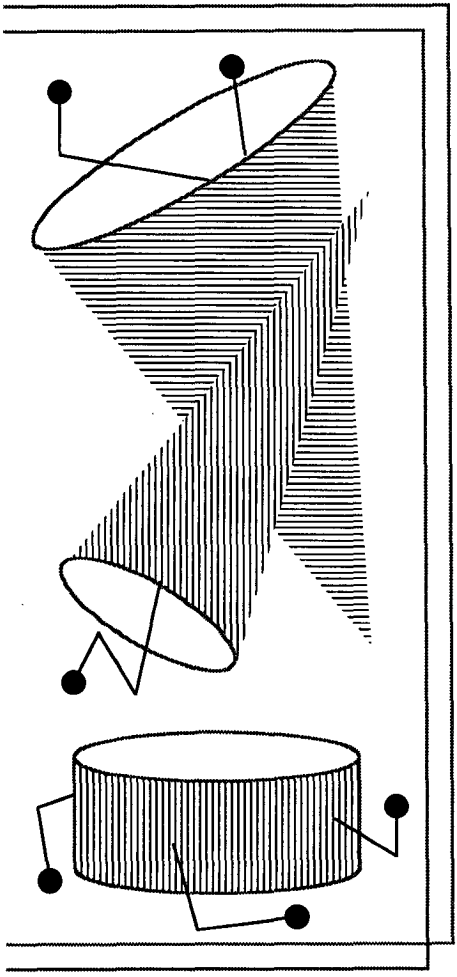
ROTARY SPEAKER SIMULATOR

G4

Owner's Manual



TONEWORKS
KORG

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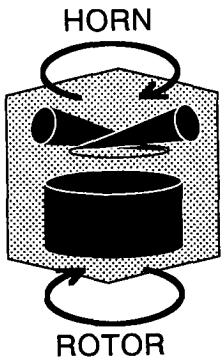
Thank you very much for purchasing the KORG TONEWORKS Rotary Speaker Simulator **G4**. The **G4** Rotary Speaker Simulator is essential not only for the electric organ, but also for the electric guitar, because it realizes the unique and very popular effect of a rotary speaker system using newly-developed rotary speaker simulation technology.



The figure on the left illustrates the basic structure of a rotary speaker. This speaker cabinet contains two speaker units to output the high and low frequency ranges separately. Each of them has individual rotary devices called "horn" and "rotor." The belt inside drives these rotary devices, creating a unique effect in which the pitch, volume level, and tone color change periodically.

As well as simulating the effect electronically, the ToneWorks **G4** realizes the acoustic effects precisely, including the sound spread, volume swell, and tremolo that are usually obtained by setting up two microphones near the rotary speaker cabinet and recording the playback sound output from the speakers.

The design also allows you to control the speed. in the same way as on an actual rotary speaker. In addition, **IPE System** makes it possible to achieve various settings more precisely than on a rotary speaker by an intuitive and simple turn of the knobs.

Read this manual thoroughly to learn how to operate the unit correctly.

Usage precautions

■ Location

Avoid using your **G4** in the following locations, which could cause a malfunction.

- Locations subject to direct sunlight
- Locations with extremely high or extremely low temperature or humidity
- Locations with much sand or dust
- Locations that subject to excessive vibration

■ Power supply

Always use the AC adaptor that comes with the **G4**.

■ Effects on other electrical equipment

The **G4** uses a microcomputer and therefore may cause interference on radios or TVs. If so, move the **G4** away from these device.

■ Handle gently

Do not apply excess force to the switches and knobs. Doing so can lead to malfunctions.

■ Cleaning

Always clean the outside case with a dry, soft cloth. Never use any liquid like benzine or paint thinner, cleaning compounds, highly flammable polishes, or the like.

■ Take care of this user's manual.

Even after you have read this user's manual, store it away carefully for future reference.

THE FCC REGULATION WARNING

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such influence in a residential installation.

If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more the following measures;

- Reorient the receiving antenna
- Relocate the equipment with respect to the receiver
- Move the equipment away from the receiver
- Plug the equipment into a different outlet so that it and the receiver are on different branch circuits

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems"

This booklet is available from the U.S.Government Printing Office, Washington, D.C. 20402, Stock No.004-000-000345 - 4.

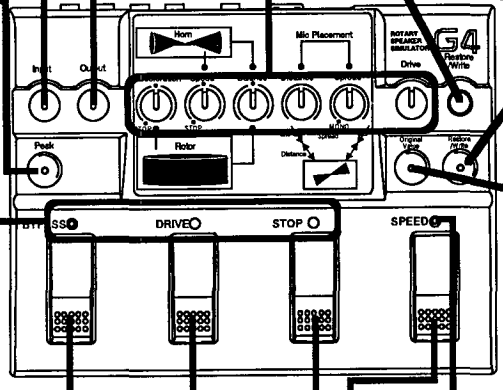
CANADA

THIS DIGITAL APPARATUS DOES NOT EXCEED THE "CLASS B" LIMITS FOR RADIO NOISE EMISSIONS FROM DIGITAL APPARATUS SET OUT IN THE RADIO INTERFERENCE REGULATION OF THE CANADIAN DEPARTMENT OF COMMUNICATIONS.

LE PRESENT APPAREIL NUMERIQUE N'EMET PAS DE BRUITS RADIOELECTRIQUES DEPASSANT LES LIMITES APPLICABLES AUX APPAREILS NUMERIQUES DE LA "CLASSE B" PRESCRITES DANS LE REGLEMENT SUR LE BROUILLAGE RADIOELECTRIQUE EDICTE PAR LE MINISTERE DES COMMUNICATIONS DU CANADA.

Panel Descriptions

Front Panel



Parameter Editors
Sets the tonal color of the effect.

Output volume
Adjusts the output sound level.

Input volume
Adjusts the input sound level.

Peak indicator (P. 5)
Adjust the input volume so that the indicator is lit only when you play chords with maximum force.

Restore/Write switch
Used to compare and restore the memory sound and effect data you created (see "Restore" on page 18), and to write the effect data (see "Write" on page 20).

Restore/Write LED
Lights up in Restore mode (page 18), and flashes three times during the Write operation (page 20).

Original value LED (P.17)
Lights up when the parameter editor position corresponds to the originally stored value.

Bypass LED
Drive LED
Stop LED
Lit, blinking, or turned off LEDs show the current bypass, drive, and stop switch settings.

Bypass switch
Switches Bypass on/off.

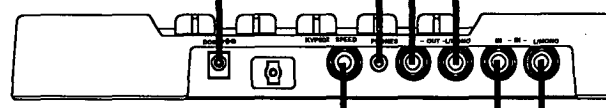
Drive switch
Switches Drive on/off.

Stop switch
Stops the rotary effect.

SPEED LED
This LED becomes red when the speed is Fast, and green when Slow. It also blinks in time with the rotation. It also indicates the Simulation On/Off condition. (page 13)

Speed Switch
Switches between Fast and Slow for the rotary effect. It is also used to switch the speaker simulator on/off.

Rear panel



Headphone jack
Connect headphones here.
You can monitor the sound in stereo.

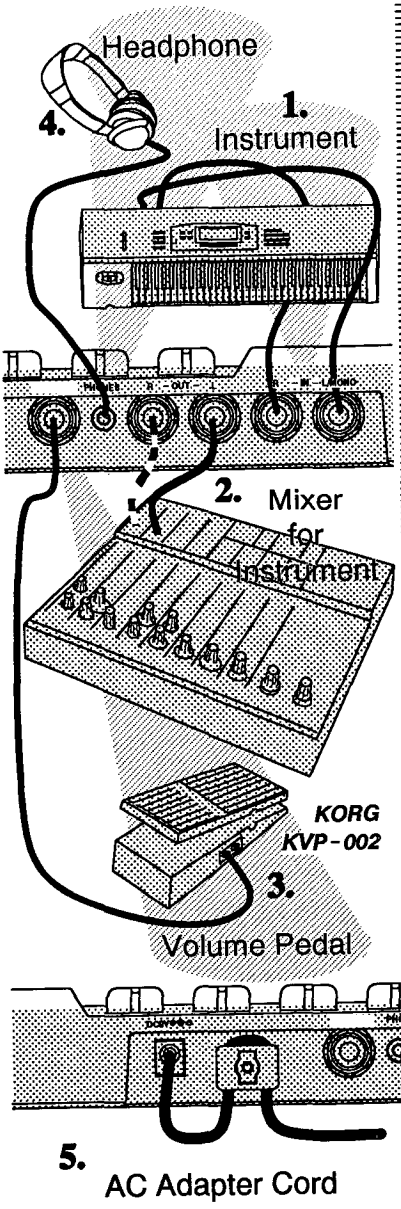
Output jacks (R, L/MONO)
Connect an amp, mixer, or the like here.
When using monaural equipment, connect to the L/MONO jack.

DC9V
Connect the power supply adapter here.

Input jacks (R, L/MONO)
Connect the instrument here.
When using monaural instrument, connect to the L/MONO jack.

Speed (P. 15)
Connect the cable from the output of a latch-type foot switch, or optional volume pedal Korg KVP-002 here.
If you have connected a latch-type foot switch, it operates in the same manner as the Speed switch on the front panel.
If you have connected the volume pedal, you can control the Speed parameter continuously.
Adjust the minimum volume setting on the KVP-002 (slider on the right side of the panel) to **0**.

Connecting the G4



1. Connect the musical instrument to the ***Input jack***.

Connect a monaural output instrument (such as a guitar) to the **L/MONO** jack.

2. Connect the mixer or amplifier to the **Output jack(s)**.

Connection in stereo will be more effective. For monaural connection, use the **L** jack.

Note : If you connect the instrument only to the **R** input, no effect sound will be produced. With the Bypass setting On, a dry sound is output from only the Output **R**.

3. Use the Speed jack to control the speed using an external volume pedal or foot switch.

Use Korg ***KVP-002*** as a volume pedal. Use a latch-type foot switch. (See page 15)

4. Connect headphones to monitor the sound in stereo.

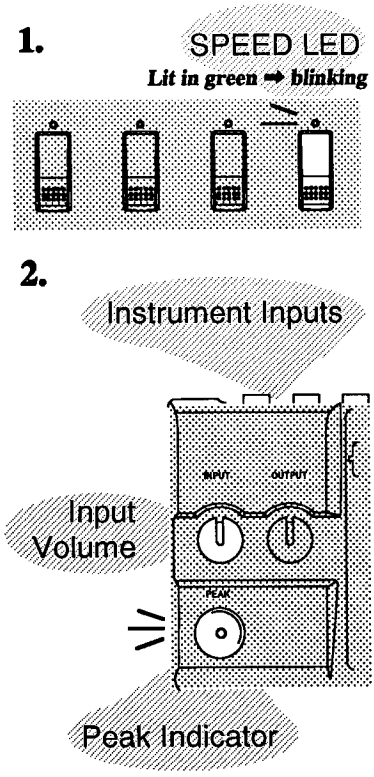
5. After finishing the connections described above, connect the power adapter.

The **G4** does not have a power switch. When you connect the power adapter, it is ready for use.

Note : Place the power adapter 30cm away from the main unit. Placing the adapter too close to the unit may create noise.

After connecting the power adapter, secure the power cord as shown in the figure on the left so that the plug will not be removed accidentally.

Note : Be sure to lower the volume of all the connected devices when you connect and remove the G4 power adapter.



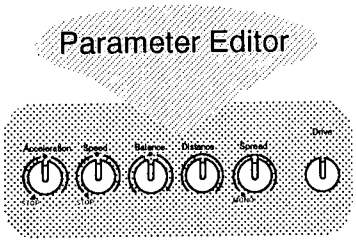
1. When you connect the power cord to the **G4**, the **Speed LED** is lit in **green**, then starts blinking. This indicates the **G4** is ready for performance. (If a pedal has been connected to the Speed jack, the Speed LED blinkes according to the pedal position.)

2. Adjust the input level while playing the instrument. If the input level is too low and the **Peak Indicator** is not lit when you play the instrument at full strength, or if the level is too high and the indicator always remains lit, the **G4** will not operate correctly and you will not be able to obtain the desired effect.

Adjust the Input volume so that the Peak indicator is lit only when you play the instrument at maximum volume during performance.

Note : The output from the **G4** may be distorted (clipping)—even with the Peak indicator off—if the output level of the connected instrument is high. In this case, lower the volume of the connected instrument until the distortion disappears.

1. Parameter Editor



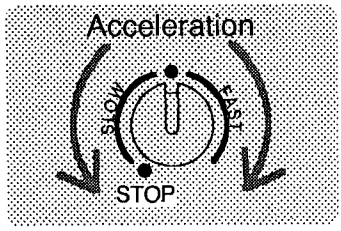
Various setting elements that shape the effect sound are called parameters.
On the **G4**, you can create your own rotary sound easily by using the six parameter editors on the front panel. The modification of the sound is called **parameter editing**. (page 19)

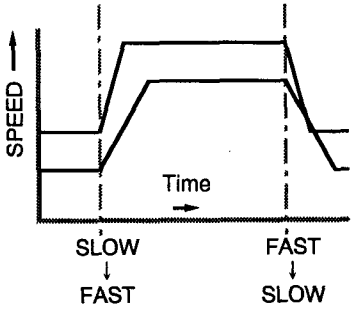
The Parameter editors of the **G4** allow you to control more than independent, abstract parameters such as the "speed" of rotation and "depth" of the effect.

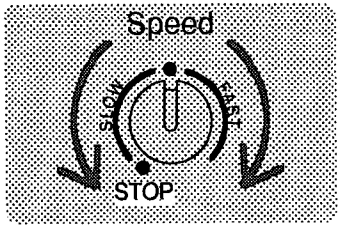
The parameters on the **G4** are associative. Changing one parameter will automatically set the other parameters to optimum values. This is called the **IPE (Integrated Parameter Edit) system**.

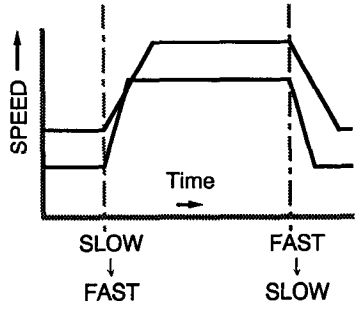
The IPE system automatically sets the parameters so that they maintain the best balance.

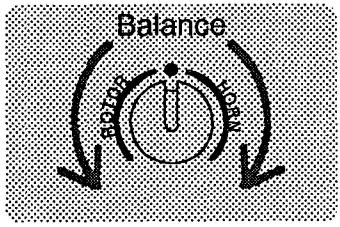
Controlling the Parameter editors allows you to intuitively edit the changes in various, complex conditions, as if you were changing the weight of the rotor, switching the horn belt, and relocating the microphone that records the rotary sound.











ACCELERATION

..... Adjusts the "force" applied to rotate (or stop) the rotor.

If **Acceleration** is set faster, it will take less time for the rotor to change speed when you switch the Speed switch or press the Stop switch.

It also changes the rotor rotation speed itself. The center position indicates a normal speed.

You can stop the rotation by setting this to Stop.

SPEED

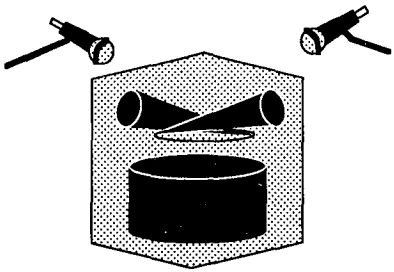
..... Adjusts the speed of the horn rotation.

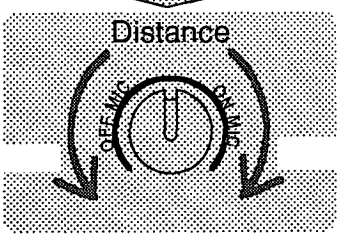
If **Speed** is set faster, not only will the horn rotation speed become faster, but it also will take more time for the horn to change its speed when you switch the Speed switch or press the Stop switch.

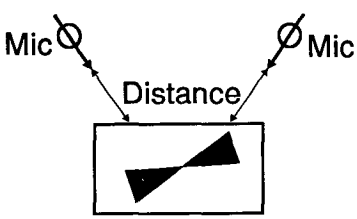
You can stop the rotation when you set this to Stop.

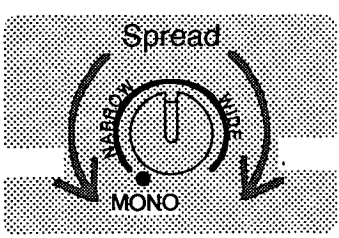
BALANCE

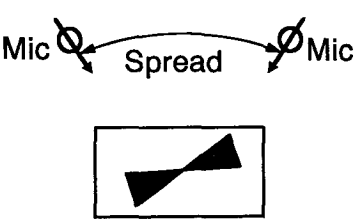
..... Adjusts the volume level balance between the horn and rotor.











What is Microphone-Placement?

When you are recording the sound output from a rotary speaker using a microphone, the effect varies significantly according to the microphone.

The **G4** allows you to simulate position of the microphone placement using the two **IPE** parameters; **Distance** and **Spread**.

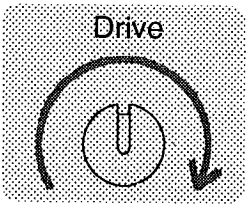
DISTANCE

.....Adjusts tremolo and spread simulating on the distance between a microphone and speaker.

SPREAD

.....Adjusting stereo image, simulating the distance between two microphones in stereo output.

In monaural output, we recommend the MONO position.



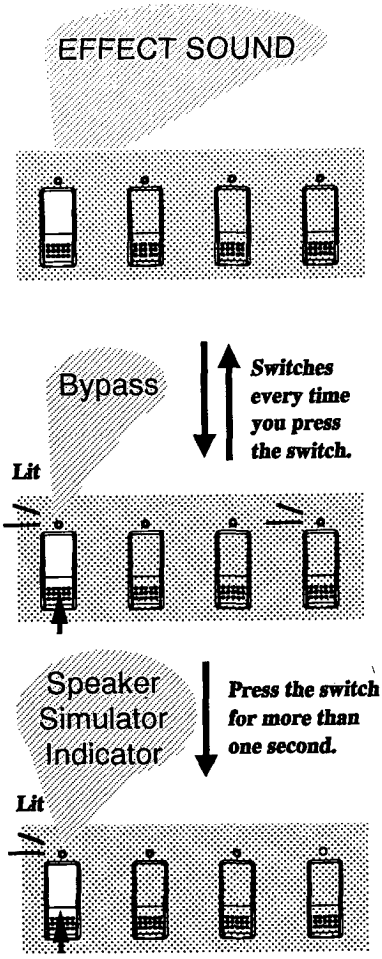
DRIVE

· · · · · · · · Adjusts the intensity of distortion when *Drive* is On.

On the **G4**, you can obtain a smooth distortion for chordal backing using the newly – developed overdrive, which was designed based on a full study of the organ sound.

Using the Drive along with the **Speaker Simulator function** will create a thicker distortion sound. It is also very effective for guitars.

2. Foot Switch Functions



BYPASS

..... If you press the **Bypass switch** when the effect has been applied, the **Bypass LED** will light, and you will hear the bypassed (dry) sound.

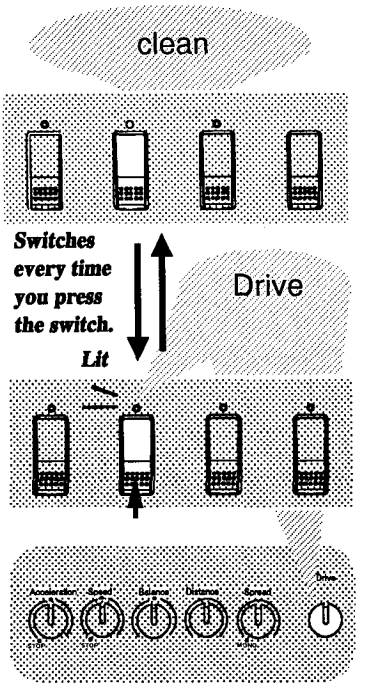
Pressing the Bypass switch again will turn off the Bypass LED, and you will hear the effect sound.

Pressing this switch for more than one second will make the Bypass LED blink, and the **Speaker Simulator** On/Off status will be shown. (page 18)

Note : **When Bypass is on, editing the sound will not change the sound.**

When Bypass is on, the **Restore/Write switch** does not function.

To edit, restore or write the sound, turn Bypass off to return to the effect sound. (See page 21)

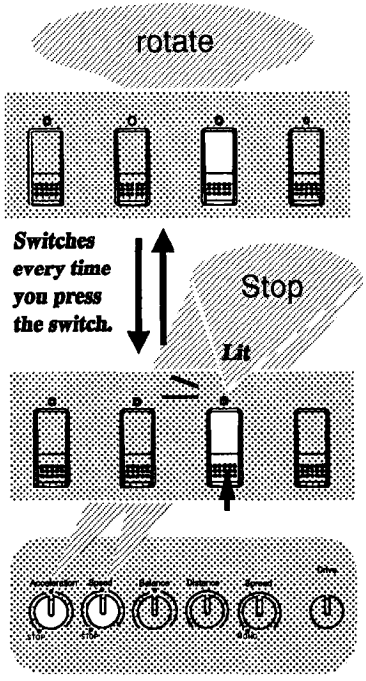


DRIVE

Switches the overdrive effect on/off.

If you press the **Drive switch** when the effect is applied, the **Drive LED** will light, and the distorted sound will be output. At this time, turning the **Drive Parameter Editor** will change the amount of distortion.

Pressing the Drive switch again will turn off the Drive LED, and you will hear a clean sound without any distortion.



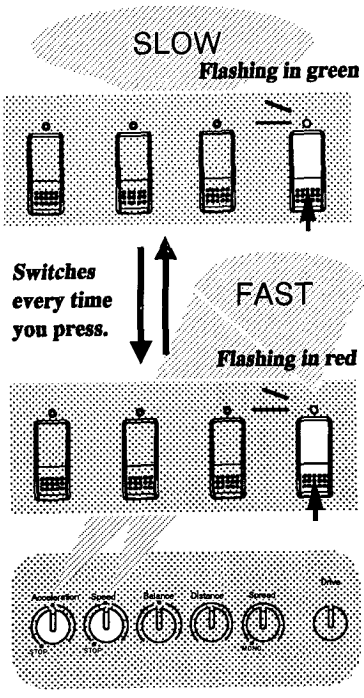
STOP

Stops the rotation of the horn and rotor.

If you press the **Stop switch** when the effect is applied, the **Stop LED** will light, and the rotation will decelerate and stop.

The period of time from when you press the Stop switch until the rotation stops depends on the setting of the **Parameter Editor** and the **Speed switch**. **The faster the rotation speed is, the longer it takes to stop the rotation.** (page 7)

Pressing the Stop switch again will turn off the STOP LED, and the horn and rotor will start to rotate slowly.



SPEED

.....Switches the rotation speed of the horn and rotor between two stages: Fast and Slow.

When you connect the **G4** to the power supply, the rotation speed of the effect sound is always set to **Slow** and the **Speed LED blinkes in green**.

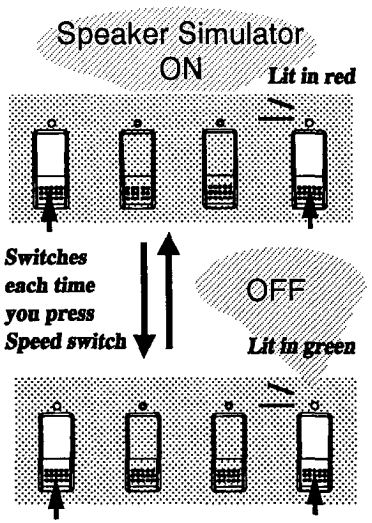
Pressing the **Speed switch** at this time will change the **Speed LED to blinking in red**, and the rotation speed will change to **Fast**. Every time you press the Speed switch, the rotation speed will toggle between Fast and Slow, and the color of the blinking Speed LED will change.

The rotation speed is determined by this **Speed switch**, and the two Parameter Editors: **Speed** and **Acceleration**. (See page 16, Speed LED)

Pressing the Speed switch while holding down the **Bypass switch** will turn the Speaker Simulation On/Off. (page 13)

Note: If a volume pedal or other pedal is connected to the **Speed jack** on the rear panel, the Speed switch will not be effective.

SPEAKER SIMULATOR



..... The **G4 Speaker Simulator function** simulates the characteristics of rotary speakers including the resonance of the cabinet, based on data recorded through the microphone.

If you wish to create your sound using an amplifier or equalizer, you may turn the Speaker Simulator function Off.

Pressing the Speed switch while holding down the Bypass switch will toggle the Speaker Simulator On/Off as follows:

Pressing the Speed switch while holding down the Bypass switch will ***stop the Speed LED from blinking***, and the Speaker Simulator On/Off condition will be shown.

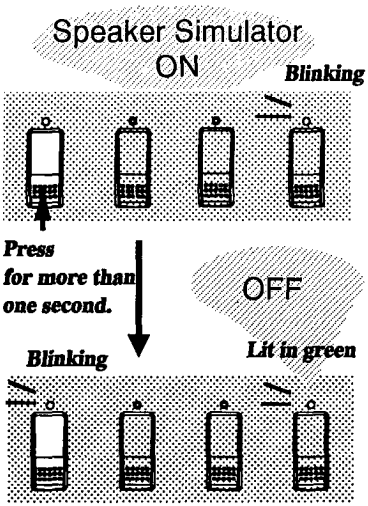
Lit in red .....**ON**
Lit in green ....**OFF**

Pressing the Speed switch each time will toggle the function On/Off.

Note : Whenever the Speaker Simulator is switched On/Off, **its new setting is retained after the power is turned off**.

The setting is not affected by switching Edit/ Restore.

You can use the Speed switch to turn the Speaker Simulator On/Off even if a pedal is connected to the Speed jack.



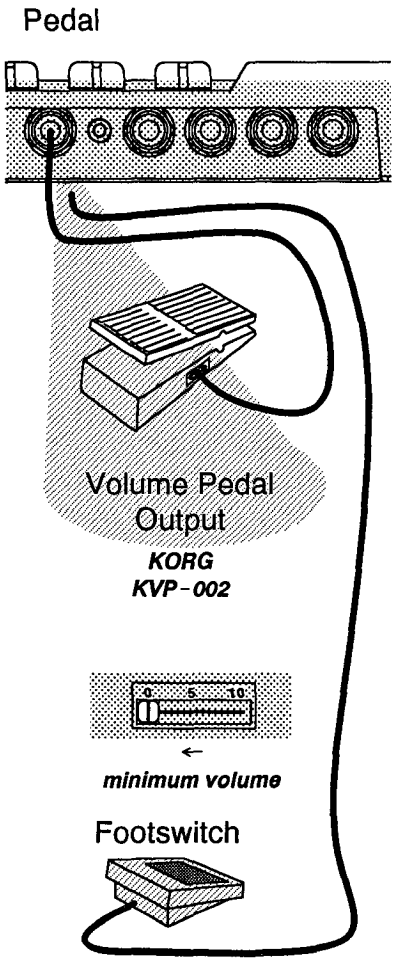
Note : Switching the Speaker Simulator On/Off when Bypass is on will turn the Bypass Off. However, switching the Speaker Simulator On/Off when Bypass is off will not turn the Bypass On.

If you wish **to switch the Speaker Simulator On/Off without changing the Bypass status, press the Bypass switch for more than one second.**

The Bypass LED will blink and the Speed LED will stop blinking to show the current On/Off status.

Note : In this case, Bypass ⇔ Effect will be switched normally.

3. How to use the Speed jack



Connecting a volume pedal or a latch-type switch to the Speed jack allows you to control the rotation speed without using the Speed switch on the **G4** front panel.

A *latch-type (alternate) switch* toggles On or Off each time you press the switch. Consult a musical instrument dealer for a latch-type switch.

A latch-type switch connected to the **G4** rear panel can be used to switch the rotation speed between Fast and Slow.

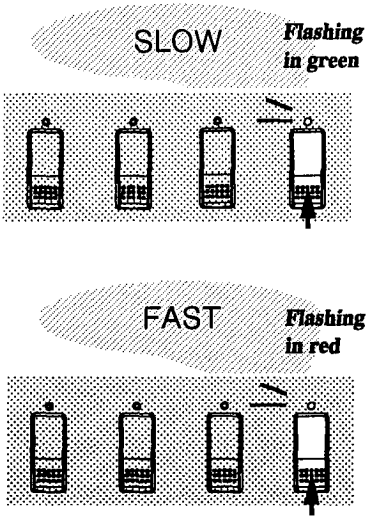
If you have connected a volume pedal, the speed changes according to the angle of the volume pedal as you step on it. That is, **you can fine-tune the speed with this pedal, as compared to the Speed switch, which has only two options: Fast and Slow.**

The rotation speed is determined by the position of the pedal connected to the Speed jack and the two knobs: **Speed** and **Acceleration**. When the volume pedal is connected, the Speed switch on the front panel becomes disabled.

Be sure to use the Korg **KVP-002** volume pedal. Connect the cable to the OUTPUT jack on the volume pedal and the Speed jack on the **G4**.

Set the minimum volume slider on the volume pedal to "0."

4. SPEED LED



The Speed LED blinkes in sync with the rotation of the horn. When the horn is stopped, the LED blinkes in sync with the rotor rotation. When both horn and rotor are stopped, the LED remains lit.

The **red LED** indicates that the Speed switch is set to **Fast**, and the **green LED** indicates that the Speed switch is set to **Slow**.

When you press the Bypass switch for more than one second, the Speed LED will indicate the Speaker Simulator On/Off status. (See page 13 Speaker Simulator)

Note: The blinking interval of the Speed LED changes according to the rotation speed.

However, it does not necessarily represent the speed precisely. It should be used only as a general indicator of the speed.

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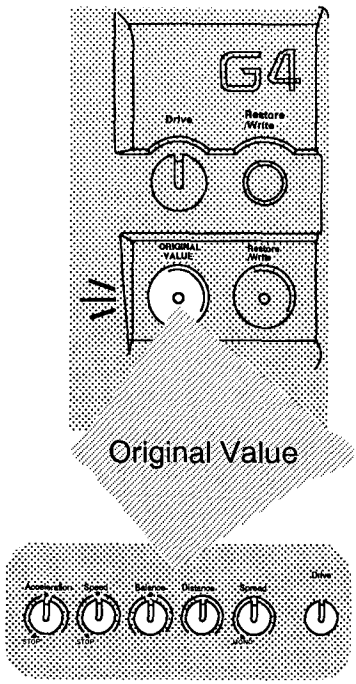
5. Original Value LED



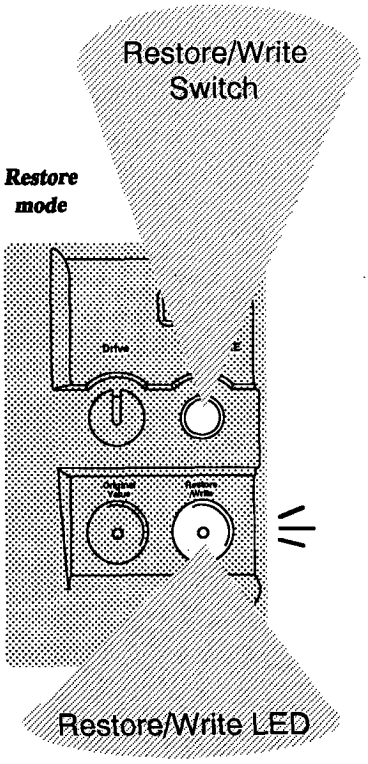
You may sometimes want to know the original position of the Parameter Editors for a particular Effect Program stored in memory while you are editing the Program.The **Original Value LED** gives you an idea what the original settings were if you wish to compare a new edit with the original Program.

The **G4** automatically places a "mark" on the position of the Parameter Editors when the Program is saved, and allows you to check this original position later during the edit operation.

When each Parameter Editor knob: (Acceleration, Speed, Balance, Distance, Spread, and Drive) is turned to come to the position originally set for the Program (Original Value position), the Original Value LED lights up.

Note : If you turn the Parameter Editors too quickly, the Original Value LED may be lit very briefly and you may not notice its illumination.
To check the position of the Original Value, turn the Parameter Editors slowly while observing the Original Value LED.

6. Restore Mode



Press the Restore/Write switch to turn on the Restore Write LED.

While editing the sound using the Parameter Editors, you may wish to listen to the original Effect Program or compare the new edit with the original Program.

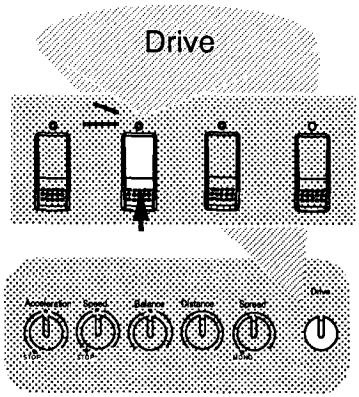
In Restore mode, you can listen to the original Effect Program stored by the Program Writing function. Pressing the **Restore/ Write Switch** repeatedly allows you to compare the edit and the original sound.(See page 20 Program Writing)

If you wish to restart editing from the beginning, turn the Parameter Editors while in Restore mode. The Restore/Write LED will be turned off, and you can start editing again.

Note : ***When you restart editing from Restore mode as mentioned above, any editing you have done so far will be lost.***

Note : When Bypass is set to On, pressing the Restore/Write switch will not change the mode to Restore mode nor turn the Restore/Write LED on.

7. Parameter Edit



Using the **Parameter Editors** to create original programs.

1. Adjust the Parameter Editor for the parameter on the front panel you wish to change.

For example, let's change the **Drive**.

2. Press the **Drive switch** to turn **Drive** on.Turn the **Drive Parameter Editor** knob and listen to the changed sound.(Setting the Drive to a higher value will change the distortion intensity.)

3. In the same way, let's change other parameters. (See page 7 for a detailed explanation of each parameter.)

4. To store the edited data, Write the Program . (See page 20 Program Writing.)

Note : Turning any Parameter Editor in Restore mode will erase any editing you have done so far. (See page 18, Restore Mode.)

Storing Effects(Program Writing)

You can store a new Effect Program you have created in the memory of the **G4**. This operation is called **Program Writing**.

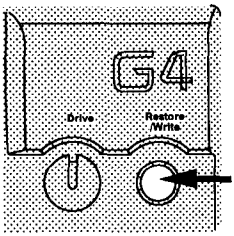
The Restore operation can recall a Program stored by Program Writing at any time. (See page 18 Restore mode)

Performing the Program Writing operation will overwrite the Program data that exists in memory.(The **G4** has the default values of the preset data when shipped from the factory.)

Note : The Program Writing operation will store the position of the Parameter Editor: **Acceleration, Speed, Balance, Distance, Spread, and Drive**.

The Bypass, Drive, Stop, and Speed switch settings, and the status of the Input, Output Volume, and Speed pedal will not be stored.

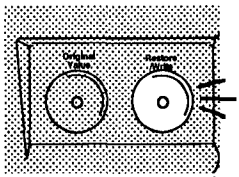
The **Speaker Simulator** On/Off condition will automatically be stored whenever the setting is changed.



Restore/
Write
Switch

Press the Restore/Write switch
→ G4 enters Restore mode.

Press the switch for more than one second.
→ The Writing operation is executed.



Flashing three times.
Writing completed.

1. After finishing the edit operation, press the **Restore/Write** switch for more than one second to execute the Write function.

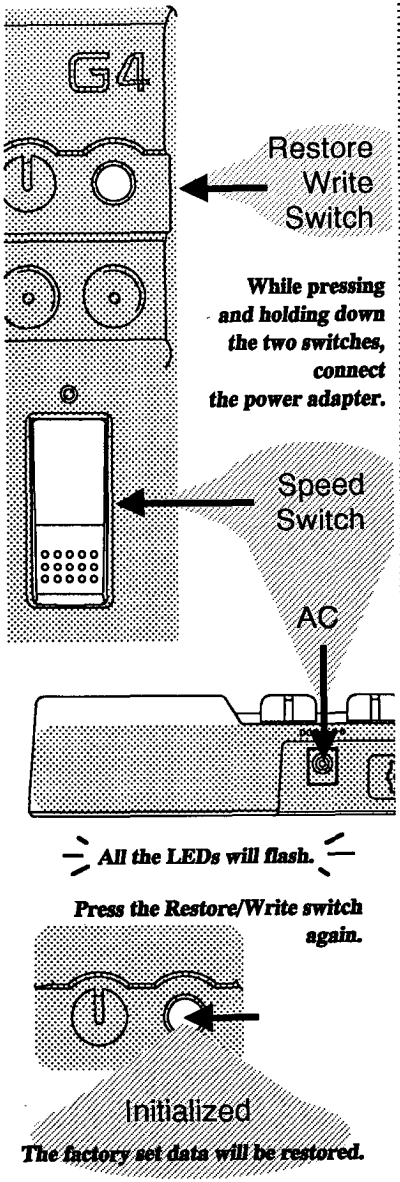
Note : Pressing the Restore/Write switch will first switch to **Restore mode** (page 18). Therefore, if you perform the Write operation while listening to the sound, you may hear a brief change in the effect sound while you are holding down the switch (as if the original sound was restored). However, the Program data to be stored will not be affected.

2. When you execute the Program Writing operation, the **Restore/Write LED will blink three times**, indicating that the edit has been written.

At this time, Restore mode will be cancelled automatically.

Note : When Bypass is set to On, pressing the Restore/Write switch will not execute the Write operation nor turn the Restore/Write LED on.

Initializing the Program Data



Writing a newly edited Effect Program will overwrite and erase the existing data. Although you cannot restore the Program data that is lost in this way, it is possible to restore the initial setting of the Program (that is, factory default setting that does not contain any edits). Follow the steps below to do so. This operation is called **initialization**.

Connecting the power adapter while pressing and holding down the Speed switch and Restore/Write switch will cause **all the LED's to blink.**

Press the Restore/Write switch to turn the Restore/Write LED on.

All the Effect Programs will be initialized back to the factory settings.(If you press any switch other than the Restore/Write switch, the Programs will not be initialized. The condition obtained is the same as when you connect the power adapter.)

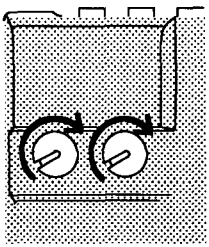
Note : Initializing will cause all Program data stored in the G4 to be lost.

Note : If all the LEDs are not blinking, some remain illuminated, or no LED is lit, turn the power off and try again.

Troubleshooting

If you have a problem, first check the following items. If the problem persists, consult the nearest Korg dealer or Korg Service Center.

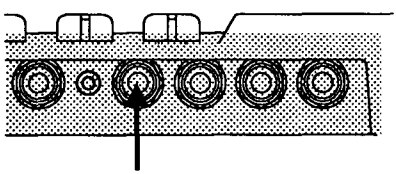
Symptom 1 · · ·
No sound is output.



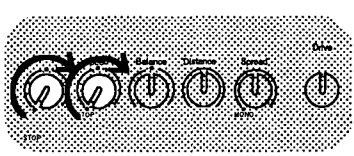
1. The Input Volume or the Output Volume is set to **0**.

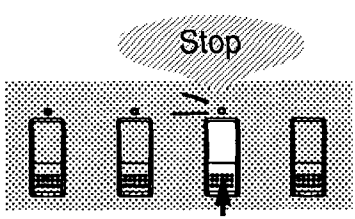
2. The musical instrument is connected only to the Input jack **R**. If so, the sound is not output with Bypass off.

With Bypass on, the sound is output only from **R**. **Connect the instrument to L/MONO for monaural setting**.



Symptom 2 · · ·
The sound does not rotate.

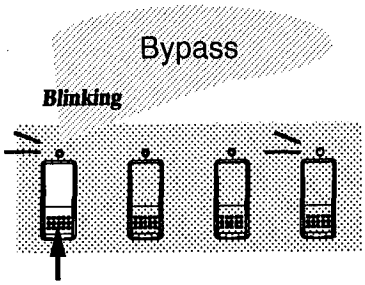




1. The Parameter Editors: **Speed** and **Acceleration** are set to 0.

2. The **Stop switch** is on.

The illuminated **Stop LED** indicates the stop condition. Press the Stop switch again to cancel the stop condition.



Symptom 3 No effect

Bypass is on.

The blinking ***Bypass LED*** indicates that Bypass is on.

Press the Bypass switch to cancel the Bypass setting.

Specifications and Options

Program	One program at a time
Front panel	Volume: Input Volume, Parameter Editors, Output Volume Switch: Bypass switch, Drive switch, Stop switch, Speed switch, Restore/Write switch LED: Bypass LED, Restore/Write LED, Speed LED, Drive LED, Stop LED, Original Value LED,Peak indicator
Rear panel	DC9V AC adapter jack, Input jack (R, L/MONO), Output jack (R, L/MONO), Speed jack, Headphone jack
Sampling rate	48kHz
A/D	64 times oversampling, 16bit
D/A	8 times oversampling18bitDA
Dynamic range	90 dB or more(IHF-A, with Bypass on)
Power supply	DC 9V(with AC adapter)
Current oonsumption	380 mA
Input sensitivity/ impedance	− 7.0 dBu ~ +7.0 dBu / 1M Ω Stereo input 500k Ω Monaural input
Maximum output level/ impedance	+6.0 dBu / 5k Ω (0dBu=0.775Vrms)
Dimensions	281(W) × 209(D) × 38(H)mm
Weight	1.1 kg
Options	Volume pedal KVP-002

Appearance and specifications subject to change without notice.

NOTICE

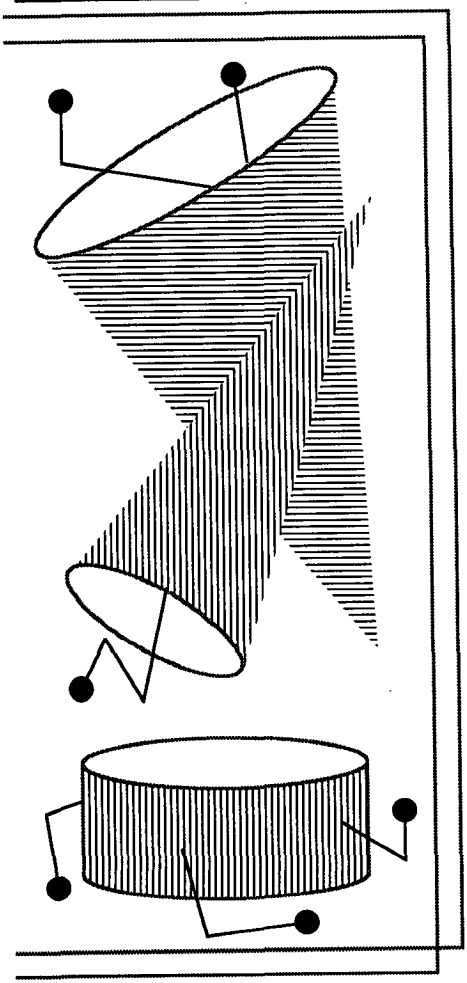
KORG products are manufactured under strict specifications and voltages required by each country. These products are warranted by the KORG distributor only in each country. Any KORG product not sold with a warranty card or carrying a serial number disqualifies the product from the manufacturer's/distributor's warranty and liability. This requirement is for your own protection and safety.

KORG 15 – 12, Shimotakaido 1 – chome, Suginami – ku, Tokyo, Japan

ROTARY SPEAKER SIMULATOR

G4

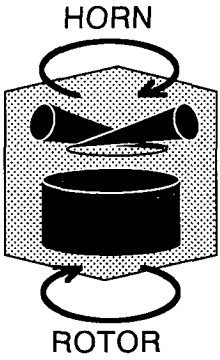
Owner's Manual



E 1

TONEWORKS
KORG

Thank you very much for purchasing the KORG TONEWORKS Rotary Speaker Simulator **G4**. The **G4** *Rotary Speaker Simulator* is essential not only for the electric organ, but also for the electric guitar, because it realizes the unique and very popular effect of a rotary speaker system using newly-developed rotary speaker simulation technology.



The figure on the left illustrates the basic structure of a rotary speaker. This speaker cabinet contains two speaker units to output the high and low frequency ranges separately. Each of them has individual rotary devices called "horn" and "rotor." The belt inside drives these rotary devices, creating a unique effect in which the pitch, volume level, and tone color change periodically.

As well as simulating the effect electronically, the ToneWorks **G4** realizes the acoustic effects precisely, including the sound spread, volume swell, and tremolo that are usually obtained by setting up two microphones near the rotary speaker cabinet and recording the playback sound output from the speakers.

The design also allows you to control the speed. in the same way as on an actual rotary speaker. In addition, **IPE System** makes it possible to achieve various settings more precisely than on a rotary speaker by an intuitive and simple turn of the knobs.

Read this manual thoroughly to learn how to operate the unit correctly.

Usage precautions

■ Location

Avoid using your **G4** in the following locations, which could cause a malfunction.

- Locations subject to direct sunlight
- Locations with extremely high or extremely low temperature or humidity
- Locations with much sand or dust
- Locations that subject to excessive vibration

■ Power supply

Always use the AC adaptor that comes with the **G4**.

■ Effects on other electrical equipment

The **G4** uses a microcomputer and therefore may cause interference on radios or TVs. If so, move the **G4** away from these device.

■ Handle gently

Do not apply excess force to the switches and knobs. *Doing so can lead to malfunctions.*

■ Cleaning

Always clean the outside case with a dry, soft cloth. Never use any liquid like benzine or paint thinner, cleaning compounds, highly flammable polishes, or the like.

■ Take care of this user's manual.

Even after you have read this user's manual, *store it away carefully for future reference.*

THE FCC REGULATION WARNING

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the *specifications in Subpart J of Part 15 of FCC rules, which* are designed to provide reasonable protection against such influence in a residential installation.

If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more the following measures;

- Reorient the receiving antenna
- Relocate the equipment with respect to the receiver
- Move the equipment away from the receiver
- Plug the equipment into a different outlet so that it and the receiver are on different branch circuits

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems"

This booklet is available from the U.S.Government Printing Office, Washington, D.C. 20402, Stock No.004-000-000345 - 4.

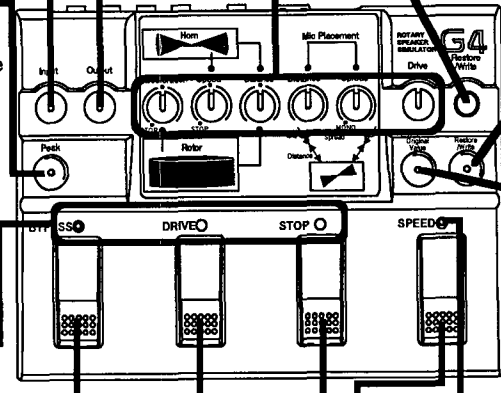
CANADA

THIS DIGITAL APPARATUS DOES NOT EXCEED THE "CLASS B" LIMITS FOR RADIO NOISE EMISSIONS FROM DIGITAL APPARATUS SET OUT IN THE RADIO INTERFERENCE REGULATION OF THE CANADIAN *DEPARTMENT OF COMMUNICATIONS.*

LE PRESENT APPAREIL NUMERIQUE N'EMET PAS DE BRUITS RADIOELECTRIQUES DEPASSANT LES LIMITES APPLICABLES AUX APPAREILS NUMERIQUES DE LA "CLASSE B" PRESCRITES DANS LE REGLEMENT SUR LE BROUILLAGE RADIOELECTRIQUE EDICTE PAR LE MINISTERE DES COMMUNICATIONS DU CANADA.

Panel Descriptions

Front Panel



Parameter Editors
Sets the tonal color of the effect.

Output volume
Adjusts the output sound level.

Input volume
Adjusts the input sound level.

Peak indicator (P. 5)
Adjust the input volume so that the indicator is lit only when you play chords with maximum force.

Restore/Write switch
Used to compare and restore the memory sound and effect data you created (see "Restore" on page 18), and to write the effect data (see "Write" on page 20).

Restore/Write LED
Lights up in Restore mode (page 18), and flashes three times during the Write operation (page 20).

Original value LED (P.17)
Lights up when the parameter editor position corresponds to the originally stored value.

Bypass LED
Drive LED
Stop LED
Lit, blinking, or turned off LEDs show the current bypass, drive, and stop switch settings.

SPEED LED
This LED becomes red when the speed is Fast, and green when Slow. It also blinks in time with the rotation. It also indicates the Simulation On/Off condition. (page 13)

Bypass switch
Switches Bypass on/off.

Drive switch
Switches Drive on/off.

Speed Switch
Switches between Fast and Slow for the rotary effect. It is also used to switch the speaker simulator on/off.

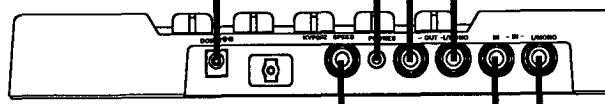
Stop switch
Stops the rotary effect.

Rear panel

Headphone jack
Connect headphones here.
You can monitor the sound in stereo.

Output jacks (R, L/MONO)
Connect an amp, mixer, or the like here.
When using monaural equipment, connect to the L/MONO jack.

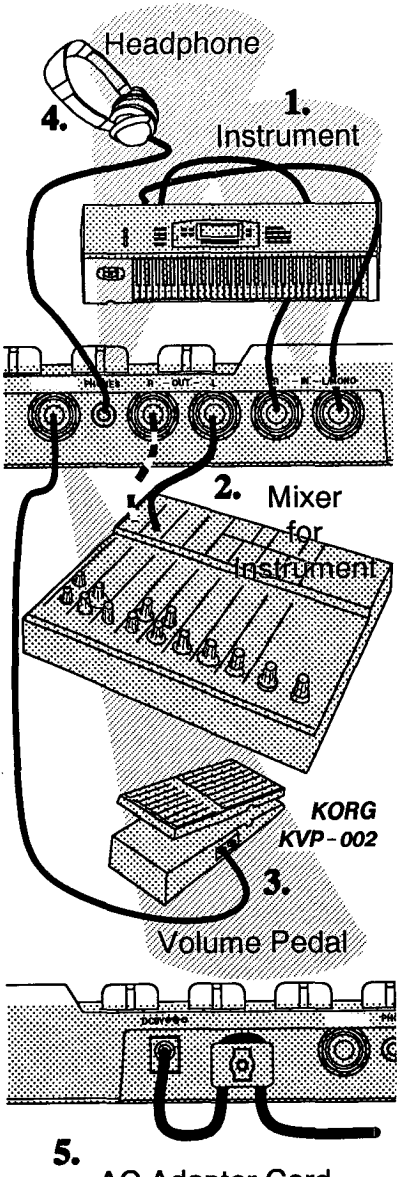
DC9V
Connect the power supply adapter here.



Input jacks (R, L/MONO)
Connect the instrument here.
When using monaural instrument, connect to the L/MONO jack.

Speed (P. 15)
Connect the cable from the output of a latch-type foot switch, or optional volume pedal Korg KVP-002 here.
If you have connected a latch-type foot switch, it operates in the same manner as the Speed switch on the front panel.
If you have connected the volume pedal, you can control the Speed parameter continuously.
Adjust the minimum volume setting on the KVP-002 (slider on the right side of the panel) to **0**.

Connecting the G4



1. Connect the musical instrument to the **Input jack**.

Connect a monaural output instrument (such as a guitar) to the ***L/MONO*** jack.

2. Connect the mixer or amplifier to the **Output jack(s)**.

Connection in stereo will be more effective. For monaural connection, use the **L** jack.

Note : If you connect the instrument only to the **R** input, no effect sound will be produced. With the Bypass setting On, a dry sound is output from only the Output **R.**

3. Use the Speed jack to control the speed using an external volume pedal or foot switch.

Use Korg **KVP-002** as a volume pedal. Use a latch-type foot switch. (See page 15)

4. Connect headphones to monitor the sound in stereo.

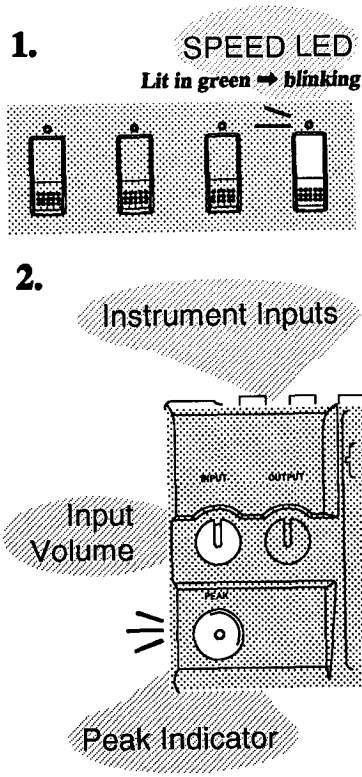
5. After finishing the connections described above, connect the power adapter.

The **G4** does not have a power switch. When you connect the power adapter, it is ready for use.

Note : Place the power adapter 30cm away from the main unit. Placing the adapter too close to the unit may create noise.

After connecting the power adapter, secure the power cord as shown in the figure on the left so that the plug will not be removed accidentally.

Note : Be sure to lower the volume of all the *connected devices* when you connect and remove the G4 power adapter.



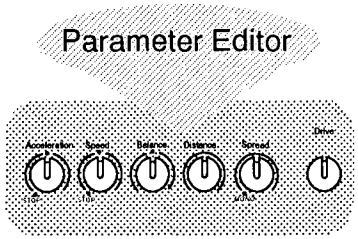
1. When you connect the power cord to the **G4**, the **Speed LED** is lit in **green**, then starts blinking. This indicates the **G4** is ready for performance. (If a pedal has been connected to the Speed jack, the Speed LED blinkes according to the pedal position.)

2. Adjust the input level while playing the instrument. If the input level is too low and the **Peak Indicator** is not lit when you play the instrument at full strength, or if the level is too high and the indicator always remains lit, the **G4** will not operate correctly and you will not be able to obtain the desired effect.

Adjust the Input volume so that the Peak indicator is lit only when you play the instrument at maximum volume during performance.

Note : The output from the **G4** may be distorted (clipping)—even with the Peak indicator off—if the output level of the connected instrument is high. In this case, lower the volume of the connected instrument until the distortion disappears.

1. Parameter Editor



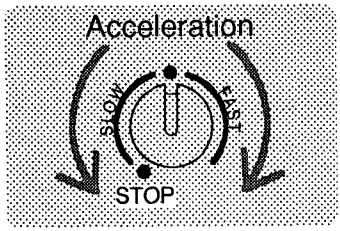
Various setting elements that shape the effect sound are called parameters.
On the **G4**, you can create your own rotary sound easily by using the six parameter editors on the front panel. The modification of the sound is called **parameter editing**. (page 19)

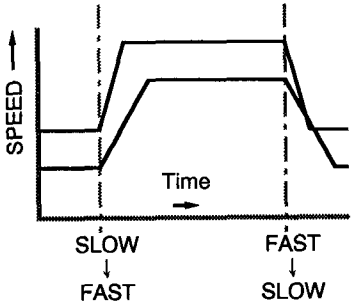
The Parameter editors of the **G4** allow you to control more than independent, abstract parameters such as the "speed" of rotation and "depth" of the effect.

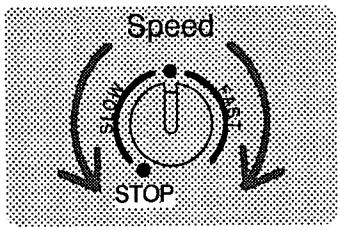
The parameters on the **G4** are associative. Changing one parameter will automatically set the other parameters to optimum values. This is called the ***IPE* (Integrated Parameter Edit) system**.

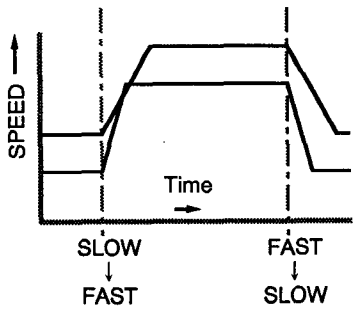
The IPE system automatically sets the parameters so that they maintain the best balance.

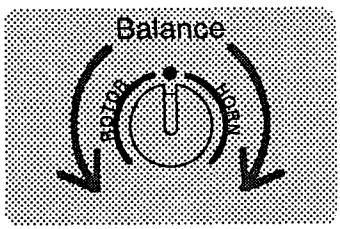
Controlling the Parameter editors allows you to intuitively edit the changes in various, complex conditions, as if you were changing the weight of the rotor, switching the horn belt, and relocating the microphone that records the rotary sound.











ACCELERATION

..... Adjusts the "force" applied to rotate (or stop) the rotor.

If **Acceleration** is set faster, it will take less time for the rotor to change speed when you switch the Speed switch or press the Stop switch.

It also changes the rotor rotation speed itself. The center position indicates a normal speed.

You can stop the rotation by setting this to Stop.

SPEED

..... Adjusts the speed of the horn rotation.

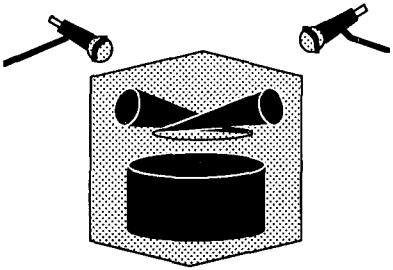
If **Speed** is set faster, not only will the horn rotation speed become faster, but it also will take more time for the horn to change its speed when you switch the Speed switch or press the Stop switch.

You can stop the rotation when you set this to Stop.

BALANCE

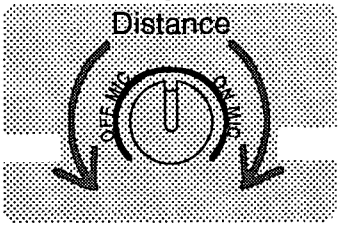
..... Adjusts the volume level balance between the horn and rotor.

What is Microphone-Placement?



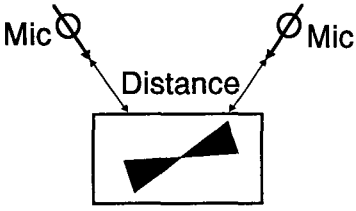
When you are recording the sound output from a rotary speaker using a microphone, the effect varies significantly according to the microphone.

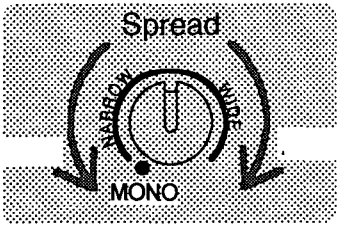
The **G4** allows you to simulate position of the microphone placement using the two **IPE** parameters; **Distance** and **Spread**.



DISTANCE

..... Adjusts tremolo and spread simulating on the distance between a *microphone and speaker.*

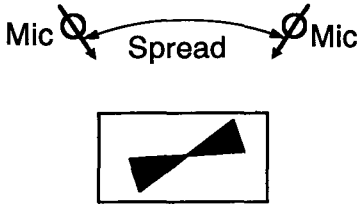


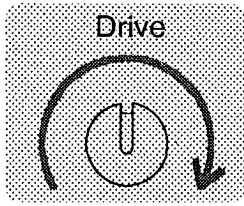


SPREAD

..... Adjusting stereo *image, simulating the distance between two microphones in stereo output.*

In monaural output, we recommend the MONO position.





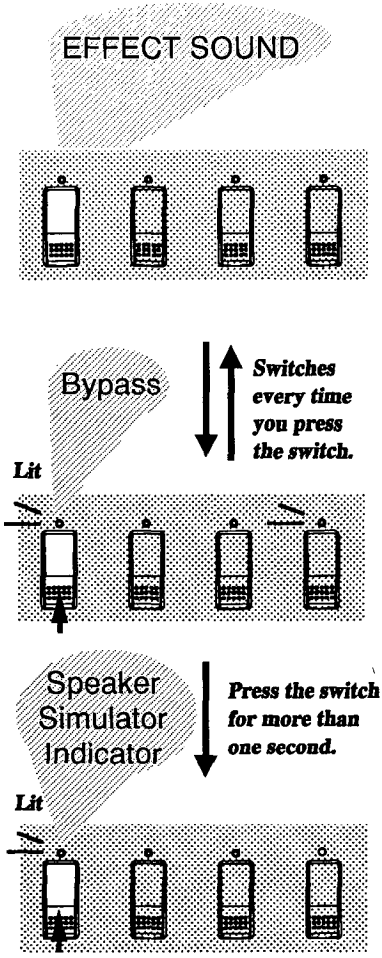
DRIVE

..... Adjusts the intensity of distortion when Drive is On.

On the **G4**, you can obtain a smooth distortion for chordal backing using the newly – developed overdrive, which was designed based on a full study of the organ sound.

Using the Drive along with the **Speaker Simulator function** will create a thicker distortion sound. It is also very effective for guitars.

2. Foot Switch Functions



BYPASS

..... If you press the **Bypass switch** when the effect has been applied, the ***Bypass LED*** will light, and you will hear the bypassed (dry) sound.

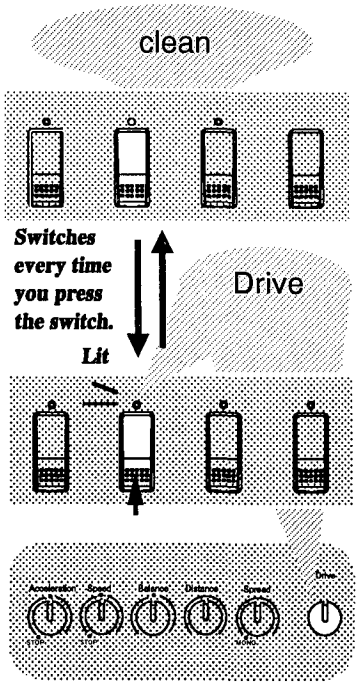
Pressing the Bypass switch again will turn off the Bypass LED, and you will hear the effect sound.

Pressing this switch for more than one second will make the Bypass LED blink, and the **Speaker Simulator** On/Off status will be shown. (page 18)

Note : **When Bypass is on, editing the sound will not change the sound.**

When Bypass is on, the **Restore/Write switch** does not function.

To edit, restore or write the sound, turn Bypass off to return to the effect sound. (See page 21)

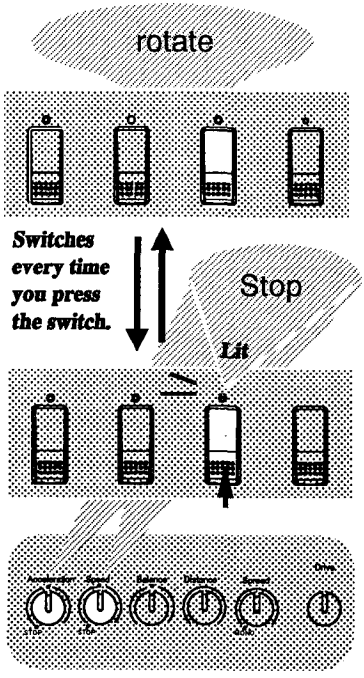


DRIVE

· · · · · · · · Switches the overdrive effect on/off.

If you press the **Drive switch** when the effect is applied, the ***Drive LED*** will light, and the distorted sound will be output. At this time, turning the **Drive Parameter Editor** will change the amount of distortion.

Pressing the Drive switch again will turn off the Drive LED, and you will hear a clean sound without any distortion.



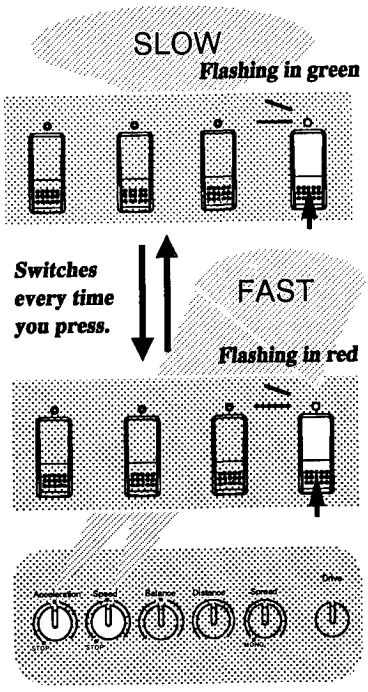
STOP

· · · · · · · · Stops the rotation of the horn and rotor.

If you press the **Stop switch** when the effect is applied, the **Stop LED** will light, and the rotation will decelerate and stop.

The period of time from when you press the Stop switch until the rotation stops depends on the setting of the **Parameter Editor** and the **Speed switch**. ***The faster the rotation speed is, the longer it takes to stop the rotation.*** (page 7)

Pressing the Stop switch again will turn off the STOP LED, and the horn and rotor will start to rotate slowly.



SPEED

.....Switches the rotation speed of the horn and rotor between two stages: Fast and Slow.

When you connect the **G4** to the power supply, the rotation speed of the effect sound is always set to **Slow** and the **Speed LED blinkes in green**.

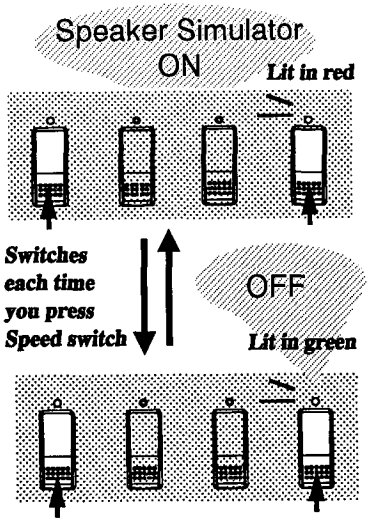
Pressing the **Speed switch** at this time will change the **Speed LED to blinking in red**, and the rotation speed will change to **Fast**. Every time you press the Speed switch, the rotation speed will toggle between Fast and Slow, and the color of the blinking Speed LED will change.

The rotation speed is determined by this **Speed switch**, and the two Parameter Editors: **Speed** and **Acceleration**. (See page 16, Speed LED)

Pressing the Speed switch while holding down the **Bypass switch** will turn the Speaker Simulation On/Off. (page 13)

Note: If a volume pedal or other pedal is connected to the **Speed jack** on the rear panel, the Speed switch will not be effective.

SPEAKER SIMULATOR



· · · · · · · · The **G4 Speaker Simulator function** simulates the characteristics of rotary speakers including the resonance of the cabinet, based on data recorded through the microphone.

If you wish to create your sound using an amplifier or equalizer, you may turn the Speaker Simulator function Off.

Pressing the Speed switch while holding down the Bypass switch will toggle the Speaker Simulator On/Off as follows:

Pressing the Speed switch while holding down the Bypass switch will **stop the Speed LED from blinking**, and the Speaker Simulator On/Off condition will be shown.

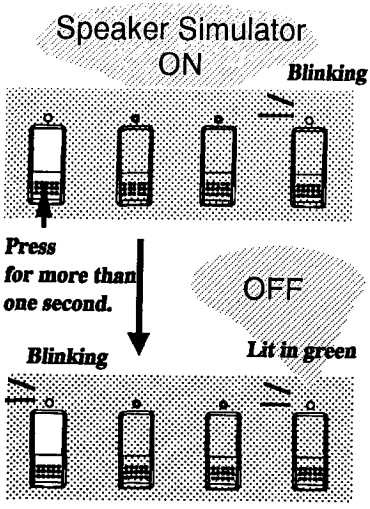
Lit in red · · · · · · **ON**
Lit in green · · · · **OFF**

Pressing the Speed switch each time will toggle the function On/Off.

Note : Whenever the Speaker Simulator is switched On/Off, **its new setting is retained after the power is turned off**.

The setting is not affected by switching Edit/ Restore.

You can use the Speed switch to turn the Speaker Simulator On/Off even if a pedal is connected to the Speed jack.



Note : Switching the Speaker Simulator On/Off when Bypass is on will turn the Bypass Off. However, switching the Speaker Simulator On/Off when Bypass is off will not turn the Bypass On.

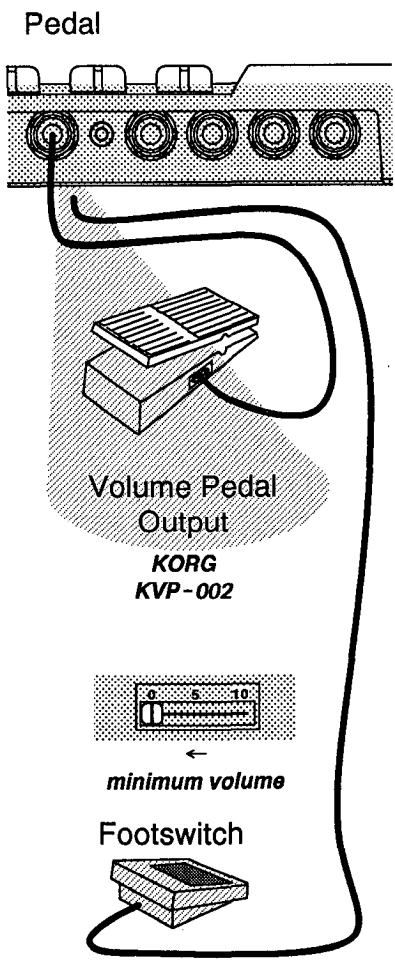
If you wish **to switch the Speaker Simulator On/Off without changing the Bypass status, press the Bypass switch for more than one second.**

The Bypass LED will blink and the Speed LED will stop blinking to show the current On/Off status.

Note : In this case, Bypass ⇔ Effect will be switched normally.

3. How to use the Speed jack

Connecting a volume pedal or a latch-type switch to the Speed jack allows you to control the rotation speed without using the Speed switch on the **G4** front panel.



A latch-type (alternate) switch toggles On or Off each time you press the switch. Consult a musical instrument dealer for a latch-type switch.

A latch-type switch connected to the **G4** rear panel can be used to switch the rotation speed between Fast and Slow.

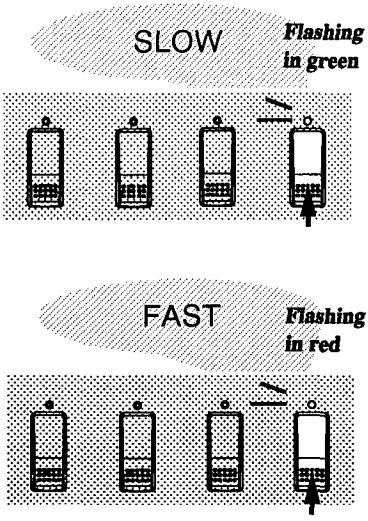
If you have connected a volume pedal, the speed changes according to the angle of the volume pedal as you step on it. That is, **you can fine-tune the speed with this pedal, as compared to the Speed switch, which has only two options: Fast and Slow.**

The rotation speed is determined by the position of the pedal connected to the Speed jack and the two knobs: **Speed** and **Acceleration**. When the volume pedal is connected, the Speed switch on the front panel becomes disabled.

Be sure to use the Korg **KVP-002** volume pedal. Connect the cable to the OUTPUT jack on the volume pedal and the Speed jack on the **G4**.

Set the minimum volume slider on the volume pedal to "0."

4. SPEED LED



The Speed LED blinkes in sync with the rotation of the horn. When the horn is stopped, the LED blinkes in sync with the rotor rotation. When both horn and rotor are stopped, the LED remains lit.

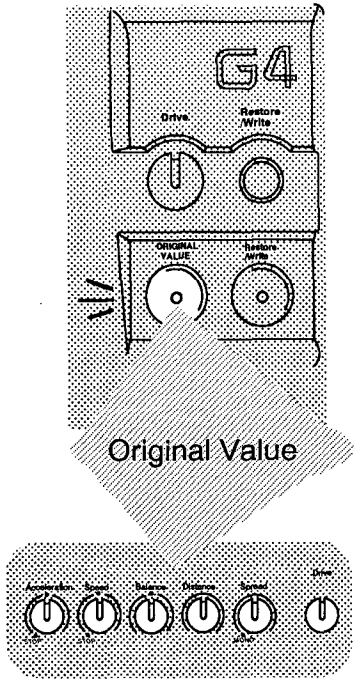
The **red LED** indicates that the Speed switch is set to **Fast**, and the **green LED** indicates that the Speed switch is set to **Slow**.

When you press the Bypass switch for more than one second, the Speed LED will indicate the Speaker Simulator On/Off status. (See page 13 Speaker Simulator)

Note : The blinking interval of the Speed LED changes according to the rotation speed.

However, it does not necessarily represent the speed precisely. It should be used only as a general indicator of the speed.

5. Original Value LED



You may sometimes want to know the original position of the Parameter Editors for a particular Effect Program stored in memory while you are editing the Program.The **Original Value LED** gives you an idea what the original settings were if you wish to compare a new edit with the original Program.

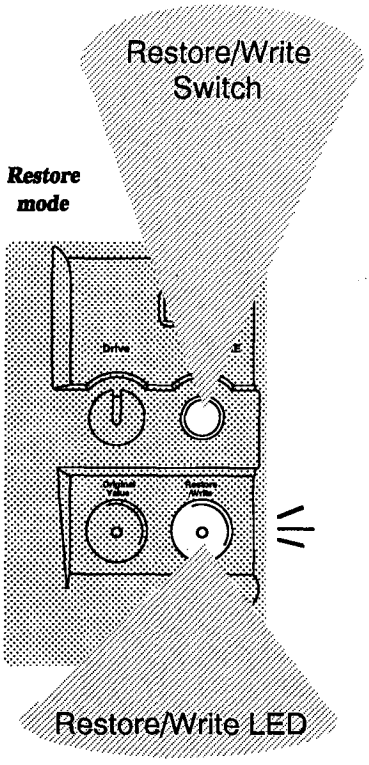
The **G4** automatically places a "mark" on the position of the Parameter Editors when the Program is saved, and allows you to check this original position later during the edit operation.

When each Parameter Editor knob: (Acceleration, Speed, Balance, Distance, Spread, and Drive) is turned to come to the position originally set for the Program (Original Value position), the Original Value LED lights up.

Note : If you turn the Parameter Editors too quickly, the Original Value LED may be lit very briefly and you may not notice its illumination.

To check the position of the Original Value, turn the Parameter Editors slowly while observing the Original Value LED.

6. Restore Mode



Press the Restore/Write switch to turn on the Restore Write LED.

While editing the sound using the Parameter Editors, you may wish to listen to the original Effect Program or compare the new edit with the original Program.

In Restore mode, you can listen to the original Effect Program stored by the Program Writing function. Pressing the **Restore/ Write Switch** repeatedly allows you to compare the edit and the original sound.(See page 20 Program Writing)

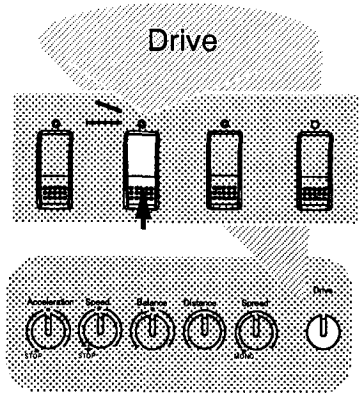
If you wish to restart editing from the beginning, turn the Parameter Editors while in Restore mode. The Restore/Write LED will be turned off, and you can start editing again.

Note : **When you restart editing from Restore mode as mentioned above, any editing you have done so far will be lost.**

Note : When Bypass is set to On, pressing the Restore/Write switch will not change the mode to Restore mode nor turn the Restore/Write LED on.

7. Parameter Edit

Using the **Parameter Editors** to create original programs.



1. Adjust the Parameter Editor for the parameter on the front panel you wish to change.

For example, let's change the **Drive**.

2. Press the **Drive switch** to turn **Drive** on.Turn the **Drive Parameter Editor** knob and listen to the changed sound.(Setting the Drive to a higher value will change the distortion intensity.)

3. In the same way, let's change other parameters. (See page 7 for a detailed explanation of each parameter.)

4. To store the edited data, Write the Program . (See page 20 Program Writing.)

Note : Turning any Parameter Editor in Restore mode will erase any editing you have done so far. (See page 18, Restore Mode.)

Ⓔ

Storing Effects(Program Writing)

You can store a new Effect Program you have created in the memory of the **G4**. This operation is called **Program Writing**.

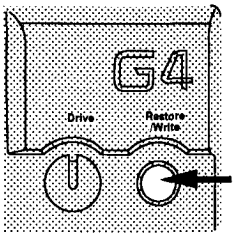
The Restore operation can recall a Program stored by Program Writing at any time. (See page 18 Restore mode)

Performing the Program Writing operation will overwrite the Program data that exists in memory.(The **G4** has the default values of the preset data when shipped from the factory.)

Note : The Program Writing operation will store the position of the Parameter Editor: **Acceleration, Speed, Balance, Distance, Spread, and Drive**.

The Bypass, Drive, Stop, and Speed switch settings, and the status of the Input, Output Volume, and Speed pedal will not be stored.

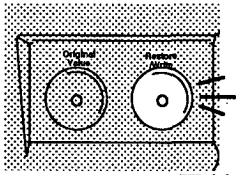
The **Speaker Simulator** On/Off condition will automatically be stored whenever the setting is changed.



Restore/
Write
Switch

Press the Restore/Write switch
→ G4 enters Restore mode.

Press the switch for more than one second.
→ The Writing operation is executed.



Flashing three times.
Writing completed.

1. After finishing the edit operation, press the **Restore/Write** switch for more than one second to execute the Write function.

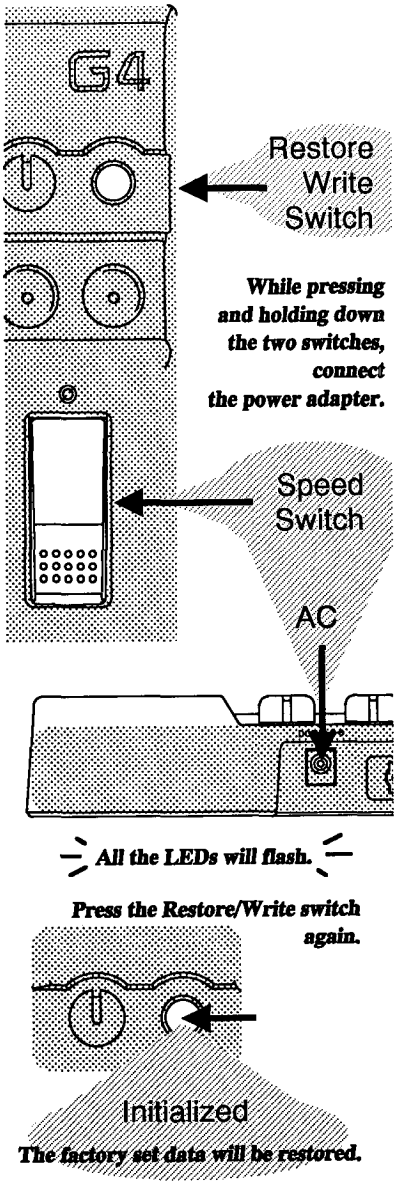
Note : Pressing the Restore/Write switch will first switch to **Restore mode** (page 18). Therefore, if you perform the Write operation while listening to the sound, you may hear a brief change in the effect sound while you are holding down the switch (as if the original sound was restored). However, the Program data to be stored will not be affected.

2. When you execute the Program Writing operation, the **Restore/Write LED will blink three times**, indicating that the edit has been written.

At this time, Restore mode will be cancelled automatically.

Note : When Bypass is set to On, pressing the Restore/Write switch will not execute the Write operation nor turn the Restore/Write LED on.

Initializing the Program Data



Writing a newly edited Effect Program will overwrite and erase the existing data. Although you cannot restore the Program data that is lost in this way, it is possible to restore the *initial setting of the Program* (that is, factory default setting that does not contain any edits). Follow the steps below to do so. This operation is called **Initialization**.

Connecting the power adapter while pressing and holding down the Speed switch and Restore/Write switch will cause **all the LED's to blink.**

Press the Restore/Write switch to turn the Restore/Write LED on.

All the Effect Programs will be initialized back to the factory settings.(If you press any switch other than the Restore/Write switch, the Programs will not be initialized. The condition obtained is the same as when you connect the power adapter.)

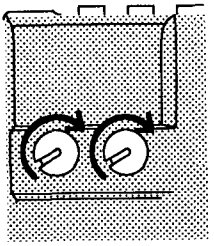
Note : **Initializing will cause all Program data stored in the G4 to be lost.**

Note : If all the LEDs are not blinking, some remain illuminated, or no LED is lit, turn the power off and try again.

Troubleshooting

If you have a problem, first check the following items. If the problem persists, consult the nearest Korg dealer or Korg Service Center.

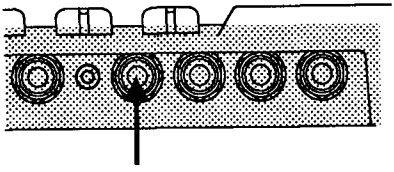
Symptom 1 ···
No sound is output.



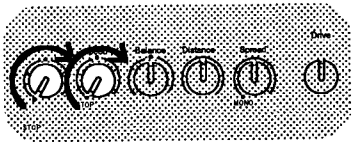
1. The Input Volume or the Output Volume is set to **0**.

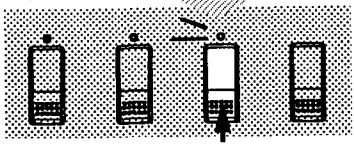
2. The musical instrument is connected only to the Input jack **R**. If so, the sound is not output with Bypass off.

With Bypass on, the sound is output only from **R**. **Connect the instrument to L/MONO for monaural setting**.



Symptom 2 ···
The sound does not rotate.

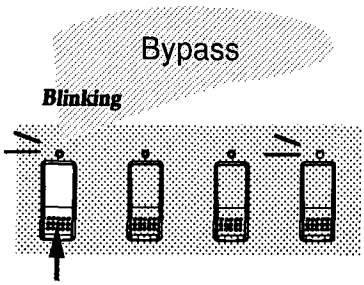




1. The Parameter Editors: **Speed** and **Acceleration** are set to 0.

2. The **Stop switch** is on.

The illuminated **Stop LED** indicates the stop condition. Press the Stop switch again to cancel the stop condition.



Symptom 3 No effect

Bypass *is on.*

The blinking **Bypass LED** indicates that Bypass is on.

Press the Bypass switch to cancel the Bypass setting.

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Specifications and Options

Program	One program at a time
Front panel	Volume: Input Volume, Parameter Editors, Output Volume Switch: Bypass switch, Drive switch, Stop switch, Speed switch, Restore/Write switch LED: Bypass LED, Restore/Write LED, Speed LED, Drive LED, Stop LED, Original Value LED,Peak indicator
Rear panel	DC9V AC adapter jack, Input jack (R, L/MONO), Output jack (R, L/MONO), Speed jack, Headphone jack
Sampling rate	48kHz
A/D	64 times oversampling, 16bit
D/A	8 times oversampling18bitDA
Dynamic range	90 dB or more(IHF-A, with Bypass on)
Power supply	DC 9V(with AC adapter)
Current oonsumption	380 mA
Input sensitivity/ impedance	− 7.0 dBu ~ +7.0 dBu / 1M Ω Stereo input 500k Ω Monaural input
Maximum output level/ impedance	+6.0 dBu / 5k Ω (0dBu=0.775Vrms)
Dimensions	281(W) × 209(D) × 38(H)mm
Weight	1.1 kg
Options	Volume pedal KVP-002

Appearance and specifications subject to change without notice.

NOTICE

KORG products are manufactured under strict specifications and voltages required by each country. These products are warranted by the KORG distributor only in each country. Any KORG product not sold with a warranty card or carrying a serial number disqualifies the product from the manufacturer's/distributor's warranty and liability. This requirement is for your own protection and safety.

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