

RD-2000 EX

Parameter Guide



Contents

Detailed Settings for a Program (Program Edit).....	4
Detailed Settings for Each Zone (Zone Edit)	4
Changing the Key Touch (Key Touch).....	5
Assigning Functions to Pedals (Pedal)	6
Assigning Functions to Controllers (Assign).....	7
List of Functions Assignable to Pedals, Knobs, and Buttons.....	8
Adding Reverberation to the Sound (Reverb)	9
Adding Spaciousness to the Sound (Delay)	9
Adjusting the Levels of Each Frequency Range (EQUALIZER) ..	9
Detailed Tone Settings (TONE DESIGNER)	10
Piano Designer.....	10
Tone Designer.....	12
Making Detailed Settings for the E. Piano Tones	12
Making Detailed Settings for the CLAV Tones.....	13
Making Detailed Settings for the Other Tones	13
Editing Individual Keys (Indiv. Voicing)	14
Adjusting Resonance When the Damper Pedal Is Depressed (Sym. Resonance).....	15
Editing the Modulation FX (Modulation FX)	15
Editing Tremolo/Amp Simulator (Tremolo/Amp Simulator) ..	16
Simulating the Creation of Organ Tones.....	17
Using the RD-2000EX as a Master Keyboard	18
What's MIDI?	18
About MIDI Connectors.....	18
Adjusting the Volume of Each Zone.....	18
Selecting the MIDI Connector to Use for Output	18
Setting the MIDI Transmit Channel.....	19
Selecting Sounds on an External MIDI Device.....	19
Detailed Settings for Transmitted Parts.....	19
Detailed Settings for Each Function	22
Setting Parameters (System).....	22
Tuning to Other Instruments' Pitches (Master Tune)....	22
Selecting the Target Controlled by a Knob (Control Destination)	22
Retaining the Equalizer Settings Even When the Program Is Switched (EQ Mode)	22
Retaining the SELECT Button Settings Even When the Program Is Switched (Select Button Mode)	22
Retaining the Pedal Settings Even When the Program Is Switched (Pedal Mode)	22
Retaining the MOD WHEEL 1/2 Settings Even When the Program Is Switched (Wheel Mode).....	22
Retaining the Assign 1–9 Controller Settings Even When the Program Is Switched (Assign 1-9 Mode)	23
Retaining the Delay Settings Even When the Program Is Switched (Delay Mode)	23
Retaining the Reverb Settings Even When the Program Is Switched (Reverb Mode)	23
Retaining the Rhythm Settings Even When the Program Is Switched (Rhythm Mode)	23
Retaining the Keyboard Touch Settings Even When the Tone or Program Is Switched (Key Touch Mode)....	23
Retaining the Current Tone Even When Tones Are Switched (Tone/Program Remain)	24
Retaining the Ext Zone On/Off Settings Even When Tones Are Switched (Tone Ext Zone Remain)	24

Preventing Ctrl Messages from Being Transmitted by Ext Zone On/Off (Ext Zone Transmit Control)	24
Selecting the USB Driver (USB Driver).....	24
Selecting the USB MIDI Thru Switch (USB MIDI Thru Switch)	24
Selecting the Function of the MIDI THRU/OUT 2 Connector (MIDI OUT2 Port Mode)	24
Switching the Pedal's Polarity (Damper/FC1/FC2/EXT Pedal Polarity)	25
Setting the Tuning Method (Temperament/Key).....	25
Transmitting Synchronization Messages (Clock Out) ...	25
Transmitting High-Resolution Velocity Data (Hi-Res Velocity Out)	25
Selecting the MIDI Output Port for Rhythm (Rhythm MIDI Output Port)	25
Selecting the MIDI Output Channel for Rhythm (Rhythm MIDI Channel).....	25
Adjusting the Playback Volume of Audio Files	25
Outputting the SUB OUT Output from MAIN OUT (Output Mix/Parallel)	26
Adjusting the Brightness of the Display (LCD Brightness)	26
Making the Power Automatically Turn Off After a Time (Auto Off)	26
Specifies the sound that is initially selected (Startup Mode).....	26
Specifies the action when moving the slider (Slider Mode).....	26
Saving System Settings	26
USB Audio Settings	26
Selecting the Parts That Will Produce Sound (PART SW).....	27
Making the System Compressor Settings (COMPRESSOR)....	27
INFORMATION.....	27

Convenient Functions (Utility)	28
Saving a Program File (Program File Save)	28
Calling Up Program Files (Backup Load)	28
Deleting a Program File (Backup Delete)	29
Formatting Memory (Format)	29
Returning to the Factory Settings (Factory Reset)	29
SCENE UTILITY.....	30
Changing the Order of Scenes (Scene Swap).....	30
Initializing a Scene (Scene Initialize).....	30
Adding a Memo to Each Scene (Scene Memo)	30
Importing Text to Display as the Scene Memo (Scene Memo Import)	31
Exporting a Scene as a Program and Saving It (Scene To Program).....	31
Deleting a Scene (Scene Remove)	31

Other Functions	32
Local Ctrl.....	32
Disconnecting the Controller Section and the Sound Generator Section (Local Switch)	32
Optimizing Settings for Recording on an External Sequencer (Rec Mode).....	32
Selecting the EXP Category	32

Connecting to Your Computer	33
--	-----------

Connecting to a Computer via the USB COMPUTER Port.....	33
Switching USB Drivers	33
Using the RD-2000EX as a USB MIDI Interface.....	33
Modulation FX Parameters	34
Tremolo/Amp Simulator Parameters	61
Sympathetic Resonance Parameters.....	64
Delay Parameters.....	65
Reverb Parameters	67
EQ Parameters.....	68
System Compressor Parameters	69

Detailed Settings for a Program (Program Edit)

Here's how to make detailed settings for the eight zones of a Program.

1. Press the [EDIT] button.

The PROGRAM EDIT MENU screen appears.



2. Use the cursor [▲] [▼] [◀] [▶] buttons to select the item you want to edit, and press the [ENTER] button.

The corresponding edit screen appears.

3. Select the parameter that you want to edit, and use the [DEC] [INC] buttons or the value dial to edit the value.

If you press the [EXIT] button, you'll return to the PROGRAM EDIT MENU screen.

4. When you've finished making settings, press the [EXIT] button several times to return to the TONE screen, the PROGRAM screen or the SCENE screen.

NOTE

If you've edited the settings, an "EDITED" indication is shown in the PROGRAM screen or the TONE screen.

If you turn off the power, select another Program, or select another tone in the TONE screen while the "EDITED" indication is shown, the edits you made are discarded. If you want to keep your edits, press the [WRITE] button to save the Program (owner's manual: p. 23).

Detailed Settings for Each Zone (Zone Edit)

Here's how to edit each zone (INTERNAL/EXTERNAL 1–8).

1. In the PROGRAM EDIT MENU screen, select "Zone Edit" and press the [ENTER] button.

2. Select the parameter that you want to edit, and use the [DEC] [INC] buttons or the value dial to edit the value.

Parameter	Value	Explanation
TONE	Selects the tone.	
	Using the Numeric Keys to Select Tones You can now use the TONE [0]–[9] buttons as numeric keys to directly specify a tone number. - While holding down the [SHIFT] button, use the TONE [0]–[9] as numeric keys to enter a tone number. The value blinks while you're entering the tone number. - Release the [SHIFT] button. The tone number is finalized.	
VOL Volume	0–127	Sets the volume for each of the zones.
PAN Pan	L64–0–R63	Specifies the left/right position of the sound when outputting in stereo.
REV Reverb Send Level	0–127	Specifies the level of signal sent to reverb.

Parameter	Value	Explanation
DLY Delay Send Level	0–127	Specifies the level of signal sent to delay.
OUT Output	MAIN, SUB	Selects the output destination.
Trans Zone Transpose	–48–0–+48	Allows you to individually transpose zones to a different pitch.
Rng Lo Keyboard Range Lower	A0–C8	Set the keyboard range in which each Zone will sound.
Rng Up Keyboard Range Upper		This can be used to make notes in different areas of the keyboard play different Tones. Specify the lower limit (Rng Lo) and upper limit (Rng Up) of the key range being set. You can also set this by pressing a specific key and then pressing the [ENTER] button. * Key range is enabled when you change the key range value or turn on the [SPLIT] button. * When key range is off, the indication "Full" is shown. To return to the Off state, turn off the [SPLIT] button or press the [SHIFT] + [KEY RANGE] buttons.
Max Velocity Max	1–127	Maximum velocity value for the corresponding key. Lowering this value will produce softer notes even if you play the keyboard strongly. * This setting is disregarded with certain tones.
Sens Velocity Sensitivity	–63–+63	This setting determines how the volume changes in response to the velocity. The volume is increased as the keyboard is played with greater force when a positive value is used; when a negative value is selected, the volume decreases as the keys are played with greater force. * This setting is disregarded with certain tones.
Rng Lo Velocity Range Lower	1–127	Specifies the lower limit (Rng Lo) and upper limit (Rng Up) of the range in which the tone is played according to the velocity.
Rng Up Velocity Range Upper		Make this setting when you want the tone to change depending on the key velocity.
Coarse Coarse Tune	–48–+48	Adjusts the pitch in semitone steps (±4 octaves).
Fine Fine Tune	–50–+50	Adjusts the pitch in one-cent steps (±50 cents). 1 cent = 1/100th of a semitone

Parameter	Value	Explanation
VC RES Voice Reserve	0–63, Full	Specifies the number of voices that will be reserved for each zone if you attempt to play more than 128 voices.
Damper Damper Control Switch	ON, OFF	Specifies whether the damper pedal will (ON) or will not (OFF) control each zone.
FC1 FC1 Control Switch		Specifies whether the pedal connected to the FC1 jack will (ON) or will not (OFF) control each zone. (*1)
FC2 FC2 Control Switch		Specifies whether the pedal connected to the FC2 jack will (ON) or will not (OFF) control each zone. (*1)
EXT EXT Pedal Control Switch		Specifies whether the pedal connected to the EXT jack will (ON) or will not (OFF) control each zone. (*1)
PCH BND Pitch Bend Control Switch		Specifies whether the pitch bend lever will (ON) or will not (OFF) control each zone.
MOD CTL Modulation Control Switch	ON, OFF	Specifies whether the modulation lever will (ON) or will not (OFF) control each zone.
MOD W1 Mod Wheel 1 Control Switch		Specifies whether the MOD WHEEL 1 will (ON) or will not (OFF) control each zone. (*1)
MOD W2 Mod Wheel 2 Control Switch		Specifies whether the MOD WHEEL 2 will (ON) or will not (OFF) control each zone. (*1)
A1 Assign 1 Control Switch	ON, OFF	Specifies whether the ASSIGN [1] knob will (ON) or will not (OFF) control each zone. (*1)
A2 Assign 2 Control Switch		Specifies whether the ASSIGN [2] knob will (ON) or will not (OFF) control each zone. (*1)
A3 Assign 3 Control Switch		Specifies whether the ASSIGN [3] knob will (ON) or will not (OFF) control each zone. (*1)
A4 Assign 4 Control Switch		Specifies whether the ASSIGN [4] knob will (ON) or will not (OFF) control each zone. (*1)
A5 Assign 5 Control Switch		Specifies whether the ASSIGN [5] knob will (ON) or will not (OFF) control each zone. (*1)
A6 Assign 6 Control Switch		Specifies whether the ASSIGN [6] knob will (ON) or will not (OFF) control each zone. (*1)
A7 Assign 7 Control Switch		Specifies whether the ASSIGN [7] knob will (ON) or will not (OFF) control each zone. (*1)
A8 Assign 8 Control Switch		Specifies whether the ASSIGN [8] knob will (ON) or will not (OFF) control each zone. (*1)
A9 Assign 9 Control Switch		Specifies whether the ASSIGN [9] button will (ON) or will not (OFF) control each zone. (*1)

Parameter	Value	Explanation
TON CLR Tone Color Control Destination	Select one zone	Select the zone that you want to control using the [TONE COLOR] knob . (* 2)
MOD FX Modulation FX Control Destination		Select the zone that you want to control using the MODULATION FX [DEPTH] and [RATE] knobs and [ON/OFF] button . (* 2)
TR/AMP Tremolo/Amp Control Destination		Select the zone that you want to control using the TREMOLO [DEPTH] and [RATE] knobs and [ON/OFF] button , and the AMP SIM [DRIVE] knob and [ON/OFF] button . (* 2)

*1 The parameters that can control each zone are the parameters indicated by (*1) in the “List of Functions Assignable to Pedals, Knobs, and Buttons” (p. 8).

*2 This parameter is enabled only when the SYSTEM setting “Control Destination” is PROGRAM.

Changing the Key Touch (Key Touch)

The setting below allows you to adjust the response you get from the keyboard when you finger the keys.

1. Either press the **[KEY TOUCH] button**, or use the **PROGRAM EDIT MENU screen** to select “Key Touch” and press the **[ENTER] button** (p. 4).
2. Select the parameter that you want to edit, and use the **[DEC] [INC] buttons** or the **value dial** to edit the value.

Parameter	Value	Explanation
Key Touch	SUPER LIGHT	An even lighter setting than LIGHT.
	LIGHT	Sets the keyboard to a light touch. You can achieve fortissimo (ff) play with a less forceful touch than MEDIUM, so the keyboard feels lighter. This setting makes it easy to play, even for children.
	MEDIUM	Sets the keyboard to the standard touch. You can play with the most natural touch. This is the closest to the touch of an acoustic piano.
	HEAVY	Sets the keyboard to a heavy touch. You have to finger the keyboard more forcefully than MEDIUM in order to play fortissimo (ff), so the keyboard touch feels heavier. Dynamic fingering adds even more feeling to what you play.
	SUPER HEAVY	An even heavier setting than HEAVY.

Parameter	Value	Explanation
Key Touch Offset	-10→+9	This setting provides even more precise adjustment of the key touch than available with the Key Touch setting alone. The touch sensitivity becomes heavier as the value increases. When this parameter is set to a value that exceeds the upper or lower limit, the setting for Key Touch (one of five possible values) is automatically changed to accommodate the value you've specified.
Velocity	REAL	Volume levels and the way sounds are played change in response to the velocity.
	1–127	Regardless of how strongly you play the keyboard, volume levels and the way sounds are played always reflect the fixed velocity value you specify here.
Velo Delay Sens	-63→+63	As the value is decreased, the timing of the sound is delayed more when more force is used to play the keys. As the value is increased, the timing of the sound is delayed more when less force is used to play the keys.
Velo Key Follow Sens	-63→+63	As the value is increased, the touch becomes heavier in the upper registers, and lighter in the lower registers.
Key Off Position	STANDARD	Note-off occurs at the key depth of a conventional piano.
	DEEP	Note-off occurs at a deeper position. This is suitable for electric piano sounds.

Assigning Functions to Pedals (Pedal)

This setting determines the function of the pedal switches (such as the optional DP series) or expression pedals (such as the optional EV-5) that are connected to the FC1, FC2, and EXT jacks on the rear panel.

1. In the PROGRAM EDIT MENU screen, select **"Pedal"** and press the [ENTER] button (p. 4).
2. Select the parameter that you want to edit, and use the [DEC] [INC] buttons or the value dial to edit the value.

The assigned function is controlled between the minimum value (Min) and maximum value (Max). If Min is set to a greater value than Max, the change is reversed.

FC1/FC2/EXT pedals

Parameter	Value	Explanation
Func (Function)	Selects the function to be assigned to each pedal. * For details on the values, refer to "List of Functions Assignable to Pedals, Knobs, and Buttons" (p. 8).	
Range Min	0–127	Specifies the value when the pedal is not pressed (minimum value) (*1).
Range Max	0–127	Specifies the value when the pedal is advanced to its fullest extent (maximum value) (*1).

MEMO

By specifying the Range Min/Max settings, you'll be able to control the function in the desired range; this will help you obtain the performance result that you want.

- *1 Depending on the function that you assign, the value might not have the range of 0–127. In this case, the setting of 0–127 is converted appropriately for the function that's assigned. If you assign a function that is switched on/off, it turns off at Min and turns on at Max. If you assign an on/off function to an expression pedal, it switches on/off at the value that is mid-way between Min and Max.

Assigning Functions to Controllers (Assign)

Here's how to assign functions to the MOD WHEEL 1/2, the ASSIGN [1]–[8] knobs and the ASSIGN [9] button.

1. In the PROGRAM EDIT MENU screen, select "Assign" and press the [ENTER] button (p. 4).
2. Select the parameter that you want to edit, and use the [DEC] [INC] buttons or the value dial to edit the value.

MOD WHEEL 1/2

Parameter	Value	Explanation
Func (Function)		Selects the functions that are assigned to the MOD WHEEL 1/2. * For details on the values, refer to "List of Functions Assignable to Pedals, Knobs, and Buttons" (p. 8).

ASSIGN [1]–[8] knobs

Parameter	Value	Explanation
Func (Function)		Selects the functions that are assigned to the ASSIGN [1]–[8] knobs. * For details on the values, refer to "List of Functions Assignable to Pedals, Knobs, and Buttons" (p. 8).
Range Min	0–127	Specifies the value when the ASSIGN [1]–[8] knob is turned all the way to the left (minimum value) (*1).
Range Max	0–127	Specifies the value when the ASSIGN [1]–[8] knob is turned all the way to the right (maximum value) (*1).

MEMO

By specifying the Range Min/Max settings, you'll be able to control the function in the desired range; this will help you obtain the performance result that you want.

- *1 Depending on the function that you assign, the value might not have the range of 0–127. In this case, the setting of 0–127 is converted appropriately for the function that's assigned. If you assign a function that is switched on/off, it turns off at Min and turns on at Max.

ASSIGN [9] button

Parameter	Value	Explanation
Func (Function)		Selects the function that's assigned to the ASSIGN [9] button. * For details on the values, refer to "List of Functions Assignable to Pedals, Knobs, and Buttons" (p. 8).
Switch Type		Specifies the operation of the button.
	LATCH	The function turns on/off each time you press the button.
	MOMENTARY	The function is on only while you hold down the button.

MEMO

Whether the Switch Type setting does anything or not depends on the function that's assigned.

SLIDER

Parameter	Value	Explanation
Slider Func		Selects the functions that are assigned to the slider. * For details on the values, refer to "List of Functions Assignable to Pedals, Knobs, and Buttons" (p. 8).

List of Functions Assignable to Pedals, Knobs, and Buttons

FC1 / FC2 / EXT pedal	Controllers to which a function can be assigned			Mod Wheel 1 / 2	Functions that can be assigned	Explanation
	ASSIGN [1]–[8] knob	ASSIGN [11]–[8] slider	ASSIGN [9] button			
✓	✓	✓	✓	✓	OFF	Nothing is controlled.
✓	✓	✓	✓	✓	CC0–CC127	Controller number 0–127 (*1)
✓	---	---	✓	✓	BEND DOWN	Lowers the pitch just as when the pitch bend lever is moved to the left. (*1)
✓	---	---	✓	✓	BEND UP	Raises the pitch just as when the pitch bend lever is moved to the right. (*1)
✓	✓	✓	✓	✓	AFTERTOUCH	Controls aftertouch. (*1)
✓	---	---	✓	---	OCTAVE DOWN	Lowers the key range in octave steps each time you press the button (maximum four octaves).
✓	---	---	✓	---	OCTAVE UP	Raises the key range in octave steps each time you press the button (maximum four octaves).
✓	---	---	✓	---	EXT START/STOP	Starts/stops an external sequencer.
✓	---	---	✓	---	TAP TEMPO	Sets the tempo to match the timing you use when pressing the pedal or the button.
✓	---	---	✓	---	PLAY/STOP	The same function as the [PLAY/STOP] button.
✓	---	---	✓	---	SONG RESET	Returns to the beginning of the song.
---	---	---	✓	---	SONG BWD	Rewinds the song.
---	---	---	✓	---	SONG FWD	Fast-forwards the song.
✓	---	---	---	---	MOD FX SWITCH	The same function as the MODULATION FX [ON/OFF] button. (*2)
✓	✓	---	---	✓	MOD FX DEPTH	The same function as the MODULATION FX [DEPTH] knob. (*2)
✓	✓	---	---	✓	MOD FX RATE	The same function as the MODULATION FX [RATE] knob. (*2)
✓	---	---	---	---	TREMOLO SWITCH	The same function as the TREMOLO [ON/OFF] button. (*3)
✓	✓	---	---	✓	TREMOLO DEPTH	The same function as the TREMOLO [DEPTH] knob. (*3)
✓	✓	---	---	✓	TREMOLO RATE	The same function as the TREMOLO [RATE] knob. (*3)
✓	---	---	---	---	AMP SIM SWITCH	The same function as the AMP SIM [ON/OFF] button. (*3)
✓	✓	---	---	✓	AMP SIM DRIVE	The same function as the AMP SIM [DRIVE] knob. (*3)
✓	---	---	---	---	DELAY SWITCH	Turns Delay (p. 9) on/off.
✓	---	---	✓	✓	ROTARY SPEED	When using the rotary effect, switches the rotary effect between fast and slow.
✓	---	---	---	✓	TONE COLOR	The same function as the [TONE COLOR] knob. (*4)
✓	---	---	✓	---	PROGRAM DOWN	Switches Programs in descending order.
✓	---	---	✓	---	PROGRAM UP	Selects Programs in ascending order.

- * 1 You can specify the zone (or external zone) to which the assigned function will apply. “Detailed Settings for Each Zone (Zone Edit)” (p. 4), “Detailed Settings for Transmitted Parts” (p. 19).
- * 2 If the SYSTEM setting “Control Destination” is PROGRAM, the assigned function applies to the zone that’s selected by “MOD FX (Modulation FX Control Destination)” (p. 5).
- * 3 If the SYSTEM setting “Control Destination” is PROGRAM, the assigned function applies to the zone that’s selected by “TR/AMP (Tremolo/Amp Control Destination)” (p. 5).
- * 4 If the SYSTEM setting “Control Destination” is PROGRAM, the assigned function applies to the zone that’s selected by “TON CLR (Tone Color Control Destination)” (p. 5).

MEMO

Depending on the state of the selected Program or tone, the assigned function might not be supported, meaning that you might not obtain the result you expect.

Adding Reverberation to the Sound (Reverb)

Here's how to make reverb settings.

The available settings will depend on the selected type.

For details on the effects, refer to "Reverb Parameters" (p. 67).

1. In the PROGRAM EDIT MENU screen, select "Reverb" and press the [ENTER] button (p. 4).
2. Select the parameter that you want to edit, and use the [DEC] [INC] buttons or the value dial to edit the value.

Parameter	Value	Explanation
Type	ROOM1, ROOM2	Simulates the reverberation of room interiors. It produces a well-defined and spacious reverberation.
	HALL1, HALL2	Simulates the reverberation exhibited by hall. It provides a deeper reverberation than the Room reverbs.
	PLATE	Simulates a plate reverb unit (a type of artificial reverb that utilized a metal plate).
	GM2 REVERB	This is a GM2 reverb.
Level	0–127	Reverb volume.

Adding Spaciousness to the Sound (Delay)

Here's how to make delay settings.

The available settings will depend on the selected type.

For details on the effects, refer to "Delay Parameters" (p. 65).

1. In the PROGRAM EDIT MENU screen, select "Delay" and press the [ENTER] button (p. 4).
2. Select the parameter that you want to edit, and use the [DEC] [INC] buttons or the value dial to edit the value.

Parameter	Value	Explanation
Type	DELAY	A stereo delay.
	T-CTRL DELAY	A delay that allows you to smoothly change the delay time.
	DELAY → TREMOLO	Tremolo is applied to the delay sound.
	2TAP DELAY	Delayed sound is heard from two locations that you specify.
	3TAP DELAY	Delayed sound is heard from three locations that you specify.
Level	0–127	Delay volume.

Adjusting the Levels of Each Frequency Range (EQUALIZER)

The RD-2000EX is equipped with a five-band equalizer.

1. Use the ZONE EFFECTS [SELECT] button to select "EQ."
2. Press the [EQ ON] button to make it light.
3. Turn the knobs to adjust the levels in each range.

NOTE

Sounds may be distorted with certain knob settings. If this occurs, adjust the Input Gain.

MEMO

You can specify that the equalizer settings stay the same even if you switch programs. In "system settings," set EQ Mode (owner's manual: p. 26) to "REMAIN."

Parameter	Value	Explanation
LOW Gain	-12–+12 [dB]	Amount of boost/cut for the low-frequency region
LOW Freq	16–16000 [Hz]	Center frequency of the low-frequency region
MID1 Gain	-12–+12 [dB]	Amount of boost/cut for mid-frequency region 1
MID1 Freq	16–16000 [Hz]	Center frequency of mid-frequency region 1
MID1 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of mid-frequency region 1 Set a higher value for Q to narrow the range to be affected.
MID2 Gain	-12–+12 [dB]	Amount of boost/cut for mid-frequency region 2
MID2 Freq	16–16000 [Hz]	Center frequency of mid-frequency region 2
MID2 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of mid-frequency region 2 Set a higher value for Q to narrow the range to be affected.
MID3 Gain	-12–+12 [dB]	Amount of boost/cut for mid-frequency region 3
MID3 Freq	16–16000 [Hz]	Center frequency for mid-frequency region 3
MID3 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of mid-frequency region 3 Set a higher value for Q to narrow the range to be affected.
HIGH Gain	-12–+12 [dB]	Amount of boost/cut for the high-frequency region
HIGH Freq	16–16000 [Hz]	Center frequency of the high-frequency region
INPUT Gain	-15–+15 [dB]	Amount of boost/cut for the input

Detailed Tone Settings (TONE DESIGNER)

After you've selected a tone, a Program or a Scene, you can use the RD-2000EX's TONE DESIGNER function to make detailed adjustments to the sound.

1. Press the [TONE DESIGNER] button.



* The items that are displayed will differ depending on the tone that's selected.

The selected zone's TONE DESIGNER MENU screen (for a TW-Organ sound, the TONE WHEEL & DESIGNER MENU screen) appears (owner's manual: p. 22).

In the designer menu you can choose the desired category of tone settings.

2. Use the cursor [▲] [▼] [◀] [▶] buttons to select the item that you want to edit.

3. Press the [ENTER] button.

The edit screen for each item appears.

4. Select the parameter that you want to edit, and use the [DEC] [INC] buttons or the value dial to edit the value.

If you press the [EXIT] button, you will return to the TONE DESIGNER MENU screen.

5. If you want to save the changes you've made, press the [WRITE] button.

You can save your changes in the Program.

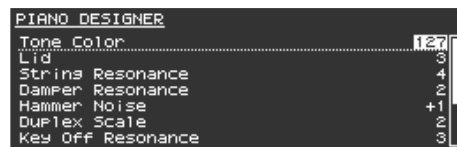
NOTE

If you've edited the settings, an "EDITED" indication is shown in the PROGRAM screen, the TONE screen or the SCENE screen.

If you turn off the power, select another Program, or select another tone in the TONE screen while the "EDITED" indication is shown, the edits you made are discarded. If you want to keep your edits, press the [WRITE] button to save the Program (owner's manual: p. 23).

1. As described in "Detailed Tone Settings (TONE DESIGNER)," select "Piano Designer" and press the [ENTER] button.

The PIANO DESIGNER screen appears.



2. Select the parameter that you want to edit, and use the [DEC] [INC] buttons or the value dial to edit the value.

Parameters of V-Piano Technology tones (tone numbers S01–S10)

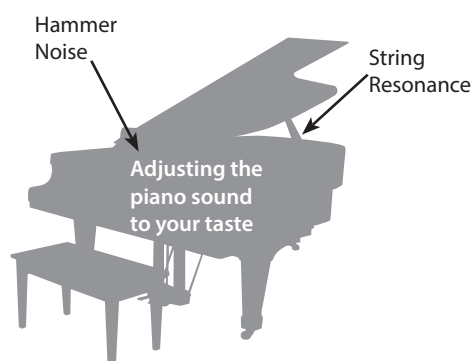
Parameter	Value	Explanation
Tone Color	0–127	Adjusts an effect that is suitable for each sound, such as the timbre or the acoustic image.
Lid	0–6	Reproduces the way the brightness of a grand piano's sound is affected by how much the piano's lid is opened. The lid is opened more as the value is increased, creating a brighter sound.
String Resonance	0–10	When the keys are pressed on an acoustic piano, the strings for keys that are already pressed also vibrate sympathetically. The function that reproduces this is called "String Resonance." Increasing the value increases the amount of effect.
Damper Resonance	0–10	This adjusts the damper resonance of the acoustic piano sound (the sympathetic vibration produced in strings other than those actually played when you press the damper pedal). Higher settings will make the sympathetic vibration louder.
Hammer Noise	–2–0–+2	This adjusts the sound of the hammer striking the string of an acoustic piano. Higher values will increase the sound of the hammer striking the string.

Piano Designer

If certain piano sounds are selected, Piano Designer appears in the TONE DESIGNER MENU screen.

* For the tones that correspond to certain piano sounds, refer to "RD-2000EX Sound List" (PDF).

In the Piano Designer screen, you can adjust various aspects of the sound of the piano to create a piano sound that's just right for you.



Parameter	Value	Explanation
Duplex Scale	0–10	Adjusts the sound of the sympathetically vibrating aliquot strings on an acoustic piano. Higher values increase the volume of the sympathetic vibration.
		What is Duplex Scale? “Duplex Scale” refers to a system that causes sympathetic vibrations in the sections of the string toward the front and toward the back. It can produce sound that is richer and brighter by adding the string’s higher harmonics. Because no damper (sound-stopping mechanism) is applied to the front or back sections of the string, the resonating sounds linger even after the sound of the string stops when you release the played key.
Key Off Resonance	0–10	Adjusts resonances such as the key-off sound of an acoustic piano (subtle sounds that are heard when you release a key). Higher values increase the volume of the resonances.
Cabinet Resonance	0–10	Adjusts the body resonance of the grand piano itself. Higher values will produce a larger body resonance.
Sound Board Resonator	0–4	When you play a chord, this setting improves the clarity of the individual notes in the chord, creating a more beautiful resonance. Higher settings produce a clearer resonance.
Damper Noise	0–10	Adjusts the damper noise (the sound that occurs when the strings of an acoustic piano are released by pressing the damper pedal). Increasing this value increases the sound that is heard when the strings are released.
Key Off Noise	0–10	This adjusts sympathetic vibrations such as an acoustic piano’s key-off sound (the subtle sound that occurs when you release a note). Higher settings will make the sympathetic vibration louder.

Parameters of SuperNATURAL piano tones (tone numbers 0001–0018, 0028–0039, 0042–0045)

Parameter	Value	Explanation
Tone Color	0–127	Adjusts an effect that is suitable for each sound, such as the timbre or the acoustic image.

Parameter	Value	Explanation
Nuance	TYPE1, TYPE2, TYPE3	Changes the Tone’s subtle nuances by altering the phase of the left and right sounds. * This effect is difficult to hear when headphones are used.
Damper Noise	0–127	Adjusts the damper noise (the sound that occurs when the strings of an acoustic piano are released by pressing the damper pedal). Increasing this value increases the sound that is heard when the strings are released.
Duplex Scale	0–127	Adjusts the sound of the sympathetically vibrating aliquot strings on an acoustic piano. Higher values increase the volume of the sympathetic vibration.
		What is Duplex Scale? “Duplex Scale” refers to a system that causes sympathetic vibrations in the sections of the string toward the front and toward the back. It can produce sound that is richer and brighter by adding the string’s higher harmonics. Because no damper (sound-stopping mechanism) is applied to the front or back sections of the string, the resonating sounds linger even after the sound of the string stops when you release the played key.
String Resonance	0–127	When the keys are pressed on an acoustic piano, the strings for keys that are already pressed also vibrate sympathetically. The function that reproduces this is called “String Resonance.” Increasing the value increases the amount of effect.
Key Off Resonance	0–127	Adjusts resonances such as the key-off sound of an acoustic piano (subtle sounds that are heard when you release a key). Higher values increase the volume of the resonances.
Hammer Noise	-2–0–+2	Adjusts the sound of the hammers striking the strings of an acoustic piano. Higher values increase the sound of the hammers striking the strings.
Character	-5–0–+5	Higher values produce a harder sound; lower values produce a more mellow sound.

Parameter	Value	Explanation
Sound Lift	0–127	Lets you change the way that the sound responds when you play the keyboard softly. For example, this can be adjusted suitably for solo performance, or to prevent your sound from being buried in the rest of the band. Increasing this value will allow fairly loud sounds to be produced even when you play with a light touch, so that your performance will not be obscured by the playing of your band. Changing this value does not affect the way in which the sound responds to velocity.

Parameter	Value	Explanation
Mechanical Key Off Noise	0–127	Adjusts the key-off sound of the electric piano (the operating sound of the key and hammer when the key is released). Higher settings produce a louder key-off sound. * Depending on the tone that's selected, this might have no effect.
Damper Noise	0–127	Adjusts the damper noise (the noise heard when you press the damper pedal to release the tone bars). Increasing this value will make the damper noise louder. * Depending on the tone that's selected, this might have no effect.
Key Off Resonance	0–127	Adjusts resonances such as the key-off sound (the faint sound heard when you release a key). Higher values produce a louder key-off sound. At a setting of 0 there will be no key-off sound at all. * Depending on the tone that's selected, this might have no effect.
Hum Noise	0–127	Adjusts the amount of hum and other noise that leaks into the pickups. Electric pianos were susceptible to various types of noise, and this noise would sometimes be output along with the sounds of the performance. Depending on the effect settings, such noises can produce an authentic, lively atmosphere. Lowering this value makes the sound clearer; raising this value makes the sound dirtier. At a setting of 0 there will be no hum at all. * Depending on the tone that's selected, this might have no effect.

Tone Designer

In the Tone Designer screen you can make detailed settings for the sound. The available parameters will depend on the tone that's selected.

1. As described in “Detailed Tone Settings (TONE DESIGNER)” (p. 10), select “Tone Designer” and press the [ENTER] button.

The Tone Designer screen appears.

The parameters will differ depending on the tone that's selected.

2. Select the parameter that you want to edit, and use the [DEC] [INC] buttons or the value dial to edit the value.

Making Detailed Settings for the E. Piano Tones

If certain electric piano tones are selected, the following parameters will be shown.

* For the tones corresponding to certain electric piano tones, refer to “RD-2000EX Sound List” (PDF).

Parameter	Value	Explanation
Tone Color	0–127	Adjusts an effect that's suitable for each sound, such as timbre or acoustic image.
Mechanical Key On Noise	0–127	Here you can adjust the loudness of the hammer strike on an electric piano's sound-producing mechanism, such as the tine or reed. Higher settings produce a louder hammer strike. * Depending on the tone that's selected, this might have no effect.

Parameter	Value	Explanation
Sound Lift	0–127	Lets you change the way that the sound responds when you play the keyboard softly. For example, this can be adjusted suitably for solo performance, or to prevent your sound from being buried in the rest of the band.
		Increasing this value will allow fairly loud sounds to be produced even when you play with a light touch, so that your performance will not be obscured by the playing of your band. Changing this value does not affect the way in which the sound responds to velocity.

Making Detailed Settings for the CLAV Tones

If certain clav tones are selected, the following parameters appear.

* For details on which clav tones this applies to, refer to “RD-2000EX Sound List” (PDF).

Parameter	Value	Explanation
Tone Color	0–127	Adjusts an effect that’s suitable for each sound, such as timbre or acoustic image.
Pitch Bend Range	0–24 (semitones)	Sets the amount of pitch change to occur when you move the Pitch Bend lever (maximum two octaves).
Key Off Resonance	0–127	Adjusts resonances such as the key-off sound (the faint sound heard when you release a key). Higher values produce a louder key-off sound. At a setting of 0 there will be no key-off sound at all.
Hum Noise	0–127	Adjusts the amount of hum and other noise that leaks into the pickups. Electric clavichords were susceptible to various types of noise, and this noise would sometimes be output along with the sounds of the performance. Depending on the effect settings, such noises can produce an authentic, lively atmosphere. Lowering this value makes the sound clearer; raising this value makes the sound dirtier. At a setting of 0 there will be no hum at all. * Depending on the tone that’s selected, this might have no effect.

Making Detailed Settings for the Other Tones

If you’ve selected a tone other than certain piano, electric piano, or clav tones, the following parameters appears.

Parameter	Value	Explanation
Tone Color	0–127	Adjusts an effect that’s suitable for each sound, such as timbre or acoustic image.
Mono/Poly		Specifies whether the tone is to play polyphonically (POLY) or monophonically (MONO). The MONO setting is effective when playing a solo instrument tone, such as sax or flute. Additionally, when this is set to “MONO LEGATO,” you can have monophonic performances be played legato. Legato is a playing style in which the spaces between notes are smoothed, creating a flowing feel with no borders between the notes. This creates a smooth transition between notes, which is effective when you wish to simulate the hammering-on and pulling-off techniques used by a guitarist.
	MONO	Only the last-played note will sound.
	POLY	Two or more notes can be played simultaneously.
	MONO LEGATO	Legato is applied to monophonic performances.
Portamento Switch	ON, OFF	Portamento is a function that causes the pitch to change smoothly from one note to the next note played. With the Mono/Poly parameter set to MONO, portamento is especially effective when simulating playing techniques such as violin glissandos.
Portamento Time	0–127	The Portamento Time setting determines the time for the change in pitch when the portamento effect is applied to the sound. Higher settings cause the pitch change to the next note to take more time.
Pitch Bend Range	0–24 (semitone)	Sets the amount of pitch change to occur when you move the Pitch Bend lever (maximum two octaves).
Attack Time Offset	-64–+63	The time it takes after the key is pressed for a sound to reach full volume. Higher values produce a milder attack; lower values produce a sharper attack. * With some Tones, the effect does not work as intended.

Parameter	Value	Explanation
Decay Time Offset		This is the time over which the volume decays after the attack is finished. The time it takes for the volume to fall increases as the value is raised; lowering the value decreases the decay time. * With some Tones, the effect does not work as intended.
Release Time Offset		The time it takes after the key is released for a sound to become inaudible. Higher values produce longer decay; set lower values for a clear-cut sound. * With some Tones, the effect does not work as intended.
Cutoff Offset		Adjusts how much the filter is opened. Higher values brighten the sound; lower values make the sound seem darker. * With some Tones, the effect does not work as intended.
Resonance Offset	-64+63	Emphasizes the overtones in the vicinity of the cutoff frequency, adding character to the sound. Excessively high settings can produce oscillation, causing the sound to distort. Higher values strengthen the distinctive characteristics of the sound; lower values reduce these characteristics. * With some Tones, the effect does not work as intended.
Vibrato Rate Offset		Adjusts the vibrato speed (the rate at which the pitch is modulated). The pitch is modulated more rapidly for higher settings, and more slowly with lower settings.
Vibrato Depth Offset		Adjusts the depth of the vibrato effect (the depth at which the pitch is modulated). The pitch is modulated more greatly for higher settings, and less with lower settings.
Vibrato Delay Offset		For each part, this adjusts the time until vibrato (pitch modulation) begins. Higher settings produce a longer delay time before vibrato begins, while lower settings produce a shorter time.

Editing Individual Keys (Indiv. Voicing)

NOTE

- These settings are available only when editing certain piano tones.
- For details on the tones to which this applies, refer to “RD-2000EX Sound List” (PDF).

1. In the procedure “Detailed Tone Settings (TONE DESIGNER)” (p. 10), choose “Indiv. Voicing” and press the [ENTER] button.
2. Use the cursor buttons to select a parameter.
3. Press a key to specify the key that you want to edit.
4. Use the [DEC] [INC] buttons or the value dial to edit the values.

TUNING

You can make fine adjustments to the tuning of each key.

Parameter	Value	Explanation
Type	OFF, PRST (PRESET), USER	Selects the type of tuning. PRST (PRESET) is the tuning curve that's factory-set for the RD-2000EX. If you choose USER, you'll be able to specify the tuning of each key.
Value	-50.0+50.0	Allows for fine adjustments to the tuning of each key in steps of 0.1 cents, over a range of -50.0 to +50.0 cents.

LEVEL

This is a fine adjustment to the volume of each key.

Parameter	Value	Explanation
Type	OFF, PRST (PRESET)*, USER	If you choose USER, you'll be able to edit the volume of each key.
Value	-50-0	Lower values cause the key to be softer than the other keys.

* V-Piano Technology tones only (tone numbers S01-S10)

CHARACTER

Relative to the value of the “Character” parameter in Piano Designer, this lets you adjust the offset value for each key.

Parameter	Value	Explanation
Type	OFF, PRST (PRESET)*, USER	If you choose USER, you'll be able to edit the Character offset value of each key.
Value	-5-0+5	Higher values produce a harder sound; lower values make the tone more mellow.

* V-Piano Technology tones only (tone numbers S01-S10)

MEMO

If you change the value of a key from "OFF" or "PRST," the Type will automatically change to "USER."

Adjusting Resonance When the Damper Pedal Is Depressed (Sym. Resonance)

NOTE

These parameters cannot be specified for some tones (V-Piano Technology tones: tone numbers S01–S10) or for zones 5–8.

For details on the tones to which this applies, refer to "RD-2000EX Sound List" (PDF).

You can adjust this resonance when the damper pedal is depressed (Sympathetic Resonance).

On an acoustic piano, holding down the damper pedal will allow the remaining strings to resonate in sympathy with the sounds that you played from the keyboard, adding a rich resonance. This feature reproduces that resonance sound.

Parameter	Value	Explanation
Switch	OFF, ON	When set to ON, the effect is applied.
Depth	0–127	Depth of the effect
Damper	0–127	Depth to which the damper pedal is pressed (controls the resonant sound)
Pre LPF	16–15000 Hz, BYPASS	Frequency of the filter that cuts the high-frequency content of the input sound (BYPASS: no cut)
Pre HPF	BYPASS, 16–15000 Hz	Frequency of the filter that cuts the low-frequency content of the input sound (BYPASS: no cut)
Peaking Freq	16–15000 Hz	Frequency of the filter that boosts/cuts a specific frequency region of the input sound
Peaking Gain	-15–+15 dB	Amount of boost/cut produced by the filter at the specified frequency region of the input sound
Peaking Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the frequency region boosted/cut by the Peaking Gain parameter (larger values make the region narrower)
HF Damp Freq	16–15000 Hz, BYPASS	Frequency at which the high-frequency content of the resonant sound will be cut (BYPASS: no cut)
LF Damp Freq	BYPASS, 16–15000 Hz	Frequency at which the low-frequency content of the resonant sound will be cut (BYPASS: no cut)
Level	0–127	Output Level
Damper Offset	0–127	Volume of additional slight resonance when the damper pedal is not pressed

Editing the Modulation FX (Modulation FX)

Here you can edit the modulation FX parameters.

NOTE

These parameters cannot be specified for some tones (V-Piano Technology tones: tone numbers S01–S10) or for zones 5–8.

For details on the tones to which this applies, refer to "RD-2000EX Sound List" (PDF).

1. Make the [ZONE EFFECTS] button light.
2. While holding down the [SHIFT] button, operate the MODULATION FX [DEPTH] (or [RATE]) knob.
The MODULATION FX screen appears.
3. Select the parameter that you want to edit, and use the [DEC] [INC] buttons or the value dial to edit the value.

Parameter	Value	Explanation
Type	Refer to the effect list (p. 34).	Specifies the type of Modulation FX. The editable parameters will depend on the effect type that's selected.
Routing	MOD FX (Modulation FX) → TR/AMP (Tremolo/Amp Simulator) TR/AMP (Tremolo/Amp Simulator) → MOD FX (Modulation FX)	Lets you select the routing of the Modulation FX and the Tremolo/Amp Simulator. By switching the Routing type, you can change the effect that's applied to the sound. For example, suppose that you chose Chorus as the MOD FX and chose E.PIANO for TR/AMP; with the MOD FX → TR/AMP setting, the chorus sound will be output in monaural, but with the TR/AMP → MOD FX setting it will be output in stereo.
Switch	OFF, ON	Turns the Modulation FX on/off.

MEMO

For details, refer to "Delay Parameters" (p. 65).

Editing Tremolo/Amp Simulator (Tremolo/Amp Simulator)

Here's how to edit the Tremolo/Amp Simulator parameters.

NOTE

These parameters cannot be specified for some tones (S tones) or for zones 5–8.

For details on the tones to which this applies, refer to "RD-2000EX Sound List" (PDF).

1. Make the [ZONE EFFECTS] button light.
2. While holding down the [SHIFT] button, operate the TREMOLO/AMP SIM [DEPTH] (or [RATE]) knob.
The Tremolo/Amp Simulator screen appears.
3. Select the parameter that you want to edit, and use the [DEC] [INC] buttons or the value dial to edit the value.

Parameter	Value	Explanation
Type	Refer to "Tremolo/Amp simulator types" (p. 16)	Selects the type of Tremolo/Amp Simulator. The editable parameters will depend on the effect type that's selected.
Routing	MOD FX (Modulation FX) → TR/AMP (Tremolo/Amp Simulator) TR/AMP (Tremolo/Amp Simulator) → MOD FX (Modulation FX)	Lets you select the routing of the Modulation FX and the Tremolo/Amp Simulator. By switching the Routing type, you can change the effect that's applied to the sound. For example, suppose that you chose Chorus as the MOD FX and chose E.PIANO for TR/AMP; with the MOD FX → TR/AMP setting the chorus sound will be output in monaural, but with the TR/AMP → MOD FX setting it will be output in stereo.

Tremolo/Amp simulator types

Type	Explanation
1 NORMAL	This is an amp with a flat frequency response. It allows you to add a tremolo effect and distortion.
2 A.PIANO	In addition to NORMAL, this reproduces the open/closed state of a grand piano's lid. Tremolo types of differing character are available, allowing you to reproduce the character of classic electric pianos when combined with an electric piano sound. Characteristics of the tremolo types OLDCASE MONO Used in conjunction with TINE EP, this simulates an early model of a classic electric piano of the 60s. OLDCASE STEREO Used in conjunction with TINE EP, this simulates a classic electric piano sound of the early 70s. NEWCASE Used in conjunction with TINE EP, this simulates a classic electric piano sound of the late 70s and early 80s. DYNO This model allows you to vary the shape of the tremolo waveform. Used in conjunction with TINE EP, this simulates an electric piano sound used in many recordings of the early 80s. WURLY Used in conjunction with REED E.PIANO, this simulates a classic electric piano sound of the 60s.
3 E.PIANO	
4 GUITAR AMP	Simulates playing through a guitar amp. MEMO Since the [DRIVE] knob faithfully simulates the volume knob of a guitar amp, turning the knob toward the left will also decrease the volume.
5 ROTARY	This simulates a rotary effect suitable for organ sounds.
6 MKS-20 Tremolo	This simulates the tremolo effect that was built into the MKS-20.
7 ROTARY Type2	This simulates a rotary effect suitable for organ sounds.

MEMO

For details, refer to "Tremolo/Amp Simulator Parameters" (p. 61).

Simulating the Creation of Organ Tones

These settings are available only if a TW-Organ (tonewheel organ) tone is selected.

On a tonewheel organ, you can create original sounds by sliding nine harmonic bars (drawbars) forward or backward to change their relative balance. Each bar is assigned a different footage, and this footage determines the pitch of the sound. 8' is the footage that forms the basic pitch of the sound; this is the center around which you create the tone.



For details, refer to "Creating the Organ Tones" (owner's manual: p. 22).

Using the RD-2000EX as a Master Keyboard

By connecting an external MIDI device to the MIDI OUT connectors on the RD-2000EX's rear panel, you can then control the external MIDI device from the RD-2000EX.

For each zone, the RD-2000EX lets you select either the internal MIDI sound generator (internal: red LED lit) or an external MIDI sound generator (external: green LED lit).

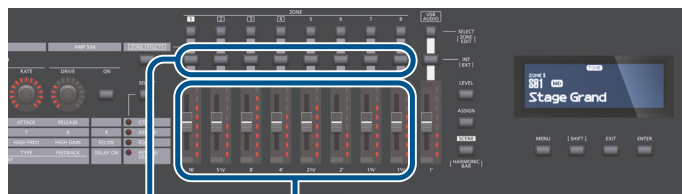
By using an external MIDI sound generator (external), you can control a wide range of settings on the external MIDI sound generator.

You can control internal and external sound generators independently.

If you press the **[SHIFT] + [INT/EXT]** buttons to make a zone light green, it controls an external MIDI sound generator (external zone). You can press the **[SHIFT] + [INT/EXT]** button to switch between controlling either the internal zone or the external zone.

You can also make detailed settings for MIDI messages transmitted to external sound modules.

* When Rec Mode (p. 32) is "ON," MIDI messages are not output from external zones.



INT/EXT select buttons
Sliders

What's MIDI?

MIDI (Musical Instrument Digital Interface) is a standard specification that allows musical data to be exchanged between electronic musical instruments and computers.

If devices equipped with MIDI ports are connected via a MIDI cable, you'll be able to use them in the following ways.

- Use one MIDI keyboard to play multiple instruments
- Play multiple MIDI instruments as an ensemble
- Automatically switch settings as the song progresses

INT/EXT select buttons

You can specify whether MIDI messages including data for your keyboard playing in an external zone is transmitted (or is not transmitted) from the MIDI OUT connector.

For a zone whose INT/EXT select button is lit (green), playing the keyboard will transmit those MIDI messages from MIDI OUT.

For a zone whose button is unlit, playing the keyboard will not transmit MIDI messages.

The INT/EXT select button's on/off status changes each time you press the button.

About MIDI Connectors

The RD-2000EX has the following three types of MIDI connectors. Their functions differ as described below.

MIDI IN connector

Performance messages from an external MIDI device are received here. These incoming messages may instruct the RD-2000EX to play sounds or switch tones.

MIDI OUT connector

MIDI messages are transmitted from these connectors to external MIDI devices. The RD-2000EX's MIDI OUT connectors are used for sending the performance data of the controller section.

MIDI THRU connector

MIDI messages received at MIDI IN connectors are re-transmitted without change from this connector to an external MIDI device. Use this in situations such as when you use multiple MIDI devices simultaneously.

MEMO

The RD-2000EX lets you switch the function of the MIDI THRU/OUT 2 connector (p. 24).

Sliders

If the **[LEVEL]** button is lit, the sliders adjust the volume of each zone.

Selecting the MIDI Connector to Use for Output

The RD-2000EX provides a MIDI OUT connector, a MIDI connector whose function can be switched between OUT and THRU, and a USB COMPUTER port.

For each zone you can select the MIDI OUT connector or USB COMPUTER port from which its data is to be transmitted.

1. In the **ZONE EDIT** screen's upper line, select the **"EXTERNAL"** tab.
[MENU] button → "Program Edit" → "Zone Edit"
2. In the **"OUT/PC"** tab of the lower line, specify the output destination for each zone.

Zone	Parameter	Settings	Explanation
1	OUT (MIDI OUT Port)	ALL, OUT1 (MIDI OUT 1), OUT2 (MIDI OUT 2), USB	The RD-2000EX's performance data is transmitted from the selected connector.
2			
3			
4			
5			
6			
7			
8			

MEMO

If the System parameter MIDI OUT2 Port Mode (p. 24) is set to **"THRU,"** the performance data from the RD-2000EX will not

Adjusting the Volume of Each Zone

If the INT/EXT select button is lit green, the INT/EXT select button and slider can control the external zone in the same way as the internal zone (owner's manual: p. 14).

be transmitted from the MIDI OUT 2 connector; instead, the performance data received at the MIDI IN connector will be retransmitted without change (MIDI THRU).

Setting the MIDI Transmit Channel

When you have finished connecting the external MIDI device, match the keyboard's Transmit channel and the Receive channel for each of the external MIDI sound generator's Parts. Sound is produced when the MIDI channels for the sending device (the RD-2000EX) and the receiving device (the external MIDI sound generator) are set to the same MIDI channel.

1. In the ZONE EDIT screen's upper line, select the "EXTERNAL" tab.

[MENU] button → "Program Edit" → "Zone Edit"

2. In the lower line, use the "OUT/PC" tab to specify the Tx Ch of each zone.

Zone	Parameter	Value	Explanation
1	Tx Ch (MIDI Tx Channel)	1–16	RD-2000EX performance data is sent over a selected channel.
2			
3			
4			
5			
6			
7			
8			

MEMO

- For details on how to set the receive channel for each part of your external MIDI device, refer to its owner's manual.
- Zones whose INT/EXT select button (p. 18) is off are shown in gray. Also, MIDI messages are not transmitted when you play the keyboard.

Selecting Sounds on an External MIDI Device

To switch the tones of an external MIDI device, the program number and the MSB/LSB of the Bank Select message are entered as numerical values on the RD-2000EX.

1. In the ZONE EDIT screen's upper line, select the "EXTERNAL" tab.

[MENU] button → "Program Edit" → "Zone Edit"

2. In the lower line, use the "OUT/PC" tab to specify the MSB, LSB, and PC for each zone.

When this setting is "--," bank select and program change messages will not be transmitted.

Parameter	Value
MSB (Bank Select MSB: CC0)	--, 0–127
LSB (Bank Select LSB: CC32)	--, 0–127
PC (Program Change)	--, 1–128

NOTE

- If the external MIDI sound generator receives a Program number or a Bank number for which no Tone has been assigned, an alternate Tone may be selected, or in some cases, there may be no sound played.
- If you do not want to transmit the Program number or Bank Select, use the procedure described above to set the PC/MSB/LSB to "--."
- If this is set to "--," the sound selection data will not be transmitted when you switch Programs.

Detailed Settings for Transmitted Parts

1. In the ZONE EDIT screen's upper line, select the "EXTERNAL" tab.

[MENU] button → "Program Edit" → "Zone Edit"

2. Press the Cursor buttons to move the cursor to the parameter to be set.

3. Use the [DEC] [INC] buttons or value dial to set the value.

If you press the [DEC] button and [INC] button simultaneously, the value will be reset to "--" or to the default setting. The value for the setting won't be transmitted when set to "--."

Parameter	Value	Explanation
OUT MIDI OUT Port	ALL, OUT1, OUT2, USB	The RD-2000EX's performance data is transmitted from the selected connector.
Tx Ch MIDI Tx Channel	1–16	RD-2000EX performance data is sent over a selected channel.
MSB Bank Select MSB (CC0)	--, 0–127	Here you can specify the sound that you want to select on your external MIDI device by entering its program number and bank select MSB/LSB values.
LSB Bank Select LSB (CC32)	--, 0–127	
PC Program Change	--, 1–128	
VOL Volume (CC7)	--, 0–127	Adjusts the volume balance between zones.
PAN Pan (CC10)	--, L64–0–R63	The Pan setting positions the sound image of each zone when the output is in stereo. With an increase in the value for L, more of the sound will be heard as coming from the left side. Similarly, more of the sound will originate at the right if the value of R is increased. When set to 0, the sound is heard as coming from the center.
REV Reverb Send Level (CC91)	--, 0–127	Sets the depth of the reverb effects.
CHO Chorus Send Level (CC93)	--, 0–127	Sets the depth of the chorus effects.

Parameter	Value	Explanation
Mn/Ply Mono (CC126) Poly (CC127)	---, M (Mono), P (Poly)	Specifies whether the tone will play polyphonically (Poly) or monophonically (Mono). The Mono setting is effective when playing a solo instrument tone such as sax or flute.
Trans Zone Transpose	-48--+48	You can perform with each zone transposed to a different pitch. When multiple zones are set to on, you can create a richer sound by setting the two Tones to different octaves. Also, if the Keyboard Mode is set to Split, and you are playing a bass Tone in the lower Part, you can use the Transpose function to play the bass at a lower pitch.
Rng Lo Keyboard Range Lower	A0–C8	Set the keyboard range in which each Zone will sound. This can be used to make notes in different areas of the keyboard play different Tones.
Rng Up Keyboard Range Upper		Specify the lower limit (Rng Lo) and upper limit (Rng Up) of the key range being set. You can also set this by pressing a specific key and then pressing the [ENTER] button.
Rng Lo Velocity Range Lower	1–127	Specify the lower limit (VR.LWR) and upper limit (VR.UPR) of the range in which the tone is played according to how strongly the keys are played (velocity). Make this setting when you want the tone to change depending on the key velocity.
Rng Up Velocity Range Upper		
Attack Attack Time Offset (CC73)	---, 0–127	The time it takes after the key is pressed for a sound to reach full volume. Higher values produce a milder attack; lower values produce a sharper attack.
Decay Decay Time Offset (CC75)		This is the time over which the volume decays after the attack is finished. The time it takes for the volume to fall increases as the value is raised; lowering the value decreases the decay time.
Release Release Time Offset (CC72)		The time it takes after the key is released for a sound to become inaudible. Higher values produce longer decay; set lower values for a clear-cut sound.

Parameter	Value	Explanation
Cutoff Cutoff Offset (CC74)	---, 0–127	Adjusts how much the filter is opened. Higher values brighten the sound; lower values make the sound seem darker.
Reso Resonance Offset (CC71)		Emphasizes the overtones in the vicinity of the cutoff frequency, adding character to the sound. Excessively high settings can produce oscillation, causing the sound to distort. Higher values strengthen the distinctive characteristics of the sound; lower values reduce these characteristics.
POR Sw Portamento Switch (CC65)	---, OFF, ON	Turns portamento on/off. Portamento is a function that causes the pitch to change smoothly from one note to the next note played.
P.Time Portamento Time (CC5)	---, 0–127	The Portamento Time setting determines the time for the change in pitch when the portamento effect is applied to the sound. Higher settings will cause the pitch change to the next note to take more time.
Coarse Coarse Tune	---, -48--+48	Adjusts the pitch in semitone steps (± 4 octaves).
Fine Fine Tune	---, -50--+50	Adjusts the pitch in one-cent steps (± 50 cents). 1 cent = 1/100th of a semitone
BND Rng Pitch Bend Range	---, 0–48	Sets the amount of pitch change to occur when you move the Pitch Bend lever (4 octaves). (RPN: 00H/00H)
MOD Dep Modulation Depth	---, 0–127	Sets the depth of the effect when the Modulation lever is tilted. (RPN: 00H/05H)

Parameter	Value	Explanation
Damper Damper Control Switch	OFF, ON	Damper pedal
FC1 FC1 Control Switch		Pedal connected to the FC1 jack
FC2 FC2 Control Switch		Pedal connected to the FC2 jack
EXT EXT Pedal Control Switch		Pedal connected to the EXT jack
PCH BND Pitch Bend Control Switch	OFF, ON	Pitch Bend Lever
MOD CTL Modulation Control Switch		Modulation Lever
MOD W1 MOD Wheel 1 Control Switch		Modulation wheel 1
MOD W2 MOD Wheel 2 Control Switch		Modulation wheel 2
A1 Assign 1 Control Switch	OFF, ON	ASSIGN [1] knob
A2 Assign 2 Control Switch		ASSIGN [2] knob
A3 Assign 3 Control Switch		ASSIGN [3] knob
A4 Assign 4 Control Switch		ASSIGN [4] knob
A5 Assign 5 Control Switch		ASSIGN [5] knob
A6 Assign 6 Control Switch		ASSIGN [6] knob
A7 Assign 7 Control Switch		ASSIGN [7] knob
A8 Assign 8 Control Switch		ASSIGN [8] knob
A9 Assign 9 Control Switch		ASSIGN [9] button
CC1 User Control Change 1 Number	---, 0–127	You can assign and transmit two different control change messages.
Value User Control Change 1 Value		
CC2 User Control Change 2 Number		
Value User Control Change 2 Value		

Detailed Settings for Each Function

Setting Parameters (System)

Functions that affect the overall operating environment of the RD-2000EX are called “system functions.”

[MENU] button → Select “System” → [ENTER] button → “SYSTEM” tab

Parameter	Value	Explanation
Master Tune	415.3–440.0–466.2 [Hz]	Tuning to Other Instruments’ Pitches (Master Tune)
		For a cleaner ensemble sound while performing with one or more other instruments, ensure that each instrument’s basic pitch is in tune with that of the other instruments. In general, the tuning of an instrument is indicated by the pitch in Hertz (Hz) of the middle “A” note.
Control Destination		Selecting the Target Controlled by a Knob (Control Destination)
		You can select the target that is controlled by the knobs via ZONE EFFECT, CTRL, and ASSIGN.
		SELECT The knobs affect the zones that are selected by the [SELECT] buttons.
EQ Mode		PROGRAM The knobs affect the settings specified by ASSIGN SW and FX DEST in ZONE EDIT.
		Retaining the Equalizer Settings Even When the Program Is Switched (EQ Mode)
		You can store different equalizer settings (p. 9) for each individual Program (owner’s manual: p. 13). This setting determines whether or not the Program equalizer settings values are to be changed when Programs are switched.
Select Button Mode		PROGRAM When you switch Programs, the equalizer settings will also switch.
		REMAIN When you switch Programs, the equalizer settings will not change.
		Retaining the SELECT Button Settings Even When the Program Is Switched (Select Button Mode)
Pedal Mode		SELECT button settings (owner’s manual: p. 8) can be stored individually for each Program (owner’s manual: p. 13). You can specify whether the SELECT button settings will or will not change to the functions stored in each Program when you switch a Program.
		PROGRAM When you switch Programs, the SELECT button settings will also change.
		REMAIN When you switch Programs, the SELECT button settings will not change.
Wheel Mode		Retaining the Pedal Settings Even When the Program Is Switched (Pedal Mode)
		Pedal settings (p. 6) can be stored for each Program (owner’s manual: p. 13). This setting determines whether or not the pedal settings are switched to the values stored in the Program you are switching to.
		PROGRAM When you switch Programs, the pedal settings will also change.
Wheel Mode		REMAIN When you switch Programs, the pedal settings will not change.
		Retaining the MOD WHEEL 1/2 Settings Even When the Program Is Switched (Wheel Mode)
		The settings of the MOD WHEEL 1/2 (p. 7) can be stored for each Program (owner’s manual: p. 13). This setting determines whether or not the settings of the MOD WHEEL 1/2 are switched to the values stored in the Program you are switching to.
		PROGRAM When you switch Programs, the settings of the MOD WHEEL 1/2 will also change.
		REMAIN When you switch Programs, the settings of the MOD WHEEL 1/2 will not change.

Parameter	Value	Explanation
Assign 1-9 Mode		Retaining the Assign 1–9 Controller Settings Even When the Program Is Switched (Assign 1-9 Mode) The settings of the Assign 1–9 controllers (p. 7) can be stored individually for each Program (owner's manual: p. 13). You can specify whether the Assign 1–9 controller settings stored in the Program will or will not change when you switch Programs.
	PROGRAM	When you switch Programs, the Assign 1–9 controller settings will also change.
	REMAIN	When you switch Programs, the Assign 1–9 controller settings will not change.
Delay Mode		Retaining the Delay Settings Even When the Program Is Switched (Delay Mode) Delay settings (p. 9) can be stored individually for each Program (owner's manual: p. 13). You can specify whether the delay settings will or will not change to the values stored in each Program when you select a Program.
	PROGRAM	When you switch Programs, the delay settings will also change.
	REMAIN	When you switch Programs, the delay settings will not change.
Reverb Mode		Retaining the Reverb Settings Even When the Program Is Switched (Reverb Mode) Reverb settings (p. 9) can be stored individually for each Program (owner's manual: p. 13). You can specify whether the reverb settings will or will not change to the values stored in each Program when you select a Program.
	PROGRAM	When you switch Programs, the reverb settings will also change.
	REMAIN	When you switch Programs, the reverb settings will not change.
Rhythm Mode		Retaining the Rhythm Settings Even When the Program Is Switched (Rhythm Mode) Rhythm pattern, tempo, and volume (owner's manual: p. 24) can be stored individually for each Program (owner's manual: p. 13). You can specify whether the Rhythm settings will or will not change to the value stored in each Program when you switch a Program.
	PROGRAM	When you switch Programs, the rhythm settings will also change.
	REMAIN	When you switch Programs, the rhythm settings will not change.
Key Touch Mode		Retaining the Keyboard Touch Settings Even When the Tone or Program Is Switched (Key Touch Mode) Key Touch settings (p. 5) can be stored individually for each Program (owner's manual: p. 13). You can specify whether the Key Touch settings will or will not change to the values stored in each Program when you switch a Program. You can also specify whether the tone's Key Touch settings (valid only for the zone 1) will or will not be applied when you switch tones.
	TONE/PROGRAM	When you switch tones or Programs, the Key Touch settings will also change. * The setting will not be changed by operations in the Zone Edit screen (p. 4) or when a MIDI message is received to switch tones.
	REMAIN	When you switch tones or Programs, the Key Touch settings will not change.

Parameter	Value	Explanation
Tone/Program Remain		Retaining the Current Tone Even When Tones Are Switched (Tone/Program Remain) This setting specifies whether the tone currently being sounded will continue (ON) or not (OFF) when another tone is selected. NOTE - Effects (Reverb, Delay, EQ, Sympathetic Resonance) settings change as soon as you switch to a new Tone, without being influenced by the Tone/Program Remain setting. Because of this, certain effects settings can cause notes that were until then sounding to no longer be heard, even though Tone/Program Remain has been set to ON. - Even if Tone/Program Remain is set to ON, the sound of the current tone is not carried over when changing from a Virtual Tone Wheel tone to a non-Virtual Tone Wheel tone. - When you switch between tones of the V-Piano Technology sound generator (MD), the currently sounding tone does not continue.
	OFF, ON	
Tone Ext Zone Remain	OFF, ON	Retaining the Ext Zone On/Off Settings Even When Tones Are Switched (Tone Ext Zone Remain) This setting specifies whether the on/off settings for zones set to External are maintained (ON) or not maintained (OFF).
Ext Zone Transmit Control	OFF, ON	Preventing Ctrl Messages from Being Transmitted by Ext Zone On/Off (Ext Zone Transmit Control) This setting specifies whether the pre-specified control change messages are transmitted (ON) or are not transmitted (OFF) when a zone set to External is turned on.
Program Control Channel		Using Program Change Messages to Switch Programs (Program Control Channel) You can switch the RD-2000EX's Programs with MIDI messages from an external MIDI device. MEMO For details, refer to "MIDI Implementation" (PDF).
	OFF	When not switching Programs from an external MIDI device, set this to OFF.
	1–16	Sets the MIDI Receive channel for receiving the MIDI messages (Bank Select and Program Change) from the external MIDI device to be used for switching Programs.
USB Driver		Selecting the USB Driver (USB Driver) ➔ Refer to "Switching USB Drivers" (p. 33)
USB MIDI Thru Switch		Selecting the USB MIDI Thru Switch (USB MIDI Thru Switch) ➔ Refer to "Using the RD-2000EX as a USB MIDI Interface" (p. 33)
MIDI OUT2 Port Mode		Selecting the Function of the MIDI THRU/OUT 2 Connector (MIDI OUT2 Port Mode) This setting specifies the function of the RD-2000EX's MIDI THRU/OUT 2 connector.
	OUT	If you choose "OUT," the connector will function as MIDI OUT, and will transmit data from the keyboard and controllers to an external MIDI device.
	THRU	If you choose "THRU," the connector will function as MIDI THRU, retransmitting without change the MIDI messages that are received at the MIDI IN connector. Performance data from the RD-2000EX itself will no longer be sent from this connector.

Parameter	Value	Explanation
Damper Polarity	STANDARD, REVERSE	Switching the Pedal's Polarity (Damper/FC1/FC2/EXT Pedal Polarity) Switch the polarity of pedals connected to the RD-2000EX. This can be set individually for each of the Pedal jacks on the rear panel (FC1, FC2, DAMPER, EXT Pedal). On some pedals, the electrical signal output by the pedal when it is pressed or released is the opposite of other pedals. If your pedal has an effect opposite of what you expect, set this parameter to reverse. If you are using a Roland pedal (that has no polarity switch), set this parameter to STANDARD.
FC1 Polarity		
FC2 Polarity		
EXT Pedal Polarity		
Temperament	EQUAL	Setting the Tuning Method (Temperament/Key) This sets the tuning and keynote (tonic). Most modern songs are composed and played with the assumption that equal temperament will be used, but when classical music was composed, there were a wide variety of other tuning systems in existence. Playing a composition with its original tuning lets you enjoy the sonorities of the chords that the composer originally intended. When playing with tuning other than equal temperament, you need to specify the keynote for tuning the song to be performed (that is, the note that corresponds to C for a major key or to A for a minor key). If you choose an equal temperament, there's no need to select a keynote.
		Equal Temperament This tuning divides an octave into 12 equal parts. Every interval produces about the same amount of slight dissonance.
		JUST MAJ Just (Major): This scale eliminates dissonance in fifths and thirds. It is unsuited to playing melodies and cannot be transposed, but is capable of beautiful sonorities.
		JUST MIN Just (Minor): The scales of the major and minor just intonations are different. You can get the same effect with the minor scale as with the major scale.
		PYTHAGOREAN Pythagorean: This scale, devised by the philosopher Pythagoras, eliminates dissonance in fourths and fifths. Dissonance is produced in thirds, but melodies are euphonious.
		KIRNBERGER Kirnberger: This scale is a modification of the meantone and just intonations that permits greater freedom in transposition to other keys. Performances are possible in all keys (III).
		MEANTONE Meantone: This scale makes some compromises in just intonation, enabling transposition to other keys.
		WERCKMEISTER Werckmeister: This is a combination of the meantone and Pythagorean scales. Performances are possible in all keys (first technique, III).
		ARABIC Arabic Scale: This scale is suitable for Arabic music.
Temperament Key	C, C#, D, Eb, E, F, F#, G, G#, A, Bb, B	Sets the keynote.
Clock Out	OFF, ON	Transmitting Synchronization Messages (Clock Out) This setting determines whether or not the MIDI messages necessary to synchronize the RD-2000EX with external devices are to be transmitted from the MIDI OUT connector.
Hi-Res Velocity Out	OFF, ON	Transmitting High-Resolution Velocity Data (Hi-Res Velocity Out) This specifies whether high-resolution velocity data is to be transmitted from the MIDI OUT connector.
Rhythm MIDI Output Port	ALL, OUT1, OUT2, USB	Selecting the MIDI Output Port for Rhythm (Rhythm MIDI Output Port) This specifies the port from which the rhythm part is to be transmitted.
Rhythm MIDI Out Channel	OFF, 1–16	Selecting the MIDI Output Channel for Rhythm (Rhythm MIDI Channel) This specifies the MIDI channel on which the rhythm part is to be output.
Audio Volume	0–127	Adjusting the Playback Volume of Audio Files This specifies the volume at which audio files play back.

Detailed Settings for Each Function

Parameter	Value	Explanation
Output Mix/ Parallel	MIX, PARALLEL	Outputting the SUB OUT Output from MAIN OUT (Output Mix/Parallel) This setting specifies whether the output of zones assigned to be output from SUB OUT is sent from MAIN OUT (Mix) or from SUB OUT (Parallel).
LCD Brightness	1–10	Adjusting the Brightness of the Display (LCD Brightness) You can adjust the brightness of the RD-2000EX's display.
Auto Off	OFF, 30 [min], 240 [min] (default)	Making the Power Automatically Turn Off After a Time (Auto Off) With the factory settings, the RD-2000EX will automatically be switched off 4 hours after you stop playing or operating the unit. If you don't need the unit to turn off automatically, set "Auto Off" to the "OFF" setting. * When turning the unit back on after it has been shut down due to the Auto Off function, always make sure to allow at least ten seconds to pass after the unit has been shut off before you turn the unit back on. If you turn it back on too rapidly, the Auto Off function will not have had enough time to reset itself, and you may not be able to turn on the unit in the normal way.
Startup Mode	DEFAULT, PROGRAM, SCENE	Specifies the sound that is initially selected (Startup Mode) Specifies the sound that is initially selected when you turn on the power. DEFAULT: As before, the sound is selected according to the content of STARTUP. PROGRAM: Program A-01 is selected. SCENE: The lowest registered number in the SCENE is selected. If nothing is registered, the STARTUP sound is selected
Slider Mode	DIRECT,CATCH	Specifies the action when moving the slider (Slider Mode) When you operate a slider, this setting specifies whether control data corresponding to the slider's position is always transmitted (DIRECT) or whether control data is transmitted only after the slider passes through the current value of the parameter (CATCH).

Saving System Settings

Changes you make to the system settings are temporary, and will be lost when you turn off the power.

If you want to keep your changes, you must save the system settings.

1. In the SYSTEM EDIT screen, press the [WRITE] button.

A confirmation message appears.

2. Press the [MENU] button.

The system settings are saved in the system memory of the RD-2000EX.

If you decide to cancel, press the [EXIT] button.

Parameters saved in SYSTEM (System parameter)

- SYSTEM
- USB AUDIO
- PART SW
- COMPRESSOR

USB Audio Settings

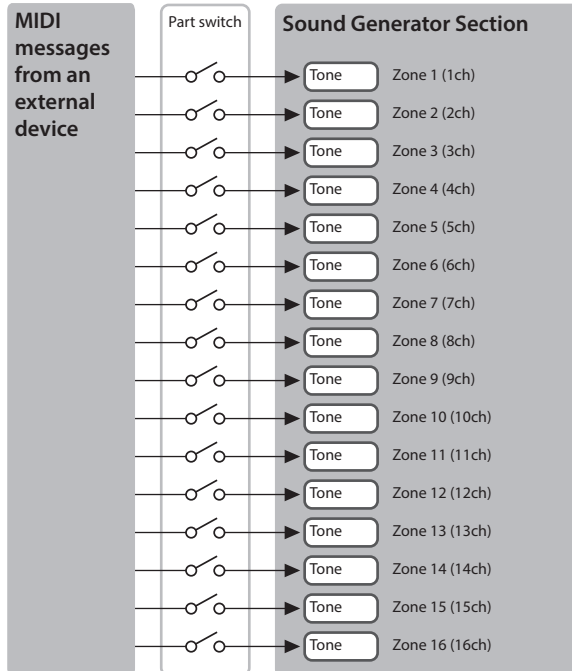
Here you can make input/output settings for USB audio.

[MENU] button → Select "System" → [ENTER] button → "USB AUDIO" tab

Parameter	Value	Explanation
USB Audio Input Switch	OFF, ON	Specifies whether to enable USB-AUDIO from an external device.
USB Audio Input Volume	0–127	Specifies the USB audio signal level from an external device.
USB Audio Output Switch	OFF, ON	Specifies whether USB audio is output to an external device.
USB Audio Output Volume	0–127	Specifies the USB audio signal level to an external device.
USB Audio Output Assign	MAIN, SUB	Specifies whether the USB audio signal is output from the MAIN jacks or from the SUB jacks.
USB Audio In/Out Select	IN, OUT	Selects the USB audio signal that is indicated and adjusted by the slider.

Selecting the Parts That Will Produce Sound (PART SW)

Here you can specify whether or not performance data is to be received from an external MIDI device.



[MENU] button → Select "System" → [ENTER] button → "PART SW" tab

Parameter	Value	Explanation
Part Switch	OFF, ON (Part 1–Part 16)	Part Switch settings can be made individually for each part. NOTE Tone Color and effects are not available for the parts received on channels 5–16. They may sound differently than the sounds played on channels 1–4.

Making the System Compressor Settings (COMPRESSOR)

This is a stereo compressor (limiter) that is applied to the final output.

With separate settings for the high-frequency range, midrange, and low-frequency range, this reduces inconsistencies in volume levels by compressing the sound when the volume exceeds a preset volume level.

[MENU] button → Select "System" → [ENTER] button → "COMPRESSOR" tab

Parameter	Value	Explanation
Compressor Switch	OFF, ON	Turns the compressor on/off.

Parameter	Value	Explanation
Type Compressor Type	When you change this parameter, the Compressor parameters will be automatically adjusted to the optimal values.	
	You can make the settings easily by first setting the Compressor Type and then changing only the necessary parameters.	
	HARD COMP	Applies strong compression.
	SOFT COMP	Applies mild compression.
	LOW BOOST	Boosts the low end.
	MID BOOST	Boosts the midrange.
Split Freq Low	HI BOOST	Boosts the high end.
	USER	The saved settings are written.
Split Freq Low	40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800 [Hz]	Sets the frequency separating the low-frequency range (LOW) and midrange (MID).
	Split Freq High	400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]
Split Freq High	Sets the frequency separating the high-frequency range (HIGH) and midrange (MID).	

Common to High, Mid, and Low

Parameter	Value	Explanation
Level	0–24 dB (1 dB Step)	Output Level
Attack Time	0–100	Sets the time it takes until the level is compressed after the input exceeds the Threshold.
Release Time	0–100	Sets the time it takes for the compression to be released after the input falls below the Threshold.
Threshold	–60 dB–0 dB (1 dB Step)	Sets the level at which compression begins.
Ratio	1:1.0, 1:1.1, 1:1.2, 1:1.4, 1:1.6, 1:1.8, 1:2.0, 1:2.5, 1:3.2, 1:4.0, 1:5.6, 1:8.0, 1:16, 1:INF	Compression Ratio

INFORMATION

This shows the RD-2000EX's system program version and information about additional sounds.

Convenient Functions (Utility)

Saving a Program File (Program File Save)

A single, individual file containing a collection of 200 Programs registered to the RD-2000EX is called a "Program file."

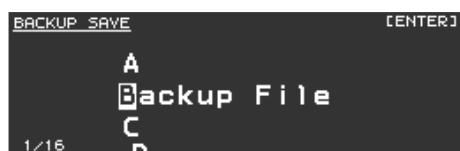
This Program file can be saved in the RD-2000EX's user memory or on a USB flash drive (sold separately) connected to the USB MEMORY/WLAN ADAPTOR port.

MEMO

The Program file will not save unsaved Programs or system parameter settings.

If you want to save these settings, you must first proceed as described in "Saving the Sound Settings in a Program (Program Write)" (owner's manual: p. 24) and "Saving System Settings" (p. 26).

1. In the MENU screen, select "Utility" and press the [ENTER] button (owner's manual: p. 26).
2. Press the cursor [▲] buttons to select "Backup Save," then press the [ENTER] button.
3. Press the cursor [◀] [▶] buttons to move the cursor to the positions where the characters are to be input.



4. Use the [DEC] [INC] buttons or the value dial to enter the name.

Names can consist of up to 16 characters.

Operation	Explanation
[SHIFT] + [◀] button	Delete one character (DELETE)
[SHIFT] + [▶] button	Insert one space (INSERT)
[▲] [▼] buttons	Switch uppercase/lowercase

NOTE

You can't save a Program file with a name that starts with a "." (period). Do not use a "." (period) at the beginning of the name.

5. Repeat steps 3–4 to input the name.
6. Press the [ENTER] button.
The confirmation message appears.
If you do not want to load the Program file, press the [EXIT] button.
7. Press the [MENU] button to save the Program file.
The Program file is saved.

NOTE

- "Processing..." appears in the display while the save is in progress. Be sure never to turn off the power.
- Do not disconnect the USB flash drive while data is being saved.

MEMO

If a file with the same name has already been saved, the confirmation message "Overwrite OK?" appears. To overwrite the Program file, press the [MENU] button; to save the file under a different name, press the [ENTER] button.

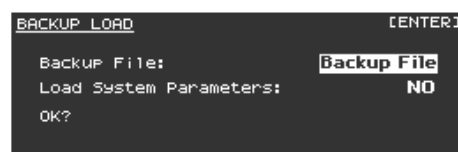
Calling Up Program Files (Backup Load)

Here's how to load a previously saved Program file.

NOTE

The current settings are erased when a Program file is called up. Be sure to save any settings you would like to keep first before calling up a Program file (owner's manual: p. 26).

1. In the MENU screen, select "Utility" and press the [ENTER] button (owner's manual: p. 26).
2. Press the cursor [▲] [▼] buttons to select "Backup Load," then press the [ENTER] button.



3. Move the cursor to "Backup File" and use the [DEC] [INC] buttons or the value dial to select the file you want to call up.
4. If you want system parameter (p. 26) settings to also be loaded, move the cursor to "Load System Parameters" and choose "YES."

The system parameters are saved in a Program file that has been stored after the [WRITE] button was pressed to save the settings in the RD-2000EX.

5. Press the [ENTER] button.

The confirmation message appears.

If you decide to cancel without loading a Program file, press the [EXIT] button.

6. Press the [MENU] button to load the Program file.

The Program file is loaded into the RD-2000EX.

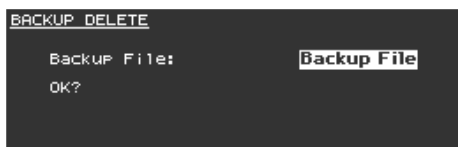
NOTE

- Be sure never to turn off the power while the load is in progress.
- Do not disconnect the USB flash drive while the file is being loaded.

Deleting a Program File (Backup Delete)

Here's how to delete a previously saved Program file.

1. In the MENU screen, select "Utility" and press the [ENTER] button.
2. Use the cursor [▲] [▼] buttons to select "Backup Delete," and then press the [ENTER] button.



3. Use the [DEC] [INC] buttons or the value dial to select the Program file that you want to delete; then press the [ENTER] button.

The confirmation message appears.

If you decide to cancel without deleting the Program file, press the [EXIT] button.

MEMO

If you choose "ALL," all Program files will be deleted.

4. Press the [MENU] button to delete the Program file.

NOTE

- Be sure never to turn off the power while the delete is in progress.
- Do not disconnect the USB flash drive while the file is being deleted.

Formatting Memory (Format)

"Formatting" is the operation of deleting all Program files from user memory or initializing a USB flash drive so that it can be used with the RD-2000EX.

USB flash drive cannot be used with the RD-2000EX unless it is formatted suitably for the RD-2000EX.

Before using a new USB flash drive, you'll need to format it.

NOTE

When you format the USB flash drive, all data previously saved on that memory will be erased. Before you carry out a format, make sure that the USB flash drive does not contain important data you need to keep.

1. In the MENU screen, select "Utility" and press the [ENTER] button.
2. Press the cursor [▲] [▼] [◀] [▶] buttons to select "Format USB Memory" and then press the [ENTER] button.

A confirmation message appears.



If you decide to cancel the Format operation, press the [EXIT] button.

3. Carefully read the confirmation message in the screen, and then press the [ENTER] button.
4. Press the [MENU] button to execute the Format operation.

NOTE

- Never turn off the unit while the screen indicates "Executing..."
- Never turn off the power or disconnect the USB flash drive while reading or writing is in progress.

Returning to the Factory Settings (Factory Reset)

The settings stored in the RD-2000EX can be returned to their factory settings.

1. In the MENU screen, select "Utility" and press the [ENTER] button.
2. Press the cursor [▲] [▼] [◀] [▶] buttons to select "Factory Reset" and then press the [ENTER] button.

A confirmation message appears.

3. Carefully read the confirmation message in the screen, and then press the [ENTER] button.
4. Press the [MENU] button.

Factory reset is executed.

NOTE

Never turn off the power during Factory Reset (while "Executing... Don't Power OFF" appears in the display).

5. Turn the power of the RD-2000EX off, then on again.

SCENE UTILITY

Changing the Order of Scenes (Scene Swap)

You can change the order of the scenes to the order that you prefer. It is convenient to change the order of the scenes to the order in which you use them during a live performance.

1. In the MENU screen, select “Scene Utility” and press the [ENTER] button.

2. Use the cursor [▲] [▼] [◀] [▶] buttons to select “Scene Swap,” and then press the [ENTER] button.

The SCENE SWAP screen appears.

3. Use the cursor [▲] [▼] buttons and the value dial to select the scene whose order you want to change, and press the [ENTER] button.

A confirmation message appears.

4. Press the [MENU] button to execute the swap operation.

If you decide to cancel, press the [EXIT] button.

NOTE

Never turn off the power during execution.

Initializing a Scene (Scene Initialize)

Here's how to initialize the settings of the currently selected scene.

NOTE

When you initialize a scene, the currently selected scene disappears.

1. In the MENU screen, select “Scene Utility” and press the [ENTER] button.

2. Use the cursor [▲] [▼] [◀] [▶] buttons to select “Scene Initialize,” and then press the [ENTER] button.

The SCENE INITIALIZE screen appears.

3. Press the [ENTER] button.

A confirmation message appears.

4. Press the [MENU] button to execute initialization.

If you decide to cancel, press the [EXIT] button.

NOTE

Never turn off the power during execution.

Adding a Memo to Each Scene (Scene Memo)

You can enter a memo for each recalled scene so that it is shown in the screen (16 characters x 2 lines).

1. In the MENU screen, select “Scene Utility” and press the [ENTER] button.

2. Use the cursor [▲] [▼] [◀] [▶] buttons to select “Scene Memo,” and then press the [ENTER] button.

The SCENE MEMO screen appears.

3. Use the cursor [◀] [▶] buttons to move the cursor to the position at which you want to enter a character.

4. Use the [DEC] [INC] buttons or the value dial to enter the characters.

Operation	Explanation
[SHIFT] + [◀] button	Delete one character (DELETE)
[SHIFT] + [▶] button	Insert one space (INSERT)
[▲] [▼] button	Switch uppercase/lowercase

5. Repeat steps 3–4 to input the memo.

6. Press the [ENTER] button.

A confirmation message appears.

If you decide to cancel, press the [EXIT] button.

7. Press the [MENU] button.

The memo is saved.

Importing Text to Display as the Scene Memo (Scene Memo Import)

The memo displayed for the recalled scene can be imported as a text file from a USB flash drive.

1. In the MENU screen, select “Scene Utility” and press the [ENTER] button.
2. Use the cursor [▲] [▼] [◀] [▶] buttons to select “Scene import,” and then press the [ENTER] button.

The SCENE MEMO IMPORT screen appears.

Files of the following format can be imported.

Item	Explanation
File format	Text file (*.txt)
File name	16 single-byte alphanumeric characters (if greater than 16 characters, only a portion is shown).
Memo content	32 single-byte alphanumeric characters (the 33rd and subsequent characters are not imported) Two lines of up to 16 characters can be shown. If there is a line-return in the first line, the text wraps to the next line, decreasing the number of characters that can be shown. Line-returns of CR+LF and LF are supported.
Characters that can be used	ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 0123456789 ! " # \$ % & ' () * + , - . / : ; < = > ? @ [\] ^ _ ` { } ? * The last character is a space.

3. Use the value dial to select the text file that you want to import, and press the [ENTER] button.
The SCENE MEMO EDIT screen appears.
4. Use the cursor [◀] [▶] buttons to move the cursor to the position at which you want to enter a character.
5. Use the [DEC] [INC] buttons or the value dial to enter the characters.

Operation	Explanation
[SHIFT] + [◀] button	Delete one character (DELETE)
[SHIFT] + [▶] button	Insert one space (INSERT)
[▲] [▼] button	Switch uppercase/lowercase

6. Repeat steps 4–5 to input the memo.
7. Press the [ENTER] button.
A confirmation message appears.
If you decide to cancel, press the [EXIT] button.
8. Press the [MENU] button.
The memo is saved.

Exporting a Scene as a Program and Saving It (Scene To Program)

Here's how to export the currently-recalled scene as a program and save it.

The first 16 characters of the memo content are used as the program name.

NOTE

The memo content cannot be shown in the program.

By re-registering the program as a scene, you'll be able to view and edit the memo.

1. In the MENU screen, select “Scene Utility” and press the [ENTER] button.
2. Use the cursor [▲] [▼] [◀] [▶] buttons to select “Scene To Program,” and then press the [ENTER] button.
The SCENE TO PROGRAM screen appears.
3. Use the value dial to select the save-destination, and press the [ENTER] button.
A confirmation message appears.
If you decide to cancel, press the [EXIT] button.
4. Press the [MENU] button.
The scene is saved as a program.

Deleting a Scene (Scene Remove)

Here's how to delete the currently-recalled scene.

1. Select the scene that you want to delete.
2. Press the [MENU] button.
3. Use the cursor [▲] [▼] [◀] [▶] buttons to select “Scene Utility” and then press the [ENTER] button.
4. Use the cursor [▲] [▼] [◀] [▶] buttons to select “Scene Remove,” and then press the [ENTER] button.
The SCENE REMOVE screen appears.
5. Press the [ENTER] button.
A confirmation message appears.
If you decide to cancel, press the [EXIT] button.
6. Press the [MENU] button.
The scene is deleted.

Other Functions

Local Ctrl

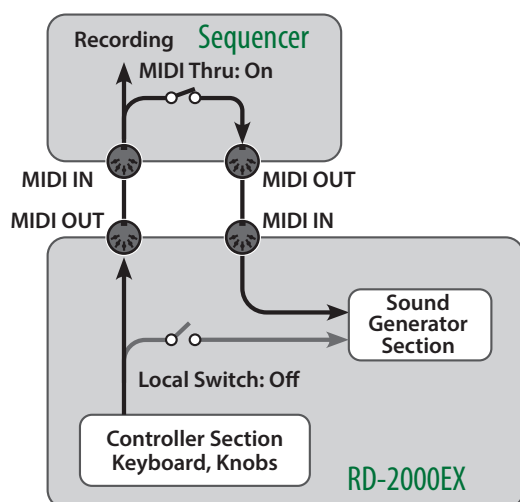
1. In the MENU screen, select “Local Ctrl” and press the [ENTER] button.

The LOCAL CONTROL screen appears.

Disconnecting the Controller Section and the Sound Generator Section (Local Switch)

The switch that connects and disconnects the MIDI connection between the keyboard controller section and the sound generator section (owner’s manual: p. 12) is called the Local switch. Since essential information describing what is being played on the keyboard won’t reach the sound generator if the Local switch is set to OFF, the Local switch should normally be left ON.

However, if while performing you want to send that performance data to an external sequencer as MIDI messages to be recorded, you should then perform with the externally connected MIDI sequencer set to MIDI Thru (whereby data received from MIDI IN is then output from the MIDI OUT with no changes made to the data), and set the Local switch to OFF.



Parameter	Value
Local Switch	OFF, ON (ON when the system is started up)

Optimizing Settings for Recording on an External Sequencer (Rec Mode)

“Rec Mode” is a convenient feature to use when recording to an external sequencer.

When using the Rec Mode function, you can get the most suitable settings for recording the RD-2000EX’s data to an external sequencer, without having to make all the Part and channel settings.

Parameter	Value
Rec Mode	OFF, ON (OFF when the system is started up)

Ordinarily, this should be set to OFF.

When this is set to ON, settings appropriate for recording are used with respect to the output from MIDI OUT, regardless of the INTERNAL zone settings.

Recording the performance

1. Turn on the external sequencer’s Thru function.
2. The following settings are made.

Parameter	Value
Local Switch	OFF
Rec Mode	ON

3. Record using your external sequencer.

Selecting the EXP Category

These are expansion sound banks specifically for the RD-2000EX.

Press the [EXP] button to switch between A and B.

A large variety of tones from the Axial sound library site can be added to the RD-2000EX.

For details, refer to the Axial site.

➔ <http://axial.roland.com/>

Connecting to Your Computer

Connecting to a Computer via the USB COMPUTER Port

If you use a USB cable (sold separately) to connect the USB COMPUTER port located on the RD-2000EX's rear panel to the USB port of your computer, you'll be able to do the following things.

- Use the RD-2000EX to play SMF music files played back by MIDI compatible software.
- By transferring MIDI data between the RD-2000EX and your sequencer software, you'll be able to enjoy a wide range of possibilities for music production and editing.

NOTE

Refer to the Roland website for system requirements.

Roland website:

<http://www.roland.com/>

Depending on the type of computer you're using, this may not operate correctly.

For details on supported operating systems, refer to the Roland website.

You can download the original driver from the Roland website.

Specify the USB driver you want to use, and then install the driver. For details, refer to "Switching USB Drivers" (p. 33).

Caution

- A USB cable is not included. If you need to obtain one, ask the dealer where you purchased the RD-2000EX.
- Switch on power to the RD-2000EX before you start up the MIDI application on your computer. Don't turn the RD-2000EX on/off while your MIDI application is running.

Switching USB Drivers

The USB driver to be used when a computer is connected to the USB COMPUTER port is determined as follows:

1. Press the [MENU] button.
2. Press the cursor [▲] [▼] buttons to select "System," and then press the [ENTER] button.
3. Press the cursor [▲] [▼] buttons to move the cursor to "USB Driver."

```
SYSTEM EDIT
/ SYSTEM \ USB AUDIO \ PART SW \ COMPRESSOR \ INFO 1/ 5
Tone/Program Remain      ON
Tone Ext Zone Remain     OFF
Program Control Channel  16
USB Driver                GENERIC
USB MIDI Thru Switch     OFF
MIDI OUT2 Port Mode      OUT
```

4. Use the [DEC] [INC] buttons or the value dial to select the USB driver you want to use.

Parameter	Value	Explanation
USB Driver	VENDOR	Choose this if you're using the USB driver downloaded from the Roland website.
	GENERIC	Choose this if you're using the default USB driver that came with your computer.

5. Press the [WRITE] button.
6. Press the [MENU] button.
7. Turn the RD-2000EX off, then on again.

Using the RD-2000EX as a USB MIDI Interface

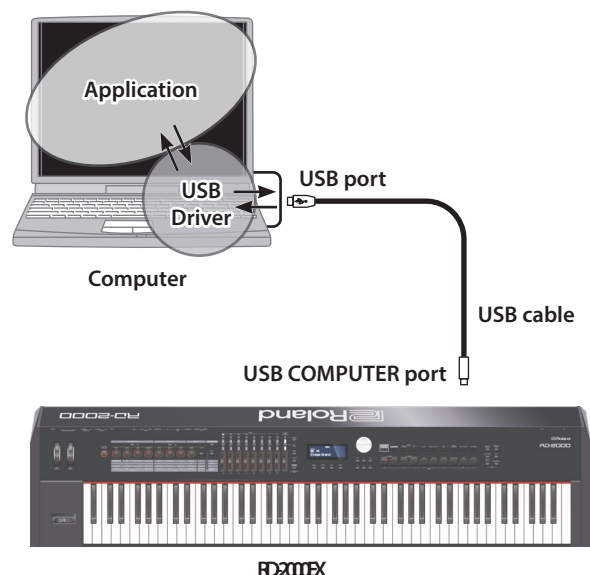
If the RD-2000EX is connected to your computer, performance data from a MIDI device connected to the RD-2000EX's MIDI IN connector can be sent to your computer.

Parameter	Value	Explanation
USB MIDI Thru Switch	OFF	Performance data from the device connected to the RD-2000EX's MIDI IN connector will not be sent to your computer.
	ON	Performance data from the device connected to the RD-2000EX's MIDI IN connector will be sent to your computer.

What is the USB MIDI driver?

The USB MIDI Driver is a software which passes data between the RD-2000EX and the application (sequencer software, etc.) that is running on the USB-connected computer.

The USB MIDI Driver sends data from the application to the RD-2000EX, and passes data from the RD-2000EX to the application.



Modulation FX Parameters

Modulation FX effects are included in the tone.

You can choose from 62 types, most of which are effects that modulate the sound.

Parameters marked by a “#” symbol can be controlled from a knob etc. by assigning them to the DEPTH knob, RATE knob, or FEEDBACK knob parameters.

Type	Modulation FX Name	Page
VINTAGE	1 CE-1	p. 35
	2 SDD-320	p. 35
	3 RE-201	p. 35
	4 SBF-325	p. 36
	5 UNI-V	p. 36
	6 SS PHASER	p. 37
	7 SCRIPT PHASER	p. 37
	8 CRY WAH	p. 37
	9 D-COMP	p. 37
	10 T-SCREAM	p. 38
FILTER	11 EQUALIZER	p. 38
	12 SPECTRUM	p. 38
	13 LOW BOOST	p. 39
	14 STEP FILTER	p. 39
	15 ENHANCER	p. 40
	16 AUTO WAH	p. 40
	17 HUMANIZER	p. 40
MODULATION	18 PHASER 1	p. 41
	19 STEP PHASER	p. 41
	20 MULTI STAGE PHASER	p. 42
	21 INFINITE PHASER	p. 42
	22 RING MODULATOR	p. 43
	23 TREMOLO	p. 43
	24 AUTO PAN	p. 43
	25 SLICER	p. 44
CHORUS	26 CHORUS	p. 44
	27 FLANGER	p. 45
	28 STEP FLANGER	p. 45
	29 HEXA-CHORUS	p. 46
	30 TREMOLO CHORUS	p. 46
	31 SPACE-D	p. 47
DYNAMICS	32 OVERDRIVE	p. 47
	33 DISTORTION	p. 47
	34 COMPRESSOR	p. 47
	35 LIMITER	p. 48
	36 SUSTAINER	p. 48
	37 GATE	p. 48
DELAY	38 DELAY	p. 49
	39 MODULATION DELAY	p. 50
	40 3TAP PAN DELAY	p. 50
	41 4TAP PAN DELAY	p. 51
	42 MULTI TAP DELAY	p. 51
	43 REVERSE DELAY	p. 52
	44 TIME CTRL DELAY	p. 52
LO-FI	45 LOFI COMPRESS	p. 53
	46 BIT CRUSHER	p. 53
PITCH	47 PITCH SHIFTER	p. 53
	48 2VOICE PITCH SHIFTER	p. 54

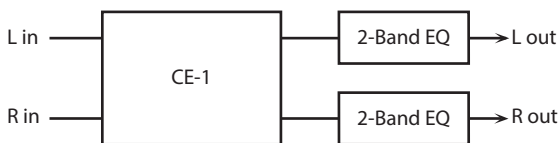
Type	Modulation FX Name	Page
COMBINATION	49 OD → CHORUS	p. 55
	50 OD → FLANGER	p. 55
	51 OD → DELAY	p. 55
	52 DS → CHORUS	p. 56
	53 DS → FLANGER	p. 56
	54 DS → DELAY	p. 56
	55 OD/DS → TWAH	p. 56
	56 OD/DS → AWAH	p. 57
	57 ENHANCER → CHORUS	p. 57
	58 ENHANCER → FLANGER	p. 58
	59 ENHANCER → DELAY	p. 58
	60 CHORUS → DELAY	p. 59
	61 FLANGER → DELAY	p. 59
	62 CHORUS → FLANGER	p. 60

Settings common to all Modulation FX

Parameter	Value	Explanation
Type	Refer to the effect list (p. 34).	Specifies the type of Modulation FX. The editable parameters will depend on the effect type that's selected.
Routing	MOD FX → TR/AMP, TR/AMP → MOD FX	Lets you select the routing of the Modulation FX and the Tremolo/Amp Simulator. By switching the Routing type, you can change the effect that's applied to the sound. For example, suppose that you chose Chorus as the MOD FX and chose E. PIANO for TR/AMP; with the MOD FX → TR/AMP setting, the chorus sound will be output in mono, but with the TR/AMP → MOD FX setting it will be output in stereo.

1: CE-1

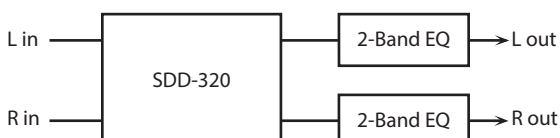
This models the classic BOSS CE-1 chorus effect unit. It provides a chorus sound with a distinctively analog warmth.



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	INTENSITY, LEVEL	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, INTENSITY, Level	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Intensity #	0–127	Chorus depth
Low Gain	-15→+15 [dB]	Gain of the low range
High Gain	-15→+15 [dB]	Gain of the high range
Level #	0–127	Output Level

2: SDD-320

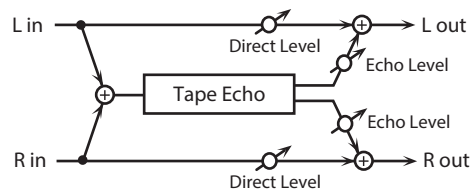
This models Roland's DIMENSION D (SDD-320). It provides a clear chorus sound.



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	LEVEL, MODE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, LEVEL, MODE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Mode #	1, 2, 3, 4, 1+4, 2+4, 3+4	Switches the mode.
Low Gain	-15→+15 [dB]	Gain of the low range
High Gain	-15→+15 [dB]	Gain of the high range
Level #	0–127	Output Level

3: RE-201

A virtual tape echo that produces a realistic tape delay sound. This simulates the tape echo section of a Roland RE-201 Space Echo.



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	REPEAT RATE, INTENSITY, ECHO LEVEL, DIRECT LEVEL	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, REPEAT RATE, INTENSITY, ECHO LEVEL, DIRECT LEVEL	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Mode	S, M, L, S+M, S+L, M+L, S+M+L	Combination of playback heads to use Select from three different heads with different delay times. S: short M: middle L: long
Repeat Rate #	0–127	Tape speed Increasing this value will shorten the spacing of the delayed sounds.
Intensity #	0–127	Amount of delay repeats
Bass	-15→+15 [dB]	Boost/cut for the lower range of the echo sound

Parameter	Value	Explanation
Treble	-15–+15 [dB]	Boost/cut for the upper range of the echo sound
Head S Pan	L64–63R	Independent panning for the short, middle, and long playback heads
Head M Pan		
Head L Pan		
Tape Distortion	0–5	Amount of tape-dependent distortion to be added This simulates the slight tonal changes that can be detected by signal-analysis equipment. Increasing this value will increase the distortion.
W/F Rate	0–127	Speed of wow/flutter (complex variation in pitch caused by tape wear and rotational irregularity)
W/F Depth	0–127	Depth of wow/flutter
Echo Level #	0–127	Volume of the echo sound
Direct Level #	0–127	Volume of the original sound
Level	0–127	Output Level

4: SBF-325

This effect reproduces Roland's SBF-325 analog flanger. It provides three types of flanging effect (which adds a metallic resonance to the original sound) and a chorus-type effect.



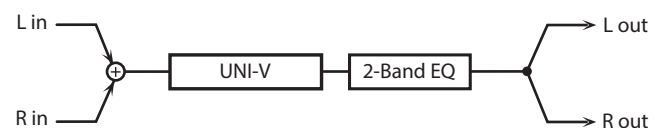
Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	RATE, DEPTH, FEEDBACK	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob		Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Mode	FL1, FL2, FL3, CHO	Types of flanging effect FL1: A typical mono flanger FL2: A stereo flanger that preserves the stereo positioning of the original sound FL3: A cross-mix flanger that produces a more intense effect CHO: A chorus effect
Rate (sync sw)	OFF, ON	If this is ON, the rate is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Rate (Hz) #	0.02–5.00 [Hz]	Rate at which the flanger sound is modulated
Rate (note) #	note (p. 60)	

Parameter	Value	Explanation
Depth #	0–127	Depth to which the flanger sound is modulated
Manual	0–127	Center frequency at which the flanger effect is applied
Feedback #	0–127	Amount by which the flanging effect is boosted * If Mode is CHO, this setting is ignored.
CH-R Mode Phase	NORM, INV	Phase of the right channel modulation: Typically, you will leave this at Normal (NORM). If you specify Inverted (INV), the modulation (upward/downward movement) of the right channel is inverted.
CH-L Phase		Phase when mixing the flanging sound with the original sound
CH-R Phase		NORM: normal phase INV: inverse phase
Level	0–127	Output Level

5: UNI-V

This models a Uni-Vibe.

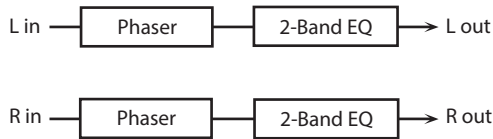
This effect is similar to a phaser, but produces a distinctive modulation that cannot be obtained from a normal phaser.



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	RATE, DEPTH, LEVEL	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob		Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Rate #	0–100	Adjusts the rate of the UNI-V effect.
Depth #	0–100	Adjusts the depth of the UNI-V effect.
Low Gain	-15–+15 [dB]	Gain of the low range
High Gain	-15–+15 [dB]	Gain of the high range
Level #	0–127	Output Level

6: SS PHASER

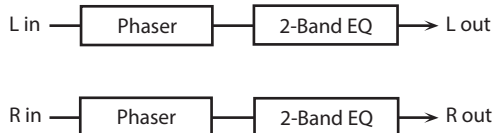
This simulates an analog phaser of the past. It is particularly suitable for electric piano.



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	RATE, COLOR	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, RATE, COLOR	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Rate #	0–100	Frequency of modulation
Color #	1, 2	Modulation character
Low Gain	-15→+15 [dB]	Gain of the low range
High Gain	-15→+15 [dB]	Gain of the high range
Level	0–127	Output Level

7: SCRIPT PHASER

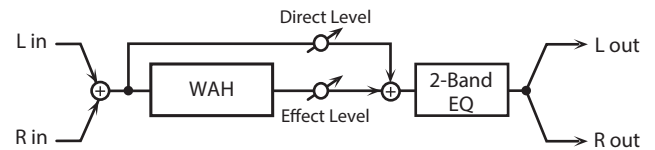
This simulates a different analog phaser than SS PHASER. It is particularly suitable for electric piano.



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	SPEED, DEPTH	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, SPEED, DEPTH	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Speed #	0–100	Frequency of modulation
Depth #	0–127	Modulation character
Low Gain	-15→+15 [dB]	Gain of the low range
High Gain	-15→+15 [dB]	Gain of the high range
Level	0–127	Output Level

8: CRY WAH

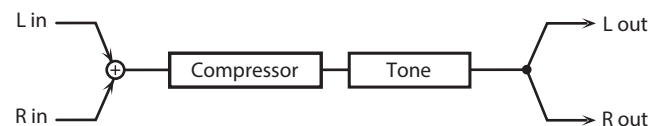
This models the sound of the CRY BABY wah pedal popular in the '70s.



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	PEDAL POSITION, EFFECT LEVEL, DIRECT LEVEL	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob		Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Pedal Position #	0–100	Adjusts the position of the wah pedal. * This parameter can also be assigned to a pedal etc. and controlled.
Pedal Min	0–100	Selects the tone produced when the heel of the EXP Pedal is depressed.
Pedal Max	0–100	Selects the tone produced when the toe of the EXP Pedal is depressed.
Low Gain	-15→+15 [dB]	Adjusts the low frequency range tone.
High Gain	-15→+15 [dB]	Adjusts the high frequency range tone.
Effect Level #	0–127	Adjusts the volume of the effect sound.
Direct Level #	0–127	Adjusts the volume of the direct sound.

9: D-COMP

This models a MXR DynaComp.



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.

Parameter	Value	Explanation
Depth Knob	SENS, RELEASE, LEVEL	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob		Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Sens #	0–100	This controls the input sensitivity.
Release #	0–100	Adjusts the release time.
Tone	–50–+50	Adjusts the tone.
Level #	0–127	Output Level

10: T-SCREAM

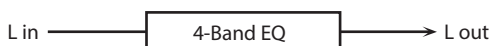
This models the analog overdrive of the past.
It adds a nice amount of overtones without dirtying the sound.



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	DISTORTION, TONE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, DISTORTION, TONE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Distortion #	0–127	Degree of distortion Also changes the volume.
Tone #	0–127	Sound quality of the Overdrive effect
Level	0–127	Output Level

11: EQUALIZER

This is a four-band stereo equalizer (low, mid x 2, high).

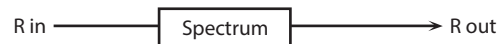
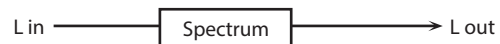


Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.

Parameter	Value	Explanation
Depth Knob	LOW GAIN, HIGH GAIN, LEVEL	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, LOW GAIN, HIGH GAIN, LEVEL	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Low Freq	20–400 [Hz]	Frequency of the low range
Low Gain #	–15–+15 [dB]	Gain of the low range
Mid1 Freq	200–8000 [Hz]	Frequency of the middle range 1
Mid1 Gain	–15–+15 [dB]	Gain of the middle range 1
Mid1 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the middle range 1 Set a higher value to narrow the range to be affected.
Mid2 Freq	200–8000 [Hz]	Frequency of the middle range 2
Mid2 Gain	–15–+15 [dB]	Gain of the middle range 2
Mid2 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the middle range 2 Set a higher value to narrow the range to be affected.
High Freq	2000–16000 [Hz]	Frequency of the high range
High Gain #	–15–+15 [dB]	Gain of the high range
Level #	0–127	Output Level

12: SPECTRUM

This is a stereo spectrum. Spectrum is a type of filter which modifies the timbre by boosting or cutting the level at specific frequencies.

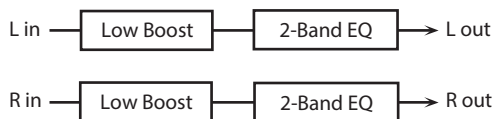


Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	BAND1, BAND3, LEVEL	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, BAND1, BAND3, LEVEL	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .

Parameter	Value	Explanation
Band1 (250 Hz) #	-15--+15 [dB]	Gain of each frequency band
Band2 (500 Hz)		
Band3 (1000 Hz) #		
Band4 (1250 Hz)		
Band5 (2000 Hz)		
Band6 (3150 Hz)		
Band7 (4000 Hz)		
Band8 (8000 Hz)		
Q	0.5, 1.0, 2.0, 4.0, 8.0	Simultaneously adjusts the width of the adjusted ranges for all the frequency bands.
Level #	0–127	Output Level

13: LOW BOOST

Boosts the volume of the lower range, creating powerful lows.



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	BOOST FREQUENCY, BOOST GAIN, BOOST WIDTH	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, BOOST FREQUENCY, BOOST GAIN, BOOST WIDTH	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Boost Frequency #	50–125 [Hz]	Basic frequency at which the lower range will be boosted
Boost Gain #	0--+12 [dB]	Amount by which the lower range will be boosted
Boost Width	WIDE, MID, NARROW	Width of the lower range that will be boosted
Low Gain	-15--+15 [dB]	Gain of the low frequency range
High Gain	-15--+15 [dB]	Gain of the high frequency range
Level	0–127	Output level

14: STEP FILTER

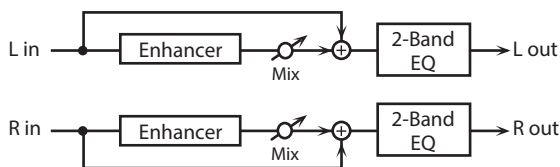
This is a filter whose cutoff frequency can be modulated in steps. You can specify the pattern by which the cutoff frequency will change.



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	RATE, ATTACK, FILTER RESO	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, RATE, ATTACK, FILTER RESO	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Step 01 –16	0–127	Cutoff frequency at each step
Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Rate (Hz) #/ Rate (note) #	0.05–10.00 note (p. 60)	Rate of modulation
Attack #	0–127	Speed at which the cutoff frequency changes between steps
Filter Type	LPF, BPF, HPF, NOTCH	Filter type Frequency range that will pass through each filter LPF : frequencies below the cutoff BPF : frequencies in the region of the cutoff HPF : frequencies above the cutoff NOTCH : frequencies other than the region of the cutoff
Filter Slope	-12, -24, -36 [dB]	Amount of attenuation per octave -12 dB : gentle -24 dB : steep -36 dB : extremely steep
Filter Resonance #	0–127	Filter resonance level Increasing this value will emphasize the region near the cutoff frequency.
Filter Gain	0--+12 [dB]	Amount of boost for the filter output
Level	0–127	Output level

15: ENHANCER

Controls the overtone structure of the high frequencies, adding sparkle and tightness to the sound.



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	SENS, MIX	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, SENS, MIX	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Sens #	0–127	Sensitivity of the enhancer
Mix #	0–127	Level of the overtones generated by the enhancer
Low Gain	-15–+15 [dB]	Gain of the low range
High Gain	-15–+15 [dB]	Gain of the high range
Level	0–127	Output Level

16: AUTO WAH

Cyclically controls a filter to create cyclic change in timbre.

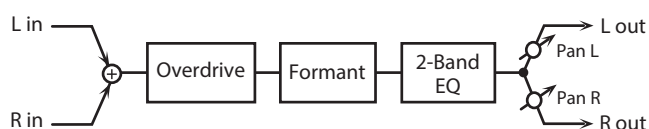


Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	MANUAL, SENS, RATE, DEPTH, PHASE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, MANUAL, SENS, RATE, DEPTH, PHASE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Filter Type	LPF, BPF	Type of filter LPF: The wah effect will be applied over a wide frequency range. BPF: The wah effect will be applied over a narrow frequency range.

Parameter	Value	Explanation
Manual #	0–127	Adjusts the basic frequency at which the effect is applied.
Peak	0–127	Adjusts the amount of the wah effect that will occur in the range of the basic frequency. Set a higher value for Q to narrow the range to be affected.
Sens #	0–127	Adjusts the sensitivity with which the filter is controlled.
Polarity	UP, DOWN	Sets the direction in which the frequency will change when the auto-wah filter is modulated. UP: The filter will change toward a higher frequency. DOWN: The filter will change toward a lower frequency.
Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Rate (Hz) #/ Rate (note) #	0.05–10.00 [Hz] note (p. 60)	Frequency of modulation
Depth #	0–127	Depth of modulation
Phase #	0–180 [deg]	Adjusts the degree of phase shift of the left and right sounds when the wah effect is applied.
Low Gain	-15–+15 [dB]	Gain of the low range
High Gain	-15–+15 [dB]	Gain of the high range
Level	0–127	Output Level

17: HUMANIZER

Adds a vowel character to the sound, making it similar to a human voice.



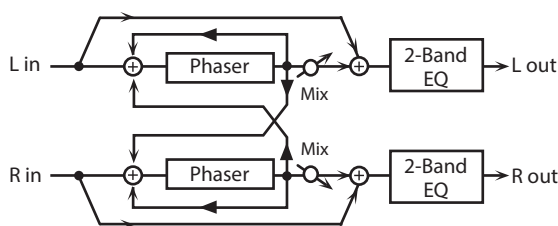
Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	DRIVE, RATE, DEPTH, MANUAL, PAN	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, DRIVE, RATE, DEPTH, MANUAL, PAN	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Drive Sw	OFF, ON	Turns Drive on/off.

Parameter	Value	Explanation
Drive #	0–127	Degree of distortion Also changes the volume.
Vowel1	A, E, I, O, U	Selects the vowel.
Vowel2	A, E, I, O, U	
Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Rate (Hz) # / Rate (note) #	0.05–10.00 [Hz] note (p. 60)	Frequency at which the two vowels switch
Depth #	0–127	Effect depth
Input Sync Sw	OFF, ON	LFO reset on/off Determines whether the LFO for switching the vowels is reset by the input signal (ON) or not (OFF).
Input Sync Threshold	0–127	Volume level at which reset is applied
Manual #	0–100	Point at which Vowel 1/2 switch 49 or less: Vowel 1 will have a longer duration. 50: Vowel 1 and 2 will be of equal duration. 51 or more: Vowel 2 will have a longer duration.
Low Gain	-15–+15 [dB]	Gain of the low frequency range
High Gain	-15–+15 [dB]	Gain of the high frequency range
Pan #	L64–63R	Stereo location of the output
Level	0–127	Output level

Parameter	Value	Explanation
Mode	4-STAGE, 8-STAGE, 12-STAGE	Number of stages in the phaser
Manual #	0–127	Adjusts the basic frequency from which the sound will be modulated.
Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Rate (Hz) # / Rate (note) #	0.05–10.00 [Hz] note (p. 60)	Frequency of modulation
Depth	0–127	Depth of modulation
Polarity	INVERSE, SYNCHRO	Selects whether the left and right phase of the modulation will be the same or the opposite. INVERSE: The left and right phase will be opposite. When using a mono source, this spreads the sound. SYNCHRO: The left and right phase will be the same. Select this when inputting a stereo source.
Resonance #	0–127	Amount of feedback
Cross Feedback	-98–+98 [%]	Adjusts the proportion of the phaser sound that is fed back into the effect. Negative “-” settings will invert the phase.
Mix #	0–127	Level of the phase-shifted sound
Low Gain	-15–+15 [dB]	Gain of the low range
High Gain	-15–+15 [dB]	Gain of the high range
Level	0–127	Output Level

18: PHASER 1

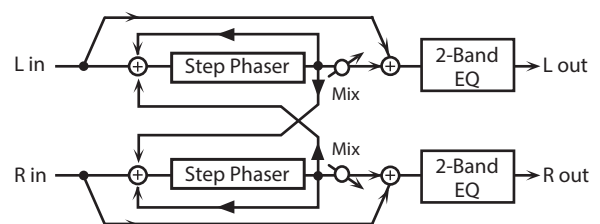
A phase-shifted sound is added to the original sound and modulated.



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	MANUAL, RATE, RESONANCE, MIX	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, MANUAL, RATE, RESONANCE, MIX	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.

19: STEP PHASER

This is a stereo phaser. The phaser effect will be varied gradually.

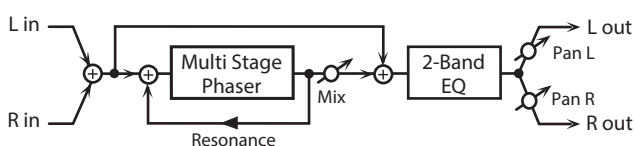


Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	MANUAL, RATE, RESONANCE, STEP RATE, MIX	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.

Parameter	Value	Explanation
Feedback Knob	OFF, MANUAL, RATE, RESONANCE, STEP RATE, MIX	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Mode	4-STAGE, 8-STAGE, 12-STAGE	Number of stages in the phaser
Manual #	0–127	Adjusts the basic frequency from which the sound will be modulated.
Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Rate (Hz) #/ Rate (note) #	0.05–10.00 note (p. 60)	Frequency of modulation
Depth	0–127	Depth of modulation
Polarity	INVERSE, SYNCHRO	Selects whether the left and right phase of the modulation will be the same or the opposite. INVERSE: The left and right phase will be opposite. When using a mono source, this spreads the sound. SYNCHRO: The left and right phase will be the same. Select this when inputting a stereo source.
Resonance #	0–127	Amount of feedback
Cross Feedback	-98–+98 [%]	Adjusts the proportion of the phaser sound that is fed back into the effect. Negative “-” settings will invert the phase.
Step Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Step Rate (Hz) #/ Step Rate (note)#	0.10–20 [Hz] note (p. 60)	Rate of the step-wise change in the phaser effect
Mix #	0–127	Level of the phase-shifted sound
Low Gain	-15–+15 [dB]	Gain of the low range
High Gain	-15–+15 [dB]	Gain of the high range
Level	0–127	Output Level

20: MULTI STAGE PHASER

Extremely high settings of the phase difference produce a deep phaser effect.

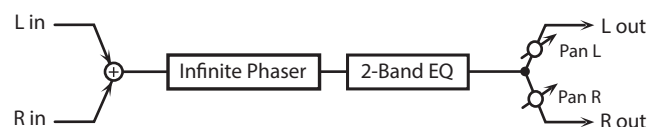


Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.

Parameter	Value	Explanation
Depth Knob	MANUAL, RATE, RESONANCE, MIX, PAN	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob	MANUAL, RATE, RESONANCE, MIX, PAN	Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, MANUAL, RATE, RESONANCE, MIX, PAN	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Mode	4-STAGE, 8-STAGE, 12-STAGE, 16-STAGE, 20-STAGE, 24-STAGE	Number of phaser stages
Manual #	0–127	Adjusts the basic frequency from which the sound will be modulated.
Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Rate (Hz) #/ Rate (note) #	0.05–10.00 [Hz] note (p. 60)	Frequency of modulation
Depth	0–127	Depth of modulation
Resonance #	0–127	Amount of feedback
Mix #	0–127	Level of the phase-shifted sound
Pan #	L64–63R	Stereo location of the output sound
Low Gain	-15–+15 [dB]	Gain of the low range
High Gain	-15–+15 [dB]	Gain of the high range
Level	0–127	Output Level

21: INFINITE PHASER

A phaser that continues raising/lowering the frequency at which the sound is modulated.

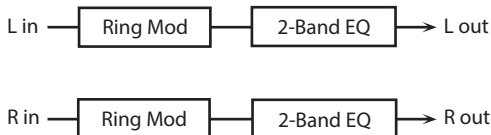


Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	SPEED, RESONANCE, MIX, PAN	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob	SPEED, RESONANCE, MIX, PAN	Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, SPEED, RESONANCE, MIX, PAN	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.

Parameter	Value	Explanation
Mode	1, 2, 3, 4	Higher values will produce a deeper phaser effect.
Speed #	-100–+100	Speed at which to raise or lower the frequency at which the sound is modulated (+: upward / -: downward)
Resonance #	0–127	Amount of feedback
Mix #	0–127	Volume of the phase-shifted sound
Pan #	L64–63R	Panning of the output sound
Low Gain	-15–+15 [dB]	Gain of the low frequency range
High Gain	-15–+15 [dB]	Gain of the high frequency range
Level	0–127	Output volume

22: RING MODULATOR

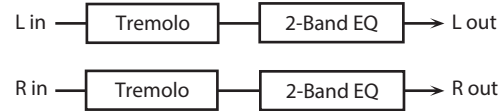
This is an effect that applies amplitude modulation (AM) to the input signal, producing bell-like sounds. You can also change the modulation frequency in response to changes in the volume of the sound sent into the effect.



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	FREQUENCY, SENS, BALANCE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, FREQUENCY, SENS, BALANCE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Frequency #	0–127	Adjusts the frequency at which modulation is applied.
Sens #	0–127	Adjusts the amount of frequency modulation applied.
Polarity	UP, DOWN	Determines whether the frequency modulation moves towards higher frequencies (UP) or lower frequencies (DOWN).
Low Gain	-15–+15 [dB]	Gain of the low frequency range
High Gain	-15–+15 [dB]	Gain of the high frequency range
Balance #	D100:0W–D0:100W	Volume balance between the direct sound (D) and the effect sound (W)
Level	0–127	Output level

23: TREMOLO

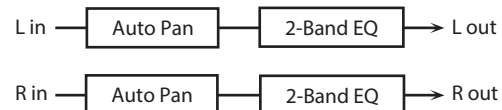
Cyclically modulates the volume to add tremolo effect to the sound.



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	RATE, DEPTH, MOD WAVE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, RATE, DEPTH, MOD WAVE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Mod Wave	TRI, SQR, SIN, SAW1, SAW2	Modulation wave TRI: triangle wave SQR: square wave SIN: sine wave SAW1/2: sawtooth wave
	SAW1 SAW2	
Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Rate (Hz) #/ Rate (note) #	0.05–10.00 [Hz] note (p. 60)	Frequency of the change
Depth #	0–127	Depth to which the effect is applied
Low Gain	-15–+15 [dB]	Gain of the low range
High Gain	-15–+15 [dB]	Gain of the high range
Level	0–127	Output Level

24: AUTO PAN

Cyclically modulates the stereo location of the sound.

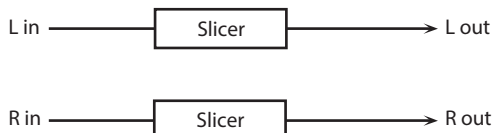


Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	RATE, DEPTH, MOD WAVE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.

Parameter	Value	Explanation
Feedback Knob	OFF, RATE, DEPTH, MOD WAVE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Mod Wave	TRI, SQR, SIN, SAW1, SAW2 SAW1 R L SAW2 R L	Modulation wave TRI : triangle wave SQR : square wave SIN : sine wave SAW1/2 : sawtooth wave
Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Rate (Hz) #/ Rate (note) #	0.05–10.00 [Hz] note (p. 60)	Frequency of the change
Depth #	0–127	Depth to which the effect is applied
Low Gain	-15–+15 [dB]	Gain of the low range
High Gain	-15–+15 [dB]	Gain of the high range
Level	0–127	Output Level

25: SLICER

By applying successive cuts to the sound, this effect turns a conventional sound into a sound that appears to be played as a backing phrase. This is especially effective when applied to sustain-type sounds.

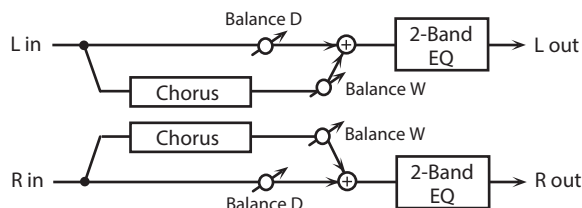


Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	RATE, ATTACK, SHUFFLE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, RATE, ATTACK, SHUFFLE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Step 01–16	0–127	Level at each step
Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Rate (Hz) #/ Rate (note) #	0.05–10.00 [Hz] note (p. 60)	Rate at which the 16-step sequence will cycle
Attack #	0–127	Speed at which the level changes between steps

Parameter	Value	Explanation
Input Sync Sw	OFF, ON	Specifies whether an input note will cause the sequence to resume from the first step of the sequence (ON) or not (OFF)
Input Sync Threshold	0–127	Volume at which an input note will be detected
Mode	LEGATO, SLASH	Sets the manner in which the volume changes as one step progresses to the next. LEGATO : The change in volume from one step's level to the next remains unaltered. If the level of a following step is the same as the one preceding it, there is no change in volume. SLASH : The level is momentarily set to 0 before progressing to the level of the next step. This change in volume occurs even if the level of the following step is the same as the preceding step.
Shuffle #	0–127	Timing of volume changes in levels for even-numbered steps (step 2, step 4, step 6...). The higher the value, the later the beat progresses.
Level	0–127	Output level

26: CHORUS

This is a stereo chorus. A filter is provided so that you can adjust the timbre of the chorus sound.

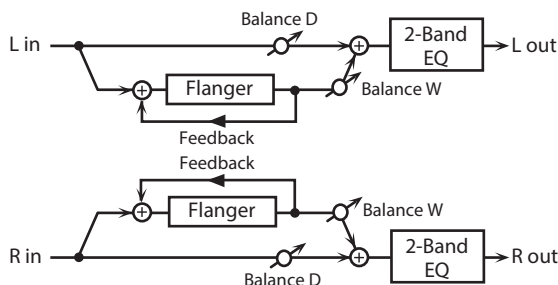


Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	RATE, BALANCE, DEPTH	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, RATE, BALANCE, DEPTH	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .

Parameter	Value	Explanation
Filter Type	OFF, LPF, HPF	Type of filter
		OFF: no filter is used
		LPF: cuts the frequency range above the Cutoff Freq
		HPF: cuts the frequency range below the Cutoff Freq
Cutoff Freq	200–8000 [Hz]	Basic frequency of the filter
Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Rate (Hz) #/ Rate (note) #	0.05–10.00 [Hz] note (p. 60)	Frequency of modulation
Depth	0–127	Depth of modulation
Phase	0–180 [deg]	Spatial spread of the sound
Low Gain	-15–+15 [dB]	Gain of the low range
High Gain	-15–+15 [dB]	Gain of the high range
Balance #	D100:0W– D0:100W	Volume balance between the direct sound (D) and the chorus sound (W)
Level	0–127	Output Level

27: FLANGER

This is a stereo flanger. (The LFO has the same phase for left and right.) It produces a metallic resonance that rises and falls like a jet airplane taking off or landing. A filter is provided so that you can adjust the timbre of the flanged sound.

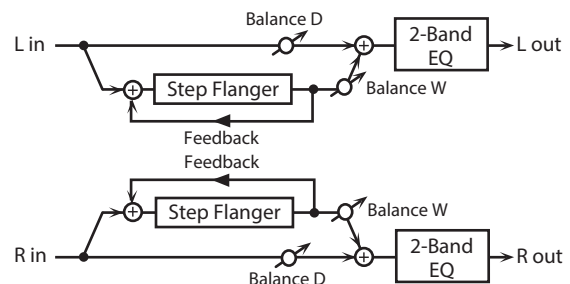


Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	RATE, FEEDBACK, BALANCE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob		Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Filter Type	OFF, LPF, HPF	Type of filter
		OFF: no filter is used
		LPF: cuts the frequency range above the Cutoff Freq
		HPF: cuts the frequency range below the Cutoff Freq

Parameter	Value	Explanation
Cutoff Freq	200–8000 [Hz]	Basic frequency of the filter
Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the flanger sound is heard.
Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Rate (Hz) #/ Rate (note) #	0.05–10.00 [Hz] note (p. 60)	Frequency of modulation
Depth	0–127	Depth of modulation
Phase	0–180 [deg]	Spatial spread of the sound
Feedback #	-98–+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative “-” settings will invert the phase.
Low Gain	-15–+15 [dB]	Gain of the low range
High Gain	-15–+15 [dB]	Gain of the high range
Balance #	D100:0W– D0:100W	Volume balance between the direct sound (D) and the flanger sound (W)
Level	0–127	Output Level

28: STEP FLANGER

This is a flanger in which the flanger pitch changes in steps. The speed at which the pitch changes can also be specified in terms of a note-value of a specified tempo.

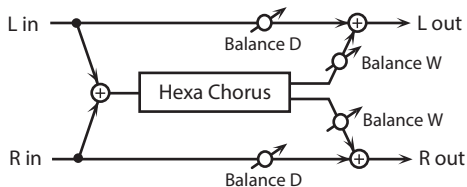


Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	RATE, FEEDBACK, STEP RATE, BALANCE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob		Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Filter Type	OFF, LPF, HPF	Type of filter
		OFF: no filter is used
		LPF: cuts the frequency range above the Cutoff Freq
		HPF: cuts the frequency range below the Cutoff Freq
Cutoff Freq	200–8000 [Hz]	Basic frequency of the filter

Parameter	Value	Explanation
Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the flanger sound is heard.
Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Rate (Hz) #/ Rate (note) #	0.05–10.00 [Hz] note (p. 60)	Frequency of modulation
Depth	0–127	Depth of modulation
Phase	0–180 [deg]	Spatial spread of the sound
Feedback #	-98–+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative “-” settings will invert the phase.
Step Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Step Rate (Hz) #/ Step Rate (note)#	0.10–20.00 [Hz] note (p. 60)	Rate (period) of pitch change
Low Gain	-15–+15 [dB]	Gain of the low range
High Gain	-15–+15 [dB]	Gain of the high range
Balance #	D100:0W– D0:100W	Volume balance between the direct sound (D) and the flanger sound (W)
Level	0–127	Output Level

29: HEXA-CHORUS

Uses a six-phase chorus (six layers of chorused sound) to give richness and spatial spread to the sound.

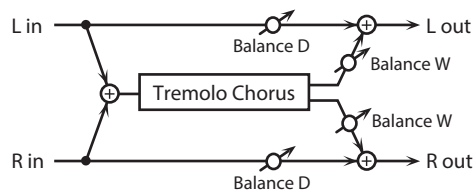


Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	RATE, BALANCE, DEPTH	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, RATE, BALANCE, DEPTH	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).

Parameter	Value	Explanation
Rate (Hz) #/ Rate (note) #	0.05–10.00 [Hz] note (p. 60)	Frequency of modulation
Depth	0–127	Depth of modulation
Pre Delay Deviation	0–20	Adjusts the differences in Pre Delay between each chorus sound.
Depth Deviation	-20–+20	Adjusts the difference in modulation depth between each chorus sound.
Pan Deviation	0–20	Adjusts the difference in stereo location between each chorus sound. 0: All chorus sounds will be in the center. 20: Each chorus sound will be spaced at 60 degree intervals relative to the center.
Balance #	D100:0W– D0:100W	Volume balance between the direct sound (D) and the chorus sound (W)
Level	0–127	Output Level

30: TREMOLO CHORUS

This is a chorus effect with added Tremolo (cyclic modulation of volume).

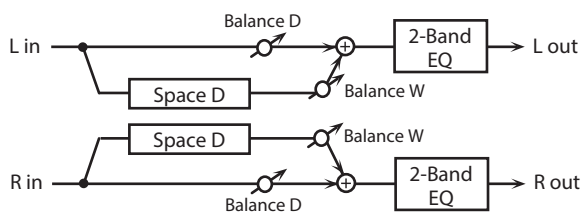


Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	CHORUS RATE, TREMOLO RATE, BALANCE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, CHORUS RATE, TREMOLO RATE, BALANCE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Chorus Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Chorus Rate (Hz) #/ Chorus Rate (note) #	0.05–10.00 [Hz] note (p. 60)	Modulation frequency of the chorus effect
Chorus Depth	0–127	Modulation depth of the chorus effect

Parameter	Value	Explanation
Tremolo Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Tremolo Rate (Hz) #/ Tremolo Rate (note) #	0.05–10.00 note (p. 60)	Modulation frequency of the tremolo effect
Tremolo Separation	0–127	Spread of the tremolo effect
Tremolo Phase	0–180 [deg]	Spread of the tremolo effect
Balance #	D100:0W–D0:100W	Volume balance between the direct sound (D) and the tremolo chorus sound (W)
Level	0–127	Output Level

31: SPACE-D

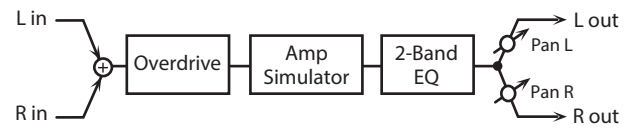
This is a multiple chorus that applies two-phase modulation in stereo. It gives no impression of modulation, but produces a transparent chorus effect.



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	RATE, BALANCE, DEPTH	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, RATE, BALANCE, DEPTH	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Rate (Hz) #/ Rate (note) #	0.05–10.00 [Hz] note (p. 60)	Frequency of modulation
Depth	0–127	Depth of modulation
Phase	0–180 [deg]	Spatial spread of the sound
Low Gain	-15–+15 [dB]	Gain of the low range
High Gain	-15–+15 [dB]	Gain of the high range
Balance #	D100:0W–D0:100W	Volume balance between the direct sound (D) and the chorus sound (W)
Level	0–127	Output Level

32: OVERDRIVE

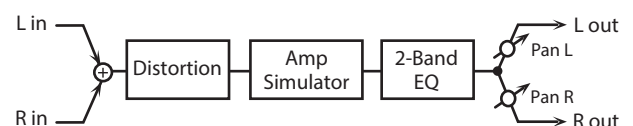
This is an overdrive that provides heavy distortion.



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	DRIVE, TONE, PAN, AMP TYPE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, DRIVE, TONE, PAN, AMP TYPE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Drive #	0–127	Degree of distortion Also changes the volume.
Tone #	0–127	Sound quality of the Overdrive effect
Amp Sw	OFF, ON	Turns the Amp Simulator on/off.
Amp Type	SMALL, BUILT-IN, 2-STACK, 3-STACK	Type of guitar amp SMALL: small amp BUILT-IN: single-unit type amp 2-STACK: large double stack amp 3-STACK: large triple stack amp
Low Gain	-15–+15 [dB]	Gain of the low range
High Gain	-15–+15 [dB]	Gain of the high range
Pan #	L64–63R	Stereo location of the output sound
Level	0–127	Output Level

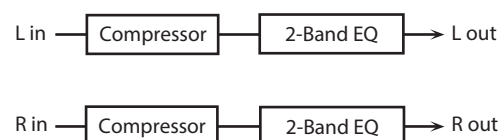
33: DISTORTION

This is a distortion effect that provides heavy distortion. The parameters are the same as for "32: Overdrive."



34: COMPRESSOR

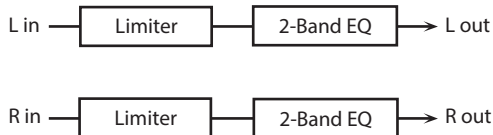
Flattens out high levels and boosts low levels, smoothing out fluctuations in volume.



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	ATTACK, THRESHOLD, LEVEL	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, ATTACK, THRESHOLD, LEVEL	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Attack #	0–127	Sets the time it takes until the level is compressed after the input exceeds the Threshold.
Threshold #	0–127	Adjusts the volume at which compression begins
Post Gain	0–+18 [dB]	Adjusts the output gain.
Low Gain	-15–+15 [dB]	Gain of the low frequency range
High Gain	-15–+15 [dB]	Gain of the high frequency range
Level #	0–127	Output Level

35: LIMITER

Compresses signals that exceed a specified volume level, preventing distortion from occurring.

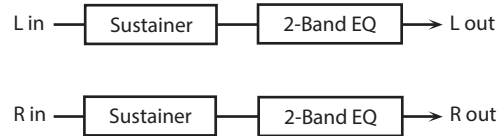


Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	RELEASE, THRESHOLD, LEVEL	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, RELEASE, THRESHOLD, LEVEL	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Release #	0–127	Adjusts the time after the signal volume falls below the Threshold Level until compression is no longer applied.
Threshold #	0–127	Adjusts the volume at which compression begins
Ratio	1.5:1, 2:1, 4:1, 100:1	Compression ratio
Post Gain	0–+18 [dB]	Adjusts the output gain.
Low Gain	-15–+15 [dB]	Gain of the low frequency range
High Gain	-15–+15 [dB]	Gain of the high frequency range

Parameter	Value	Explanation
Level #	0–127	Output Level

36: SUSTAINER

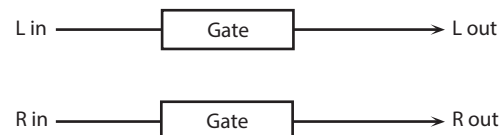
This effect compresses high input and boosts low input, making the volume consistent and producing undistorted sustain.



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	SUSTAIN, ATTACK, RELEASE, LEVEL	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, SUSTAIN, ATTACK, RELEASE, LEVEL	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Sustain #	0–127	Adjusts the range of volume for which low input signals are boosted to make the volume consistent. Higher settings produce longer sustain.
Attack	0–127	Time until the volume is compressed
Release	0–127	Time until compression ends
Post Gain	-15–+15 [dB]	Adjusts the output gain.
Low Gain	-15–+15 [dB]	Gain of the low frequency range
High Gain	-15–+15 [dB]	Gain of the high frequency range
Level #	0–127	Output Level

37: GATE

Cuts the reverb's delay according to the volume of the sound sent into the effect. Use this when you want to create an artificial-sounding decrease in the reverb's decay.



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.

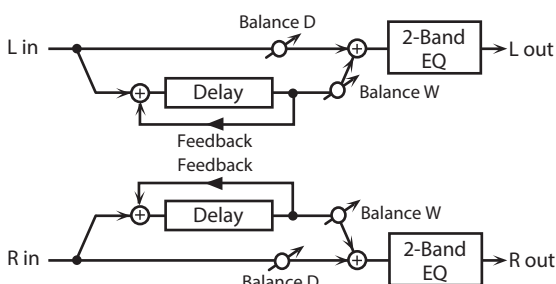
Parameter	Value	Explanation
Depth Knob	THRESHOLD, BALANCE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, THRESHOLD, BALANCE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Threshold #	0–127	Volume level at which the gate begins to close
Mode	GATE, DUCK	Type of gate GATE: The gate will close when the volume of the original sound decreases, cutting the original sound. DUCK (Ducking): The gate will close when the volume of the original sound increases, cutting the original sound.
Attack	0–127	Adjusts the time it takes for the gate to fully open after being triggered.
Hold	0–127	Adjusts the time it takes for the gate to start closing after the source sound falls beneath the Threshold.
Release	0–127	Adjusts the time it takes the gate to fully close after the hold time.
Balance #	D100:0W– D0:100W	Volume balance between the direct sound (D) and the effect sound (W)
Level	0–127	Output Level

Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	FEEDBACK, BALANCE, DELAY LEFT	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, FEEDBACK, BALANCE, DELAY LEFT	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Delay Left (sync switch)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Delay Left (msec)/ Delay Left (note)	1–1300 [msec] note (p. 60)	Delay time from the original sound until the left delay sound is heard
Delay Right (sync switch)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Delay Right (msec)/ Delay Right (note)	1–1300 [msec] note (p. 60)	Delay time from the original sound until the right delay sound is heard
Phase Left Phase Right	NORMAL, INVERSE	Phase of the delay sound
Feedback Mode	NORMAL, CROSS	Selects the way in which delay sound is fed back into the effect. (See the figures above.)
Feedback #	-98–+98 [%]	Adjusts the amount of the delay sound that's fed back into the effect. Negative “-” settings invert the phase.
HF Damp	200–8000 [Hz], BYPASS	Adjusts the frequency above which sound fed back to the effect is filtered out (BYPASS: no cut).
Low Gain	-15–+15 [dB]	Gain of the low frequency range
High Gain	-15–+15 [dB]	Gain of the high frequency range
Balance #	D100:0W– D0:100W	Volume balance between the direct sound (D) and the delay sound (W)
Level	0–127	Output Level

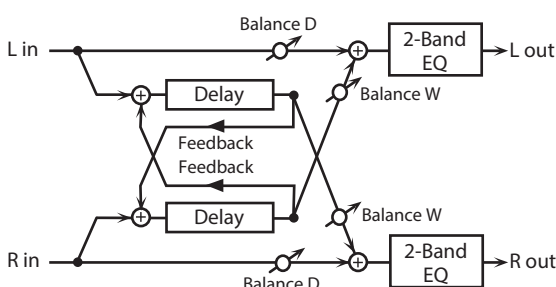
38: DELAY

This is a stereo delay.

When Feedback Mode is NORMAL:



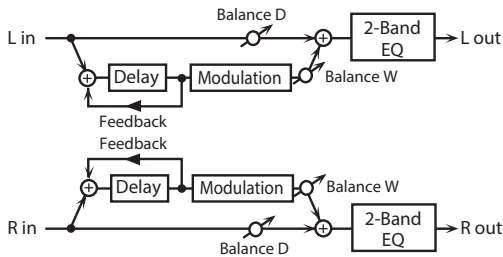
When Feedback Mode is CROSS:



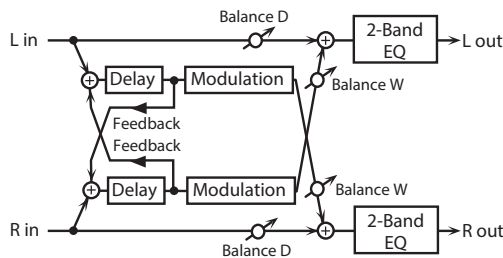
39: MODULATION DELAY

Adds modulation to the delayed sound.

When Feedback Mode is NORMAL:



When Feedback Mode is CROSS:

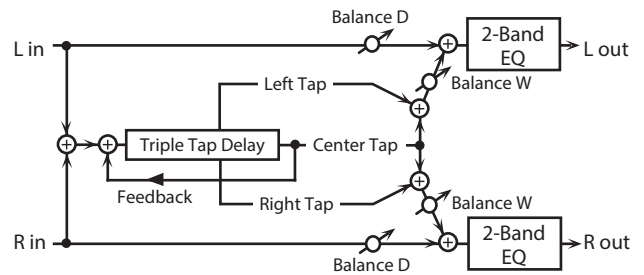


Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	FEEDBACK, RATE, BALANCE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, FEEDBACK, RATE, BALANCE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Delay Left (sync switch)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Delay Left (msec)/ Delay Left (note)	1–1300 [msec] note (p. 60)	Delay time from the original sound until the left delay sound is heard
Delay Right (sync switch)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Delay Right (msec)/ Delay Right (note)	1–1300 [msec] note (p. 60)	Delay time from the original sound until the right delay sound is heard
Feedback Mode	NORMAL, CROSS	Selects the way in which delay sound is fed back into the effect (See the figures above.)
Feedback #	-98–+98 [%]	Adjusts the amount of the delay sound that's fed back into the effect. Negative “-” settings invert the phase.

Parameter	Value	Explanation
HF Damp	200–8000 [Hz], BYPASS	Adjusts the frequency above which sound fed back to the effect is filtered out (BYPASS : no cut).
Rate #	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Rate (Hz) #/ Rate (note) #	0.05–10.00 [Hz] note (p. 60)	Frequency of modulation
Depth	0–127	Depth of modulation
Phase	0–180 [deg]	Spatial spread of the sound
Low Gain	-15–+15 [dB]	Gain of the low frequency range
High Gain	-15–+15 [dB]	Gain of the high frequency range
Balance #	D100:0W– D0:100W	Volume balance between the direct sound (D) and the delay sound (W)
Level	0–127	Output Level

40: 3TAP PAN DELAY

Produces three delay sounds; center, left and right.

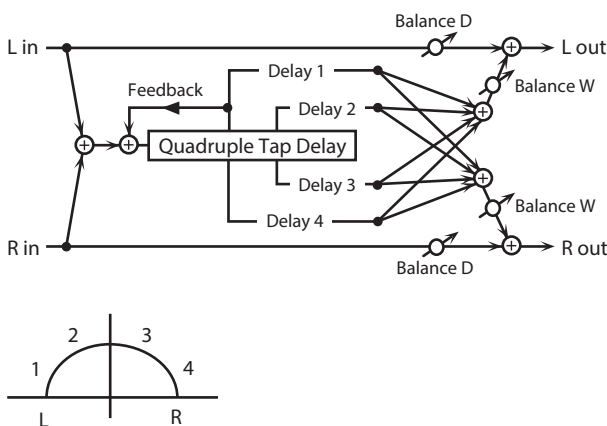


Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	CENTER FEEDBACK, BALANCE, DELAY LEFT	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, CENTER FEEDBACK, BALANCE, DELAY LEFT	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Delay Left/ Right/Center (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Delay Left/ Right/Center (msec) #/ Delay Left/ Right/Center (note) #	1–2600 [msec] note (p. 60)	Adjusts the time until the delay sound is heard.

Parameter	Value	Explanation
Center Feedback #	-98→+98 [%]	Adjusts the amount of the delay sound that's fed back into the effect. Negative "-" settings invert the phase.
HF Damp	200–8000 [Hz], BYPASS	Adjusts the frequency above which sound fed back to the effect is filtered out (BYPASS : no cut).
Left/Right/Center Level	0–127	Volume of each delay
Low Gain	-15→+15 [dB]	Gain of the low frequency range
High Gain	-15→+15 [dB]	Gain of the high frequency range
Balance #	D100:0W–D0:100W	Volume balance between the direct sound (D) and the delay sound (W)
Level	0–127	Output Level

41: 4TAP PAN DELAY

This effect has four delays.

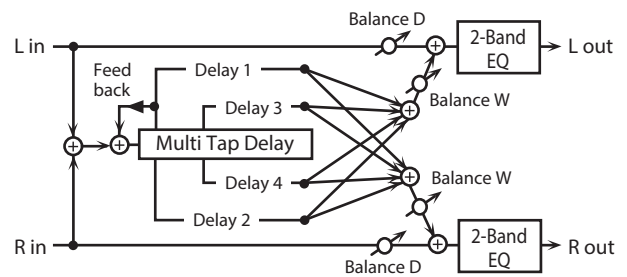


Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	DLY 1 FBACK, BALANCE, DLY 1 TIME	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob	DLY 1 FBACK, BALANCE, DLY 1 TIME	Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, DLY 1 FBACK, BALANCE, DLY 1 TIME	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Delay 1–4 Time (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Delay 1–4 Time (msec)/ Delay 1–4 Time (note)	1–2600 [msec] note (p. 60)	Adjusts the time until the delay 1–4 sound is heard.
Delay 1 Feedback #	-98→+98 [%]	Adjusts the amount of the delay sound that's fed back into the effect. Negative "-" settings invert the phase.

Parameter	Value	Explanation
HF Damp	200–8000 [Hz], BYPASS	Adjusts the frequency above which sound fed back to the effect is filtered out (BYPASS : no cut).
Delay 1–4 Level	0–127	Volume of each delay
Low Gain	-15→+15 [dB]	Gain of the low frequency range
High Gain	-15→+15 [dB]	Gain of the high frequency range
Balance #	D100:0W–D0:100W	Volume balance between the direct sound (D) and the delay sound (W)
Level	0–127	Output Level

42: MULTI TAP DELAY

This effect provides four delays. Each of the Delay Time parameters can be set to a note length based on the selected tempo. You can also set the panning and level of each delay sound.

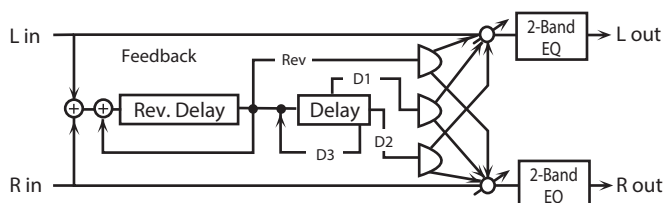


Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	DLY 1 FBACK, BALANCE, DLY 1 TIME	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob	DLY 1 FBACK, BALANCE, DLY 1 TIME	Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, DLY 1 FBACK, BALANCE, DLY 1 TIME	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Delay 1–4 (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Delay 1–4 Time (msec)/ Delay 1–4 Time (note)	1–2600 [msec] note (p. 60)	Adjusts the time until Delays 1–4 are heard.
Delay 1 Feedback #	-98→+98 [%]	Adjusts the amount of the delay sound that's fed back into the effect. Negative "-" settings invert the phase.
HF Damp	200–8000 [Hz], BYPASS	Adjusts the frequency above which sound fed back to the effect is filtered out (BYPASS : no cut).
Delay 1–4 Pan	L64–63R	Stereo location of Delays 1–4

Parameter	Value	Explanation
Delay 1–4 Level	0–127	Output level of Delays 1–4
Low Gain	-15–+15 [dB]	Gain of the low frequency range
High Gain	-15–+15 [dB]	Gain of the high frequency range
Balance #	D100:0W–D0:100W	Volume balance between the direct sound (D) and the effect sound (W)
Level	0–127	Output Level

43: REVERSE DELAY

This is a reverse delay that adds a reversed and delayed sound to the input sound. A tap delay is connected immediately after the reverse delay.

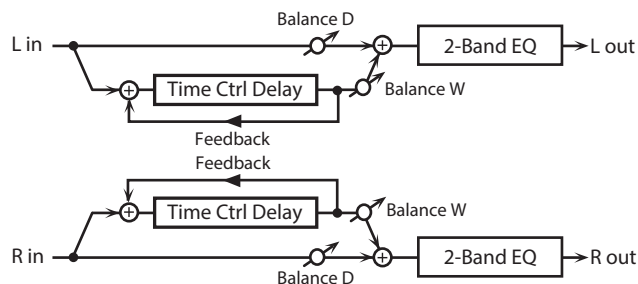


Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	REV DLY FEEDBACK, DLY 3 FEEDBACK, BALANCE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob	DLY 3 FEEDBACK, BALANCE	Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, REV DLY FEEDBACK, DLY 3 FEEDBACK, BALANCE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Threshold	0–127	Volume at which the reverse delay will begin to be applied
Rev Delay Time (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Rev Delay Time (msec)/ Rev Delay Time (note)	1–1300 [msec] note (p. 60)	Delay time from when sound is input into the reverse delay until the delay sound is heard
Rev Delay Feedback #	-98–+98 [%]	Proportion of the delay sound that is to be returned to the input of the reverse delay (negative values invert the phase)
Rev Delay HF Damp	200–8000 [Hz], BYPASS	Frequency at which the high-frequency content of the reverse-delayed sound will be cut (BYPASS : no cut).
Rev Delay Pan	L64–63R	Panning of the reverse delay sound
Rev Delay Level	0–127	Volume of the reverse delay sound

Parameter	Value	Explanation
Delay 1–3 Time (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Delay 1–3 Time (msec)/ Delay 1–3 Time (note)	1–1300 [msec] note (p. 60)	Delay time from when sound is input into the tap delay until the delay sound is heard
Delay 3 Feedback #	-98–+98 [%]	Proportion of the delay sound that is to be returned to the input of the tap delay (negative values invert the phase)
Delay HF Damp	200–8000 [Hz], BYPASS	Frequency at which the low-frequency content of the tap delay sound will be cut (BYPASS : no cut).
Delay 1 Pan, Delay 2 Pan	L64–63R	Panning of the tap delay sounds
Delay 1 Level, Delay 2 Level	0–127	Volume of the tap delay sounds
Low Gain	-15–+15 [dB]	Gain of the low frequency range
High Gain	-15–+15 [dB]	Gain of the high frequency range
Balance #	D100:0W–D0:100W	Volume balance of the original sound (D) and delay sound (W)
Level	0–127	Output Level

44: TIME CTRL DELAY

A stereo delay in which the delay time can be varied smoothly.

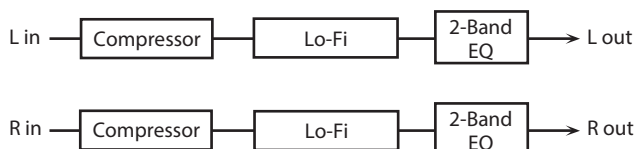


Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	DELAY TIME, FEEDBACK, BALANCE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob	DELAY TIME, FEEDBACK, BALANCE	Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, DELAY TIME, FEEDBACK, BALANCE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Delay Time (sync sw) #	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).

Parameter	Value	Explanation
Delay Time (msec) #/ Delay Time (note) #	1–1300 [msec] note (p. 60)	Adjusts the time until the delay is heard.
Acceleration	0–15	Adjusts the speed which the Delay Time changes from the current setting to a specified new setting. The rate of change for the Delay Time directly affects the rate of pitch change.
Feedback #	-98–+98 [%]	Adjusts the amount of the delay sound that's fed back into the effect. Negative "–" settings invert the phase.
HF Damp	200–8000 [Hz], BYPASS	Adjusts the frequency above which sound fed back to the effect is filtered out (BYPASS : no cut).
Low Gain	-15–+15 [dB]	Gain of the low frequency range
High Gain	-15–+15 [dB]	Gain of the high frequency range
Balance #	D100:0W– D0:100W	Volume balance between the direct sound (D) and the delay sound (W)
Level	0–127	Output Level

45: LOFI COMPRESS

This is an effect that intentionally degrades the tone quality for creative purposes.

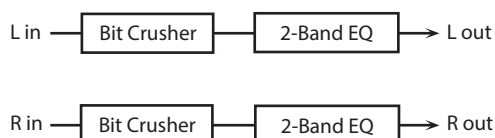


Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	BALANCE, LEVEL	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, BALANCE, LEVEL	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Pre Filter Type	1–6	Selects the type of filter applied to the sound before it passes through the Lo-Fi effect. 1 : Compressor off 2–6 : Compressor on
LoFi Type	1–9	Degrades the tone quality. The tone quality grows poorer as this value is increased.

Parameter	Value	Explanation
Post Filter Type	OFF, LPF, HPF	Type of filter OFF : no filter is used LPF : cuts the frequency range above the Cutoff HPF : cuts the frequency range below the Cutoff
Post Filter Cutoff	200–8000 [Hz]	Basic frequency of the Post Filter
Low Gain	-15–+15 [dB]	Gain of the low range
High Gain	-15–+15 [dB]	Gain of the high range
Balance #	D100:0W– D0:100W	Volume balance between the direct sound (D) and the effect sound (W)
Level #	0–127	Output Level

46: BIT CRUSHER

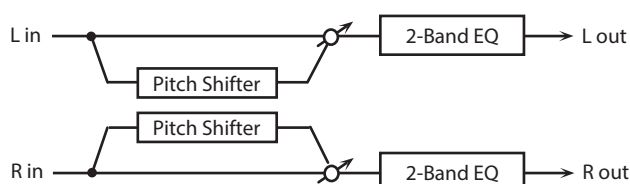
This creates a lo-fi sound.



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	SAMPLE RATE, BIT DOWN, FILTER	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, SAMPLE RATE, BIT DOWN, FILTER	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Sample Rate #	0–127	Adjusts the sample rate.
Bit Down #	0–20	Adjusts the bit depth.
Filter #	0–127	Adjusts the filter depth.
Low Gain	-15–+15 [dB]	Gain of the low frequency range
High Gain	-15–+15 [dB]	Gain of the high frequency range
Level	0–127	Output Level

47: PITCH SHIFTER

A stereo pitch shifter.



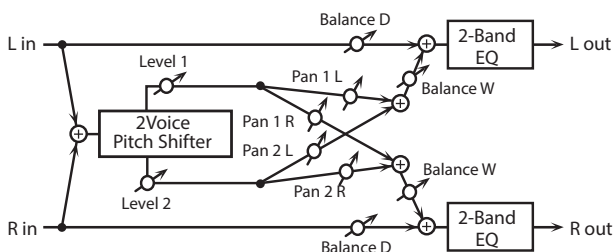
Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.

Parameter	Value	Explanation
Depth Knob	COARSE, FINE, FEEDBACK, BALANCE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob	COARSE, FINE, FEEDBACK, BALANCE	Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, COARSE, FINE, FEEDBACK, BALANCE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Coarse #1	-24--+12 [semi]	Adjusts the pitch of the pitch shifted sound in semitone steps.
Fine #1	-100--+100 [cent]	Adjusts the pitch of the pitch shifted sound in 2-cent steps.
Delay Time (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Delay Time (msec)/ Delay Time (note)	1–1300 [msec] note (p. 60)	Adjusts the delay time from the direct sound until the pitch shifted sound is heard.
Feedback #	-98--+98 [%]	Adjusts the proportion of the pitch shifted sound that is fed back into the effect. Negative “-” settings will invert the phase.
Low Gain	-15--+15 [dB]	Gain of the low range
High Gain	-15--+15 [dB]	Gain of the high range
Balance #	D100:0W– D0:100W	Volume balance between the direct sound (D) and the pitch shifted sound (W)
Level	0–127	Output Level

Parameter	Value	Explanation
Depth Knob	PITCH1 COARSE, PITCH1 FINE, PITCH1 FEEDBACK, PITCH1 PAN, PITCH2 COARSE, PITCH2 FINE, PITCH2 FEEDBACK, PITCH2 PAN, BALANCE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob	COARSE, FINE, FEEDBACK, BALANCE	Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, PITCH1 COARSE, PITCH1 FINE, PITCH1 FEEDBACK, PITCH1 PAN, PITCH2 COARSE, PITCH2 FINE, PITCH2 FEEDBACK, PITCH2 PAN, BALANCE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Pitch1 Coarse #1	-24--+12 semi	Adjusts the pitch of Pitch Shift 1 in semitone steps.
Pitch1 Fine #1	-100--+100 cent	Adjusts the pitch of Pitch Shift 1 in 2-cent steps.
Pitch1 Delay (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Pitch1 Delay (msec)/ Pitch1 Delay (note)	1–1300 [msec] note (p. 60)	Adjusts the delay time from the direct sound until the Pitch Shift 1 sound is heard.
Pitch1 Feedback #	-98--+98 [%]	Adjusts the proportion of the pitch shifted sound that is fed back into the effect. Negative “-” settings will invert the phase.
Pitch1 Pan #	L64–63R	Stereo location of the Pitch Shift 1 sound
Pitch1 Level	0–127	Volume of the Pitch Shift 1 sound
Pitch2 Coarse #2	-24--+12 semi	Settings of the Pitch Shift 2 sound.
Pitch2 Fine #2	-100--+100 cent	The parameters are the same as for the Pitch Shift 1 sound.
Pitch2 Delay	OFF, ON	
Pitch2 Delay (msec)/ Pitch2 Delay (note)	1–1300 [msec] note (p. 60)	
Pitch2 Feedback #	-98--+98 [%]	
Pitch2 Pan #	L64–63R	
Pitch2 Level	0–127	
Low Gain	-15--+15 [dB]	Gain of the low range
High Gain	-15--+15 [dB]	Gain of the high range
Balance #	D100:0W– D0:100W	Volume balance between the direct sound (D) and the pitch shifted sound (W)
Level	0–127	Output Level

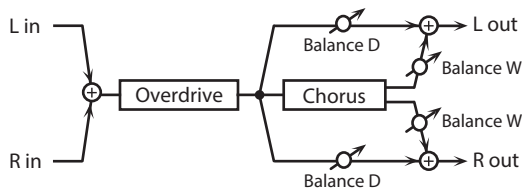
48: 2VOICE PITCH SHIFTER

Shifts the pitch of the original sound. This 2-voice pitch shifter has two pitch shifters, and can add two pitch shifted sounds to the original sound.



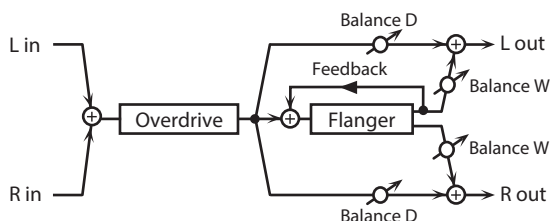
Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.

49: OD → CHORUS



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	OVERDRIVE DRIVE, OVERDRIVE PAN, CHORUS RATE, CHORUS BALANCE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob	OVERDRIVE DRIVE, OVERDRIVE PAN, CHORUS RATE, CHORUS BALANCE	Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, OVERDRIVE DRIVE, OVERDRIVE PAN, CHORUS RATE, CHORUS BALANCE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Overdrive Drive #	0–127	Degree of distortion Also changes the volume.
Overdrive Pan #	L64–63R	Stereo location of the overdrive sound
Chorus Pre Delay	0.0–100.0 [msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Chorus Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Chorus Rate (Hz) #/ Chorus Rate (note) #	0.05–10.00 [Hz] note (p. 60)	Frequency of modulation
Chorus Depth	0–127	Depth of modulation
Chorus Balance #	D100:0W–D0:100W	Adjusts the volume balance between the sound that is sent through the chorus (W) and the sound that is not sent through the chorus (D).
Level	0–127	Output Level

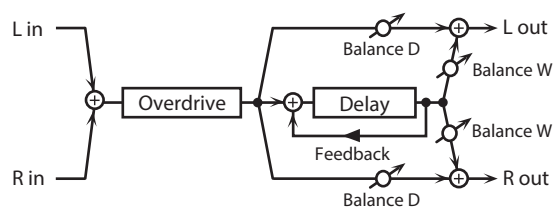
50: OD → FLANGER



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.

Parameter	Value	Explanation
Depth Knob	OVERDRIVE DRIVE, OVERDRIVE PAN, FLN RATE, FLN FEEDBACK, FLN BALANCE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob	OVERDRIVE DRIVE, OVERDRIVE PAN, FLN RATE, FLN FEEDBACK, FLN BALANCE	Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, OVERDRIVE DRIVE, OVERDRIVE PAN, FLN RATE, FLN FEEDBACK, FLN BALANCE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Overdrive Drive #	0–127	Degree of distortion Also changes the volume.
Overdrive Pan #	L64–63R	Stereo location of the overdrive sound
Flanger Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the flanger sound is heard.
Flanger Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Flanger Rate (Hz) #/ Flanger Rate (note) #	0.05–10.00 [Hz] note (p. 60)	Frequency of modulation
Flanger Depth	0–127	Depth of modulation
Flanger Feedback #	-98–+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative “-” settings will invert the phase.
Flanger Balance #	D100:0W–D0:100W	Adjusts the volume balance between the sound that is sent through the flanger (W) and the sound that is not sent through the flanger (D).
Level	0–127	Output Level

51: OD → DELAY



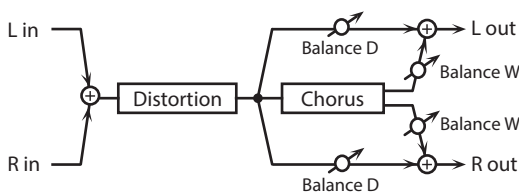
Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	OVERDRIVE DRIVE, OVERDRIVE PAN, DELAY FEEDBACK, DELAY BALANCE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob	OVERDRIVE DRIVE, OVERDRIVE PAN, DELAY FEEDBACK, DELAY BALANCE	Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.

Parameter	Value	Explanation
Feedback Knob	OFF, OVERDRIVE DRIVE, OVERDRIVE PAN, DELAY FEEDBACK, DELAY BALANCE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Overdrive Drive #	0–127	Degree of distortion Also changes the volume.
Overdrive Pan #	L64–63R	Stereo location of the overdrive sound
Delay Time (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Delay Time (msec)/ Delay Time (note)	1–2600 [msec] note (p. 60)	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay Feedback #	–98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative “–” settings will invert the phase.
Delay HF Damp	200–8000 [Hz], BYPASS	Adjusts the frequency above which sound fed back to the effect will be cut (BYPASS : no cut).
Delay Balance #	D100:0W– D0:100W	Adjusts the volume balance between the sound that is sent through the delay (W) and the sound that is not sent through the delay (D).
Level	0–127	Output Level

52: DS → CHORUS

The parameters are essentially the same as in “49: OD → CHORUS,” with the exception of the following two.

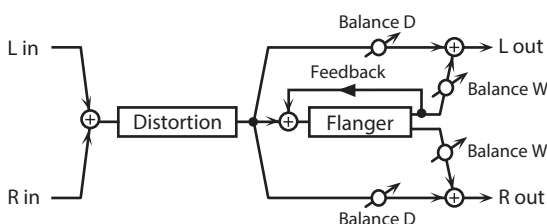
- Overdrive Drive → Distortion Drive
- Overdrive Pan → Distortion Pan



53: DS → FLANGER

The parameters are essentially the same as in “50: OD → FLANGER,” with the exception of the following two.

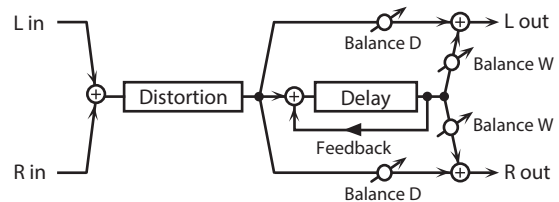
- Overdrive Drive → Distortion Drive
- Overdrive Pan → Distortion Pan



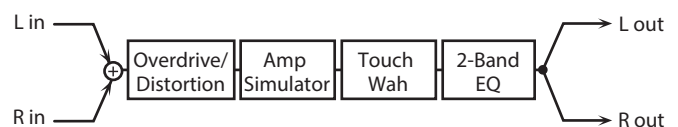
54: DS → DELAY

The parameters are essentially the same as in “51: OD → DELAY,” with the exception of the following two.

- Overdrive Drive → Distortion Drive
- Overdrive Pan → Distortion Pan



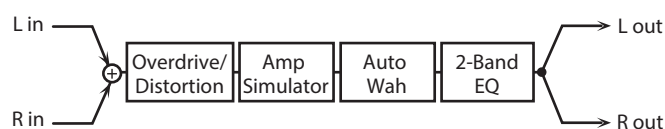
55: OD/DS → TWAH



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	DRIVE, TONE, TWAH SENS, TWAH MANUAL, TWAH PEAK, TWAH BALANCE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob		Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, DRIVE, TONE, TWAH SENS, TWAH MANUAL, TWAH PEAK, TWAH BALANCE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Drive Switch	OFF, ON	Turns overdrive/distortion on/off
Drive Type	OVERDRIVE, DISTORTION	Type of distortion
Drive #	0–127	Degree of distortion Also changes the volume.
Tone #	0–127	Sound quality of the Overdrive effect
Amp Switch	OFF, ON	Turns the Amp Simulator on/off.
Amp Type	SMALL, BUILT-IN, 2-STACK, 3-STACK	Type of guitar amp SMALL : small amp BUILT-IN : single-unit type amp 2-STACK : large double stack amp 3-STACK : large triple stack amp
TWah Switch	OFF, ON	Wah on/off
TWah Filter Type	LPF, BPF	Type of filter LPF : Produces a wah effect in a broad frequency range. BPF : Produces a wah effect in a narrow frequency range.

Parameter	Value	Explanation
TWah Polarity	DOWN, UP	Direction in which the filter will move UP: Move toward a higher frequency DOWN: Move toward a lower frequency
TWah Sens #	0–127	Sensitivity with which the filter is modified
TWah Manual #	0–127	Basic frequency at which the wah effect is applied
TWah Peak #	0–127	Width of the frequency region at which the wah effect is applied Increasing this value will make the frequency region narrower.
TWah Balance #	D100:0W–D0:100W	Volume balance of the sound that passes through the wah (W) and the direct sound (D)
Low Gain	-15→+15 [dB]	Gain of the low range
High Gain	-15→+15 [dB]	Gain of the high range
Level	0–127	Output Level

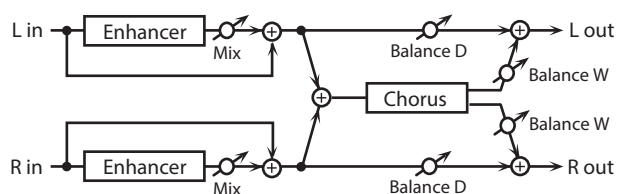
56: OD/DS → AWAH



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	DRIVE, TONE, AUTOWAH MANUAL, AUTOWAH PEAK, AUTOWAH RATE, AUTOWAH DEPTH, AUTOWAH BALANCE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob	AUTOWAH RATE, AUTOWAH DEPTH, AUTOWAH BALANCE	Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, DRIVE, TONE, AUTOWAH MANUAL, AUTOWAH PEAK, AUTOWAH RATE, AUTOWAH DEPTH, AUTOWAH BALANCE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Drive Switch	OFF, ON	Overdrive/distortion on/off
Drive Type	OVERDRIVE, DISTORTION	Type of distortion
Drive #	0–127	Degree of distortion Also changes the volume.
Tone #	0–127	Sound quality of the Overdrive effect
Amp Switch	OFF, ON	Turns the Amp Simulator on/off.

Parameter	Value	Explanation
Amp Type	SMALL, BUILT-IN, 2-STACK, 3-STACK	Type of guitar amp SMALL: small amp BUILT-IN: single-unit type amp 2-STACK: large double stack amp 3-STACK: large triple stack amp
AutoWah Switch	OFF, ON	Wah on/off
AutoWah Filter Type	LPF, BPF	Type of filter LPF: Produces a wah effect in a broad frequency range. BPF: Produces a wah effect in a narrow frequency range.
AutoWah Manual #	0–127	Basic frequency at which the wah effect is applied
AutoWah Peak #	0–127	Width of the frequency region at which the wah effect is applied Increasing this value will make the frequency region narrower.
AutoWah Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
AutoWah Rate (Hz) #/ AutoWah Rate (note) #	0.05–10.00 [Hz] note (p. 60)	Rate at which the wah effect is modulated
AutoWah Depth #	0–127	Depth at which the wah effect is modulated
AutoWah Balance #	D100:0W–D0:100W	Volume balance of the sound that passes through the wah (W) and the direct sound (D)
Low Gain	-15→+15 [dB]	Gain of the low range
High Gain	-15→+15 [dB]	Gain of the high range
Level	0–127	Output Level

57: ENHANCER → CHORUS

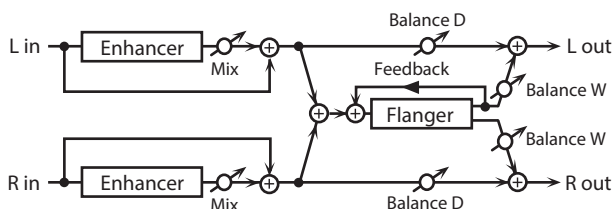


Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	ENHANCER SENS, ENHANCER MIX, CHORUS RATE, CHORUS BALANCE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob	ENHANCER SENS, ENHANCER MIX, CHORUS RATE, CHORUS BALANCE	Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .

Parameter	Value	Explanation
Feedback Knob	OFF, ENHANCER SENS, ENHANCER MIX, CHORUS RATE, CHORUS BALANCE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Enhancer Sens #	0–127	Sensitivity of the enhancer
Enhancer Mix #	0–127	Level of the overtones generated by the enhancer
Chorus Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Chorus Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Chorus Rate (Hz) #/ Chorus Rate (note) #	0.05–10.00 [Hz] note (p. 60)	Frequency of modulation
Chorus Depth	0–127	Depth of modulation
Chorus Balance #	D100:0W–D0:100W	Adjusts the volume balance between the sound that is sent through the chorus (W) and the sound that is not sent through the chorus (D).
Level	0–127	Output Level

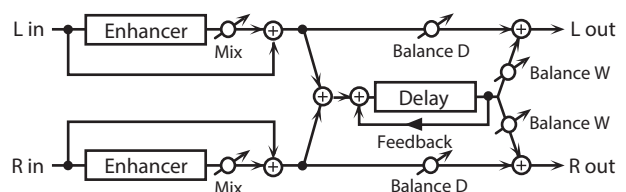
Parameter	Value	Explanation
Flanger Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Flanger Rate (Hz) #	0.05–10.0 [Hz]	Frequency of modulation
Flanger Rate (note) #	note (p. 60)	
Flanger Depth	0–127	Depth of modulation
Flanger Feedback #	–98–+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative “–” settings will invert the phase.
Flanger Balance #	D100:0W–D0:100W	Adjusts the volume balance between the sound that is sent through the flanger (W) and the sound that is not sent through the flanger (D).
Level	0–127	Output Level

58: ENHANCER → FLANGER



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	ENHANCER SENS, ENHANCER MIX, FLN RATE, FLN FEEDBACK, FLN BALANCE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob	ENHANCER SENS, ENHANCER MIX, FLN RATE, FLN FEEDBACK, FLN BALANCE	Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, ENHANCER SENS, ENHANCER MIX, FLN RATE, FLN FEEDBACK, FLN BALANCE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Enhancer Sens #	0–127	Sensitivity of the enhancer
Enhancer Mix #	0–127	Level of the overtones generated by the enhancer
Flanger Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the flanger sound is heard.

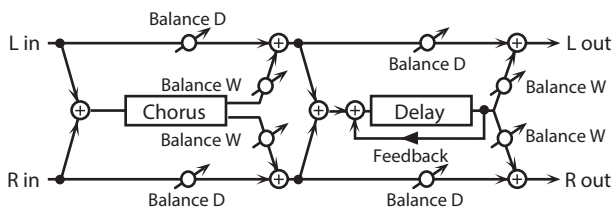
59: ENHANCER → DELAY



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	ENHANCER SENS, ENHANCER MIX, DELAY FEEDBACK, DELAY BALANCE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob	ENHANCER SENS, ENHANCER MIX, DELAY FEEDBACK, DELAY BALANCE	Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, ENHANCER SENS, ENHANCER MIX, DELAY FEEDBACK, DELAY BALANCE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Enhancer Sens #	0–127	Sensitivity of the enhancer
Enhancer Mix #	0–127	Level of the overtones generated by the enhancer
Delay Time (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Delay Time (msec)/ Delay Time (note)	1–2600 [msec] note (p. 60)	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay Feedback #	–98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative “–” settings will invert the phase.

Parameter	Value	Explanation
Delay HF Damp	200–8000 [Hz], BYPASS	Adjusts the frequency above which sound fed back to the effect will be cut (BYPASS : no cut).
Delay Balance #	D100:0W– D0:100W	Adjusts the volume balance between the sound that is sent through the delay (W) and the sound that is not sent through the delay (D).
Level	0–127	Output Level

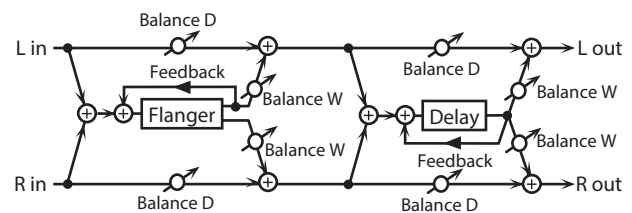
60: CHORUS → DELAY



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	CHORUS RATE, CHORUS BALANCE, DELAY FEEDBACK, DELAY BALANCE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob	CHORUS RATE, CHORUS BALANCE, DELAY FEEDBACK, DELAY BALANCE	Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, CHORUS RATE, CHORUS BALANCE, DELAY FEEDBACK, DELAY BALANCE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Chorus Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Chorus Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Chorus Rate (Hz) #/ Chorus Rate (note) #	0.05–10.00 [Hz] note (p. 60)	Frequency of modulation
Chorus Depth	0–127	Depth of modulation
Chorus Balance #	D100:0W– D0:100W	Volume balance between the direct sound (D) and the chorus sound (W)
Delay Time (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Delay Time (msec)/ Delay Time (note)	1–2600 [msec] note (p. 60)	Adjusts the delay time from the direct sound until the delay sound is heard.

Parameter	Value	Explanation
Delay Feedback #	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative “-” settings will invert the phase.
Delay HF Damp	200–8000 [Hz], BYPASS	Adjusts the frequency above which sound fed back to the effect will be cut (BYPASS : no cut).
Delay Balance #	D100:0W– D0:100W	Adjusts the volume balance between the sound that is sent through the delay (W) and the sound that is not sent through the delay (D).
Level	0–127	Output Level

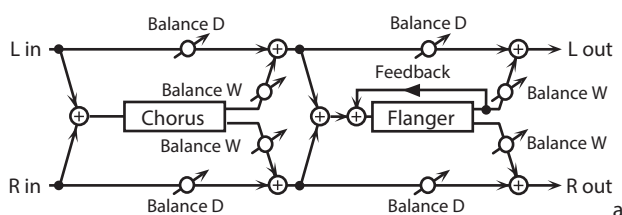
61: FLANGER → DELAY



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	FLN RATE, FLN FEEDBACK, FLN BALANCE, DELAY FEEDBACK, DELAY BALANCE	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob.
Rate Knob	FLN RATE, FLN FEEDBACK, FLN BALANCE, DELAY FEEDBACK, DELAY BALANCE	Specifies the parameter that is controlled by the MODULATION FX [RATE] knob.
Feedback Knob	OFF, FLN RATE, FLN FEEDBACK, FLN BALANCE, DELAY FEEDBACK, DELAY BALANCE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob.
Flanger Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the flanger sound is heard.
Flanger Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Flanger Rate (Hz) #/ Flanger Rate (note) #	0.05–10.00 [Hz] note (p. 60)	Frequency of modulation
Flanger Depth	0–127	Depth of modulation
Flanger Feedback #	-98–+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative “-” settings will invert the phase.
Flanger Balance #	D100:0W– D0:100W	Volume balance between the direct sound (D) and the flanger sound (W)

Parameter	Value	Explanation
Delay Time (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Delay Time (msec)/ Delay Time (note)	1–2600 [msec] note (p. 60)	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay Feedback #	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative “-” settings will invert the phase.
Delay HF Damp	200–8000 [Hz], BYPASS	Adjusts the frequency above which sound fed back to the effect will be cut (BYPASS : no cut).
Delay Balance #	D100:0W– D0:100W	Adjusts the volume balance between the sound that is sent through the delay (W) and the sound that is not sent through the delay (D).
Level	0–127	Output Level

62: CHORUS → FLANGER



Parameter	Value	Explanation
Switch	OFF, ON	Turns the effect on/off.
Depth Knob	CHORUS RATE, CHORUS BALANCE,	Specifies the parameter that is controlled by the MODULATION FX [DEPTH] knob .
Rate Knob	FLN RATE, FLN FEEDBACK, FLN BALANCE	Specifies the parameter that is controlled by the MODULATION FX [RATE] knob .
Feedback Knob	OFF, CHORUS RATE, CHORUS BALANCE, FLN RATE, FLN FEEDBACK, FLN BALANCE	Specifies the parameter that is controlled by the MODULATION FX [FEEDBACK] knob .
Chorus Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Chorus Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Chorus Rate (Hz) #/ Chorus Rate (note) #	0.05–10.00 [Hz] note (p. 60)	Modulation frequency of the chorus effect
Chorus Depth	0–127	Modulation depth of the chorus effect

Parameter	Value	Explanation
Chorus Balance #	D100:0W– D0:100W	Volume balance between the direct sound (D) and the chorus sound (W)
Flanger Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the flanger sound is heard.
Flanger Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Flanger Rate (Hz) #/ Flanger Rate (note) #	0.05–10.00 [Hz] note (p. 60)	Modulation frequency of the flanger effect
Flanger Depth	0–127	Modulation depth of the flanger effect
Flanger Feedback #	-98–+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative “-” settings will invert the phase.
Flanger Balance #	D100:0W– D0:100W	Adjusts the volume balance between the sound that is sent through the flanger (W) and the sound that is not sent through the flanger (D).
Level	0–127	Output Level

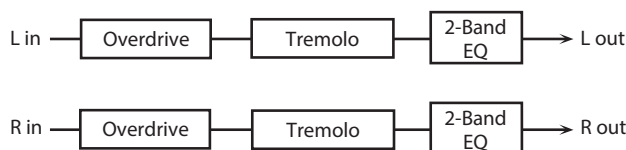
Note

Tremolo/Amp Simulator Parameters

The Tremolo/Amp Simulator effect is included in the tone.

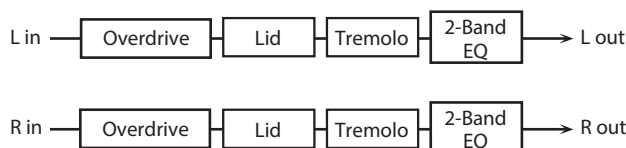
You can choose from six types of tremolo and amp simulator that are optimized in different ways.

1: NORMAL



Parameter	Value	Explanation
OD Switch	OFF, ON	Overdrive on/off
OD Drive	0–127	Degree of distortion
Tremolo Switch	OFF, ON	Tremolo on/off
Tremolo Mod Wave	TRI, SQR, SIN, SAW1, SAW2, TRP	Modulation Wave TRI: triangle wave SQR: square wave SIN: sine wave SAW1/2: sawtooth wave TRP: Trapezoidal wave
Tremolo Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Tremolo Rate (Hz)/ Tremolo Rate (note)	0.05–10.00 [Hz] note (p. 60)	Rate of the tremolo effect
Tremolo Depth	0–127	Depth of the tremolo effect
Low Gain	-15–+15 [dB]	Gain of the low range
High Gain	-15–+15 [dB]	Gain of the high range
Level	0–127	Output Level

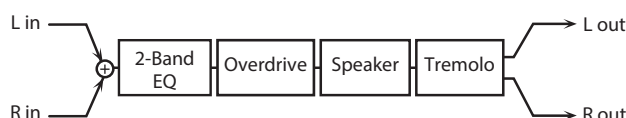
2: A.PIANO



Parameter	Value	Explanation
Lid	1–7	Amount by which the lid of the grand piano is open. Higher settings open the lid more, producing a brighter sound.
OD Switch	OFF, ON	Overdrive on/off
OD Drive	0–127	Degree of distortion
Tremolo Switch	OFF, ON	Tremolo on/off
Tremolo Mod Wave	TRI, SQR, SIN, SAW1, SAW2, TRP	Modulation Wave TRI: triangle wave SQR: square wave SIN: sine wave SAW1/2: sawtooth wave TRP: Trapezoidal wave
Tremolo Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).

Parameter	Value	Explanation
Tremolo Rate (Hz)/ Tremolo Rate (note)	0.05–10.00 [Hz] note (p. 60)	Rate of the tremolo effect
Tremolo Depth	0–127	Depth of the tremolo effect
Low Gain	-15–+15 [dB]	Gain of the low range
High Gain	-15–+15 [dB]	Gain of the high range
Level	0–127	Output Level

3: E. PIANO



Parameter	Value	Explanation
Bass	-50–+50	Gain of the low range
Treble	-50–+50	Gain of the high range
Tremolo Switch	OFF, ON	Tremolo on/off
Tremolo Type	OLD CASE MONO, OLD CASE STEREO, NEW CASE, DYNO, WURLY	Type of tremolo effect
Tremolo Speed (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Tremolo Speed (Hz)/ Tremolo Speed (note)	0.05–10.00 [Hz] note (p. 60)	Rate of the tremolo effect
Tremolo Depth	0–127	Depth of the tremolo effect
Tremolo Shape	0–20	Adjusts the waveform of the tremolo.
AMP Switch	OFF, ON	If this is off, speaker and overdrive are not applied.
Speaker Type	LINE, OLD, NEW, WURLY, TWIN	Type of speaker * If LINE is selected, the sound will not be sent through the speaker simulation.
OD Drive	0–127	Degree of distortion
Level	0–127	Output Level

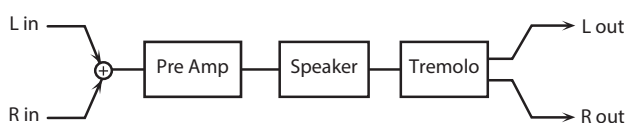
Characteristics of the tremolo types

Tremolo types of differing character are available, allowing you to reproduce the character of classic electric pianos when combined with an electric piano sound.

Tremolo/Amp Simulator Parameters

Type	Explanation
OLD CASE MONO	Used in conjunction with TINE EP, this simulates an early model of a classic electric piano of the 60s.
OLD CASE STEREO	Used in conjunction with TINE EP, this simulates a classic electric piano sound of the early 70s.
NEW CASE	Used in conjunction with TINE EP, this simulates a classic electric piano sound of the late 70s and early 80s.
DYNO	This model allows you to vary the shape of the tremolo waveform. Used in conjunction with TINE EP, this simulates an electric piano sound used in many recordings of the early 80s.
WURLY	Used in conjunction with REED E. PIANO, this simulates a classic electric piano sound of the 60s.

4: GUITAR AMP



Parameter	Value	Explanation
Pre Amp Switch	OFF, ON	Turns the amp switch on/off.
Pre Amp Type	JC-120, CLEAN TWIN, MATCH DRIVE, BG LEAD, MS1959I, MS1959II, MS1959I+II, SLDN LEAD, METAL 5150, METAL LEAD, OD-1, OD-2 TURBO, DISTORTION, FUZZ	Type of guitar amp
Pre Amp Volume	0–127	Volume and amount of distortion of the amp
Pre Amp Master	0–127	Volume of the entire pre-amp
Pre Amp Gain	Low, Middle, High	Amount of pre-amp distortion
Pre Amp Bass	0–127	Tone of the bass/mid/treble frequency range
Pre Amp Middle	0–127	* Middle cannot be set if "Match Drive" is selected as the Pre Amp Type.
Pre Amp Treble	0–127	
Speaker Switch	OFF, ON	Selects whether the sound will be sent through the speaker simulation (ON) or not (OFF)
Speaker Type	➔ "Specifications of each Speaker Type" (p. 62)	
Tremolo Switch	OFF, ON	Turns the tremolo effect on/off
Tremolo Mod Wave	TRI, SQR, SIN, SAW1, SAW2, TRP	Modulation Wave TRI: triangle wave SQR: square wave SIN: sine wave SAW1/2: sawtooth wave TRP: Trapezoidal wave

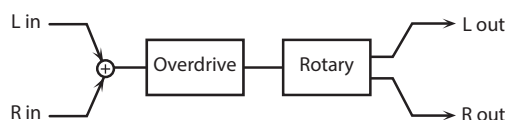
Parameter	Value	Explanation
Tremolo Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Tremolo Rate (Hz)/	0.05–10.00 [Hz]	Rate of the tremolo effect
Tremolo Rate (note)	note (p. 60)	
Tremolo Depth	0–127	Depth of the tremolo effect
Level	0–127	Output Level

Specifications of each Speaker Type

The speaker column indicates the diameter of each speaker unit (in inches) and the number of units.

Type	Cabinet	Speaker	Microphone
SMALL 1	Small open-back enclosure	10	Dynamic
SMALL 2	Small open-back enclosure	10	Dynamic
MIDDLE	Open back enclosure	12 x 1	Dynamic
JC-120	Open back enclosure	12 x 2	Dynamic
BUILT-IN 1	Open back enclosure	12 x 2	Dynamic
BUILT-IN 2	Open back enclosure	12 x 2	Condenser
BUILT-IN 3	Open back enclosure	12 x 2	Condenser
BUILT-IN 4	Open back enclosure	12 x 2	Condenser
BUILT-IN 5	Open back enclosure	12 x 2	Condenser
BG STACK 1	Sealed enclosure	12 x 2	Condenser
BG STACK 2	Large sealed enclosure	12 x 2	Condenser
MS STACK 1	Large sealed enclosure	12 x 4	Condenser
MS STACK 2	Large sealed enclosure	12 x 4	Condenser
METAL STACK	Large double stack	12 x 4	Condenser
2-STACK	Large double stack	12 x 4	Condenser
3-STACK	Large triple stack	12 x 4	Condenser

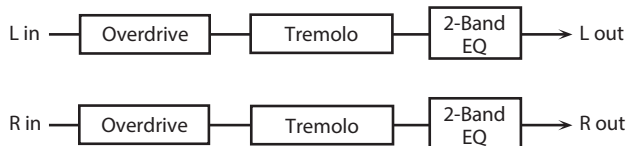
5: ROTARY



Parameter	Value	Explanation
Speed	SLOW, FAST	Simultaneously switch the rotational speed of the low frequency rotor and high frequency rotor. SLOW: Slows down the rotation to the Slow Rate. FAST: Speeds up the rotation to the Fast Rate.
Rotary Switch	OFF, ON	Switches the rotation of the rotary speaker. When this is turned off, the rotation will gradually stop. When it is turned on, the rotation will gradually resume.
Woofer Slow Speed	0.05–10.00 [Hz]	Slow speed (SLOW) of the low frequency rotor
Woofer Fast Speed	0.05–10.00 [Hz]	Fast speed (FAST) of the low frequency rotor

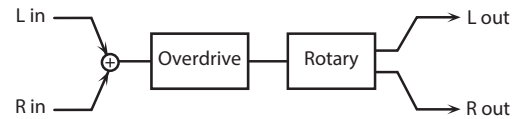
Parameter	Value	Explanation
Woofer Trans Up	0–127	Adjusts the rate at which the woofer rotation speeds up when the rotation is switched from Slow to Fast.
Woofer Trans Down	0–127	Adjusts the rate at which the woofer rotation speeds up when the rotation is switched from Fast to Slow.
Woofer Level	0–127	Volume of the woofer
Tweeter Slow Speed	0.05–10.00 [Hz]	Settings of the tweeter The parameters are the same as for the woofer.
Tweeter Fast Speed	0.05 - 10.00 [Hz]	
Tweeter Trans Up	0–127	
Tweeter Trans Down	0–127	
Tweeter Level	0–127	
Spread	0–10	Sets the rotary speaker stereo image. The higher the value set, the wider the sound is spread out.
Low Gain	-15→+15 [dB]	Gain of the low range
High Gain	-15→+15 [dB]	Gain of the high range
Level	0–127	Output Level
OD Switch	OFF, ON	Overdrive on/off
OD Gain	0–127	Overdrive input level Higher values will increase the distortion.
OD Drive	0–127	Degree of distortion
OD Level	0–127	Volume of the overdrive

6: MKS-20 Tremolo



Parameter	Value	Explanation
OD Switch	OFF, ON	Overdrive on/off
OD Drive	0–127	Degree of distortion
Tremolo Switch	OFF, ON	Turns the tremolo effect on/off
Tremolo Rate (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Tremolo Rate (Hz)/	0.05–10.00 [Hz]	Rate of the tremolo effect
Tremolo Rate (note)	note (p. 60)	
Tremolo Depth	0–15	Depth of the tremolo effect
Low Gain	-15→+15 [dB]	Gain of the low range
High Gain	-15→+15 [dB]	Gain of the high range
Level	0–127	Output Level

7: ROTARY Type2



Parameter	Value	Explanation
Speed	SLOW, FAST	Simultaneously switch the rotational speed of the low frequency rotor and high frequency rotor. SLOW: Slows down the rotation to the Slow Rate. FAST: Speeds up the rotation to the Fast Rate.
Rotary Switch	OFF, ON	Switches the rotation of the rotary speaker. When this is turned off, the rotation will gradually stop. When it is turned on, the rotation will gradually resume.
Woofer Slow Speed	0.05–10.00 [Hz]	Slow speed (SLOW) of the low frequency rotor
Woofer Fast Speed	0.05–10.00 [Hz]	Fast speed (FAST) of the low frequency rotor
Woofer Trans Up	0–127	Adjusts the rate at which the woofer rotation speeds up when the rotation is switched from Slow to Fast.
Woofer Trans Down	0–127	Adjusts the rate at which the woofer rotation speeds up when the rotation is switched from Fast to Slow.
Woofer Level	0–127	Volume of the woofer
Tweeter Slow Speed	0.05–10.00 [Hz]	Settings of the tweeter The parameters are the same as for the woofer.
Tweeter Fast Speed	0.05 - 10.00 [Hz]	
Tweeter Trans Up	0–127	
Tweeter Trans Down	0–127	
Tweeter Level	0–127	
Spread	0–10	Sets the rotary speaker stereo image. The higher the value set, the wider the sound is spread out.
Level	0–127	Output Level
OD Switch	OFF, ON	Overdrive on/off
OD Gain	0–127	Overdrive input level Higher values will increase the distortion.
OD Drive	0–127	Degree of distortion
OD Dry Mix	0–127	Volume of the original sound that's mixed with the overdrive sound
OD Level	0–127	Volume of the overdrive

Sympathetic Resonance Parameters

You can adjust this resonance when the damper pedal is depressed (Sympathetic Resonance).

On an acoustic piano, holding down the damper pedal will allow the remaining strings to resonate in sympathy with the sounds that you played from the keyboard, adding a rich resonance. This feature reproduces that resonance sound.

MEMO

This setting is available only for certain piano tones.

For the tones that correspond to certain piano sounds, refer to “RD-2000EX Sound List” (PDF).

Parameter	Value	Explanation
Switch	OFF, ON	When set to ON, the effect is applied.
Depth	0–127	Depth of the effect
Damper	0–127	Depth to which the damper pedal is pressed (controls the resonant sound)
Pre LPF	16–15000 [Hz], BYPASS	Frequency of the filter that cuts the high-frequency content of the input sound (BYPASS: no cut)
Pre HPF	BYPASS, 16–15000 [Hz]	Frequency of the filter that cuts the low-frequency content of the input sound (BYPASS: no cut)
Peaking Freq	16–15000 [Hz]	Frequency of the filter that boosts/cuts a specific frequency region of the input sound
Peaking Gain	-15–+15 [dB]	Amount of boost/cut produced by the filter at the specified frequency region of the input sound
Peaking Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the frequency region boosted/cut by the Peaking Gain parameter (larger values make the region narrower)
HF Damp Freq	16–15000 [Hz], BYPASS	Frequency at which the high-frequency content of the resonant sound will be cut (BYPASS: no cut)
LF Damp Freq	BYPASS, 16–15000 [Hz]	Frequency at which the low-frequency content of the resonant sound will be cut (BYPASS: no cut)
Level	0–127	Output Level
Damper Offset	0–127	Volume of additional slight resonance when the damper pedal is not pressed

Delay Parameters

This is a delay that is applied to the entire Program. You can choose from five types.

You can also adjust the amount of delay that is applied to each zones by editing the “DLY (Delay Send Level)” (p. 4) from each zones.

Settings common to all Delay types

Parameter	Value	Explanation
Type	DELAY	A stereo delay.
	T-CTRL DELAY	A delay that allows you to smoothly change the delay time.
	DELAY → TREMOLO	Tremolo is applied to the delay sound.
	2TAP DELAY	Delayed sound is heard from two locations that you specify.
	3TAP DELAY	Delayed sound is heard from three locations that you specify.
Level	0–127	Delay volume.

1: DELAY

Parameter	Value	Explanation
Switch	OFF, ON	Delay on/off
Off Mode	IMMEDIATE, REMAIN	Specifies what happens to the delay decays of the previously-played phrase when you turn delay off. IMMEDIATE: The delay sound disappears immediately. REMAIN: The delay sound decays naturally.
Output Select	MAIN, REV, MAIN+REV	Specifies the output destination of the sound from the delay.
Delay (sync sw)	OFF, ON	If this is ON, the modulation is synchronized to the tempo of the rhythm (owner's manual: p. 24).
Delay (msec)/ Delay (note)	1–1300 [msec] note (p. 60)	Adjusts the delay time from the direct sound until the delay sound is heard.
Feedback	-98–+98 [%]	Adjusts the amount of the delay sound that's fed back into the effect. Negative “-” settings invert the phase.
HF Damp	200–8000 [Hz], BYPASS	Adjusts the frequency above which sound fed back to the effect is filtered out (BYPASS: no cut).

2: T-CTRL DELAY

Parameter	Value	Explanation
Switch	OFF, ON	Delay on/off

Parameter	Value	Explanation
Off Mode	IMMEDIATE, REMAIN	Specifies what happens to the delay decays of the previously-played phrase when you turn delay off. IMMEDIATE: The delay sound disappears immediately. REMAIN: The delay sound decays naturally.
Output Select	MAIN, REV, MAIN+REV	Specifies the output destination of the sound from the delay.
Delay (sync sw)	OFF, ON	If this is on, the delay is synchronized with the tempo.
Delay (msec)/ Delay (note)	1–1300 [msec] note (p. 60)	Adjusts the delay time from the direct sound until the delay sound is heard.
Acceleration	0–15	Specifies the time over which the current delay time changes to the newly specified delay time when you change the delay time. This changes the speed of the pitch change as well as the delay time.
Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200–8000 [Hz], BYPASS	Adjusts the frequency above which sound fed back to the effect is filtered out (BYPASS: no cut).

3: DELAY“ TREMOLO

Parameter	Value	Explanation
Switch	OFF, ON	Delay on/off
Off Mode	IMMEDIATE, REMAIN	Specifies what happens to the delay decays of the previously-played phrase when you turn delay off. IMMEDIATE: The delay sound disappears immediately. REMAIN: The delay sound decays naturally.
Output Select	MAIN, REV, MAIN+REV	Specifies the output destination of the sound from the delay.
Input Mode	MONAURAL, STEREO	MONAURAL: The input is mixed to mono. STEREO: The input is stereo.
Delay (sync sw)	OFF, ON	If this is on, the delay is synchronized with the tempo.
Delay (msec)/ Delay (note)	1–1300 [msec] note (p. 60)	Adjusts the delay time from the direct sound until the delay sound is heard.

Parameter	Value	Explanation
Feedback	-98--+98 [%]	Adjusts the amount of the delay sound that's fed back into the effect. Negative "-" settings invert the phase.
HF Damp	200–8000 [Hz], BYPASS	Adjusts the frequency above which sound fed back to the effect is filtered out (BYPASS: no cut).
Tremolo Switch	OFF, ON	Tremolo on/off
Tremolo Mod Wave	TRI, SQR, SIN, SAW1, SAW2, TRP	Modulation Wave TRI : triangle wave SQR : square wave SIN : sine wave SAW1/2 : sawtooth wave TRP : Trapezoidal wave
Tremolo Rate (sync sw)	OFF, ON	If this is on, the tremolo is synchronized with the tempo.
Tremolo Rate (Hz)/ Tremolo Rate (note)	0.05–10.00 [Hz] note (p. 60)	Rate of the tremolo effect
Tremolo Depth	0–127	Modulation depth of the flanger effect

4: 2TAP DELAY

Parameter	Value	Explanation
Switch	OFF, ON	Delay on/off
Off Mode	IMMEDIATE, REMAIN	Specifies what happens to the delay decays of the previously-played phrase when you turn delay off. IMMEDIATE: The delay sound disappears immediately. REMAIN: The delay sound decays naturally.
Output Select	MAIN, REV, MAIN+REV	Specifies the output destination of the sound from the delay.
Delay (sync sw)	OFF, ON	If this is on, the delay is synchronized with the tempo.
Delay (msec)/ Delay (note)	1–1300 [msec] note (p. 60)	Adjusts the delay time from the direct sound until the delay sound is heard.
Feedback	-98--+98 [%]	Adjusts the amount of the delay sound that's fed back into the effect. Negative "-" settings invert the phase.
HF Damp	200–8000 [Hz], BYPASS	Adjusts the frequency above which sound fed back to the effect is filtered out (BYPASS: no cut).
Delay 1 Pan	L64–63R	Pan position of delay 1
Delay 2 Pan	L64–63R	Pan position of delay 2
Delay 1 Level	0–127	Volume of delay 1
Delay 2 Level	0–127	Volume of delay 2

5: 3TAP TAP DELAY

Parameter	Value	Explanation
Switch	OFF, ON	Delay on/off
Off Mode	IMMEDIATE, REMAIN	Specifies what happens to the delay decays of the previously-played phrase when you turn delay off. IMMEDIATE: The delay sound disappears immediately. REMAIN: The delay sound decays naturally.
Output Select	MAIN, REV, MAIN+REV	Specifies the output destination of the sound from the delay.
Delay Time (sync sw)	OFF, ON	If this is on, the delay is synchronized with the tempo.
Delay Time (msec)/ Delay Time (note)	1–2600 [msec] note (p. 60)	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay 1 Feedback	-98--+98 [%]	Adjusts the amount of the delay sound that's fed back into the effect. Negative "-" settings invert the phase.
HF Damp	200–8000 [Hz], BYPASS	Adjusts the frequency above which sound fed back to the effect is filtered out (BYPASS: no cut).
Delay 1 Pan	L64–63R	Pan position of delay 1
Delay 2 Pan	L64–63R	Pan position of delay 2
Delay 3 Pan	L64–63R	Pan position of delay 3
Delay 1 Level	0–127	Volume of delay 1
Delay 2 Level	0–127	Volume of delay 2
Delay 3 Level	0–127	Volume of delay 3

Reverb Parameters

This is a reverb that is applied to the entire Program. You can choose from six types.

You can also adjust the amount of reverb that is applied to each zones by editing the “REV (Reverb Send Level)” (p. 4) from each zones.

Settings common to all Reverb types

Parameter	Value	Explanation
Type		Type of reverb
	1: Room 1	Room 1/2: Reverb that simulates the reverberation of a room
	2: Room 2	
	3: Hall 1	Hall 1/2: Reverb that simulates the reverberation of a hall
	4: Hall 2	
	5: Plate	Plate: Simulation of a plate echo (a reverb device that uses a metal plate)
	6: GM2 Reverb	GM2 Reverb: GM2 reverb
Level	0–127	Volume of the reverb sound

1–5: Room 1/2, Hall 1/2, Plate

Parameter	Value	Explanation
Pre Delay	0–100 [msec]	Adjusts the delay time from the direct sound until the reverb sound is heard.
Time	0.1–10 [sec]	Time length of reverberation
Density	0–127	Density of reverb
Diffusion	0–127	Adjusts the change in the density of the reverb over time.
		The higher the value, the more the density increases with time. (The effect of this setting is most pronounced with long reverb times.)
LF Damp	0–100	Adjusts the low-frequency portion of the reverb.
HF Damp	0–100	Adjusts the high-frequency portion of the reverb.
Spread	0–127	Reverb spread
Tone	0–127	Tonal character of the reverb

6: GM2 Reverb

Parameter	Value	Explanation
Character	SMALL_ROOM, MEDIUM_ROOM, LARGE_ROOM, MEDIUM_HALL, LARGE_HALL, PLATE	Type of reverb
Time	0–127	Time length of reverberation

EQ Parameters

This is a five-band equalizer that is applied to the entire Program.

Parameter	Value	Explanation
Low Gain	-12--+12 [dB]	Gain of the low range
Low Freq	16–16000 [Hz]	Frequency of the low range
Mid1 Gain	-12--+12 [dB]	Gain of the middle range 1
Mid1 Freq	16–16000 [Hz]	Frequency of the middle range 1
Mid1 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the middle range 1 Set a higher value for Q to narrow the range to be affected.
Mid2 Gain	-12--+12 [dB]	Gain of the middle range 2
Mid2 Freq	16–16000 [Hz]	Frequency of the middle range 2
Mid2 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the middle range 2 Set a higher value for Q to narrow the range to be affected.
Mid3 Gain	-12--+12 [dB]	Gain of the middle range 3
Mid3 Freq	16–16000 [Hz]	Frequency of the middle range 3
Mid3 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the middle range 3 Set a higher value for Q to narrow the range to be affected.
High Gain	-12--+12 [dB]	Gain of the high range
High Freq	16–16000 [Hz]	Frequency of the high range
Input Gain	-15--+15 [dB]	Gain of the Input

System Compressor Parameters

This is a stereo compressor (limiter) that is applied to the final output.

With separate settings for the high-frequency range, midrange, and low-frequency range, this reduces inconsistencies in volume levels by compressing the sound when the volume exceeds a preset volume level.

Parameter	Value	Explanation
Compressor Switch	OFF, ON	Turns the compressor on/off .
Type	When you change this parameter, the Compressor parameters will be automatically adjusted to the optimal values. You can make the settings easily by first setting the Compressor Type and then changing only the necessary parameters.	
	HARD COMP	Applies strong compression.
	SOFT COMP	Applies mild compression.
	LOW BOOST	Boosts the low end.
	MID BOOST	Boosts the midrange.
	HI BOOST	Boosts the high end.
	USER	The saved settings are written.
Split Freq Low	40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800 [Hz]	Sets the frequency separating the low-frequency range (LOW) and midrange (MID).
Split Freq High	400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Sets the frequency separating the high-frequency range (HIGH) and midrange (MID).

Common to Low, Mid, and High

Parameter	Value	Explanation
Level	0–24 [dB] (1 dB Step)	Output Level
Attack Time	0–100	Sets the time it takes until the level is compressed after the input exceeds the Threshold.
Release Time	0–100	Sets the time it takes for the compression to be released after the input falls below the Threshold.
Threshold	-60–0 [dB] (1 dB Step)	Sets the level at which compression begins.
Ratio	1:1.0, 1:1.1, 1:1.2, 1:1.4, 1:1.6, 1:1.8, 1:2.0, 1:2.5, 1:3.2, 1:4.0, 1:5.6, 1:8.0, 1:16, 1:INF	Compression Ratio