

 Roland

MIDI BASS GUITAR SYNTHESIZER

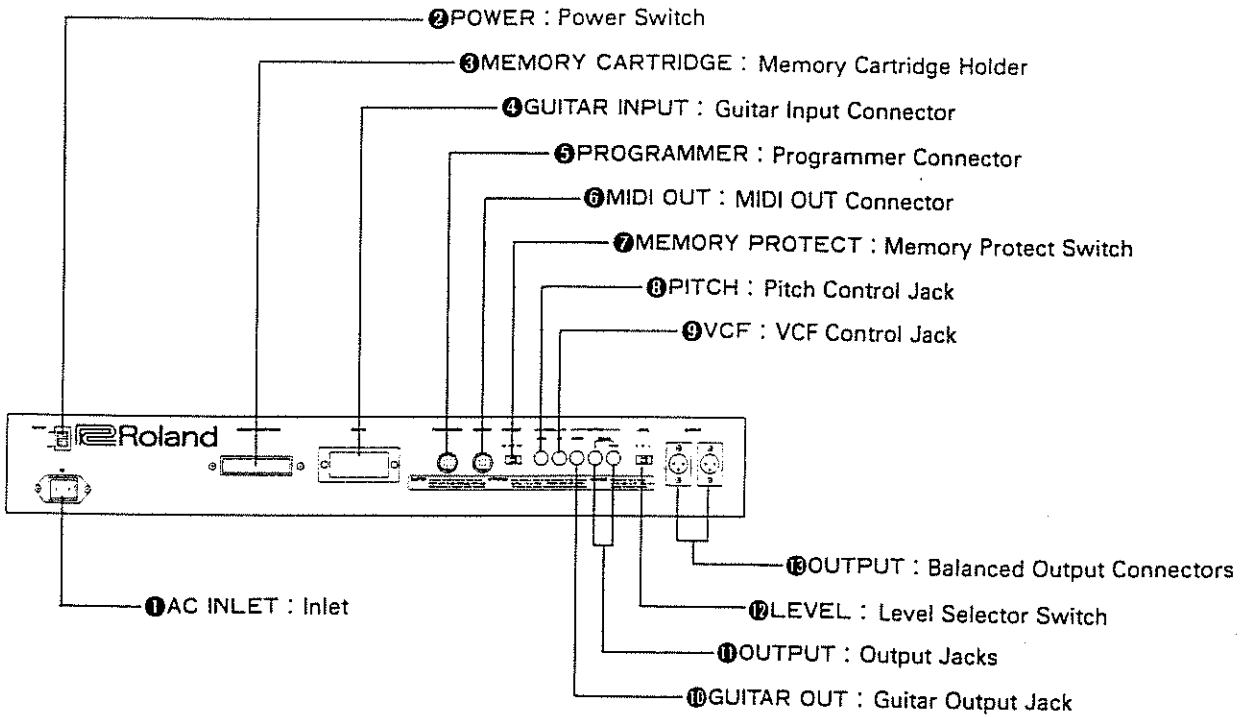
GR-77B

Owner's Manual

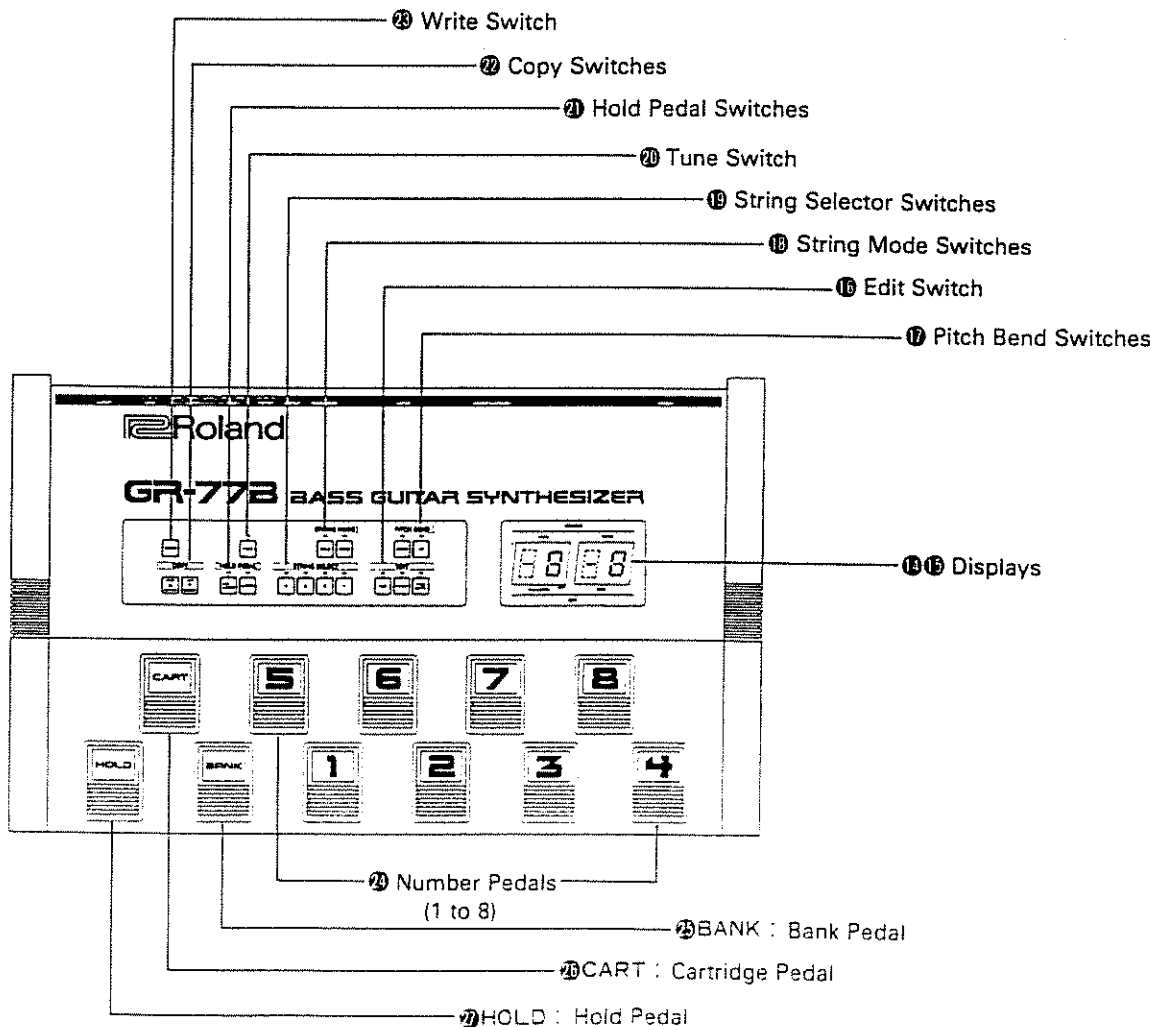


1 PANEL DESCRIPTION

〈Rear Panel〉



〈Front Panel〉



IMPORTANT NOTES

Power Supply

- The appropriate power supply for this unit is shown on its name plate. Please make sure that the line voltage in your country meets that.
- Please do not use the same socket used for any noise generating device (such as motor, variable lighting system).
- This unit might not work properly if turned on immediately after turned off. If this happens, simply turn it off and turn it on again a few seconds later.
- Before setting up the GR-77B with an external amplifier or the Bass Guitar Controller, turn both of them off.
- This unit might get hot while operating, but there is no need to worry about it.

Cleaning

- Use a soft cloth and clean only with a mild detergent.
- Do not use solvents such as paint thinner.

Location

- Operating the GR-77B near a neon or fluorescent lamp may cause noise interference. If so, change the angle or position of the GR-77B.
- Avoid using the GR-77B in excessive heat or humidity or where it may be affected by direct sunlight or dust.

Repairing

- Save the necessary data into a cartridge before having the GR-77B repaired, in case it is accidentally erased.

RADIO AND TELEVISION INTERFERENCE

Warning - This equipment has been verified to comply with the limits for a Class B computing device, pursuant to Subpart J, of Part 15, of FCC Rules Operation with non-certified or non-verified equipment is likely to result in interference to radio and TV reception.

The equipment described in this manual generates and uses radio-frequency energy. If it is not installed and used properly, that is, in strict accordance with our instructions, it may cause interference with radio and television reception.

This equipment has been 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. These rules are designed to provide reasonable protection against such a interference in a residential installation.

However, there is no guarantee that the interference to radio or television reception, which can be determined by turning the equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by the following measure:

- Disconnect other devices and their input/output cables one at a time. If the interference stops, it is caused by either the other device or its I/O cable. These devices usually require Roland designated shielded I/O cables. For Roland devices, you can obtain the proper shielded cable from your dealer. For non-Roland devices, contact the manufacturer or dealer for assistance.

If your equipment does cause interference to radio or television reception, you can try to correct the interference by using one or more of the following measures:

- Turn the TV or radio antenna until the interference stops.
- Move the equipment to one side or the other of the TV or radio.
- Move the equipment farther away from the TV or radio.
- Plug the equipment into an outlet that is on a different circuit than the TV or radio. (That is, make certain the equipment and the radio or television set are on circuits controlled by different circuit breakers or fuses.)
- Consider installing a rooftop television antenna with coaxial cable lead in between the antenna and TV.

If necessary, you should consult your dealer or an experienced radio/television technician for additional suggestions. You may find helpful the following booklet prepared by the Federal Communications Commission:

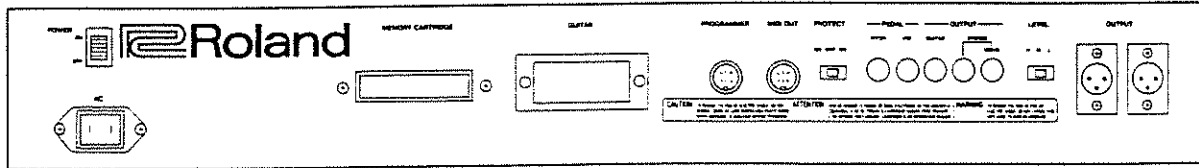
"How to Identify and Resolve Radio-TV Interference Problems"

This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock No. 004-000-00345-4.

2 CONNECTIONS

* Before making or breaking connection, be sure to turn all the units off.

• Setup with the Guitar Controller



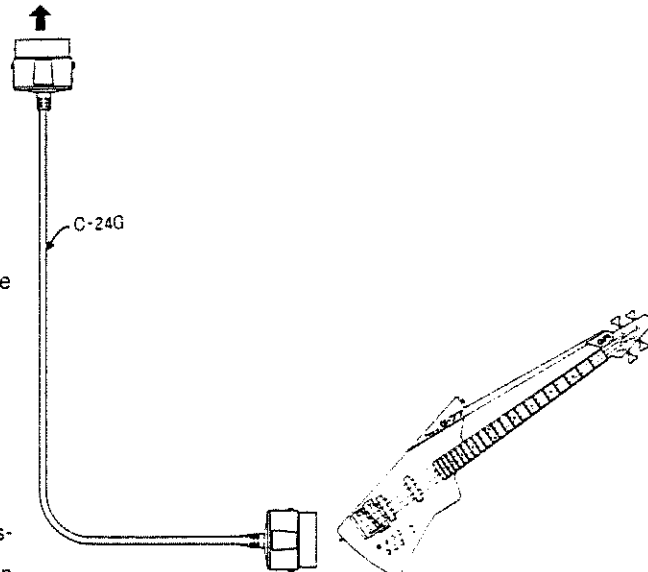
1. Guitar Input Connector

Connect the Bass Guitar Controller here by using the supplied cable C-24G.

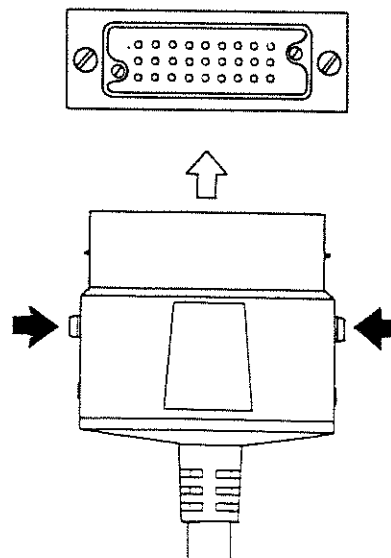
Using supplied cable C-24G

Push the side buttons of the socket, and without releasing them insert the socket into the connector. Then release the buttons, and the socket will be automatically locked. To disconnect the socket, press the side buttons down and pull it out.

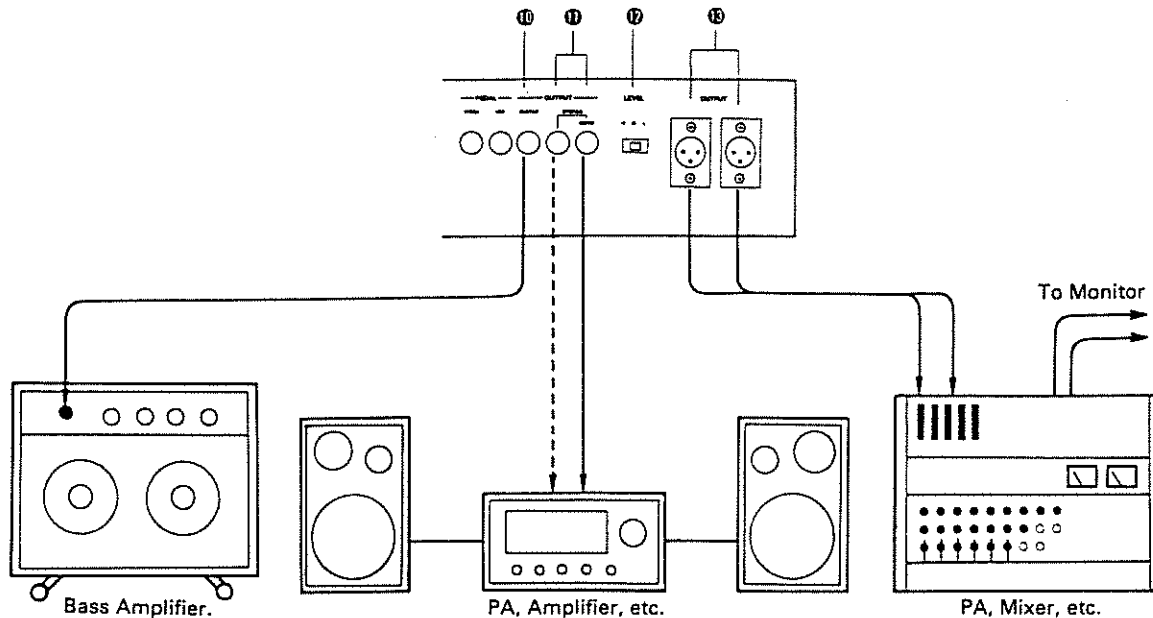
* The supplied cable C-24G can be used to connect any G-series Guitar Controller.



④ Guitar Input Connector



- Setup with amplifiers, mixer etc.



2. Output Jacks ⑩

These jacks are used to connect amplifiers. When these are the only output jacks used, mixed sound of direct and synthesizer will be obtained. To fully benefit the advantages of the GR-77B, use keyboard amplifiers and speakers, PA, or audio equipment. If two amplifiers are used (stereo), chorus effect will sound more effective.

3. Level Selector Switch ⑪

With this switch, select an appropriate output level depending on the type of the amplifier you use. The knack is to select the position that allows undistorted sound of desirable level with the amplifier's volume set to 5 to 7.

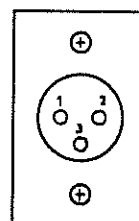
4. Guitar Output Jack ⑫

This jack is provided to connect a bass amplifier. Through this jack, only direct bass sound is sent out. Also, a preamplifier is built in here, therefore, good result can be expected when an effect device or foot volume is used. If both this jack and the Output Jack ⑩ are used at the same time, the pure synthesizer sound is output through the Output Jack ⑩.

5. Balanced Output Connectors ⑬

These are used for setting up the GR-77B with the balanced type mixer or effect device. The signal sent out through these connectors are the same as the output jacks ⑩, but the maximum output level is 0dB regardless of the position of the Level Selector Switch ⑪. If setting up in monaural, be sure to mix the signals of both channels.

Also, the output from this connector is transformless, so to convert it into unbalanced output, keep the 2nd pin open.



⑬ Balanced Output Connector

6. Programmer Connector ⑭

Connect the programmer PG-800 (optional) here by using the 6P DIN Cord supplied with the PG-800.

7. MIDI OUT Connector ⑮

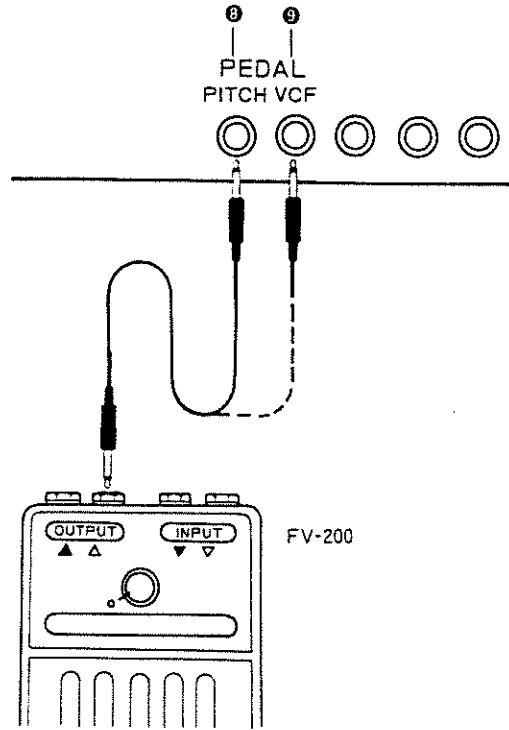
This is to connect a MIDI sound module. Use the optional MIDI Sync Cable MSC-15, 25 or 50.

8. Pitch Control Jack ⑧ and VCF Control Jack ⑨

By connecting the Foot Volume FV-200 (BOSS), you can control the pitch and VCF Cutoff by depressing the pedal.

- * Use the Output Jack of the FV-200.
- * Set the Minimum Volume of the FV-200 to zero.
- * Remove the spring holder from the FV-200. (Refer to the operation manual of the FV-200 to see how to remove it).
- * When you are not using the FV-200, set the pedal to its highest position.

Connecting the Volume Pedal

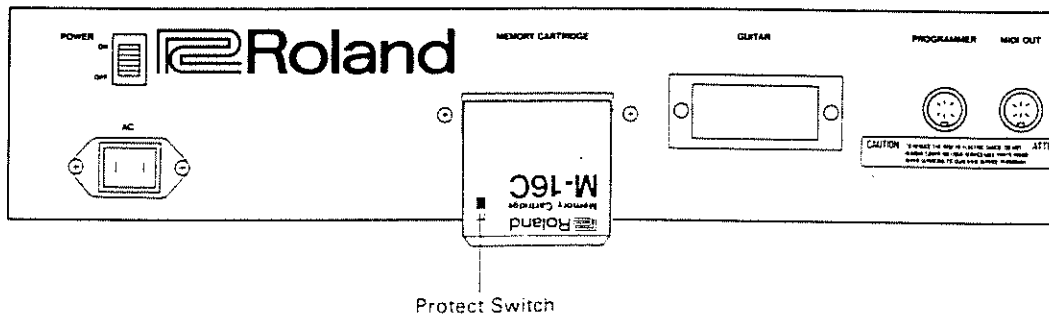


9. Memory Cartridge Holder ⑩

Connect the supplied Memory Cartridge M-16C.

Set the Protect Switch on the cartridge to the ON position, and insert the cartridge securely into the Memory Cartridge Holder ⑩ of the GR-77B with the Protect Switch of the cartridge facing upward. (See the picture shown below.)

Connecting the Memory Cartridge



3 PROBLEMS CAUSED BY YOUR IMPROPER PLAYING MANNER

The GR-77B digitally processes the vibration of the strings, producing digital signal that controls each section of the synthesizer. In other words, even the string vibration inaudible in usual bass guitar performance is bound to be processed.

Therefore, you may be annoyed by unexpected reaction of the bass guitar controller when playing it. The following are possible symptoms and how to resolve them.

a. Sound Delay

The GR-77B reads the waveform of the string vibration, and then detects the pitch by its computer. The lower tone (slower vibration) needs more time for pitch detection, resulting in sound delay. The open 4th string (E) requires at least 25ms (0.025 seconds). The sound delay is also caused by a certain playing manner, because the GR-77B is designed not to output sound until the string vibration has become stable, to obtain accurate pitch.

b. Sound cannot be muted

The 3rd and 4th strings are likely to keep vibrating even when muted. So, when you play tremolo or repeat an open chord or muteless stroke on these strings, the created sounds may not be muted.

c. Irrelevant sound is heard

The GR-77B processes even the string vibration irrelevant for deciding pitch. Therefore, you need a special care for picking.

d. No sound is heard

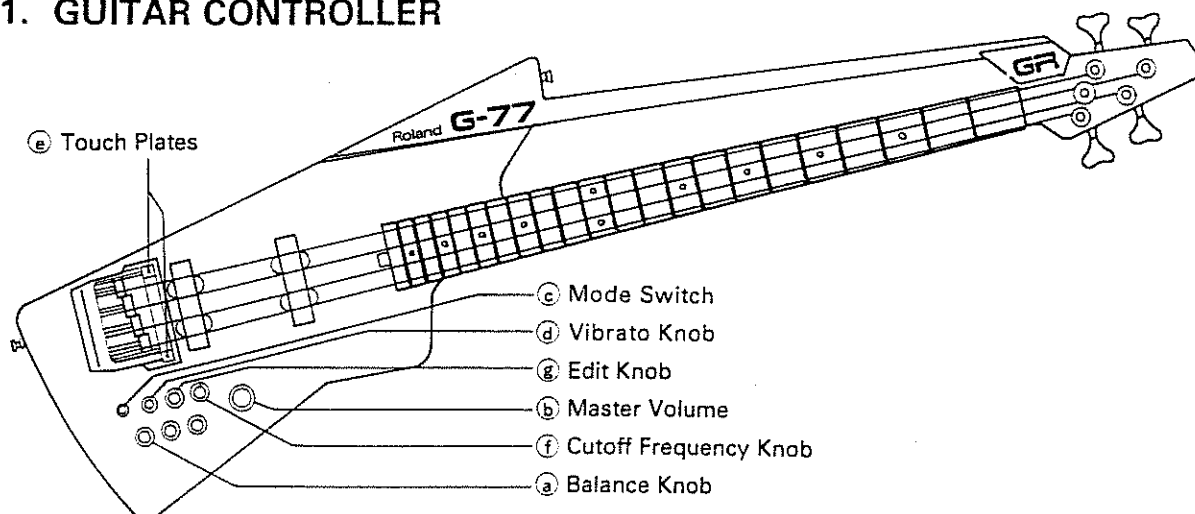
When the vibrating time of string is too short or the pitch is ambiguous, or you have not picked or touched the string hard enough, pitch detection is difficult. Watch that your picking is hard enough.

*** Harmonics playing**

Avoid playing in harmonics manner, if possible. The problems are often caused by feeble string vibration in harmonics manner.

4 OPERATION

1. GUITAR CONTROLLER



1) Balance Knob (a)

With this knob turned fully counterclockwise, only direct bass sound is obtained. As you rotate it clockwise, synthesizer sound will be increased and at its fully clockwise position, only synthesizer sound will be heard.

2) Master Volume (b)

This knob sets the overall volume.

3) Mode Switch (c)

At I position	Only direct bass sound is obtained, and the Balance Knob (a) does not work.
At II and III position	Both direct and synthesizer sounds are available.

4) Vibrato Knob (d) and Touch Plates (e)

By using these knobs, you can add vibrato effect.

1. When using the G-33 or G-88

Slightly turn the Vibrato Knob (d) and touch the Touch Plate A while holding the strings down. To stop vibrato, touch the Touch Plate B and immediately release it.

2. When using the G-77

Slightly turn the Vibrato Knob (d) and touch the Touch Plate while holding the strings down. To stop vibrato, release the Touch Plate.

- * If the Vibrato Knob (d) is set to zero, no vibrato is obtained at all. That is, you are not annoyed by unexpected vibrato effect caused by touching the Touch Plate accidentally.
- * The rate, delay time and depth of the vibrato effect change according to its set level in writing.

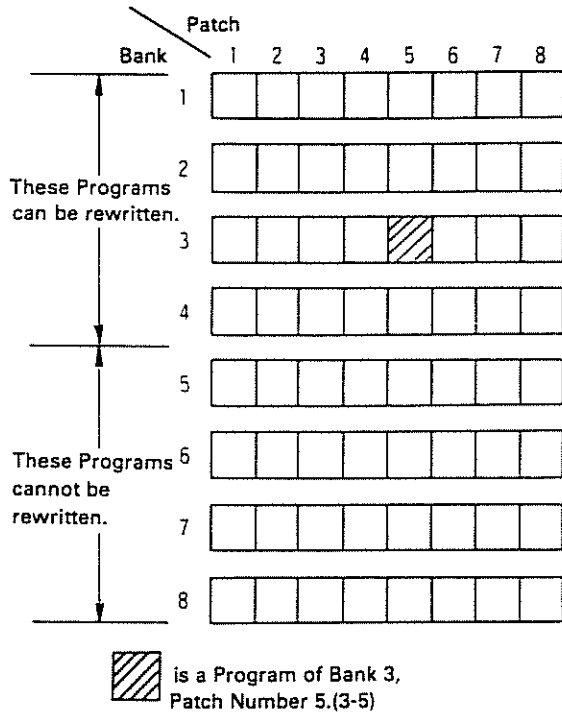
5) Cutoff Frequency Knob (f)

6) Edit Knob (g) (Resonance Knob in other G series)

These knobs work exclusively in Edit mode.

- * The Cutoff Frequency Knob (f) is provided specifically for controlling the VCF Cutoff Frequency.
- * The Edit (Resonance) Knob (g) is used to control parameters other than the cutoff frequency.
- * Refer to the owner's manual of each bass guitar controller for the other control knobs.

2. PLAY, EDIT & WRITE MODES



Set up GR-77B with amplifier and speaker, etc., and power it up, and it will be ready to play. (— **PLAY Mode**)

There are 64 different tone colors preprogrammed (8 bank × 8 patch numbers) as shown left. And you can recall any of those patches and edit it as you like. (— **EDIT Mode**) This editing operation, however, does not automatically rewrite the existing patch program.

If you wish to write the edited program, an appropriate writing operation is required. Writing a new patch program, however, replaces the one currently written. (— **WRITE Mode**)

The 32 patches programmed in the bank 1 to 4 can be rewritten, but the bank 5 to 8 are all fixed programs.

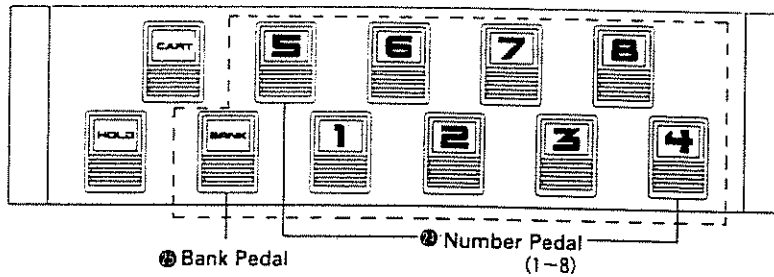
3. PLAY MODE

a. Tone Color Selection

There are 64 different tone colors preprogrammed in the GR-77B's memory (8 banks × 8 patch numbers) by the manufacturer. When the GR-77B is switched on, the Display windows show "5 - 1". 5-1 means that tone color of bank number 5 (Display ①), patch number 1 (Display ②) is called. The Display windows change as a different tone color is called.

How to select a tone color

- 1) First press the Bank Pedal, then press the appropriate Number Pedal (1 to 8) that corresponds to the Bank number of the tone color you want.
- 2) Press the Number Pedal that corresponds to the Patch number of the tone color.



Operation	Display	Description
Power on!		Patch Program "5-1" is initially called.
↓		
Set Patch No.3 		Patch Program "5-3" is called.
↓		
Set Patch No.8 		Patch Program "5-8" is called.
↓		
Set Bank No.4 		Bank Number "5" flashes.
↓		
		Patch Program "4-8" is called.
↓		
Set Bank No.5 & Patch No.6 		Bank Number "4" flashes.
↓		
		Patch Program "5-8" is called.
↓		
		Patch Program "5-6" is called.

b. Tone color selection when using the Memory Cartridge

The supplied Memory Cartridge M-16C can expand the memory capacity by another 32 patch programs.

Memory Cartridge Mode

OPERATION

- 1) **Change the Internal Memory mode to the cartridge mode by pressing the Cartridge Pedal ②. Each time you press the Cartridge Pedal ②, the Internal Memory and the Cartridge Memory modes are alternately selected. When it is the Cartridge mode, " [" is shown at the left of the Display ①.**
- 2) **Select a tone color in exactly the same way as in the Internal Memory mode, but note that the Bank 5 to 8 are not available.**

* When the Internal Memory mode is changed to the Cartridge mode in the step 1), the numbers in the Display windows will flash.

* The previous tone color remains until you select a tone color in the step 2).

NOTE

The memory capacity of the Cartridge is 32 tone colors. That is, while in the Cartridge memory mode (the Display shows " ["), the available tone colors are 32 in the Banks 1 to 4. If you try to select the irrelevant Bank numbers 5 to 8 (if pressing the Bank Pedal and the Number Pedal 5 to 8), "[" will change to "E r r - " and returned to the previous display. If this happens, select the tone color in an appropriate bank 1 to 4. Until you select a new tone color, the previous one remains.

APPLICATION

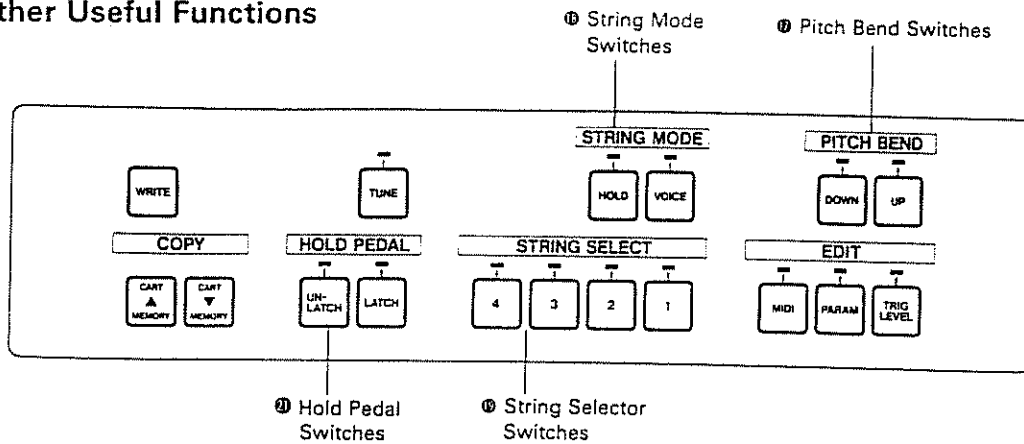
It is possible to use the Memory Cartridge that stores the tone colors synthesized on the JX-8P Roland polyphonic synthesizer. Take the following operation.

OPERATION

- ① **Insert the Memory Cartridge of the JX-8P to the Memory Cartridge Holder ③ on the GR-77B.**
- ② **Set the Protect Switch on the Memory Cartridge to the OFF position.**
- ③ **Press the Cartridge Pedal ②, make sure that " [" is shown at the left of the Display window ①, and set the Protect Switch to the ON position.**
- ④ **Change the tone colors in the same way as show in "Memory Cartridge Mode" steps 1) and 2).**

* The JX-8P's Memory Cartridge used for the GR-77B will work properly on the JX-8P.

c. Other Useful Functions



The switches ①, ②, ③ and ④ on the front panel are On/Off switches which can add extra effects such as pitch Bend and Hold on the strings you choose. Gently push the switch, and it will be alternately turned on and off. When the switch is turned on, the indicator lights up.

1) Pitch Bend Switches ①

When the Foot Volume is used to control the pitch, this sets how the pitch changes by pressing the pedal. When the UP switch is on, the pitch goes up, and when the DOWN Switch is on, the pitch comes down.

2) Hold Pedal Switches ②

Hold Pedal ②

Press the Hold Pedal ② and the Display ⑤ will show " H ", and the sound currently in use will be sustained. This is called Hold effect. The Hold Pedal Switches ② can be used to select either of the Hold modes; Latch or Unlatch.

Latch Mode : Pressing the Hold Pedal once will turn the Hold effect on, and it will not be turned off until the pedal is pressed again.

Unlatch Mode : The Hold effect is on as long as the Hold Pedal is pressed, and releasing the pedal turns it off.

* This Hold effect cannot be obtained if Hold is not set in the String Selecting operation which is referred to later on this page.

* In the Memory Cartridge mode (← the Display ⑤ show " ["), pressing the Hold Pedal will cause the same Display to show " [" and " H " alternately.

3) String Mode Switches ③

String Selector Switches ③

Use these switches to select which of the string(s) should take on the Voice or the Hold effect. The String Selector Switches 1 to 4 correspond to the guitar's 1st to 4th strings.

VOICE : Depress the Voice switch, then select the string(s) which should take the synthesizer voice by pressing the corresponding String Selector Switch(es) ③.

HOLD : Depress the Hold switch, then select the string(s) on which the Hold effect should work.

* The Up or Down mode of the Pitch Bend effect, the Latch or Unlatch mode of the Hold effect and the String Select data can be individually set for each tone color.

4. EDIT MODE

Like any usual synthesizer, the GR-77B has various parameters (44 kinds) which can be edited for sound synthesis. The GR-77B, however, does not feature knobs or switches on its panel for you to touch or move. Instead, there are two methods of synthesizing. One is using the optional programmer PG-800 which works just like panel controls of a usual synthesizer. Another is calling each parameter by using the Pedal Switches and changing its value by using the controls on the Guitar Controller. For quicker and easier editing or synthesis from scratch, the PG-800 may be essential.

- * This Editing function does not automatically rewrite the existing program, unless the appropriate procedure for rewriting (see page 24) is done.

a. Editing with PG-800

The optional programmer PG-800 can considerably simplify the editing operation. The PG-800 works like the control panel of a usual synthesizer, that is, you can edit the existing patch program or make a complete new patch from scratch, by actually using the tangible knobs and buttons.

- * For hook-up, use the 6 pin DIN cable (2.5m) of the PG-800.
- * The Programmer PG-800 functions when the GR-77B is in the Play or Edit mode.

1) Play Mode

In this mode, the tone color currently called can be edited by moving the knobs on the programmer. While in editing, a dot will flash at the right end of the Display ①.

2) Edit Mode

In this mode, the parameter's value can be seen in the Display.

OPERATION

- ① **Select the tone color you wish to edit by using the Bank Pedal ② and the Number Pedal ③.**

- ② **Push the **PARAM** in the Edit Switches ④ to turn the GR-77B to the Edit mode.**

- * The Display ① and ② show " [F x x] . " [F " represents cutoff frequency, and " x x " is its value.

- ③ **Edit the tone color by moving the knobs on the programmer.**

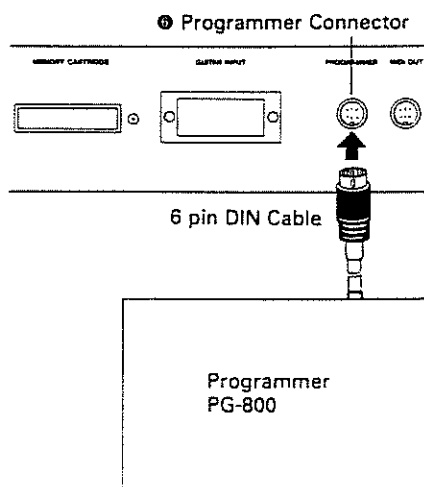
- * The Display will show the corresponding parameter number and its value.

- ④ If you like, continue to adjust other parameters by moving the knobs or the slider switches on the programmer.

3) Manual Mode

Pressing the Manual Button on the PG-800 will turn the GR-77B to the Programmer mode. The Display Window ① shows "H". In this mode, the whole panel setting of the PG-800 decides the tone color. That is, now, existing patch program in memory has nothing to do with your sound synthesis. You make a new patch from scratch. This mode is cancelled when you select any other patch program, or a new program is written.

- * See "c. Parameter Table" on page 18 and the attached Edit Map to learn the name and number of each parameter, its function, how it is shown in the display windows and how it is related to the knob or the slider switch on the Programmer.
- * While editing a parameter with the PG-800, even if the current set positions of the knobs or switches are exactly what you desire, change the position once then return it. Otherwise, the parameter data might not be affected by the PG-800 at all, thereby remain unchanged.
- * The edited patch program, either with the guitar controller or with the PG-800, cannot be retained unless a proper writing procedure is taken.



Data Display and Value Setting

	Programmer	Data Display
1	Knob 	Knob Position 0 ~ 5 ~ 10
2	Slider Switch (more than 3 positions) 	Switch Position I II III IV
3	Slider Switch (two positions) 	Switch Position I II

b. Editing Without PG-800

It is even possible to edit the parameters without using the programmer. There are altogether 44 parameters, and each parameter has a number. Call the parameter you wish to edit by assigning the appropriate number with the Number Pedal ②.

- * See "c. Parameter Table" on page 18 and the attached Edit Map to learn the name and number of each parameter, its function, how it is shown in the Display windows and how it is related to the knobs or the slider switches on the Programmer.

OPERATION

① Call the tone color you wish to edit by using the Bank Pedal ① and the Number Pedal ②.

② Push the **PARAM** of the Edit Switches ③ to turn the GR-77B to the Edit mode.

- * The Display ④ and ⑤ show " [F] x x ". " [F] " represents cutoff frequency, and " x x " is its value.

Now, rotating the Cutoff Frequency knob on the guitar controller will change the value of the cutoff frequency, therefore alter the tone color, and cause the value shown in the Display to change. If you do not wish to change the value of the cutoff frequency, skip this operation and go directly to the step ③.

③ Assign the number (2 figures) of the parameter you wish to edit by pressing the relevant Number Pedal ②. The first pressing will change the left figure, then the Display Window ④ show a flashing bar " — " on the right asking you to set the right figure. The Display Window ⑤ shows the data value of the parameter.

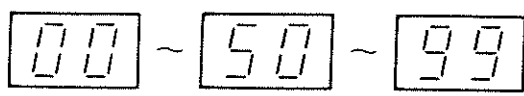
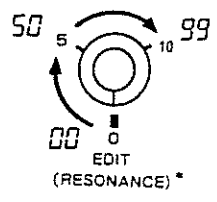

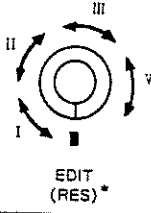
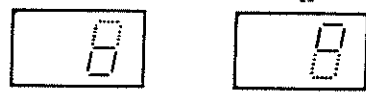
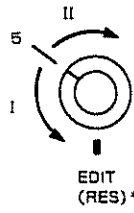
④ While actually listening to the sound, adjust the parameter by using the Edit (Resonance) Knob.

⑤ By repeating procedure ③ and ④, keep on synthesizing.

[NOTE]

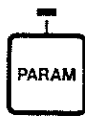
When any slight editing is done, a dot flashes in the Display ④ indicating that the tone color currently in use is different from the one in memory. This indication helps you to understand that the edited tone color is not yet written into memory. If you wish to write the edited tone color, take an appropriate writing procedure. If you do not want to retain the edited tone color, simply call any other patch program. (Just note that calling a patch program can be done only in the Play mode.) To turn the GR-77B to Play mode, simply press the **PARAM** of the Edit Switches ③.

Data Display and Setting a Value

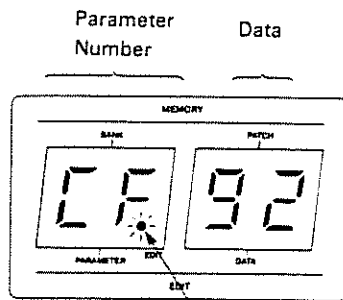
Data Display	Value Setting
<p>Knob</p> <p>0 ~ 5 ~ 10</p> 	
<p>Switch Position</p> <p>I II III IV</p> 	
<p>Switch position</p> <p>I II</p> 	

()*:When using the controller other than the G-77.

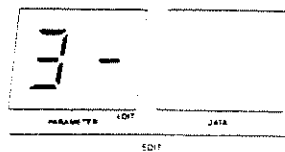
e.g.: Cutoff Frequency



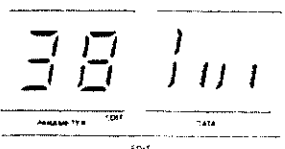
Call the parameter 38
(MIXER, ENV)



This dot flashes during editing.



"3" goes out and "-" flashes.

















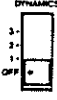































The right window shows that the Slide Switch is set to 1.

c. PARAMETER TABLE

DCO (Digitally Controlled Oscillator)

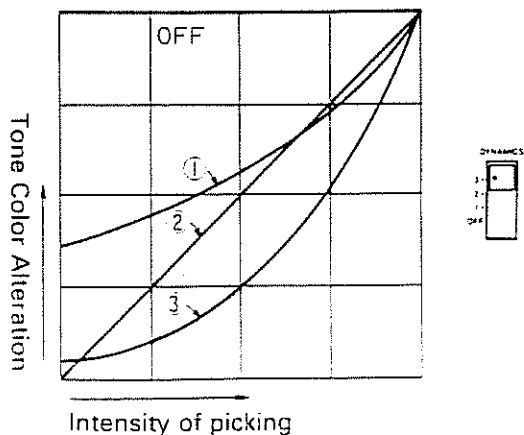
DCO is the Digitally Controlled Oscillator that controls the pitch and generates the waveforms that are the sound source of the synthesizers. Owing to its digitally control system, this offers superior pitch stability compared to the VCO (Voltage Controlled Oscillator). The GR-77B has 2 DCO's.

Parameter	Function	Programmer	Display		
			Number	Data	Value
DCO-1 Range	This is to change the pitch range of the DCO in exact one octave steps from 2' to 16' (2',4',8',16'). 8' is standard.		DCO- 1	16'	8'
DCO-2 Range			DCO- 2	4'	2'
DCO-1 Waveform	This is to choose the output waveform of the DCO. (Saw Tooth) (Pulse Wave) (Square Wave) (Noise)		DCO- 1	Noise	Square wave
DCO-2 Waveform			DCO- 2	Pulse wave	Sawtooth wave
DCO-1 Tune	This changes the frequency (pitch) of the DCO, in semi-tone steps. • Variable Range: ± 12 (± 1 Octave)		DCO- 1		
DCO-2 Tune			DCO- 2		
DCO-1 LFO Depth	When the LFO output is modulating the DCO, this parameter is used to adjust the depth of the modulation. For vibrato effect, select " ~ " with the LFO Waveform.		DCO- 1		
DCO-2 LFO Depth			DCO- 2		
DCO-1 Envelope Depth	When the ENV output is modulating the DCO, this parameter is used to adjust the depth of the modulation.		DCO- 1		
DCO-2 Envelope Depth			DCO- 2		



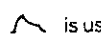
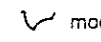




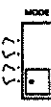
<p>CROSS Modulation</p>	<p>1 : The pitch is determined by DCO-1, and the harmonic contents by DCO-2. The waveform is determined by the DCO-2's synchronization to DCO-1.</p> <p>2 : Both 1 and 3 work together.</p> <p>3 : DCO-1 and DCO-2 affect each other, pitch, harmonic contents, and waveform.</p> <p>OFF : The pitch and waveform of DCO-1 is independent of that of DCO-2.</p>		<p>23</p>	<table border="1"> <tr> <td>OFF</td> <td>1</td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td>2</td> <td>3</td> </tr> <tr> <td></td> <td></td> </tr> </table>	OFF	1			2	3		
OFF	1											
												
2	3											
												
<p>DCO-2 Fine Tune</p>	<p>The frequency (pitch) of the DCO-2 can be adjusted slightly with this parameter.</p> <p>• Variable range...±50 cent</p>		<p>25</p>	<table border="1"> <tr> <td>00</td> </tr> <tr> <td>99</td> </tr> </table>	00	99						
00												
99												
<p>DCO Dynamics Range</p>	<p>When the DCO's pitch is controlled by the ENV, and the amount of the ENV is controlled by Dynamics, this parameter adjusts the sensitivity of the picking. (See Note 1 below.)</p>		<p>31</p>	<table border="1"> <tr> <td>OFF</td> <td>1</td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td>2</td> <td>3</td> </tr> <tr> <td></td> <td></td> </tr> </table>	OFF	1			2	3		
OFF	1											
												
2	3											
												
<p>DCO Envelope Mode</p>	<p>This selects the polarity of the Envelope curve. Normally,  is used. In  mode, ADSR pattern will be all inverted.</p> <p>ENV 1 </p> <p>ENV 1 </p> <p>ENV 2 </p> <p>ENV 2 </p>		<p>32</p>	<table border="1"> <tr> <td>ENV 2</td> <td>ENV 2</td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td>ENV 1</td> <td>ENV 1</td> </tr> <tr> <td></td> <td></td> </tr> </table>	ENV 2	ENV 2			ENV 1	ENV 1		
ENV 2	ENV 2											
												
ENV 1	ENV 1											
												

Note 1

Depending on the position of the Dynamics Range Selector, the tone color alteration differs as shown below.


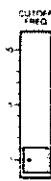


This is where the volume balance of the DCO-1 and DCO-2 is controlled.

Parameter	Function	Programmer	Display					
			Number	Data Value				
DCO-1 Level	This adjusts the level of DCO-1.		34	00				
DCO-2 Level	This adjusts the level of DCO-2.		35	99				
DCO-2 Envelope Depth	When ENV controls the DCO-2's level, this sets the amount of ENV signal.		36					
DCO-2 Dynamic Range	When the DCO-2's level is controlled by ENV Depth and then by Dynamics, this sets the sensitivity of the picking. (See Note 1 on page 19.)		37	<table border="1"> <tr> <td>1 OFF</td> <td>1</td> </tr> <tr> <td>2</td> <td>3</td> </tr> </table>	1 OFF	1	2	3
1 OFF	1							
2	3							
DCO-2 Envelope Mode	Normally,  is used, and in  mode, ADSR pattern will be inverted. ENV 1  ENV 1  ENV 2  ENV 2 		38	<table border="1"> <tr> <td>ENV 2</td> <td>ENV 2</td> </tr> <tr> <td>ENV 1</td> <td>ENV 1</td> </tr> </table>	ENV 2	ENV 2	ENV 1	ENV 1
ENV 2	ENV 2							
ENV 1	ENV 1							

VCF (Voltage Controlled Filter)

The output signal of DCO goes to the Mixer, then to the VCF to be filtered. Each VCF lets lower frequency harmonics pass and cuts off the higher ones. In other words, it is a usual low pass filter. By controlling the cutoff point and resonance, the waveform changes, thereby the tone color alters.





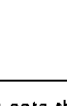
Parameter	Function	Programmer	Display					
			Number	Data Value				
High-pass Filter Cutoff Frequency	The HPF (High-Pass Filter) is a filter that passes higher frequency harmonics and cuts off the lower ones. As you increase the value, cutoff point goes up, lower frequency harmonics being cut off.		41	<table border="1"> <tr> <td>0</td> <td>1</td> </tr> <tr> <td>2</td> <td>3</td> </tr> </table>	0	1	2	3
0	1							
2	3							
Cutoff Frequency	This is for changing the cutoff point of the VCF. As you decrease the value, higher frequency harmonics will be cut off, and the waveform gradually becomes approximation of a sine wave, then the sound will fade out		42	00 99				

Parameter	Function	Programmer	Display	
			Number	Data Value
Resonance	This emphasizes the cutoff point. As you increase the value, the created sound will become more unusual, more electronic in nature.		43	
LFO Depth	This controls the cutoff point by the waveform selected at the LFO section. Increasing the value deepens the modulation.		44	00
Envelope Depth	This controls the cutoff point of the VCF in each note with the ENV curve set in the ENV section. As you increase the value, tone color within one note changes more drastically.		45) 99
Key Follow	This can shift the cutoff point by the pitch. At 100%, it prevents any inconsistency in the harmonic contents caused by pitch alteration. Parameter value 83 (=Programmer's Knob set to around "8")=100%		46	
Dynamics Range	When the VCF is controlled by ENV and Dynamics, this parameter determines the sensitivity of the picking. (See Note 1 on page 19.)		47	OFF 1 1 1 1 1 1 1 1 1 2 3 1 1 1 1 1 1 1 1
Envelope Mode	This is to select the polarity of the Envelope curve that controls VCF. Usually may be used. In mode, ADSR pattern will be inverted. ENV 1 ENV 1 ENV 2 ENV 2		48	ENV 2 ENV 2 1 1 1 1 1 1 1 1 1 1 1 1 ENV 1 ENV 1 1 1 1 1 1 1 1 1 1 1 1 1

VCA/CHORUS
(Voltage Controlled Amplifier - Chorus)



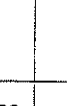
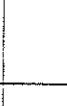
After filtered in the VCF, the signal is fed to the VCA where the volume (amplitude) of the sound is controlled.

Parameter	Function	Programmer	Display	
			Number	Data Value
VCA Level	This is to adjust the volume level, and can be effectively used in the writing mode If it is set too high, sound may be distorted.		51	00 99

Parameter	Function	Programmer	Display	
			Number	Data Value
VCA Mode	This is to select whether to control the VCA by the signal from the ENV-2 () or by the Gate signal ().		52	ENV 2 8 GATE 8
VCA Dynamics Range	This parameter determines the sensitivity of the Dynamics effect. (See Note 1 on page 19.)		53	OFF 1 1 1 1 1 1 1 1 1 2 3 1 1 1 1 1 1 1 1
Chorus Mode	OFF: Chorus is off 1: Expansive Chorus effect is obtained. 2: Rich Chorus effect is obtained.		54	OFF 1 1 1 1 1 1 1 1 1 2 1 1 1 1 1 1 1 1

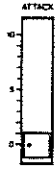
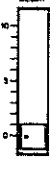
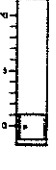
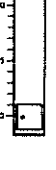
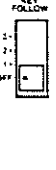
LFO (Low Frequency Oscillator)

This oscillator generates extremely low frequency, so produces a vibrato or growl effect by controlling the DCO or VCF.

Parameter	Function	Programmer	Display	
			Number	Data Value
LFO Waveform	This is for selecting the LFO output waveform.  (Sine Wave)  (Square Wave) RND Random		61	Random Square wave 1 1 1 1 1 1 1 1 Sine wave 1 1 1 1 1 1 1 1
Delay Time	This sets the time needed for the modulation by the LFO to start.		62	00
Rate	This sets the rate (frequency) of the LFO.		63	99

ENV (Envelope Generator)

This generates the control voltage (Envelope) which controls the DCO, VCF and VCA, therefore, alters the pitch, tone color and volume in each note.

Parameter	Function	Programmer	Display			
			Number	Data Value		
ENV-1 Attack Time	This determines the time required for the voltage to reach its maximum from the moment the string is played.		71	00) 99		
ENV- Attack Time			81			
ENV-1 Decay Time	This determines the time required for the voltage to drop from the maximum to the sustain level.		72			
ENV-2 Decay Time			82			
ENV-1 Sustain Level	This sets the sustain level to which the voltage falls at the end of the decay time. Therefore, at its maximum setting, Decay Time Knob has no effect.		73			
ENV-2 Sustain Level			83			
ENV-1 Release Time	This sets the time needed for the voltage to drop from the sustain level to zero from the moment the string stops vibrating.		74			
ENV-2 Release Time			84			
ENV-1 Key Follow	This changes the time required for an ENV curve to complete its curve (= ENV time). At OFF, all the pitches have the same ENV time. As the value is increased, higher notes have shorter ENV time.		75		OFF	1
ENV-2 Key Follow			85		2	3

5. Write Mode

a. Writing Operation

① **Make a tone color you like with the Edit function of the GR-77B or with the PG-800.**

* If necessary, use the Panel Switches ①, ②, ③ and ④ here.

② **Set the Memory Protect Switch ⑦ to the OFF position.**

③ **Turn the GR-77B to the Write mode by pressing the Memory Write Switch ⑥ or the Write Button on the PG-800.**

In the Display Windows ⑧ and ⑨, the Bank number and the Patch number of the original tone color are shown and the left side of the Display ⑧ shows "—" and "—" alternately.

④ **Set the Bank number by pressing the Bank Pedal ⑩ then the relevant Number Pedal ⑪.**

* The Banks 5 to 8 cannot be used.

⑤ **Set the Patch number by pressing the relevant Number Pedal ⑫.**

When the writing is completed, the Displays ⑧ and ⑨ will show "Good".

⑥ **Set the Memory Protect Switch ⑦ to the ON position.**

* Even if you happen to set a wrong Bank number in procedure ④, you can cancel it by simply pressing the Bank Pedal ⑩ again and setting a correct one. This is because writing is not done until you set the Patch number.

* If you happen to press the Memory Write Switch ⑥ by mistake, simply press the same switch again, and the Write mode will be cancelled and returned to the Play mode.

* If the Bank Number shown in the left Display Window is what you desire, you can skip the procedure ④.

* If the Memory Protect Switch ⑦ is set to the ON position, writing is not done. The Display Windows show "Protect" right after writing procedure. If so, repeat procedure ②, ③, ④ and ⑤.

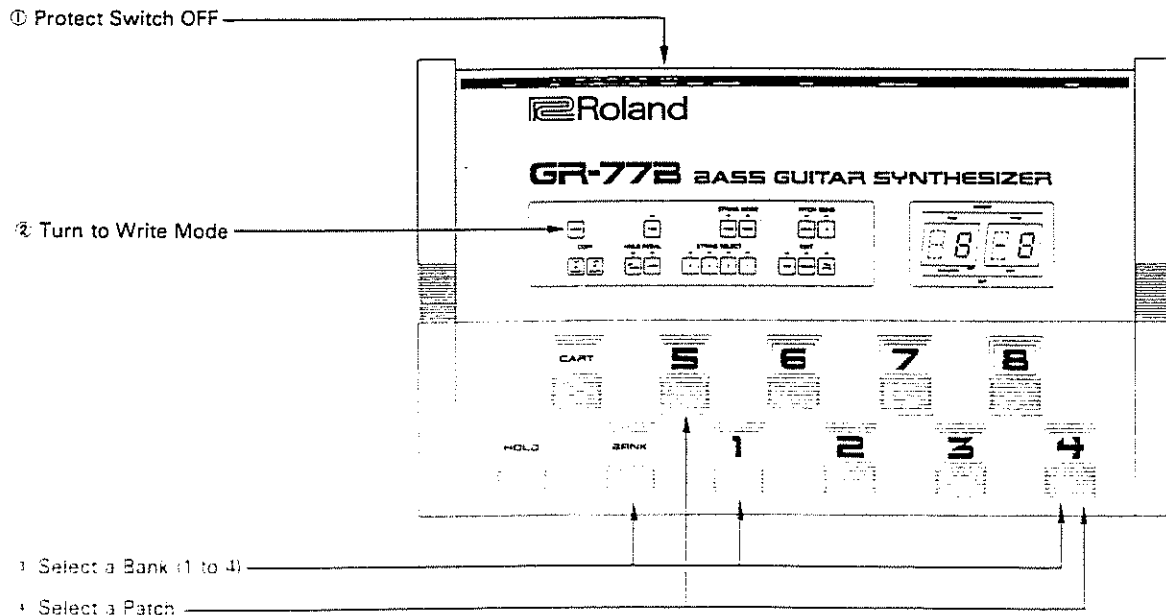
b. Copy Function

By using the Copy function, you can collect your favorite tone colors in one bank or change the places of the patch programs, etc. This copying operation, however, inevitably sacrifices one patch program.

- ① With the GR-77B in the Play mode, call the patch program number where you wish to copy a tone color. In other words, assign the new place for the tone color. Here, if you do not want to lose the tone color written in that patch program number, you must write it somewhere else. To do that, turn the GR-77B to the Write mode and write this tone color into the patch program number which you do not mind losing, by taking a usual writing operation. (If you do not remember how to write a tone color, refer to "a. Writing Operation" on page 24.)
- ② Call the patch program you wish to copy, then turn the GR-77B to the Write mode, and write it into a new place by taking a usual writing operation.

NOTE

The Banks 5 to 8 cannot be used for the new location or for the tone color to be erased.



c. Writing into the Cartridge Memory

The supplied Memory Cartridge M-16C works just like the internal memory of the GR-77B. It has the memory capacity that can retain 32 different tone colors.

- * Writing a new tone color into the cartridge memory will automatically erase the old one.
- * The Memory Cartridge adopts battery backup system that retains the data in memory. The battery which fully supports this backup system will need replacing in five years after the unit is released from the manufacture.

The necessary procedures needed for writing into the Memory Cartridge are almost the same as when writing into the internal memory. The only you need is turning the Protect Switch on the cartridge ON and OFF, and also pressing the Cartridge Pedal ④ to turn the GR-77B to the Cartridge Memory mode.

1) If you wish to transfer a patch program in the GR-77B's memory into the Memory Cartridge, do as follows.

- ① Call an internal patch program you wish to transfer into the cartridge.
- ② Press the Cartridge Pedal ④ to turn to the Cartridge Memory mode.
- ③ Press the Memory Write Switch ⑤ to turn the GR-77B to the Write mode.
- ④ Set the Protect Switch on the Memory Cartridge to the OFF position.
- ⑤ Assign the Patch Program Number of the cartridge where you wish to transfer the patch program from the internal memory, by using the Bank Pedal ⑥ and Number Pedal ⑦.
- ⑥ Set the Protect Switch of the Memory Cartridge to the ON position.




2) If you wish to transfer a patch in the Memory Cartridge into the internal memory of the GR-77B, do as follows.

- ① Press the Cartridge Pedal ④, then call the patch program you wish to transfer to the internal memory.
 - ② Set the Memory Protect Switch ⑧ to the OFF position.
 - ③ Press the Memory Write Switch ⑤ to turn the GR-77B to the Write mode.
 - ④ Assign the internal patch program number where you wish to transfer the patch program from the Memory Cartridge, by using the Bank Pedal ⑥ and the Number Pedal ⑦.
 - ⑤ Set the Memory Protect Switch ⑧ to the ON position.
- * The moment the Patch number is assigned, writing is done, then the GR-77B is automatically turned to the Play mode






3) Saving and Loading



It is possible to save the data in the GR-77B's memory into the Memory Cartridge. Also, you can load the data in the cartridge into the internal memory of the GR-77B.

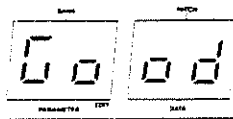
Saving

- ① Set the Protect Switch on the Memory Cartridge to the OFF position.
- ② While holding the Write Switch  down, press the Copy Switch  "  ".
- ③ Set the Protect Switch on the cartridge to the ON position.

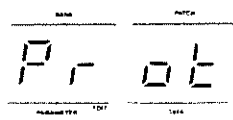
Loading

- ① Set the Memory Protect Switch  to the OFF position.
- ② While holding the Write Switch  down, press the Copy Switch  "  ".
- ③ Set the Memory Protect Switch  to the ON position.

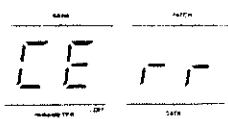
Right after the Saving or Loading operation, the Display  and  react as shown below.



- Saving or Loading is completed.





- Protect ON.



- Memory Cartridge is not inserted, or inserted but insecurely. (Or there is something wrong with the Memory Cartridge.)

4) Using other M-16C

When using the M-16C other than the one supplied with the GR-77B or if the supplied M-16C has been used for other Roland products, the following operations are required before taking the writing operation 1), 2) or 3).

- ① Insert the M-16C to the Cartridge Holder and set the Protect Switch on the Cartridge to OFF.
- ② Press the Cartridge Pedal .
- ③ Make sure that " [" is shown at the left of the Display , and return the Protect Switch to ON.

6 Other Useful Functions

a. Master Tuning

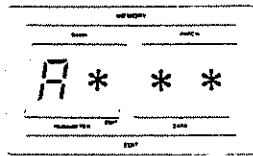
The Tune Switch ④ is provided to tune the GR-77B itself (=Master Tuning) and also to tune the Bass Guitar Controller easier.

The Master Tuning can be done within the range of A=438 to 445Hz in 1Hz step.

OPERATION

- ① Make sure that the GR-77B is in the Play mode and push the Tune Switch ④.
- ② Rotate the Edit Knob ⑨ on the Bass Guitar Controller to set the concert pitch.

The Display windows ① and ② will respond as shown below.



*** is a number from 438 to 445.

- ③ To tune the Bass Guitar Controller, play an open string and adjust the peg one by one.

* The pitch of the string vibration is purposely set an octave higher to make the tuning easier.

- ④ Tune to the concert pitch by adjusting the pegs of the Guitar Controller.

- ⑤ Set the Protect Switch ⑦ on the GR-77B to the OFF position and push the Write Switch ⑥.

* "Good" is shown in the Displays ① and ②, then the GR-77B is automatically returned to the Play mode.

- ⑥ Set the Protect Switch ⑦ to the ON position.

* To cancel the Master Tuning mode and return to the Play mode, simply push the Tune Switch ④.

b. Editing Trigger Level

Trigger level is the sensitivity for the synthesizer sound. That is, this determines the minimum picking level at which the synthesizer sound is output. "50" is preprogrammed for all the tone colors, but this can be changed within the range of 00 to 99. As the value is increased, the synthesizer sound is output by weaker picking, and at the lower value, stronger picking is needed to obtain the synthesizer sound. This Trigger level can be set individually in each tone color.

99

This setting is ideal for playing quick phrases, but playing mistake will be most conspicuously remarked.

50

This is the value preprogrammed by the manufacturer.

00

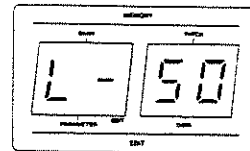
At this value, a stable pitch can be obtained when playing a slow phrase of long tones.

Setting the Trigger Level

OPERATION

- ① Make sure that the GR-77B is in the Play mode and push the "TRIGGER LEVEL" switch in the Edit Switches ⑥. (The indicator lights up.)

* The Displays ① and ② will respond with;



- ② Try rotating the Edit Knob on the Bass Guitar Controller, and the number in the Display will change in the range of 00 to 99.
- ③ While actually playing the bass guitar, adjust the Trigger level with the Edit Knob.

* To write the Trigger level you have set, take the writing operation explained in "5 Write Mode, a. Writing Operation" on page 24.

* To cancel the Trigger Level Setting mode and return to the Play mode, simply push the "TRIGGER LEVEL" Switch in the Edit Switches ⑥.

7. MIDI

Please read the separate book "MIDI" before getting into this section.

The GR-77B's MIDI has only transmitting function. Therefore, it has only a MIDI OUT Connector.

a. MIDI Transmit Messages

Refer to the Implementation Chart at the end of this manual or the "MIDI" on the supplied Edit Map.

b. Setting MIDI Transmit Messages

MIDI messages of the GR-77B can be edited just like other editing operation.

c. Operation

① Push the **MIDI** switch of the Edit Switches ⑩.

* The indicator flashes and the Displays ① and ② respond with;



"E 1" means that the GR-77B is in the MIDI Channel setting mode.

"0 1" represents Channel 1.

② To change to a different MIDI Channel, rotate the Edit Knob ⑨ on the Guitar Controller.

③ Find out the number of the MIDI message which you wish to edit, and press the appropriate Number Pedal ④.

④ By rotating the Edit Knob ⑨, set the value or On/Off of the message.

⑤ Repeat the steps ③ and ④ as many times as necessary.

⑥ Set the Protect Switch ⑦ on the GR-77B to the OFF position.

⑦ Push the Write Switch ⑧.

* "Good" is shown in the Display windows ① and ②, and the unit is returned to the Play mode.

⑧ Return the Protect Switch ⑦ to the ON position.

* If you wish to cancel the MIDI Message Setting mode during the steps ① to ⑥, simply push the **MIDI** of the Edit Switches ⑩. The unit will return to the Play mode.

MIDI MESSAGES OF THE GR-77B

MIDI		Pedal	EDIT MAP	Display ①	Display ②	Initial Settings
			MIDI CHANNEL	E1	01-16	01
1	CHANNEL		PROGRAM CHANGE	E2	ON	0
2	P. CHANGE		PITCH BEND	E3		
3	PITCH BEND		HOLD	E4	OFF	0
4	HOLD		MODULATION	E5		
5	MODULATION		VOLUME	E6	: Sending OMNI ON : Sending OMNI OFF	0
6	VOLUME		MODE	E7		
7	MODE		TRANSPOSE	E8	: Octave Up : Normal	0

Edit Map

EDIT MAP

DCO-1		DCO-2		DCO MOD/MIXER		VCF		VCA/CHORUS		LFO		ENVELOPE-1		ENVELOPE-2		MIDI	
11	RANGE	21	RANGE	31	DYNAMICS	41	HPF	51	LEVEL	61	WAVEFORM	71	ATTACK	81	ATTACK	1	CHANNEL
12	WAVEFORM	22	WAVEFORM	32	ENV MOD	42	FREQUENCY	52	ENV MOD	62	DELAY	72	DECAY	82	DECAY	2	P. CHANGE
13	TUNE	23	CROSS MOD			43	RESONANCE	53	DYNAMICS	63	RATE	73	SUSTAIN	83	SUSTAIN	3	PITCH BEND
14	LFO	24	TUNE	34	DCO-1	44	LFO	54	CHORUS			74	RELEASE	84	RELEASE	4	HOLD
15	ENVELOPE	25	FINE TUNE	35	DCO-2	45	ENVELOPE					75	KEY FOLLOW	85	KEY FOLLOW	5	MODULATION
		26	LFO	36	ENVELOPE	46	KEY FOLLOW									6	VOLUME
		27	ENVELOPE	37	DYNAMICS	47	DYNAMICS									7	MODE
				38	ENV MOD	48	ENV MOD										

Program Change Numbers to Bank and Patch Numbers of the GR-77B

GR-77B Program Number Table

Memory	Bank	Patch Number							
		1	2	3	4	5	6	7	8
INT	1	0	1	2	3	4	5	6	7
	2	8	9	10	11	12	13	14	15
	3	16	17	18	19	20	21	22	23
	4	24	25	26	27	28	29	30	31
	5	32	33	34	35	36	37	38	39
	6	40	41	42	43	44	45	46	47
	7	48	49	50	51	52	53	54	55
	8	56	57	58	59	60	61	62	63
CART.	1	64	65	66	67	68	69	70	71
	2	72	73	74	75	76	77	78	79
	3	80	81	82	83	84	85	86	87
	4	88	89	90	91	92	93	94	95

8. Error Indication

1.

Er r -

This is indicated when you have tried to write a tone color into any of the Banks 5 to 8.

↓

Select the Bank 1, 2, 3 or 4.

2.

CE r r

The Memory Cartridge is not properly connected.

↓

Check if the Cartridge is securely and properly connected, then select the Cartridge mode.

3.

FE r r

The Memory Cartridge used is not ready to be used with the GR-77B. (See page 27.)

↓

Set the Protect Switch on the Cartridge to the OFF position, select the Cartridge mode, then return the Protect Switch to ON.

4.

Pr ot

In the Write mode, the relevant Protect Switch (either of the GR-77B or the Memory Cartridge which is to be rewritten) is set to the ON position.

↓

Set the switch to the OFF position.

9. Adjusting Output Level

The output level of the G-series Bass Guitar Controller is set to a kind of average. This, however, may not suit your guitar technique. If you find it difficult to play the guitar, readjust the level.

The GR-77B is compatible with any G-series Bass Guitar Controller, but the G-77 is the best match of all. When using other G-series bass guitar, or when changing the gauge of the strings, you may have to readjust the output level of the guitar. The level adjustment

can be done by using the small knobs located on the back of the guitar's body. The location of the knobs, however, differs depending on the guitar, so first do as shown in the Fig 1 or 2, then go to the "Adjusting Operation".

When using the G-33 or G-88

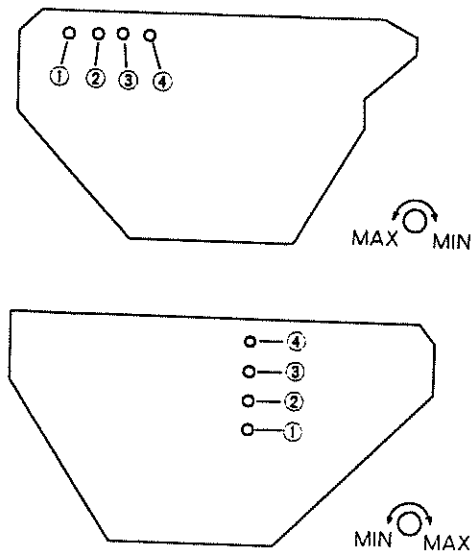
Loosen the screws on the back of the guitar by using a cross-head driver, then remove the back panel. Place the guitar with its neck at the left side, and with the back side facing upward. As shown in the Fig 1, your guitar should look like either of them. Also check the MAX and MIN of the small adjusting knobs on your guitar.

* Please gently loosen or tighten the screws.

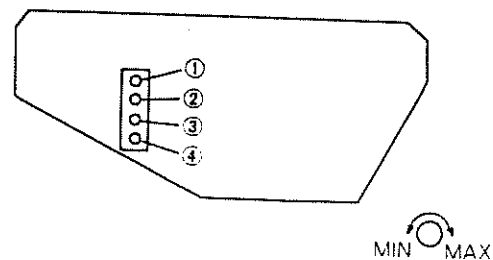
When using the G-77

By using a driver, remove the square cap which is attached to the back panel of the guitar. You do not have to remove the back panel from the guitar.

«Fig 1»



«Fig 2»



How to adjust the level

- ① Push the Tune Switch ⑩ of the Panel Switches.

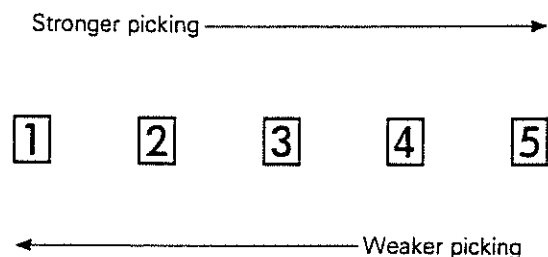
The indicator of the Tune Switch will flash.

- ② Depress the Number Pedal ②.

The Display windows ③ and ④ will show "PU-L".

- * Playing a string here will cause the GR-77B to generate testing tone for adjusting the output level. You may check the guitar sound and this testing tone of each string.

The Test tone varies as shown below depending on how hard you pick the string.



- ① Test tone is one octave higher than that of the open string.
- ② Test tone is the 3rd higher than that of ①
- ③ Test tone is the 5th higher than that of ①
- ④ Test tone is an octave higher than that of ①
- ⑤ Test tone vibrates.

- ③ Press the 5th fret of the guitar, and as you play each string in fortissimo (the strongest picking manner), adjust the output level as follows.

- * When the Test tone stays between the condition ④ and ⑤, the string does not need tuning. If it changes from ① to ④ or remains ⑤, take the following tuning operation.

- ④ When the Test tone changes from ① to ④:
→ Toward MAX.

- When the Test tone remains the ⑤ condition:
→ Toward MIN.

Then as you play the string at the 5th fret in fortissimo, rotate the knob little by little toward the MAX or MIN position (depending on the condition as shown above) until the Test tone moves from the ④ to ⑤ condition.

● GR-77B Preset Sounds

Patch BANK	1	2	3	4	5	6	7	8
1	1-1 32' Ow Synth Bass	1-2 Hollow Detune	1-3 16' Sync I	1-4 32' Poly Synth Bass I	1-5 Piano Bass	1-6 16' Sync II	1-7 Low Brass	1-8 Bass Pedals V
2	2-1 E. Piano Bass I	2-2 32' E. Bass II	2-3 Bassline I	2-4 Organ Bass W / Perc	2-5 Detune Pad Bass	2-6 Synth Bells	2-7 Ow Synth Bass IV	2-8 Big Pad Bass
3	3-1 Voices	3-2 High Strings	3-3 Bassline II	3-4 16' Sync III	3-5 Banjo	3-6 16' Sync IV	3-7 16' Bass Guitar III	3-8 32' / 8' Bass I
4	4-1 32' / 8' Bass II	4-2 Detuner Bass	4-3 Slap and E. Drum	4-4 Slap and Brass Hit	4-5 Steel Drums	4-6 Slap Percussion	4-7 Playing at the Beach	4-8 Bass Pedals VI
5	5-1 32' / 16' Synth Bass I	5-2 Warm Detune I	5-3 Ow Synth Bass I	5-4 Poly Synth Bass I	5-5 Poly Synth Bass II	5-6 32' / 16' Synth Bass II	5-7 32' Sync I	5-8 Bass Pedals I
6	6-1 SG & Horn	6-2 Organ Bass Pedals	6-3 Organ	6-4 Pipe Organ Pedals	6-5 Guitar 16'	6-6 SG & Horn	6-7 Tuba	6-8 Bass Pedals II
7	7-1 32' / 16' Synth Bass III	7-2 32' Bass Guitar I	7-3 Ow Synth Bass II	7-4 G. Bass Guitar I	7-5 Upright Bass	7-6 32' Sequence Bass I	7-7 Ow Synth Bass III	7-8 Bass Pedals III
8	8-1 E. Bass Detune	8-2 E. Bass	8-3 Warm Detune II	8-4 W.M. Bass	8-5 32' Sequence Bass II	8-6 E. Drum Bass	8-7 32' Bass Guitar II	8-8 Bass Pedals IV

Internal Memory, Cartridge Memory

Preset Sounds

■ The tone colors with "*" mark should be mixed with the bass guitar's normal sound.

● Sample Note

Patch Bank	1	2	3	4	5	6	7	8
1								
2								
3								
4								

Patch Bank	1	2	3	4	5	6	7	8
1								
2								
3								
4								

5 SPECIFICATIONS

GR-77B

4 Voice Programmable Bass Guitar Synthesizer

Memory Capacity

64 patches (Battery Back-up)
{ 32 patches (ROM)
{ 32 patches (RAM)

External Memory

Memory Cartridge (M-16C)

Edit

44 parameters (for tone color)
8 parameters (for MIDI)

* Both can be done by Guitar Controller

◀Front Panel▶

Pedal Switches

Number (1 to 8)
Bank
Cartridge
Hold

Panel Switches

Pitch Bend (Up, Down)
Edit (MIDI, Parameter, Trig Level)
String Mode (Voice, Hold)
String Selector (1 to 4)
Tune
Hold Pedal (Latch, Unlatch)
Memory Write
Copy (CART▶MEMORY, MEMORY▶CART)

Display Windows

Memory : Bank Number
Patch Number
Edit : Parameter Number
(MIDI) Parameter Data
Tune
Trigger Level
(4 figures, 7 segment)

◀Rear Panel▶

Connectors

Output Connectors : 2
(XLR Connector/600Ω)
Output Jacks : 2
(Stereo/Mono)
(Standard phone jack/5kΩ)
Guitar Output Jack : 1
(Standard phone jack/1kΩ)
VCF Pedal Jack : 1
(FV-200)
Pitch Pedal Jack : 1
(FV-200)
MIDI OUT Connector : 1
(5P DIN)
Programmer In Connector : 1
(6P DIN)
Guitar Input Connector : 1
(C-24G STD)
Memory Cartridge Holder : 1
(For M-16C)
AC Inlet

Controls and Switches

Output Level Switch
(H: 0dB, M: -15dB, L: -30dB)
Memory Protect Switch
Power Switch

Consumption 27W

Dimensions 690(W) × 375(D) × 155(H) mm
27-3/16"(W) × 14-3/4"(D) × 6-1/8"(H)

Weight 12kg / 26 lb 8 oz

Accessories

Connection Cord (LP-25) : 2
Connection Cable (C-24G) : 1
AC Cord : 1
Memory Cartridge (M-16C) : 1
Edit Map : 1

OPTIONS

Programmer	PG-800
Foot Volume	FV-200
Memory Cartridge	M-16C
Carrying Case	AB-700

Bass Guitar Synthesizer

MODEL **GR-77B** MIDI Implementation

GR-77B MIDI IMPLEMENTATION

Ver 1.0

Sep. 9 1985

*** GR-77B MIDI IMPLEMENTATION ***
Version 1.0
Sep. 9 1985

1. TRANSMITTED DATA

Status	Second	Third	Description
1001 nnnn	0kkk kkkk	0000 0000	note OFF kkkkkkk = 21 - 71 *3
1001 nnnn	0kkk kkkk	0vvv vvvv	Note ON kkkkkkk = 21 - 71 *3 vvvvvvv = 1 - 127
1011 nnnn	0000 0001	0vvv vvvv	Modulation vvvvvvv = 0 - 127 *1
1011 nnnn	0000 0111	0vvv vvvv	Volume vvvvvvv = 0 - 127 *1
1011 nnnn	0100 0000	0111 1111	Hold ON *1
1011 nnnn	0100 0000	0000 0000	Hold OFF *1
1100 nnnn	0ppp pppp		Program Change *1, *2 ppppppp = 0 - 95
1110 nnnn	0000 0000	0vvv vvvv	Pitch Bender Change *1 vvvvvvv = 0 - 127
1011 nnnn	0111 1011	0000 0000	ALL NOTES OFF
1011 nnnn	0111 1100	0000 0000	OMNI OFF
1011 nnnn	0111 1101	0000 0000	OMNI ON
1011 nnnn	0111 1111	0000 0000	POLY ON

Notes :

*1 Transmitted if corresponding function switch is ON

*2 0 - 31 : Internal Memory
32 - 63 : Preset
64 - 95 : Memory Cartridge

*3 String #1 on 21 fret (note E) = 54
String #4 on 0 fret (note E) = 28

MODEL

GR-77B MIDI Implementation Chart

Function.....		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1 - 16 1 - 16		memorized
Mode	Default Messages Altered	3 OMNI ON/OFF, POLY ON *****		
Note Number	True voice	21 - 71 *****		
Velocity	Note ON Note OFF	○ 9n, v=1-127 × 9n, v=0		
After Touch	Key's Ch's	× ×		
Pitch Bender		× (default x)		
Control Change	1 7 64	* * *		Modulation Volume Hold
Prog Change	True =	* 0 - 95 *****		
System Exclusive		×		
System Common	Song Pos Song Sel Tune	× × ×		
System Real Time	Clock Commands	× ×		
Aux Messages	Local ON OFF All Notes OFF Active Sense Reset	× : 123-125, 127 × .		
Notes		* Can be set and memorized to "on" or "off" manually in MIDI EDIT mode. ** When power up OMNI OFF POLY ON are sent in default channel		

Mode 1 : OMNI ON POLY
Mode 3 : OMNI OFF POLY

Mode 2 : OMNI ON MONO
Mode 4 : OMNI OFF MONO

: Yes
: No

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