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Thank you for selecting *the ZOOM Player Pro 4040* (hereafter simply called the “4040”).

The 4040 is a sophisticated multi-effect device with the following features and functions:

- **A total of 25 built-in individual effects, which can be combined in patches of up to six effects. 40 preset patches and a user memory for 40 additional patches offer extraordinary flexibility.**
- **Integrated volume and expression pedals allow adjustment of output level and effect settings in real time. This is ideal for use during a live performance.**
- **Integrated auto-chromatic guitar tuning function lets you quickly and precisely tune instruments on stage.**
- **Compression and distortion effects are generated using analog circuitry, to assure rich and natural-sounding sustain and distortion.**
- **Send/return Jacks allow connection of external effect devices, and a control out lets you switch guitar amp channels. You can even program the use of these connectors as part of a patch, to create sophisticated sound effects.**
- **MIDI OUT for control of external MIDI devices makes the 4040 convenient as a system control center.**
- **By using the optional foot switch FS01, single effect on/off switching during a performance is possible, for further enhanced playability.**

Please take the time to read this manual carefully, in order to get the most out of your 4040 and to ensure optimum performance and reliability.

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## Safety Precautions

Please observe the following safety tips and precautions to ensure hazard-free use of the 4040.

### • Power requirements

The 4040 is powered by the supplied AC adapter AD0003/AD0004. To prevent malfunction and safety hazards, Do not use any other kind of AC adapter.

When using the 4040 in an area with a different line voltage, please consult your local ZOOM distributor about acquiring a proper AC adapter.

### • Environment

Avoid using your 4040 in environments where it will be exposed to:

- **Extreme temperature**
- **High humidity or moisture**
- **Excessive dust or sand**
- **Excessive vibration or shock**

### • Handling

Since the 4040 is a precision electronic device, avoid applying excessive force to the switches and buttons. Also take care not to drop the unit, and do not subject it to shock or excessive pressure.

### • Alterations

Never open the case of the 4040 or attempt to modify the product in any way since this can result in damage to the unit.

### • Connecting cables and input and output jacks

You should always turn off the power to the 4040 and all other equipment before connecting or disconnecting any cables. Also make sure to disconnect all cables and the AC adapter before moving the 4040.

## Usage Precautions

### • Electrical interference

The 4040 uses digital circuitry that may cause interference and noise if placed too close to other electrical equipment, such as TV sets and radio receivers. If such problems occur, move the 4040 further away from the affected equipment. Also, when fluorescent lights or devices with built-in motors are close to the 4040, the unit may not function properly.

### • Cleaning

Use a soft, dry cloth to clean the 4040. If necessary, slightly moisten the cloth. Do not use abrasive cleanser, wax, or solvents (such as paint thinner or cleaning alcohol), since these may dull the finish or damage the surface.

Please keep this manual in a convenient place for future reference.

# Getting Familiar With Some Basic Terms

This manual has been written so that it can be easily understood by first-time users. However, the 4040 offers several special functions which are not available with a conventional effect processor. This section explains some of the terms used to describe such functions.

## • Effect Module

The 4040 incorporates five types of effect groups which are referred to as “effect modules”. Each effect module can be thought of as a single compact effect. The 4040 therefore operates like five compact effects connected in series. In addition, it is also possible to connect external effect devices.

The 4040 offers the following five effect modules:

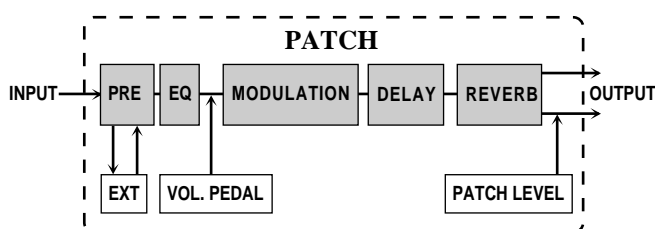
- **PRE (Analog compressor and distortion effects)**
- **EQ (Equalizer and wah effects, amp simulation)**
- **MODULATION (Modulation effects for changing pitch or sound timbre, such as pedal pitch and flanger)**
- **DELAY (Delay effects)**
- **REVERB (Reverberation effects)**

## • Effect Type

Each effect module contains several effect variations which are called “effect types”. Each effect module can use one effect type at a time. For a list of effect types in each effect module, please see the table on page 10.

## • Patches and Groups

The 4040 allows you to use a maximum of five effect modules simultaneously. A combination of effect modules, each with individual parameter settings plus the final output level setting is referred to as a “patch”. The patch also includes the external effect on/off setting, external control setting, and expression pedal setting.



The 4040 has two memory areas or “groups” where patches are stored: the USER group for patches that can be freely altered and stored by the user, and the PRESET group for factory defined read-only patches. There are 40 patches in each group, for a total of 80 patches.

## • Bank

The 4040 calls up patches in sets of four, and the foot pedals

serve to switch between patches. Such a set of four patches is referred to as a “bank”. To select a patch, first specify the group and the bank number (0 – 9), and then use the foot pedal switches 1 – 4 to select the patch number.

GROUP	BANK No.	PATCH No.
USER	0	1 – 4
	1	1 – 4
	2	1 – 4
	⋮	⋮
	9	1 – 4
PRESET	0	1 – 4
	1	1 – 4
	2	1 – 4
	⋮	⋮
	9	1 – 4

## • Parameter

The elements which determine the sound of an effect are referred to as “parameters”. Parameter values can be adjusted for each effect module, to create your own patches with the 4040.

## • Mode

The functions of the 4040 can be roughly divided into three different categories. These are called “modes”, as described below.

### • Play Mode

In this mode, patches can be selected and played. This is the default mode of the 4040 when power is turned on.

### • Edit (Manual) Mode

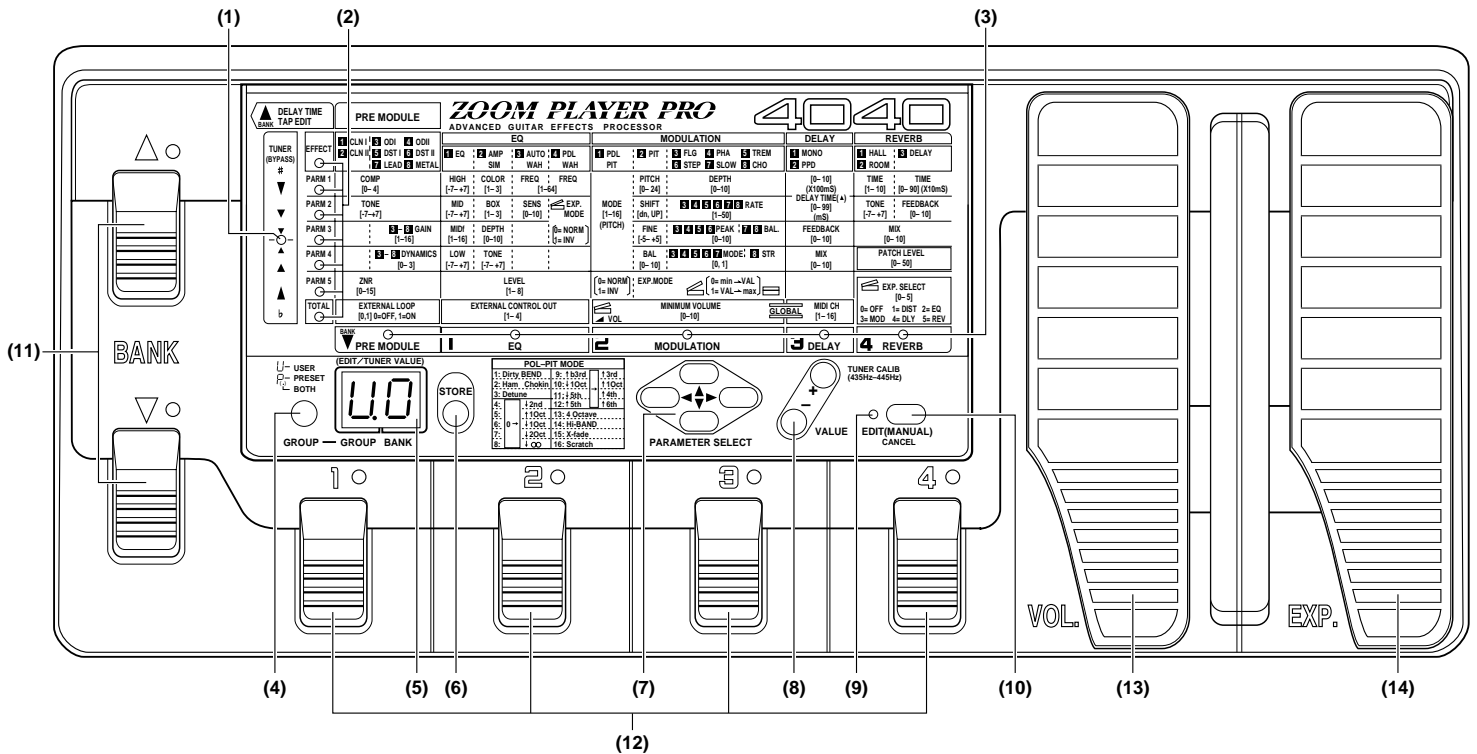
In this mode, the parameters of each patch can be edited. The mode can also serve as a manual mode to switch effect modules on and off during a performance using the pedal switches 1 – 4 and the BANK ▼ pedal.

### • Special Mode

Serves to return some or all patch data to the factory preset condition.

# Names and Functions of Controls and Connectors

## Front Panel



### (1) Tuner LED

Indicates the bypass/tuner condition.

### (2) Parameter cursor LED

#### • In Edit mode

Flashing LED indicates the currently edited parameter.

#### • In bypass/tuner mode

Serves as a fine tuning meter.

### (3) Module cursor LED

#### • In Play mode

Lit LED indicates which effect module in the current patch is ON.

#### • In Edit mode

Lit LED indicates which effect module in the currently edited patch is ON, and flashing LED indicates the currently edited effect module.

### (4) GROUP key

#### • In Play mode

Serves to select the memory group for the patch :USER, PRESET, or BOTH.

#### • In Edit mode

Serves to compare the currently edited patch with the patch before editing (compare function). For details, please refer to page 12.

### (5) Display

The display shows vital information for operating the 4040, such as group and bank numbers of a patch, effect parameter values and other messages.

### (6) STORE key

Serves to store an edited patch with its new parameter and level settings in the user group.

### (7) PARAMETER SELECT keys

Serve to select the parameter to be edited in Edit mode.

### (8) VALUE +/- keys

These keys serve to change the value of a setting in any mode. Tapping the VALUE + key increases the value by one step, and tapping the VALUE - key decreases the value by one step. Keeping a key depressed changes the value continuously. To increase the speed of the change, press the other key as well.

### (9) Edit mode LED

This LED lights up when the 4040 is in the Edit (Manual) mode.

### (10) EDIT (MANUAL) / CANCEL key

Pressing this key switches from Play mode to Edit mode.

The Edit mode can also be used as Manual mode to switch effect modules on and off with the pedal switches 1 – 4 and the BANK ▼ pedal. The key also serves to return from the Edit mode to the Play mode, and to cancel a store process.

#### (11) BANK ▲/▼ pedal switches

##### • In Play mode

The ▲ pedal selects the next higher bank, and the ▼ pedal the next lower bank.

##### • In Edit (Manual) mode

The ▲ pedal serves to set the delay time of the effect module. Each tap of the pedal changes the setting by one step. The ▼ pedal serves to switch PRE for the effect module on and off. The pedal LED lights up when PRE is on.

#### (12) Pedal switches 1 - 4

##### • In Play mode

The pedals serve to select a patch. The respective pedal LED lights up.

##### • In Edit (Manual) mode

The pedals serve to switch the effect modules EQ, MODULATION, DELAY, REVERB on and off. The respective pedal LED lights up.

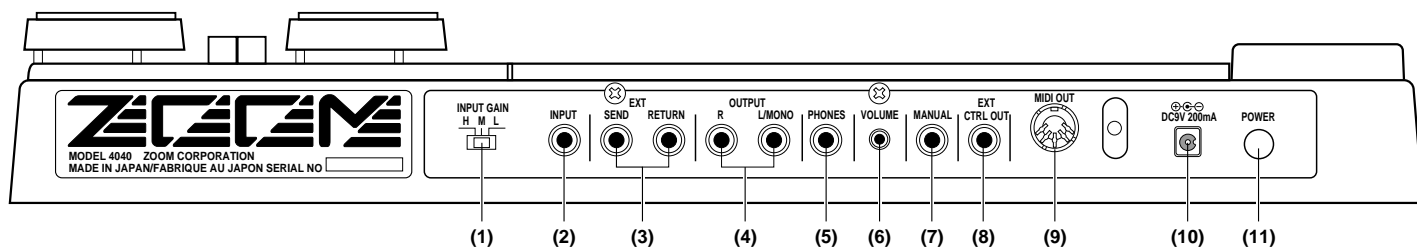
#### (13) VOL (Volume) pedal

Serves to manually control the overall level of a patch.

#### (14) EXP (Expression) pedal

Serves to control any selected effect parameter in real time.

## Rear Panel



#### (1) INPUT GAIN SWITCH

This switch controls the input sensitivity. Select the position most suited to the connected instrument. For reference, standard settings are shown below.

**H:** For guitars with single-coil pickups

**M:** For guitars with hum-bucking or active type pickups

**L:** For guitars with very high output

#### (2) INPUT jack

Serves for connection of an instrument such as electric guitar or bass.

#### (3) EXTERNAL SEND/RETURN connectors

Serve for connection of an external effect device. The send/return loop is inserted in series between the compressor and distortion sections in the PRE module. The ON/OFF setting of the send/return loop can be stored as part of a patch.

#### (4) OUTPUT L/MONO & R connectors

Serves for connection to a guitar amplifier. To use the 4040 in stereo, connect cables to both jacks. For a monaural setup, connect the cable to the L/MONO jack.

#### (5) PHONES jack

Allows connection of a pair of stereo headphones, to monitor the output of the 4040.

#### (6) VOLUME control

Adjusts the master volume (overall output level of the 4040). The control affects both the signal at the OUTPUT connectors and the PHONES jack.

#### (7) MANUAL connector

This jack serves for connection of the optional foot switch FS01 which can be used to switch between Play mode and Manual mode.

#### (8) EXTERNAL CONTROL OUT connector

This jack can be used to control channel switching of an external guitar amplifier.

This setting can be stored as part of a patch.

#### (9) MIDI OUT connector

Serves for connection of a device with MIDI input, such as another effect or a synthesizer. The setting can be stored as part of a patch.

#### (10) DC INPUT (AC adapter) jack

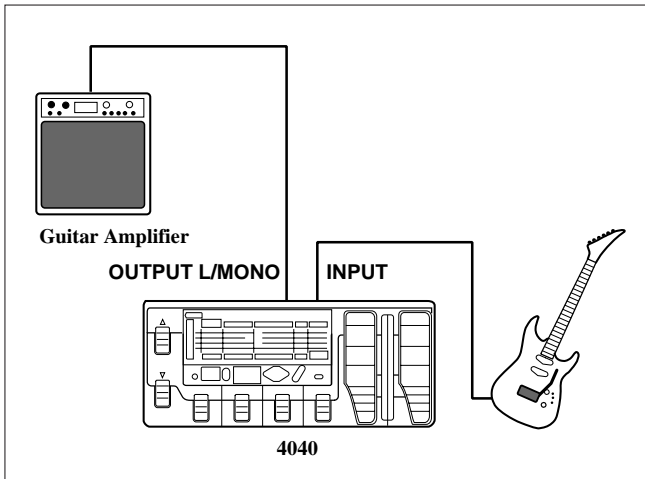
The supplied AC adapter is connected here.

#### (11) POWER switch

Serves to turn the 4040 on and off.

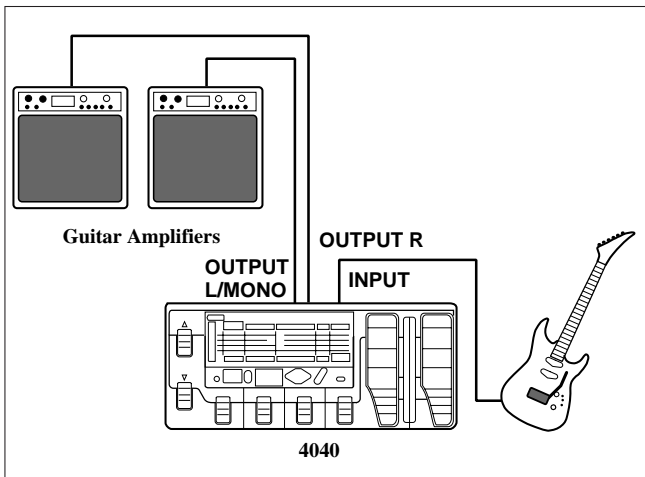
# Connection Examples

## Connection to one guitar amplifier (Example 1)



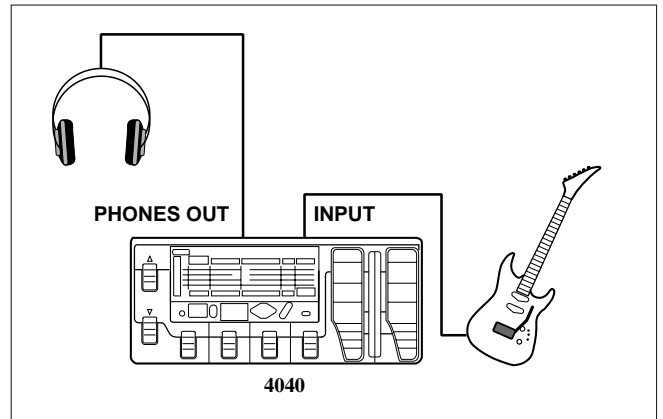
To use the 4040 with one guitar amplifier, connect the output of the musical instrument to the INPUT jack of the 4040, and the OUTPUT L/MONO jack of the 4040 to the amplifier. With this connection, stereo effects such as reverb and ping-pong delay are output in mono.

## Connection to two guitar amplifiers (Example 2)



To use the 4040 with two guitar amplifiers, connect the OUTPUT L/R jacks of the 4040 to the amplifiers. A well balanced stereo sound can be obtained when the stereo effects are activated.

## Connection to Headphone (Example 3)



This setup is suitable for example to practice individually without disturbing others.

# Playing a Patch (Use of the Play Mode)

In the Play mode, a patch is selected and played. This section describes the basic operation steps for selecting patches.

- Turn off the amplifier and set the volume control to minimum. Then connect the 4040 to the instrument and amplifier.
- Turn on the 4040 and then the amplifier. Adjust the volume to a suitable position while playing the instrument.

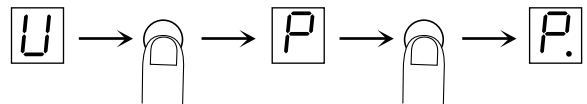
## Selecting a patch

- Select the desired group with the GROUP key.

In the 4040, patches are divided into the USER group for patches which can be created and altered freely and stored by the user, and the PRESET group for factory defined patches where only the output level can be changed, but not stored. Choose the group from which you want to select a patch.

With each push of the GROUP key, the group setting cycles through the following three settings which are shown on the display.

- **U (USER)** USER group only
- **P (PRESET)** PRESET group only
- **U. or P. (BOTH)** USER group and PRESET group



## Panel display in Play mode

When the 4040 is turned on, it goes into Play mode automatically. In the Play mode, the following information is shown on the display.

### (1) Group

The currently selected group is shown in the GROUP field.

### (2) Bank number

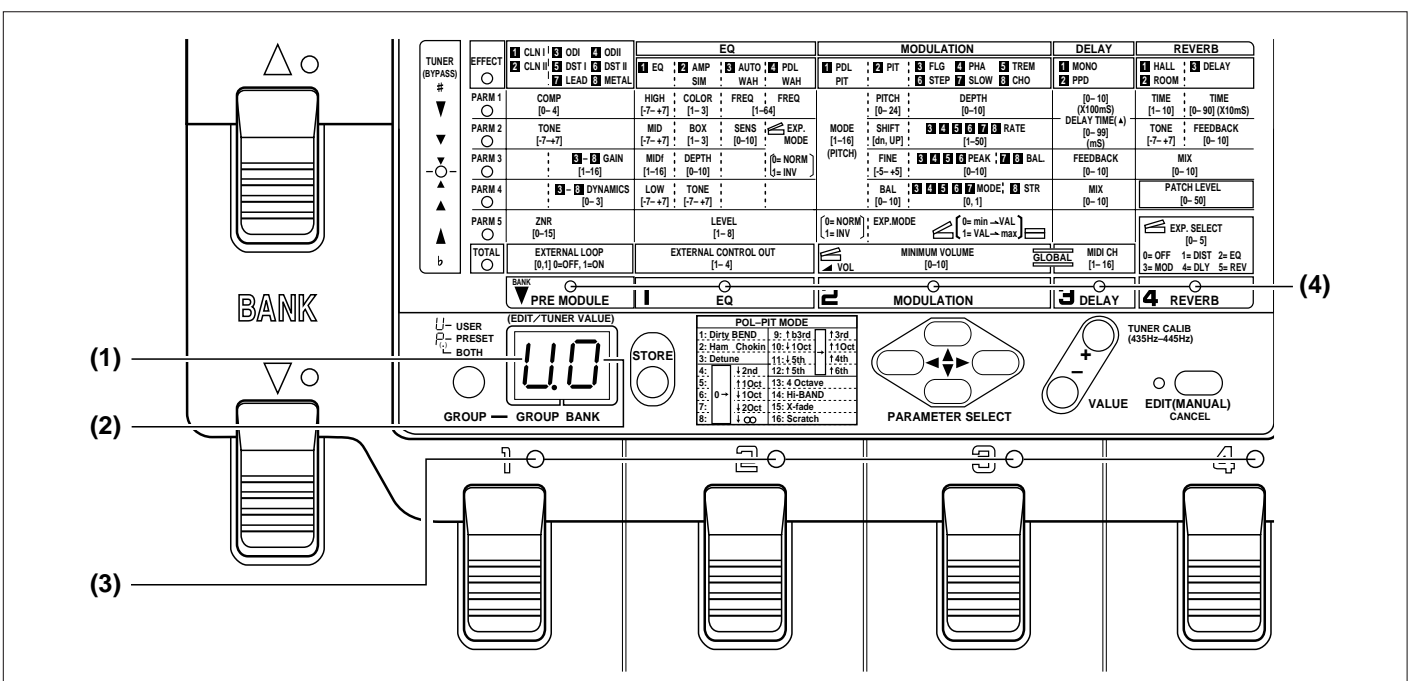
The currently selected bank number is shown in the BANK field.

### (3) Patch number

The currently selected patch number is indicated by the pedal LED (1 - 4).

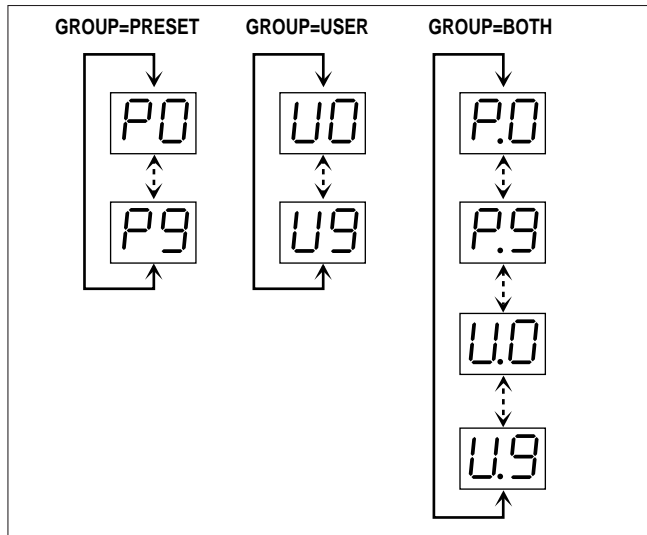
### (4) Effect module on/off

The effect module on/off condition in the patch is indicated by the module cursor LED.



- Select the bank with the BANK ▲/▼ pedals.

A bank is a group of four patches. There are ten banks each (numbered 0 through 9) for the USER group and the PRESET group. The BANK ▲ pedal selects the next higher bank, and the BANK ▼ pedal the next lower bank. (The bank number display flashes.)



**NOTE** Merely pressing one of the BANK pedals does not yet change the patch. To activate the patch and change the sound, press one of the pedal switches 1 - 4, as described below.

- Select the patch by pressing one of the pedal switches 1 - 4.

The LED of that pedal lights up, showing that the patch has been selected. (The BANK number is now constantly lit.)

Now would be a good time to try out some of the various patches offered by the 4040 while playing your instrument.

## Useful functions in the Play mode

Some other useful functions available in Play mode are described below.

### ■ Adjusting the patch level

The final output level of the patch — called the patch level — is also stored as a parameter along with the other parameters of the patch. In the Play mode, the patch level can be adjusted.

- Press the VALUE + / - keys in the Play mode.

When one of the VALUE + / - keys is pressed, the current patch level setting is shown on the display as a numeric value (0 - 50). Pressing VALUE + increases the value and pressing VALUE - decreases it. To change values continuously, hold down the key. To change values more rapidly, press the other key as well.

**NOTE** The patch level setting change made in this way is only temporary. If you select a different patch without storing the new level setting first, the setting will be lost. (For details on how to store settings, please refer to page 12.)

*In the Play mode, the patch level can be adjusted also for patches from the PRESET group, but the new level setting cannot be stored. When wishing to store the level, select a patch from the USER group.*

### ■ Bypassing the effects

You can temporarily turn off all effects in a patch. This is useful for example to check the sonic character of a patch. The bypass mode is also used for the chromatic tuning function.

- In the Play mode, press the pedal switch 1 - 4 whose LED is lit (i.e. the pedal switch that was used to choose the current patch).

All effects in the patch are now bypassed and the original instrument sound is heard. In the bypass condition, the LED of the selected patch flashes and the tuner LED lights up.

- Press the pedal switch once more to turn the patch on again. Normal Play mode can also be restored by selecting a different patch.

### ■ Tuning a guitar

The 4040 incorporates an automatic guitar tuning function. When the 4040 is set to the bypass mode, the tuning function is automatically enabled.

- In the Play mode, press the pedal switch 1 - 4 whose LED is lit. This activates the bypass mode and the tuner LED lights up.

- **Pick an open string on the guitar.**

The display shows the note which is closest to the current pitch. Tune the guitar to the desired pitch.

C = $\square$	F = $\square$	A = $\square$
C# = $\square^\circ$	F# = $\square^\circ$	A# = $\square^\circ$
D = $\square$	G = $\square$	B = $\square$
D# = $\square^\circ$	G# = $\square^\circ$	
E = $\square$		

- **While the reference frequency is shown, use the VALUE + / - keys to adjust the frequency.**

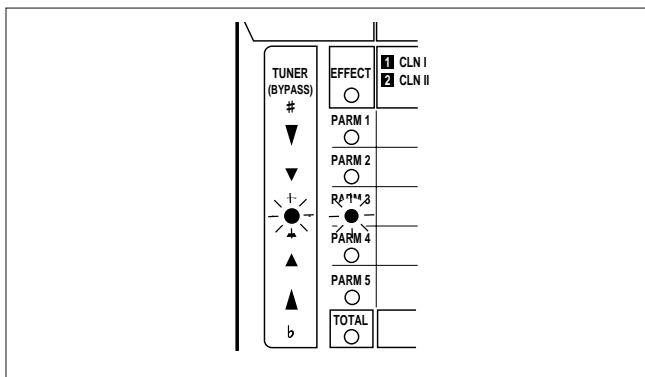
The adjustment range is 35 (435 Hz) to 45 (445 Hz).

435Hz : 35
440Hz : 40
445Hz : 45


 **NOTE** The default reference frequency setting that is established when the 4040 is turned on is 440 Hz.

- **When the display shows the desired note, perform fine tuning.**

While the tuner function is being used, the parameter cursor LEDs serve as a fine tuning meter. When the pitch is correct, the PARM3 LED lights. If the pitch is too high, the PARM1 LED lights, and if it is too low, the PARM5 LED lights. Watch the LEDs while fine tuning your instrument.



- **Press the pedal switch once more or select a different patch to revert to normal Play mode.**

 **NOTE** For tuning an electric bass, use octave harmonics (lightly touch and release a string above the 12th fret).

## ■ Tuner calibration

The reference frequency of the integrated guitar tuner can be fine adjusted for the reference note A.

- **In the Play mode, press the pedal switch 1 - 4 whose LED is lit once more. This activates the bypass mode and the tuner LED lights up.**
- **Press one of the VALUE + / - keys.**  
The current reference frequency is shown for a brief duration on the display.

# Editing a Patch (Use of the Edit Mode)

This section describes the basic operation steps for editing patches.

As shown below, a patch of the 4040 contains parameters for the five types of effect modules, the patch level, VOL pedal and EXP pedal settings, as well as the external effect and external amplifier control settings. In the Edit mode, you can call up any of these parameters and change it.

## Entering the Edit mode

- Select the desired patch in the Play mode (from the USER group or the PRESET group) and press the EDIT/CANCEL key.

The 4040 is now in the Edit mode, and the Edit mode LED lights up.

- Pressing the EDIT/CANCEL key once more returns the 4040 to the Play mode.

## Panel display in Edit mode

In the Edit mode, the following information is shown on the display panel.

### (1) Effect module on/off

The LEDs of pedals for effect modules which are on (pedal switches 1 – 4 and BANK ▼ pedal) are lit.



The pedal switches 1 - 4 and the BANK ▼ pedal correspond to the following effect modules:

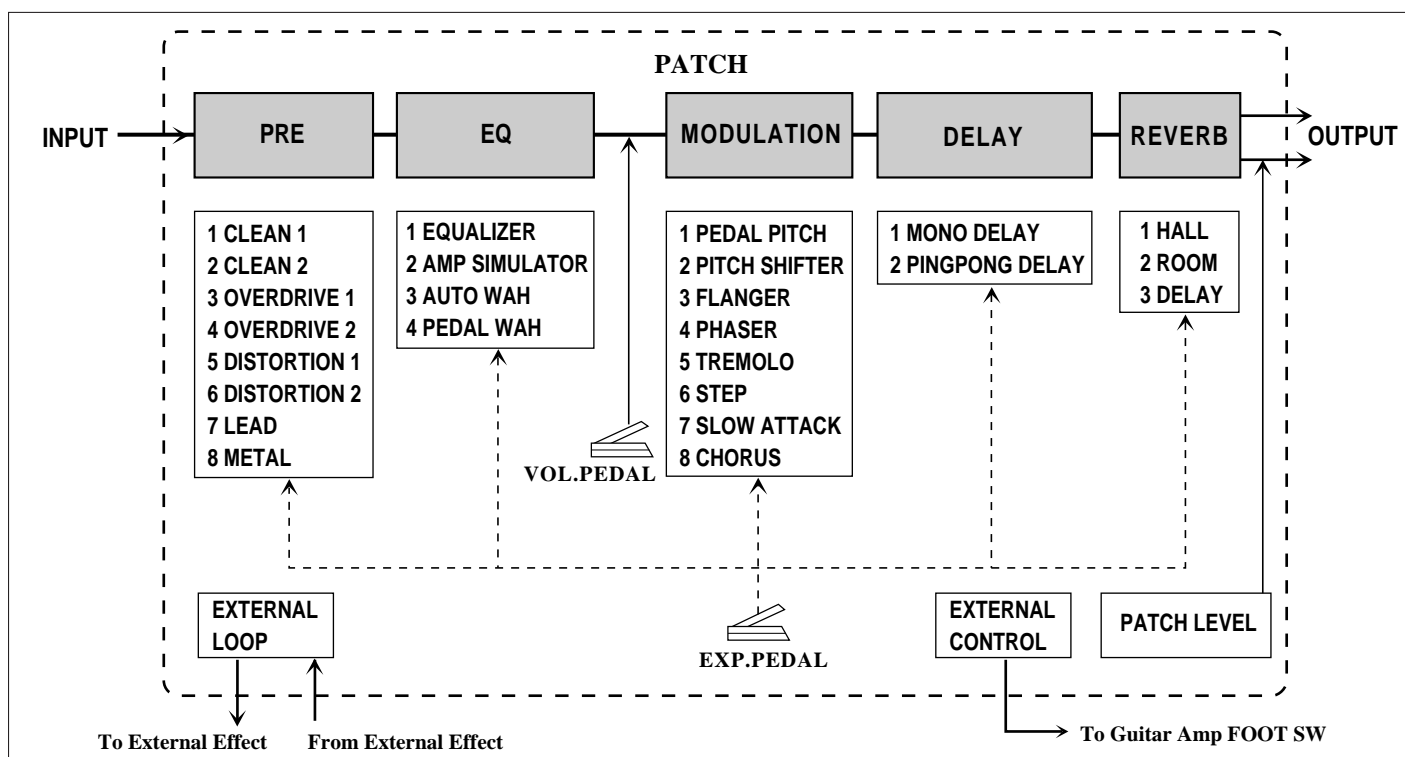
• BANK ▼ pedal:	PRE
• Pedal switch 1:	EQ
• Pedal switch 2:	MODULATION
• Pedal switch 3:	DELAY
• Pedal switch 4:	REVERB

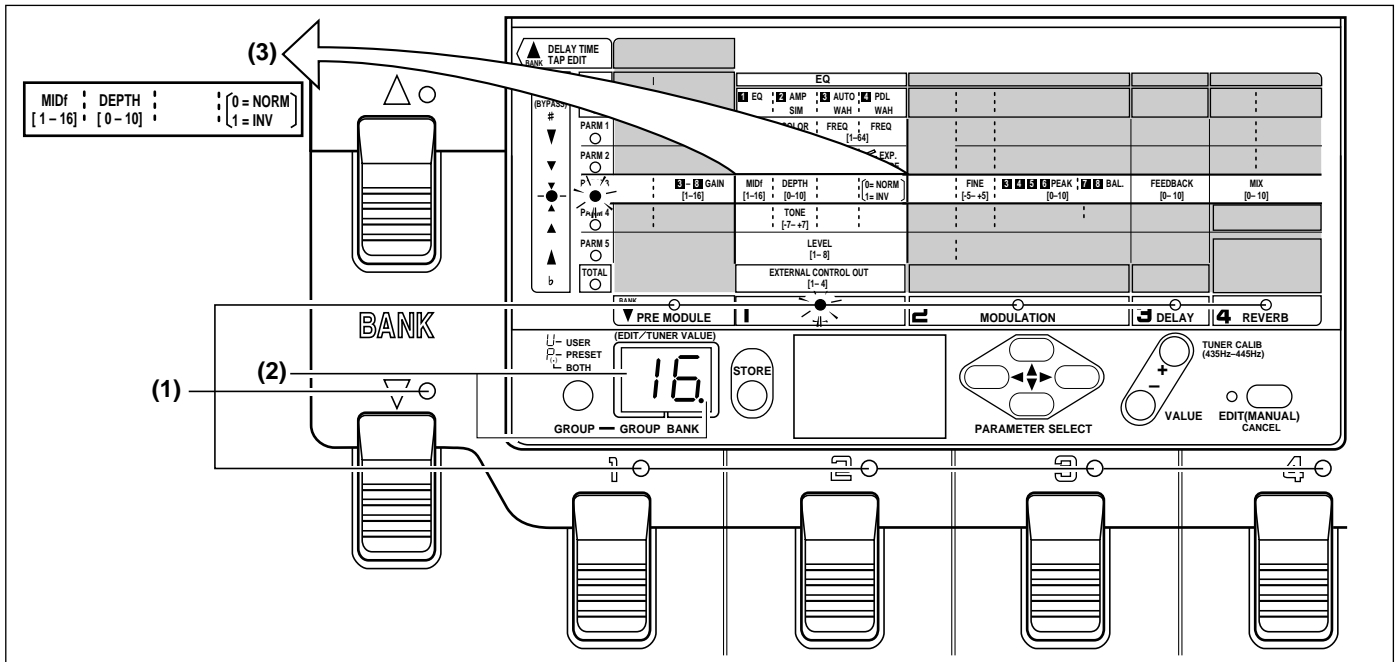
### (2) Parameter value

The value of the parameter currently selected for editing is shown on the display.

### (3) Parameter type

The type of the parameter currently selected for editing is indicated by the flashing module cursor LED and parameter cursor LED.





4040.

## Editing a patch

- In the Edit mode, use the PARAMETER SELECT keys to select the desired parameter.

The PARAMETER SELECT ◀/▶ keys control the module cursor LEDs. The PARAMETER SELECT ▲/▼ keys control the parameter cursor LEDs.

The display indication changes accordingly.



The topmost LED corresponds to the EFFECT parameter which changes the effect type. When the effect type is changed, the setting of parameters 1 - 5 also changes. Therefore it is best to first select the effect type and then work on the other parameters when creating an effect from scratch.

The bottom LED corresponds to a number of special parameters called TOTAL parameters. These LEDs refer to the control of an external effect or amplifier, and to settings which affect operation of the entire

- Use the VALUE +/- keys to change the parameter value. The value of the currently selected parameter is changed.



For details on the parameters of each effect module, please refer to "Effect Types and Parameters" on pages 13 - 22.

- Change other parameters in the same way.



Parameter setting changes made in this way are only temporary. If you return to the Play mode or select a different patch without storing the new settings first, the settings will be lost. For details on how to store a patch, please refer to page 12.

DELAY TIME BANK TAP EDIT		PRE MODULE		EQ		MODULATION		DELAY		REVERB	
TUNER (BYPASS) #	EFFECT	1 CLN I, 3 ODI, 4 ODI II	2 CLN II, 5 DST I, 6 DST II, 7 LEAD, 8 METAL	1 EQ, 2 AMP, 3 AUTO, 4 PDL	1 PDL, 2 PIT, 3 FLG, 4 PHA, 5 TREM, 6 STEP, 7 SLOW, 8 CHO	1 MONO, 2 PPD	1 HALL, 3 DELAY, 2 ROOM				
PARM 1	COMP [0-4]	HIGH [-7-+7]	COLOR [1-3]	FREQ: FREQ [1-64]	PITCH: DEPTH [0-10]	MODE [1-16] (dn, UP)	SHIFT: 3 4 5 6 7 8 RATE [1-50]	DELAY TIME (A) [0-99] (mS)	TIME: TIME [1-10]; [0-90] (X10mS)	TONE: FEEDBACK [-7-+7]; [0-10]	
PARM 2	tone [-7-+7]	MID [-7-+7]	BOX [1-3]	SENS [0-10]	EXP. MODE [0=NORM, 1=INV]	FINE [-5-+5]	3 4 5 6 7 8 PEAK; 7 8 BAL. [0-10]	FEEDBACK [0-10]	MIX [0-10]		
PARM 3	3-8 GAIN [1-16]	MID [-7-+7]	DEPTH [0-10]	MODE [0=NORM, 1=INV]	BAL. [0-10]	3 4 5 6 7 8 MODE; 8 STR [0, 1]	MIX [0-10]	PATCH LEVEL [0-50]			
PARM 4	3-8 DYNAMICS [0-3]	LOW [-7-+7]	tone [-7-+7]	LEVEL [1-8]	0=NORM, 1=INV; EXP.MODE [0= min → VAL, 1= VAL → max]	MINIMUM VOLUME [0-10]	GLOBAL	MIDI CH [1-16]	EXP. SELECT [0-5]		
PARM 5	ZNR [0-15]	EXTERNAL LOOP [0,1] 0=OFF, 1=ON	EXTERNAL CONTROL OUT [1-4]	VOL				0=OFF 1=DIST 2=EQ 3=MOD 4=DLY 5=REV			
TOTAL											
BANK	PRE MODULE	1 EQ	2 MODULATION	3 DELAY	4 REVERB						

---

## Turning effect modules on and off

In the Edit mode, each effect can be turned on and off independently from others.

- **Pressing a pedal corresponding to an effect module that is currently on (pedal switch LED and effect module cursor LED are lit) turns the effect module off.** The LED goes out. Press the pedal again to turn the effect back on.



*The effect module on/off setting can also be stored as part of a patch.*

---

## Compare

During editing, it is possible to temporarily return to the setting that was active before starting the editing process. This is called the “compare” function.

- **In the Edit mode, press the GROUP key.**

The previous value of the parameter where the cursor is currently located and the indication “CP” appear alternately on the display.



- **Press the GROUP key once more.** The 4040 returns to the Edit mode.



*The compare function is useful for example to check how a certain parameter change affects the overall sound. When the parameter is selected with the PARAMETER SELECT keys, the value of that parameter is shown on the display.*

---

## Storing a Patch

If an edited patch (or a patch whose patch level setting was changed in the Play mode) is not stored, the change will be lost when another patch is selected. To preserve a setting, store the patch as described below.

- **Press the STORE key in the Play mode or Edit mode.** The unit is now in the store standby condition, and you can choose the bank number and patch number in which you want to store the patch.



*For patches from the PRESET group, changed parameters cannot be stored. Therefore, even if a patch was chosen from the PRESET group, the store destination will automatically become “U” (USER group) if a parameter was changed.*

- **Use the BANK ▲/▼ pedals and pedal switches 1 – 4 to specify the bank number and patch number.**

If no input is made, the patch will be stored in the original bank number and patch number.



*When a patch is stored, the patch that was previously stored in that number will be overwritten (erased). Take care not to erase a patch that you want to keep. When wishing to restore the factory preset patches, please refer to the explanation on page 25.*

- **Press the STORE key again. The patch is stored, and the 4040 reverts to the Play mode.**



*If the STORE key has not yet been pressed for the second time, you can use the EDIT/CANCEL key to cancel the store process and return to the immediately preceding mode.*

# Effect Types and Parameters

In this section, all effect types and parameters of the 4040 are explained. Parameters that are the same for several effects are explained in detail only the first time they appear.

PRE	EQ	MODULATION	DELAY	REVERB
1 CLEAN 1 2 CLEAN 2 3 OVERDRIVE 1 4 OVERDRIVE 2 5 DISTORTION 1 6 DISTORTION 2 7 LEAD 8 METAL	1 EQUALIZER 2 AMP SIMULATOR 3 AUTO WAH 4 PEDAL WAH	1 PEDAL PITCH 2 PITCH SHIFTER 3 FLANGER 4 PHASER 5 TREMOLO 6 STEP 7 SLOW ATTACK 8 CHORUS	1 MONO DELAY 2 PINGPONG DELAY	1 HALL 2 ROOM 3 DELAY  PATCH LEVEL

## ■ Effect Module 1: (PRE)

This module combines a compressor with various types of distortion. The compressor maintains the volume at a given level without impairing the sense of tone and attack. The distortion effect produces characteristic tube-amplifier-like distortion combined with long sustain.

### 1 CLN I (Clean 1)

This effect type uses only the compressor, to obtain a clean sound without distortion. The effect is especially suitable for electric guitars.

PRE		
1 CLN I		
Parameter 1	COMP	0 – 4
Parameter 2	TONE	-7 – +7
Parameter 5	ZNR	0 – 15

#### Explanation

**(1)COMP (compressor):** Determines the depth of the compression. The higher the value, the smaller the level difference, and the longer sustain is obtained.

**(2)TONE:** This is a tone-control-type equalizer. Changing the value towards (+) makes the sound brighter and changing it towards (-) makes the sound more subdued.

**(5)ZNR (Zoom Noise Reduction):** This parameter adjusts the threshold for the ZNR feature which cuts noise during performance pauses. You should set the parameter to a value as high as possible, but without causing the instrument release to sound unnatural.



*The optimum ZNR setting depends on the type of guitar you are using.*

### 2 CLN II (Clean 2)

Clean sound effect with flat characteristics that is suitable for electric and acoustic guitar.

PRE		
2 CLN II		
Parameter 1	COMP	0 – 4
Parameter 2	TONE	-7 – +7
Parameter 5	ZNR	0 – 15

### 3 OD I (Overdrive 1)

Overdrive effect with the warm distortion sound that is typical for tube amplifiers.

PRE		
3 OD I		
Parameter 1	COMP	0 – 4
Parameter 2	TONE	-7 – +7
Parameter 3	GAIN	1 – 16
Parameter 4	DYNAMICS	0 – 3
Parameter 5	ZNR	0 – 15

#### Explanation

**(3)GAIN:** Determines distortion intensity in the overdrive circuit. The higher the value, the deeper the distortion.

**(4)DYNAMICS:** This parameter changes the volume depending on the picking intensity, but without changing the distortion. The higher the value, the more pronounced the effect.

#### **4** OD II (Overdrive 2)

Overdrive effect with heavy, fuzzy distortion.

PRE		
<b>4</b> OD II		
Parameter 1	COMP	0 – 4
Parameter 2	TONE	-7 – +7
Parameter 3	GAIN	1 – 16
Parameter 4	DYNAMICS	0 – 3
Parameter 5	ZNR	0 – 15

#### **5** DST I (Distortion 1)

Hard distortion effect similar to a large amplifier driven to full capacity.

PRE		
<b>5</b> DST I		
Parameter 1	COMP	0 – 4
Parameter 2	TONE	-7 – +7
Parameter 3	GAIN	1 – 16
Parameter 4	DYNAMICS	0 – 3
Parameter 5	ZNR	0 – 15

#### **6** DST II (Distortion 2)

Distortion with a thick, full-bodied character that is ideal for the heavy metal genre.

PRE		
<b>6</b> DST II		
Parameter 1	COMP	0 – 4
Parameter 2	TONE	-7 – +7
Parameter 3	GAIN	1 – 16
Parameter 4	DYNAMICS	0 – 3
Parameter 5	ZNR	0 – 15

#### **7** LEAD

Hard distortion with a distinct character.

PRE		
<b>7</b> LEAD		
Parameter 1	COMP	0 – 4
Parameter 2	TONE	-7 – +7
Parameter 3	GAIN	1 – 16
Parameter 4	DYNAMICS	0 – 3
Parameter 5	ZNR	0 – 15

#### **8** METAL

Distortion which stresses the upper and lower ends of the frequency spectrum, suitable for heavy metal.

PRE		
<b>8</b> METAL		
Parameter 1	COMP	0 – 4
Parameter 2	TONE	-7 – +7
Parameter 3	GAIN	1 – 16
Parameter 4	DYNAMICS	0 – 3
Parameter 5	ZNR	0 – 15

## ■ Effect Module 2: Equalizer (EQ)

This effect module comprises four effect types to control the tonal character of the sound.

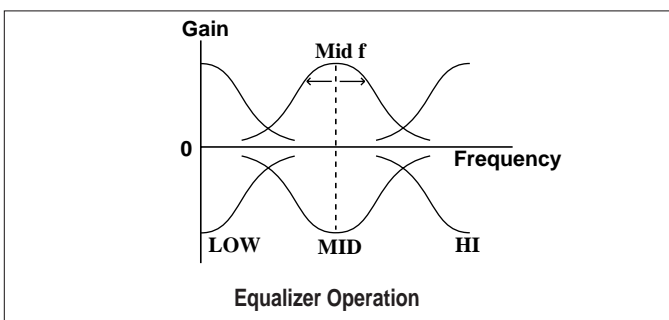
### 1 EQ (Equalizer)

This is an equalizer with independent boost/cut for the high, mid, and low frequency range. The mid-range control is a parametric type allowing the user to freely select the center frequency.

EQ		
1 EQ		
Parameter 1	HIGH	-7 - +7
Parameter 2	MID	-7 - +7
Parameter 3	MID f	1 - 16
Parameter 4	LOW	-7 - +7
Parameter 5	LEVEL	1 - 8

#### Explanation

- (1)HI (high range):** Adjusts the high frequency range. A value of 0 (zero) signifies flat response. The higher the value, the stronger is the high frequency boost.
- (2)MID (midrange):** Adjusts the mid frequency range. A value of 0 (zero) signifies flat response. The higher the value, the stronger the mid frequency boost.
- (3)MID f (midrange frequency):** Determines the center frequency for cut/boost. The higher the value, the higher is the center frequency.
- (4)LOW (low range):** Adjusts the low frequency range. A value of 0 (zero) signifies flat response. The higher the value, the stronger the low frequency boost.
- (5)LEVEL:** Determines the EQ module output level.



The **LEVEL** parameter allows compensation for the change in output level due to a tone boost or cut. When **HIGH**, **MID**, and **LOW** are all at the flat setting, the **LEVEL** setting "5" produces the same volume as **EQ OFF**.



If **LEVEL** is set too high, internal clipping may lead to distortion. Adjust the **LEVEL** parameter to match the input level.

### 2 AMP SIM (Amp simulator)

This effect simulates the sound of a guitar amplifier. By combining it with the **PRE** module, the sound of picking up a guitar amp with a microphone can be convincingly recreated.

EQ		
2 AMP SIM		
Parameter 1	COLOR	1 - 3
Parameter 2	BOX	1 - 3
Parameter 3	DEPTH	0 - 10
Parameter 4	TONE	-7 - +7
Parameter 5	LEVEL	1 - 8

#### Explanation

- (1)COLOR:** Determines the frequency response of the simulated amplifier.
- 1: Flat response
  - 2: Vintage tube amplifier with emphasized midrange
  - 3: Modern amplifier with extended high and low range
- (2)BOX:** Determines the type of simulated speaker enclosure.
- 1: Stack
  - 2: Combo
  - 3: Compact
- (3)DEPTH:** Determines the amount of speaker box ringing. Higher values will result in pronounced ringing which occurs when an amplifier is operating at a loud volume. When set to 0 (zero), there is no such speaker box ringing, regardless of the selected box type.

### 3 AUTO WAH

This is an auto wah effect where the emphasized frequency range changes according to the dynamics of the input signal.

EQ		
3 AUTO WAH		
Parameter 1	FREQ	1 - 64
Parameter 2	SENS	0 - 10
Parameter 5	LEVEL	1 - 8

#### Explanation

- (1)FREQ (Frequency):** Determines the reference frequency.
- (2)SENS (Sensitivity):** Determines the sensitivity of the auto wah effect. The bigger the value, the bigger the frequency change even at low volume levels.

## 4 PDL WAH (Pedal Wah)

A wah effect which can be controlled in real time with the EXP pedal.


EQ		
4 PDL WAH		
Parameter 1	FREQ	1 – 64
Parameter 2	EXP. MODE	0, 1
Parameter 5	LEVEL	1 – 8

### Explanation

**(2)EXP. MODE (Expression Mode):** Determines the direction of the change caused by the EXP pedal.

**0:** The frequency is raised with each push of the pedal.

**1:** The frequency is lowered with each push of the pedal.

 **NOTE** When wishing to use this effect, be sure to select the EQ module in the TOTAL parameter EXP. SELECT, as described on page 22.

## Effect Module 3: Modulation

This effect module has eight effect types which vary the pitch over time.

## 1 PDL PIT (Pedal Pitch Shifter)


This effect allows you to shift the pitch using the EXP pedal. By presetting the mode, you can easily select the shift amount.

MODULATION		
1 PDL PIT		
Parameter 1	MODE	1 – 16
Parameter 5	EXP. MODE	0, 1

### Explanation

**(1)MODE:** Determines the pitch shift range effected by the EXP pedal. There are 16 different modes.


**(5)EXP. MODE (Expression Mode):** Determines the direction of the change caused by the EXP pedal.

 **NOTE** The various modes and pitch shift ranges are shown at right. We recommend that you try various settings to find the one which suits your needs. 1 cent is 1/100 of a chromatic interval. “DRY” indicates the original pitch, and “oct” stands for octave.



Mode	Pedal up	Pedal down
1: Dirty bend (Dirty BEND)	-100 cent	DRY
2: Harmonized choking (Harm Chokin')	-200 cent+DRY	-10 cent+DRY
3: Detune (Detune)	Doubling	+50 cent+DRY
4: Bend down (0 → ↓2nd)	0 cent	-200 cent
5: Bend up (0 → ↑1oct)	0 cent	+1 oct
6: Arm down 1 (0 → ↓1oct)	0 cent	-1 oct
7: Arm down 2 (0 → ↓2oct)	0 cent	-2 oct
8: Infinity bend down (0 → ↓∞)	0 cent	-∞
9: Minor/major (↑ b3rd → ↑ 3rd)	+300 cent+DRY	+400 cent+DRY
10: Octave harmony (↓ 1oct → ↑ 1oct)	-1 oct+DRY	+400 cent+DRY
11: Perfect 5th/perfect 4th (↓ 5th → ↑ 4th)	-700 cent+DRY	+500 cent+DRY
12: 5th/6th (↑ 5th → ↑ 6th)	+700 cent+DRY	+900 cent+DRY
13: 4-octave shift	-2 oct	+2 oct
14: Manual flanger (Hi-BAND)	+1 oct+DRY	+2 oct+DRY
15: Cross fade (X-fade)	-∞+DRY	+1 oct
16: Stop (Scratch)	+1 oct+DRY	-∞

PDL PIT Modes and Pitch Shift Ranges

 **NOTE** When wishing to use this effect, be sure to select the MODULATION module in the TOTAL parameter EXP. SELECT, as described on page 22.

## 2 PIT (Pitch)

This effect shifts the pitch by a maximum of two octave up or down, and adds the shifted signal to the direct sound.

MODULATION		
2 PIT		
Parameter 1	PIT	0 – 24
Parameter 2	SHIFT	dn , UP
Parameter 3	FINE	-10 – +10
Parameter 4	BAL	0 – 10
Parameter 5	EXP. MODE	0 , 1

### Explanation

- (1)PIT (Pitch):** Determines the pitch change in semitone steps. The setting range is one octave up or down.
- (2)SHIFT:** Determines the direction of the pitch shift, either "dn" (down) or "UP".
- (3)FINE:** Allows fine adjustment of pitch.
- (4)BAL (Balance):** Determines the balance between effect sound and direct sound. At a setting of 0 (zero), the output signal contains only the direct sound, and at a setting of 10 only the effect sound.
- (5)EXP. MODE (Expression Mode):** Determines the direction of the change caused by the EXP pedal.
- 0:** When the pedal is fully pushed down, the balance is as set with the BAL parameter. When the pedal is up, the balance is minimum.
- 1:** When the pedal is fully pushed down, the balance is maximum. When the pedal is up, the balance is as set with the BAL parameter.



*By setting the pitch to 0 (zero) and somewhat raising the FINE parameter, you can create a chorus effect with slight modulation.*

## 3 FLG (Flanger)

This effect adds a delayed component to the direct sound, with periodically changing delay time in the range of several to tens of milliseconds. The result is an intense, distinct sound. When combined with distortion, a swirling "jet sound" type flanger effect can be obtained.

MODULATION		
3 FLG		
Parameter 1	DEPTH	0 – 10
Parameter 2	RATE	1 – 50
Parameter 3	PEAK	0 – 10
Parameter 4	MODE	0 , 1
Parameter 5	EXP. MODE	0 , 1

### Explanation

- (1)DEPTH:** Determines the depth of the flanger effect.
- (2)RATE:** Determines the speed of the flanger variation.
- (3)PEAK:** Determines the amount of feedback. Increasing this parameter stresses the modulation impression and adds a distinct character to the sound.
- (4)MODE:**Determines the basic sonic character.
- 0:** Flanger
- 1:** Solid chorus (strong chorus with little modulation)
- (5)EXP. MODE (Expression Mode):** Determines the direction of the change caused by the EXP pedal.
- 0:** When the pedal is fully pushed down, the feedback is as set with the PEAK parameter. When the pedal is up, the feedback is minimum.
- 1:** When the pedal is fully pushed down, the feedback is maximum. When the pedal is up, the feedback is as set with the PEAK parameter.

## 4 PHA (Phase)

This effect adds a phase-shifted component to the direct sound, with a variable amount of phase shift. The effect creates a warm, distinct sound that is different from flanger or chorus.

MODULATION		
4 PHA		
Parameter 1	DEPTH	0 – 10
Parameter 2	RATE	1 – 50
Parameter 3	PEAK	0 – 10
Parameter 4	MODE	0, 1
Parameter 5	EXP. MODE	0, 1

### Explanation

- (1)**DEPTH**: Determines the depth of phase shift.  
 (2)**RATE**: Determines the speed of phase shift.  
 (3)**PEAK**: Adds a distinct character to the sound by emphasizing the effect.  
 (4)**MODE**: Determines the basic sonic character.  
 0: Warm  
 1: Clear  
 (5)**EXP. MODE (Expression Mode)**: Determines the direction of the change caused by the EXP pedal.  
 0: When the pedal is fully pushed down, the sonic change is as set with the PEAK parameter. When the pedal is up, the sonic change is minimum.  
 1: When the pedal is fully pushed down, the sonic change is maximum. When the pedal is up, the sonic change is as set with the PEAK parameter.

## 5 TRM (Tremolo)

This effect periodically varies the intensity of the sound. The effect can be adjusted from conventional tremolo to a strong clipping effect.

MODULATION		
5 TRM		
Parameter 1	DEPTH	0 – 10
Parameter 2	RATE	1 – 50
Parameter 3	PEAK	0 – 10
Parameter 4	MODE	0, 1
Parameter 5	EXP. MODE	0, 1

### Explanation

- (1)**DEPTH**: Determines the depth of the tremolo effect.  
 (2)**RATE**: Determines the speed of the tremolo variation.

(3)**PEAK**: Increasing this parameter deforms the tremolo waveform to a trapezoid shape, which causes a strong clipping effect and adds a distinct character to the sound.

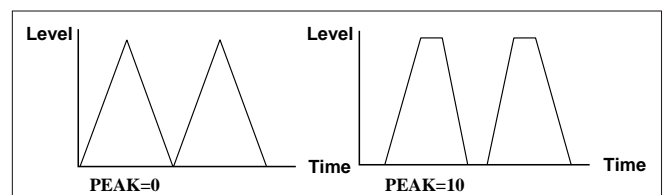
(4)**MODE**: Determines the modulation waveform.

0: Chopping 1: Sawtooth

(5)**EXP. MODE (Expression Mode)**: Determines the direction of the change caused by the EXP pedal.

0: When the pedal is fully pushed down, the tremolo rate is as set with the RATE parameter. When the pedal is up, the tremolo rate is minimum.

1: When the pedal is fully pushed down, the tremolo rate is maximum. When the pedal is up, the tremolo rate is as set with the RATE parameter.



Effect of the PEAK Parameter

## 6 STEP

This effect causes random pitch changes and creates an auto arpeggio sound.

MODULATION		
6 STEP		
Parameter 1	DEPTH	0 – 10
Parameter 2	RATE	1 – 50
Parameter 3	PEAK	0 – 10
Parameter 4	MODE	0, 1
Parameter 5	EXP. MODE	0, 1

### Explanation

- (1)**DEPTH**: Determines the depth of the pitch change.  
 (2)**RATE**: Determines the speed of the effect (arpeggio rate)  
 (3)**PEAK**: Determines the amount of feedback. Increasing this parameter stresses the feeling of modulation and adds a distinct character to the sound.  
 (4)**MODE**: Determines whether there is a portamento effect when changing the pitch.  
 0: Effect disabled 1: Effect enabled  
 (5)**EXP. MODE (Expression Mode)**: Determines the direction of the change caused by the EXP pedal.  
 0: When the pedal is fully pushed down, the feedback is as set with the PEAK parameter. When the pedal is up, the feedback is minimum.  
 1: When the pedal is fully pushed down, the feedback is maximum. When the pedal is up, the feedback is as set with the PEAK parameter.

## 7 SLOW (Slow Attack)

This effect smoothes the picking attack, automatically creating a volume swell, while adding a dynamic filter. The filter opening characteristics depend on the input signal, causing a gradual emphasis in the low (or high) range.

MODULATION		
7 SLOW		
Parameter 1	DEPTH	0 – 10
Parameter 2	RATE	1 – 50
Parameter 3	BAL	0 – 10
Parameter 4	MODE	0, 1
Parameter 5	EXP. MODE	0, 1

### Explanation

- (1)**DEPTH:** Determines the frequency change range of the dynamic filter. The higher the value, the greater the range.
- (2)**RATE:** Determines the rise time rate. The higher the value, the longer the attack sound.
- (3)**BAL (Balance):** Determines the balance between the slow attack sound and the dynamic filter sound. Smaller values increase the attack character and larger values the dynamic filter character.
- (4)**MODE:** Determines the filter characteristics, causing a change in sonic quality.  
**0:** LPF (low-pass filter)  
**1:** HPF (high-pass filter)
- (5)**EXP. MODE (Expression Mode):** Determines the direction of the change caused by the EXP pedal.  
**0:** When the pedal is fully pushed down, the attack time is as set with the RATE parameter. When the pedal is up, the attack time is minimum.  
**1:** When the pedal is fully pushed down, the attack time is maximum. When the pedal is up, the attack time is as set with the RATE parameter.

## 8 CHO (Chorus)

This effect adds a component with periodically changing pitch to the direct sound, which results in a spatially wide impression. The effect can be used in mono or stereo. In principle, this is similar to the flanger effect, but without the PEAK parameter.

MODULATION		
8 CHO		
Parameter 1	DEPTH	0 – 10
Parameter 2	RATE	1 – 50
Parameter 3	BAL	0 – 10
Parameter 4	STEREO	0, 1
Parameter 5	EXP. MODE	0, 1

### Explanation

- (1)**DEPTH:** Determines the depth of the pitch change.
- (2)**RATE:** Determines the speed of the rate change.
- (3)**BAL (Balance):** Determines the balance between the effect sound and the direct sound. The higher the value, the stronger the effect sound.
- (4)**STEREO:** A setting of 0 (zero) gives a monaural effect and a setting of 1 a stereo effect.
- (5)**EXP. MODE (Expression Mode):** Determines the direction of the change caused by the EXP pedal.  
**0:** When the pedal is fully pushed down, the balance is as set with the BAL parameter. When the pedal is up, the balance is minimum.  
**1:** When the pedal is fully pushed down, the balance is maximum. When the pedal is up, the balance is as set with the BAL parameter.

## ■ Effect Module 4: Delay

This effect module adds an echo component to the direct sound. You can choose between simple monaural delay and stereo ping-pong delay. It is also possible to change the delay time by tapping the BANK ▲ pedal. For details regarding tapping input, please refer to page 23.

### 1 MONO

Digital delay with a delay time of up to 1000 milliseconds.

DELAY		
1 MONO		
Parameter 1	DELAY TIME ( x100ms )	0 – 10
Parameter 2	DELAY TIME ( x1ms )	0 – 99
Parameter 3	FEEDBACK	0 – 10
Parameter 4	MIX	0 – 10

#### Explanation

- (1)**DELAY TIME (x100 ms)**: This parameter adjusts the delay time (interval between delayed sounds) in 100-ms steps.
- (2)**DELAY TIME (x1 ms)**: This parameter adjusts the delay time in 1-ms steps. The sum of parameters (1) and (2) becomes the final delay time. When parameter (1) is 10 (= 1000 ms), parameter (2) is fixed at 0 (zero).
- (3)**FEEDBACK**: Determines the number of repetitions of the delay sound. The higher the value, the more repetitions are added.
- (4)**MIX**: Determines the balance between effect sound and direct sound. At a setting of 0 (zero), the output signal contains only the direct sound, and at a setting of 10 only the effect sound.

### 2 PPD (Ping-pong delay)

This is a ping-pong type delay where the delayed sound alternates between the left and right channel.

DELAY		
2 PPD		
Parameter 1	DELAY TIME ( x100ms )	0 – 10
Parameter 2	DELAY TIME ( x1ms )	0 – 99
Parameter 3	FEEDBACK	0 – 10
Parameter 4	MIX	0 – 10



*When the 4040 is used in a monaural configuration, only short delay signals are output from the OUTPUT L/MONO jack.*

## ■ Effect Module 5: Reverb (REV)

This effect module includes three types of reverberation effects.

### 1 HALL

This effect simulates hall-type reverberation, adding rich ambience to the sound.

REV		
1 HALL		
Parameter 1	TIME	1 – 10
Parameter 2	TONE	-7 – +7
Parameter 3	MIX	0 – 10

#### Explanation

- (1)**TIME**: Determines the duration of the reverberation. Higher values increase the reverb time and the apparent room size.
- (2)**TONE**: Determines the tonal quality of the reverberation. The higher the value, the brighter the sound.
- (3)**MIX**: Determines the balance between effect sound and direct sound. At a setting of 0 (zero), the output signal contains only the direct sound, and at a setting of 10 only the effect sound.

### 2 ROOM

This is a short, room-type reverb effect, which is suitable to add backing to a simple sound.

MODULATION		
2 ROOM		
Parameter 1	TIME	1 – 10
Parameter 2	TONE	-7 – +7
Parameter 3	MIX	0 – 10

### 3 DELAY

This effect is similar to the ping-pong delay of the DELAY module, but with a maximum delay time of 900 milliseconds.

REV		
3 DELAY		
Parameter 1	TIME ( x10ms )	0 – 90
Parameter 2	FEEDBACK	0 – 10
Parameter 3	MIX	0 – 10

#### Explanation

- (1)**TIME (x10 ms)**: This parameter adjusts the delay time in 10-ms steps.
- (2)**FEEDBACK**: Determines the number of repetitions of the delay sound. The higher the value, the more repetitions are added.
- (3)**MIX**: Determines the balance between effect sound and direct sound. At a setting of 0 (zero), the output signal contains only the direct sound, and at a setting of 10 only the effect sound.



*When the 4040 is used in a monaural configuration, only long delay signals are output from the OUTPUT L/MONO jack. This is opposite to the operation of the ping-pong type delay.*

### ■ Patch Level

Parameter 4 of the REVERB module serves to set the patch level. This setting, although not actually an effect, can also be stored as part of the patch.

PATCH LEVEL		
Parameter 4	PATCH LEVEL	0 – 50

#### Explanation

- (4)**PATCH LEVEL**: Determines the individual output level for each patch.



*The patch level parameter can be set regardless of the REVERB module on/off status. It is also possible to change the patch level in the Play mode, using the VALUE +/- keys.*

## About the TOTAL parameters

The bottom parameter LED corresponds to a number of special parameters called TOTAL parameters. These refer to the control of an external effector or amplifier, and to settings which affect operation of the entire 4040. Like effect parameters, the TOTAL parameters are also set by using the PARAMETER SELECT key and the VALUE +/- keys in the Edit mode.



*Some of the TOTAL parameters can be stored as part of a patch and some are global settings for operation of the 4040. When a patch parameter has been changed, it must be stored with its patch in the same way as an effect parameter. When a global parameter has been changed, storing any patch will also store the global parameter setting.*

### ■ EXTERNAL LOOP

The send/return loop for an external device is inserted between the compression and distortion sections in the PRE module. This parameter controls the on/off setting of the loop. This parameter can be stored as part of an individual patch. For details, please refer to page 23.

EXTERNAL LOOP		
Parameter	EXTERNAL LOOP	0, 1

#### Explanation

**EXTERNAL LOOP**: Controls the on/off setting of the external send/return loop. 0 (zero) is OFF and 1 is ON.



*The external loop can be used also when the PRE module is off.*

### ■ EXTERNAL CTRL OUT (External Control)

Determines the setting of the EXTERNAL CONTROL OUT connector which serves to switch the channel of an external amplifier. This parameter can be stored as part of an individual patch. For details, please refer to page 23.

EXTERNAL CTRL OUT		
Parameter	EXTERNAL CONTROL OUT	1 – 4

#### Explanation

**EXTERNAL CTRL OUT**: Controls the setting of the EXTERNAL CONTROL OUT connector. For details, please refer to page 23.

## ■ MINIMUM VOLUME

This parameter controls the volume level setting between the EQ module and the MODULATION module, when the VOL pedal is fully raised. This is a global parameter which affects operation of the entire 4040.

MINIMUM VOLUME		
Parameter	MINIMUM VOLUME	0 – 10

### Explanation

**MINIMUM VOLUME:** Determines the minimum volume level when the VOL pedal is fully raised. At a setting of 0 (zero), no sound is heard.

## ■ MIDI CH (MIDI Channel)

This parameter controls the channel for the MIDI signal supplied at the MIDI OUT connector. This is a global parameter which affects operation of the entire 4040. For details, please refer to page 26.

MIDI CH		
Parameter	MIDI CH	1 – 16

### Explanation

**MIDI CH (MIDI Channel):** Determines the MIDI send channel.



*When you have changed a global parameter (MINIMUM VOLUME/MIDI CHANNEL) and want to retain the setting, simply store any patch. This will also store the global parameter setting. If you turn off the 4040 without storing a patch, the global parameter setting will revert to the default value.*

## ■ EXP. SELECT (Expression Select)

This parameter determines which module is controlled by the expression pedal. This parameter can be stored as part of an individual patch.

EXP. SELECT		
Parameter	EXP. SELECT	0 – 5

### Explanation

**EXP. SELECT (Expression Select):** Determines which module is controlled by the expression pedal.

- 0: OFF
- 1: PRE
- 2: EQ
- 3: MODULATION
- 4: DELAY
- 5: REVERB



*The effect of the EXP (expression) pedal depends on which module is selected for the current patch. The direction and intensity of the change depends on the module settings. Edit the respective parameters and check the results to find your desired sound.*



*Modules which are currently off and modules which cannot be controlled by the EXP pedal cannot be selected (are not displayed). When wishing to control a module with the EXP pedal, be sure to set it to on.*


# Edit Mode Application Examples

This section gives pointers on how to use some advanced features of the Edit mode and the TOTAL parameters.

## Tapping input of delay time

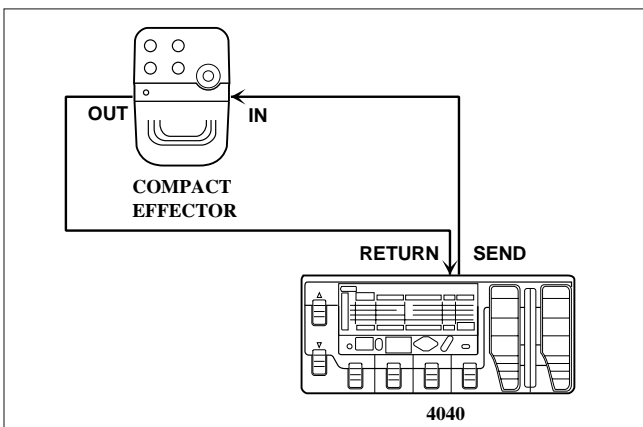
The delay time of the delay module can be set by tapping the BANK ▲ pedal in the desired interval. By mastering this technique, you can easily adjust the delay time to match the tempo of a song.

- In Play mode, select the patch you want to edit (from either the USER or the PRESET group). Press the EDIT/CANCEL key to activate the Edit mode.
- Tap the BANK ▲ pedal at least twice, in the desired tempo.  
The 4040 detects the interval between taps of the pedal switch and sets the delay time accordingly.
- Press the EDIT/CANCEL key once more to return to the Play mode.

 **NOTE** The tapping input method can be used only for the delay time of the DELAY module, and only when the DELAY module is on. The maximum delay time is 1000 ms. If the tapping interval is between 1000 and 2000 ms, the delay time will be set to one half the interval time. If the tapping interval is more than 2000 ms, the delay time is not set.

## External effector loop

An external effect device connected to the EXTERNAL SEND/RETURN connector is inserted in series between the compression and distortion sections in the PRE module. The on/off setting of the send/return loop can be stored as part of a patch. This lets you for example connect a compact effector for distortion etc. and control it as part of the 4040.



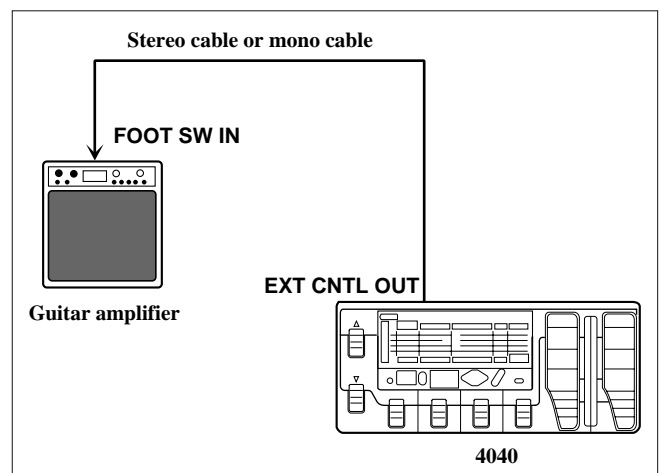
- In Play mode, press the EDIT/CANCEL key to activate the Edit mode.
- Use the PARAMETER SELECT key to select the TOTAL parameter EXTERNAL LOOP.
- Use the VALUE +/- keys to set the parameter value to 1 (on).  
The signal is now routed through the external loop and can be altered by any device connected in the loop.
- If you wish to use this setting also in future, store the patch.



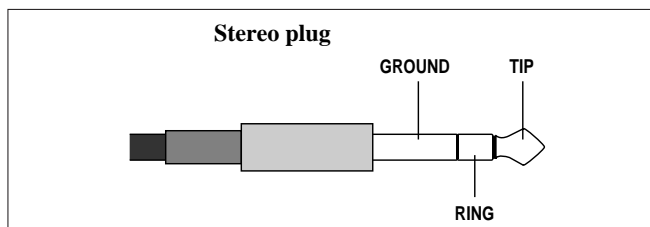
Since the on/off condition of the external loop will be controlled by the 4040, you should leave the connected effect switched on. The signal level returned to the 4040 can be adjusted at the connected effect.

## External control

Some guitar amplifiers or preamplifiers with several channels allow the user to switch channels with a foot switch. Some amplifiers also allow internal effect on/off control by foot switch. The EXTERNAL CONTROL OUT connector of the 4040 can be used to duplicate the action of a foot switch for amplifier channel control or internal effect on/off control in conjunction with a patch of the 4040.



As shown in the diagram, this output is designed for a stereo connection, allowing on/off control of two channels.



Use a stereo cable or mono cable to connect the 4040 to the channel switching connector on the amplifier. The amplifier function is controlled according to whether the tip and ring of the plug are shorted to ground or not.

- In Play mode, press the EDIT/CANCEL key to activate the Edit mode.
- Use the PARAMETER SELECT key to select the TOTAL parameter EXTERNAL CONTROL OUT.
- Use the VALUE +/- keys to set the value.

Applicable values are shown in the table below.

EXTERNAL CONTROL VALUES	Status of the Connectors	
	RING	TIP
1	Shorted	Shorted
2	Open	Open
3	Open	Shorted
4	Shorted	Open

- If you wish to use these settings, they must be stored in the patch.



Since the specifications for control connectors vary for different amplifiers, you may have to try out a variety of settings and cable connections. Normally, using a cable of the same type as the cable for the foot switch that came with the amplifier is recommended. For details, please refer to the manual of the amplifier.



Even if equipped with a foot switch connector, some amplifiers may not be suitable for control by the 4040.

## Expression pedal control

The EXP pedal of the 4040 can be used to adjust an effect parameter in real time. For example, you might change the distortion depth during a performance, or increase the amount of reverberation. The parameters available for control by the EXP pedal depend on the module and the effects used in the selected patch.

- In Play mode, press the EDIT/CANCEL key to activate the Edit mode.
- Use the PARAMETER SELECT key to select the parameter EXP. SELECT.
- Use the VALUE +/- keys to set the value.

EXP. SELECT VALUES	MODULE	Parameters Available for Pedal Control
0	OFF	
1	PRE	OD I, OD II, DIST I, DIST II, ... GAIN* LEAD, METAL
2	EQ	AUTO WAH ... SENSE* PDL WAH ... FREQ*
3	MODULATION	PDL PIT ... PIT PIT ... BAL FLG ... PEAK PHA ... PEAK TRM ... RATE STEP ... PEAK SLOW ... RATE CHO ... BAL
4	DELAY	MONO ... MIX* PING PONG ... MIX*
5	REVERB	HALL ... MIX* ROOM ... MIX* DELAY ... MIX*

- If you wish to use these settings, they must be stored in the patch.



For parameters marked with an \* in the table, the range is always MIN <-> MAX, regardless of the setting.

# Other Functions

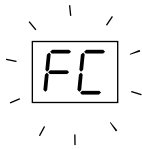
This section describes use of the special mode and the MIDI function of the 4040.

## Restoring individual factory preset patches (patch recall)

The 4040 contains a ROM (read-only memory) in which all factory preset patch data are permanently stored. Even if patches have been edited and stored in the USER group, the original factory preset patches can be individually recalled at any time.

- **Turn off the 4040 (with the amplifier volume set to minimum), and turn the unit back on while keeping the EDIT/CANCEL key depressed.**

The indication “FC” flashes on the display. This shows that the unit is ready for recalling individual patches from the internal ROM.



- **Press the STORE key.**

You now can select the group, bank number and patch number you want to restore.

The indication of “FC” and “U0” (group and bank numbers) alternately appears on the display.



- **Use the GROUP key, BANK ▼/▲pedals, and pedal switches 1 – 4 to select the desired patch.**

At this time, the sound of the patch can be monitored.

- **Press the STORE key once more.**

The selected patch is now restored to the same setting as when the unit was shipped.

- **Turn off the 4040, and then turn it on again for normal use.**

The 4040 will be in regular Play mode.



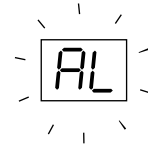
*When the factory setting of a patch is recalled, any setting previously stored in that patch will be lost. By using the GROUP key before pressing the STORE key a second time, you can compare the sound of the user-stored patch and the recalled factory-preset patch before overwriting the patch contents.*

## Restoring all factory preset patches (initialize)

This special function returns all patches in the USER group to the factory preset condition. Use this function with care, because all patches you have stored will be lost.

- **Turn off the 4040 (with the amplifier volume set to minimum), and turn the unit back on while keeping the STORE key depressed.**

The indication “AL” flashes on the display. This shows that the unit is ready for recalling all patches from the internal ROM.



- **When wishing to initialize all patches**

Press the STORE key once more. This restores all patches to their factory preset condition. The 4040 then switches to the Play mode.

- **When wishing to cancel the function**

Press the EDIT/CANCEL key. The 4040 switches to the Play mode without changing the patch settings.

## Volume pedal control

The VOL pedal of the 4040 can be used to adjust the volume level between the EQ module and the MODULATION module. This lets you adjust the volume without changing the delay or reverb settings. The minimum volume level that is used when the VOL pedal is fully raised can be set and stored as part of a patch.

- **In Play mode, press the EDIT/CANCEL key to activate the Edit mode.**

- **Use the PARAMETER SELECT key to select the TOTAL parameter MINIMUM VOLUME.**

- **Use the VALUE +/- keys to set the value.**

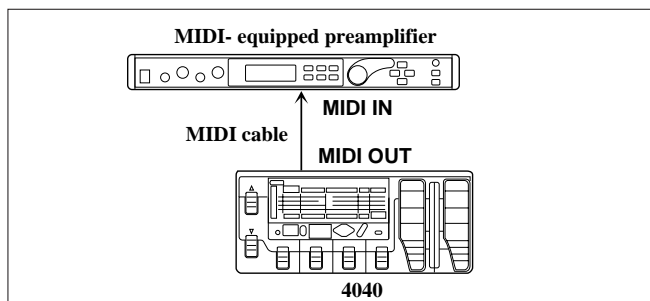
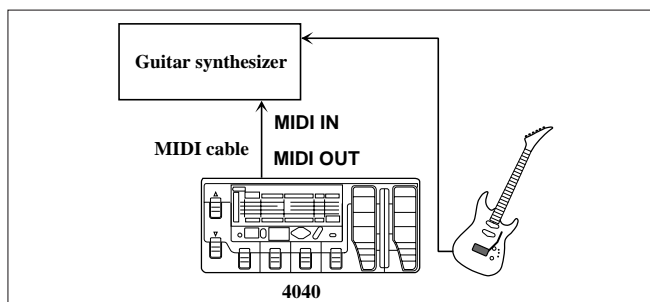


*When you want to retain the setting, store any patch. This will also store the MINIMUM VOLUME setting. If you turn off the 4040 without storing a patch, the setting will revert to the default*

value.

## MIDI control

Program change and control change messages can be sent from the MIDI OUT connector of the 4040, according to pedal operation and pedal switch on/off operation. This lets you control equipment with a MIDI IN connector from the 4040. For example, you can change the program of a guitar synthesizer when selecting patches at the 4040, or call up settings at a MIDI-equipped preamplifier such as the ZOOM 9150.



### ● Sending program change messages

Whenever a patch is selected, a program change message is sent from the MIDI OUT connector. The program change numbers are shown in the table below.

GROUP	BANK No.	PATCH No.			
		1	2	3	4
USER	0	0	1	2	3
	1	4	5	6	7
	2	8	9	10	11
	⋮				
	9	36	37	38	39
PRESET	0	40	41	42	43
	1	44	45	46	47
	2	48	49	50	51
	⋮				
	9	76	77	78	79

### ● Sending control change messages

When the VOL pedal or EXP pedal is operated, special control change messages with continuously varying values are sent from the MIDI OUT connector.

If the 4040 is in the Manual (Edit) mode, special control change messages are sent when a module is switched on and off via the pedal switches. In this case, the output has only

two values (on = 127, off = 0). Likewise, when the 4040 is in the Play mode and the bypass condition is activated, a special control change message with only two values is sent.

The control change number and values are shown in the table below.

		Control change NO.	Value
VOL. PEDAL		7	0 – 127
EXP. PEDAL		1	0 – 127
BYPASS		91	ON : 127 OFF : 0
MANUAL MODE	BANK ▼	72	ON : 127 OFF : 0
	PEDAL 1	73	ON : 127 OFF : 0
	PEDAL 2	75	ON : 127 OFF : 0
	PEDAL 3	76	ON : 127 OFF : 0
	PEDAL 4	77	ON : 127 OFF : 0

### ● MIDI channel selection

When wishing to use the MIDI OUT connector of the 4040 to control external equipment, the MIDI channel of the 4040 must be set to match the equipment. This is done by setting the TOTAL parameter MIDI CH.

- In Play mode, press the EDIT/CANCEL key to activate the Edit mode.
- Use the PARAMETER SELECT key to select the TOTAL parameter MIDI CH.
- Use the VALUE +/- keys to set the value (MIDI channel 1 - 16).

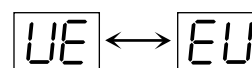
## Swapping the pedal functions

The pedals of the 4040 are normally set up so that the left pedal operates as volume pedal and the right pedal as expression pedal. If desired, the function of the pedals can be interchanged as follows.

- Turn off the 4040 (with the amplifier volume set to minimum), and turn the unit back on while keeping the GROUP key depressed.

The indication “VE” flashes on the display. In this condition, the left pedal operates as volume pedal and the right pedal as expression pedal (factory default).

- Use the VALUE +/- keys to change the value. When “EV” is shown, the right pedal operates as volume pedal and the left pedal as expression pedal.



- Press the STORE key. The new setting is stored, and the unit switches to Play mode. If you wish to cancel the function, press the

# Application Examples for Use of the Foot Switch and Pedal Switches 1 - 4

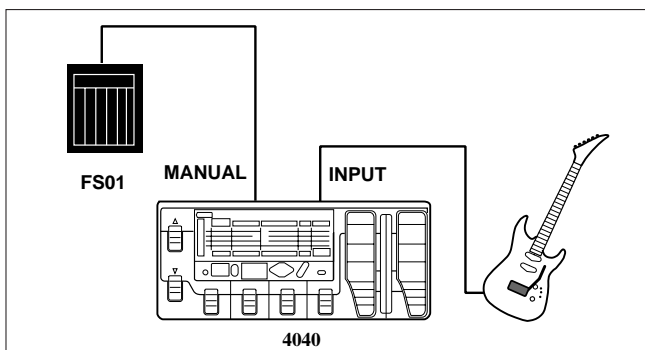
The optional foot switch FS01 can be used for example to switch modes during a performance.

EDIT/CANCEL key instead of the STORE key.

## Using the FS01

The optional foot switch FS01 can be used to switch between the normal Play mode and the Manual mode where effects can be individually switched on and off.

- Turn off the 4040, and connect the FS01 to the MANUAL connector of the 4040.



- Turn on the 4040 and select the patch.
- Push the FS01 once.

This switches the 4040 to the Manual (Edit) mode. The on/off status of individual effect modules can now be controlled with the pedal switches 1 - 4 and the BANK ▼ pedal.



*The pedal switches 1 - 4 and the BANK ▼ pedal correspond to the following effect modules:*

- BANK ▼ pedal : PRE
- Pedal switch 1: EQ
- Pedal switch 2: MODULATION
- Pedal switch 3: DELAY
- Pedal switch 4: REVERB



*In Manual mode, selecting patches is not possible.*

- Push the FS01 once more.

The 4040 reverts to the normal Play mode, and patch selection is possible.

