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# 9150

*ZOOM VALVE DSP*

## OPERATION MANUAL

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Thank you for selecting the *ZOOM VALVE DSP 9150* (hereafter called the "9150").

The 9150 is a sophisticated multi-effect device with the following features and functions:

- Hybrid design, combining a vacuum tube preamplifier with a digital effect processor. This lets you enjoy the best of two worlds: the natural overdrive tone of a tube amplifier and the versatility of a digital effect device.
- Two send/return loops allow easy connection of external effecters, with programmable insertion point for one pair. This makes the 9150 suitable for use not only as a stand-alone device but also as a master control system.
- RTM (Real-Time Modulation) function allows control of effect parameters in real time. With Simul-RTM, it is even possible to adjust several parameters simultaneously. Using an optional foot controller such as the FC50 or the 8050 and FP01, or other MIDI equipment, you can dynamically adjust parameters during a performance.

Please take the time to read this manual carefully, in order to get the most out of your 9150 and to ensure optimum performance and reliability.

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## Safety Precautions

Keep in mind the following safety tips and precautions for optimum safe use of the 9150.

### Power Requirements

A special AC adaptor is designed for use only with the 9150. Make sure to use the included AC adaptor (AD0005). Use of another AC adaptor can cause malfunctions or damage.

Make sure to consult with your local ZOOM dealer about the use of a proper AC adaptor or voltage converter when using the AC adaptor in an area (for example, another country) where the power supply voltage is different.

### Environment

Avoid using your 9150 in environments where it will be exposed to:

- Temperature extremes
- High humidity or moisture
- Excessive dust or sand
- Excessive vibration or sudden shock

### Handling

Since the 9150 is a precision electronic device, avoid applying excessive force to the switches and buttons. Though the 9150 has been constructed for sturdiness and reliability, dropping, smashing, or applying too much weight to the product can cause damage.

### Remodeling

Never open the case of the 9150 or attempt to modify the product in any way since this can result in damage.

### Connecting cables and input and output jacks

You should always turn off the power before connecting any cables. Also make sure to disconnect all cables and the AC adaptor before moving the 9150.

#### **WARNING!**

Danger of explosion at incorrect battery change.

Use same type of battery or of equivalent type recommended by manufacturer.

Always discard the battery according to the manufacturer's instructions.

## Precautions

### Electrical Interference

The 9150 uses digital circuitry that may cause interference and noise if placed too close to other electrical equipment, such as TV sets and radios. If such problems occur, move the 9150 further away from the affected equipment. Also, when fluorescent lights or devices with built-in motors are in close proximity to the 9150, the 9150 may not function properly.

### Cleaning

Use a soft, dry cloth to clean the 9150. If necessary, a slightly damp cloth can also be used. Do not use any abrasive cleansers, waxes, or solvents (such as paint thinner or alcohol), since these may dull the finish or damage the surface.

Keep this manual in a safe, convenient place for future reference.

#### **Caution!**

The 9150 contains a long-life lithium battery which maintains the effect programs stored to the internal memory even when the unit is turned off. With normal use, the battery should last for approximately five years. To avoid possible data loss, contact your local ZOOM dealer five years from the date of purchase and have the battery replaced by a qualified technician. Do not attempt to replace the battery yourself, since installing an improper battery could result in an explosion.

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# Contents

<b>9150 Feature Chart</b> .....	4	<b>Pop-up Menus</b> .....	25
<b>Names and Functions of Controls and Connectors</b> .....	6	<b>PRG CHG LEARN Pop-up Menu (PC#Learn)</b> .....	25
<b>Front Panel</b> .....	6	<b>CTL CHG MONITOR Pop-up Menu (C-ChgMon)</b> .....	25
<b>Rear Panel</b> .....	7	<b>Remote Control and RTM</b> .....	26
<b>Play Mode</b> .....	8	<b>Remote Control With FC50 or 8050</b> .....	26
<b>To Activate Play Mode</b> .....	8	<b>Preparations</b> .....	26
<b>Display in Play Mode</b> .....	8	<b>Patch Selection With FC50</b> .....	26
<b>Selecting a Patch</b> .....	8	<b>Bypass/Mute Control With FC50</b> .....	26
<b>Effect Module On/Off and Bypass</b> .....	9	<b>Using the FP01 for RTM</b> .....	27
<b>Edit Mode</b> .....	10	<b>Effect Module On/Off Switching With 8050</b> .....	27
<b>Edit Mode — Basic Operation Steps</b> .....	10	<b>Glossary/Index</b> .....	28
<b>Effect Module On/Off Selection</b> .....	12	<b>Specifications</b> .....	29
<b>RTM (Real-Time Modulation)</b> .....	12	<b>Rack Mount</b> .....	30
<b>Compare</b> .....	13		
<b>Storing a Patch</b> .....	13		
<b>Effect Parameters</b> .....	14		
<b>Effect Module 1: PREAMP</b> .....	14		
<b>Effect Module 2: EQ (Equalizer)</b> .....	15		
<b>Effect Module 3: MODULATION</b> .....	16		
<b>Effect Module 4: DELAY</b> .....	18		
<b>Effect Module 5: REVERB</b> .....	18		
<b>Effect Module 6: TOTAL</b> .....	20		
<b>Utility Mode</b> .....	22		
<b>To Activate Utility Mode</b> .....	22		
<b>Utility Mode Pages</b> .....	22		
<b>1. Patch Names</b> .....	22		
<b>2. MIDI Global Settings</b> .....	22		
<b>3. MIDI Assign</b> .....	23		
<b>4. System Exclusive Setting</b> .....	23		
<b>5. Patch Recall</b> .....	24		

# 9150 Feature Chart

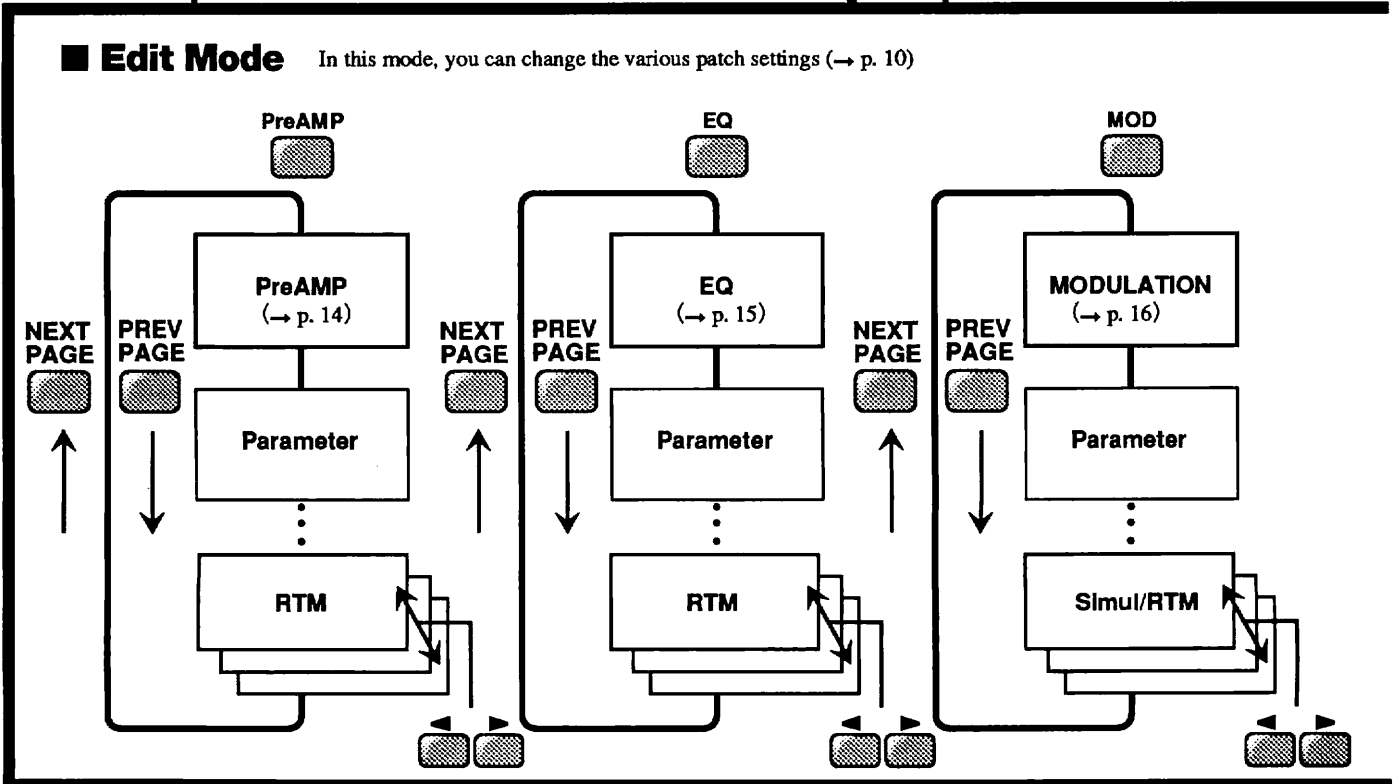
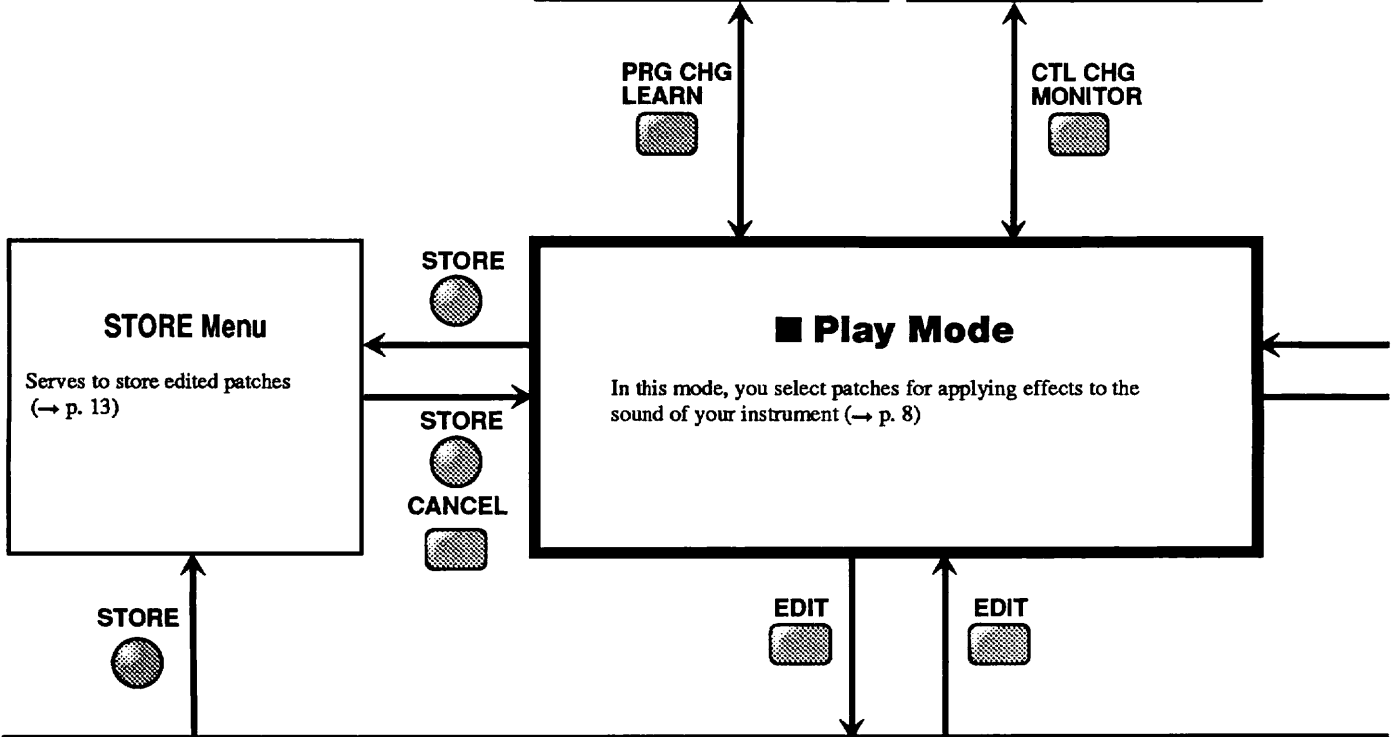
This chart shows the major functions of the 9150 along with the relevant controls and the reference pages in this manual.

**● PRG CHG LEARN Pop-up Menu**

This menu assigns patch numbers to program change messages sent from external equipment (→ p. 25)

**● CTL CHG MONITOR Pop-up Menu**

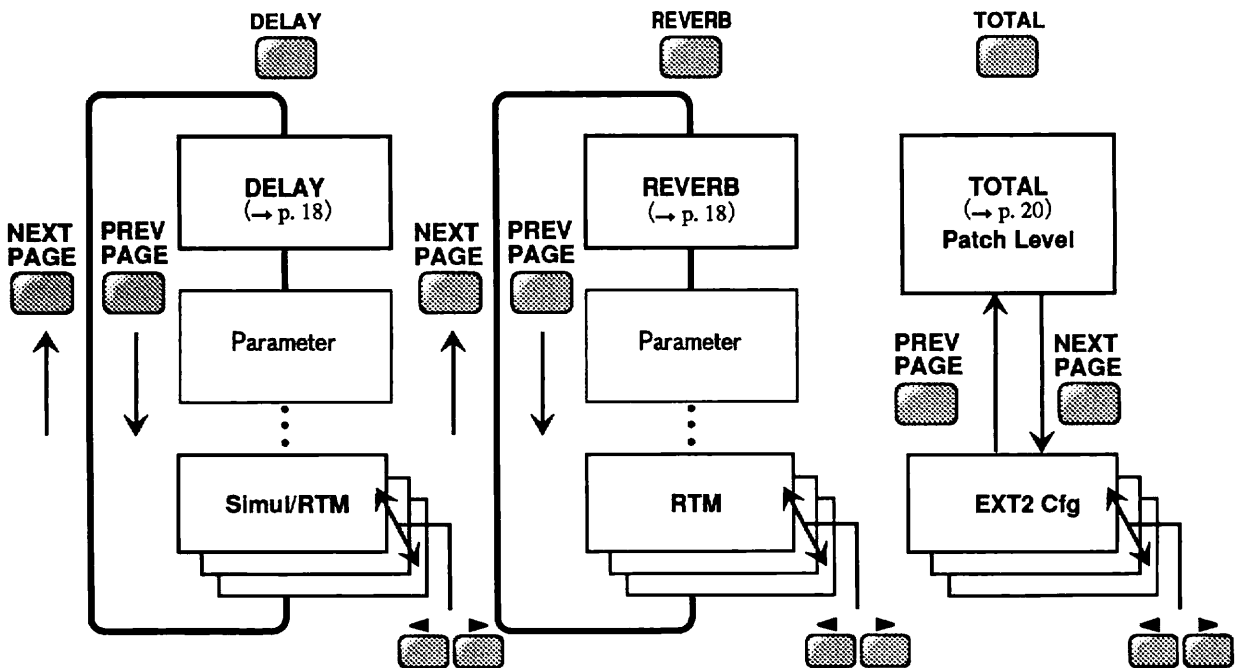
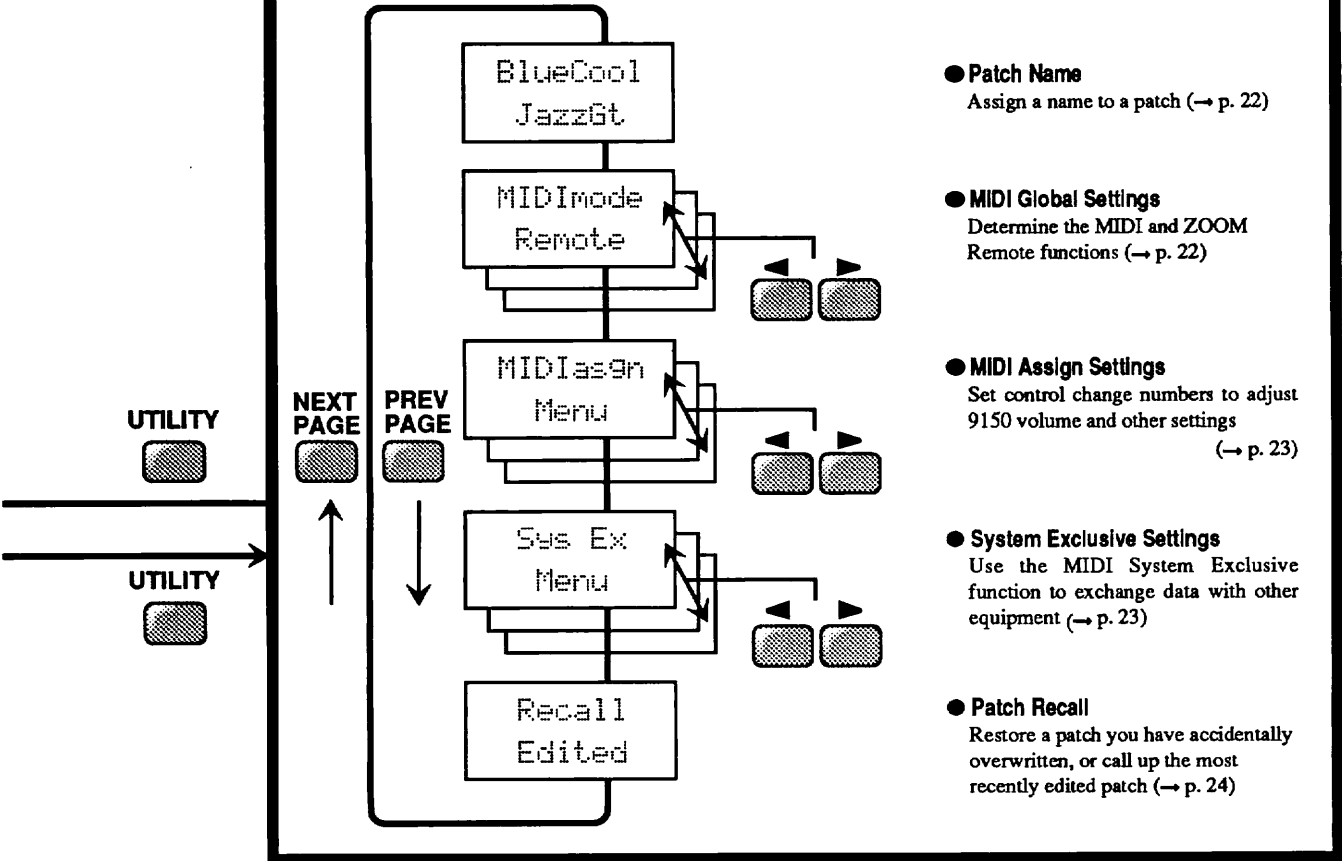
This menu is used to check control numbers and values of control change messages sent from external equipment (→ p. 25)



\* The actual display on the unit may differ from the example shown here.

## Utility Mode

This mode allows you to change MIDI settings and other general parameters of the 9150 (→ p. 22)



# Names and Functions of Controls and Connectors

## Front Panel

### (1) Power switch

Turns the 9150 on and off.

### (2) INPUT Jack

High-impedance input for connection of a guitar.

### (3) INPUT LEVEL control

Serves to adjust the level of the input signal. For best S/N ratio, turn the control up as far as possible without causing the CLIP LEVEL indicator to light. Before using the control, you should press the BYPASS key.

### (4) PHONES OUTPUT Jack

For connection of a pair of stereo headphones. This output incorporates an amp simulator.

### (5) OUTPUT LEVEL control

Adjusts the output level of the 9150. This affects both the signal at the output jack and the headphone jack.

### (6) CLIP LEVEL Indicator

Serves as an indication of input signal level. When the input has been overloaded by a peak signal, the indicator lights up in red.

### (7) LCD display

Shows vital information for operation of the 9150, such as patch numbers and patch names.

### (8) LCD CONTRAST control

Serves to adjust the LCD for best readability.

### (9) Effect module keys

Serve to select effect modules in Play mode and Edit mode and to turn effect modules on and off.

### (10) EDIT DIAL

Serves to select patches and to change setting values.

### (11) DIAL RUSH key

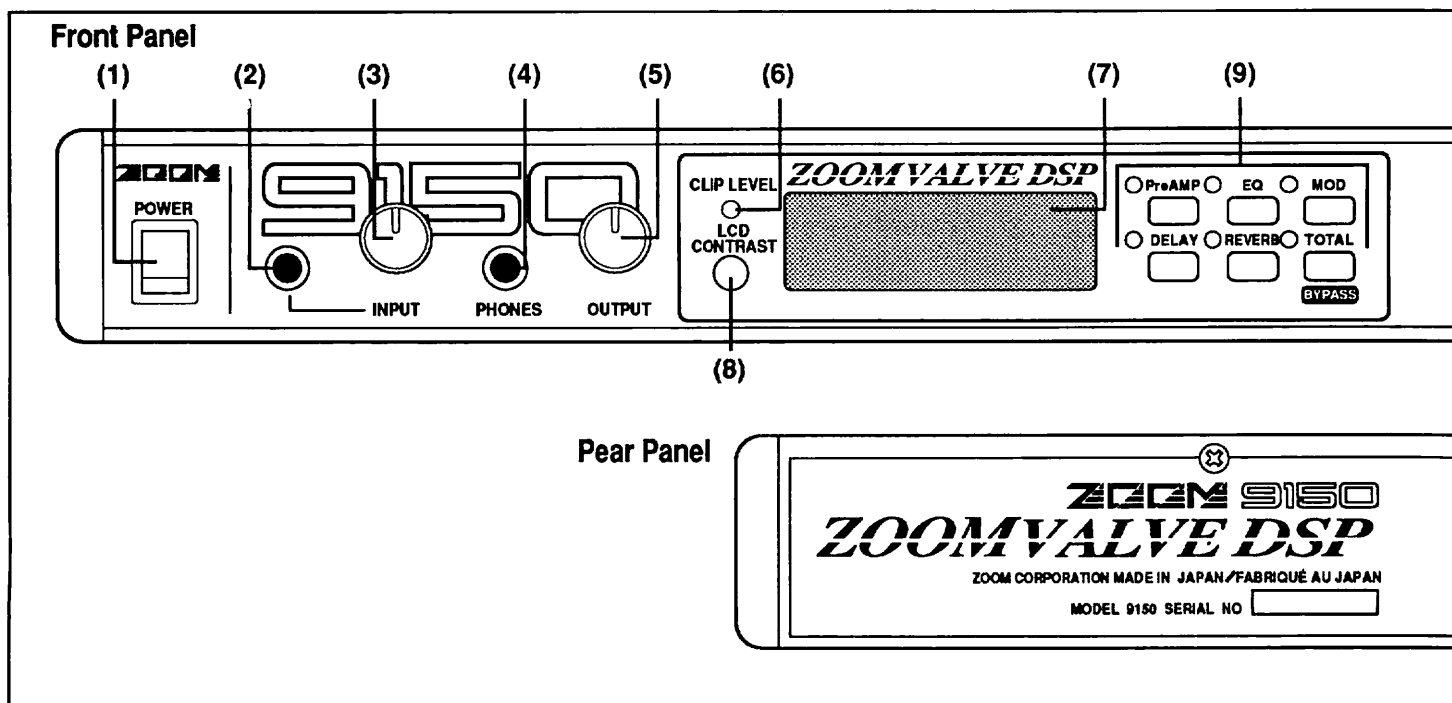
Pressing this key while turning the EDIT DIAL increases the speed of patch switching, value setting etc.

### (12) ◀ / MEMORY BANK key

Serves mainly to move the cursor on the display to the left. In Play mode, the key switches between the two memory banks (USER and PRESET).

### (13) NEXT PAGE/PRG CHG LEARN key

Serves mainly to move the cursor to the next page on the display. In Play mode, the key calls up the PRG CHG LEARN pop-up menu.



**(14) ► / CTL CHG MONITOR key**

Serves mainly to move the cursor on the display to the right. In Play mode, the key calls up the CTL CHG MONITOR pop-up menu.

**(15) PREV PAGE**

Serves to move the cursor to the previous page on the display.

**(16) STORE/EXECUTE key**

Serves mainly to store patches in memory, and also to execute a selected function.

**(17) EDIT/CANCEL key**

Serves mainly for switching between the Edit and Play modes. In the Edit mode, the LED on the left side lights up. The key also serves as a cancel key to abort certain functions.

**(18) UTILITY key**

Serves mainly for switching between the Utility and Play modes. In the Utility mode, the LED on the left side lights up. The key can also be used in the Edit mode to compare the sound of a patch before and after editing.

**Rear Panel**

**(1) The supplied AC adapter AD0005 is connected here.**

**(2) INPUT jack**

Serves for connection of an active instrument, such as a guitar or keyboard with comparatively low impedance.

**(3) EXT1 SEND/RETURN jacks**

Allow connection of an external effector. A device connected here is inserted in the signal path of the 9150 between the compressor in the preamplifier stage and the distortion circuits. The in/out status of the loop can be programmed as part of a 9150 patch.

**(4) EXT2 SEND/RETURN jacks**

This loop has a mono send output and stereo return inputs for connection of an external effector. The in/out status,

send level, insertion point, and mixing principle of the loop can be programmed as part of a 9150 patch.

**(5) OUTPUT jacks**

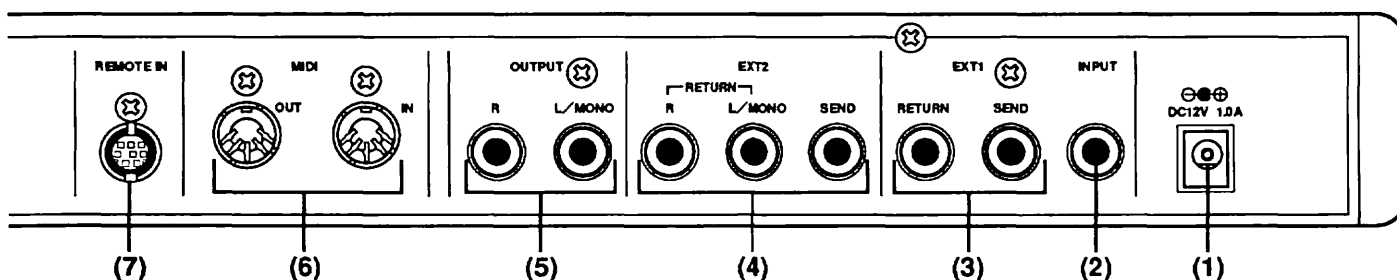
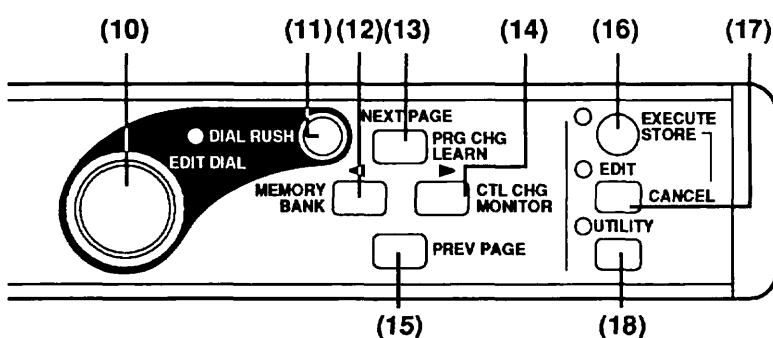
Stereo output for connection to an amplifier or mixer etc. When using the 9150 in monaural mode, use the L/MONO jack. For stereo, use the L/MONO and R jacks.

**(6) MIDI jacks**

Serve for connection to the MIDI interface of a synthesizer or computer, for remote control of the 9150 or storage of 9150 data on a sequencer or computer.

**(7) REMOTE IN jack**

Allows connection of a controller with ZOOM remote output, such as the foot controller FC50 or 8050, for remote operation of the 9150.





# Play Mode

This section describes functions and operation of the Play mode. This is the basic mode of the 9150, in which you select patches and use the effects for your instrument.

## To Activate Play Mode

If the 9150 is in another mode, press the key you used to activate the other mode, such as the EDIT/CANCEL key or UTILITY key, once more. The 9150 will revert to the Play mode. Since the Play mode is automatically activated after turn-on, you can also turn the 9150 off and on again.

## Display in Play Mode

In the Play mode, the display shows the following information.

### (1) Memory bank

Shows to which memory bank the currently selected patch belongs. The 9150 has two memory banks: PRESET and USER. The MEMORY BANK key can be used to switch between the two.

### (2) Patch number

Shows the currently selected patch number. There are 99 patch numbers (1–99) each for the PRESET and USER memory banks. The 9150 thus can store a maximum of 198 patches.

### (3) Patch name

Shows the name of the currently selected patch.

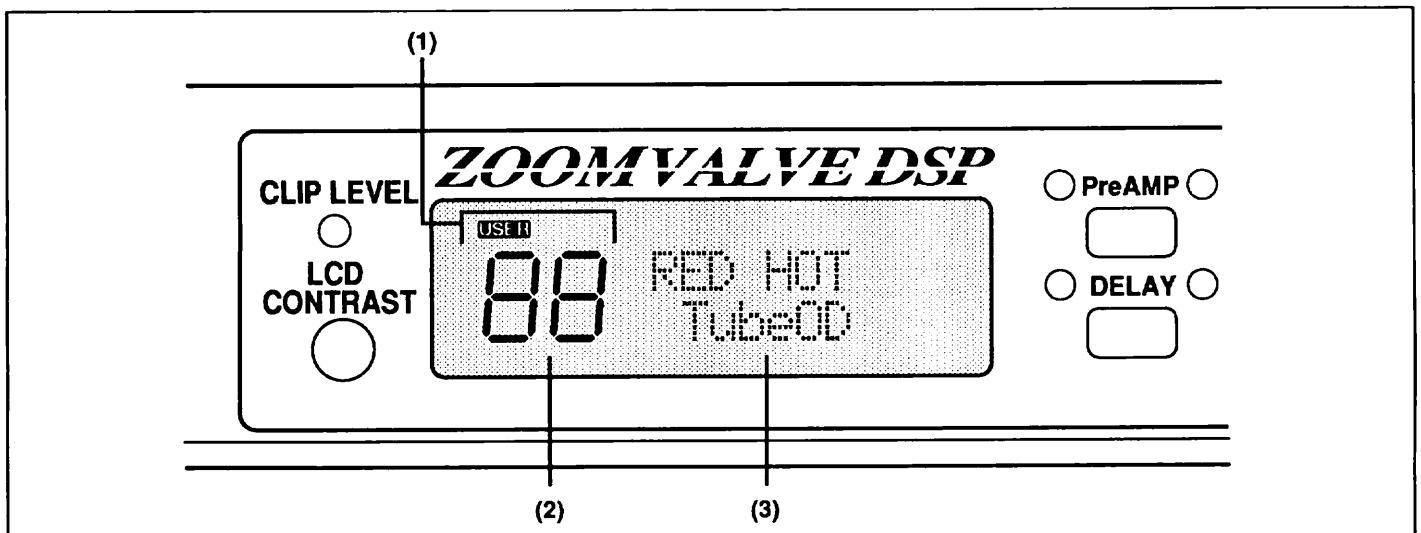
## Selecting a Patch

The EDIT DIAL serves to select a patch. With each click of the EDIT DIAL, the patch number changes by one, either up (clockwise rotation) or down (counterclockwise rotation).



When wishing to select a patch in a different memory bank, press the MEMORY BANK key, and then use the EDIT DIAL to select the patch.

Play mode display \*The actual display on the unit may differ from the example shown here.

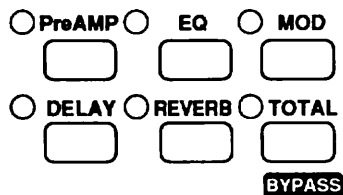


## Effect Module On/Off and Bypass

Every patch of the 9150 consists of several effect modules. In Play mode, it is possible to switch the individual effect modules of a patch on and off or to bypass all effect modules.

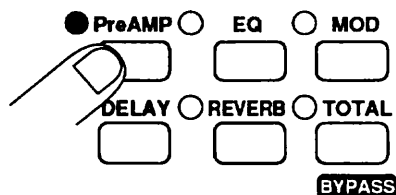
### 1. Select a patch in Play mode.

The LEDs of the effect module keys which are used in this patch light up.



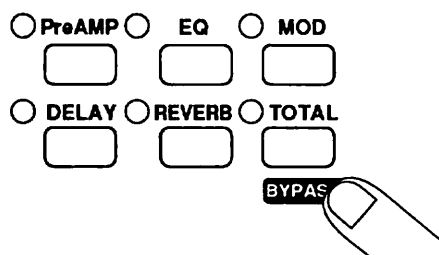
### 2. Press an effect module key whose LED is lit.

The effect module is temporarily switched off. To reactivate the effect module, press the key once more.



### 3. Press the BYPASS key.

All effect modules are temporarily switched off.



### 4. Press the BYPASS key once more.

All effect modules are reactivated.



Switching effect modules on and off in the Play mode does not alter the contents of the patch as stored in memory.

# Edit Mode

This section describes functions and operation of the Edit mode. In this mode, the effect parameters of the various patches can be changed.


## Edit Mode

### — Basic Operation Steps

1. Use the Play mode to select the patch to be edited. Then press the EDIT/CANCEL key to activate the Edit mode. By pressing the EDIT/CANCEL key once more, you can switch back to the Play mode.

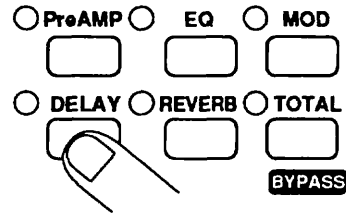


The patches of the 9150 use the following five types of effect modules. In addition to the effect module settings, a patch contains information on the patch level, external effect settings, and patch name (set in the Utility mode).

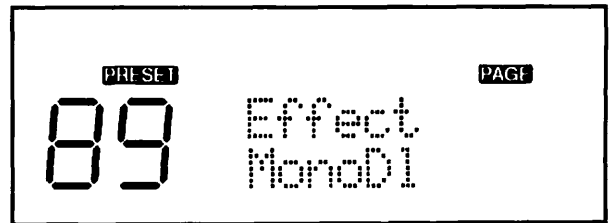
 It is possible to edit any patch, whether called up from the PRESET or the USER memory bank. However, edited patches can only be stored in the USER memory bank.

2. Press the effect module key to select the effect module you want to edit.

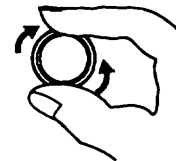
In the Edit mode, the effect modules used for the current patch are indicated by the LEDs for the respective effect module keys. When an effect module key is pressed, the LED starts to flash with long “on” intervals, and the module is selected for editing.



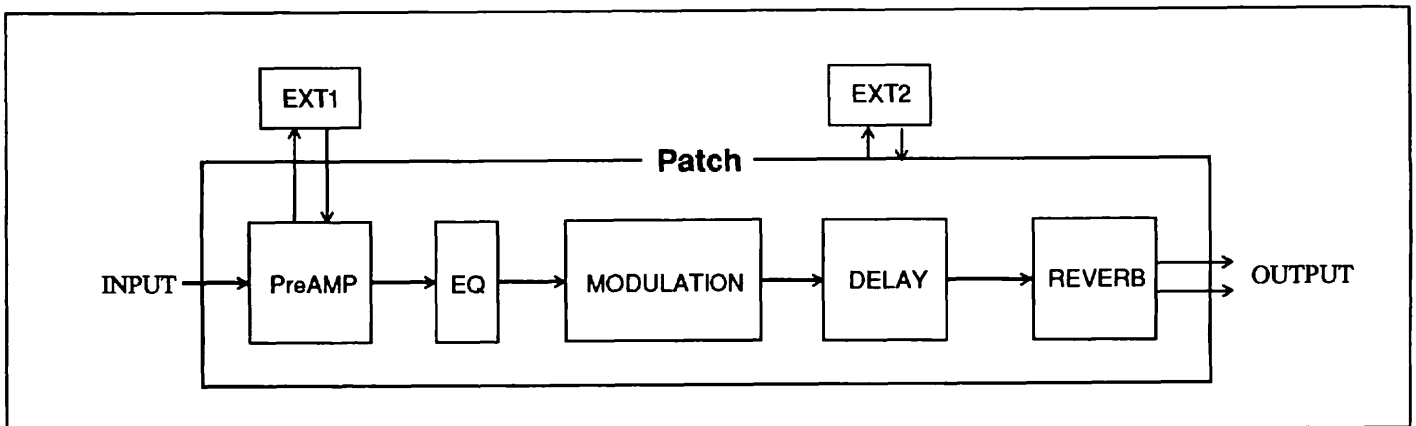
An effect module consists of various effects (see table on page 11). Immediately after selecting an effect module, the indication “Effect” appears on the top line of the display, and the name of the currently selected effect appears below it.



3. Use the EDIT DIAL to select the desired effect in the effect module.

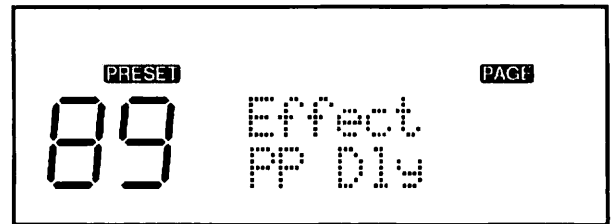


### Patch configuration

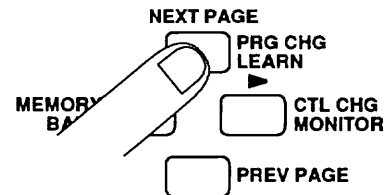


Effects in effect modules

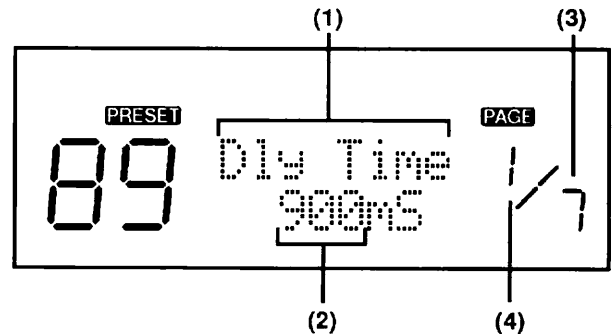
PreAMP		Display
1	CLEAN 1	Clean1
2	CLEAN 2	Clean2
3	RHYTHM 1	Rythm1
4	RHYTHM 2	Rythm2
5	Overdrive 1	Ovdrv1
6	Overdrive 2	Ovdrv2
7	LEAD 1	Lead 1
8	LEAD 2	Lead 2
EQ		Display
1	3BAND EQ	3bndEQ
2	EQ→ENHANCER	EQ→ENH
3	AUTO WAH	At. Wah
4	PEDAL WAH	Pd1Wah
MODULATION		Display
1	PITCH SHIFTER	Pitch
2	PHASE SHIFTER	Phase
3	FLANGER	Flange
4	CHORUS	Chorus
5	TREMOLO/PAN	Tremlo
6	STEP	Step
7	ROTARY	Rotary
8	PEDAL PITCH	Pd1Pit
DELAY		Display
1	MONO DELAY	MonoD1
2	Ping Pong Delay	PP D1w
REVERB		Display
1	REVERB	Reverb
2	Early Refraction	E/R
3	Ping Pong Delay	PP D1w
4	Delay→Panning	D1→Pan
5	Expand Memory for Delay Module	ExeMem



4. Use the NEXT PAGE and PREV PAGE keys to select the parameter to be edited.



Each effect has several pages of parameters. Use the NEXT PAGE and PREV PAGE keys to select the parameter you wish to change. The display shows the following information.



Effect parameters

- (1) Parameter name
- (2) Parameter value
- (3) Total number of parameter pages
- (4) Currently selected page

To go to a different page, use the NEXT PAGE and PREV PAGE keys.

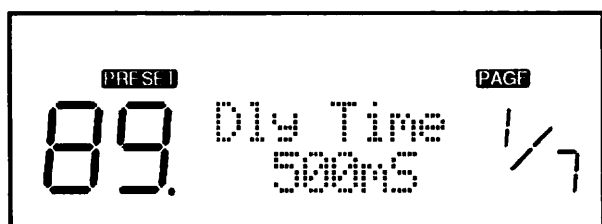


For a detailed description of effect parameters, please refer to the section "Effect Parameters".

5. Use the EDIT DIAL to change the parameter value. Repeat steps 2 through 5 for all parameters you wish to change.

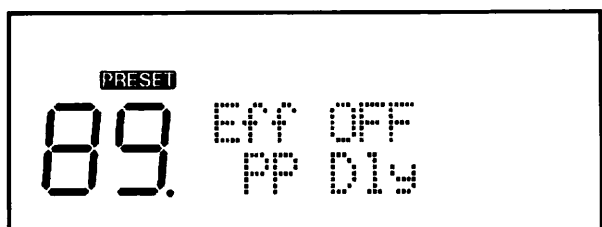


When any value has been changed, a dot (.) appears to the right of the patch number, to show that the patch is being edited.



## Effect Module On/Off Selection

From the effect selection display, you can determine whether an effect module should be active or not within a patch. To do this, press the corresponding effect module key. When the LED flashes with long “on” intervals, the effect module is ON. When the LED flashes with long “off” intervals, the effect module is OFF.



You can switch between the ON and OFF state with each push of the effect module key.

## RTM (Real-Time Modulation)

The last page of almost all effects contains the RTM parameter settings. RTM makes it possible to control effect parameters during a performance with an external controller (such as the optional FP01 or a synthesizer). For example, you could use two expression pedals FP01 connected to the foot controller FC50 to control the volume and tone of your instrument. The RTM settings are also stored as part of the patch.

To use the RTM function with the effect modules PREAMP, EQ, and REVERB, the following three

parameters must be set.

### (1) RTM Dest (RTM destination)

Selects the parameter to be controlled externally. Which parameter is available depends on the effect. Set to OFF when not wishing to use RTM.

### (2) Dest max (Destination maximum)

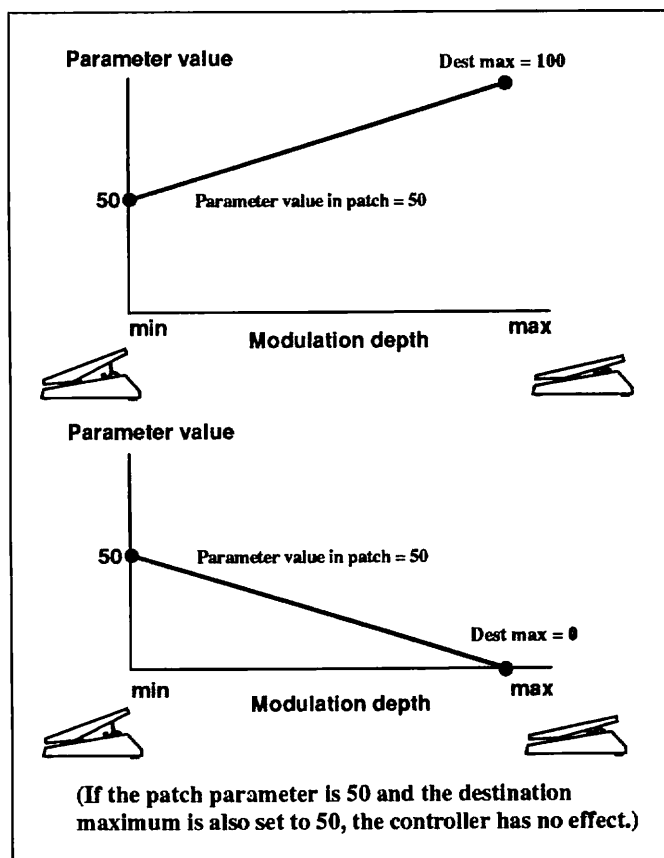
Sets the maximum value that the controlled parameter assumes when the external control signal is at maximum (maximum modulation depth).

### (3) RTM Src (RTM source)

Selects the control number to be used for RTM (range: #1–31). This control number is called the RTM source.

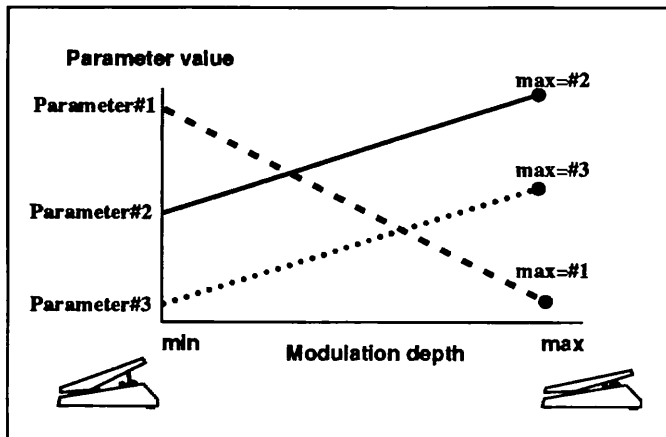
### RTM usage example

A parameter with a value from 0 – 100 has been selected as RTM destination and the FP01 is used as controller. The parameter is programmed into the patch with a value of 50. Destination maximum has been set to 100. This means that while the pedal is fully raised, the parameter is 50. Pushing the pedal down gradually increases the parameter, and it becomes 100 when the pedal is fully depressed.



RTM

The effect modules MODULATION and DELAY also allow Simul-RTM, which means that several destinations are controlled simultaneously. The destination maximum settings for each single effect can be set individually. Destinations which should not be controlled by RTM can be set to OFF.



Simul-RTM

Use the ◀/▶ keys to move between the RTM Dest, Dest max and RTM Src pages.

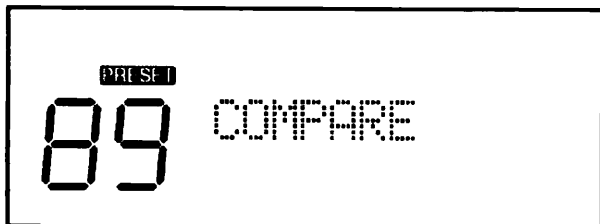
For details about RTM parameters, please refer to pages 14 and 16.

## Compare

By pressing the UTILITY key while the 9150 is in the Edit mode, the original patch can be called up, to compare the sound of the patch before and after editing.



The display changes as follows, and all parameters in the patch are set to the original values.



To return to the editing condition, press the UTILITY key once more or press the EDIT/CANCEL key.



When a patch is selected, the patch data in memory are copied to a separate memory area for editing, which is called the edit buffer. In other words, when you are editing parameters in the Edit mode, you are actually editing the patch in the edit buffer.

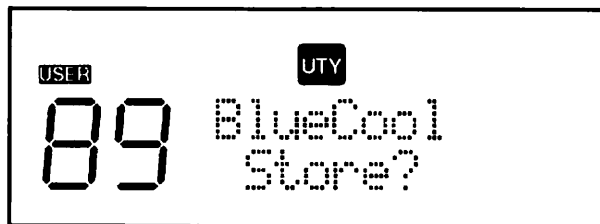
## Storing a Patch

When you are done editing, you can store the results as follows.

1. Press the STORE key.



The store menu appears on the display, with the current patch number and patch name. If you wish to store the edited patch under the same number, just press the STORE key once more. (If you were editing a patch from the PRESET memory bank, the memory bank is automatically switched to USER.)



2. If you wish to store the edited patch under a different number, use the EDIT DIAL to select the desired number.
3. Press the STORE key again. The edited patch is stored under the new number.

When a patch is stored, any data previously contained in that patch number are overwritten.



If you have edited a patch (a dot is shown to the right of the patch number) and you have returned to the Play mode without storing it, you can still store it provided you have not selected a different patch in the meantime. To do this, simply press the STORE key to bring up the store menu.

When wishing to change the name of the patch, press the UTILITY key while the store menu is displayed. This activates the Utility mode, and you can now select the patch name page. For details, please refer to page 22.

# Effect Parameters

This section lists all parameters of all effects available in the 9150, that is all items which influence the characteristics and the sound of an effect. Parameters which are common for several or all effects are explained only once.

## ■ Effect Module 1: PREAMP

This module comprises the tube preamplifier with compressor and overdrive functions.

**1. CLEAN 1** Clean1

Creates a bright, clean sound. This channel uses solid-state circuitry only.

**2. CLEAN 2** Clean2

Recreates the clean sound of a vintage tube amplifier.

**3. RHYTHM 1** Rethm1

All-purpose rhythm sound with a light, crunchy character.

**4. RHYTHM 2** Rethm2

Rhythm sound with a solid punch.

These four effects use exactly the same parameters.

Page	Parameters	Values
1	Comp Dpt	Off, 1 - 4
2	EXT 1	Off, On
3	Tone	- 10 - + 10
4	ZNR Thr	Off, 1 - 15
5	1 RTM Dest	Off, Comp, Tone
5	2 Dest Max	
5	3 RTM Src	#01 - #31

### Description:

- [P1] Determines the compression depth. The higher the value, the more intense the compression.
- [P2] Controls external effect loop on/off.
- [P3] This parameter is a tone control type equalizer.
- [P4] Adjusts the ZNR (Zoom Noise Reduction) sensitivity. Set to the value which yields minimum noise when no input signal is present.
- [P5-1] Determines the parameter to be controlled by RTM. Set to OFF if RTM is not used.
- [P5-2] Determines the value at maximum modulation (for the parameter set with P5-1).

[P5-3] Selects the control number for the modulation source (#01 - #31).

Use the ◀ / ▶ keys to move between pages [P5-1] and [P5-3].

**5. OVERDRIVE 1** Ovdrv1

Smooth overdrive sound with distinctive tube amplifier characteristics.

**6. OVERDRIVE 2** Ovdrv2

Overdrive sound with wild, fat distortion.

**7. LEAD 1** Lead 1

Lead guitar sound with distinct, hard distortion.

**8. LEAD 2** Lead 2

Heavy metal lead guitar sound.

These four effects use exactly the same parameters.

Page	Parameters	Values
1	Comp Dpt	Off, 1 - 4
2	EXT 1	Off, On
3	Color	1 - 3
4	Gain	1 - 12
5	Turbo	Off, On
6	Tone	- 10 - + 10
7	ZNR Thr	Off, 1 - 15
8	1 RTM Dest	Off, Comp, Gain, Turbo, Tone
8	2 Dest Max	
8	3 RTM Src	#01 - #31

### Description:

- [P3] Selects one of three sound variations.
- [P4] Determines the overdrive gain.
- [P5] Switches the two-stage drive circuit on and off.



The 9150 can be set to high gain, Pay attention not to cause feedback when playing certain types of guitars.

## 2. EQ → ENHANCER

EQ→ENH

This is a special effect combining a 2-band equalizer with an enhancer. The enhancer mixes a phase-shifted signal to the original signal to emphasize the sound.

Page	Parameters	Values
1	EQ Low	- 15dB - + 15dB
2	EQ HI	- 15dB - + 15dB
3	ENH Dpt	Off, 1 - 15
4	ENH freq	500Hz - 6300Hz
5	Level	- 36dB - + 12dB
6	1 RTM Dest	Off, EQ Low, EQ Hi, ENH D, ENH f, Level
6	2 Dest Max	
6	3 RTM Src	#01 - #31

### Description:

- [P3] Determines the enhancer depth.  
 [P4] Determines the enhancer center frequency.

## ■ Effect Module 2: EQ (Equalizer)

This is an equalizer/tone control effect module.

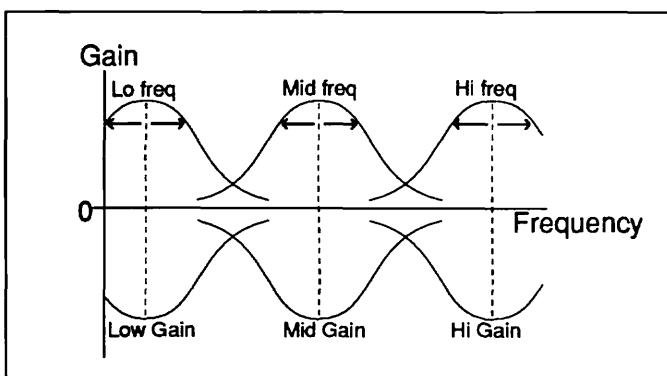
### 1. 3BAND EQ

3bndEQ

Page	Parameters	Values
1	Low Gain	- 15dB - + 15dB
2	Low freq	50 - 250Hz
3	Mid Gain	- 15dB - + 15dB
4	Mid freq	200 - 2500Hz
5	Hi Gain	- 15dB - + 15dB
6	Hi freq	2000 - 6300Hz
7	Level	- 36dB - + 12dB
8	1 RTM Dest	Off, Low G, Low f, Mid G, Mid f, High G, High f, Level
8	2 Dest Max	
8	3 RTM Src	#01 - #31

### Description:

- [P1] Determines the low-range boost/cut.  
 [P2] Sets the low-range center frequency.  
 [P3] Determines the mid-range boost/cut.  
 [P4] Sets the mid-range center frequency.  
 [P5] Determines the high-range boost/cut.  
 [P6] Sets the high-range center frequency.  
 [P7] Controls the output level of the EQ module.



EQ Parameters

### 3. Auto WAH

At. Wah

Page	Parameters	Values
1	Wah Sens	- 10 - + 10
2	freq	1 - 64
3	Level	- 36dB - + 12dB
4	1 RTM Dest	Off, Sens, Level
4	2 Dest Max	
4	3 RTM Src	#01 - #31

### Description:

- [P1] Sets the wah sensitivity in response to picking intensity. With negative values, the sweep proceeds in the opposite direction.  
 [P2] Determines the base frequency around which the wah effect is centered.

### 4. Pedal WAH

Fd1Wah

In combination with the optional FC50 or the 8050 and FP01, this effect allows pedal wah.

Page	Parameters	Values
1	freq	1 - 64
2	Level	- 36dB - + 12dB
3	1 RTM Dest	Off, freq, Level
3	2 Dest Max	
3	3 RTM Src	#01 - #31



## ■Effect Module 3: MODULATION

This modulation effect module provides cyclic alteration of the signal.

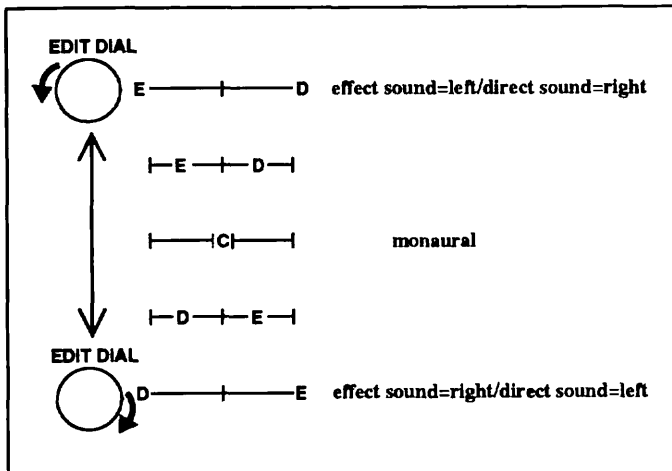
### 1. PITCH SHIFTER

Pitch

Page	Parameters	Values
1	Cromatic	- 24 - + 24
2	Fine	- 50cent - + 50cent
3	Eff Lvl	0 - 100
4	Dir Lvl	0 - 100
5	Separate	See be low
6 0	SimulRTM Param →	Off, On
6 1	max "Eff Lvl"	Off, 0 - 100
6 2	max "Dir Lvl"	Off, 0 - 100
6 3	max "Separate"	Off, See be low
6 4	RTM Src	#01 - #31

#### Description:

- [P1] Determines the pitch change width in semitones (up to ±2 octaves).
- [P2] Allows fine adjustment of pitch change width in cent (1/100 semitone).
- [P3] Determines the level of the pitch-shifted sound.
- [P4] Determines the level of the direct sound.
- [P5] Shifts the left/right separation of direct sound and effect sound. On the display, "D" represents the direct sound and "E" the effect sound. When the EDIT DIAL is turned clockwise, the direct sound moves to the left and the effect sound to the right. Turning the EDIT DIAL counter-clockwise moves the sounds towards the center. When the indication "C" appears, the direct sound and effect sound are centered (monaural).



#### Separate parameter function

- [P6-0] This parameter serves to activate the display for the Simul-RTM parameters. Pressing ► at this screen calls up parameters [P6-1] to [P6-4].
- [P6-1] - [P6-4] Determine the maximum value for the controlled parameters at maximum modulation depth. Set destinations which should not be controlled to OFF.

### 2. PHASE SHIFTER

Phase

Page	Parameters	Values
1	Depth	0 - 100
2	LFO Rate	0.05Hz - 5.00Hz
3	Manual	0 - 100
4	Reso	0 - 100
5	Color	1, 2
6 0	SimulRTM Param →	
6 1	max "Depth"	Off, 0 - 100
6 2	max "LFO Rate"	Off, 0.05Hz - 5.00Hz
6 3	max "Reso"	Off, 0 - 100
6 4	RTM Src	#01 - #31

#### Description:

- [P1] Determines the modulation depth. When set to "0" (zero), the effect works as a comb (fixed-phase) filter.
- [P2] Determines the LFO frequency.
- [P3] Determines the center frequency at modulation "0" (zero).
- [P4] Determines the resonance amount which gives the effect an unusual character.
- [P5] Determines the basic tonal quality of the effect.

### 3. FLANGER

Flange

Page	Parameters	Values
1	Depth	0 - 100
2	LFO Rate	0.05Hz - 5.00Hz
3	PreDelay	0.0mS - 40.0mS
4	Feedback	0 - 100
5	Eff Mix	0 - 100
6 0	SimulRTM Param →	
6 1	max "Depth"	Off, 0 - 100
6 2	max "LFO Rate"	Off, 0.05Hz - 5.00Hz
6 3	max "Feedback"	Off, 0 - 100
6 4	RTM Src	#01 - #31

#### Description:

- [P1] Determines the modulation depth. When set to "0" (zero), the effect works as a doubling effect.
- [P3] Determines the predelay time of the effect sound.
- [P4] Determines the feedback amount which gives the effect an unusual character.
- [P5] Determines the level of the effect sound.

## 4. CHORUS

Chorus

Page	Parameters	Values
1	Depth	0 – 100
2	LFO Rate	0.05Hz – 5.00Hz
3	Eff Mix	0 – 100
4	Mode	Mono, Stereo
5	0 SimuIRTM Param →	
5	1 max "Depth"	Off, 0 – 100
5	2 max "LFO Rate"	Off, 0.05Hz – 5.00Hz
5	3 max "Eff Mix"	Off, 0 – 100
5	4 RTM Src	#01 – #31

### Description:

[P4] Switches between mono and stereo chorus.

## 5. TREMOLO/Auto PAN

Tremlo

This effect works as a tremolo in monaural mode and as an auto-pan effect (which shifts the sound regularly between left and right) in stereo mode.

Page	Parameters	Values
1	Depth	0 – 100
2	LFO Rate	0.2Hz – 20.0Hz
3	Peak	0 – 15
4	Mode	Trem, At Pan
5	0 SimuIRTM Param →	
5	1 max "Depth"	Off, 0 – 100
5	2 max "LFO Rate"	Off, 0.2Hz – 20.0Hz
5	3 max "Peak"	Off, 0 – 15
5	4 RTM Src	#01 – #31

### Description:

[P3] The higher the value of this parameter, the more the LFO waveform changes from a sine wave (sawtooth for tremolo) towards a trapezoid and square wave.

[P4] Switches between tremolo (mono) and auto-pan (stereo).

## 6. STEP

Step

This special effect changes the flanger resonance frequency in discrete staircase steps.

Page	Parameters	Values
1	Depth	0 – 100
2	LFO Rate	0.2Hz – 40.0Hz
3	Feedback	0 – 100
4	0 SimuIRTM Param →	
4	1 max "Depth"	Off, 0 – 100
4	2 max "LFO Rate"	Off, 0.2Hz – 40.0Hz
4	3 max "Feedback"	Off, 0 – 100
4	4 RTM Src	#01 – #31

## 7. ROTARY

Rotary

This effect simulates a rotating speaker.

Page	Parameters	Values
1	Hrn fast	1.0Hz – 20.0Hz
2	Hrn slow	0.05Hz – 5.00Hz
3	Rot fast	1.0Hz – 20.0Hz
4	Rot slow	0.05Hz – 5.00Hz
5	Swp time	Off, 1 – 10
6	Speed	slow, fast
7	RTM Src	#01 – #31

### Description:

[P1] Determines the cycle for the horn (high-frequency speaker) at high rotation speed.

[P2] Determines the cycle for the horn at low rotation speed.

[P3] Determines the cycle for the rotor (low-frequency speaker) at high rotation speed.

[P4] Determines the cycle for the rotor at low rotation speed.

[P5] Determines the time required to switch between high and low rotation speed.

[P6] Determines which speed (high or low) is active when calling the patch.

[P7] Selects the control number for the modulation source (#01 – #31). The destination is fixed to "Speed". Control change values from 0 – 63 select low speed and values from 64 – 127 high speed.

## 8. Pedal PITCH

Pd1Pit

This is an unusual effect which allows changing the pitch during the performance using a pedal such as the FP01.

Page	Parameters	Values
1	Pit cent	– ∞, – 2400 – + 2400
2	Eff Lvl	0 – 100
3	Dir Lvl	0 – 100
4	0 SimuIRTM Param →	
4	1 max "Pitch"	Off, – ∞, – 2400 – + 2400
4	2 max "Eff Lvl"	Off, 0 – 100
4	3 max "Dir Lvl"	Off, 0 – 100
4	4 RTM Src	#01 – #31

### Description:

[P1] Determines the pitch change width in cent.

## ■ Effect Module 4: DELAY

This effect module comprises delay effects.

### 1. MONO DELAY MonoD1

Page	Parameters	Values
1	Dly Time	0 mS – 1000mS
2	Feedback	0 – 100
3	Hi Damp	0 – 15
4	Eff Lvl	0 – 100
5	Dir Lvl	0 – 100
6 0	Dly RTM1 →	Off, Dly Tim
6 1	RTM Src	#01 – #31
7 0	Dly RTM2 →	Off, Bal
7 1	max "Eff Lvl"	Off, 0 – 100
7 2	max "Dir Lvl"	Off, 0 – 100
7 3	RTM Src	#01 – #31

#### Description:

- [P1] Determines the mono delay time.
- [P3] The higher the value of this parameter, the stronger is the high range attenuation during each feedback cycle.
- [P6-0] Pressing ► at this screen calls up parameters [P6-1] to [P6-4].
- [P6-1] This special parameter serves to control the delay time with the optional foot controller 8050. By matching the parameter to the pedal switch control change messages of the 8050, the delay time can be changed according to pedal switch timing. For details, please refer to pages 30 – 37 in the 8050 instruction manual.
- [P7-0] Pressing ► at this screen calls up the parameter page [P7-1].

### 2. Ping Pong DELAY PP D14

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

Page	Parameters	Values
1	Dly Time	0 mS – 1000mS
2	Feedback	0 – 100
3	Hi Damp	0 – 15
4	Eff Lvl	0 – 100
5	Dir Lvl	0 – 100
6 0	Dly RTM1 →	Off, Dly Tim
6 1	RTM Src	#01 – #31
7 0	Dly RTM2 →	Off, Bal
7 1	max "Eff Lvl"	Off, 0 – 100
7 2	max "Dir Lvl"	Off, 0 – 100
7 3	RTM Src	#01 – #31

#### Description:

- [P1] Determines the delay time.

## ■ Effect Module 5: REVERB

This effect module comprises reverberation effects.

### 1. REVERB Reverb

Page	Parameters	Values
1	Rev Time	0.1S – 10.0S
2	Pre Dly	0 mS – 100mS
3	Rev Tone	– 10 – + 10
4	Eff Mix	0 – 100
5 0	RTM Dest	Off, RevTim, EffMix
5 1	Dest Max	
5 2	RTM Src	#01 – #31

#### Description:

- [P1] Determines the reverb time.
- [P2] Determines the predelay (delay between original sound and onset of reverberation).
- [P3] Determines the tonal quality of the reverberation sound. Higher values mean brighter sound.
- [P5-0] Pressing ► at this screen calls up the parameter page [P5-1].

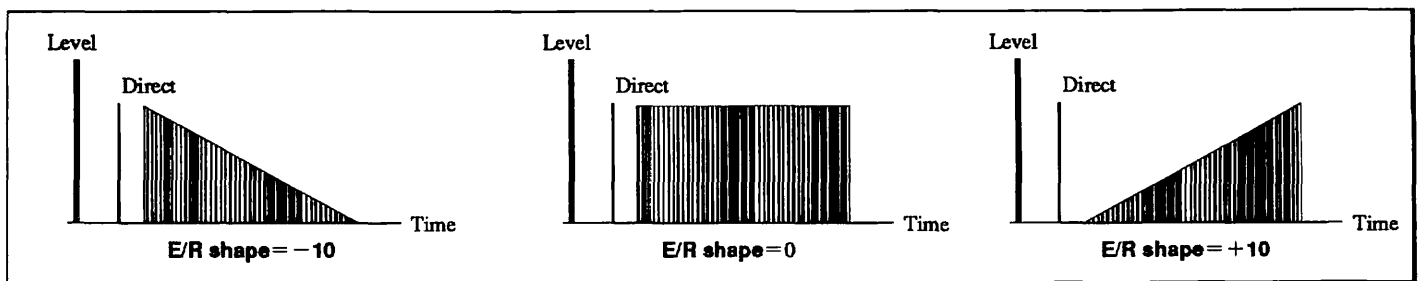
### 2. Early Reflection E/R

This is an early reflection effect with a shape parameter.

Page	Parameters	Values
1	ER Time	1 – 100
2	Pre Dly	0 mS – 100mS
3	ER Shape	– 10 – + 10
4	ER Tone	– 10 – + 10
5	Eff Mix	0 – 100
6 0	RTM Dest	Off, Shape, EffMix
6 1	Dest Max	
6 2	RTM Src	#01 – #31

#### Description:

- [P1] Determines the early reflection time.
- [P3] Determines the pattern of the reflected sound. Positive values mean a reverse-envelope curve.
- [P4] Adjusts the tonal quality of the delayed sound.



Shape parameter

### 3. Ping Pong DELAY

PP Dly

This is a ping-pong delay with opposite definition than the ping-pong delay in effect module 4.

Page	Parameters	Values
1	Dly Time	0 mS – 900mS
2	Feedback	0 – 100
3	Hi Damp	0 – 15
4	Eff Mix	0 – 100
5	0 RTM Dest	Off, Feedbk, EffMix
5	1 Dest Max	
5	2 RTM Src	#01 – #31

**Description:**

[P1] Determines the delay time.

### 4. DELAY → PAN

Dl→Pan

This is an SFX type effect which combines delay with auto-pan.

Page	Parameters	Values
1	Dly Time	0 mS – 900mS
2	FB Time	0 mS – 900mS
3	Feedback	0 – 100
4	PanWidth	0 – 15
5	PanDepth	0 – 15
6	LFO Rate	0.2Hz – 20.0Hz
7	Eff Mix	0 – 100
8	0 RTM Dest	Off, Feedbk, PanWid, PanDpt, Rate, EffMix
8	1 Dest Max	
8	2 RTM Src	#01 – #31

**Description:**

- [P2] Determines the feedback tap time.
- [P4] Determines the left/right expansion of the auto-pan effect.
- [P5] Determines the depth direction of the auto-pan effect.

### 5. Expand Memory for Delay Module

Releases the memory used by the REVERB effect module and assigns it to the DELAY effect module, to allow longer delay times.

Page	Parameters	Values
1	Exp Time	0 mS – 900mS

**Description:**

[P1] Sets the length of time during which the memory is expanded.



If for example the DELAY effect module is set for a delay time of 600 ms and the memory is expanded for 500 ms, the actual delay time becomes 1100 ms. When this is selected, the other effects in the REVERB effect module cannot be used.

## ■ Effect Module 6: TOTAL

TOTAL is not an effect as such, but it is stored as part of a patch. It comprises settings such as total volume level, external effect loop 2 insert point etc. The external effect loop allows sending the signal to an external effector for further processing and then feeding it back to the effect module of the 9150.

Page	Parameters	Values
1	PatchLvl	0 – 100
2	EXT2 Cfg	Insert, Para, Mix in

### Description:

- [P1] Determines the overall level of the patch.  
 [P2-0] Allows choosing the insert point for external effect loop 2. The following three settings are available.

#### • Insert

Insertion possible at any point marked by a  $\diamond$  in the chart (mono send, stereo return). The stereo return signal is mixed internally in the 9150.

#### • Para (Parallel Mix)

The signal can be tapped as a mono signal at any point marked by a  $\diamond$  in the chart and is mixed as a stereo signal to the output of the REVERB effect module.

#### • Mix In

The signal can be tapped as a mono signal at any point marked by a  $\diamond$  in the chart and mixed with the EXT2 RETURN L and R signals into the signal path at any point marked by a  $\blacklozenge$ . Stereo mixing with the output of the REVERB effect module is also possible.

Use the  $\blacktriangleleft$  /  $\blacktriangleright$  keys to move between pages [P2-1] and [P2-5].

The meaning of parameters [P2-1] – [P2-5] depends on the setting of [P2-0].

### ● If [P2-0] is set to "Insert"

Page	Parameters	Values	
2	1	InsPoint	Pre $\diamond$ EQ, EQ $\diamond$ Mod, Mod $\diamond$ DL, DL $\diamond$ Rev
2	2	Send Lvl	By, 1 – 10

### Description:

- [P2-1] Selects the insert point for external effect loop 2.  
 [P2-2] Determines the send level for external effect loop 2. When set to "By", the loop is bypassed.

### ● If [P2-0] is set to "Para"

Page	Parameters	Values	
2	1	Brch Pnt	PreOut, EQ Out, ModOut, DlyOut
2	2	Send Lvl	By, 1 – 10

### Description:

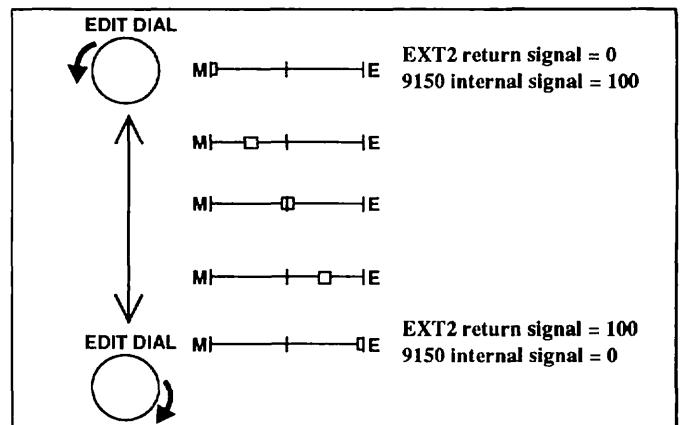
- [P2-1] Selects the send tap for external effect loop 2.  
 [P2-2] Determines the send level for external effect loop 2. When set to "By", the loop is bypassed.

### ● If [P2-0] is set to "Mix In"

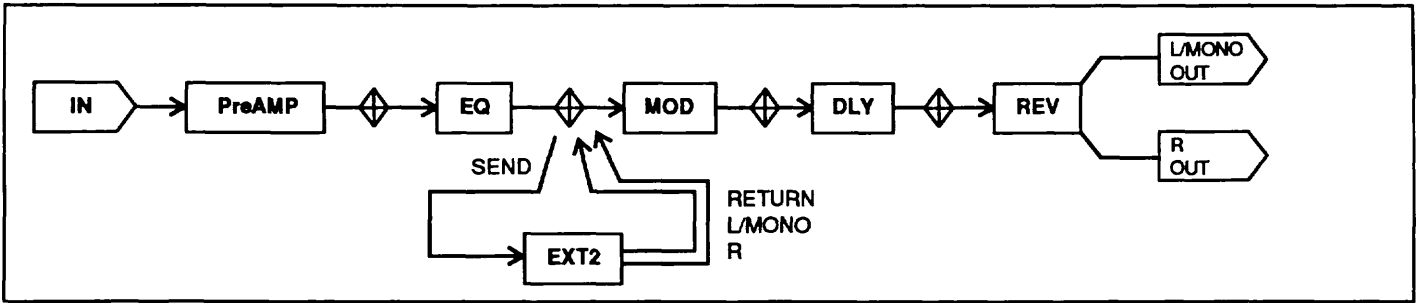
Page	Parameters	Values	
2	1	Brch Pnt	PreOut, EQ Out
2	2	Send Lvl	By, 1 – 10
2	3	MixPoint	Mod In, Dly In, Rev In
2	4	SubMixer	See below
2	5	Parallel	Mix On, Mix Off

### Description:

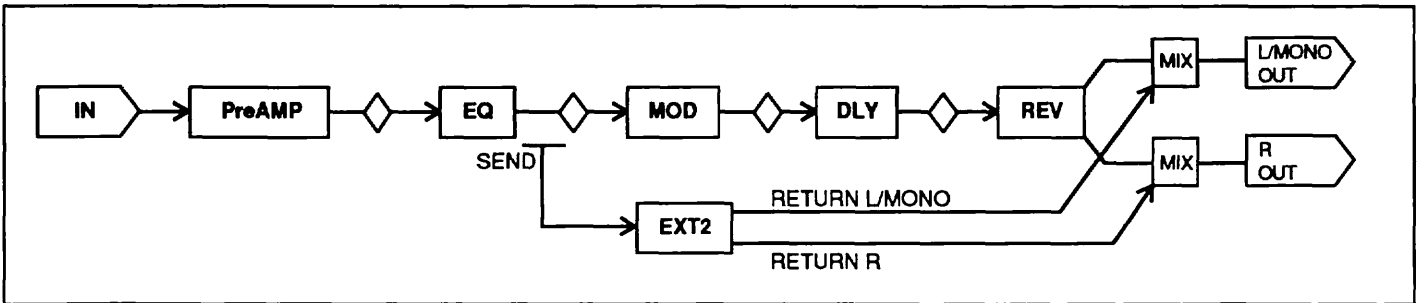
- [P2-1] Selects the send tap for external effect loop 2.  
 [P2-2] Determines the send level for external effect loop 2. When set to "By", the loop is bypassed.  
 [P2-3] Determines the mixing point for the return signal from external effect loop 2.  
 [P2-4] Determines the level balance between the external effect loop 2 return signal ("E") and the internal signal of the 9150 ("M").  
 [P2-5] Determines whether the external effect loop 2 return signal is mixed with the REVERB effect module output.



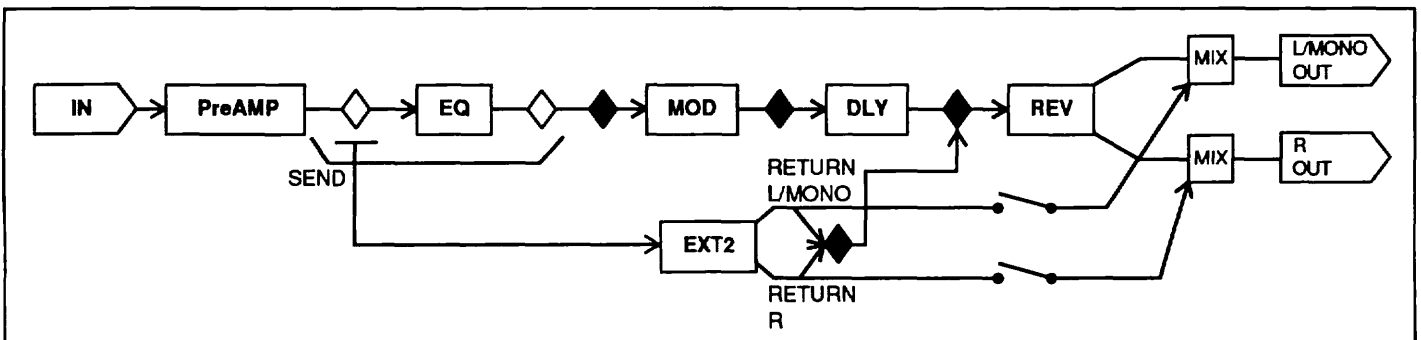
**Insert**



**Para**



**Mix In**



**If an effector with stereo output is connected to EXT2, the return signal will be mixed in the 9150. You should take this into account when setting the balance and send level of the external effector.**

# Utility Mode

This section explains use of the Utility mode which serves to make MIDI settings and other adjustments affecting operation of the entire 9150.

## To Activate Utility Mode

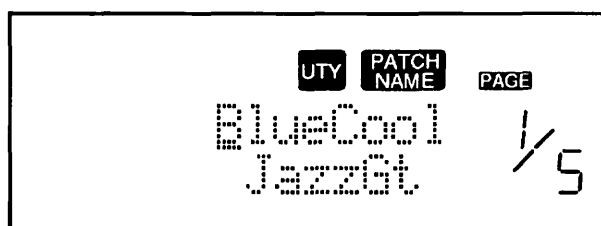
Press the UTILITY key in Play mode or Edit mode. Pressing the UTILITY key again returns the unit to the Play mode.

## Utility Mode Pages

The Utility mode has several pages for adjustment. Use the NEXT PAGE and PREV PAGE keys to switch between pages, and use the EDIT DIAL to change settings.

### 1. Patch Names

This page allows you to change the name of the patch that was last selected in Play mode or Edit mode.



The top row of the display shows the user-selected patch name (up to 8 characters), and the bottom row shows effect types (such as CLEAN1, DIST etc.) which make it easier to identify patches by sound character.

The following characters can be used for a patch name:

0123456789

ABCDEFGHIJKLMNPOQRSTUVWXYZ [space]

abcdefghijklmnopqrstuvwxyz [space] ! ? [space]

Use the ◀/▶ keys to move the underline cursor and then select the desired character with the EDIT DIAL. Pressing the DIAL RUSH key and turning the EDIT DIAL jumps to the beginning of each alphanumeric category (numbers, upper- case, lower-case).



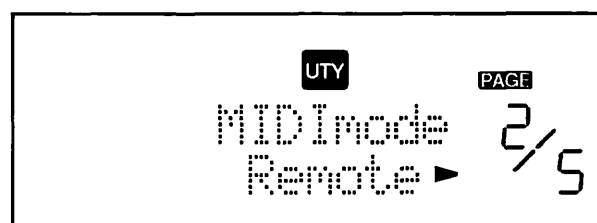
The patch name is handled as a patch parameter. When you have changed a patch name and you want to make the change permanent, you must store the patch in memory, using the STORE key.

### 2. MIDI Global Settings

This page serves to establish settings for the MIDI and REMOTE IN interface. Since there are many parameters on this page, it is divided into five submenus (2-1 to 2-5). Use the ◀/▶ keys to move between the menus.

#### 2-1 MIDI Mode

Selects whether the 9150 is to be controlled via the MIDI connector or the REMOTE IN jack (for 8050 or FC50).



#### 2-2 MIDI Channel

Selects the MIDI channel (1 – 16) on which the 9150 receives and sends program change and control change messages (for continuous parameter change via MIDI values 0 – 127). When using the FC50, set the channel to "1".



#### 2-3 Program Change Mode

Determines how program change messages received from external equipment are handled. The following three settings are available.



- **Map**

128 patches mapped as described in section 2-4 can be selected.

- **Direct**

MIDI bank select and program change messages are used to directly select up to 198 patches.

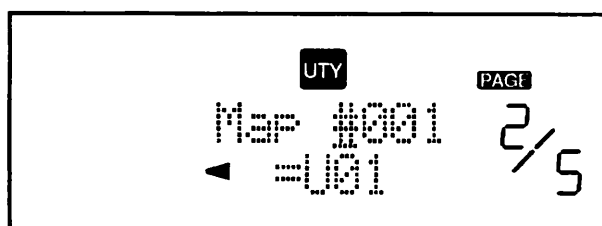
Bank #0/program change messages #0 – 98 are for USER and Bank #1/program change messages #0 – 98 are for PRESET patches.

- **8050**

The optional foot controller 8050 is used to select patches, according to the display of the 8050.

## 2-4 Program Change Map

This page allows mapping of program change messages.



The MIDI program change numbers 0 – 127 can be mapped to any of the 198 patch numbers of the 9150. The upper section of the display shows the program change numbers and the lower section the memory bank and patch numbers of the 9150.



The program change map is only active if “2-3 Program Change Mode” is set to “Map”.

When assigning program change numbers to patch numbers, the PRG CHG LEARN pop-up menu is handy (see page 25).

## 3. MIDI Assign

Determines items such as which MIDI control change number is used to control the 9150 volume level. Since there are many items on this page, it is divided into three submenus (3-1 to 3-3). Use the ◀ / ▶ keys to move between the menus.

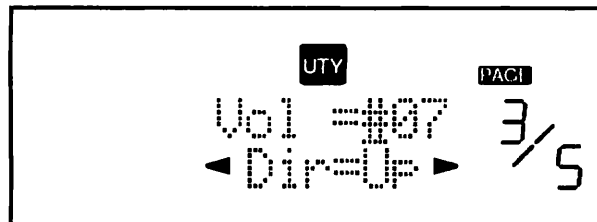
### 3-1 MIDI Assign Menu

Serves to activate the MIDI assign menu.



### 3-2 Volume Control Number

On the top row of the display, a control change number from 1 – 31 can be selected, and the bottom row allows setting the volume change direction: “Up” or “Dn” (Down).



### 3-3 Other Control Change Assignments

Determines control change numbers for various functions of the 9150.



The upper section of the display gives a choice between the following three functions:

- **All Byp**  
Bypass all effects (output only direct sound)
- **Sig Mute**  
Mute output (no signal).
- **PREAMP/EQ/DLY/REV/EXT1/EXT2**  
Controls effect module on/off.

The lower section of the display allows assigning control change numbers 64 – 95 to the above functions.



A control change value of “127” means “On” and a value of “0” (zero) means “Off”.

## 4. System Exclusive Setting

The MIDI System Exclusive function can be used to exchange data with other equipment. Since there are many items on this page, it is divided into three submenus (4-1 to 4-3). Use the ◀ / ▶ keys to move between the menus.



When this menu is selected, the MIDI IN/OUT Jacks are activated and the MIDI mode is automatically set to “MIDI”.



#### 4-1 System Exclusive Menu

Serves to activate the System Exclusive menu.



#### 4-2 System Exclusive Dump

The dump function lets you transfer patch settings of the 9150 as System Exclusive data to other equipment, for example to store them on a MIDI sequencer or similar device.

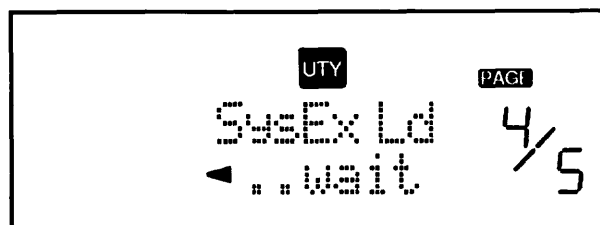


Use the EDIT DIAL to select the type of data to be output, then press the STORE/EXECUTE key to initiate the dump. The following four kinds of data can be sent:

- **All** All 9150 settings
- **Pat** All patch settings (including patch names)
- **Sys** MIDI settings
- **Buf** Current contents of edit buffer, including patch name (the last selected patch)

#### 4-3 System Exclusive Load

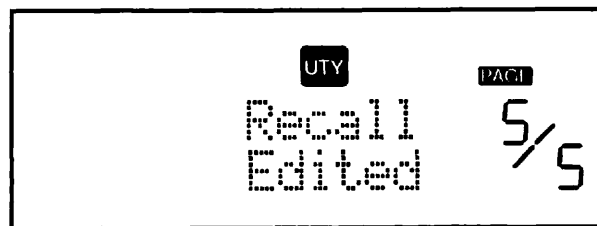
This function lets you reload data that was stored as System Exclusive dump data on other equipment.



There are no parameters to be set on this screen. While the screen is shown, the 9150 is ready to receive System Exclusive messages via the MIDI IN jack.

#### 5. Patch Recall

This function serves to restore patches which were accidentally overwritten, or to recall the last edited patch.



Use the EDIT DIAL to select the type of patch to be recalled. The following two choices are available.

- **Edited** Last edited patch
- **Erased** Last overwritten patch

When the STORE/EXECUTE key is pressed, the recalled patch is placed in the edit buffer, and the 9150 switches to the Play mode. You can then store this patch in memory if desired.




The 9150 can also be reset to the factory default settings. To do this, keep the STORE key depressed while turning power to the 9150 on.

# Pop-up Menu

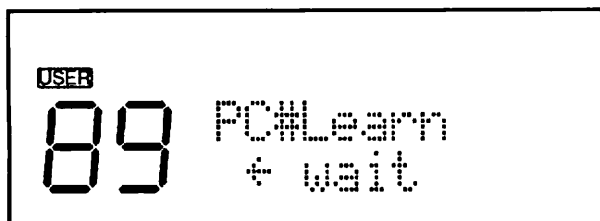
This section explains the two pop-up menus of the 9150. A pop-up menu is a menu where functions such as program change number setting or control change monitor are assigned to a button for quick activation. The menus operate independently from the other modes of the 9150.

## PRG CHG LEARN Pop-up Menu (PC#Learn)

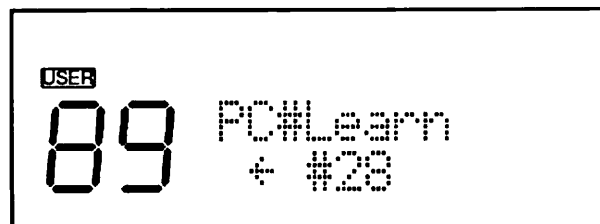
The program change learn function serves to assign the currently selected patch number to the program change map.

 In order to use the program change map, the 9150 must be connected to the FC50 (via REMOTE IN) or a MIDI device such as a synthesizer (via MIDI IN). Also, page 2-3 of the Utility mode must be set to "Map" (see page 23).

In Play mode, select the patch you want to assign, then press the PRG CHG LEARN key and keep the key depressed. While the key is held down, the display changes as follows.



In this condition, send the program change message from the FC50, 8050 or a MIDI device. The program change number is shown on the display of the 9150 and assigned to the current patch number on the program change map.



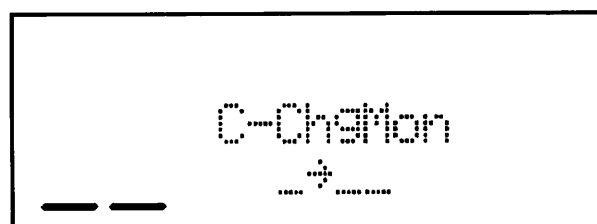
When the PRG CHG LEARN key is released, the unit reverts to regular Play mode.

## CTL CHG MONITOR Pop-up Menu (C-ChgMon)


The control change pop-up menu serves to check the numbers and values of control change messages received from other MIDI devices.

In order to use this menu, the 9150 must be connected to the FC50 or 8050 (via REMOTE IN) or a MIDI device such as a synthesizer (via MIDI IN).

In Play mode, press the CTL CHG MONITOR key and keep the key depressed. While the key is held down, the display changes as follows.



When a control change message is received from the FC50 or MIDI device in this condition, the control change number and its value are shown in the bottom row of the display.

 Only control change numbers from 1 – 31 can be monitored. Control change numbers from 64 – 95 are disregarded.

# Remote Control and RTM

This section describes how to use the optional foot controller FC50 or 8050 to select patches of the 9150 during a performance, and how to use the expression pedal FP01 (option) to control effect parameters of the 9150 in real time.

## Remote Control With FC50 or 8050

### Preparations

1. Connect the FC50 and 9150 as shown in the illustration. (The example describes the FC50, but the 8050 can be used in the same way.)

Use the dedicated remote control cable for the FC50 to connect the REMOTE OUT jack of the FC50 to the REMOTE IN jack of the 9150. Power to the FC50 is then supplied by the 9150.

2. Use page 2-2 of the Utility mode to set the MIDI channel of the 9150 to "1". (The MIDI channel of the FC50 is fixed to "1".)



3. Use page 2-1 of the Utility mode to set the MIDI mode of the 9150 to "REMOTE".



## Patch Selection With FC50

1. Use the program change map of the 9150 to assign patches you want to control to program change numbers.

The PRG CHG LEARN pop-up menu is handy for this task (see page 25).

2. Use the BANK pedal and number pedals of the FC50 to send program change messages. The LED indicator of the selected pedal lights up in red.

The FC50 can generate program change numbers from 0 – 39. In response to a program change message, the 9150 switches to the patch assigned to the respective number in the program change map.

## Bypass/Mute Control With FC50

The number pedals of the FC50 can be used to perform the same function as the BYPASS key on the 9150.

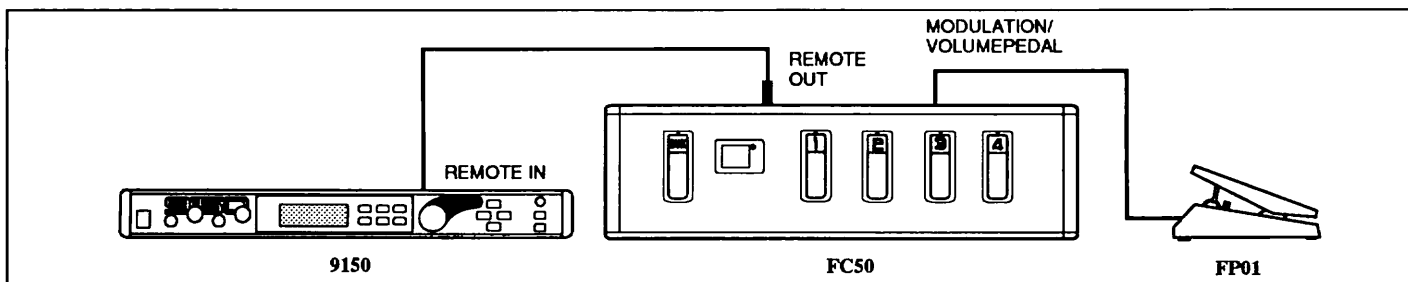
1. While the 9150 is in Play mode, press the last pressed number pedal of the FC50 once more.

The 9150 is now in the bypass condition. If you keep the number pedal depressed, the 9150 switches to the mute condition. The LED indicator of the selected pedal lights up in green.

2. To cancel bypass or mute, press the same number pedal once more or press another number pedal.

The bypass or mute condition is canceled and the 9150 reverts to the Play mode.

### Connection of FC50 and 9150



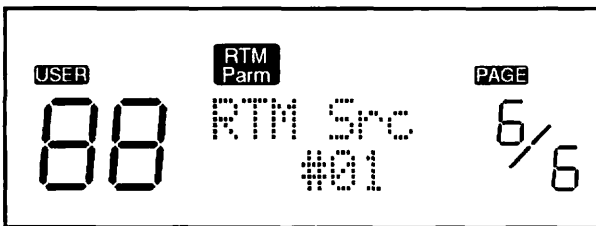
## Using the FP01 for RTM

By connecting the optional expression pedal FP01 to the VOLUME PEDAL or MODULATION PEDAL jack of the FC50 or the 8050, you can control effect parameters or the master volume of the 9150 in real time during a performance.

### 1. Connect the FP01 to the VOLUME PEDAL or MODULATION PEDAL jack of the FC50 or 8050.

The control change number sent by the FC50 to the 9150 depends on whether the FP01 is connected to the VOLUME PEDAL jack (control change message #7) or the MODULATION PEDAL jack (control change message #1) of the FC50. In either case, the pedal can be used as RTM source or master volume control by selecting the appropriate control change number at the 9150.

### 2. When wishing to use the FP01 as RTM source, activate the Edit mode and call up the "RTM Scr" page of the effect you wish to control.

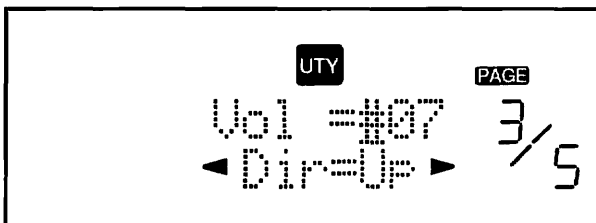


By setting "Src" on this page to control change number #1, the FP01 connected to the MODULATION PEDAL jack can be used to control the parameter selected as RTM destination. By setting "Src" to control change number #7, the FP01 connected to the VOLUME PEDAL jack can be used in the same way.



If required, this setting can be stored.

### 3. When wishing to use the FP01 as master volume control, activate page 3-2 (volume control number) of the Utility mode.



By setting this page to control change number #1, the FP01 connected to the MODULATION PEDAL jack can be used

as master volume control. By setting the page to control change number #7, the FP01 connected to the VOLUME PEDAL jack can be used in the same way.

## Effect Module On/Off Switching With 8050

By using the extended mode of MIDI devices or the 8050 to assign the control change numbers of foot pedals etc. to effect modules of the 9150, the effects can be switched on and off remotely. The table below shows the default control change assignments for the effect modules of the 9150. A control change value of 127 means "On" and a value of "0" (zero) means "Off".



When wishing to change the control change number assignments at the 9150, activate the Utility mode and select page 3-3 (Other Control Change Assignments).

When wishing to change the control change number assignments of the pedals at the 8050, please refer to the instruction manual of the 8050.

# Glossary/Index

## Glossary

### **RTM (Real-Time Modulation)**

A function which allows continuous control of effect parameters with a pedal controller or other equipment.

### **ZOOM Remote Jack**

Serves for connection of the FC50 or 8050 to the 9150. The connector type is different, but the signal format conforms to the MIDI standard.

### **Effect**

A particular type of signal treatment such as mono delay, flanger, etc.

### **Effect Module**

Single effect which belongs to a patch of the 9150.

### **Simul-RTM**

Real-Time Modulation with simultaneous continuous control of several effect parameters.

### **Source**

The external signal that is used to control effect parameters with the RTM function.

### **Destination**

The effect parameter that is being controlled by the external signal with the RTM function.

### **Patch**

A patch is a group of up to five effects. In addition, the patch also contains information on overall level and a patch name.

## Index

### **A**

**Auto-pan** 15

### **B**

**Bypass** 6

### **C**

**Compare** 10

**Control change** 18

**Control change number** 18

### **D**

**Destination** 9

### **E**

**Edit (mode)** 6

**Effect loop (2)** 16

**Effect module** 7

**Effect parameter** 11

### **M**

**Memory bank** 5

**MIDI channel** 18

### **P**

**Patch** 7

**Patch number** 5

**Play mode** 5

**Pop-up menu** 20

**Program change** 18

**Program change map** 18

### **R**

**Recall** 20

**Remote control** 22

**RTM** 9

### **S**

**Simul-RTM** 9

**Source** 9

**Store** 10

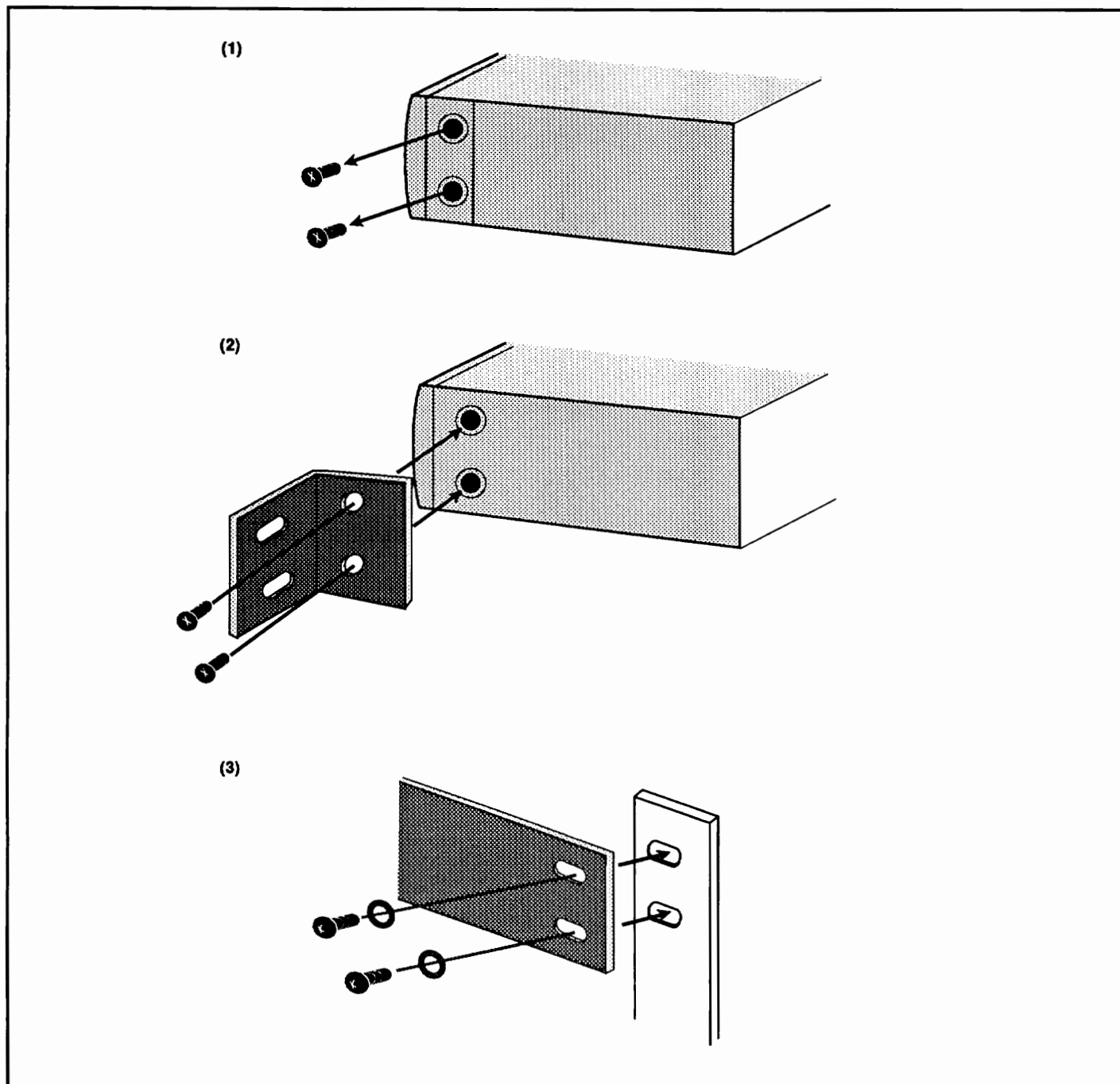
# Specifications

<b>Power Supply</b>	12 V DC, 1 A (from supplied AC adapter AD0005A)
<b>Preamplifier</b>	Vacuum tube amplifier (12AX7A) + solid-state amplifier
<b>A/D Converter</b>	18-bit stereo converter with 64-times oversampling
<b>D/A Converter</b>	16-bit stereo converter x 2
<b>Sampling Frequency</b>	31.25 kHz
<b>Number of Patches</b>	USER: 99, PRESET: 99
<b>Number of Effects</b>	27 (5 modules)
<b>Display</b>	Custom LCD x 1, LED x 11
<b>Inputs</b>	
	<b>Front-panel input (Hi-Z):</b> -10 to -40 dBm / 470 k-ohms
	<b>Rear-panel input (Lo-Z):</b> -10 to -40 dBm / 100 k-ohms
	<b>EXT1 return:</b> -10 dBm / 100 k-ohms
	<b>EXT2 return L/MONO, R:</b> -10 dBm / 100 k-ohms
<b>Outputs</b>	
	<b>L/MONO, R:</b> -10 to -40 dBm / 2 k-ohms or less
	<b>EXT1 send:</b> -10 dBm / 1 k-ohm
	<b>EXT2 send:</b> -10 dBm / 1 k-ohm
	<b>Headphone output:</b> 35 mW into 32 ohms
<b>Control Connectors</b>	MIDI IN, MIDI OUT, REMOTE IN
<b>Size</b>	19-inch rack 1U (W:432 x H:44 x D:184)
<b>Weight</b>	Approx. 2.8 kg

\* 0 dBm = 0.775 Vrms

\* Design and specifications are subject to change without notice.

## Rack Mount



- (1) Remove the two screws each on the right and left side of the 9150.**
- (2) Use the screws to fasten the supplied rack mount brackets to the right and left side of the 9150.**
- (3) Use round-head screws to mount the 9150 in the rack.**

# 9150 MIDI IMPLEMENTATION

## 1. TRANSMITTED DATA

### 1) CHANNEL VOICE MESSAGES

STATUS	SECOND	THIRD	DESCRIPTION
1011 nnnn	0ccc cccc	0vvv vvvv	CONTROL CHANGE ccc cccc : Control No. vvv vvvv : Control Value
1100 nnnn	0ppp pppp	----	PROGRAM CHANGE ppp pppp : Program Number

#### NOTES:

- \* nnnn = MIDI Channel Number ( 0000 - 1111 )
- These messages are transmitted in Remote Mode only.
- Messages from Remote controller will be converted and outputted to MIDI OUT.

## 2. RECOGNIZED DATA

### 1) CHANNEL VOICE MESSAGES

STATUS	SECOND	THIRD	DESCRIPTION
1011 nnnn	0ccc cccc	0vvv vvvv	CONTROL CHANGE  <u>Bank select</u> hhh hhhh : MSB of Bank No. 111 1111 : LSB of Bank No. (See NOTE 1)
	0000 0000 0010 0000	0hhh hhhh 0111 1111	
	0ccc cccc	0vvv vvvv	<u>Master Output Level</u> ccc cccc : Master Output Level 1-31(Selectable, memorized, default 7) vvv vvvv : Level
	0ccc cccc	0vvv vvvv	<u>Real Time Modulation</u> ccc cccc : Control No. 1-31(33-63 LSB data for Delaytime Tap control) vvv vvvv : Control Value (See NOTE 2)
	0ccc cccc	0vvv vvvv	<u>Effect Module On/Off</u> ccc cccc : Module On/Off (64-95 selectable, memorized) vvv vvvv : On/Off (When vvv vvvv is 0, module is turned off. When vvv vvvv is 127, module is turned on.) defaults PreAMP 72 , EQ 73 , MOD 75 , DELAY 76 REVERB 77 , EXT1 70 , EXT2 78
	0ccc cccc	0vvv vvvv	<u>Signal Mute</u> ccc cccc : MUTE (64-95 selectable, memorized. Default 80) vvv vvvv : MUTE On/Off (When vvv vvvv is 0, MUTE is turned off. When vvv vvvv is 127, MUTE is turned on.)
	0ccc cccc	0vvv vvvv	<u>Bypass</u> ccc cccc : Bypass (64-95 selectable, memorized. Default 91) vvv vvvv : Bypass On/Off (When vvv vvvv is 0, Bypass is turned off. When vvv vvvv is 127, Bypass is turned on.)
1100 nnnn	0ppp pppp	----	PROGRAM CHANGE ppp pppp : Program Number (See NOTE3)

#### NOTES:

- \* nnnn = MIDI Channel Number ( 0000 - 1111 )
- 1. When Program change mode is "Map", Bank select is ignored.  
In "Seq" mode, USER memory is assigned to BANK #0, PRESET memory is assigned to BANK #1.  
Using "8050" mode, refer 8050 users manual.
- 2. CONTROL CHANGE message is recognized only when the control number is matched with Control numbers selected by panel.
- 3. Relationship between MIDI Program No. and Patch No. is assignable.



### 3. SYSTEM EXCLUSIVE MESSAGE

All System Exclusive Messages are recognized in BULK DUMP, LOAD MENU only.

#### 1) Identity Request

BYTE	DESCRIPTION
1111 0000	Exclusive Status
0111 1110	Universal System Exclusive Non-Real Time Header
0nnn nnnn	Channel nnn nnnn : channel 00H-0FH or 7FH (See NOTE 1)
0000 0110	General Information (Sub-ID #1)
0000 0001	Identity Request (Sub-ID #2)
1111 0111	EOX

#### NOTES:

- \* Recognized only.
- 1. When this message is received with channel No. 7fh, it should be recognized with any channel. Then, Identity Reply Message is transmitted with Basic Channel. (Rule of Universal System Exclusive Message Communication)

#### 2) Identity Reply

BYTE	DESCRIPTION
1111 0000	Exclusive Status
0111 1110	Universal System Exclusive Non-Real Time Header
0nnn nnnn	Channel nnn nnnn : channel 00H-0FH
0000 0110	General Information (Sub-ID #1)
0000 0010	Identity Reply (Sub-ID #2)
0101 0010	ZOOM ID 52H
0000 1000	DEVICE ID 08H (ZOOM 9150)
0000 0000	Reserved of MSB of device code
0000 0000	Reserved of MSB of device code
0000 0000	Reserved of MSB of device code
0sss ssss	1st character of Software Revision Code
0sss ssss	2nd character of Software Revision Code
0sss ssss	3rd character of Software Revision Code
0sss ssss	4th character of Software Revision Code
1111 0111	EOX

#### NOTES:

- \* Transmitted when Identity Request Message is recognized.
- Software revision code is 4-digits ASCII characters.

### 3)Patch Dump

BYTE	DESCRIPTION
1111 0000	EXCLUSIVE STATUS
0101 0010	ZOOM ID 52H
0nnn nnnn	CHANNEL nnn nnnn : channel 00H-0FH or 7FH (See NOTE 1)
0000 1000	DEVICE ID 08H : device No. (ZOOM 9150)
0010 0001	FUNCTION ID 21H : Patch Dump
0vvv vvvv : 0vvv vvvv	Patch Data in Edit Buffer (96bytes)(See NOTE 2)
1111 0111	EOX

#### NOTES:

1. When this message is received with channel No. 7fh, it should be recognized with any channel.
2. 8-7 Conversion technique is used while Patch Data is transmitted.

### 4)Patch Dump Request

BYTE	DESCRIPTION
1111 0000	EXCLUSIVE STATUS
0101 0010	ZOOM ID 52H
0nnn nnnn	CHANNEL nnn nnnn : channel 00H-0FH or 7FH (See NOTE 1)
0000 1000	DEVICE ID 08H : device No. (ZOOM 9150)
0001 0001	FUNCTION ID 11H : Patch Dump Request
1111 0111	EOX

#### NOTES:

- \* Recognized only.
- When this message is recognized, Patch Dump Message will be transmitted.
1. When this message is received with channel No. 7fh, it should be recognized with any channel. Then, Patch Dump Message is transmitted with Basic Channel.

### 5)Write Request

BYTE	DESCRIPTION
1111 0000	EXCLUSIVE STATUS
0101 0010	ZOOM ID 52H
0nnn nnnn	CHANNEL nnn nnnn : channel 00H-0FH or 7FH (See NOTE 1)
0000 1000	DEVICE ID 08H : device No. (ZOOM 9150)
0001 0010	FUNCTION ID 12H : Write Request
0ppp pppp	User Bank PATCH No. ppp pppp : 1 - 99
1111 0111	EOX

#### NOTES:

- \* Recognized only.
- When this message is recognized, 9150 stores the Patch Data in Edit Buffer into User Bank Patch memory #<PATCH No.> .
1. When this message is received with channel No. 7fh, it should be recognized with any channel.

6)All Patches Dump

BYTE	DESCRIPTION
1111 0000	EXCLUSIVE STATUS
0101 0010	ZOOM ID 52H
0nnn nnnn	CHANNEL nnn nnnn : channel 00H-0FH or 7FH (See NOTE 1)
0000 1000	DEVICE ID 08H : device No. (ZOOM 9150)
0010 0010	FUNCTION ID 22H : All Patches Dump
0vvv vvvv : 0vvv vvvv	whole of Patch Data in Memory (6336bytes)(See NOTE 2)
1111 0111	EOX

NOTES:

1. When this message is received with channel No. 7fh, it should be recognized with any channel.
2. 8-7 Conversion technique is used while Patch Data is transmitted.

7)All Patches Dump Request

BYTE	DESCRIPTION
1111 0000	EXCLUSIVE STATUS
0101 0010	ZOOM ID 52H
0nnn nnnn	CHANNEL nnn nnnn : channel 00H-0FH or 7FH (See NOTE 1)
0000 1000	DEVICE ID 08H : device No. (ZOOM 9150)
0001 0011	FUNCTION ID 13H : All Patches Dump Request
1111 0111	EOX

NOTES:

- \* Recognized only.
- When this message is recognized, All Patches Dump Message will be Transmitted.
1. When this message is received with channel No. 7fh, it should be recognized with any channel. Then, All Patches Dump Message is transmitted with Basic Channel.

8)System data Dump

BYTE	DESCRIPTION
1111 0000	EXCLUSIVE STATUS
0101 0010	ZOOM ID 52H
0nnn nnnn	CHANNEL nnn nnnn : channel 00H-0FH or 7FH (See NOTE 1)
0000 1000	DEVICE ID 08H : device No. (ZOOM 9150)
0010 0011	FUNCTION ID 23H : System data Dump
0vvv vvvv : 0vvv vvvv	system data(168bytes)
1111 0111	EOX

NOTES:

1. When this message is received with channel No. 7fh, it should be recognized with any channel.

9)System Data Dump Request

BYTE	DESCRIPTION
1111 0000	EXCLUSIVE STATUS
0101 0010	ZOOM ID 52H
0nnn nnnn	CHANNEL nnn nnnn : channel 00H-0FH or 7FH (See NOTE 1)
0000 1000	DEVICE ID 08H : device No. (ZOOM 9150)
0001 0110	FUNCTION ID 16H : System data Dump Request
1111 0111	EOX

NOTES:

\* Recognized only.

When this message is recognized, System data Dump Message will be Transmitted.

1. When this message is received with channel No. 7fh, it should be recognized with any channel. Then, System Data Dump Message is transmitted with Basic Channel.

10)Completed

BYTE	DESCRIPTION
1111 0000	EXCLUSIVE STATUS
0101 0010	ZOOM ID 52H
0nnn nnnn	CHANNEL nnn nnnn : channel 00H-0FH
0000 1000	DEVICE ID 08H : device No. (ZOOM 9150)
0001 0100	FUNCTION ID 14H : Completed
1111 0111	EOX

NOTES:

\* This message is transmitted when Dump is processed successfully, write operation is completed for Write Request message.

\* 8-7 Conversion

To transmit 8bit-byte data in MIDI SysEx, any data bytes should be 7bit-byte data.

First, strip out bit7(MSB) from source 7 bytes of data, and built 1 byte data attaching MSB=0. Then send this byte first, and send 1st - 7th data without MSB. These 8 bytes are combined to 1 block.(Fig.1)

If stream of data is less than 7 bytes, stream bytes + 1 will be a size of the block.(Fig.2)

Fig.1

Aaaaaaaa Bbbbbbbb Cccccccc Dddddddd Eeeeeeee Ffffffff Gggggggg

↓

0GFEDCBA 0aaaaaaa 0bbbbbbb 0ccccccc 0ddddddd 0eeeeeee 0fffffff 0ggggggg

Fig.2

Aaaaaaaa Bbbbbbbb Cccccccc

↓

00000CBA 0aaaaaaa 0bbbbbbb 0ccccccc

Function ...	Transmitted	Recognized	Remarks
Basic Default Channel Changed	1 - 16 1 - 16	1 - 16 1 - 16	Memorized
Mode Default Messages Altered	3 × *****	3 ×	
Note Number   True voice	× *****	×	
Velocity Note ON Note OFF	× ×	× ×	
After Key's Touch Ch's	× ×	× ×	
Pitch Bend	×	×	
Control Change	○	○ 0,32 1-31 1-31  64-95 64-95 64-95	Bank Select Master Output Level Real Time Modulation control Effect module on/off Signal Mute All bypass
Prog Change   True #	○ (0-127) *****	○ (0-127) User01-99, Preset01-99	Internally mappable
System Exclusive	○	○	
System   Song Pos Common   Song Sel Tune	× × ×	× × ×	
System   Clock Real Time   Commands	× ×	× ×	
Aux   Local ON/OFF Mes-   All Notes OFF sages   Active Sense Reset	× × × ×	× × × ×	
Notes			

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

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

o : Yes  
x : No



**High-Tech Tools for Artistic Expression**

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