** Press the **VIBRATO AND CHORUS [UPPER]** or **VIBRATO AND CHORUS [LOWER]** button so that the indicator is lit.

The vibrato or chorus effect will be applied to the organ voice.

When the **VIBRATO AND CHORUS [UPPER]** button's indicator is lit, vibrato or chorus is applied to the sound of the upper part.

When the **VIBRATO AND CHORUS [LOWER]** button's indicator is lit, vibrato or chorus is applied to the sound of the lower and pedal part.
- 2** Turn the **[VIBRATO AND CHORUS]** knob to switch the type of vibrato or chorus effect.

The indicator of the selected vibrato or chorus effect type will light.

Three types of vibrato and three types of chorus are provided (a total of six types).

V-1, V-2, V-3

This applies vibrato (pitch modulation). Increasing the value will produce a deeper effect.

C-1, C-2, C-3

This applies chorus to add depth and spaciousness to the sound. Increasing the value will produce a deeper effect.

MEMO

When the **VIBRATO AND CHORUS [LOWER]** button is on, you can set whether the vibrato or chorus effect is applied only to the Lower Part, or to both the Lower Part and the Pedal Part (p. 68).

NOTE

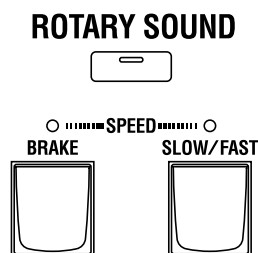
It is not possible to apply both vibrato and chorus simultaneously. Nor is it possible to select different vibrato or chorus types for the upper part and lower part.

NOTE

Vibrato or chorus cannot be applied to percussion and ORCHESTRAL TONES.



Using the COSM Rotary Speaker Effect (Rotary Sound)

Rotary Sound is an effect which adds the modulation that is produced when organ voices are used with a rotary speaker. On most rotary speakers, the high-frequency speaker and low-frequency speaker rotate at different speeds. The VK-88 can simulate this type of complex modulation.



ROTARY SOUND [ON] button

The rotary speaker effect can be switched off.

Button	Explanation
ROTARY SOUND  Lit (ON)	The rotary speaker will be applied.
ROTARY SOUND  Dark (OFF)	The rotary speaker effect will not be applied.

SPEED Indicator

The left and right indicators light up alternately, indicating the speed of the rotary speaker.

When you press the [BRAKE] button to stop the rotation of the rotary sound, the indicator stops flashing, and then either or both indicators remain lit.

[SLOW/FAST] button

Switches the speed of the rotary speaker. FAST and SLOW will alternate each time you press the [SLOW/FAST] button.

When the SPEED indicator is flashing rapidly, it indicates that the rotary effect is in FAST mode; in SLOW mode, this flashes slowly. The change in rotation speed when switching between FAST and SLOW occurs gradually.

[BRAKE] button

This button temporarily halts the rotation of the rotary sound.

Indicator	Explanation
Either the left, the right, or both SPEED indicators light up.	The speed of rotation will gradually slow down and then stop.
The left and right SPEED indicators blink alternately	From a stopped condition, the rotation will gradually become faster.

MEMO

The VK-88 uses an effect algorithm based on COSM technology, and is able to faithfully reproduce the modulation of an actual rotary speaker and the irregularities of its rotation. You can also make sophisticated settings, such as the characteristics of the amplifier (p. 41), the resonance of the speaker cabinet, and the distance of the microphone which picks up the sound of the rotary speaker (p. 66).

MEMO

You can use a foot switch, D Beam controller, or other controllers to switch the rotary speaker between fast and slow. For details, refer to p. 42, 58, 68, 69, 70).

MEMO

When a rotary speaker is connected to the ROTARY TONE CABINET jack on the rear panel, the [SLOW/FAST] button, [BRAKE] button, and ROTARY SOUND [ON] button function as follows.

[SLOW/FAST] Button

Changes the speed of the connected rotary speaker. The VK-88's rotary effect is not applied.

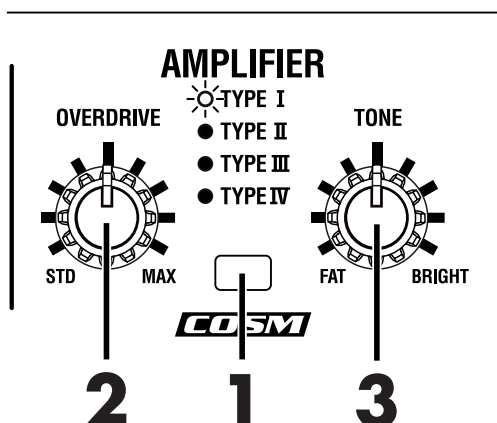
[BRAKE] Button

Temporarily stops the rotation of the connected rotary speaker.

ROTARY SOUND [ON] Button

Disabled when a rotary speaker is connected.

Changing the Amp Type (Amp Type, Overdrive, Tone)



Changing the Virtual Amp

Switches the frequency response and cabinet resonance of the virtual amp.

- 1 Press the [AMPLIFIER] button to select the type of virtual amp.

The amp type will change each time you press the [AMPLIFIER] button.

Type	Explanation
TYPE I	Characteristics of the most frequently used rotary speakers.
TYPE II	Characteristics of the large vacuum tube amps that were an indispensable element of the British hard rock of the 70's, and that continue to be favored by many hard rock guitarists.
TYPE III	The character of a rotary speaker often used for rock organ.
TYPE IV	This adds the characteristic rotary speaker sound used for a wide range of tones, from a clean sound to heavy overdrive. What's more, a type of system is used that allows you to change the amount of overdrive without causing the volume to change, making level settings a breeze.

Adding Distortion to the Sound—Overdrive

Overdrive is an effect which distorts the sound. By distorting the sound, you can create the intense organ sounds that are frequently used in styles, such as hard rock.

- 2 Turn the [OVERDRIVE] knob to adjust the amount of overdrive.

Rotate fully right: The distortion effect will be at maximum.

Rotate fully left: No effect.

Changing Sound Characters

You can adjust the tonal character of the organ voice.

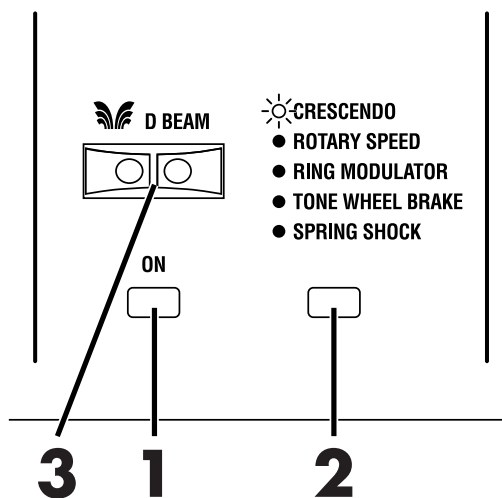
- 3 Turn the [TONE] knob to adjust the tonal character.

Counterclockwise rotation: The organ voice becomes fatter.

Clockwise rotation: The organ voice becomes brighter.

Using the D BEAM Controller to Produce Common Organ Effects

You can apply various effects to the sound only by moving your hand over the D Beam Controller on the VK-88 panel.



1 Press the D BEAM [ON] button so that the button is lit.

The D Beam Controller will be on.

2 Use the [D Beam] button to select the effect that you want to control using the D Beam.

The effect assigned to the D Beam controller will be switched each time you press the [D BEAM] button.

The following effects can be applied using the D Beam controller:

Effects	Explanation
CRESCENDO	As you move your hand closer to the D Beam controller, the volume of all harmonic bars will gradually increase. When your hand is closest to the D Beam controller, the harmonic bar volumes will be at maximum, and the rotary will switch to FAST.
ROTARY SPEED	The rotary effect will switch between slow and fast each time you position your hand over the D Beam controller.
RING MODULATOR	When you position your hand over the D Beam controller, the ring modulator will be applied (p. 43). As you bring your hand closer to the D Beam controller, the ring modulator depth will change.
TONE WHEEL BRAKE	Moving your hand near the D Beam controller will turn on the wheel brake. When you take your hand away from the D Beam controller, the wheel brake will be turned off (p. 43).
SPRING SHOCK	Moving your hand near the D Beam controller will produce the sound of a spring reverb unit being jarred (p. 43).

NOTE

The control pedal, aftertouch, or modulation lever has no effect when the D BEAM [ON] button is off while "D BEAM SYNC" is assigned to the control pedal, aftertouch, or modulation lever.

NOTE

The crescendo effect is not applied to the Pedal Tone.

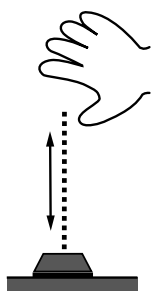
MEMO

If ROTARY SPEED is assigned to the D Beam, you can move your hand over the D Beam to make the rotary effect change gradually from slow to fast, or from fast to slow (p. 82).

MEMO

The volume of the spring shock can be adjusted with the REVERB [LEVEL] knob. The spring shock is particularly effective if "SPRING" is selected as the reverb type (p. 45).

- 3** While playing the keyboard to produce sound, place your hand over the D Beam controller.



The timbre will change when you move your hand over the D Beam controller.

About the Effects

Throughout the history of rock organ, a wide range of performers have developed unique effects and used them in their music. The VK-88 can not only simulate several of these unique effects, but also lets you enjoy effects provided by no other instrument.

Giving the sound a metallic character (Ring Modulator)

By changing the frequency of the ring modulator's internal oscillator, you can give the organ voice an unpitched metallic character, like that of a bell.

In hard rock of the past, extreme effects such as ring modulation were sometimes applied to the organ. It appears that organ players tried all sorts of things in an attempt to hold their own against the radical performance techniques used by electric guitarists.

By applying ring modulation, you can create a complex harmonic structure that was not present in the original audio signal. This complex harmonic structure has a certain bell-like character. The term "ring" comes from the fact that when a ring modulation circuit is constructed as analog circuitry, the circuit is shaped like a ring (circle).

Stopping the rotation of the tone wheels (Wheel Brake)

It is possible to stop the rotation of the tone wheels of the organ. This produces an unexpected result, whereby the pitch of the organ voice gradually falls until the sound ceases entirely.

The technique of stopping the tone wheel rotation was occasionally used by performers on tone wheel organs. Since the amp of a tone wheel organ was an analog circuit that used vacuum tubes, the sound was still audible for a time after the power was turned off. However, when the power was turned off, the tone wheels would begin slowing down, and you would hear the pitch continue to fall. Innovative performers used this effect in their music.

Spring Reverb Shock

Organs of the past used spring reverb units to add a reverb effect to the sound. When a physical shock is applied to a spring reverb unit, the springs collide with each other, producing a crashing sound. Some performers even utilized this in their organ sound.

The VK-88 lets you simulate this reverb impact sound.



The color of the D BEAM [ON] button changes while the D Beam controller is in use.



When the "SPRING SHOCK" function is assigned to the D Beam controller, control pedal, aftertouch, and modulation lever, please be aware that raising the reverb level excessively will produce a high-volume impact sound. If you want to reduce the volume of the impact sound, use the REVERB [LEVEL] knob to adjust the reverb level (p. 45).

■ Adjusting the Sensitivity of the D Beam Controller

You can adjust the sensitivity of the D Beam controller.

Caution

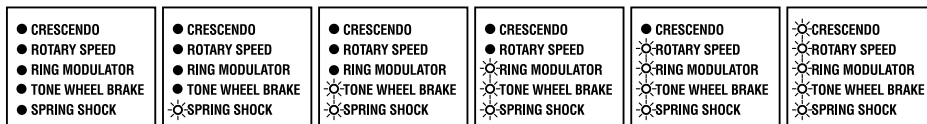
Please be aware that the D Beam will not function in a location where there is a large amount of infrared light.

Automatically Adjusting the Sensitivity of the D Beam Controller

1 Holding down the D BEAM [ON] button to make [VIBRATE AND CHORUS] knob's indicators blink, then press the VIBRATO AND CHORUS [UPPER] button.

The sensitivity of the D Beam controller will be adjusted automatically.

The D Beam indicators will show the D Beam sensitivity.



Min Max

The sensitivity of the D Beam controller is saved, after you release your hand from the D BEAM [ON] button.

While the settings are being saved, all of the panel indicators will light.

Manually Adjusting the Sensitivity of the D Beam Controller

1 Holding down the D BEAM [ON] button to make [VIBRATE AND CHORUS] knob's indicators blink, turn the [VIBRATO AND CHORUS] knob to adjust the sensitivity of the D Beam controller.

The D Beam indicators will show the D Beam sensitivity.

The sensitivity of the D Beam controller is saved, after you release your hand from the D BEAM [ON] button.

While the settings are being saved, all of the panel indicators will light.

NOTE

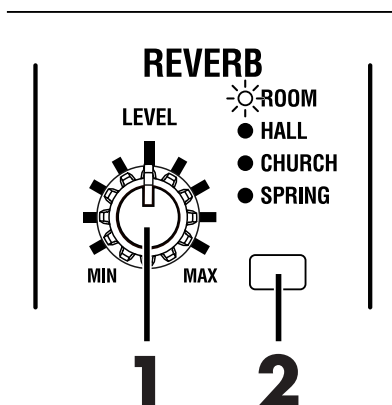
Do not place any objects on the D Beam or cover it with your hand when the sensitivity of the D Beam controller is adjusted.

NOTE

Never turn off the power while the settings are being saved.

Adding Ambience (Reverb)

Reverb is an effect that adds reverberation to the sound. You can apply the reverb effect to the organ sound and the ORCHESTRAL TONES.



1 Turn the REVERB [LEVEL] knob to adjust the amount of reverb effect to be applied.

Rotate fully right: Maximum reverberation.

Rotate fully left: No effect.

Changing the Reverb Type

By changing the reverberations of the notes, you can enjoy the atmosphere of performance in a wide variety of different locations.

2 Press the [REVERB] button to switch the reverb types.

The reverb type will be switched each time you press the [REVERB] button.

Type	Explanation
ROOM	Simulates the reverberation of a room.
HALL	Simulates the reverberation of a large concert hall.
CHURCH	Simulates the reverberation of a church.
SPRING	Simulates the reverberation of a spring reverb unit (p. 43).

NOTE

Note that assigning the “Spring Shock” function to the D BEAM controller, control pedal, aftertouch, or Modulation lever increases the reverb level, producing a very loud shock sound.

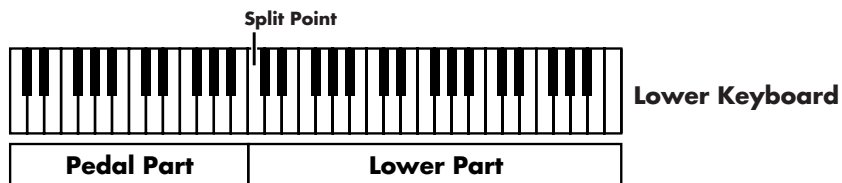
MEMO

When the “Spring Shock” function is selected with the D BEAM controller, control pedal, aftertouch, or Modulation lever (p. 42, 57), you can use the [REVERB] knob to adjust the Spring Shock volume.

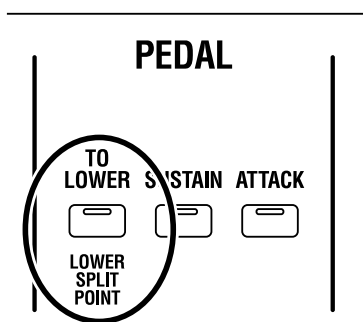
Dividing the Lower Keyboard (PEDAL TO LOWER)

You can divide the Lower keyboard into two zones, and assign the Lower part sound of the organ voice to the right-hand zone, and the Pedal part sound of the organ voice to the left-hand zone.

This is called “split,” and the location at which the keyboard is divided is called the “split point.” The split point is included in the Lower part.



At the factory settings, the split point is set to “C4” (middle C).



1 Press the PEDAL [TO LOWER] button to make its indicator light.

The Lower keyboard will be divided into two zones.

The right-hand keyboard zone will play the Lower organ part, and the left-hand keyboard zone will play the Pedal organ part.

2 To cancel the Split, press the PEDAL [TO LOWER] button once again, extinguishing the indicator.

■ Changing the Split Point

You can change the location (Split Point) at which the Lower keyboard will be divided.

1 Hold down the [BANK] buttons and press the PEDAL [TO LOWER] button.

The indicators of the PEDAL [TO LOWER] button will blink.

2 Press the key that you want to specify as the split point.

The split point will be set.

3 Save the setting of split point to a registration (p. 49).

MEMO

When the pedalboard is set to play the Pedal Orchestral Tones, and the PEDAL [TO LOWER] button lights up, the Pedal Orchestral Tones are played in the left side of the lower manual.

MEMO

You are free to change the split point.

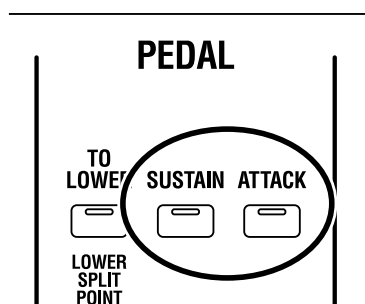
NOTE

Sustain is not applied to the Pedal Tone when you set the PEDAL [TO LOWER] button to ON and play the Pedal Tone in the lower keys.

MEMO

Split points are saved to the individual registrations (p. 48).

Adding Effects to the Pedal Part



■ Adding a Decay to the Pedal Part (Pedal Sustain)

You can add sustain to the organ voice's Pedal Part.

- 1 Press the PEDAL [SUSTAIN] button to make its indicator light.

Sustain is added to the Pedal Part and Pedal Orchestral Tones.

When the PEDAL [SUSTAIN] button is on and you play the organ Pedal Part, sustain is applied to the last note played.

This prevents the sound from becoming unclear, even when sustain is applied to the Pedal Part.

■ Sharpening the Attack of the Pedal Part (Pedal Attack)

You can emphasize the attack of the organ voice's Pedal Part.

- 1 Press the PEDAL [ATTACK] button to make its indicator light.

The attack in the Pedal Part is increased.



You can set the length of the sustain after you release the keys when the PEDAL [SUSTAIN] button is on (p. 83).



Sustain is not applied to the Pedal Tone when you set the PEDAL [TO LOWER] button to ON and play the Pedal Tone in the lower keys.



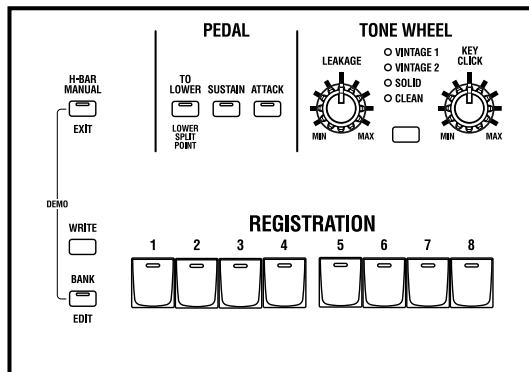
You can set the attack sound's decay time when the PEDAL [ATTACK] button is on (p. 83).



You can set the attack sound volume when the PEDAL [ATTACK] button is on (p. 83).

Saving Your Settings (Registration)

Organ sounds, Orchestral Tones sounds, and other panel settings can be saved together to a REGISTRATION buttons. By saving your favorite settings in a registration, you can easily recall them simply by pressing a REGISTRATION buttons. The VK-88 contains 64 different registrations. These are organized into eight groups, with eight registrations in each group.



A registration contains the following settings.

- The sounds of the Upper part, Lower part, and Pedal part of the Harmonic Bar settings. ORCHESTRAL TONES Harmonic Bar settings.
- ROTARY SOUND [ON] button
- ROTARY [BRAKE] button
- ROTARY [SLOW/FAST] button
- PEDAL [TO LOWER] button
- PEDAL [SUSTAIN] button
- PEDAL [ATTACK] button
- [TONE WHEEL] button
- [LEAKAGE] knob
- [KEY CLICK] knob
- [AMPLIFIER] button
- [OVERDRIVE] knob
- [TONE] knob
- [REVERB] button
- REVERB [LEVEL] knob
- PERCUSSION [SECOND] button
- PERCUSSION [THIRD] button
- PERCUSSION [SOFT] button
- PERCUSSION [SLOW] button
- VIBRATO AND CHORUS [UPPER] button
- VIBRATO AND CHORUS [LOWER] button
- [VIBRATO AND CHORUS] knob
- D BEAM [ON] button
- [D BEAM] button
- UPPER ORCHESTRAL TONES buttons
- UPPER ORCHESTRAL TONES [TO LOWER] button
- LOWER & PEDAL ORCHESTRAL TONES buttons
- LOWER ORCHESTRAL TONES [TO UPPER] button
- ORCHESTRAL TONES [PEDAL] button
- [ORGAN CONTROL] button
- Effects and other settings (p. 81)
- Pedal Sustain setting (p. 83)
- Pedal Attack settings (p. 83)
- Split Point (p. 46)
- Active Expression Settings (p. 56)

MEMO

The VK-88 comes with 64 registrations stored onboard. When you save a registration, the registration data that was previously occupying that memory number will be overwritten. Registrations that you've overwritten can also be restored to the factory settings (p. 27).

■ Saving to a Registration in the Same Bank

1 Make the panel settings that you want to save in the registration.

2 Hold down the [WRITE] button, and press one of the buttons from [1] through [8] to specify the save-destination registration.

While the registration is being saved, the indicator of the selected registration number button will blink. Once the registration has been saved, the indicator will change from blinking to lit.

■ Saving to a Registration in Another Bank

1 Make the panel settings that you want to save in the registration.

2 Hold down the [WRITE] button, and press the [BANK] button and one of the buttons from [1] through [8].

The save-destination bank will be selected.

3 Hold down the [WRITE] button and press one of the buttons from [1] through [8] to specify the save-destination registration.

While the registration is being saved, the indicator of the selected registration number button will blink. When the registration has been saved, the indicator will change from blinking to lit.

■ Copying a Registration

Selecting the Copy-source Registration

1 Hold down the [BANK] button and press one of the buttons from [1] through [8] to select the bank of the copy-source registration.

2 Press one of the buttons from [1] through [8] to select the number of the copy-source registration.

The indicator of the number button you selected will light.

Selecting the Copy-destination Registration

3 Hold down the [WRITE] button and [BANK] button, and press one of the buttons from [1] through [8] to specify the bank of the copy-destination registration.

The indicator of the number button you selected will light.

4 Hold down the [WRITE] button and press one of the buttons from [1] through [8] to select the copy-destination registration number.

While the registration is being saved, the indicator of the selected registration number will blink. When the registration has been saved, the indicator will change from blinking to lit.

NOTE

Never turn off the power while a registration is being saved. Doing so may damage the unit.

NOTE

Never turn off the power while a registration is being saved. Doing so may damage the unit.

MEMO

The indicator of the selected bank will light while you hold down the [BANK] button.

MEMO

If you want to save the settings in a registration of the same bank, step 3 is not necessary.

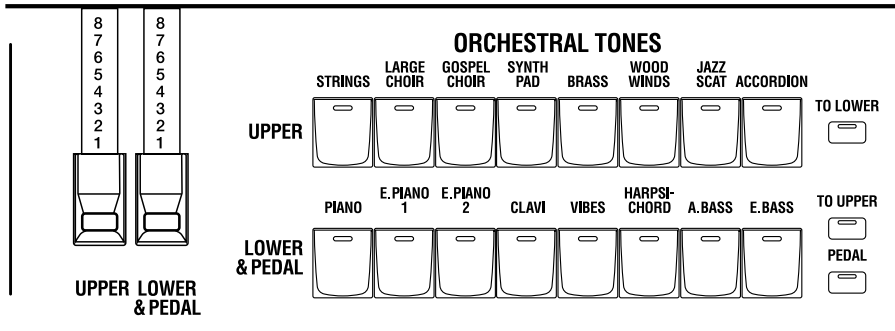
NOTE

Never turn off the power while a registration is being saved. Doing so may damage the unit.

Playing Orchestral Tones

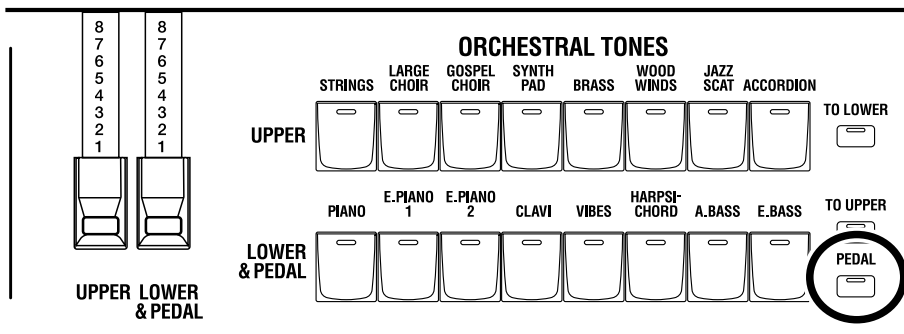
About the ORCHESTRAL TONES

With the VK-88, you can play piano, strings, and other Orchestral Tones.

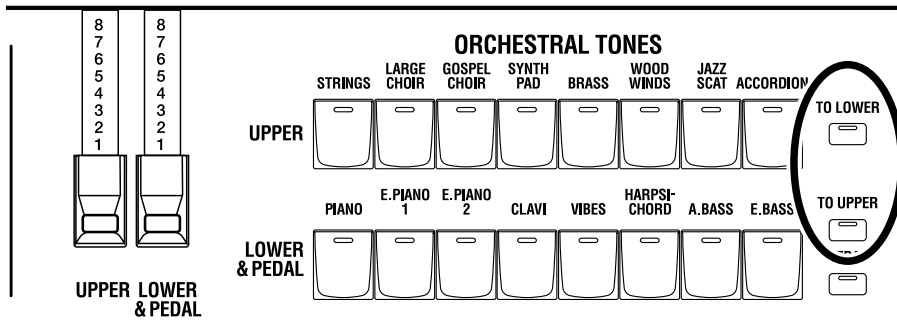


The Orchestral Tones include three parts, the Upper Orchestral Tones, Lower Orchestral Tones, and Pedal Orchestral Tones.

PEDAL ORCHESTRAL TONES	LOWER ORCHESTRAL TONES	UPPER ORCHESTRAL TONES
PIANO		STRINGS
E.PIANO 1 (Electric Piano 1)		LARGE CHOIR
E.PIANO 2 (Electric Piano 2)		GOSPEL CHOIR
CLAVI		SYNTH PAD (Synthesizer Pad)
VIBES (Vibraphone)		BRASS
HARPSICHORD		WOOD WINDS
A.BASS (Acoustic Bass)		JAZZ SCAT
E.BASS (Electric Bass)		ACCORDION



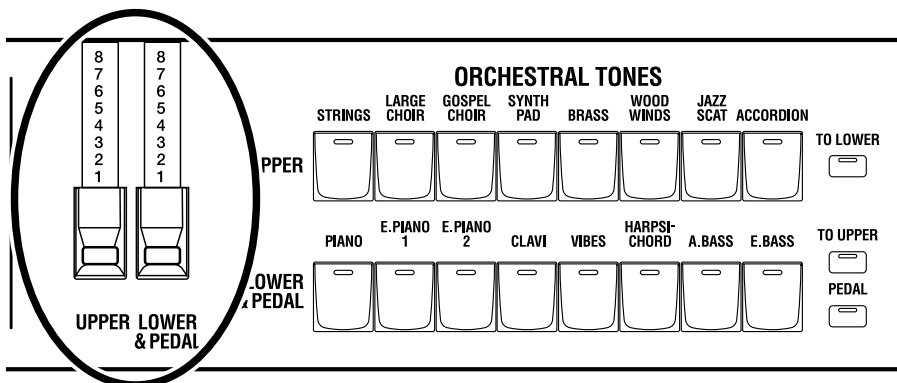
Press the UPPER ORCHESTRAL TONES button to select the Upper Orchestral Tones. When the ORCHESTRAL TONES [PEDAL] button is not lit, the LOWER & PEDAL ORCHESTRAL TONES buttons are used for selecting the Lower Orchestral Tones; when the ORCHESTRAL TONES [PEDAL] button is flashing, these buttons are used for selecting the Pedal Orchestral Tones.



The Upper Orchestral Tones are played on the upper manual, and the Lower Orchestral Tones are played on the lower manual.

To play the Pedal Orchestral Tones, connect an external pedalboard to the VK-88. You can also press the PEDAL [TO LOWER] button to split the lower manual into two ranges and play the Pedal Orchestral Tones in the left side.

When you press the UPPER ORCHESTRAL TONES [TO LOWER] button and the LOWER ORCHESTRAL TONES [TO UPPER] button, the Upper Orchestral Tones can be played on the lower manual, and the Lower Orchestral Tones can be played on the upper manual.



You can adjust the volume of the Orchestral Tones with the Orchestral Tones harmonic bars.

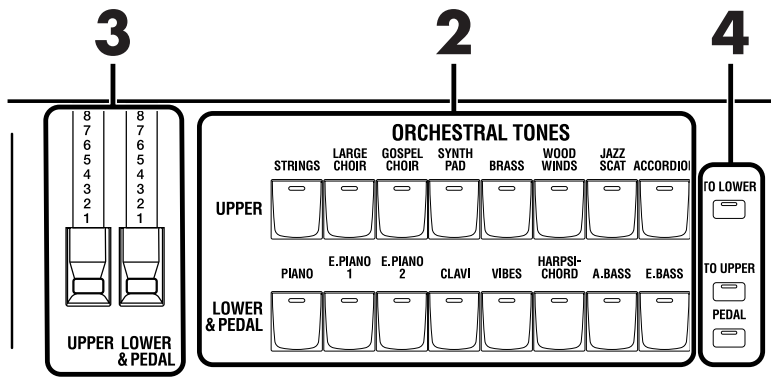
Adjust the volume of the Upper Orchestral Tones with the UPPER ORCHESTRAL TONES harmonic bars.

When the ORCHESTRAL TONES [PEDAL] button is not lit, you can use the LOWER & PEDAL ORCHESTRAL TONES harmonic bars to adjust the volume of the Lower Orchestral Tones.

When the ORCHESTRAL TONES [PEDAL] button is flashing, you can use the LOWER & PEDAL ORCHESTRAL TONES harmonic bars to adjust the volume of the Pedal Orchestral Tones.

Layering ORCHESTRAL TONES with Organ Sounds (Layer)

In addition to organ voices, the VK-88 provides ORCHESTRAL TONES, such as piano or strings. Here's how you can play organ sounds together with Orchestral tones.



- 1** Select a registration organ voice (p. 29), or use the harmonic bars and other knobs and buttons to create the desired organ sound.
- 2** Press the UPPER ORCHESTRAL TONES buttons and LOWER & PEDAL ORCHESTRAL TONES buttons to select an Orchestral Tone.

The selected Orchestral Tone will sound together with the organ voice.

When the ORCHESTRAL TONES [PEDAL] button is not lit, the LOWER & PEDAL ORCHESTRAL TONES buttons are used for selecting the Lower Orchestral Tones; when the ORCHESTRAL TONES [PEDAL] button is flashing, these buttons are used for selecting the Pedal Orchestral Tones.

- 3** Sliding the ORCHESTRAL TONES harmonic bars in and out to adjust the volume of the ORCHESTRAL TONES.

Adjusting the UPPER ORCHESTRAL TONES harmonic bars changes the volume level of the Orchestral Tones played on the upper manual, while adjusting the LOWER & PEDAL ORCHESTRAL TONES harmonic bars changes the volume level of the Orchestral Tones played on the lower manual.

When the ORCHESTRAL TONES [PEDAL] button is flashing, you can adjust the volume of the Pedal Orchestral Tones by moving the LOWER & PEDAL ORCHESTRAL TONES harmonic bars.

- 4** Press the UPPER ORCHESTRAL TONES [TO LOWER] button and the LOWER ORCHESTRAL TONES [TO UPPER] button as needed.

When you press the UPPER ORCHESTRAL TONES [TO LOWER] button, the Upper Orchestral Tones can be played on the lower manual.

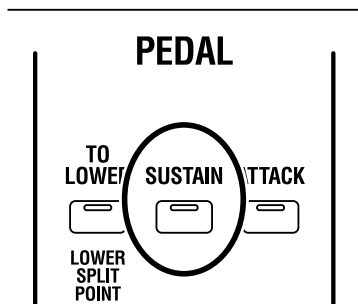
When the LOWER ORCHESTRAL TONES [TO UPPER] button is pressed, the Lower Orchestral Tones can be played on the upper manual.

■ Muting the Organ Tones and Playing Only the Orchestral Tones

- 5** Press the UPPER harmonic bars, PEDAL harmonic bars, and LOWER harmonic bars, inward until you can no longer see the numbers.
- 6** Get the indicators for the PERCUSSION [SECOND] button and PERCUSSION [THIRD] button to go out (off).
Only the Orchestral Tones will sound.

Adding a Decay to the Pedal Orchestral Tones (Pedal Sustain)

You can add sustain to the Pedal Orchestral Tones.



- 1** Press the PEDAL [SUSTAIN] button to make its indicator light.

Sustain is added to the Pedal Orchestral Tones.

The pedal sustain does not affect the Orchestral Voices E.PIANO 1, E.PIANO 2, CLAVI, or HARPSICHORD.

MEMO

You can set the length of the sustain after you release the keys when the PEDAL [SUSTAIN] button is on (p. 83).

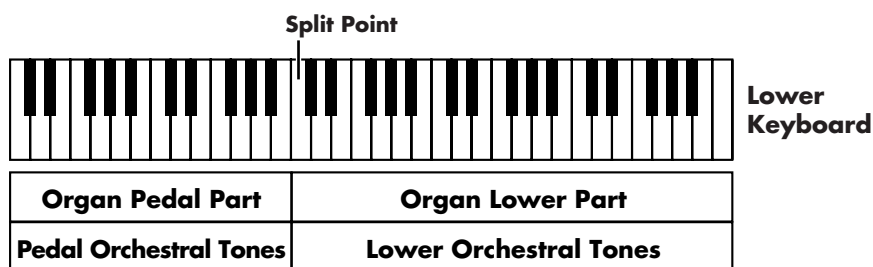
NOTE

Sustain is not applied to the Pedal Tone when you set the PEDAL [TO LOWER] button to ON and play the Pedal Tone in the lower keys.

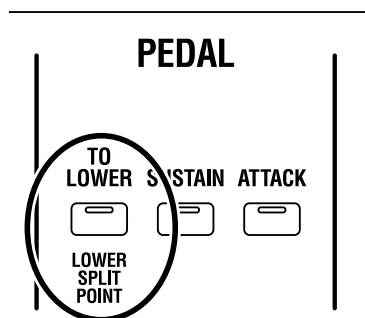
Playing the Pedal Orchestral Tones in the Lower Keyboard (PEDAL TO LOWER)

You can divide the Lower keyboard into two zones, and assign the Pedal Orchestral Tones to the left-hand zone.

This is called “split,” and the location at which the keyboard is divided is called the “split point.” The split point is included in the Lower part.



At the factory settings, the split point is set to “C4” (middle C).



1 Press the LOWER & PEDAL ORCHESTRAL TONES buttons to select an Orchestral Tone.

The selected Orchestral Tone will sound together with the organ voice.

When the ORCHESTRAL TONES [PEDAL] button is not lit, the LOWER & PEDAL ORCHESTRAL TONES buttons are used for selecting the Lower Orchestral Tones; when the ORCHESTRAL TONES [PEDAL] button is flashing, these buttons are used for selecting the Pedal Orchestral Tones.

2 Sliding the ORCHESTRAL TONES harmonic bars in and out to adjust the volume of the ORCHESTRAL TONES.

Adjusting the LOWER & PEDAL ORCHESTRAL TONES harmonic bars changes the volume level of the Orchestral Tones played on the lower manual.

When the ORCHESTRAL TONES [PEDAL] button is flashing, you can adjust the volume of the Pedal Orchestral Tones by moving the LOWER & PEDAL ORCHESTRAL TONES harmonic bars.

3 Press the PEDAL [TO LOWER] button to make its indicator light.

The Lower keyboard will be divided into two zones.

The right-hand keyboard zone will play the Lower organ part and Lower Orchestral Tones, and the left-hand keyboard zone will play the Pedal organ part and Pedal Orchestral Tones.



You are free to change the split point.

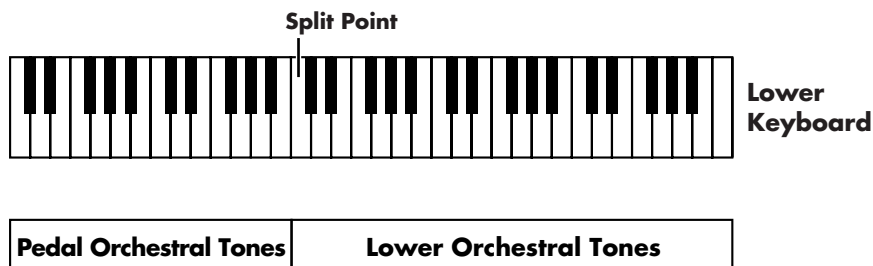


Sustain is not applied to the Pedal Tone when you set the PEDAL [TO LOWER] button to ON and play the Pedal Tone in the lower keys.

- 4** To cancel the Split, press the PEDAL [TO LOWER] button once again, extinguishing the indicator.

■ Muting the Organ Tones and Playing Only the Orchestral Tones

- 5** Press the PEDAL harmonic bars and LOWER harmonic bars, inward until you can no longer see the numbers.



■ Changing the Split Point

You can change the location (Split Point) at which the Lower keyboard will be divided.

- 1** Hold down the [BANK] buttons and press the PEDAL [TO LOWER] button.
The indicators of the PEDAL [TO LOWER] button will blink.
- 2** Press the key that you want to specify as the split point.
The split point will be set.
- 3** Save the setting of split point to a registration (p. 49).

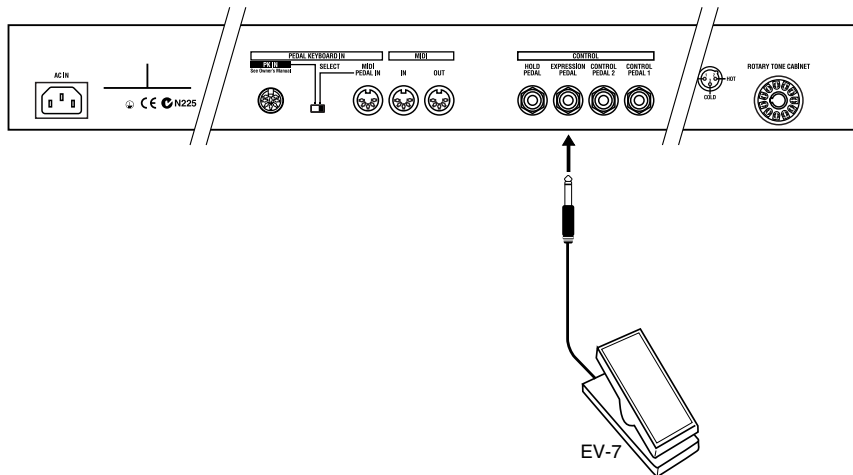


Split points are saved to the individual registrations (p. 48).

Using the Controllers

Using the Expression Pedal

You can connect an expression pedal to the rear panel EXPRESSION PEDAL jack and use it to adjust the volume. Advancing the pedal away from yourself will increase the volume, and returning it toward yourself will decrease the volume.



Even if you return the expression pedal all the way toward yourself, the organ volume will not go to zero.

■ Using the Active Expression Function

Normally, when you use an expression pedal connected to the EXPRESSION PEDAL jack, the Organ Voice and Orchestral Tones will both gradually change in volume. The VK-88 provides an Active Expression function, which you can use with an expression pedal connected to the EXPRESSION PEDAL jack. The Active Expression function lets you create tonal changes for greater expressiveness, and allows you to emphasize the “forte” passages in your playing.

The VK-88 has two types of Active Expression settings.



Settings for the Active Expression function can be stored for each registration (p. 48).

○ Applying the Active Expression Function to the UPPER ORCHESTRAL TONES

When you step on the expression pedal lightly, the organ voice will sound. Depress the pedal some more, and the UPPER ORCHESTRAL TONES will be added.

- 1 Hold down the [BANK] button and press the PERCUSSION [SOFT] button.

○ Applying the Active Expression Function to the LOWER ORCHESTRAL TONES

When you step on the expression pedal lightly, the organ voice will sound. Depress the pedal some more, and the LOWER ORCHESTRAL TONES will be added.

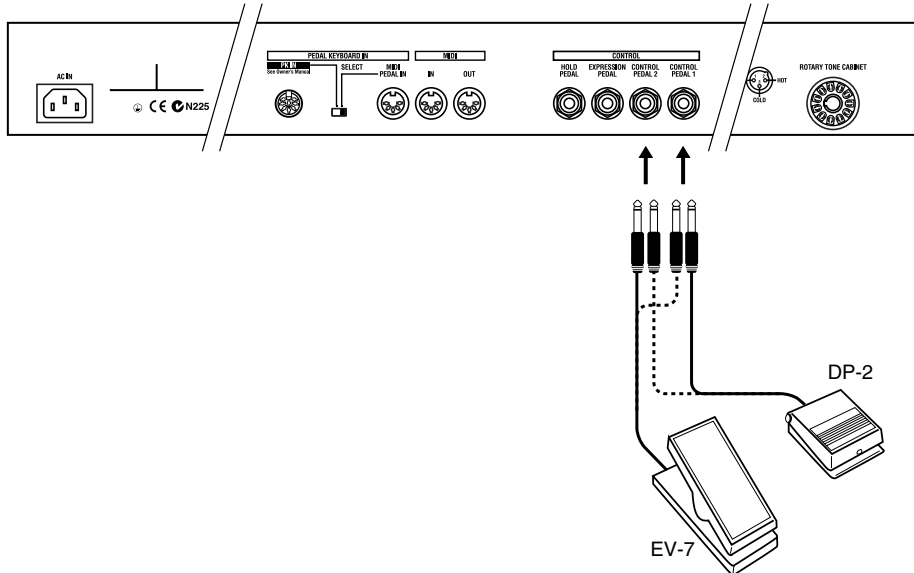
- 1 Hold down the [BANK] button and press the PERCUSSION [SLOW] button.

○ Returning to the Normal Expression Pedal Function

- 1 Hold down the [BANK] button and press the PERCUSSION [THIRD] button.

Using a Control Pedal

You can connect a pedal switch or expression pedal to the rear panel CONTROL PEDAL 1 jack and CONTROL PEDAL 2 jack, and assign a function to the pedal.



NOTE

For some type of pedal switch, the action you obtain when the pedal is pressed will be the opposite of what you intend. In this case, change the polarity of the pedal (p. 80).

■ Assigning a Function to the Control Pedal

You can change the function that is assigned to the control pedal.

- 1** To assign the function of the controller pedal connected to the CONTROL 1 jack, hold down the [BANK] button and press the [PIANO] button; if assigning the function of the controller pedal connected to the CONTROL 2 jack, hold down the [BANK] button and press the [E. PIANO 1] button.

The indicators of buttons [1]–[8] ([1]–[5]) will blink.

- 2** Press one of the buttons from [1] through [8] ([1] through [5]) to select the function that you want to assign to the control pedal.

13 different functions can be assigned to the control pedal. You can select any one of these functions by switching the indicator of the [BANK] button between lit/dark states.

The following parameters are assigned to each button.

[BANK] button's indicator is dark

Button	Parameter	Page
[1]	ROTARY SLOW/FAST	The rotary speaker effect can be switched between slow and fast. This will have the same effect as the [SLOW/FAST] button.
[2]	ROTARY SPEED	The speed of the rotary speaker effect can be freely controlled between slow and fast. This is especially effective when assigned to the expression pedal.
[3]	ROTARY BRAKE	This button temporarily halts the rotation of the rotary sound.
[4]	ORCHESTRAL TONES GLIDE	Controls the Glide function for the Orchestral Tones. The pitch of the Orchestral Tones will change while the control pedal is pressed, and will gradually return to the original pitch when the control pedal is released.
[5]	REGISTRATION UP	Steps sequentially through the registrations. Each time the control pedal is pressed, the next registration will be selected.
[6]	REGISTRATION DOWN	Steps sequentially through the registrations. The registration number decreases by one each time the control pedal is pressed.
[7]	OVERDRIVE	The depth of overdrive will be controlled. This is especially effective when assigned to the expression pedal.

Button	Parameter	Page
[8]	ORCHESTRAL TONES EXPRESSION	Select this when you want to use the expression pedal to control the volume of the Orchestral Tones . While this function is being used, the expression pedal connected to the EXPRESSION PEDAL jack will affect only the volume of the organ.

[REGISTRATION] button's indicator is lit

Button	Parameter	Page
[1]	D BEAM SYNC	The same function that is assigned to the D BEAM controller will also be assigned to the control pedal. When you change the function that is assigned to the D BEAM controller, the function that is assigned to the control pedal will also change.
[2]	CRESCENDO	As you depress the expression pedal connected to the EXPRESSION PEDAL jack, the volume of all harmonic bars will gradually become louder. When the expression pedal is fully depressed, the harmonic bar volumes will be at maximum, and the rotary will switch to FAST . As you return the expression pedal toward yourself, the volume will decrease.
[3]	RING MODULATOR	When you depress the control pedal, the ring modulator (p. 43) will be applied. The depth to which you depress the control pedal will control the depth of the ring modulator.
[4]	TONE WHEEL BRAKE	The wheel brake will be applied (p. 43).
[5]	SPRING SHOCK	This lets you produce the sound of a spring reverb unit being jarred (p. 43).

If you want to stop editing, press the **[H-BAR MANUAL]** button.

3 Press the **[WRITE]** button to finalize the function assigned to the control pedal.

The function assigned to the control pedal will be saved.

The indicators for the [1]–[8] buttons light up while the settings are being saved.

NOTE

The control pedal has no effect when the **D BEAM [ON]** button is off while “**D BEAM SYNC**” is assigned to the control pedal.

NOTE

When the “**SPRING SHOCK**” function is assigned to the control pedal, please be aware that raising the reverb level excessively will produce a high-volume impact sound. If you want to reduce the volume of the impact sound, use the **REVERB [LEVEL]** knob to adjust the reverb level (p. 45).

MEMO

If you press the **VIBRATO AND CHORUS [UPPER]** button, the setting will return to its initial value.

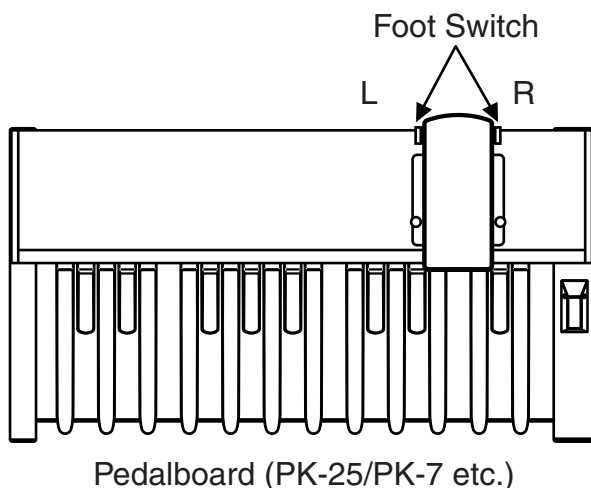
NOTE

Never turn off the power while the setting are being saved.

Using the Controllers

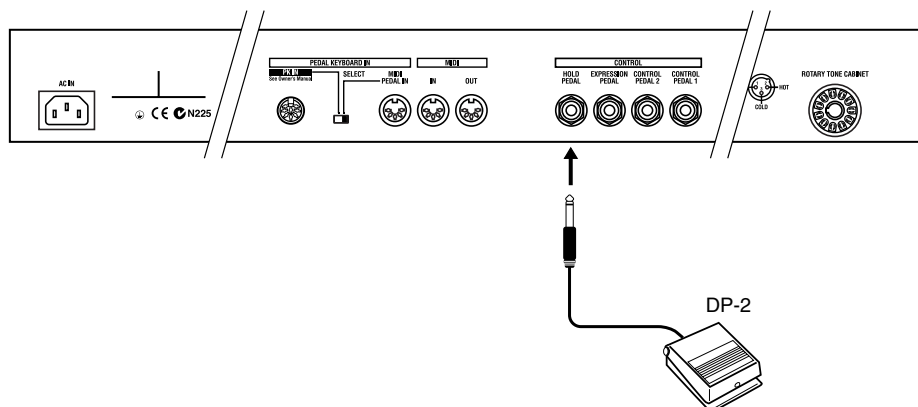
Using the Pedalboard Foot Switch

When a pedalboard equipped with a foot switch, such as the PK-25/PK-7 (optionally available) is connected to the PK IN jack on the VK-88's rear panel, you can assign any of a number of control functions (such as switching the speed of the rotary speaker rotation or switching registrations) to the foot switch.



Using the Hold Pedal to Sustain the Sound

If you connect a pedal switch to the rear panel HOLD PEDAL jack, the organ voice or Orchestral Tone that you play while pressing the pedal will be sustained. This is the same function as the damper pedal of a piano.



When changing the function assigned to the foot switch, refer to "PK FOOT L ASSIGN" and "PK FOOT R ASSIGN" (p. 68).



For some type of pedal switch, the action you obtain when the pedal is pressed will be the opposite of what you intend. In this case, change the polarity of the pedal (p. 80).

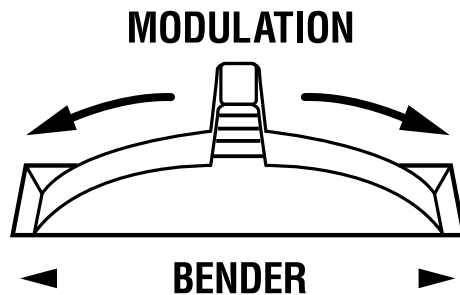


You can also set it so the Hold Pedal function will apply only to Orchestral Tones (p. 80).

Using the Bender

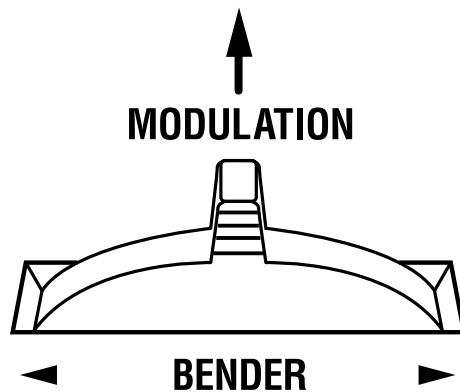
Moving the BENDER at the left of the lower manual from side to side while the [ORGAN CONTROL] button is unlit causes the pitch to change smoothly (Pitch Bend effect).

With the VK-88, you can apply this pitch bend effect to the Organ voice and Orchestral Tones.



Using the Modulation Lever

Moving the MODULATION lever away from you while the [ORGAN CONTROL] button is unlit adds a wavering effect to the Orchestral Tones.



MEMO

You can change the maximum range for the pitch bend effect. For more details, refer to "ORGAN BEND RANGE" (p. 80), and "ORCHESTRAL TONES BEND RANGE" (p. 82).

MEMO

You can set application of the BENDER to the Upper Orchestral Tones, Lower Orchestral Tones, and Pedal Orchestral Tones separately (p. 72).

MEMO

You can change the function the BENDER performs when the [ORGAN CONTROL] button is on (p. 70).

NOTE

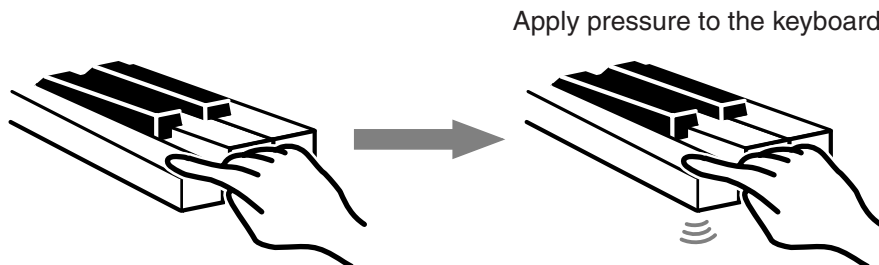
You cannot apply modulation (a wavering in the sound) to the Organ Tones.

MEMO

You can change the function the MODULATION Lever performs when the [ORGAN CONTROL] button is on (p. 70).

Changing the Sound with Aftertouch

After pressing keys on the upper manual, you can then alter the sound of the Organ and Orchestral Tones by continuing to press harder on the keys.



The function of aftertouch is as follows.

Tone	Function
Organ Voice	The function assigned to aftertouch is enabled.
ORCHESTRAL TONES	The tone is changed.

Changing the Pedal and MODULATION Lever Functions ([ORGAN CONTROL] Button)

Pressing the [ORGAN CONTROL] button, which causes the button to light up, allows you to use the BENDER or MODULATION lever to change the Organ tones.

- 1** Press the [ORGAN CONTROL] button to make its indicator light.
- 2** Set the organ tone.
- 3** Move the BENDER or MODULATION lever.

When the [ORGAN CONTROL] button is lit, the Bender and Modulation lever function as shown below.

Bender

Tone	Function
Organ Voice	You can switch the rotary speed of rotary effect. Tilting the lever either to the left or right changes the rotary effect's rotation speed.
ORCHESTRAL TONES	The Bender is disabled.

Modulation Lever

Tone	Function
Organ Voice	You can use the function assigned to the MODULATION lever.
ORCHESTRAL TONES	The MODULATION lever is disabled.

MEMO

The effect may be difficult to perceive with certain types of tones.

MEMO

You can change the function the Aftertouch performs (p. 69).

MEMO

You can set the Rotary effect so it won't be switched when the [ORGAN CONTROL] button is on, even when the BENDER is moved (p. 70).

MEMO

You can change the function the MODULATION Lever performs when the [ORGAN CONTROL] button is on (p. 70).

NOTE

When the [ORGAN CONTROL] button is lit, the BENDER and MODULATION lever have no effect on the Orchestral Tones.

MEMO

When the [ORGAN CONTROL] button is off, BENDER and MODULATION lever messages are transmitted to the external MIDI device.

Advanced Use

Edit mode allows you to get the most out of the VK-88's functions by making more detailed settings. This section explains the functions that can be set in Edit mode. In this owner's manual, the process of modifying a setting is referred to as "editing," and the item of data that is modified is referred to as a "parameter."

■ About the Edit Modes

There are two edit modes—one saves settings individually for each registration, while the other stores a single value to be used by the entire system.

System Memory

The edit mode that stores things for the entire system deals with the following:

- Organ rotary settings (p. 65)
- Percussion settings (p. 67)
- Organ voice settings (p. 68)
- Controller settings (p. 68)
- Orchestral Tones Controller settings (p. 71)
- MIDI settings (p. 74)
- Equalizer and other settings (p. 78)
- Control pedal settings (p. 58)

Registration Memory

The edit mode that stores things on an individual registration basis deals with the following:

- Effect and other settings (p. 81)
- Pedal Sustain setting (p. 83)
- Pedal Attack settings (p. 83)
- Harmonic bars and other panel settings (p. 48)
- Split Point of lower keyboard (p. 46)
- Active Expression setting (p. 56)

NOTE

In the case of settings that are saved for each registration, you must save the edited settings in a registration. If you turn off the power without saving the edited settings to a registration, your changes will be lost.

■ Basic Procedure

Here is the basic procedure for each edit mode.

→ For details, refer to the explanation for each edit mode.

1. [BANK] button, and press the [***] button.

The indicators of the [1]–[8] buttons will blink.



The [***] button will be a different button depending on the edit mode that you want to set. For details, follow the procedure for each edit mode.

2. Press one of the buttons from [1] through [8] to select the parameter that you want to edit.

If there are more than eight parameters, you can access all of them by switching the lit/dark state of the [BANK] button.

3. Turn the [VIBRATO AND CHORUS] knob to adjust the setting.

For parameters that are switched ON/OFF, turn the [VIBRATO AND CHORUS] knob toward the right to switch the parameter ON, or toward the left to switch it OFF.

For parameters that have an adjustable value, turn the [VIBRATO AND CHORUS] knob toward the right to increase the value, or toward the left to decrease the value.

At this time, the D Beam type indicator will show the approximate value of the setting (p. 64).



If you press the VIBRATO AND CHORUS [UPPER] button, the setting will return to the initial value.

4. If you want to adjust another parameter in the same edit mode, press [BANK] button and one of the [1]–[8] buttons to select the parameter, and turn the [VIBRATO AND CHORUS] knob to edit the value.

When you want to stop editing, press the [H-BAR MANUAL] button.

5. Press the [WRITE] button to finalize the settings of the parameters.

Parameter settings will be saved.

The indicators for the [1]–[8] buttons light up while the settings are being saved.

6. Parameters that are edited independently for each registration are saved as part of the registration (p. 48).

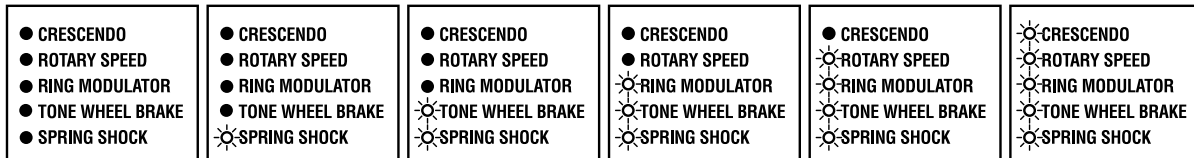
Advanced Use

State of the D BEAM Indicators in Edit Mode

○ When the setting is "0-127," "0-10," "0-12," "0-15," "0-24," or "0-31"

The lit location of the D Beam Type indicator shows the approximate value.

The minimum value (0) will be when the D Beam indicators are all dark, and the maximum value when they are all lit. As you increase the value, the D Beam indicators will successively light from the bottom.



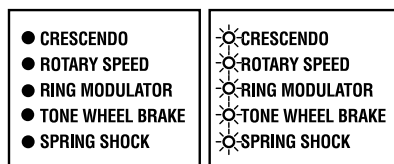
Min **Max**

The setting will increase as you turn the [VIBRATO AND CHORUS] knob clockwise, and will decrease as you turn it counterclockwise.

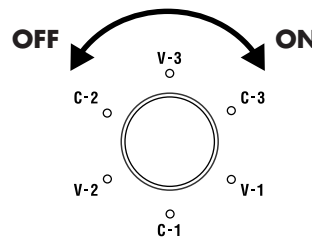
When you press the VIBRATO AND CHORUS [UPPER] button, this will return to the default setting.

○ If the setting is an "ON or OFF" switch

This will be OFF when all D Beam indicators are dark, and ON when they are all lit.



OFF **ON**



This will be ON when the [VIBRATO AND CHORUS] knob is turned to the right, and OFF when turned to the left.

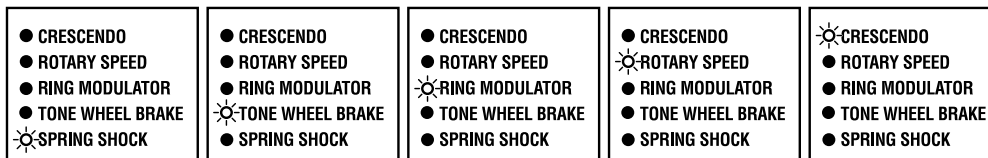
When you press the VIBRATO AND CHORUS [UPPER] button, this will return to the default setting.

○ When the setting is "-5-0-+5," "-6-0-+5," "-100-0-+100," "-3-0-+3" or "-2-0-+2"

The lit location of the D Beam Type indicator shows the approximate value.

When the value is 0, the center D Beam Type indicator (RING MODULATOR indicator) will light.

D Beam Type indicators below the middle will indicate a negative value, and D Beam Type indicators above the middle will indicate a positive value.



Min **0** **Max**

Turn the [VIBRATO AND CHORUS] knob clockwise to increase the value, or counterclockwise to decrease it.

When you press VIBRATO AND CHORUS [UPPER], this will return to the default setting.

Settings That Are Saved for the Entire System

■ Rotary-related Settings

1. [BANK] button and press the ROTARY SOUND [ON] button.

The indicators of the [1]–[8] buttons ([1]–[7] buttons) will blink.

2. Press one of the [1]–[8] buttons ([1]–[7] buttons) to select the parameter that you want to edit.

There are 15 rotary-related parameters. You can select all of these parameters by controlling the lighted/extinguished state of the [BANK] button's indicator.

The following parameters are assigned to each button.

[BANK] button's indicator extinguished

Button	Parameter	Page
[1]	ROTARY WOOFER LEVEL	p. 66
[2]	ROTARY TWEETER LEVEL	p. 66
[3]	ROTARY WOOFER RISE TIME	p. 66
[4]	ROTARY TWEETER RISE TIME	p. 66
[5]	ROTARY WOOFER FALL TIME	p. 66
[6]	ROTARY TWEETER FALL TIME	p. 66
[7]	ROTARY WOOFER SPREAD	p. 66
[8]	ROTARY TWEETER SPREAD	p. 66

[BANK] button's indicator lighted

Button	Parameter	Page
[1]	ROTARY WOOFER SPEED SLOW	p. 66
[2]	ROTARY TWEETER SPEED SLOW	p. 66
[3]	ROTARY WOOFER SPEED FAST	p. 66
[4]	ROTARY TWEETER SPEED FAST	p. 66
[5]	ROTARY MIC DISTANCE	p. 66
[6]	ROTARY RANDOMIZE	p. 66
[7]	ROTARY INDICATOR SYNC SOURCE	p. 66

3. Turn the [VIBRATO AND CHORUS] knob to adjust the setting.

MEMO

If you press the VIBRATO AND CHORUS [UPPER] button, the setting will return to the initial value.

4. If you want to adjust the setting of another parameter, press the [BANK] button and the appropriate button from [1] through [8] (from [1] through [7]) to select the parameter, and turn the [VIBRATO AND CHORUS] knob to adjust the setting.

When you want to stop editing, press the [H-BAR MANUAL] button.

5. Press the [WRITE] button to finalize the settings of the rotary-related parameters.

Parameter settings will be saved.

The indicators for the [1]–[8] buttons light up while the settings are being saved.

NOTE

Never turn off the power while parameters are being saved.

Advanced Use

○ **ROTARY WOOFER LEVEL (0-127)**

Specifies the volume of the low-range speaker (woofer).
The rotary speaker effect consists of a low range and a high range, and you can independently adjust the volume of the low-range speaker (woofer) and the high-range speaker (tweeter) to set as desired.

○ **ROTARY TWEETER LEVEL (0-127)**

Specifies the volume of the high-range speaker (tweeter).
The rotary speaker effect consists of a low range and a high range, and you can independently adjust the volume of the low-range speaker (woofer) and the high-range speaker (tweeter) to set as desired.

○ **ROTARY WOOFER RISE TIME (0-127)**

This specifies the speed at which the rotary speaker effect for the low-range (woofer) will shift from slow to fast. The change will occur more rapidly as this value is increased.

○ **ROTARY TWEETER RISE TIME (0-127)**

This specifies the speed at which the rotary speaker effect for the high-range (tweeter) will shift from slow to fast. The change will occur more rapidly as this value is increased.

○ **ROTARY WOOFER FALL TIME (0-127)**

Specifies the rate at which the low-range speaker (woofer) will change from the fast to the slow speed.
The change will occur more rapidly as this value is increased.

○ **ROTARY TWEETER FALL TIME (0-127)**

Specifies the rate at which the high-range speaker (tweeter) will change from the fast to the slow speed.
The change will occur more rapidly as this value is increased.

MEMO

The ROTARY RISE TIME / ROTARY FALL TIME parameters affect not only the change produced by the [SLOW/FAST] button, but also the rate at which the [BRAKE] button will stop or resume rotation.

○ **ROTARY WOOFER SPREAD (0-10)**

Specify the spaciousness of the low-range speaker (woofer).
Specifies the left/right spread of the rotary speaker.
Increasing this value will increase the sense of stereo.

○ **ROTARY TWEETER SPREAD (0-10)**

Specify the spaciousness of the high-range speaker (tweeter).
Specifies the left/right spread of the rotary speaker.
Increasing this value will increase the sense of stereo.

○ **ROTARY WOOFER SPEED SLOW (0-127)**

Specifies the rotational speed for the Slow setting of the rotary speaker. Specifies the rotational speed for the low-range speaker (woofer).
Increasing the value raises the speed.

○ **ROTARY TWEETER SPEED SLOW (0-127)**

Specifies the rotational speed for the Slow setting of the rotary speaker. Specifies the rotational speed for the high-range speaker (tweeter).
Increasing the value raises the speed.

○ **ROTARY WOOFER SPEED FAST (0-127)**

Specifies the rotational speed for the Fast setting of the rotary speaker. Specifies the rotational speed for the low-range speaker (woofer).
Increasing the value raises the speed.

○ **ROTARY TWEETER SPEED FAST (0-127)**

Specifies the rotational speed for the Fast setting of the rotary speaker. Specifies the rotational speed for the high-range speaker (tweeter).
Increasing the value raises the speed.

○ **ROTARY MIC DISTANCE (0-10)**

Specifies the distance from the rotary speaker to the mic. As this value is increased, the mic and speaker will be located further apart, and the volume will be modulated less.

○ **ROTARY RANDOMIZE (0-10)**

Adjusts the irregularity in the rotation of the rotary speaker. Increasing this value will produce more irregularity in the rotation.

○ **ROTARY INDICATOR SYNC SOURCE (TWEETER: OFF, WOOFER: ON)**

This selects whether the timing of the ROTARY SPEED indicator is to be synchronized to the speed of the high-frequency range speaker (tweeter: OFF), or to the low-frequency range speaker (woofer: ON), of the rotary speakers.

■ Percussion Settings

1. Hold down the [BANK] button and press the PERCUSSION [SECOND] button.

The indicators of buttons [1]–[6] will blink.

2. Press one of the buttons from [1] through [6] to select the parameter that you want to edit.

There are six parameters related to Percussion.

The following parameters are assigned to each button.

Button	Parameter	Page
[1]	PERCUSSION SOFT LEVEL	p. 67
[2]	PERCUSSION NORMAL LEVEL	p. 67
[3]	PERCUSSION SLOW TIME	p. 67
[4]	PERCUSSION FAST TIME	p. 67
[5]	PERCUSSION RECHARGE TIME	p. 67
[6]	PERCUSSION H-BAR LEVEL	p. 68

3. Turn the [VIBRATO AND CHORUS] knob to adjust the setting.

MEMO

If you press the VIBRATO AND CHORUS [UPPER] button, the setting will return to its initial value.

4. If you want to edit another parameter, press the appropriate button from [1] through [6] to select the parameter, and turn the [VIBRATO AND CHORUS] knob to adjust the setting.

When you want to stop editing, press the [H-BAR MANUAL] button.

5. Press the [WRITE] button to finalize the settings of the percussion parameters.

Parameter settings will be saved.

The indicators for the [1]–[8] buttons light up while the settings are being saved.

NOTE

Never turn off the power while parameters are being saved.

○ PERCUSSION SOFT LEVEL (0–15)

Sets the percussion volume when percussion is set to Soft (the [SOFT] button's indicator is lit).

Increasing this value will increase the volume of percussion.

○ PERCUSSION NORMAL LEVEL (0–15)

Sets the percussion volume when percussion is set to Normal (the [SOFT] button's indicator is dark).

Increasing this value will increase the volume of percussion.

○ PERCUSSION SLOW TIME (0–127)

Sets the speed at which the percussion sound will decay when percussion is set to Slow (the [SLOW] button's indicator is lit).

Increasing this value causes the percussion to decay more slowly.

○ PERCUSSION FAST TIME (0–127)

Sets the speed at which the percussion sound will decay when percussion is set to Fast (the [SLOW] button's indicator is dark).

Increasing this value causes the percussion to decay more slowly.

○ PERCUSSION RECHARGE TIME (0–10)

Specifies the percussion charge time that determines the time from when the keys are released until percussion is recharged.

Increasing this value will increase the time necessary for percussion to recharge, causing the percussion sound to be smaller for rapidly repeated notes.

On tone wheel organs, percussion was produced by an analog circuit. This meant that if only a very short time elapsed from when the keys were released until the next key was pressed, the percussion circuit was unable to recharge fully, and the percussion sound that was added would therefore be lower in volume. This also meant that even if legato was broken during a rapid trill, etc., an appropriate amount of percussion was added. The percussion charge time parameter adjusts this charge time.

Advanced Use

○ PERCUSSION H-BAR LEVEL (0–127)

Adjusts the volume of the harmonic bars when percussion is normal (the [SOFT] button's indicator is dark).

As this value is increased, the sound of the harmonic bars will be less affected by the percussion.

On tone wheel organs, turning the percussion on would lower the overall volume specified by the harmonic bars. This is because the percussion on tone wheel organs was designed not to impair the volume balance of the entire organ. The VK-88 allows you to adjust this change in volume balance.

■ Organ Voice Setting

○ VIBRATO AND CHORUS LOWER (VIBRATO/CHORUS LOWER&PEDAL, VIBRATO/CHORUS LOWER)

When the VIBRATO AND CHORUS [LOWER] button is on, you can set the vibrato or chorus so that it is applied only to the Lower Part, or to both the Lower and Pedal Parts.

1. Hold down the [BANK] button and press the VIBRATO AND CHORUS [LOWER] button.
The indicators of buttons [1]–[2] will blink.
2. Press the [1] or [2] button to select the part to which the vibrato or chorus effect is to be applied.

Button	Explanation
[1]	The vibrato or chorus effect is applied to both the Lower and Pedal Parts.
[2]	The vibrato or chorus effect is applied only to the Lower Part.

MEMO

If you press the VIBRATO AND CHORUS [UPPER] button, the setting will return to its initial value.

When you want to stop editing, press the [H-BAR MANUAL] button.

3. Press the [WRITE] button to confirm the settings.

This saves the settings.

The indicators for the [1]–[8] buttons light up while the settings are being saved.

NOTE

Never turn off the power while parameters are being saved.

■ Controller Settings

○ PK FOOT L ASSIGN

○ PK FOOT R ASSIGN

With a pedalboard unit (such as the PK-25/PK-7; sold separately) connected with a special pedalboard connector, you can then switch the pedalboard unit's foot switch function.

1. To change the pedalboard's Foot Switch L setting, hold down the [BANK] button and press the [E. PIANO 2] button. When changing the pedalboard's Foot Switch R setting, hold down the [BANK] button and press the [CLAVI] button.

The indicators of buttons [1]–[8] will blink.

2. Press one of the buttons [1]–[8] to select the function you want to assign to the pedalboard's foot switch.

Button	Parameter
[1]	ROTARY SLOW/FAST The rotary speaker effect can be switched between slow and fast. This will have the same effect as the [SLOW/FAST] button.
[2]	ROTARY BRAKE This button temporarily halts the rotation of the rotary sound.
[3]	ORCHESTRAL TONES GLIDE Controls the Glide function for the Orchestral Tones. The pitch of the Orchestral Tones will change while the foot switch is depressed, and will gradually return to the original pitch when the foot switch is released.
[4]	REGISTRATION UP Steps sequentially through the registrations. Each time the foot switch is depressed, the next registration will be selected.
[5]	REGISTRATION DOWN Steps sequentially through the registrations. The registration number decreases by one each time the foot switch is depressed.
[6]	HOLD This will have the same effect as the Hold pedal.
[7]	SEQ START/STOP The connected sequencer alternately starts and stops each time the foot switch is depressed.
[8]	SEQ RESET Depressing the foot switch returns the sequencer to the beginning of the song.

When you want to stop editing, press the [H-BAR MANUAL] button.

MEMO

If you press the VIBRATO AND CHORUS [UPPER] button, the setting will return to its initial value.

3. Press the [WRITE] button to confirm the settings.

This saves the settings.

The indicators for the [1]–[8] buttons light up while the settings are being saved.

NOTE

Never turn off the power while parameters are being saved.

○ ORGAN AFTER ASSIGN

This selects the function whereby the sound is controlled by the velocity used in the Upper Part.

1. Hold down the [BANK] button and press the [VIBES] button.

The indicators of [1]–[8] buttons ([1] button) will blink.

2. Press one of the [1]–[8] buttons ([1] button) to select the function.

There are nine parameters. You can select all of these parameters by controlling the lighted/extinguished state of the [BANK] button's indicator.

The following parameters are assigned to each button.

[BANK] button's indicator extinguished

Button	Parameter
[1]	OFF Nothing is assigned.
[2]	ROTARY SLOW/FAST The rotary speaker effect can be switched between slow and fast. This will have the same effect as the [SLOW/FAST] button.
[3]	ROTARY BRAKE This button temporarily halts the rotation of the rotary sound.
[4]	OVERDRIVE The depth of overdrive will be controlled.
[5]	CRESCENDO By pressing the keys down, you can gradually increase the volume for all the harmonic bars. When you press down fully on the keys, the harmonic bar volumes will be at maximum, and the rotary will switch to FAST. When you reduce the pressure on the keys, the volume decreases.

Button	Parameter
[6]	RING MODULATOR Pressing down on the keys causes the ring modulation to be applied (p. 43). The amount of ring modulation applied varies according to how much pressure is placed on the keys.
[7]	TONE WHEEL BRAKE The wheel brake will be applied (p. 43).
[8]	SPRING SHOCK This lets you produce the sound of a spring reverb unit being jarred (p. 43).

[BANK] button's indicator lighted

Button	Parameter
[1]	D BEAM SYNC The same function that is assigned to the D BEAM controller will also be assigned to the aftertouch. When you change the function that is assigned to the D BEAM controller, the function that is assigned to the aftertouch will also change.

MEMO

If you press the VIBRATO AND CHORUS [UPPER] button, the setting will return to its initial value.

When you want to stop editing, press the [H-BAR MANUAL] button.

3. Press the [WRITE] button to confirm the settings.

This saves the settings.

The indicators for the [1]–[8] buttons light up while the settings are being saved.

NOTE

Never turn off the power while parameters are being saved.

MEMO

The volume of the spring shock can be adjusted with the REVERB [LEVEL] knob. The spring shock is particularly effective if "SPRING" is selected as the reverb type (p. 45).

NOTE

When the "SPRING SHOCK" function is assigned to the aftertouch, please be aware that raising the reverb level excessively will produce a high-volume impact sound.

NOTE

The aftertouch has no effect when the D BEAM [ON] button is off while "D BEAM SYNC" is assigned to aftertouch.

Advanced Use

○ ORGAN BENDER ASSIGN

This sets the bender action when the [ORGAN CONTROL] button is on.

1. Hold down the [BANK] button and press the [HARPSICHORD] button.

The indicators of buttons [1]–[2] will blink.

2. Press one of the buttons [1]–[2] to select the function you want to assign to the Bender.

Button	Explanation
[1]	OFF The bender does not affect anything, even when operated.
[2]	ROTARY SLOW/FAST The rotary speaker effect can be switched between slow and fast. This will have the same effect as the [SLOW/FAST] button.

MEMO

If you press the VIBRATO AND CHORUS [UPPER] button, the setting will return to its initial value.

When you want to stop editing, press the [H-BAR MANUAL] button.

3. Press the [WRITE] button to confirm the settings.

This saves the settings.

The indicators for the [1]–[8] buttons light up while the settings are being saved.

NOTE

Never turn off the power while parameters are being saved.

○ ORGAN MODULATION ASSIGN

This sets the modulation lever action when the [ORGAN CONTROL] button is on.

1. Hold down the [BANK] button and press the [A.BASS] button.

The indicators of [1]–[8] buttons ([1] button) will blink.

2. Press one of the [1]–[8] buttons ([1] button) to select the function.

There are nine parameters. You can select all of these parameters by controlling the lighted/extinguished state of the [BANK] button's indicator.

The following parameters are assigned to each button.

[BANK] button's indicator extinguished

Button	Parameter
[1]	OFF Nothing is assigned.
[2]	ROTARY SLOW/FAST The rotary speaker effect can be switched between slow and fast. This will have the same effect as the [SLOW/FAST] button.
[3]	ROTARY BRAKE This lever temporarily halts the rotation of the rotary sound.
[4]	OVERDRIVE The depth of overdrive will be controlled.
[5]	CRESCENDO By tilting the MODULATION lever inward, you can gradually increase the volume for all the harmonic bars. When you tilt the MODULATION lever completely inward, the harmonic bar volumes will be at maximum, and the rotary will switch to FAST. When you bring the MODULATION lever back towards you, the volume decreases.
[6]	RING MODULATOR Tilting the MODULATION lever inward applies ring modulation to the sound (p. 43). The amount of ring modulation applied varies according to how far the MODULATION lever is tilted.
[7]	TONE WHEEL BRAKE The wheel brake will be applied (p. 43).
[8]	SPRING SHOCK This lets you produce the sound of a spring reverb unit being jarred (p. 43).

MEMO

The volume of the spring shock can be adjusted with the REVERB [LEVEL] knob. The spring shock is particularly effective if "SPRING" is selected as the reverb type (p. 45).

NOTE

When the "SPRING SHOCK" function is assigned to the modulation lever, please be aware that raising the reverb level excessively will produce a high-volume impact sound.

[BANK] button's indicator lighted

Button	Parameter
[1]	D BEAM SYNC The same function that is assigned to the D BEAM controller will also be assigned to the aftertouch. When you change the function that is assigned to the D BEAM controller, the function that is assigned to the aftertouch will also change.

MEMO

If you press the VIBRATO AND CHORUS [UPPER] button, the setting will return to its initial value.

When you want to stop editing, press the [H-BAR MANUAL] button.

3. Press the [WRITE] button to confirm the settings.

This saves the settings.

The indicators for the [1]–[8] buttons light up while the settings are being saved.

NOTE

Never turn off the power while parameters are being saved.

NOTE

The modulation lever has no effect when the D BEAM [ON] button is off while "D BEAM SYNC" is assigned to modulation lever.

■ ORCHESTRAL TONES Controller Setting

1. Hold down the [BANK] button and press the [ORGAN CONTROL] button.

The indicators of [1]–[8] buttons will blink.

2. Press one of the buttons from [1] through [8] to select the parameter that you want to edit.

There are 16 ORCHESTRAL TONES Controller-related parameters. You can select all of these parameters by controlling the lighted/extinguished state of the [BANK] button's indicator.

The following parameters are assigned to each button.

[BANK] button's indicator extinguished

Button	Parameter	Page
[1]	UPPER ORCHESTRAL TONES BENDER	p. 72
[2]	UPPER ORCHESTRAL TONES MODULATION	p. 72
[3]	UPPER ORCHESTRAL TONES VELOCITY	p. 72
[4]	UPPER ORCHESTRAL TONES GLIDE	p. 72
[5]	LOWER ORCHESTRAL TONES BENDER	p. 72
[6]	LOWER ORCHESTRAL TONES MODULATION	p. 73
[7]	LOWER ORCHESTRAL TONES VELOCITY	p. 73
[8]	LOWER ORCHESTRAL TONES GLIDE	p. 73

[BANK] button's indicator lighted

Button	Parameter	Page
[1]	PEDAL ORCHESTRAL TONES BENDER	p. 73
[2]	PEDAL ORCHESTRAL TONES MODULATION	p. 73
[3]	PEDAL ORCHESTRAL TONES VELOCITY (TO LOWER)	p. 73
[4]	PEDAL ORCHESTRAL TONES GLIDE	p. 73
[5]	ORCHESTRAL TONES VELOCITY SENSE	p. 73
[6]	ORCHESTRAL TONES VELOCITY SENSE OFFSET	p. 74

Advanced Use

Button	Parameter	Page
[7]	PEDAL ORCHESTRAL TONES VELOCITY MODE	p. 74
[8]	PEDAL ORCHESTRAL TONES VELOCITY	p. 74

- Turn the [VIBRATO AND CHORUS] knob to adjust the setting.

MEMO

If you press the VIBRATO AND CHORUS [UPPER] button, the setting will return to its initial value.

- If you want to edit another parameter, press [BANK] button and the appropriate button from [1] through [8] to select the parameter, and turn the [VIBRATO AND CHORUS] knob to adjust the setting.

When you want to stop editing, press the [H-BAR MANUAL] button.

- Press the [WRITE] button to finalize the settings of the MIDI-related parameters.

Parameter settings will be saved.

The indicators for the [1]–[8] buttons light up while the settings are being saved.

NOTE

Never turn off the power while parameters are being saved.

○ UPPER ORCHESTRAL TONES BENDER (ON/OFF)

This setting determines whether or not the BENDER is applied to the Upper Orchestral Tones.

Turn the [VIBRATO AND CHORUS] knob to the right to turn this on, or to the left to turn it off. At the factory settings, this is turned on.

○ UPPER ORCHESTRAL TONES MODULATION (ON/OFF)

This setting determines whether or not the modulation is applied to the Upper Orchestral Tones.

Turn the [VIBRATO AND CHORUS] knob to the right to turn this on, or to the left to turn it off. At the factory settings, this is turned on.

○ UPPER ORCHESTRAL TONES VELOCITY (ORIGINAL/MODIFIED)

This setting determines whether the value of the velocity applied to the Upper Orchestral tone will be the actual value produced while playing, or will be a modified value that results from the values for ORCHESTRAL TONES VELOCITY SENSE and ORCHESTRAL TONES VELOCITY SENSE OFFSET.

Turn the [VIBRATO AND CHORUS] knob toward the left to select ORIGINAL, or toward the right to select MODIFIED.

Setting	Explanation
ORIGINAL	The velocity exactly as played with the keys is used for the Lower Orchestral Tone.
FIXED	The velocity applied to the Lower Orchestral Tone will be a modified value that results from the values for ORCHESTRAL TONES VELOCITY SENS and ORCHESTRAL TONES VELOCITY SENS OFFSET.

○ UPPER ORCHESTRAL TONES GLIDE (ON/OFF)

This setting determines whether or not the glide is applied to the Upper Orchestral Tones.

Turn the [VIBRATO AND CHORUS] knob to the right to turn this on, or to the left to turn it off. At the factory settings, this is turned on.

○ LOWER ORCHESTRAL TONES BENDER (ON/OFF)

This setting determines whether or not the BENDER is applied to the Lower Orchestral Tones.

Turn the [VIBRATO AND CHORUS] knob to the right to turn this on, or to the left to turn it off. At the factory settings, this is turned on.

○ **LOWER ORCHESTRAL TONES MODULATION (ON/OFF)**

This setting determines whether or not the modulation is applied to the Lower Orchestral Tones.

Turn the [VIBRATO AND CHORUS] knob to the right to turn this on, or to the left to turn it off. At the factory settings, this is turned on.

○ **LOWER ORCHESTRAL TONES VELOCITY (ORIGINAL/MODIFIED)**

This setting determines whether the value of the velocity applied to the Lower Orchestral tone will be the actual value produced while playing, or will be a modified value that results from the values for ORCHESTRAL TONES VELOCITY SENSE and ORCHESTRAL TONES VELOCITY SENSE OFFSET.

Turn the [VIBRATO AND CHORUS] knob to the right to turn this on, or to the left to turn it off. At the factory settings, this is turned on.

Setting	Explanation
ORIGINAL	The velocity exactly as played with the keys is used for the Upper Orchestral Tone.
FIXED	The velocity applied to the Upper Orchestral Tone will be a modified value that results from the values for ORCHESTRAL TONES VELOCITY SENS and ORCHESTRAL TONES VELOCITY SENS OFFSET.

○ **LOWER ORCHESTRAL TONES GLIDE (ON/OFF)**

This setting determines whether or not the glide is applied to the Lower Orchestral Tones.

Turn the [VIBRATO AND CHORUS] knob to the right to turn this on, or to the left to turn it off. At the factory settings, this is turned on.

○ **PEDAL ORCHESTRAL TONES BENDER (ON/OFF)**

This setting determines whether or not the BENDER is applied to the Pedal Orchestral Tones.

Turn the [VIBRATO AND CHORUS] knob to the right to turn this on, or to the left to turn it off. At the factory settings, this is turned on.

○ **PEDAL ORCHESTRAL TONES MODULATION (ON/OFF)**

This setting determines whether or not the modulation is applied to the Pedal Orchestral Tones.

Turn the [VIBRATO AND CHORUS] knob to the right to turn this on, or to the left to turn it off. At the factory settings, this is turned on.

○ **PEDAL ORCHESTRAL TONES VELOCITY (TO LOWER) (ORIGINAL/MODIFIED)**

When you have pressed the PEDAL [TO LOWER] button so it is lit, and are playing the Pedal Orchestral Tone on the lower manual, this setting determines whether the value of the velocity applied to the Pedal Orchestral Tone will be the actual value produced while playing the keyboard, or will be a modified value that results from the values for ORCHESTRAL TONES VELOCITY SENS and ORCHESTRAL TONES VELOCITY SENS OFFSET.

Turn the [VIBRATO AND CHORUS] knob toward the left to select ORIGINAL, or toward the right to select MODIFIED.

Setting	Explanation
ORIGINAL	The velocity exactly as played with the keys is used for the Pedal Orchestral Tone.
FIXED	The velocity applied to the Pedal Orchestral Tone will be a modified value that results from the values for ORCHESTRAL TONES VELOCITY SENS and ORCHESTRAL TONES VELOCITY SENS OFFSET.

○ **PEDAL ORCHESTRAL TONES GLIDE (ON/OFF)**

This setting determines whether or not the glide is applied to the Pedal Orchestral Tones.

Turn the [VIBRATO AND CHORUS] knob to the right to turn this on, or to the left to turn it off. At the factory settings, this is turned on.

○ **ORCHESTRAL TONES VELOCITY SENSE (0-127)**

This sets the relationship between the force with which the keys are pressed (velocity) and the Orchestral Tones volume.

The higher the value set, the smaller the difference in velocity needed to effect a change in volume. When set to lower values, the volume does not change much, even with large differences in velocity.

NOTE

When this set to certain values, there may be times when sounds are not played. If this occurs, raise the ORCHESTRAL TONES VELOCITY SENSE value.

Advanced Use

○ ORCHESTRAL TONES VELOCITY SENSE OFFSET (0-127)

This sets the relationship between the force with which the keys are pressed (velocity) and the Orchestral Tones volume.

As the set value is raised, a high volume is produced even when the keys are pressed weakly. When set to lower values, the volume level remains low, even when the keys are pressed with greater force.

NOTE

When this set to certain values, there may be times when sounds are not played. If this occurs, raise the ORCHESTRAL TONES VELOCITY SENSE OFFSET value.

○ PEDAL ORCHESTRAL TONES VELOCITY MODE (ORIGINAL/FIXED)

This setting determines whether the velocity used will be that of the pedalboard connected to the PK IN connector and MIDI PEDAL IN connector, or will be the velocity value set for PEDAL ORCHESTRAL TONES VELOCITY.

Turn the [VIBRATO AND CHORUS] knob toward the left to select ORIGINAL, or toward the right to select FIXED.

Setting	Explanation
ORIGINAL	Velocity from pedalboard connected to PK IN connector and MIDI PEDAL IN connector.
FIXED	Velocity value set for PEDAL ORCHESTRAL TONES VELOCITY.

○ PEDAL ORCHESTRAL TONES VELOCITY (0-127)

You can set the Pedal Part velocity on the VK-88.

The velocity increases as the value is raised.

■ MIDI-related Settings

○ When setting things other than the MIDI channel

1. Hold down the [BANK] button and press the [TONE WHEEL] button.

The indicators of buttons [1]-[8] ([1]-[6]) will blink.

2. Press one of the [1]-[8] ([1]-[6]) buttons to select the parameter that you want to edit.

There are 14 MIDI-related parameters. You can select all of these parameters by controlling the lighted/ extinguished state of the [BANK] button's indicator.

The following parameters are assigned to each button.

[BANK] button's indicator extinguished

Button	Parameter	Page
[1]	LOCAL CONTROL	p. 75
[2]	MIDI THRU	p. 75
[3]	CONTROL MIDI CH. (Control MIDI Channel)	p. 77
[4]	UPPER ORGAN MIDI CH. (Upper Organ MIDI Channel)	p. 77
[5]	LOWER ORGAN MIDI CH. (Lower Organ MIDI Channel)	p. 77
[6]	PEDAL ORAGN MIDI CH. (Pedal Organ MIDI Channel)	p. 77
[7]	UPPER ORCHESTRAL TONES MIDI CH. (Upper Orchestral Tones MIDI Channel)	p. 77
[8]	LOWER ORCHESTRAL TONES MIDI CH. (Lower Orchestral Tones MIDI Channel)	p. 77

[BANK] button's indicator lighted

Button	Parameter	Page
[1]	PEDAL ORCHESTRAL TONES MIDI CH. (Pedal Orchestral Tones MIDI Channel)	p. 77
[2]	DRUM MIDI CH. (Drum MIDI Channel)	p. 77
[3]	SPRING SHOCK MIDI CH. (Spring Shock MIDI Channel)	p. 77
[4]	MIDI SOUND CONTROLLERS SWITCH	p. 76

Button	Parameter	Page
[5]	MIDI GENERAL CONTOROLLERS SWITCH	p. 76
[6]	MIDI PROGRAM CHANGE SWITCH	p. 76

3. Turn the [VIBRATO AND CHORUS] knob to adjust the setting.

MEMO

If you press the VIBRATO AND CHORUS [UPPER] button, the setting will return to its initial value.

4. If you want to edit another parameter, press the [BANK] button and the appropriate button from [1] through [8] (from [1] through [6]) to select the parameter, and turn the [VIBRATO AND CHORUS] knob to adjust the setting.

When you want to stop editing, press the [H-BAR MANUAL] button.

5. Press the [WRITE] button to finalize the settings of the MIDI-related parameters.

Parameter settings will be saved.

The indicators for the [1]–[8] buttons light up while the settings are being saved.

NOTE

Never turn off the power while parameters are being saved.

Connecting/disconnecting the sound generator and keyboard

○ **LOCAL CONTROL (ON/OFF)**

Connects/disconnects the internal link between the VK-88's sound generator (organ voice and orchestral tones) and its keyboard and other controllers.

Setting	Explanation
ON	The sound generator will be internally connected to the keyboard and other controllers. Normally you will use the VK-88 with this setting.
OFF	The sound generator will be internally disconnected from the keyboard and other controllers.

MEMO

To prevent problems such as failure to sound, the Local Control setting will automatically be turned on each time the VK-88 is powered up.

NOTE

When the keyboard device connected to the MIDI PEDAL IN connector will be disconnected from the sound generator if Local Control is turned off.

Adding MIDI THRU functionality to the MIDI OUT connector

○ **MIDI THRU (ON/OFF)**

This is a function by which the data received at the MIDI IN connector is re-transmitted from the MIDI OUT connector. Data received at the VK-88's MIDI PEDAL IN connector will be merged, and transmitted from the MIDI OUT connector.

The MIDI Thru setting will automatically be turned off each time the VK-88 is powered up.

Setting	Explanation
ON	All data received at the MIDI IN connector will be re-transmitted from the MIDI OUT connector.
OFF	The MIDI Thru function will be turned off.

NOTE

If the VK-88 receives a large amount of MIDI data or exclusive data, it may not be able to receive all of the MIDI data correctly. If this occurs, reduce the amount of MIDI data that is being transmitted from the external device, or break up the exclusive data into smaller units.

Advanced Use

○ MIDI SOUND CONTROLLERS SWITCH (ON/OFF)

This specifies whether Harmonic Bar data will be received using sound controller MIDI messages.

Turn the [VIBRATO AND CHORUS] knob to the right to turn this on, or to the left to turn it off. At the factory settings, this is turned on.

Setting	Explanation
ON	Harmonic bar data can be received using sound controller MIDI messages.
OFF	Harmonic bar data will not be received using sound controller MIDI messages.

○ MIDI GENERAL CONTROLLERS SWITCH (ON/OFF)

This specifies whether data of Wheel Brake, Orchestral Tones Glide, Rotary Speed, and Rotary Brake will be transmitted and received using MIDI general purpose controller messages.

Turn the [VIBRATO AND CHORUS] knob to the right to turn this on, or to the left to turn it off. At the factory settings, this is turned on.

Setting	Explanation
ON	Data of Wheel Brake, Orchestral Tones Glide, Rotary Speed, and Rotary Brake will be transmitted and received using MIDI general purpose controller messages.
OFF	Data of Wheel Brake, Orchestral Tones Glide, Rotary Speed, and Rotary Brake will not be transmitted or received using MIDI general purpose controller messages.

○ MIDI PROGRAM CHANGE SWITCH (ON/OFF)

This specifies whether registration selection data will be transmitted and received.

Turn the [VIBRATO AND CHORUS] knob to the right to turn this on, or to the left to turn this off. At the factory settings, this is turned on.

Setting	Explanation
ON	Registration selection data will be transmitted and received.
OFF	Registration selection data will not be transmitted or received.

○ When making MIDI channel settings

MIDI uses sixteen MIDI channels (1–16). If you want to play a connected external device, there will be no sound unless the MIDI channels of the transmitting and receiving devices match.



For information on the MIDI transmit/receive channels in effect when the power is turned on, refer to “MIDI Implementation” (p. 101).

1. Hold down the [BANK] button and press the [TONE WHEEL] button.

The indicators of [1]–[8] buttons ([1]–[6] buttons) will blink.

2. Use the [1]–[8] buttons ([1]–[6] buttons) to select the part whose MIDI channel you want to change.

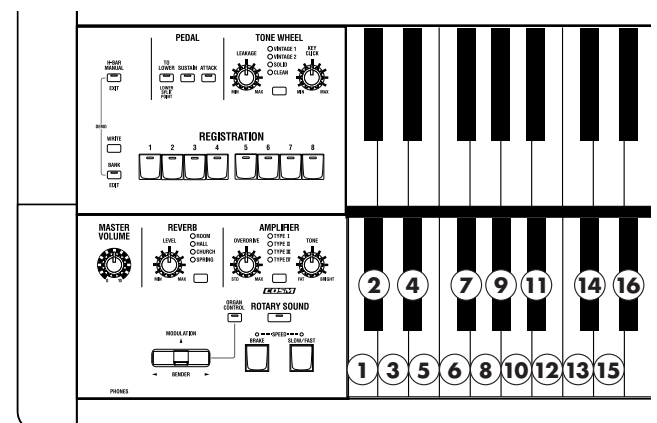
There are 14 MIDI-related parameters. You can select all of these parameters by controlling the lighted/extinguished state of the [BANK] buttons.

There are nine parameters that change the MIDI channel.



For the parameter that is assigned to each button, refer to page 74.

3. Press a key from C2 to D#3 on the lower manual to set the MIDI channel.



4. Press the [WRITE] button to finalize the settings of the MIDI channel.



Never turn off the power while parameters are being saved.

- **CONTROL MIDI CH.**
(Control MIDI Channel)
(1-16) (Initial setting: 1 ch.)
Select the MIDI channel that will be used to transmit and receive MIDI messages to control the VK-88. This channel can be used to select registrations on the VK-88, and to control the expression of the organ voice, etc.
- **UPPER ORGAN MIDI CH.**
(Upper Organ MIDI Channel)
(1-16) (Initial setting: 1 ch.)
Sets the MIDI channel on which data will be transmitted and received for the upper organ voice.
- **LOWER ORGAN MIDI CH.**
(Lower Organ MIDI Channel)
(1-16) (Initial setting: 3 ch.)
Sets the MIDI channel on which data will be transmitted and received for the lower organ voice.
- **PEDAL ORGAN MIDI CH.**
(Pedal Organ MIDI Channel)
(1-16) (Initial setting: 2 ch.)
Sets the MIDI channel on which data will be transmitted and received for the pedal organ voice.
- **UPPER ORCHESTRAL TONES MIDI CH.**
(Upper Organizational Tones MIDI Channel)
(1-16) (Initial setting: 4 ch.)
Specifies the MIDI channel on which data will be transmitted and received for Upper Organizational Tones.
- **LOWER ORCHESTRAL TONES MIDI CH.**
(Lower Organizational Tones MIDI Channel)
(1-16) (Initial setting: 5 ch.)
Specifies the MIDI channel on which data will be transmitted and received for Lower Organizational Tones.
- **PEDAL ORCHESTRAL TONES MIDI CH.**
(Pedal Organizational Tones MIDI Channel)
(1-16) (Initial setting: 6 ch.)
Specifies the MIDI channel on which data will be transmitted and received for Pedal Organizational Tones.

- **DRUM MIDI CH. (Drum MIDI Channel)**
(1-16) (Initial setting: 10 ch.)

Specifies the MIDI channel on which drum notes will be received.

If you connect an external drum pad or sequencer and set its MIDI transmit channel to channel 10, you will be able to play drum sounds on the VK-88. In this case, the sounds of the GM2 standard drum set will be played (p. 100).

- **SPRING SHOCK MIDI CH.**
(Spring Shock MIDI Channel)
(1-16) (Initial setting: 9 ch.)

Specifies the MIDI channel on which Spring Reverb Shock data will be received and transmitted.

NOTE

Different MIDI channels must be assigned to the upper/lower/pedal/drum/Upper Organizational Tones/Lower Organizational Tones/Pedal Organizational Tones/Spring Shock parts. It is not possible to select the same channel for two or more parts. MIDI channels which have already been assigned will not be available for selection.

NOTE

Set the control MIDI channel to a different channel than used for Drum/Organizational Tone/Spring Shock. It is not possible to select the same MIDI channel. Nor is it possible to select a MIDI channel that's already selected.

Advanced Use

■ Equalizer and Other Settings

1. Hold down the [BANK] button and press the [AMPLIFIER] button.

The indicators of [1]–[8] buttons will blink.

2. Press one of the buttons from [1] through [8] to select the parameter that you want to edit.

There are 16 parameters related to equalizer and other settings. You can select all of these parameters by controlling the lighted/extinguished state of the [BANK] button's indicator.

The following parameters are assigned to each button.

[BANK] button's indicator extinguished

Button	Parameter	Page
[1]	EQ BASS	p. 78
[2]	EQ MIDDLE	p. 78
[3]	EQ TREBLE	p. 78
[4]	TONE CABINET FX	p. 79
[5]	REVERB STRUCTURE	p. 79
[6]	FOLD BACK	p. 79
[7]	MASTER TUNE	p. 79
[8]	KEY TRANSPOSE	p. 79

[BANK] button's indicator lighted

Button	Parameter	Page
[1]	CONTROL PEDAL 1 POLARITY	p. 80
[2]	CONTROL PEDAL 2 POLARITY	p. 80
[3]	HOLD PEDAL POLARITY	p. 80
[4]	HOLD PEDAL ASSIGN	p. 80
[5]	LIGHT MODE	p. 80
[6]	AUTO COLOR MODE	p. 80
[7]	OGRAN BEND RANGE	p. 80
[8]	AFTERTOUCHE SENS (Aftertouch Sensitivity)	p. 80

3. Turn the [VIBRATO AND CHORUS] knob to adjust the setting.

MEMO

If you press the VIBRATO AND CHORUS [UPPER] button, the setting will return to its initial value.

4. If you want to edit another parameter, press the [BANK] button and the appropriate button from [1] through [8] to select the parameter, and turn the [VIBRATO AND CHORUS] knob to adjust the setting.

When you want to stop editing, press the [H-BAR MANUAL] button.

5. Press the [WRITE] button to finalize the settings of these parameters.

Parameter settings will be saved.

The indicators for the [1]–[8] buttons light up while the settings are being saved.

NOTE

Never turn off the power while parameters are being saved.

○ EQ BASS (-5-0-+5)

Adjusts the tone quality of the organ voice's lower range. Turning the [VIBRATO AND CHORUS] knob toward the right will emphasize the lower range of frequencies, while turning it toward the left will reduce the volume of the lower range.

○ EQ MIDDLE (-5-0-+5)

Adjusts the tone quality of the organ voice's midrange. Turning the [VIBRATO AND CHORUS] knob toward the right will emphasize the midrange frequencies, while turning it toward the left will reduce the volume of the midrange.

○ EQ TREBLE (-5-0-+5)

Adjusts the tone quality of the organ voice's upper range. Turning the [VIBRATO AND CHORUS] knob toward the right will emphasize the upper range of frequencies, while turning it toward the left will reduce the volume of the upper range.

○ **TONE CABINET FX**
(RING→OD→EQ→AMP→TONE→REV, RING→OD→EQ)

Specify how effects will be applied to the Organ Voice signal that is sent to the ROTARY TONE CABINET connector.

Turn the [VIBRATO AND CHORUS] knob toward the left to select RING→OD→EQ→AMP→TONE→REV, or toward the right to select RING→OD→EQ.

Setting	Explanation
RING→OD→EQ→AMP→TONE→REV	When a speaker is correctly connected to the ROTARY TONE CABINET connector, the audio signal that is output to the ROTARY TONE CABINET connector will have effects applied to it in the following order: 1. Ring Modulator → 2. Overdrive → 3. Equalizer → 4. Amp → 5. Tone → 6. Reverb. At this time, the ORGAN OUTPUT jacks and MIX OUTPUT jacks will function as monitor jacks for the audio output of the ROTARY TONE CABINET connector. When a rotary speaker is connected, the ROTARY SOUND [ON] button is disabled. The registration will not change.
RING→OD→EQ	The audio signal that is output to the ROTARY TONE CABINET connector will have effects applied to it in the following order: 1. Ring Modulator → 2. Overdrive → 3. Equalizer. The organ voice signal that is output from the ORGAN OUTPUT jack and MIX OUTPUT jack will be processed by the effects that are specified.



Before you connect a speaker to the ROTARY TONE CABINET connector, please refer to “Connecting a Rotary Speaker” (p. 91).

○ **REVERB STRUCTURE**
(ROTARY→REVERB, REVERB→ROTARY, PARALLEL)

This parameter specifies how the rotary sound effect and the reverb effect applied to the organ voice will be connected.

Turning the [VIBRATO AND CHORUS] knob switches the setting.

D BEAM type indicators	Explanation
All indicators off	ROTARY→REVERB
“SPRING SHOCK” and “TONE WHEEL BRAKE” indicators lit	REVERB→ROTARY
All indicators lit	PARALLEL

Setting	Explanation
ROTARY→REVERB	The rotary effect will be applied first. This simulates the sound produced by a rotary speaker that has been placed in a reverberant room.
REVERB→ROTARY	The reverb effect will be applied first. Some traditional tone wheel organs had a reverb circuit that utilized a spring mechanism, and was placed before the rotary speaker. This setting simulates the result.
PARALLEL	The reverb effect and the rotary effect will be applied in parallel. This reproduces the effect obtained by using a tone cabinet that has both a rotary speaker section without reverb and a fixed (non-rotating) speaker with a spring-type reverb unit.

○ **FOLD BACK (ON/OFF)**

Specifies whether or not the 16' wheel will be “folded back” an octave in the lower range of the upper part and lower part. When this setting is On, the pitch will be folded back.

On traditional tone wheel organs, the 16' wheel of the lowest octave in the upper part and lower part was designed to produce the same pitch as the 8' wheel. This was because when chords are played in the lowest octave, the sound tended to become muddy. The VK-88 allows you to choose either to fold back the pitch (as on traditional tone wheel organs), or not to fold it back. When Fold Back is turned off, the lowest twelve notes will use the wheels of the pedal part, which sound differently than the other wheels.

Adjusting the pitch to match another instrument

○ **MASTER TUNE (-100cent-0-+100cent)**

This is a fine adjustment to the pitch of the VK-88. You can adjust the pitch of the entire instrument in 0.1 cent steps, relative to the pitch of A4 (middle A) = 440.0 Hz.

→ 100 cents equals one semitone.

Transposing the entire VK-88

○ **KEY TRANSPOSE (-6-0-+5)**

This transposes the entire VK-88. The value is in semitone steps over a range of -6-0-+5. With a setting of 0, there will be no transposition.

Advanced Use

Switching the polarity of the control pedal

○ CONTROL PEDAL 1 POLARITY (STANDARD / REVERSE)

○ CONTROL PEDAL 2 POLARITY (STANDARD / REVERSE)

Depending on the type of pedal switch, the result when the switch is operated may be the opposite of what you intend. If the pedal switch does not operate as described in this owner's manual, change the polarity setting.

Turning the [VIBRATO AND CHORUS] knob toward the right will select STANDARD, and all of the D BEAM TYPE indicators will light.

Turning it toward the left will select REVERSE, and all of the D BEAM TYPE indicators will go out.

Setting	Explanation
STANDARD	Use this setting if the pedal switch operates as described in this owner's manual.
REVERSE	Use this setting if the pedal switch pedal operates the opposite of the description in this owner's manual.

Switching the polarity of the Hold pedal

○ HOLD PEDAL POLARITY (STANDARD/REVERSE)

Depending on the type of pedal switch, the result when the switch is pressed may be the opposite of what you intend. If the pedal switch does not operate as described in this owner's manual, change the polarity setting.

Turning the [VIBRATO AND CHORUS] knob toward the right will select STANDARD, and all of the D BEAM TYPE indicators will light.

Turning it toward the left will select REVERSE, and all of the D BEAM TYPE indicators will go out.

Setting	Explanation
STANDARD	Use this setting if the pedal switch operates as described in this owner's manual.
REVERSE	Use this setting if the pedal switch operates the opposite of the description in this owner's manual.

○ HOLD PEDAL ASSIGN (ORGAN & ORCHESTRAL TONES/ ORCHESTRAL TONES)

If a Hold pedal is connected, you can sustain the sound by pressing the pedal. This selects the part that will be sustained when you press the Hold pedal.

Turn the [VIBRATO AND CHORUS] knob toward the left to select ORGAN & ORCHESTRAL TONES, or toward the right to select ORCHESTRAL TONES.

○ LIGHT MODE (NORMAL/MULTI)

This changes how the [D BEAM] button lights.

Turn the [VIBRATO AND CHORUS] knob toward the left to select NORMAL, or toward the right to select MULTI.

Setting	Explanation
NORMAL	The [D BEAM] button lights the same way, regardless of the D Beam type. The color changes each time your hand is placed over the D-Beam.
MULTI	The manner in which the [D BEAM] button lights changes according to the D Beam type. Depending on the D Beam type, the color may change continuously, or the color may switch each time your hand is placed over the D-Beam.

○ AUTO COLOR MODE (OFF, 1-10)

You can set the instrument so the color of the [D BEAM] button begins changing automatically after a predetermined period elapses, throughout which no buttons or knobs have been operated, even though the [D BEAM] button has been on.

Settings Values: OFF, 1 (20 seconds), 2-10 (1 minute-9 minutes)

○ ORGAN BEND RANGE (OFF, 1-12)

When [ORGAN CONTROL] is off, this parameter allows the bender to be used to apply pitch bending to the entire organ voice.

Increasing this value by one will allow an additional semitone of pitch change when the bender is moved to left or right. With a setting of 12, a pitch change of one octave will result when the bender is moved to left or right.

○ AFTERTOUCHE SENS (Aftertouch Sensitivity) (0-15)

This adjust the depth of the Aftertouch.

Parameters that are Stored in a Registration

■ Effect and Other Settings

1. Hold down the [BANK] button, and press the [REVERB] button.

The indicators of [1]–[8] buttons ([1]–[7] buttons) will blink.

2. Press one of the [1]–[8] buttons ([1]–[7] buttons) to select the parameter that you want to edit.

There are 15 effect-related parameters. You can select all of these parameters by controlling the lighted/extinguished state of the [BANK] button's indicator.

The following parameters are assigned to each button.

[BANK] button's indicator extinguished

Button	Parameter	Page
[1]	REVERB TIME	p. 82
[2]	ORCHESTRAL TONES CHORUS LEVEL	p. 82
[3]	D BEAM ROTARY SPEED MODE	p. 82
[4]	ON CLICK LEVEL	p. 82
[5]	OFF CLICK LEVEL	p. 82
[6]	UPPER ORCHESTRAL TONES EXPRESSION	p. 82
[7]	LOWER ORCHESTRAL TONES EXPRESSION	p. 82
[8]	PEDAL ORCHESTRAL TONES EXPRESSION	p. 82

[BANK] button's indicator lighted

Button	Parameter	Page
[1]	UPPER ORCHESTRAL TONES OCTAVE SHIFT	p. 82
[2]	LOWER ORCHESTRAL TONES OCTAVE SHIFT	p. 82
[3]	PEDAL ORCHESTRAL TONES OCTAVE SHIFT	p. 82
[4]	ORCHESTRAL TONES BEND RANGE	p. 82

Button	Parameter	Page
[5]	ORCHESTRAL TONES MODULATION SENSE	p. 82
[6]	ORCHESTRAL TONES AFTER SENSE	p. 82
[7]	PRDAL ORCHESTRAL TONES MONO MODE	p. 83

3. Turn the [VIBRATO AND CHORUS] knob to adjust the setting.

MEMO

If you press the VIBRATO AND CHORUS [UPPER] button, the setting will return to its initial value.

4. If you want to edit another parameter, press the [BANK] button and the appropriate button from [1] through [8] (from [1] through [7]) to select the parameter, and turn the [VIBRATO AND CHORUS] knob to adjust the setting.

When you want to stop editing, press the [H-BAR MANUAL] button.

5. Press the [WRITE] button to finalize the settings of the effect-related parameters.
6. Save the finalized parameter settings in a registration (p. 48).

NOTE

Never turn off the power while registration are being saved.

Advanced Use

○ REVERB TIME (0-127)

Adjusts the length of the Reverb time. Higher values result in longer reverberation.

○ ORCHESTRAL TONES CHORUS LEVEL (0-127)

Specify the chorus level when the chorus effect is applied to the Orchestral Tones ELECTRIC PIANO1 or ELECTRIC PIANO2.

○ D BEAM ROTARY SPEED MODE (SLOW/FAST, CONTINUOUS)

Specify the D Beam function when ROTARY SPEED is assigned to the D Beam.

Turn the [VIBRATO AND CHORUS] knob to the left to select SLOW/FAST, or to the right to select CONTINUOUS.

Setting	Explanation
SLOW/FAST	The rotary effect is toggled between slow and fast each time you move your hand over the D Beam controller.
CONTINUOUS	The rotary effect will change gradually from slow to fast or fast to slow as you move your hand closer to the D Beam controller.

○ ON CLICK LEVEL (0-31)

Specifies the level of the click sound that occurs when a key is pressed (On).

Increasing this value will increase the volume.

○ OFF CLICK LEVEL (0-31)

Specifies the level of the click sound that occurs when a key is released (Off).

Increasing this value will increase the volume.

○ UPPER ORCHESTRAL TONES EXPRESSION (ON/OFF)

This setting determines whether or not the Expression is applied to the Upper Orchestral Tones.

Turn the [VIBRATO AND CHORUS] knob to the right to turn this on, or to the left to turn it off. At the factory settings, this is turned on.

○ LOWER ORCHESTRAL TONES EXPRESSION (ON/OFF)

This setting determines whether or not the Expression is applied to the Lower Orchestral Tones.

Turn the [VIBRATO AND CHORUS] knob to the right to turn this on, or to the left to turn it off. At the factory settings, this is turned on.

○ PEDAL ORCHESTRAL TONES EXPRESSION (ON/OFF)

This setting determines whether or not the Expression is applied to the Pedal Orchestral Tones.

Turn the [VIBRATO AND CHORUS] knob to the right to turn this on, or to the left to turn it off. At the factory settings, this is turned on.

○ UPPER ORCHESTRAL TONES OCTAVE SHIFT (-2-0+2)

Transpose the Upper Orchestral Tones in steps of an octave.

○ LOWER ORCHESTRAL TONES OCTAVE SHIFT (-2-0+2)

Transpose the Lower Orchestral Tones in steps of an octave.

○ PEDAL ORCHESTRAL TONES OCTAVE SHIFT (-2-0+2)

Transpose the Pedal Orchestral Tones in steps of an octave.

○ ORCHESTRAL TONES BEND RANGE (ORCHESTRAL TONES Pitch Bend Range) (0-24)

Specifies the width of pitch change that will occur when you operate the bender. As this value is increased by one, the range of pitch change that occurs when the bender is moved to left or right will increase by one semitone. With a setting of 24, the pitch will change two octaves up or down when the bender is moved to right or left.

○ ORCHESTRAL MODULATION SENSE (ORCHESTRAL TONES Modulation Sensitivity) (0-127)

Specifies the amount of pitch modulation change that will occur when the modulation lever is operated. As this value is increased, a stronger modulation becomes possible. With a value of 0, moving the modulation lever will not apply modulation.

○ ORCHESTRAL TONES AFTERTOUCH SENSE (ORCHESTRAL TONES Aftertouch Sensitivity) (0-127)

Specifies the amount of pitch modulation that will occur when you apply aftertouch. As this value is increased, a stronger modulation becomes possible. With a value of 0, applying aftertouch will not apply modulation.

○ **PEDAL ORCHESTRAL TONES MONO MODE (POLYPHONY/MONO)**

This setting determines whether the Pedal Orchestral Tones are played with multiple or single notes.

Turn the [VIBRATO AND CHORUS] knob to the left to select POLYPHONY, or to the right to select MONO.

■ **Pedal Sustain Setting**

○ **PEDAL SUSTAIN TIME (0-127)**

This sets the length of the sustain following release of the keys when the PEDAL [SUSTAIN] button is on. The length of the sustain increases as the value is increased

1. Hold down the [BANK] button and press the PEDAL [SUSTAIN] button.

The indicators of PEDAL [SUSTAIN] button will blink.

2. Turn the [VIBRATO AND CHORUS] knob to adjust the setting.



If you press the VIBRATO AND CHORUS [UPPER] button, the setting will return to its initial value.

When you want to stop editing, press the [H-BAR MANUAL] button.

3. Press the [WRITE] button to confirm the settings.
4. Save the finalized parameter settings in a registration (p. 48).



Never turn off the power while registration are being saved.

■ **Pedal Attack Setting**

1. Hold down the [BANK] button and press the PEDAL [ATTACK] button.

The indicators of buttons [1]–[2] will blink.

2. Press one of the buttons from [1] through [2] to select the parameter that you want to edit.

There are two parameters related to Pedal Attack.

The following parameters are assigned to each button.

Button	Parameter	Page
[1]	PEDAL ATTACK TIME	p. 83
[2]	PEDAL ATTACK LEVEL	p. 83

3. Turn the [VIBRATO AND CHORUS] knob to adjust the setting.



If you press the VIBRATO AND CHORUS [UPPER] button, the setting will return to its initial value.

When you want to stop editing, press the [H-BAR MANUAL] button.

4. Press the [WRITE] button to confirm the settings.
5. Save the finalized parameter settings in a registration (p. 48).



Never turn off the power while registration are being saved.

○ **PEDAL ATTACK TIME (0-127)**

Specify the decay time of the attack sound when the PEDAL [ATTACK] button is on. Increasing this value will cause the attack sound to decay more slowly.

○ **PEDAL ATTACK LEVEL (0-127)**

Specify the volume of the attack sound when the PEDAL [ATTACK] button is on. Increasing this value will increase the volume of the attack sound.

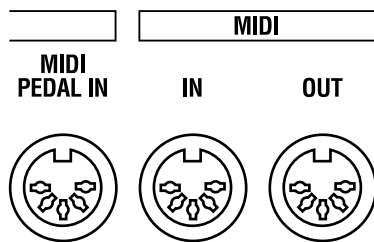
Connecting the VK-88 to External Devices

Playing the VK-88 from an External MIDI Device

The VK-88 has six parts: the “upper part,” “lower part,” and “pedal part” of the organ voice, “Upper Orchestral Tones,” “Lower Orchestral Tones,” and “Pedal Orchestral Tones.”

If you connect an external keyboard or pedal keyboard, you will be able to play the Pedal Organ Part and PEDAL ORCHESTRAL TONES together with the Upper Part or Lower Part.

The VK-88 has three MIDI connectors.



MIDI IN connector	Plays the sound for the Part specified with the MIDI Transmit channel.
MIDI PEDAL IN connector	Plays the sound of the Pedal Part.

MEMO

By connecting an external device to the MIDI PEDAL IN connector, you can play the Pedal Part tones from the connected device, even without matching the MIDI channel.

About MIDI

MIDI (Musical Instrument Digital Interface) is a worldwide standard for exchanging music data among electronic musical instruments and computers. MIDI does not send audio signals, but instead converts performance data and commands into digital data for transmission. The digital data handled by MIDI is collectively referred to as MIDI messages. Any device with a MIDI connector can be connected via a MIDI cable to another MIDI device, to allow data to be exchanged regardless of the manufacturer or model of the device.

MIDI IN connector: Receives MIDI messages from an external MIDI device.

MIDI OUT connector: Transmits MIDI messages from the VK-88.

About MIDI Channel

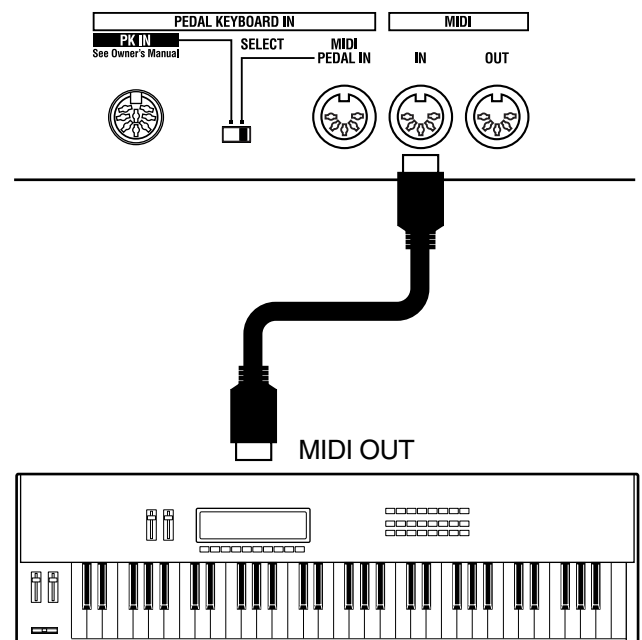
MIDI is able to transmit or receive a large number of messages over a single cable. In order to do so, it uses a concept called “channels” (analogous to the channels used in TV broadcasting), so that MIDI messages are received only when the channel of the receiving device matches the channel of the transmitting device.

Using the VK-88 with an External Keyboard

You can connect an external keyboard and play the sound of the VK-88 from the external keyboard.

NOTE

Turn off the power of the VK-88 and the other device before making connections. If you connect an external device when the power is turned on, damage or malfunctions may occur.



1. Turn off the power of the VK-88 and the external keyboard that you want to connect.
2. Use a commercially available MIDI cable to connect the MIDI OUT connector of your external keyboard to the MIDI IN connector of the VK-88.
3. Turn on the power of your external keyboard.
4. Turn on the power of the VK-88.
5. Select the MIDI channel of external keyboard and VK-88.

The VK-88’s sounds are played when you play the external keyboard.

MEMO

For information on setting the MIDI channel of an external keyboard, refer to the owner’s manual that came with the keyboard.

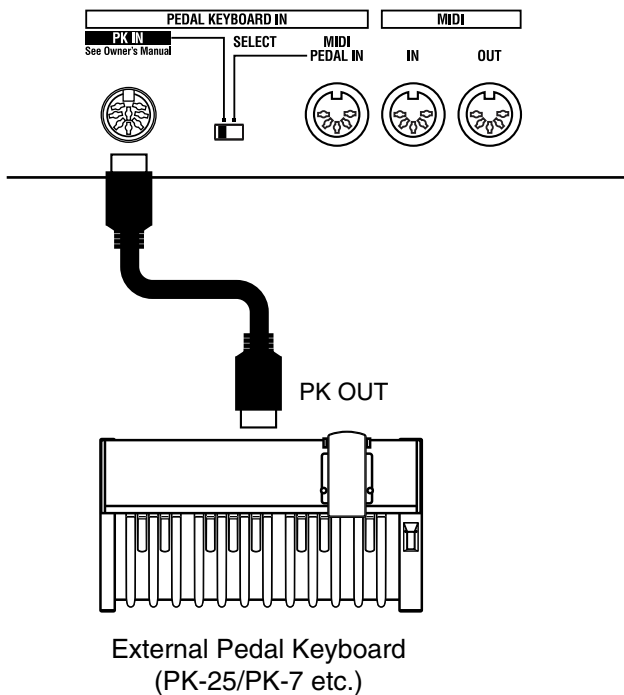
■ Connecting a Pedal Keyboard

You can connect a pedal keyboard and play the Pedal Part of the VK-88.

NOTE

Turn off the power of the VK-88 and the other device before making connections. If you connect an external device when the power is turned on, damage or malfunctions may occur.

Connecting a Pedal Keyboard unit which Has a PK OUT Connector



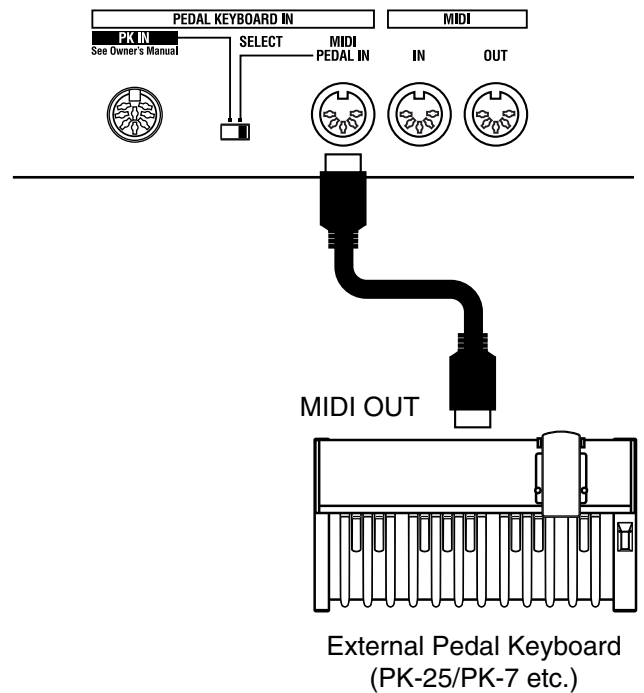
1. Turn off the power of the VK-88 and the pedal keyboard that you want to connect.
2. Set the PEDAL KEYBOARD IN [SELECT] switch of the rear panel to the PK IN position.
3. Using the special cable that was included with the VK-88, connect the VK-88's PK IN connector to the PK OUT connector of your pedal keyboard unit.
4. Turn on the power of the VK-88.

The Pedal Part will sound when you play the pedalboard.

MEMO

If the special cable is connected, it is not necessary to turn the power of the pedal keyboard unit on/off.

Connecting a MIDI Pedal Keyboard Unit



1. Turn off the power of the VK-88 and the pedal keyboard that you want to connect.
2. Set the PEDAL KEYBOARD IN [SELECT] switch of the rear panel to the MIDI PEDAL IN position.
3. Use a commercially available MIDI cable to connect the VK-88's MIDI PEDAL IN connector to the MIDI OUT connector of your MIDI pedal keyboard unit.
4. Turn on the MIDI pedal keyboard unit.
5. Turn on the power of the VK-88.

The Pedal Part will sound when you play the pedal keyboard.

MEMO

By connecting an external device to the MIDI PEDAL IN connector, you can play the Pedal Part tones from the connected device, even without matching the MIDI channel.

MEMO

The power switch of your MIDI pedal keyboard unit must be turned on before the power switch of the VK-88. When you turn off the power, first turn off the power of the VK-88, and then turn off the power of your MIDI pedal keyboard.

Connecting the VK-88 to External Devices

Using an External Sequencer to Record and Play Back

You can connect a sequencer to the VK-88 and record your playing. The sequencer will store your performance on the VK-88 as various types of MIDI data. MIDI data that is received can be sent from the sequencer back to the VK-88 to reproduce your performance.

→ Some sequencers are able to record settings such as the VK-88's registrations, ORCHESTRAL TONES settings, and system settings.

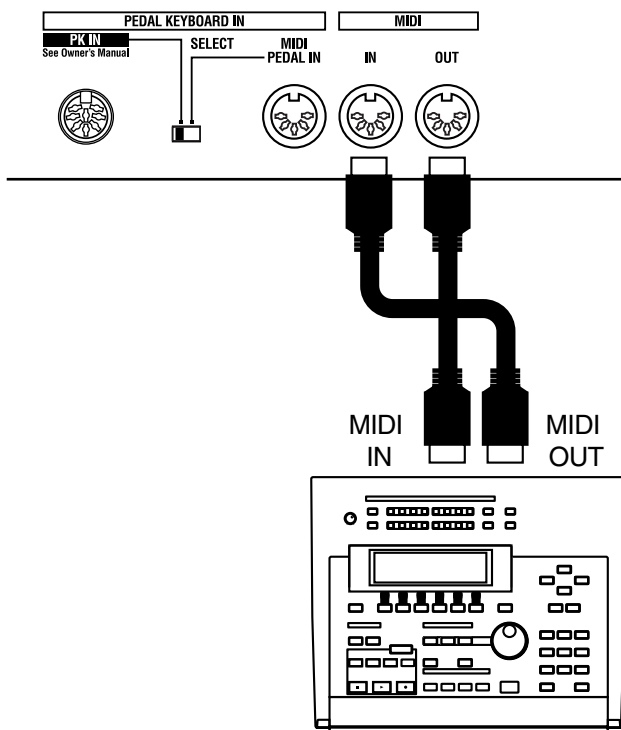
Making preparations for recording

1. Make sure that the power of the VK-88 and your sequencer is turned off.

NOTE

Turn off the power of the VK-88 and the other device before making connections. If you connect an external device when the power is turned on, damage or malfunctions may occur.

2. Use commercially-available MIDI cables to connect the VK-88 to your sequencer.



- Connect the VK-88's MIDI OUT connector to the sequencer's MIDI IN connector
- Connect the VK-88's MIDI IN connector to the sequencer's MIDI OUT connector

3. Turn on the power of the external sequencer and the VK-88.

4. Turn off the Thru function of your sequencer.

This allows you to listen to the sound while you record.

Turn off Thru function so every note doesn't get sounded twice—once as the result of the performance data that directly conveys keyboard information to the organ voice or Orchestral Tone, and a second time by the performance data returned via the Thru function of your sequencer.

NOTE

For details on setting the Thru function of your sequencer, refer to the owner's manual of your sequencer.

Carry out the recording

When you have finished making preparations for recording, start recording on your sequencer and record your performance.

5. Start recording on your sequencer.
6. Adjust the harmonic bars or select Orchestral Tones if desired, and play the organ.
7. When you are finished playing, stop recording on your sequencer.

Play back your performance

8. Play back your sequencer, and your performance will be played back.

Saving VK-88 Settings on an External Sequencer (Bulk Dump)

You can connect the VK-88 to an external sequencer, then save VK-88 registrations, and system settings on it. This function is called “bulk dump.”

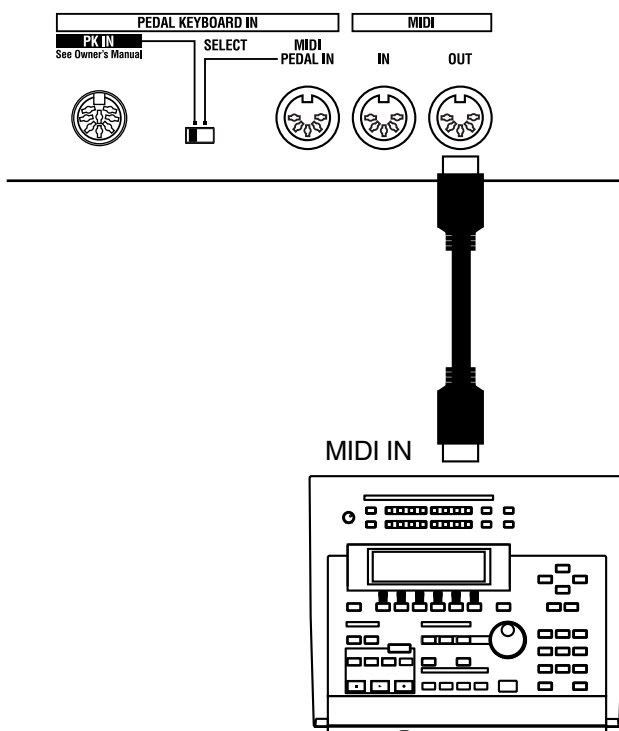
Connect the VK-88 to your sequencer

1. Make sure that the power of the VK-88 and your sequencer is off.

NOTE

Turn off the power of the VK-88 and the other device before making connections. If you connect an external device when the power is turned on, damage or malfunctions may occur.

2. Use commercially-available MIDI cables to connect the VK-88 to your sequencer.



- Connect the VK-88's MIDI OUT connector to the sequencer's MIDI IN connector
3. Turn on the power of the external sequencer and the VK-88.
 4. Turn off the Thru function of your sequencer.

NOTE

For details on setting the Thru function of your sequencer, refer to the owner's manual of your sequencer.

Save the settings

5. Hold down the [BANK] buttons, and press the ROTARY SOUND [BRAKE] button.

The VIBRATO AND CHORUS [UPPER] button's indicator will blink.

6. Start recording on your sequencer.
7. Press the VIBRATO AND CHORUS [UPPER] button to begin saving the settings.

While the settings are being saved, the D BEAM type indicators will light in succession, starting from the bottom.

When the save has been completed, all indicators of the D Beam Type will blink.

8. Press the [H-BAR MANUAL] button.
9. Stop recording on your sequencer.

Loading Back Data That's Been Saved on an External Sequencer

1. Make sure that the power of the VK-88 and your sequencer is off.

NOTE

Turn off the power of the VK-88 and the other device before making connections. If you connect an external device when the power is turned on, damage or malfunctions may occur.

2. Use commercially-available MIDI cables to connect the VK-88 to your sequencer.

Connect the VK-88's MIDI IN connector to the sequencer's MIDI OUT connector

3. Turn on the power of your sequencer and VK-88.
4. Play back your sequencer.

When the playback has been completed, all indicators of the VIBRATO AND CHORUS Type and VIBRATO AND CHORUS [UPPER] button will blink.

5. When the external sequencer has finished playing back, press the VIBRATO AND CHORUS [UPPER] button.

The data from the external sequencer has thus been loaded into the VK-88.

Using the VK-88 as the Master Keyboard

These settings allow the VK-88 to function as a master keyboard to control external MIDI devices.

■ Connecting a External Sound Generator

1. Turn off the power of the VK-88 and the external sound generator that you want to connect.
2. Use a commercially available MIDI cable to connect the MIDI IN connector of your sound generator to the MIDI OUT connector of the VK-88.
3. Turn on the power of your sound generator.
4. Turn on the power of the VK-88.

■ Making the Master Keyboard Settings

1. Hold down the [BANK] button and press the [STRINGS] button.

The indicators of buttons [1]–[4] will blink.

Button	Parameter
[1]	MIDI TX MODE
[2]	EXTERNAL UPPER CHANNEL
[3]	EXTERNAL LOWER CHANNEL
[4]	EXTERNAL PEDAL CHANNEL

2. Press the [1] button.
3. Turn the [VIBRATO AND CHORUS] knob to the right.

Master Keyboard Mode is switched on.

Turning the [VIBRATO AND CHORUS] knob to the right turns Master Keyboard Mode on; turning the knob to the right turns Master Keyboard Mode off. This is set at the factory to “Off.”



If you press the VIBRATO AND CHORUS [UPPER] button, the setting will return to its initial value.

When you want to stop editing, press the [H-BAR MANUAL] button.

4. Press the [WRITE] button to finalize the settings.

This saves the settings.

The indicators for the [1]–[8] buttons light up while the settings are being saved.



Never turn off the power while parameters are being saved.

■ Setting a Different MIDI Channel for Each Keyboard

You can assign a separate MIDI channel for each keyboard. At the factory settings, Channel 1 is assigned to the upper manual, Channel 3 is assigned to the lower manual, and Channel 2 is assigned to the pedalboard.

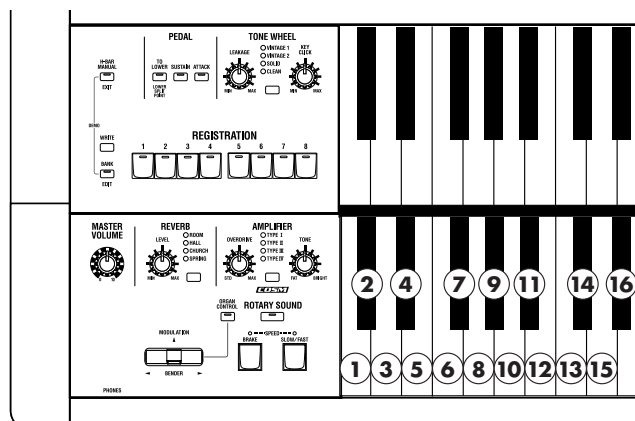
1. Hold down the [BANK] button and press the [STRINGS] button.

The indicators of buttons [1]–[4] will blink.

2. Use the [2]–[4] buttons to select the keyboard whose MIDI channel you want to change.

Button	Parameter
[2]	EXTERNAL UPPER CHANNEL
[3]	EXTERNAL LOWER CHANNEL
[4]	EXTERNAL PEDAL CHANNEL

3. Press a key from C2 to D#3 on the lower manual to set the MIDI channel.



If you press the VIBRATO AND CHORUS [UPPER] button, the setting will return to its initial value.

When you want to stop editing, press the [H-BAR MANUAL] button.

4. Press the [WRITE] button to confirm the settings.

This saves the settings.

The indicators for the [1]–[8] buttons light up while the settings are being saved.



Never turn off the power while parameters are being saved.

■ Turning Transmission of MIDI Messages On and Off Separately for Each Keyboard

You can specify whether or not MIDI messages are to be transmitted by each keyboard. At the factory settings, MIDI messages are transmitted from all of the keyboards.

1. To switch transmission of MIDI messages from the upper manual on or off, hold down the [BANK] button and press the [LARGE CHOIR] button.

To switch transmission of MIDI messages from the lower manual on or off, hold down the [BANK] button and press the [GOSPEL CHOIR] button.

To switch transmission of MIDI messages from the pedalboard on or off, hold down the [BANK] button and press the [SYNTH PAD] button.

2. Press the [1] button.
3. Turning the [VIBRATO AND CHORUS] knob switches the setting.

Turn the [VIBRATO AND CHORUS] knob to the right to turn this on, or to the left to turn it off. At the factory settings, this is turned on.

MEMO

If you press the VIBRATO AND CHORUS [UPPER] button, the setting will return to its initial value.

4. Press the [WRITE] button to finalize the settings.
5. Save the finalized parameter settings in a registration (p. 48).

NOTE

Never turn off the power while registration are being saved.

NOTE

Changes in the different keyboards' MIDI message transmission settings are saved to the registrations. If you turn off the power without saving the edited settings to a registration, your changes will be lost.

■ Using the VK-88 to Select Tones on an External Sound Module

You can select tones on an external sound module from the VK-88. This procedure sets the Bank Select (MSB, LSB) and Program Change messages for each keyboard.

1. Make the master keyboard setting (p. 88).
2. To switch settings for the upper manual, hold down the [BANK] button and press the [LARGE CHOIR] button. To switch settings for the lower manual, hold down the [BANK] button and press the [GOSPEL CHOIR] button. To switch settings for the pedalboard, hold down the [BANK] button and press the [SYNTH PAD] button. The indicators of buttons [1]–[4] will blink.
3. Press one of the buttons from [2] through [4] to select the parameter that you want to edit.

Upper Manual Setting

Button	Parameter	Page
[2]	EXTERNAL UPPER BANK SELECT MSB	OFF, 0–127
[3]	EXTERNAL UPPER BANK SELECT LSB	OFF, 0–127
[4]	EXTERNAL UPPER PROGRAM CHANGE	OFF, 1–128

Lower Manual Setting

Button	Parameter	Page
[2]	EXTERNAL LOWER BANK SELECT MSB	OFF, 0–127
[3]	EXTERNAL LOWER BANK SELECT LSB	OFF, 0–127
[4]	EXTERNAL LOWER PROGRAM CHANGE	OFF, 1–128

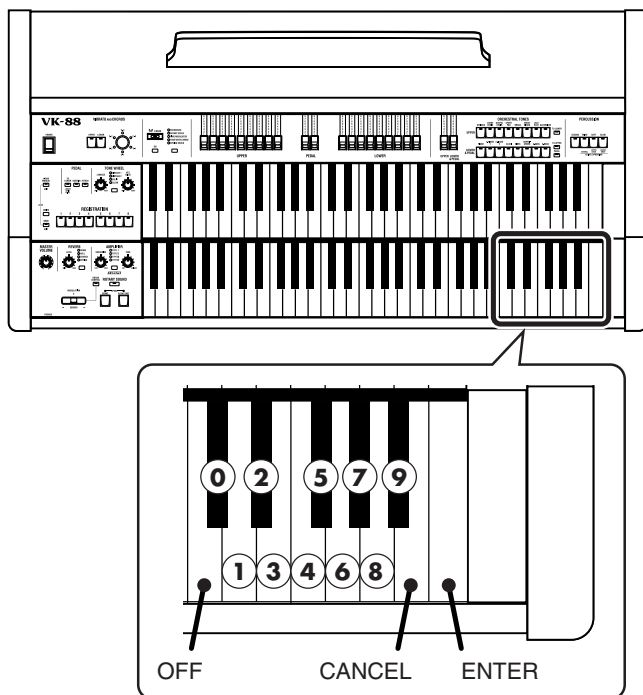
Pedalboard Setting

Button	Parameter	Page
[2]	EXTERNAL PEDAL BANK SELECT MSB	OFF, 0–127
[3]	EXTERNAL PEDAL BANK SELECT LSB	OFF, 0–127
[4]	EXTERNAL PEDAL PROGRAM CHANGE	OFF, 1–128

Connecting the VK-88 to External Devices

4. Press one of the keys from C#6 to Bb6 on the lower manual to set the Program Change or Bank Select.

To set to OFF, press the C6 key.



MEMO

Press the B6 key to cancel a Bank Select or Program Change you have set.

5. Press the C7 key to confirm the Bank Select or Program Change.

A MIDI message is transmitted to the external MIDI sound module when a Program Change is set.

6. Press the [WRITE] button to finalize the settings.

7. Save the finalized parameter settings in a registration (p. 48).

NOTE

Never turn off the power while registration are being saved.

NOTE

Changes in the different keyboards' Bank Select and Program Change settings are saved to the registrations. If you turn off the power without saving the edited settings to a registration, your changes will be lost.

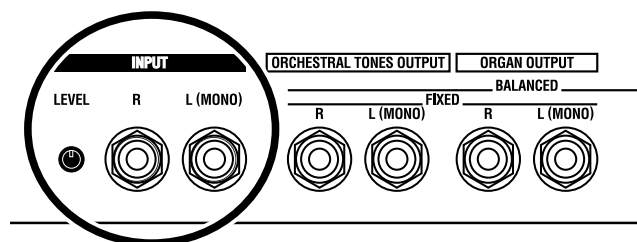
NOTE

Data of program change and bank select will not be transmitted when the MIDI PROGRAM CHANGE SWITCH is off (p. 76).

Mixing the Sound Module Sound with the Organ Sound

You can play the external sound module's sounds by connecting the keyboard to the VK-88's INPUT jack.

1. Connect the sound module to the INPUT jack of VK-88.
2. Turn the INPUT [LEVEL] knob on the rear panel to adjust the volume of the sound module connected to the INPUT jacks.

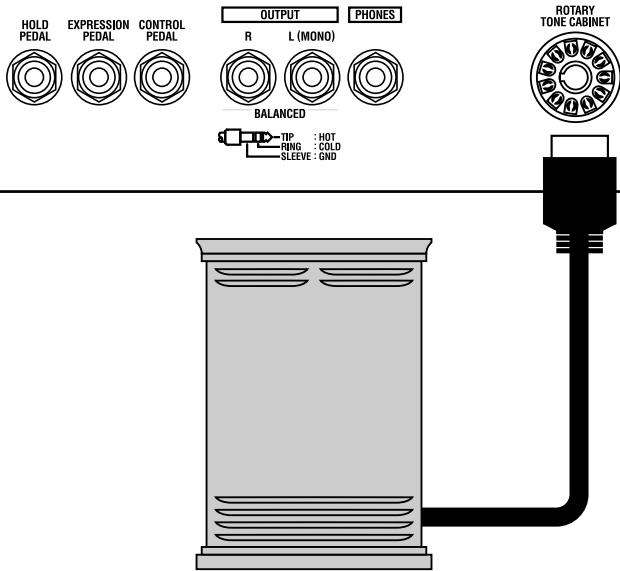


(As seen from the rear panel) Turn to the left	The keyboard volume is reduced.
--	---------------------------------

(As seen from the rear panel) Turn to the right	The keyboard volume is increased.
---	-----------------------------------

Connecting a Rotary Speaker

In addition to providing a rotary speaker effect, the VK-88 also allows you to connect an actual rotary speaker. Connect your rotary speaker to the ROTARY TONE CABINET connector located on the rear panel.



MEMO

You can use the ROTARY [FAST/SLOW] button to change the speed of the rotary speaker and the ROTARY [BRAKE] button to stop the rotation of the rotary speaker temporarily.

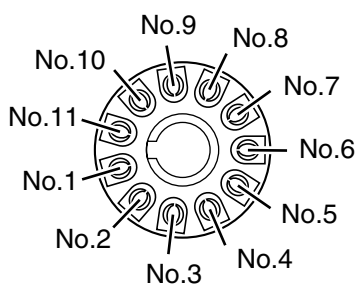
NOTE

The rotary speaker effect of the organ voice will not be applied to the audio signal that is output from the ROTARY TONE CABINET connector.

NOTE

Connecting a speaker which does not meet the following specifications may cause malfunctions.

The pinout for the ROTARY TONE CABINET connector is as follows:



Pin No.	Output data
No. 1	ORGAN (ROTARY)
No. 2	ORCHESTRAL TONES L
No. 3	ORCHESTRAL TONES R
No. 4	GND
No. 5	GND
No. 6	POWER ON/OFF CONTROL
No. 7	FAST CONTROL
No. 8	SLOW CONTROL
No. 9	NC
No. 10	NC
No. 11	+24 V IN

* Pin Nos. 1, 2 and 3 are the output of the organ voice and ORCHESTRAL TONES.

* The No. 6, No. 7, and No. 8 pins are open collector output with a rated voltage of 5–30 volts DC and a maximum rated current load of 50 mA.

* Pin no. 11 detects the connection. If the nominal input voltage is outside the acceptable range (18–30 V DC), the connection will not operate correctly.

- The volume of the external speaker can be adjusted by the VK-88's [MASTER VOLUME] knob.
- ROTARY [SLOW/FAST] button will switch the rotational speed of the connected rotary speaker.
- ROTARY [BRAKE] button will temporarily stop the rotation of the connected speaker. To resume rotation, press ROTARY [BRAKE] button again, or press ROTARY [SLOW/FAST] button.

MEMO

If you do not want to output the Orchestral Tone from the ROTARY TONE CABINET jack, press the ORCHESTRAL TONES harmonic bars all the way in to set the volume of the Orchestral Tones to "0," or select a registration that does not use the Orchestral Tones.

Troubleshooting

If the VK-88 does not function in the way you expect, first check the following chart. If this does not resolve the problem, consult your dealer or a nearby Roland service station.

Problem	Check	Solution	Page
Power does not turn on	Power cord is not connected correctly.	Connect the power cord correctly.	p. 19
No sound/insufficient volume	Power of connected device is not turned on.	Turn on the power of the connected amp or mixer.	p. 20
	The volume of the connected amp or mixer is turned down.	Raise the volume of the connected amp or mixer.	p. 20
	Volume of the VK-88 is too low.	Turn the [Master Volume] knob toward "Max."	p. 26
	Volume of the connected amp or speaker has been turned down.	Raise the volume of the connected amp or mixer.	p. 20
	The expression pedal is not depressed.	While carefully monitoring the volume, depress the toe of the pedal.	p. 56
	If there is sound in the headphones, it is possible that a cable connecting the VK-88 to your amp/mixer is broken, or that your amp/mixer is malfunctioning.	Check your cables and amp/mixer system once again.	p. 20
	Local Control is turned off.	Turn the Local Control setting on.	p. 75
Organ voices cannot be heard	All harmonic bars are pushed all the way inward.	Pull out the harmonic bars.	p. 31
	The wheel brake is activated.	Release the wheel brake using the foot switch, D Beam, aftertouch or modulation lever.	p. 42 p. 58 p. 69 p. 70
ORCHESTRAL TONES cannot be heard/Volume is too low	Volume of the Orchestral Tones is too low.	Pull the ORCHESTRAL TONES harmonic bars out to increase the volume of the Orchestral Tones.	p. 52
	The control pedal has been rocked toward the front.	If "ORCHESTRAL TONES EXPRESSION" is assigned to the control pedal, the volume of the orchestra voice is controlled by means of the control pedal. While carefully monitoring the volume, depress the toe of the control pedal.	p. 58
	The expression pedal is not depressed.	While carefully monitoring the volume, depress the toe of the pedal.	p. 56
	(When the Active Expression function is assigned to the expression pedal) The expression pedal has not been depressed.	Depress the toe of the expression pedal.	p. 56
Click is heard when you press/release a key	On a tone wheel organ, a slight "blip" noise is heard when you press or release a key. Initially, this was considered a defect, but as organs with this characteristic came to be used in a wide range of music, it grew to be considered part of the sound. The VK-88 faithfully simulates this key click noise, which is characteristic of tone wheel organs.	Turn the [KEY CLICK] knob to adjust the key click level. The volume of the click can be adjusted with "ON CLICK LEVEL" and "OFF CLICK LEVEL."	p. 35 p. 82

Problem	Check	Solution	Page
Pitch is incorrect	Tuning is incorrect.	Adjust the reference pitch.	p. 79
	Key Transpose (transposition) is in effect.	Either cancel Key Transpose, or change its setting.	p. 79
	Glide has been assigned to the control pedal. If Glide is assigned when no foot switch or control pedal is connected to the CONTROL PEDAL jack, the pitch may be incorrect.	Either connect a foot switch or control pedal to the CONTROL PEDAL jack, or assign a function other than Glide to the control pedal.	p. 58
	Wheel Brake is assigned to the control pedal. If Wheel Brake is assigned when no foot switch or control pedal is connected to the CONTROL PEDAL jack, the pitch may be incorrect.	Either connect a foot switch or control pedal to the CONTROL PEDAL jack, or assign a function other than Wheel Brake to the control pedal.	p. 59
	Ring Modulator is applied to the organ voice.	Operate the control pedal, the D Beam, aftertouch or modulation lever to defeat the ring modulator.	p. 43 p. 57 p. 69 p. 70
Overdrive is not applied	Overdrive level is too low.	Turn the [OVERDRIVE] knob to adjust the depth of overdrive.	p. 41
	The expression pedal has been rocked toward the front.	While carefully monitoring the volume, depress the toe of the pedal.	p. 56
	Overdrive will not be applied to the Orchestral Tones.	This is not malfunction.	- - -
Reverb is not applied	Reverb level is too low.	Turn the REVERB [LEVEL] knob clockwise to adjust the reverb level.	p. 45
Rotary effect is not applied	The ROTARY SOUND [ON] button is turned off (dark).	Press the ROTARY SOUND [ON] button to turn it on (lit).	p. 40
	The [BRAKE] button is on (lit).	Either turn the [BRAKE] button off (dark) or press the [SLOW/FAST] button, so that the brake will be released, and rotary will be applied.	p. 40
Can't set the MIDI channel	This is already specified as the MIDI channel of another part.	Either select a different channel for the other part that is using that channel and then make the desired setting, or select a MIDI channel that no other part is using.	p. 76
	You are attempting to set the MIDI channel of the Orchestral Tones, Drum, or spring shock to the MIDI channel that has been specified as the Control MIDI Channel.	It is not possible to set the MIDI channel of the Orchestral Tones, Drum, or spring shock to the same channel as the Control MIDI Channel.	p. 77
MIDI messages are not transmitted/receive correctly	The MIDI channel of each part is not set correctly.	Set the MIDI channels correctly.	p. 76
	The Control MIDI Channel is not set correctly.	Make sure that the VK-88's program changes and expression data are being transmitted on the correct MIDI channel.	p. 77
	The sequencer playback tempo is not set correctly.	Have the sequencer play back the data at the same tempo that was used when the exclusive data was recorded.	p. 86
Can't hear spring shock noise	Reverb level is set to 0.	Turn the REVERB [LEVEL] knob clockwise to adjust the reverb level.	p. 45

Troubleshooting

Problem	Check	Solution	Page
Can't hear the 1' harmonic bar	PERCUSSION is turned on. If PERCUSSION is on, the sound of the 1' harmonic bar will not be heard.	This is not malfunction.	---
Rotary changes to FAST unintentionally	"CRESCENDO" is assigned to the control pedal, D BEAM, aftertouch, or MODULATION lever. When "CRESCENDO" is assigned to the control pedal, D BEAM, aftertouch, or MODULATION lever with the [SLOW/FAST] button set to SLOW, then the rotary switches to FAST when you press the control pedal down completely, or position your hand very near to the D BEAM.	Assign a function other than "CRESCENDO" to the control pedal, D BEAM, aftertouch, or MODULATION lever. Alternatively, when you release your foot from the control pedal, or move your hand away from the D BEAM, or release the upper keys or MODULATION lever, the rotary switches back to SLOW.	p. 42 p. 58 p. 69 p. 70
Hold pedal or control pedal operation is reversed	The control pedal's polarity is reversed.	Depending on the type of pedal switch or expression pedal, it may have the opposite operation when depressed. Switch the polarity of the control pedal.	p. 80
D Beam sensitivity is incorrect	Something covered the D BEAM while the sensitivity was being adjusted.	When adjusting the sensitivity, do not place any object on the D BEAM or cover it with your hand.	p. 44
	D Beam sensitivity is incorrect.	Readjust the sensitivity of the D Beam.	p. 44
	The instrument is placed in a location where there is a large amount of infrared light.	The D Beam will not function correctly in a location where there is a large amount of infrared light.	p. 44
Registration memory contents are lost	The power was turned off while data was being written into registration memory.	Never turn off the power while data is being written into registration memory.	---
Can't select Orchestral Tones	The VK-88 is in Edit mode.	Exit Edit mode.	p. 63
	The VK-88 is in Demo mode.	Exit Demo mode.	p. 28
The volume level of the instrument connected to VK-88 is too low	Could you be using a connection cable that contains a resistor?	Use a connection cable that does not contain a resistor.	---

■ Error Indications

When an incorrect operation is performed, or when an operation cannot be carried out correctly, the VK-88 will light all of its indicators for a few seconds. Errors are divided into two categories—those that show up at power-up, and those that occur during normal operation. Please read the following explanations carefully, and take the appropriate action.

When you turn on the power

All indicators light for several seconds

Cause: The content of backup memory has been returned to the condition it was in originally, when the unit left the factory. In most cases, this occurs when the power was turned off while data was being written into memory.

During normal operation

All indicators light for several seconds

Cause 1: A MIDI cable was disconnected or broken.

Action: Make sure that the MIDI cable is connected correctly.

Cause 2: A large amount of MIDI data was received all at once.

Action: Reduce the amount of MIDI data that is being transmitted to the VK-88.

Cause 3: System exclusive data was not received correctly.

Action: Check the settings of the transmitting device, or the data that is being transmitted.

Registration/ORCHESTRAL TONES List

■ Registration List

Registration Number	UPPER PART	LOWER PART	PEDAL PART	PERCUSSION	VIBRATO AND CHORUS	ROTARY
1-1	88 8000 000	83 8000 000	82	THIRD, SOFT, FAST	OFF	SLOW
1-2	80 0000 888	83 8000 000	82	OFF	C-3	FAST
1-3	88 8800 000	83 8000 000	82	THIRD, SOFT, FAST	C-3	SLOW
1-4	88 8800 000	00 8800 000	84	THIRD, NORM, FAST	OFF	SLOW
1-5	88 8008 008	83 8000 000	82	THIRD, SOFT, SLOW	OFF	SLOW
1-6	85 8500 005	03 8300 000	73	OFF	C-3	SLOW
1-7	88 8000 678	00 8600 000	84	OFF	C-3	FAST
1-8	60 8807 006	00 8800 000	84	OFF	OFF	SLOW
2-1	88 8000 000	08 8888 000	73	SECOND, SOFT, SLOW	OFF	SLOW
2-2	88 8008 008	83 8000 000	82	THIRD, SOFT, SLOW	OFF	FAST
2-3	88 8800 000	00 8800 000	84	SECOND, SOFT, FAST	OFF	SLOW
2-4	88 8800 000	00 8800 000	84	THIRD, NORM, FAST	OFF	SLOW
2-5	80 0888 888	83 8000 000	82	THIRD, NORM, FAST	C-3	FAST
2-6	88 8000 000	00 8600 000	82	THIRD, NORM, FAST	OFF	SLOW
2-7	88 8080 880	00 8600 000	82	OFF	OFF	OFF
2-8	28 0030 350	44 8600 000	82	THIRD, SOFT, FAST	C-3	FAST
3-1	88 8000 000	83 8000 000	82	THIRD, SOFT, FAST	C-3	SLOW
3-2	88 8800 000	83 8000 000	82	THIRD, SOFT, FAST	C-1	SLOW
3-3	80 0000 888	83 8000 000	82	OFF	C-3	FAST
3-4	88 8000 068	84 8000 000	82	THIRD, SOFT, FAST	OFF	SLOW
3-5	88 0834 228	00 0000 000	00	OFF	OFF	SLOW
3-6	88 8000 000	83 8000 000	82	THIRD, SOFT, FAST	C-1	SLOW
3-7	81 8151 608	00 6400 000	82	OFF	C-2	SLOW
3-8	84 8500 008	00 8600 000	82	OFF	OFF	SLOW
4-1	80 7050 404	00 8500 000	54	OFF	V-2	FAST
4-2	80 3700 000	00 8500 000	54	OFF	V-3	BRAKE
4-3	00 3800 460	00 6600 000	84	OFF	OFF	OFF
4-4	00 4544 222	00 6600 000	84	OFF	OFF	BRAKE
4-5	00 6876 540	00 6600 000	84	OFF	OFF	OFF
4-6	00 7373 430	00 6600 000	84	OFF	OFF	OFF
4-7	00 8030 000	00 2400 000	84	OFF	OFF	OFF
4-8	60 8807 006	00 8804 000	84	OFF	OFF	OFF
5-1	88 8000 000	83 8000 000	82	THIRD, SOFT, FAST	OFF	SLOW
5-2	80 0000 888	83 8000 000	82	OFF	C-3	FAST
5-3	88 8800 000	83 8000 000	82	THIRD, SOFT, FAST	C-3	SLOW
5-4	88 8800 000	00 8800 000	84	THIRD, NORM, FAST	OFF	SLOW
5-5	88 8008 008	83 8000 000	82	THIRD, SOFT, SLOW	OFF	SLOW
5-6	85 8500 005	03 8300 000	73	OFF	C-3	SLOW
5-7	88 8000 678	00 8600 000	84	OFF	C-3	FAST
5-8	60 8807 006	00 8800 000	84	OFF	OFF	SLOW

Registration/ORCHESTRAL TONES List

Registration Number	UPPER PART	LOWER PART	PEDAL PART	PERCUSSION	VIBRATO AND CHORUS	ROTARY
6-1	88 8000 000	08 8888 000	73	SECOND, SOFT, SLOW	OFF	SLOW
6-2	88 8008 008	83 8000 000	82	THIRD, SOFT, SLOW	OFF	FAST
6-3	88 8800 000	00 8800 000	84	SECOND, SOFT, FAST	OFF	SLOW
6-4	88 8800 000	00 8800 000	84	THIRD, NORM, FAST	OFF	SLOW
6-5	80 0888 888	83 8000 000	82	THIRD, NORM, FAST	C-3	FAST
6-6	88 8000 000	00 8600 000	82	THIRD, NORM, FAST	OFF	SLOW
6-7	88 8080 880	00 8600 000	82	OFF	OFF	OFF
6-8	28 0030 350	44 8600 000	82	THIRD, SOFT, FAST	C-3	FAST
7-1	88 8000 000	83 8000 000	82	THIRD, SOFT, FAST	C-3	SLOW
7-2	88 8800 000	83 8000 000	82	THIRD, SOFT, FAST	C-1	SLOW
7-3	80 0000 888	83 8000 000	82	OFF	C-3	FAST
7-4	88 8000 068	84 8000 000	82	THIRD, SOFT, FAST	OFF	SLOW
7-5	88 0834 228	00 0000 000	00	OFF	OFF	SLOW
7-6	88 8000 000	83 8000 000	82	THIRD, SOFT, FAST	C-1	SLOW
7-7	81 8151 608	00 6400 000	82	OFF	C-2	SLOW
7-8	84 8500 008	00 8600 000	82	OFF	OFF	SLOW
8-1	80 7050 404	00 8500 000	54	OFF	V-2	FAST
8-2	80 3700 000	00 8500 000	54	OFF	V-3	BRAKE
8-3	00 3800 460	00 6600 000	84	OFF	OFF	OFF
8-4	00 4544 222	00 6600 000	84	OFF	OFF	BRAKE
8-5	00 6876 540	00 6600 000	84	OFF	OFF	OFF
8-6	00 7373 430	00 6600 000	84	OFF	OFF	OFF
8-7	00 8030 000	00 2400 000	84	OFF	OFF	OFF
8-8	60 8807 006	00 8804 000	84	OFF	OFF	OFF

*Registration 5-1-8-8 have the same contents as 1-1-4-8.

■ ORCHESTRAL TONES List

PEDAL ORCHESTRAL TONES	LOWER ORCHESTRAL TONES	UPPER ORCHESTRAL TONES
PIANO		STRINGS
E.PIANO 1 (Electric Piano 1)		LARGE CHOIR
E.PIANO 2 (Electric Piano 2)		GOSPEL CHOIR
CLAVI		SYNTH PAD (Synthesizer Pad)
VIBES (Vibraphone)		BRASS
HARPSICHORD		WOOD WINDS
A.BASS (Acoustic Bass)		JAZZ SCAT
E.BASS (Electric Bass)		ACCORDION

Edit Parameters

Settings that are saved for the entire System

● Rotary-related settings

- ROTARY WOOFER LEVEL
- ROTARY TWEETER LEVEL
- ROTARY WOOFER RISE TIME
- ROTARY TWEETER RISE TIME
- ROTARY WOOFER FALL TIME
- ROTARY TWEETER FALL TIME
- ROTARY WOOFER SPREAD
- ROTARY TWEETER SPREAD
- ROTARY WOOFER SPEED SLOW
- ROTARY TWEETER SPEED SLOW
- ROTARY WOOFER SPEED FAST
- ROTARY TWEETER SPEED FAST
- ROTARY MIC DISTANCE
- ROTARY RANDOMIZE
- ROTARY INDICATOR SYNC SOURCE

● Click Noise and Percussion settings

- PERCUSSION SOFT LEVEL
- PERCUSSION NORMAL LEVEL
- PERCUSSION SLOW TIME
- PERCUSSION FAST TIME
- PERCUSSION RECHARGE TIME
- PERCUSSION H-BAR LEVEL

● MIDI-related settings

- LOCAL CONTROL
- MIDI THRU
- CONTROL MIDI CH.
- UPPER ORGAN MIDI CH.
- LOWER ORGAN MIDI CH.
- PEDAL ORAGN MIDI CH.
- UPPER ORCHESTRAL TONES MIDI CH.
- LOWER ORCHESTRAL TONES MIDI CH.
- PEDAL ORCHESTRAL TONES MIDI CH.
- DRUM MIDI CH.
- SPRING SHOCK MIDI CH.
- MIDI SOUND CONTROLLERS SWITCH
- MIDI GENERL CONTROLLERS SWITCH
- MIDI PROGRAM CHANGE SWITCH

● Equalizer and other settings

- EQ BASS
- EQ MIDDLE
- EQ TREBLE
- TONE CABINET FX
- REVERB STRUCTURE
- FOLD BACK
- MASTER TUNE
- KEY TRANSPOSE
- CONTROL PEDAL 1 POLARITY
- CONTROL PEDAL 2 POLARITY
- HOLD PEDAL POLARITY
- HOLD PEDAL ASSIGN
- LIGHT MODE
- AUTO COLOR MODE
- ORGAN BEND RANGE
- AFTERTOUCHE SENSE

● D BEAM SENSITIVITY

- CONTROL PEDAL ASSIGN 1
- CONTROL PEDAL ASSIGN 2
- VIBRATO AND CHORUS LOWER
- PK FOOT L ASSIGN
- PK FOOT R ASSIGN
- ORGAN AFTER ASSIGN
- ORGAN BENDER ASSIGN
- ORGAN MODULATION ASSIGN

● ORCHESTRAL TONES Controller settings

- UPPER ORCHESTRAL TONES BENDER
- UPPER ORCHESTRAL TONES MODULATION
- UPPER ORCHESTRAL TONES VELOCITY
- UPPER ORCHESTRAL TONES GLIDE
- LOWER ORCHESTRAL TONES BENDER
- LOWER ORCHESTRAL TONES MODULATION
- LOWER ORCHESTRAL TONES VELOCITY
- LOWER ORCHESTRAL TONES GLIDE
- PEDAL ORCHESTRAL TONES BENDER
- PEDAL ORCHESTRAL TONES MODULATION
- PEDAL ORCHESTRAL TONES VELOCITY (TO LOWER)
- PEDAL ORCHESTRAL TONES GLIDE
- ORCHESTRAL TONES VELOCITY SENSE
- ORCHESTRAL TONES VELOCITY SENSE OFFSET
- PEDAL VELOCITY MODE
- PEDAL VELOCITY

Parameters that are stored in a registration

●Effect and other setting

- REVERB TIME
- ORCHESTRAL TONES CHORUS LEVEL
- D BEAM ROTARY SPEED MODE
- ON CLICK LEVEL
- OFF CLICK LEVEL
- UPPER ORCHESTRAL TONES EXPRESSION
- LOWER ORCHESTRAL TONES EXPRESSION
- PEDAL ORCHESTRAL TONES EXPRESSION
- UPPER ORCHESTRAL TONES OCTAVE SHIFT
- LOWER ORCHESTRAL TONES OCTAVE SHIFT
- PEDAL ORCHESTRAL TONES OCTAVE SHIFT
- ORCHESTRAL BEND RANGE
- ORCHESTRAL MODULATION SENSE
- ORCHESTRAL AFTERTOUCH SENSE
- PEDAL ORCHESTRAL TONES MONO MODE

●PEDAL SUSTAIN TIME

●PEDAL ATTACK TIME

●PEDAL ATTACK LEVEL

●Panel settings.

- The sounds of the Upper part, Lower part, and Pedal part of the Harmonic Bar settings.
- The sounds of the UPPER ORCHESTRAL TONES and LOWER ORCHESTRAL TONES of the Harmonic Bar settings.
- ROTARY SOUND [ON] button
- ROTARY [BRAKE] button
- ROTARY [SLOW/FAST] button
- PEDAL [TO LOWER] button
- PEDAL [SUSTAIN] button
- PEDAL [ATTACK] button
- [TONE WHEEL] button
- [LEAKAGE] knob
- [KEY CLICK] knob
- [AMPLIFIER] button
- [OVERDRIVE] knob
- [TONE] knob
- [REVERB] button
- REVERB [LEVEL] knob
- PERCUSSION [SECOND] button
- PERCUSSION [THIRD] button
- PERCUSSION [SOFT] button
- PERCUSSION [SLOW] button
- VIBRATO AND CHORUS [UPPER] button
- VIBRATO AND CHORUS [LOWER] button
- [VIBRATO AND CHORUS] knob
- D BEAM [ON] button
- [D BEAM] button
- UPPER ORCHESTRAL TONES buttons

- UPPER ORCHESTRAL TONES [TO LOWER] button
- LOWER ORCHESTRAL TONES buttons
- LOWER ORCHESTRAL TONES [TO UPPER] button
- ORCHESTRAL TONES [PEDAL] button
- [ORGAN CONTROL] button

●SPLIT POINT

●EXPRESSION PEDAL MODE

Drum List

	27	High Q
28		Slap
29		Scratch Push [EXC7]
	30	Scratch Pull [EXC7]
31		Sticks
	32	Square Click
33		Metronome Click
	34	Metronome Bell
35		Acoustic Bass Drum
C2	36	Bass Drum 1
	37	Side Stick
38		Acoustic Snare
	39	Hand Clap
40		Electric Snare
		Low Floor Tom
41		Closed Hi-hat [EXC1]
	42	High Floor Tom
43		Pedal Hi-hat [EXC1]
	44	Low Tom
45		Open Hi-hat [EXC1]
	46	Low-Mid Tom
47		
C3	48	High Mid Tom
	49	Crash Cymbal 1
50		High Tom
	51	Ride Cymbal 1
52		Chinese Cymbal
		Ride Bell
53		Tambourine
	54	Splash Cymbal
55		Cowbell
	56	Crash Cymbal 2
57		Vibra-slap
	58	Ride Cymbal 2
59		
C4	60	High Bongo
	61	Low Bongo
62		Mute Hi Conga
	63	Open Hi Conga
64		Low Conga
		High Timbale
65		Low Timbale
	66	High Agogo
67		Low Agogo
	68	Cabasa
69		Maracas
	70	Short Whistle [EXC2]
71		
C5	72	Long Whistle [EXC2]
	73	Short Guiro [EXC3]
74		Long Guiro [EXC3]
	75	Claves
76		Hi Wood Block
		Low Wood Block
77		Mute Cuica [EXC4]
	78	Open Cuica [EXC4]
79		Mute Triangle [EXC5]
	80	Open Triangle [EXC5]
81		Shaker
	82	Jingle Bell
83		
C6	84	Bell Tree
	85	Castanets
86		Mute Surdo [EXC6]
	87	Open Surdo [EXC6]
88		-----

* -----: No Sound

By connecting an external MIDI device to the VK-88's MIDI IN connector and matching the external MIDI device's MIDI channel to the VK-88's DRUM MIDI CH. setting (p. 77), you can then use the connected external MIDI device to play the VK-88's drum sets.

NOTE

You cannot play the drum sets with the external MIDI device when it is connected to the VK-88's MIDI PEDAL IN connector.

MIDI Implementation

Model: VK-88 (Combo Organ)
 Date: Mar. 1, 2003
 Version: 1.00

1. Receive data

* The VK-88 has two MIDI IN connectors: MIDI IN and PEDAL IN. Messages input through the MIDI IN connector can be used to control specific Parts, according to the MIDI channel numbers of the MIDI messages. Messages input via the MIDI PEDAL IN connector are received as messages for the Pedal Part, regardless of the channel number.

CONTROL	1 ch
UPPER ORGAN	1 ch
LOWER ORGAN	3 ch
PEDAL ORGAN	2 ch
UPPER ORCHESTRAL TONES	4 ch
LOWER ORCHESTRAL TONES	5 ch
PEDAL ORCHESTRAL TONES	6 ch
DRUMS	10 ch
SPRING SHOCK	9 ch

■ Channel Voice Messages

● Note off

Status	2nd byte	3rd byte
8nH	kkH	vvH
9nH	kkH	00H

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
 kk = note number: 00H - 7FH (0 - 127)
 vv = note off velocity: 00H - 7FH (0 - 127)

* Signals input to the MIDI PEDAL IN connector are treated as PEDAL PART messages

● Note on

Status	2nd byte	3rd byte
9nH	kkH	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
 kk = note number: 00H - 7FH (0 - 127)
 vv = note on velocity: 00H - 7FH (0 - 127)

* Signals input to the MIDI PEDAL IN connector are treated as PEDAL PART messages.

● Control Change

○ Modulation (Controller number 1)

Status	2nd byte	3rd byte
BnH	01H	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
 vv = modulation depth: 00H - 7FH (0 - 127)

* Received only for the Orchestral Tones Part.

○ Data Entry (Controller Number 6, 38)

Status	2nd byte	3rd byte
BnH	06H	mmH
BnH	26H	llH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
 mm, ll = the value of the parameter specified by RPN/NRPN
 mm = upper byte (MSB), ll = lower byte (LSB)

○ Volume (Controller number 7)

Status	2nd byte	3rd byte
BnH	07H	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
 vv = volume: 00H - 7FH (0 - 127)

* Received only for the Orchestral Tones Part.

○ Panpot (Controller number 10)

Status	2nd byte	3rd byte
BnH	0AH	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
 vv = panpot: 00H-40H-7FH (Left-Center-Right)

* Received only for the Orchestral Tones Part.

○ Expression (Controller number 11)

Status	2nd byte	3rd byte
BnH	0BH	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
 vv = expression: 00H - 7FH (0 - 127)

* If you want to control all of the Organ Parts, transmit data on the channel specified by the CONTROL MIDI CH. setting (factory setting: channel 1). It is not possible to separately control each part of the Organ Part.

* When inputting via the MIDI PEDAL IN connector, this functions the same as an expression pedal connected to the VK-88's EXPRESSION PEDAL jack.

○ General Purpose Controller 1 (Controller number 16) (Orchestral Tones glide)

Status	2nd byte	3rd byte
BnH	10H	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
 vv = control value: 00H - 7FH (0 - 127) 0-63 = OFF, 64-127 = ON

* Received only for the Orchestral Tones Part.

* Not received when MIDI GENERAL CONTROLLERS SWITCH (p. 76) is OFF.

○ General Purpose Controller 2 (Controller number 17) (Wheel Brake)

Status	2nd byte	3rd byte
BnH	11H	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
 vv = control value: 00H - 7FH (0 - 127) 0-63 = OFF, 64-127 = ON

* When signals are received through the MIDI IN connector, reception is over the channel specified in CONTROL MIDI CH. (p. 77) (factory setting: Channel 1).

* Not received by the Orchestral Tones part.

* Not received when MIDI GENERAL CONTROLLERS SWITCH (p. 76) is OFF.

○ Hold 1 (Controller number 64)

Status	2nd byte	3rd byte
BnH	40H	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
 vv = control value: 00H - 7FH (0 - 127) 0-63 = OFF, 64-127 = ON

* When inputting via the MIDI PEDAL IN connector, this functions the same as an hold pedal connected to the VK-88's HOLD PEDAL jack.

○ Sound Controller 1-9 (Controller number 70-78) (Harmonic Bars)

Status	2nd byte	3rd byte
BnH	ccH	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
 cc = control change number: 46H - 4EH (70-78)
 vv = control value: 00H - 7FH (0 - 127)

* Receives harmonic bar values.

* Not received by the Orchestral Tones part.

* Messages input through the MIDI IN connector can be used to control specific Parts, according to the MIDI channel numbers of the MIDI messages. Messages input via the MIDI PEDAL IN connector are received as messages for the Pedal Part, regardless of the channel number.

* Not received when MIDI SOUND CONTROLLERS SWITCH (p. 76) is OFF.

cc	H.Bar Feet
46H (70)	16'
47H (71)	5 1/3'
48H (72)	8'
49H (73)	4'
4AH (74)	2 1/3'
4BH (75)	2'
4CH (76)	1 3/5'
4DH (77)	1 1/3'
4EH (78)	1'

* Control values and harmonic bars are related as follows.

vv	H.Bar Level
00H - 0EH	0
0FH - 1CH	1
1DH - 2AH	2
2BH - 38H	3
39H - 47H	4
48H - 55H	5
56H - 63H	6
64H - 71H	7
72H - 7FH	8

○ General Purpose Controller 5 (Controller number 80) (Rotary Speed)

Status	2nd byte	3rd byte
BnH	50H	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
 vv = control value: 00H - 7FH (0 - 127)

* When signals are received through the MIDI IN connector, reception is over the channel specified in CONTROL MIDI CH. (p. 77) (factory setting: Channel 1).

* Not received by the Orchestral Tones part.

* Not received when MIDI GENERAL CONTROLLERS SWITCH (p. 76) is OFF.

MIDI Implementation

○General Purpose Controller 6 (Controller number 81) (Rotary Brake)

<u>Status</u>	<u>2nd byte</u>	<u>3rd byte</u>
BnH	51H	vvH
n = MIDI channel number:	0H - FH (ch.1 - ch.16)	
vv = control value:	00H - 7FH (0 - 127) 0-63 = SPIN, 64-127 = BRAKE	
* When signals are received through the MIDI IN connector, reception is over the channel specified in CONTROL MIDI CH. (p. 77) (factory setting: Channel 1).		
* Not received by the Orchestral Tones part.		
* Not received when MIDI GENERAL CONTROLLERS SWITCH (p. 76) is OFF.		

○RPN MSB/LSB (Controller number 100, 101)

<u>Status</u>	<u>2nd byte</u>	<u>3rd byte</u>
BnH	65H	mmH
BnH	64H	llH
n = MIDI channel number:	0H - FH (ch.1 - 16)	
mm = upper byte (MSB) of parameter number specified by RPN		
ll = lower byte (LSB) of parameter number specified by RPN		
<<< RPN >>>		

Control Changes include RPN (Registered Parameter Numbers), which are extended. When using RPNs, first RPN (Controller numbers 100 and 101; they can be sent in any order) should be sent in order to select the parameter, then Data Entry (Controller numbers 6 and 38) should be sent to set the value. Once RPN messages are received, Data Entry messages that is received at the same MIDI channel after that are recognized as changing toward the value of the RPN messages. In order not to make any mistakes, transmitting RPN Null is recommended after setting parameters you need.

This device receives the following RPNs.

RPN	Data entry	Notes
<u>MSB_LSB</u>	<u>MSB_LSB</u>	
00H, 00H	mmH, llH	Pitch Bend Sensitivity mm: 00H - 18H (0 - 24 semitones) ll: ignored (processed as 00H) Up to 2 octave can be specified in semitone steps. * Not received by the Organ part.
00H, 01H	mmH, llH	Master Fine Tuning mm, ll: 20 00H - 40 00H - 60 00H (-8192 x 50 / 8192 - 0 - +8192 x 50 / 8192 cent) * Not received by the Organ part.
00H, 02H	mmH, llH	Master Coarse Tuning mm: 10H - 40H - 70H (-48 - 0 - +48 semitones) ll: ignored (processed as 00H) * Not received by the Organ part.
7FH, 7FH	---, ---	RPN null RPN and NRPN will be set as "unspecified." Once this setting has been made, subsequent Parameter values that were previously set will not change. mm, ll: ignored

●Program Change

<u>Status</u>	<u>2nd byte</u>
CnH	ppH
n = MIDI channel number:	0H - FH (ch.1 - ch.16)
pp = program number:	00H - 3FH (prog.1 - prog.64) (registration) 00H - 07H (prog.1 - prog.8) (Orchestral Tones)
* Not received when MIDI PROGRAM CHANGE SWITCH is OFF (factory setting: ON).	
* Registrations are received on the channel specified by CONTROL MIDI CH. (p. 77) (factory setting: channel 1). The Orchestral Tones part is received on the channel specified by ORCHESTRAL TONES MIDI CH. (factory setting: Upper Orchestral Tones = channel 4, Lower Orchestral Tones = channel 5, Pedal Orchestral Tones = channel 6).	

●Channel Pressure

<u>Status</u>	<u>2nd byte</u>
DnH	vvH
n = MIDI channel number:	0H - FH (ch.1 - ch.16)
vv = Channel Pressure:	00H - 7FH (0-127)
* Received only for the Orchestral Tones Part.	

●Pitch Bend Change

<u>Status</u>	<u>2nd byte</u>	<u>3rd byte</u>
EnH	llH	mmH
n = MIDI channel number:	0H - FH (ch.1 - ch.16)	
mm, ll = Pitch Bend value:	00 00H - 40 00H - 7F 7FH (-8192 - 0 - +8191)	
* Received only for the Orchestral Tones Part.		

■Channel Mode messages

●All Sound Off (Controller number 120)

<u>Status</u>	<u>2nd byte</u>	<u>3rd byte</u>
BnH	78H	00H
n = MIDI channel number:	0H - FH (ch.1 - ch.16)	
* When this message is received, all notes currently sounding on the corresponding channel will be turned off.		

●Reset All Controllers (Controller number 121)

<u>Status</u>	<u>2nd byte</u>	<u>3rd byte</u>
BnH	79H	00H
n = MIDI channel number:	0H - FH (ch.1 - ch.16)	
* When this message is received, the following controllers will be set to their reset values.		
<u>Controller</u>	<u>Reset value</u>	
Pitch Bend Change	±0 (center)	
Modulation	0 (off)	
Hold 1	0 (off)	

●All Note Off (Controller number 123)

<u>Status</u>	<u>2nd byte</u>	<u>3rd byte</u>
BnH	7BH	00H
n = MIDI channel number:	0H - FH (ch.1 - ch.16)	
* When All Note Off is received, all currently sounding notes of the corresponding channel will be turned off. However if Hold 1 is on, the sound will be held until these are turned off.		

■System Realtime Messages

●Active Sensing

<u>Status</u>	
FEH	
* When an Active Sensing message is received, the unit will begin monitoring the interval at which MIDI messages are received. During monitoring, if more than 420 ms passes without a message being received, the same processing will be done as when All Sound Off, All Note Off, and Reset All Controllers messages are received. Then monitoring will be halted.	

■System Exclusive Messages

<u>Status</u>	<u>data byte</u>	<u>Status</u>
FOH	iiH, ddH,, eeH	F7H
FOH:	System Exclusive message status	
ii = ID number:	This is the ID number (manufacturer ID) that specifies the manufacturer whose exclusive message this is. Roland's manufacturer ID is 41H. ID numbers 7EH and 7FH are defined in an expansion of the MIDI standard as Universal Non-realtime messages (7EH) and Universal Realtime Messages (7FH).	
dd,, ee = data:	00H - 7FH (0 - 127)	
F7H:	EOX (End Of Exclusive) This is the last status of system exclusive message.	

The System Exclusive Messages received by VK-88 are; messages related to mode settings, Universal Realtime System Exclusive messages, Data Requests (RQ1), and Data Set (DT1).

●Universal Non-realtime System Exclusive Messages

○Identity Request Message

<u>Status</u>	<u>Data byte</u>	<u>Status</u>
FOH	7EH, dev, 06H, 01H	F7H
<u>Byte</u>	<u>Explanation</u>	
FOH	Exclusive status	
7EH	ID number (universal non-realtime message)	
dev	Device ID (dev: 10H (17) fixed)	
06H	Sub ID#1 (General Information)	
01H	Sub ID#2 (Identity Request)	
F7H	EOX (End Of Exclusive)	
* The "dev" is own device number or 7FH (Broadcast)		

●Data Request 1 RQ1

This message requests the other device to transmit data. The address and size indicate the type and amount of data that is requested. When a Data Request message is received, if the device is in a state in which it is able to transmit data, and if the address and size are appropriate, the requested data is transmitted as a Data Set 1 (DT1) message. If the conditions are not met, nothing is transmitted. The model ID of the exclusive messages used by this instrument is 00 65H.

Status	data byte
F0H	41H, dev, 00H, 65H, 11H, aaH, bbH, ccH, ddH, ssH, ttH, uuH, vvH, sum
Status	
F7H	

Byte	Remarks
F0H	Exclusive status
41H	ID number (Roland)
dev	device ID (dev: 10H fixed)
00H	model ID
65H	model ID (VK-88)
11H	command ID (RQ1)
aaH	address MSB
bbH	address
ccH	address
ddH	address LSB
ssH	size MSB
ttH	size
uuH	size
vvH	size LSB
sum	checksum
F7H	EOX (End Of Exclusive)

- * The amount of data can be transmitted at one time depends on the type of data, and data will be transmitted from the specified starting address and size. Refer to the address and size given in "Parameter Address Map" (p. 105).
- * For the address, size, and checksum, refer to "Examples of system exclusive messages and calculating the checksum" (p. 107).
- * Regarding the checksum, please refer to page 107.

●Data Set 1 DT1

This message transmits the actual data, and is used when you wish to set the data of the receiving device.

Status	data byte
F0H	41H, dev, 00H, 65H, 12H, aaH, bbH, ccH, ddH, eeH, ... ffH, sum
Status	
F7H	

Byte	Remarks
F0H	Exclusive status
41H	ID number (Roland)
dev	device ID (dev: 10H fixed)
00H	model ID
65H	model ID (VK-88)
12H	command ID (DT1)
aaH	address MSB
bbH	address
ccH	address
ddH	address LSB
eeH	data: The actual data to be transmitted. Multi-byte data is transmitted in the order of the address.
:	:
ffH	data
sum	checksum
F7H	EOX (End Of Exclusive)

- * For the address, size, and checksum, refer to "Examples of System Exclusive Messages and Calculating the Checksum" (p. 107).
- * Data whose size is greater than 128 bytes should be divided into packets of 128 bytes or less and transmitted. Successive "Data Set 1" messages should have at least 40 ms of time interval between them.
- * Regarding the checksum, please refer to page 107.

2. Transmitted Data

- * Messages that affect the system or the entire organ part are transmitted on the channel specified by CONTROL MIDI CH. (p. 77).
- * Messages related to individual Organ parts are transmitted on the channels specified by UPPER/LOWER/PEDAL ORGAN MIDI CH. (p. 77).
- * Messages related to the Orchestral Tones part are transmitted on the channel specified by ORCHESTRAL TONES MIDI CH (p. 77).

■Channel Voice Messages

●Note off

Status	2nd byte	3rd byte
8nH	kkH	vvH
n = MIDI channel number:		0H-FH (ch.1-ch.16)
kk = note number:		1EH-65H (30-101) (Organ Part)
		00H-7FH (0-127) (Orchestral Tones Part)
vv = note off velocity:		40H (64) (Organ Part)
		00H-7FH (0-127) (Orchestral Tones Part)

●Note on

Status	2nd byte	3rd byte
9nH	kkH	vvH
n = MIDI channel number:		0H-FH (ch.1-ch.16)
kk = note number:		1EH-65H (30-101) (Organ Part)
		00H-7FH (0-127) (Orchestral Tones Part)
vv = note on velocity:		64H (100) (Organ Part)
		01H-7FH (1-127) (Orchestral Tones Part)

●Control Change

○Bank Select (Controller number 0, 32)

Status	2nd byte	3rd byte
BnH	00H	mmH
BnH	20H	llH
n = MIDI channel number:		0H - FH (ch.1 - ch.16)
mm = Bank number upper Byte:		00H - 7FH (0 - 127)
ll = Bank number lower Byte		00H - 7FH (0 - 127)
		* Signals are not transmitted when MIDI Tx Mode (p. 88) is set to Internal.

○Modulation (Controller number 1)

Status	2nd byte	3rd byte
BnH	01H	vvH
n = MIDI channel number:		0H - FH (ch.1 - ch.16)
vv = Modulation depth:		00H - 7FH (0 - 127)

○Volume (Controller number 7)

Status	2nd byte	3rd byte
BnH	07H	vvH
n = MIDI channel number:		0H - FH (ch.1 - ch.16)
vv = volume:		00H - 7FH (0 - 127)
		* Signals are transmitted in response to the action of the panel's ORCHESTRAL TONES harmonic bars over the channel specified in ORCHESTRAL TONES MIDI CH. (p. 77).

○Expression (Controller number 11)

Status	2nd byte	3rd byte
BnH	0BH	vvH
n = MIDI channel number:		0H - FH (ch.1 - ch.16)
vv = expression:		10H - 7FH (10 - 127) (Organ Part)
		00H - 7FH (0 - 127) (Orchestral Tones Part)
		* Transmitted when the expression pedal is operated, on the channel specified by CONTROL MIDI CH. (p. 77) and ORCHESTRAL TONES MIDI CH.

○General Purpose Controller 1 (Controller number 16) (Orchestral Tones Glide)

Status	2nd byte	3rd byte
BnH	10H	vvH
n = MIDI channel number:		0H - FH (ch.1 - ch.16)
vv = control value:		00H - 7FH (0 - 127) 0-63 = OFF, 64-127 = ON
		* Not transmitted when MIDI GENERAL CONTROLLERS SWITCH (p. 76) is OFF.

○General Purpose Controller 2 (Controller number 17) (Wheel Brake)

Status	2nd byte	3rd byte
BnH	11H	vvH
n = MIDI channel number:		0H - FH (ch.1 - ch.16)
vv = control value:		00H - 7FH (0 - 127) 0-63 = OFF, 64-127 = ON
		* Not transmitted when MIDI GENERAL CONTROLLERS SWITCH (p. 76) is OFF.

MIDI Implementation

○Hold 1 (Controller number 64)

Status	2nd byte	3rd byte
BnH	40H	vvH
n = MIDI channel number:	0H - FH (ch.1 - ch.16)	
vv = control value:	00H - 7FH (0 - 127) 0-63 = OFF, 64-127 = ON	

○General Purpose Controller 5 (Controller number 80) (Rotary Speed)

Status	2nd byte	3rd byte
BnH	50H	vvH
n = MIDI channel number:	0H - FH (ch.1 - ch.16)	
vv = control value:	00H - 7FH (0 - 127)	

* Not transmitted when MIDI GENERAL CONTROLLERS SWITCH (p. 76) is OFF.

○General Purpose Controller 6 (Controller number 81) (Rotary Brake)

Status	2nd byte	3rd byte
BnH	51H	vvH
n = MIDI channel number:	0H - FH (ch.1 - ch.16)	
vv = control value:	00H - 7FH (0 - 127) 0-63 = SPIN, 64-127 = BRAKE	

* Not transmitted when MIDI GENERAL CONTROLLERS SWITCH (p. 76) is OFF.

●Program Change

Status	2nd byte
CnH	ppH
n = MIDI channel number:	0H - FH (ch.1 - ch.16)
pp = program number:	00H - 3FH (prog.1 - prog.64) (Registration) 00H - 07H (prog.1 - prog.8) (Orchestral Tones)

* Not transmitted when MIDI PROGRAM CHANGE SWITCH (p. 76) is OFF (factory setting: ON).

●Channel Pressure

Status	2nd byte
DnH	vvH
n = MIDI channel number:	0H - FH (ch.1 - ch.16)
vv = Channel Pressure:	00H - 7FH (0-127)

●Pitch Bend Change

Status	2nd byte	3rd byte
EnH	llH	mmH
n = MIDI channel number:	0H - FH (ch.1 - ch.16)	
mm,ll = Pitch Bend value:	00 00H - 40 00H - 7F 7FH (-8192 - 0 - +8191)	

■System Realtime Message

●Active sensing

Status
FEH

* This will be transmitted constantly at intervals of approximately 250 ms.

■System Exclusive Messages

"Identity Reply" and "Data Set 1 (DT1)" are the only System Exclusive messages transmitted by VK-88.

When an appropriate "Identity Request Message" and "Data Request 1 (RQ1)" message are received, the requested internal data will be transmitted.

●Identity Reply

Status	Data byte
F0H	7EH, dev, 06H, 02H, 41H, 65H, 01H, 00H, 00H, 00H, 01H, 00H, 00H
Status	F7H

Byte	Explanation
F0H	Exclusive status
7EH	ID number (universal non-realtime message)
dev	Device ID (use the same as the device ID of Roland)
06H	Sub ID#1 (General Information)
02H	Sub ID#2 (Identity Reply)
41H	ID number (Roland)
65H	Device family code (LSB)
01H	Device family code (MSB)
00H	Device family number code (LSB)
00H	Device family number code (MSB)
00H	Software revision level
01H	Software revision level
00H	Software revision level
00H	Software revision level
F7H	EOX (End of Exclusive)

* Reply the message by the unique device ID (dev) when the device has received the "Identity Request Message" in the Broadcast.

●Data Set 1 DT1

Status	data byte
F0H	41H, dev, 00H, 65H, 12H, aaH, bbH, cCH, ddH, eeH... eeH, sum
Status	F7H

Byte	Remarks
F0H	Exclusive status
41H	ID number (Roland)
dev	device ID (dev: 10H fixed)
00H	model ID
65H	model ID (VK-88)
12H	command ID (DT1)
aaH	address MSB
bbH	address
cCH	address
ddH	address LSB
eeH	data: The actual data to be transmitted. Multi-byte data is transmitted in the address order.
:	:
ffH	data
sum	checksum
F7H	EOX (End Of Exclusive)

* For the address, size, and checksum, refer to "Examples of System Exclusive Messages and Calculating the Checksum" (p. 107).

* Large amounts of data must be divided into packets of 128 bytes or less, and transmitted at intervals of approximately 40 ms.

* Regarding the checksum, please refer to page 107.

3. Parameter address map (MODEL ID = 00 65H)

Transmission of “#” marked address is divided to some packets. For example, ABH in hexadecimal notation will be divided to 0AH and 0BH, and is sent/received in this order.

Start Address	Description
00 00 00 00	System
10 00 00 00	Temporary Registration
20 00 00 00	User Registration (01)
20 01 00 00	User Registration (02)
20 3F 00 00	User Registration (64)

• System

Offset Address	Description
00 00 00	System Common
00 01 00	System MIDI
00 02 00	System Organ
00 03 00	System FX

• Registration

Offset Address	Description
00 00 00	Registration Common
00 10 00	Registration Organ
00 20 00	Registration FX

• System Common

Offset Address	Description
# 00 00	0000 aaaa Master Tune (24 - 2024) 0000 bbbb 0000 cccc 0000 dddd
00 04	0000 aaaa Key Transpose -100.0 - 100.0 [cent] (58 - 69)
00 05	0000 aaaa Foot Control 1 Assign (0 - 12) ROTARY SLOW/FAST, ROTARY SPEED, ROTARY BRAKE ON/OFF, ORCHESTRAL TONES GLIDE, REGISTRATION UP, REGISTRATION DOWN, OVERDRIVE, ORCHESTRAL TONES EXPRESSION, D-BEAM SYNC, CRESCENDO, RING MODULATION, TONE WHEEL BRAKE, SPRING SHOCK
00 06	0000 000a Foot Control 1 Polarity (0 - 1) STANDARD, REVERSE
00 07	0000 aaaa Foot Control 2 Assign (0 - 12) ROTARY SLOW/FAST, ROTARY SPEED, ROTARY BRAKE ON/OFF, ORCHESTRAL TONES GLIDE, REGISTRATION UP, REGISTRATION DOWN, OVERDRIVE, ORCHESTRAL TONES EXPRESSION, D-BEAM SYNC, CRESCENDO, RING MODULATION, TONE WHEEL BRAKE, SPRING SHOCK
00 08	0000 000a Foot Control 2 Polarity (0 - 1) STANDARD, REVERSE
00 09	0000 0aaa PK Foot L Assign (0 - 7) ROTARY SLOW/FAST, ROTARY BRAKE ON/OFF, ORCHESTRAL TONES GLIDE, REGISTRATION UP, REGISTRATION DOWN, HOLD, SEQ START-STOP, SEQ RESET
00 0A	0000 0aaa PK Foot R Assign (0 - 7) ROTARY SLOW/FAST, ROTARY BRAKE ON/OFF, ORCHESTRAL TONES GLIDE, REGISTRATION UP, REGISTRATION DOWN, HOLD, SEQ START-STOP, SEQ RESET
00 0B	0000 000a Hold Pedal Assign (0 - 1) ORGAN & ORCHESTRAL TONES, ORCHESTRAL TONES
00 0C	0000 000a Hold Pedal Polarity (0 - 1) STANDARD, REVERSE
00 0D	0000 000a Organ Bender Assign (0 - 1) OFF, ROTARY SLOW/FAST
00 0E	0000 aaaa Organ Modulation Assign (0 - 8) OFF, ROTARY SLOW/FAST, ROTARY BRAKE, OVERDRIVE, CRESCENDO, RING MODULATION, TONE WHEEL BRAKE, SPRING SHOCK, D-BEAM SYNC
00 0F	0000 aaaa Organ After Assign (0 - 8) OFF, ROTARY SLOW/FAST, ROTARY BRAKE, OVERDRIVE, CRESCENDO, RING MODULATION, TONE WHEEL BRAKE, SPRING SHOCK, D-BEAM SYNC
00 10	0000 aaaa Organ Bend Range (0 - 12) OFF, 1 - 12
00 11	0000 000a Light Mode (0 - 1) NORMAL, MULTI
00 12	0000 aaaa Auto Color Mode (0 - 10) OFF, 1 - 10
00 13	0000 000a Upper Orchestral Tones Bender SW (0 - 1) OFF, ON

00 14	0000 000a	Upper Orchestral Tones Modulation SW (0 - 1) OFF, ON
00 15	0000 000a	Upper Orchestral Tones Velocity SW (0 - 1) OFF, ON
00 16	0000 000a	Upper Orchestral Tones Glide SW (0 - 1) OFF, ON
00 17	0000 000a	Lower Orchestral Tones Bender SW (0 - 1) OFF, ON
00 18	0000 000a	Lower Orchestral Tones Modulation SW (0 - 1) OFF, ON
00 19	0000 000a	Lower Orchestral Tones Velocity SW (0 - 1) OFF, ON
00 1A	0000 000a	Lower Orchestral Tones Glide SW (0 - 1) OFF, ON
00 1B	0000 000a	Pedal Orchestral Tones Bender SW (0 - 1) OFF, ON
00 1C	0000 000a	Pedal Orchestral Tones Modulation SW (0 - 1) OFF, ON
00 1D	0000 000a	Pedal Orchestral Tones Velocity SW (0 - 1) ORIGINAL, MODIFIED
00 1E	0000 000a	Pedal Orchestral Tones Glide SW (0 - 1) OFF, ON
00 1F	0aaa aaaa	Orchestral Tones Velocity Sense (0 - 127)
00 20	0aaa aaaa	Orchestral Tones Velocity Offset (0 - 127)
00 21	0000 000a	Pedal Orchestral Tones Velocity Mode (0 - 1) ORIGINAL, FIXED
00 22	0aaa aaaa	Pedal Orchestral Tones Velocity (1 - 127)
00 00 00 23	Total Size	

• System MIDI

Offset Address	Description	
00 00	0000 aaaa Control Channel (0 - 15) 1 - 16	
00 01	0000 aaaa Upper Channel (0 - 15) 1 - 16	
00 02	0000 aaaa Lower Channel (0 - 15) 1 - 16	
00 03	0000 aaaa Pedal Channel (0 - 15) 1 - 16	
00 04	0000 aaaa Drums Channel (0 - 15) 1 - 16	
00 05	0000 aaaa Spring Shock Channel (0 - 15) 1 - 16	
00 06	0000 aaaa Upper Orchestral Channel (0 - 15) 1 - 16	
00 07	0000 aaaa Lower Orchestral Channel (0 - 15) 1 - 16	
00 08	0000 aaaa Pedal Orchestral Channel (0 - 15) 1 - 16	
00 09	0000 000a Sound Controllers Switch (0 - 1) OFF, ON	
00 0A	0000 000a General Controllers Switch (0 - 1) OFF, ON	
00 0B	0000 000a Program Change Switch (0 - 1) OFF, ON	
00 0C	0000 000a MIDI Tx Mode (0 - 1) Internal, External	
00 0D	0000 aaaa External Upper Channel (0 - 15) 1 - 16	
00 0E	0000 aaaa External Lower Channel (0 - 15) 1 - 16	
00 0F	0000 aaaa External Pedal Channel (0 - 15) 1 - 16	
00 00 00 10	Total Size	

• System Organ

Offset Address	Description	
00 00	0000 aaaa Percussion Soft Level (0 - 15)	
00 01	0000 aaaa Percussion Norm Level (0 - 15)	
00 02	0aaa aaaa Percussion Slow Time (0 - 127)	
00 03	0aaa aaaa Percussion Fast Time (0 - 127)	
00 04	0000 aaaa Percussion Recharge Time (0 - 10)	
00 05	0aaa aaaa Percussion H.Bar Level (0 - 127)	
00 06	0aaa aaaa D-Beam Crescendo (0 - 127)	
00 07	0aaa aaaa Organ Crescendo (0 - 127)	
00 08	0000 000a Fold Back Switch (0 - 1) OFF, ON	
00 09	0000 000a Vibrato Chorus Lower Mode (0 - 1) Lower & Pedal, Lower	
00 00 00 0A	Total Size	

MIDI Implementation

• System FX

Offset Address	Description
00 00	0aaa aaaa Rotary Woofer Level (0 - 127)
00 01	0aaa aaaa Rotary Tweeter Level (0 - 127)
00 02	0aaa aaaa Rotary Woofer Rise Time (0 - 127)
00 03	0aaa aaaa Rotary Tweeter Rise Time (0 - 127)
00 04	0aaa aaaa Rotary Woofer Fall Time (0 - 127)
00 05	0aaa aaaa Rotary Tweeter Fall Time (0 - 127)
00 06	0aaa aaaa Rotary Woofer Speed Fast (0 - 127)
00 07	0aaa aaaa Rotary Tweeter Speed Fast (0 - 127)
00 08	0aaa aaaa Rotary Woofer Speed Slow (0 - 127)
00 09	0aaa aaaa Rotary Tweeter Speed Slow (0 - 127)
00 0A	0000 aaaa Rotary Woofer Spread (0 - 10)
00 0B	0000 aaaa Rotary Tweeter Spread (0 - 10)
00 0C	0000 aaaa Rotary Mic Distance (0 - 10)
00 0D	0000 aaaa Rotary Randomize (0 - 10)
00 0E	0000 aaaa EQ Bass (59 - 69) -5 +5
00 0F	0000 aaaa EQ Middle (59 - 69) -5 +5
00 10	0000 aaaa EQ Treble (59 - 69) -5 +5
00 11	0000 000a Rotary Indicator Sync Source (0 - 1)
00 12	0000 000a Tone Cabinet Effects (0 - 1) RNG->EQ->OD->REV, RNG->EQ
00 13	0000 00aa Organ Reverb Structure (0 - 2) ROTARY->REVERB, REVERB->ROTARY, PARALLEL
00 00 00 14	Total Size

• Registration Common

Offset Address	Description
00 00	0000 000a Keyboard Lower Split Switch (0 - 1) OFF, ON
00 01	0aaa aaaa Keyboard Lower Split Point (0 - 127) C-1 - G9
00 02	0000 000a D-Beam Switch (0 - 1) OFF, ON
00 03	0000 0aaa D-Beam Assign (0 - 5) CRESCENDO, ROTARY SPEED, TONE CHANGE, RING MODULATION, TONE WHEEL BRAKE, SPRING SHOCK
00 04	0000 000a D-Beam Rotary Speed Mode (0 - 1) SLOW/FAST, CONTINUOUS
00 05	0000 000a Rotary Fast/Slow Status (0 - 1) SLOW, FAST
00 06	0000 00aa Expression Mode (0 - 3) NORMAL, UPPER ORCHESTRAL TONES, LOWER ORCHESTRAL TONES, LOWER & PEDAL ORCHESTRAL TONES
00 07	0000 000a Upper Orchestrals Tones Switch (0 - 1) OFF, ON
00 08	0000 0aaa Upper Orchestrals Tones PC Number (0 - 7) 1 - 8
00 09	0aaa aaaa Upper Orchestrals Tones Level (0 - 127)
00 0A	0000 0aaa Upper Orchestrals Tones Octave Shift (62 - 66) 2 +2
00 0B	0000 000a Upper Orchestrals Tones Expression SW (0 - 1) OFF, ON
00 0C	0000 000a Lower Orchestrals Tones Switch (0 - 1) OFF, ON
00 0D	0000 0aaa Lower Orchestrals Tones PC Number (0 - 7) 1 - 8
00 0E	0aaa aaaa Lower Orchestrals Tones Level (0 - 127)
00 0F	0000 0aaa Lower Orchestrals Tones Octave Shift (62 - 66) 2 +2
00 10	0000 000a Lower Orchestrals Tones Expression SW (0 - 1) OFF, ON
00 11	0000 000a Pedal Orchestrals Tones Switch (0 - 1) OFF, ON
00 12	0000 0aaa Pedal Orchestrals Tones PC Number (0 - 7) 1 - 8
00 13	0aaa aaaa Pedal Orchestrals Tones Level (0 - 127)
00 14	0000 0aaa Pedal Orchestrals Tones Octave Shift (62 - 66) 2 +2
00 15	0000 000a Pedal Orchestrals Tones Expression SW (0 - 1) OFF, ON
00 16	0000 000a Upper Orchestrals Tones To (0 - 1) UPPER, LOWER
00 17	0000 000a Lower Orchestrals Tones To (0 - 1) UPPER, LOWER
00 18	0000 000a Organ Control (0 - 1) OFF, ON
00 19	000a aaaa Pitch Bend Range (0 - 24)
00 1A	0aaa aaaa Modulation Sense (0 - 127)
00 1B	0aaa aaaa After Touch Sense (0 - 127)
# 00 1C	0000 aaaa External Upper Bank Select MSB (0 - 128) 0000 bbbb 0 - 127, OFF

# 00 1E	0000 aaaa External Upper Bank Select LSB (0 - 128) 0000 bbbb 0 - 127, OFF
# 00 20	0000 aaaa External Upper Program Change (0 - 128) 0000 bbbb 1 - 128, OFF
00 22	0000 000a External Upper Tx Switch (0 - 1) OFF, ON
# 00 23	0000 aaaa External Lower Bank Select MSB (0 - 128) 0000 bbbb 0 - 127, OFF
# 00 25	0000 aaaa External Lower Bank Select LSB (0 - 128) 0000 bbbb 0 - 127, OFF
# 00 27	0000 aaaa External Lower Program Change (0 - 128) 0000 bbbb 1 - 128, OFF
00 29	0000 000a External Lower Tx Switch (0 - 1) OFF, ON
# 00 2A	0000 aaaa External Pedal Bank Select MSB (0 - 128) 0000 bbbb 0 - 127, OFF
# 00 2C	0000 aaaa External Pedal Bank Select LSB (0 - 128) 0000 bbbb 0 - 127, OFF
# 00 2E	0000 aaaa External Pedal Program Change (0 - 128) 0000 bbbb 1 - 128, OFF
00 30	0000 000a External Pedal Tx Switch (0 - 1) OFF, ON
00 31	0000 000a Pedal Orchestrals Mono Mode (0 - 1) MONO, POLY
00 00 00 32	Total Size

• Registration Organ

Offset Address	Description
00 00	0000 aaaa Upper Harmonic Bar 16' (0 - 8)
00 01	0000 aaaa Upper Harmonic Bar 5-1/3' (0 - 8)
00 02	0000 aaaa Upper Harmonic Bar 8' (0 - 8)
00 03	0000 aaaa Upper Harmonic Bar 4' (0 - 8)
00 04	0000 aaaa Upper Harmonic Bar 2-2/3' (0 - 8)
00 05	0000 aaaa Upper Harmonic Bar 2' (0 - 8)
00 06	0000 aaaa Upper Harmonic Bar 1-3/5' (0 - 8)
00 07	0000 aaaa Upper Harmonic Bar 1-1/3' (0 - 8)
00 08	0000 aaaa Upper Harmonic Bar 1' (0 - 8)
00 09	0000 aaaa Lower Harmonic Bar 16' (0 - 8)
00 0A	0000 aaaa Lower Harmonic Bar 5-1/3' (0 - 8)
00 0B	0000 aaaa Lower Harmonic Bar 8' (0 - 8)
00 0C	0000 aaaa Lower Harmonic Bar 4' (0 - 8)
00 0D	0000 aaaa Lower Harmonic Bar 2-2/3' (0 - 8)
00 0E	0000 aaaa Lower Harmonic Bar 2' (0 - 8)
00 0F	0000 aaaa Lower Harmonic Bar 1-3/5' (0 - 8)
00 10	0000 aaaa Lower Harmonic Bar 1-1/3' (0 - 8)
00 11	0000 aaaa Lower Harmonic Bar 1' (0 - 8)
00 12	0000 aaaa Pedal Harmonic Bar 16' (0 - 8)
00 13	0000 aaaa Pedal Harmonic Bar 8' (0 - 8)
00 14	0000 000a Pedal Sustain Switch (0 - 1) OFF, ON
00 15	0aaa aaaa Pedal Sustain Time (0 - 127)
00 16	0000 000a Pedal Sustain Switch (0 - 1) OFF, ON
00 17	0aaa aaaa Pedal Attack Time (0 - 127)
00 18	0aaa aaaa Pedal Attack Level (0 - 127)
00 19	0000 000a Percussion Switch (0 - 1) OFF, ON
00 1A	0000 000a Percussion Harmonic (0 - 1) 2ND, 3RD
00 1B	0000 000a Percussion Soft (0 - 1) NORM, SOFT
00 1C	0000 000a Percussion Slow (0 - 1) FAST, SLOW
00 1D	0000 0aaa Wheel Type (0 - 4) VINTAGE 1, VINTAGE 2, SOLID, CLEAN
00 1E	0aaa aaaa Leakage Level (0 - 127)
00 1F	000a aaaa On Click Level (0 - 31)
00 20	000a aaaa Off Click Level (0 - 31)
00 00 00 21	Total Size

• Registration FX

Offset Address	Description	
00 00	0000 000a	Vibrato Chorus Upper Switch (0 - 1) OFF, ON
00 01	0000 000a	Vibrato Chorus Lower Switch (0 - 1) OFF, ON
00 02	0000 0aaa	Vibrato Chorus Type (0 - 5) V-1, V-2, V-3, C-1, C-2, C-3
00 03	0000 00aa	Vibrato Chorus Vintage (0 - 2) '50, '60, '70
00 04	0aaa aaaa	Rotary Speed (0 - 127)
00 05	0000 000a	Rotary Brake (0 - 1) OFF, ON
00 06	0000 000a	Rotary Bypass (0 - 1) OFF, ON
00 07	0000 00aa	Amp & Speaker (0 - 3) TYPE I, TYPE II, TYPE III, TYPE IV
00 08	0aaa aaaa	Overdrive (0 - 127)
00 09	0aaa aaaa	Tone (1 - 127) OFF, 1 - 127 -63 - +63
00 0A	0000 000a	Ring Modulator Switch (0 - 1) OFF, ON
00 0B	0aaa aaaa	Ring Modulator Frequency (0 - 127)
00 0C	0000 00aa	Reverb Type (0 - 3) ROOM, HALL, CHURCH, SPRING
00 0D	0aaa aaaa	Reverb Level (0 - 127)
00 0E	0aaa aaaa	Reverb Time (0 - 127)
00 0F	0aaa aaaa	Chorus Level (0 - 127)
00 00 00 10	Total Size	

4. Supplementary material

■ Decimal/Hexadecimal Table

MIDI uses 7-bit hexadecimal values to indicate data values and the address and size of exclusive messages. The following table shows the correspondence between decimal and hexadecimal numbers.

* Hexadecimal values are indicated by a following 'H'.

D	H	D	H	D	H	D	H
0	00H	32	20H	64	40H	96	60H
1	01H	33	21H	65	41H	97	61H
2	02H	34	22H	66	42H	98	62H
3	03H	35	23H	67	43H	99	63H
4	04H	36	24H	68	44H	100	64H
5	05H	37	25H	69	45H	101	65H
6	06H	38	26H	70	46H	102	66H
7	07H	39	27H	71	47H	103	67H
8	08H	40	28H	72	48H	104	68H
9	09H	41	29H	73	49H	105	69H
10	0AH	42	2AH	74	4AH	106	6AH
11	0BH	43	2BH	75	4BH	107	6BH
12	0CH	44	2CH	76	4CH	108	6CH
13	0DH	45	2DH	77	4DH	109	6DH
14	0EH	46	2EH	78	4EH	110	6EH
15	0FH	47	2FH	79	4FH	111	6FH
16	10H	48	30H	80	50H	112	70H
17	11H	49	31H	81	51H	113	71H
18	12H	50	32H	82	52H	114	72H
19	13H	51	33H	83	53H	115	73H
20	14H	52	34H	84	54H	116	74H
21	15H	53	35H	85	55H	117	75H
22	16H	54	36H	86	56H	118	76H
23	17H	55	37H	87	57H	119	77H
24	18H	56	38H	88	58H	120	78H
25	19H	57	39H	89	59H	121	79H
26	1AH	58	3AH	90	5AH	122	7AH
27	1BH	59	3BH	91	5BH	123	7BH
28	1CH	60	3CH	92	5CH	124	7CH
29	1DH	61	3DH	93	5DH	125	7DH
30	1EH	62	3EH	94	5EH	126	7EH
31	1FH	63	3FH	95	5FH	127	7FH

D: decimal

H: hexadecimal

* Decimal expressions such as used for MIDI channel, Bank Select, and Program Change will be the value 1 greater than the decimal value given in the above table.

* Since each MIDI byte carries 7 significant data bits, each byte can express a maximum of 128 different values. Data for which higher resolution is required must be transmitted using two or more bytes. For example a value indicated as a two-byte value of aa bbH would have a value of aa x 128 + bb.

* For a signed number (±), 00H = -64, 40H = ±0, and 7FH = +63. I.e., the decimal equivalent will be 64 less than the decimal value given in the above table. For a two-byte signed number, 00 00H = -8192, 40 00H = ±0, and 7F 7FH = +8191. For example the decimal expression of aa bbH would be aa bbH - 40 00H = aa x 128 + bb - 64 x 128.

Hexadecimal notation in two 4-bit units is used for data indicated as "nibbled." The nibbled two-byte value of 0a 0b H would be a x 16 + b.

<Example1> What is the decimal equivalent of 5AH?

From the above table, 5AH = 90.

<Example2> What is the decimal equivalent of the 7-bit hexadecimal values 12 34H?

From the above table, 12H = 18 and 34H = 52
Thus, 18 x 128 + 52 = 2356

■ Examples of Actual MIDI Messages

<Example1> 93 3E 5F

9n is the Note On status and 'n' is the MIDI channel number. Since 3H = 3, 3EH = 62, and 5FH = 95, this is a Note On message of MIDI CH = 4, note number 62 (note name D4) and velocity 95.

<Example2> C0 25

CnH is the Program Change status and 'n' is the MIDI channel number. Since 0H = 0, and 25H = 37, this is a Program Change message of MIDI CH = 1, Program number 38

■ Examples of System Exclusive Messages and Calculating the Checksum

Roland exclusive messages (RQ1, DT1) are transmitted with a checksum at the end of the data (before F7) to check that the data was received correctly. The value of the checksum is determined by the address and data (or size) of the exclusive message.

● How to calculate the checksum

The checksum consists of a value whose lower 7 bits are 0 when the address, size and checksum itself are added. The following formula shows how to calculate the checksum when the exclusive message to be transmitted has an address of aa bb cc ddH, and data or size of ee ffH.

$$aa + bb + cc + dd + ee + ff = \text{total}$$

$$\text{total} \div 128 = \text{quotient} \dots \text{remainder}$$

$$128 - \text{remainder} = \text{checksum}$$

<Example1> Turn the Temporary Registration Organ Pedal Sustain switch ON (DT1).

The "Parameter address map" indicates that the starting address of the Temporary Registration is 10 00 00 00H, that the Registration Organ Parameter offset address is 10 00H, and that the "PEDAL SUSTAIN SWITCH" address is 00 14H. Thus, the address is:

$$\begin{array}{r} 10\ 00\ 00\ 00H \\ \quad \quad \quad 10\ 00H \\ +) \quad \quad \quad 00\ 14H \\ \hline 10\ 00\ 10\ 14H \end{array}$$

Since "ON" is parameter value 01H,

$$F0\ 41\ 10\ 00\ 65\ 12\ 10\ 00\ 10\ 14\ 01\ \quad ?? \quad F7$$

(1) (2) (3) (4) (5) address data checksum (6)

- (1) Exclusive status
- (2) ID number (Roland)
- (3) device ID(17)
- (4) model ID (VK-88)
- (5) command ID (DT1)
- (6) EOX

Next we calculate the checksum.

$$10H + 00H + 10H + 14H + 01H = 16 + 0 + 16 + 20 + 1 = 53 (\text{sum})$$

$$53 (\text{total}) \div 128 = 0 (\text{quotient}) \dots 53 (\text{remainder})$$

$$\text{checksum} = 128 - 53 (\text{quotient}) = 75 = 4BH$$

This means that the message transmitted will be F0 41 10 00 65 12 10 00 10 14 01 4B F7.

<Example2> Obtain registration organ parameter data for User Registration: 02 (RQ1).

The "Parameter address map" indicates that the starting address of USER: 02 is 20 01 00 00H, and that the offset address of Organ Parameter is 10 00H. Thus, the address is:

$$\begin{array}{r} 20\ 01\ 00\ 00H \\ +) \quad \quad \quad 10\ 00H \\ \hline 20\ 01\ 10\ 00H \end{array}$$

Since the size of the Performance Part is 00 00 00 21H,

$$F0\ 41\ 10\ 00\ 65\ 11\ 20\ 01\ 10\ 00\ 00\ 00\ 00\ 21\ \quad ?? \quad F7$$

(1) (2) (3) (4) (5) address data checksum (6)

- (1) Exclusive status
- (2) ID number (Roland)
- (3) Device ID (17)
- (4) Model ID (VK-88)
- (5) Command ID (RQ1)
- (6) EOX

Next we calculate the checksum.

$$20H + 01H + 10H + 00H + 00H + 00H + 21H =$$

$$32 + 1 + 16 + 0 + 0 + 0 + 33 = 82 (\text{sum})$$

$$82 (\text{total}) \div 128 = 0 (\text{product}) \dots 82 (\text{remainder})$$

$$\text{checksum} = 128 - 82 (\text{remainder}) = 46 = 2EH$$

Thus, a message of F0 41 10 00 65 11 20 01 10 00 00 00 21 2E F7 would be transmitted.

MIDI Implementation Chart

Function...		Transmitted	Recognized		Remarks
			MIDI IN	MIDI PEDAL IN	
Basic Channel	Default Changed	1-16 1-16	1-16 1-16	1-16 X	
Mode	Default Messages Altered	Mode 3 X *****	Mode 3 X	Mode 1 X	
Note Number :	True Voice	30-101 *****	0-127 36-96 (UPPER/LOWER) 36-61 (PEDAL) 0-127 (ORCH. TONE)	0-127 *1 36-96 (UPPER/LOWER) 36-61 (PEDAL) 0-127 (ORCH. TONE)	
Velocity	Note On Note Off	O O	O O	O *1 O	
After Touch	Key's Channel's	X O	X O	X X	
Pitch Bend		O	O	O	
Control Change	0, 32	O	X	X	Bank Select
	1	O	O *2	O	Modulation
	6, 38	X	O *2	O	Data entry
	7	O	O *2	O	Volume
	10	X	O *2	O	Panpot
	11	O	O	O *3	Expression
	16	O *4	O *4	O *4	General purpose controller 1
	17	O *5 *6	O *5 *6	O *5	General purpose controller 2
	64	O	O	O *8	Hold 1
	70-78	X	O *6 *7	O *7	Sound controller
80	O *6	O *6 *10	O *10	General purpose controller 5	
81	O *6	O *6 *11	O *11	General purpose controller 6	
100, 101	X	O *2	O	RPN LSB, MSB	
Program Change :	True Number	O *****	O 0-63 (ORCH. TONES: 0-7)	O *9	Program Number
System Exclusive		O	O	O	
System Common	: Song Position : Song Select : Tune Request	O X X	X X X	X X X	
System Real Time	: Clock : Commands	X O	X X	X X	
Aux Messages	: All Sound Off : Reset All Controllers : Local On/Off : All Notes Off : Active Sensing : System Reset	X X X X O X	O O X O O X	O O X O O X	
Notes	<p>*1 The messages will be received as messages for Pedal part, regardless of their channel number.</p> <p>*2 Only ORCHESTRAL TONES part</p> <p>*3 Received Data will be handled in the same way as the EXPRESSION PEDAL jack of the VK-88 itself.</p> <p>*4 ORCHESTRAL TONES Glide</p> <p>*5 Wheel Brake</p> <p>*6 The Messages will be received and transmitted on the channel specified by Control MIDI Channel.</p> <p>*7 Harmonic Bar</p> <p>*8 Received Data will be handled in the same way as the HOLD PEDAL jack of the VK-88 itself.</p> <p>*9 Registration will be switched by received MIDI message.</p> <p>*10 Rotary Speed</p> <p>*11 Rotary Brake</p>				

Mode 1 : OMNI ON, POLY
Mode 3 : OMNI OFF, POLY

Mode 2 : OMNI ON, MONO
Mode 4 : OMNI OFF, MONO

O : Yes
X : No

Main Specification

VK-88: Combo Organ

● Keyboard

Upper: 61 keys (Waterfall keyboard with velocity and aftertouch)
Lower: 61 keys (Waterfall keyboard with velocity)

● Sound Generator

Organ: Virtual ToneWheel Method
Orchestral Tones: PCM

● Part

Organ: 3 parts (Upper, Lower, Pedal)
Orchestral Tones: 3 parts (Upper, Lower, Pedal)

● Maximum Polyphony

Organ: Full Polyphony
Orchestral: 128 voices

● Organ

Tone wheel

VINTAGE 1, VINTAGE 2, SOLID, CLEAN

Leakage Level

Key Click

Vibrato and Chorus

V-1, V-2, V-3, C-1, C-2, C-3

Percussion

SECOND, THIRD, SOFT, SLOW

AMP simulator

TYPE I, TYPE II, TYPE III, TYPE IV

Overdrive

Tone

Reverb

ROOM, HALL, CHURCH, SPRING

Reverb Level

D BEAM

CRESCENDO, ROTARY SPEED, RING MODULATOR,
TONE WHEEL BRAKE, SPRING SHOCK

● ORCHESTRAL TONES

Tone

Upper: STRINGS, LARGE CHOIR, GOSPEL CHOIR,
SYNTH PAD, BRASS, WOOD WINDS, JAZZ SCAT,
ACCORDION

Lower: PIANO, E.PIANO 1, E.PIANO 2, CLAVI, VIBES,
HARPSICHORD, A.BASS, E.BASS

Pedal: PIANO, E.PIANO 1, E.PIANO 2, CLAVI, VIBES,
HARPSICHORD, A.BASS, E.BASS

Effect

Chorus, Reverb

● Internal Memory

Registration memory: 64 (User Memory)

● Control

UPPER HARMONIC BAR

16', 5-1/3', 8', 4', 2-2/3', 2', 1-3/5', 1-1/3', 1'

LOWER HARMONIC BAR

16', 5-1/3', 8', 4', 2-2/3', 2', 1-3/5', 1-1/3', 1'

PEDAL HARMONIC BAR

16', 8'

ORCHESTRAL HARMONIC BAR

UPPER, LOWER&PEDAL

TONE WHEEL

[LEAKAGE] knob, [TONE WHEEL] button, [KEY CLICK] knob

VIBRATO AND CHORUS

VIBRATO AND CHORUS [UPPER] button,
VIBRATO AND CHORUS [LOWER] button,
[VIBRATO AND CHORUS] rotary knob

D BEAM

D BEAM Controller, D BEAM [ON] button, [D BEAM] button

AMPLIFIER

[OVERDRIVE] knob, [AMPLIFIER] button, [TONE] knob

REVERB

REVERB [LEVEL] knob, [REVERB] button

ORCHESTRAL TONES

UPPER:

[STRINGS] button, [LARGE CHOIR] button,
[GOSPEL CHOIR] button, [SYNTH PAD] button,
[BRASS] button, [WOOD WINDS] button,
[JAZZ SCAT] button, [ACCORDION] button,
[TO LOWER] button

LOWER&PEDAL:

[PIANO] button, [E.PIANO 1] button, [E.PIANO 2] button,
[CLAVI] button, [VIBES] button, [HARPSICHORD] button,
[A.BASS] button, [E.BASS] button,
[TO UPPER] button, [PEDAL] button

REGISTRATION

[WRITE] button, [BANK] button, [1]-[8] buttons

PERCUSSION

[SECOND] button, [THIRD] button, [SOFT] button,
[SLOW] button

ROTARY SOUND

ROTARY SOUND [ON] button, [BRAKE] button,
[SLOW/FAST] button

Pitch Bend/Modulation Lever

ORGAN CONTROL [ON] button

Others

PEDAL [TO LOWER] button, PEDAL [SUSTAIN] button,
PEDAL [ATTACK] button, [H-BAR MANUAL] button,
[INPUT LEVEL] knob, [MASTER VOLUME] knob

Main Specification

● Connectors

INPUT Jacks (L/MONO, R): 1/4 inch phone type
MIX OUTPUT Jacks (L, R): XLR 3-32 type
MIX OUTPUT Jacks (L/MONO, R): 1/4 inch TRS phone type
ORGAN OUTPUT Jacks (L/MONO, R): 1/4 inch TRS phone type
ORCHESTRAL OUTPUT Jacks (L/MONO, R): 1/4 inch TRS phone type
PHONES Jack: Stereo 1/4 inch phone type
EXPRESSION PEDAL Jack
HOLD PEDAL Jack
CONTROL PEDAL 1 Jack
CONTROL PEDAL 2 Jack
MIDI Connectors (IN, PEDAL IN, OUT)
PK IN Connector
ROTARY TONE CABINET Connector
AC Inlet

● Power

AC 117 V, AC 230 V, AC 240 V

● Power Consumption

55 W

● Finish

Top Panel: Simulated Walnut
Side Panel: Natural Wood Walnut Finish

● Dimensions

VK-88
1184 (W) x 590 (D) x 199 (H) mm
46-5/8 (W) x 23-1/4 (D) x 7-7/8 (H) inches

VK-88 include Music Rest
1184 (W) x 590 (D) x 383 (H) mm
46-5/8 (W) x 23-1/4 (D) x 15-1/8 (H) inches

VK-88 + KS-88
1184 (W) x 590 (D) x 946 (H) mm
46-5/8 (W) x 23-1/4 (D) x 37-1/4 (H) inches

VK-88 include Music Rest + KS-88
1184 (W) x 590 (D) x 1130 (H) mm
46-5/8 (W) x 23-1/4 (D) x 44-1/2 (H) inches

● Weight

VK-88
39 kg / 86 lbs

KS-88
23 kg / 50 lbs 12 oz

BNC-88
20 kg / 44 lbs 2 oz

RKS-88
9 kg / 19 lbs 14 oz

● Accessories

Owner's Manual, Edit Mode Quick Reference, Music Rest,
Rear cover, Screw set, Cord Clamp, PK Cable, Power Cord

* *In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.*

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Information

When you need repair service, call your nearest Roland Service Center or authorized Roland distributor in your country as shown below.

AFRICA

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Al Fanny Trading Office
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ARD El Golf, Heliopolis,
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TEL: 20-2-417-1828

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Ste Clotilde Cedex,
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TEL: (0262) 218-429

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Main Road, Claremont 7708
SOUTH AFRICA

P.O.Box 23032, Claremont 7735,
SOUTH AFRICA
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ASIA

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**Roland Shanghai Electronics
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5F, No.1500 Pingliang Road
Shanghai, CHINA
TEL: (021) 5580-0800

**Roland Shanghai Electronics
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Jakarta Pusat
INDONESIA
TEL: (021) 6324170

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Cosmos Corporation
1461-9, Seocho-Dong,
Seocho Ku, Seoul, KOREA
TEL: (02) 3486-8855

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BENTLEY MUSIC SDN BHD
140 & 142, Jalan Bukit Bintang
55100 Kuala Lumpur, MALAYSIA
TEL: (03) 2144-3333

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Makati, Metro Manila 1200,
PHILIPPINES
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Swee Lee Company
150 Sims Drive,
SINGAPORE 387381
TEL: 6846-3676

CRISTOFORI MUSIC PTE

LTD
Blk 3014, Bedok Industrial Park E,
#02-2148, SINGAPORE 489980
TEL: 6243-9555

TAIWAN

**ROLAND TAIWAN
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As of April 1, 2003 (Roland)