



**Aerophone Pro**  
AE-30

**Aerophone**  
AE-20

Parameter Guide

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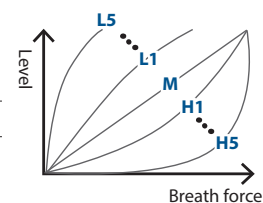
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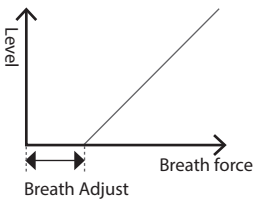
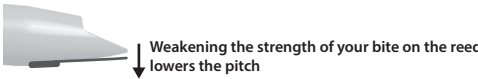


# Settings Used on this Instrument

## System Parameters

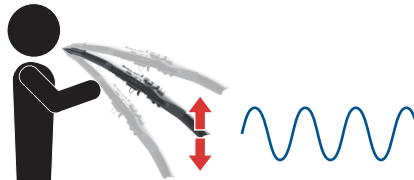
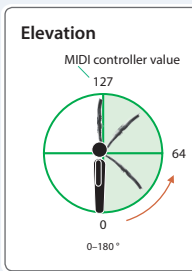
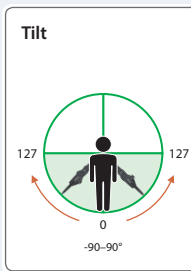
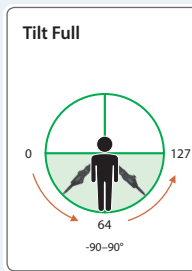
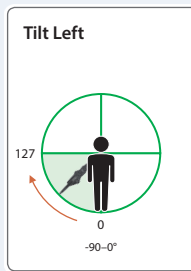
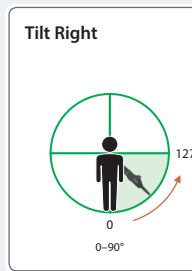
Indication (Parameter)	Value	Explanation
Master Tuning	415.3–466.2 (Hz)	Changes the system tuning. * The displayed value is the frequency of the A key.
Transpose Mode	Switches the operating mode for transpose.	
	System	The System Transpose value is used as the transpose value of the instrument.
Transpose Mode	Scene	The transposition will be as specified by the scene. * When you change System Transpose, the System Transpose value is used even when a transpose value is already set for the scene. When you change the scene afterwards, the scene's transpose value is used.
	These parameters configure the functions for the <b>AE-30</b> [TRANPOSE] knob or the <b>AE-20</b> [VOLUME] knob.	
<b>AE-30</b> Transpose Knob Mode	System Transpose	The System Transpose parameter changes when you operate the knob.
	Speaker Volume	The volume of the built-in speakers changes when you operate the knob.
<b>AE-20</b> Volume Knob Mode	Output Volume	The volume for headphones connected to the PHONES jack, or of the signal output from the OUTPUT jack changes when you operate the knob.
	Speaker & Output	The volume of the built-in speakers and of headphones connected to the PHONES jack, as well as the signal output from the OUTPUT jack simultaneously changes when you operate the knob.
System Transpose	-5 (G)–0 (C)–+6 (F#)	Sets the system transpose value.
Display Contrast	1–5	Sets the display contrast. Larger values make the display brighter.
Display Off Time	Always On, 3sec, 10sec, 30sec, 1–3min	Sets the time it takes for the display to turn off when the instrument is not being used. When set to "Always On," the display is always on. When you press the [SCENE] or [MENU] button while the display is off, the display turns back on.
Auto Off	Always On, 5min, 30min	Sets the time before the instrument automatically turns off. The power to this unit will be turned off automatically after a predetermined amount of time has passed since it was last used for playing music, or its buttons or controls were operated (Auto Off function). If you don't want the unit to turn off automatically, change this setting to "Always On."
Speaker Volume	0–11	Sets the volume of the built-in speakers.
Output Volume	0–11	Specifies the volume that is output from the OUTPUT jack or from headphones connected to the PHONES jack.
Speaker Setting	These parameters are the speaker settings.	
	Off	Sound is not output from the built-in speakers.
	On	Sound is output from the built-in speakers.
Speaker Setting	Auto	Sound is not output from the built-in speakers if headphones or a cable are connected to the PHONES jack.
	Output Mode	Stereo, Mono
Hold Mode	Sets the "hold mode," which sustains notes even after you stop blowing.	
	Off	Notes are not sustained.
	Breath	Notes are sustained at the volume they are played when you blow once. Inhale to stop the note.
Hold Mode	Key	Pressing the performance keys produce notes according to your fingering.
	Specifies how the sound responds to the force of your breath (breath sensitivity).	
	L5–L1	We recommend these settings if you're a beginning wind instrument player. Fortissimo (ff) can be produced even by blowing relatively softly.
Breath Curve	M	This is the usual setting.
	H1–H5	We recommend these settings for experienced wind instrument players. Fortissimo (ff) is produced only when you blow quite strongly.



## Settings Used on this Instrument




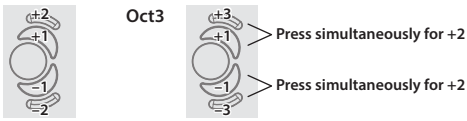
Indication (Parameter)	Value	Explanation
Breath Adjust	1–50	Adjusts the strength of breath at which sound starts being heard. The larger the value, the stronger you must blow to make a sound.
		
Bite Ctrl Mode	These parameters set how the bite sensor controls the sound.	
	Off	Turns off the bite sensor control.
	Sax	Reducing the strength of your bite on the reed makes the pitch fall. 
E-Wind	Cyclically varying the strength of your bite on the reed applies vibrato. 	
Bite Center (Sax)	Auto, 1–70	This sets how much bite is applied to the reed (bite center) when playing normally. When set to "Auto," this is automatically set. * You can also set the bite center by pressing the +2 octave and -2 octave keys at the same time with the mouthpiece in your mouth, as when you're usually playing.
Bite Sense (E-Wind)	1–10	Sets the sensitivity when Bite Ctrl Mode is set to "E-Wind." Increase this value if you want to make the effect easier to apply; lower this value if the effect is too strong.
Bite Calibration	Use this parameter to adjust (calibrate) the bite sensor.	
		<ol style="list-style-type: none"> <li>Select "Bite Calibration," and then press the [MENU] button.</li> <li>Use your fingers to hold the reed while "◀NO YES▶" is shown.</li> <li>Press the [▶] (YES) button while still holding the reed. "Adjusting now..." appears, and calibration begins automatically. The internal digital volume is automatically adjusted.</li> <li>Press the [MENU] button when "Press MENU to save" appears. "Saving..." → "Complete" appears, and the calibration value is saved.</li> <li>Take your fingers off the reed.</li> </ol>
Bend Range Source	System, Scene	Selects whether the bend range in system settings (System) or the bend range set in each scene (Scene) is used when operating the pitch bend.
Bend Range Bite Dn	0–2400 (cent)	Sets the bend range in cents, when "Bend Down" or "Bend Up" is assigned to the bite controller. You can set this differently for the "Sax" and "E-Wind" values of the Bite Ctrl Mode parameter.
Bend Range Bite Up		* This is enabled when the Bend Range Source is "System."
Bend Range Ctrl	0–24	Sets the bend range in semitones, when "Bend Up" or "Bend Down" is assigned to the thumb lever or to another controller.
Bend Range Mode	These parameters switch between bend range modes.	
	Normal	Either the Bend Range Bite, <b>AE-30</b> Bend Range Motion or Bend Range Ctrl (whichever is larger) is used for the bend range. When you use both bite control and the thumb lever or other bend controls together, the bend range is limited to the maximum or minimum value and does not operate beyond this.
	Advance	Automatically calculates the bend range using the combination of Bend Range Bite, <b>AE-30</b> Bend Range Motion and Bend Range Ctrl.
<b>AE-30</b> Thumb Pad Sense	Off, 1–10	Sets how much the thumb pad affects the sound. Larger values produce a greater effect.




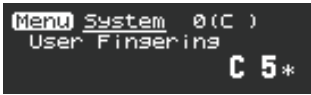
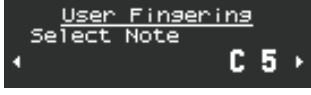
Indication (Parameter)	Value	Explanation			
<b>AE-30</b> Motion Ctrl Mode	These parameters set how the motion sensors control the sound.				
	Off	Turns off the motion sensor control.			
	Normal	Tilting the Aerophone controls the functions that are assigned in the Assign parameters. The tilt detection range is set in Motion_1 Setting and Motion_2 Setting.			
<b>AE-30</b> Motion Ctrl Mode	Vibrato	Lets you controls the pitch when you make cyclic changes to how the Aerophone is tilted. Gives a vibrato-like effect when you repeatedly move the Aerophone up and down. 			
<b>AE-30</b> Motion_1 Setting Motion_2 Setting	These parameters configure the detection range of the motion sensors.				
					
	Elevation	The motion of lifting the Aerophone up is used. This works through the range of tilting the instrument up to 180° upwards.			
	Tilt	The motion of tilting the Aerophone either to the left or to the right is used. This works through the range of tilting the instrument up to 90° to the left or right.			
	Tilt Full	The motion of tilting the Aerophone either to the left or to the right is used. The base value is when the instrument is tilted 90° to the left, and this works through the range of tilting the instrument up to 90° to the right.			
	Tilt Left	The motion of tilting the Aerophone to the left is used. This works through the range of tilting the instrument up to 90° to the left.			
Tilt Right	The motion of tilting the Aerophone to the right is used. This works through the range of tilting the instrument up to 90° to the right.				
<b>AE-30</b> Motion Sense (Vib)	1-10	Sets the sensitivity when Motion Ctrl Mode is set to "Vibrato." Increase this value if you want to make the effect easier to apply; lower this value if the effect is too strong.			
<b>AE-30</b> Bend Range Motion Dn Bend Range Motion Up	0-2400 (cent)	Sets the bend range in cents, when "Bend Up/Down" is assigned to the motion control. You can set this differently for the "Normal" and "Vibrato" values of the Motion Ctrl Mode parameter. * This is enabled when Bend Range Source is "System."			
Asgn Src Breath	System, Scene	Selects whether to use the system settings (System) or the settings in each scene (Scene) for the Assign or MIDI parameter that is assigned to the breath control.			
Asgn Src Bite		Selects whether to use the system settings (System) or the settings in each scene (Scene) for the Assign or MIDI parameter that is assigned to the bite control.			
Asgn Src Lever		Selects whether to use the system settings (System) or the settings in each scene (Scene) for the Assign or MIDI parameter that is assigned to the thumb lever.			
<b>AE-30</b> Asgn Src Thumb Pad		Selects whether to use the system settings (System) or the settings in each scene (Scene) for the Assign or MIDI parameter that is assigned to the thumb pad.			
<b>AE-30</b> Asgn Src Motion		Selects whether to use the system settings (System) or the settings in each scene (Scene) for the Assign or MIDI parameter that is assigned to the motion control.			
Asgn Src S1/S2		Selects whether to use the system settings (System) or the settings in each scene (Scene) for the Assign or MIDI parameter that is assigned to the [S1]/[S2] buttons.			
Asgn Src Key		Selects whether to use the system settings (System) or the settings in each scene (Scene) for the Assign or MIDI parameter that is assigned to the performance keys.			
Harmony Source		Selects whether to use the system harmony settings (System) or the harmony settings in each scene (Scene).			
<b>AE-30</b> Harmony Tune	Scale Tune	The pitches of harmony notes added by the harmony function follow the tuning set with the scale tune function.			
	Just	The pitch of harmony notes that are added when you use the harmony function are tuned in just intonation.			

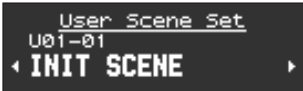
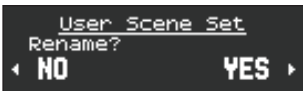
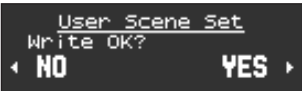
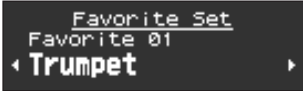
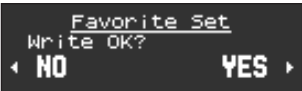
## Settings Used on this Instrument

Indication (Parameter)	Value	Explanation									
<b>AE-30</b> Harmony Type	Normal, Intelligent	Selects the type of harmony.									
Harmony 1 Harmony 2 Harmony 3 Harmony 4	<p>Sets the pitch of the harmony notes. Up to four harmony notes can be added. * This is enabled when the Harmony Source is "System," <b>AE-30</b> the Harmony Type is "Normal."</p> <p>Oct below (-12), 7th Maj below (-11), 7th min below (-10), 6th Maj below (-9), 6th min below (-8), 5th below (-7), Tritone below (-6), 4th below (-5), 3rd Maj below (-4), 3rd min below (-3), 2nd Maj below (-2), 2nd min below (-1), Off, 2nd min above (+1), 2nd Maj above (+2), 3rd min above (+3), 3rd Maj above (+4), 4th above (+5), Tritone above (+6), 5th above (+7), 6th min above (+8), 6th Maj above (+9), 7th min above (+10), 7th Maj above (+11), Oct above (+12)</p>										
<b>AE-30</b> Int. Hrmny Scale	Major, Minor	Sets the scale for intelligent harmony.									
<b>AE-30</b> Int. Hrmny Key	C–B	Sets the root for the intelligent harmony.									
<b>AE-30</b> Int. Harmony 1 Int. Harmony 2 Int. Harmony 3 Int. Harmony 4	<p>Sets the pitch of the harmony notes. Up to four harmony notes can be added. * This is enabled when the Harmony Source is "System," the Harmony Type is "Intelligent."</p> <p>Oct below, 7th below, 6th below, 5th below, 4th below, 3rd below, 2nd below, Off, 2nd above, 3rd above, 4th above, 5th above, 6th above, 7th above, Oct above</p>										
Ctrl Source Select	System	Uses System Control Source 1–4.									
	Scene	Uses Control Source 1–4 for the scene.									
System Ctrl Source 1 System Ctrl Source 2 System Ctrl Source 3 System Ctrl Source 4	Off, CC01–31, CC33–95, Bend, After Touch	Sets the MIDI messages to use for tone control.									
Category Knob Mode	Sets the function of the [CATEGORY] knob.										
	Category	This lets you select a preset scene category by turning the knob. Hold down the [▲] button and turn the knob to select a favorite scene. Hold down the [▼] button and turn the knob to select a user scene bank.									
	User	This lets you select a user scene bank by turning the knob. Hold down the [▲] button and turn the knob to select a preset scene category. Hold down the [▼] button and turn the knob to select a scene that's registered as a favorite.									
Scene Shortcut	Off, On	This lets you select a scene registered as a favorite by turning the knob. Hold down the [▲] button and turn the knob to select a preset scene category. Hold down the [▼] button and turn the knob to select a user scene bank.									
		This turns the shortcut function on/off, which is useful for switching between scenes.									
<table border="1"> <tr> <td><b>Holding down the [SCENE] (▲) or (▼) button</b></td> <td><b>1 – 8</b></td> <td>Select the user scene (U01-01–U01-08)</td> </tr> <tr> <td></td> <td><b>Eb</b></td> <td>Scene number – 1</td> </tr> <tr> <td></td> <td><b>C</b></td> <td>Scene number + 1</td> </tr> </table>			<b>Holding down the [SCENE] (▲) or (▼) button</b>	<b>1 – 8</b>	Select the user scene (U01-01–U01-08)		<b>Eb</b>	Scene number – 1		<b>C</b>	Scene number + 1
<b>Holding down the [SCENE] (▲) or (▼) button</b>	<b>1 – 8</b>	Select the user scene (U01-01–U01-08)									
	<b>Eb</b>	Scene number – 1									
	<b>C</b>	Scene number + 1									
Edit Confirm	Off, On	Sets whether to show a confirmation message (On) or not (Off) when a scene parameter is edited and you select a different scene without saving your user scene.									
Bluetooth	Off, On	Turns the Bluetooth function on/off.									

Indication (Parameter)	Value	Explanation				
Bluetooth ID	Off, 1–9	If you are pairing with your smartphone in a location where there are multiple Aerophone units, you can assign an ID to each unit. When you specify a Device ID, the specified number is added to the end of the device name that is shown on app "Aerophone Pro Editor." (Example: "AE-30 AUDIO 1", "AE-30 1", etc.) * To enable the ID that you set, turn Aerophone's power off and then on.				
BT Audio Pairing	(Pairing Start)	<ol style="list-style-type: none"> <li>Place the smartphone that you want to connect near Aerophone.</li> <li>Press the Aerophone's [MENU] button. The Menu screen appears.</li> <li>Use the [-][+] (◀/▶) buttons to select "BT Audio Pairing," and press the [MENU] button. The cursor moves to the lower line, and the display indicates "Yes"/"No."</li> <li>Use the [+] (A) button to select "Yes."</li> </ol>  <p>The Bluetooth LED blinks, and the Aerophone waits for pairing.</p> <ol style="list-style-type: none"> <li>Turn on the Bluetooth function of your smartphone.</li> <li>Tap "AE-30 AUDIO" or "AE-20 AUDIO" that appears in the smartphone's Bluetooth "DEVICES" field.</li> </ol>  <p>Aerophone and smartphone are paired. When pairing is completed, a display like the following appears.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <table border="1"> <tr> <td>Smartphone</td> <td>"AE-30 AUDIO" or "AE-20 AUDIO" is added to the "My devices" area, and shown as "Connected."</td> </tr> <tr> <td>Aerophone</td> <td>The screen indicates "Connected."</td> </tr> </table>  </div> <p><b>MEMO</b> If the Aerophone's Bluetooth function is off, use MENU to turn "Bluetooth" to "On".</p>	Smartphone	"AE-30 AUDIO" or "AE-20 AUDIO" is added to the "My devices" area, and shown as "Connected."	Aerophone	The screen indicates "Connected."
Smartphone	"AE-30 AUDIO" or "AE-20 AUDIO" is added to the "My devices" area, and shown as "Connected."					
Aerophone	The screen indicates "Connected."					
Bluetooth Reset		Resets the Bluetooth settings. When reconnecting a smartphone that was connected prior to the reset, delete the registration on your smartphone first.				
MIDI Ctrl Sound	Off, On	Sets whether the internal sound engine is on/off when MIDI control mode is on.				
MIDI Ctrl PC	Off, On	When the MIDI control mode is on, this switches the program change message output on/off.				
MIDI Ctrl BS	Off, On	When the MIDI control mode is on, this switches the bank select (MSB, LSB) output on/off.				
MIDI Speed	1–15 (ms)	Sets the interval at which MIDI messages are output when MIDI control mode is on.				
MIDI Velocity	These parameters set the note-on velocity values for MIDI output.					
	Tongued	The velocity value is determined by the strength of your tonguing.				
	Fixed 1–127	The specified value (a fixed value) is used.				
USB Driver	Sets the USB driver.					
	Generic	Choose this if you want to use the generic USB driver provided by your computer's operating system. * Only MIDI is available.				
	Vendor	Choose this if you want to use a USB driver downloaded from the Roland website.				
Key Delay	0–10	Sets the time it takes for the performance keys to actually produce sound when you play them. Unintended notes can be sounded due to inconsistent fingering when you press or release multiple keys simultaneously. The larger the value, the less likely it is for unintended notes to sound.				
Octave Key	The octave keys can be set to ±2 octaves, ±3 octaves, Sax1 or Sax2.					
	Oct2, Oct3	 <p>Press simultaneously for +2 Press simultaneously for +2</p>				
	Sax1	This is the sax-compatible mode. The upper octave key only raises the octave up +1.				
	Sax2	This is the baritone sax-compatible mode. The upper octave key raises the octave up +1. The lower octave key lets you play all the way down to the low A.				

## Settings Used on this Instrument

Indication (Parameter)	Value	Explanation	
Fingering Mode	Specifies the fingering mode. For details on fingering in each mode, refer to "Fingering Chart" (p. 71).		
	Sax	Sax fingering	
	Recorder	Recorder fingering This uses standard recorder fingering, with the pitch range expanded by the table key. With this fingering, the side keys are disabled so that the note does not change even if you inadvertently press the left or right side key.	
	E-Wind	Electronic wind instrument fingering The same "C D E F G A B C" fingering as a standard sax or recorder, with key combinations that raise/lower the pitch by a semitone.	
		1, 2, 3, 4, 5, 6, C	The same "C D E F G A B C" fingering as a standard sax or recorder
		Tc, G#, C#	Raise by a semitone
		Ta, Tf, Eb, B	Lower by a semitone
	Bb	Lower by a whole tone	
		Trumpet	Trumpet fingering This mode is close to the fingering of a typical brass instrument. Right-hand keys 4, 5, and 6 correspond to pistons 1, 2, and 3 of a trumpet.
	Left Hand	Fingering that lets you perform using only the left hand	
	Right Hand	Fingering that lets you perform using only the right hand	
	Flute	Flute fingering This uses standard flute fingering, with the pitch range expanded by the below keys.	
		x, C1, C2, C3	Raise by a semitone
		p, B, C4, Tc, Ta	Lower by a semitone
Bb		Lower by a whole tone	
Clarinet	Clarinet fingering This uses standard clarinet fingering, with the pitch range expanded by the below keys.		
	C1	Raise by a semitone	
	p, C5	Lower by a semitone	
User Fingering	You can add, edit, or delete your preferred fingerings. * Up to 36 fingering settings can be specified. * In this mode, transpose and octave shift settings are ignored. For details on the displayed note name and fingering, refer to "Fingering Chart" (p. 71).		
	<b>How to add or edit</b>		
	<ol style="list-style-type: none"> <li>Select "User Fingering," and then press the [MENU] button.</li> <li>Press a performance key. The note name appears. If there is no corresponding note, indicates "NONE."</li> <li>While fingering the desired key, press the octave key [+2].</li> </ol>		
			
	<ol style="list-style-type: none"> <li>Use the [◀] [▶] buttons to change the note name.</li> <li>Press the [MENU] button. A confirmation message appears.</li> <li>To execute the write, press the [▶] (YES) button. If you decide to cancel the write, press the [◀] (NO) button. An added or disabled fingering is indicated by a "*" to the right side of the note name.</li> </ol>		
			
	<b>How to delete</b>		
	<ol style="list-style-type: none"> <li>Select "User Fingering," and then press the [MENU] button.</li> <li>Press a performance key. The note name appears. An added or disabled fingering is indicated by a "*" in the screen.</li> <li>While fingering the desired key, press the octave key [+2].</li> </ol>		
			
	<ol style="list-style-type: none"> <li>Use the [◀] [▶] buttons to choose "Del."</li> <li>Press the [MENU] button. A confirmation message appears.</li> <li>To execute the write, press the [▶] (YES) button. The "*" in the screen disappears. If you decide to cancel the write, press the [◀] (NO) button.</li> </ol>		

Indication (Parameter)	Value	Explanation							
Key Function	This function lets you disable the performance keys, and shift the pitch up/down a semitone or whole tone.								
	<ol style="list-style-type: none"> <li>1. Select "Key Function" and then press a performance key. The name of the key you pressed is shown.</li> <li>2. Press the [MENU] button to move the cursor to the lower row.</li> <li>3. Select a function.</li> <li>4. Press the [MENU] button to move the cursor to the upper row.</li> </ol>								
	Off	Disables the keys.							
	Sax Key	The keys operate as normal performance keys.							
	Semitone Down	The keys shift down a semitone.							
	Semitone Up	The keys shift up a semitone.							
	Wholetone Down	The keys shift down a whole tone.							
Wholetone Up	The keys shift up a whole tone.								
Language	English, Japanese, Chinese	Specifies the display language.							
User Scene Set	Registers the scene you are currently using as a user scene.								
	<ol style="list-style-type: none"> <li>1. Select "User Scene Set" and then press the [MENU] button.</li> <li>2. Use the [-][+] (◀/▶) buttons to specify the user scene number in which you want to save the currently selected scene.</li> </ol>								
									
	<ol style="list-style-type: none"> <li>3. Press the [MENU] button. A screen appears, allowing you to edit the name of the scene.</li> </ol>								
									
	<ol style="list-style-type: none"> <li>4. If you want to edit the name, press the [▶] (YES) button.</li> </ol>								
									
<table border="1"> <tr> <td>[-] [+] (◀/▶) buttons</td> <td>Moves cursor</td> </tr> <tr> <td>[SCENE] (▲/▼) buttons</td> <td>Changes the character</td> </tr> <tr> <td>[S1] button</td> <td>Insert one character</td> </tr> <tr> <td>[S2] button</td> <td>Delete one character</td> </tr> </table>		[-] [+] (◀/▶) buttons	Moves cursor	[SCENE] (▲/▼) buttons	Changes the character	[S1] button	Insert one character	[S2] button	Delete one character
[-] [+] (◀/▶) buttons	Moves cursor								
[SCENE] (▲/▼) buttons	Changes the character								
[S1] button	Insert one character								
[S2] button	Delete one character								
<ol style="list-style-type: none"> <li>5. Press the [MENU] button. A confirmation message appears.</li> </ol>									
<ol style="list-style-type: none"> <li>6. To write the scene, press the [+] (▶) button. If you decide not to write, press the [-] (◀) button.</li> </ol>									
Favorite Set	Registers the scene you are currently selecting as a favorite.								
	<ol style="list-style-type: none"> <li>1. Select "Favorite Set" and then press the [MENU] button.</li> <li>2. Use the [-][+] (◀/▶) buttons or [SCENE CATEGORY] knob to specify the favorite scene number in which you want to save the currently selected scene.</li> </ol>								
									
	<ol style="list-style-type: none"> <li>3. Press the [MENU] button. A confirmation message appears.</li> </ol>								
									
<ol style="list-style-type: none"> <li>4. To write the scene, press the [+] (▶) button. If you decide not to write, press the [-] (◀) button. After writing is completed, the scene that you wrote is shown.</li> </ol>									
Factory Reset	Returns the system settings to their factory-set state. This operation does not erase the user scene/tones/ <b>AE-30</b> sample.								
User Scene Clear	Erases all user scenes/tones/ <b>AE-30</b> samples that are registered.								
Version	Displays the version of the unit's system program.								

## Scene Parameters

Indication (Parameter)	Value	Explanation
Scene Volume	0–127	Specifies the volume of each scene.
Scene Transpose	-5 (G)–0 (C)–+6 (F#)	Specifies the transposition (pitch shift) of each scene. * If the system parameter's Transpose Mode is "Scene," this transpose value is applied when you select the scene. * When you change System Transpose after selecting a scene, the System Transpose value is used as the transpose value of the instrument.
Scene Octave Shift	-3–0–+3	Specifies the octave shift setting of the scene.
Scene Chorus	0–127	Sets the chorus depth for the scene.
Scene Reverb	0–127	Sets the reverb depth for the scene.
Scene Delay	0–127	Sets the delay depth for the scene.
Scene IFX Sw	Off, On	Switches the IFX on/off for the scene.
All Effects Off	–	Turns off all effects (chorus, reverb, delay and MFX) set for the scene. To turn all effects off, press the [MENU] button and then press the [▶] button.
Scale Tune Type	CUSTOM	Custom: This lets you create a custom scale.
	EQUAL	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.
	PYTHAGORE	Pythagorean: This scale, devised by the philosopher Pythagoras, eliminates dissonance in fourths and fifths. Dissonance is produced in thirds, but melodies are euphonious.
	KIRNBERGE	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.
	WERCKMEIS	Werckmeister: This is a combination of the meantone and Pythagorean scales. Performances are possible in all keys (first technique, III).
	ARABIC 1 ARABIC 2	Arabic Scale 1: This scale is suitable for Arabic music. Arabic Scale 2: This scale is suitable for Arabic music.
Scale Tune Key	C–B	Sets the keynote of the scale tune.
Scale Tune 1–12	-64–+63	Finely adjusts the pitch of the scale tune.

## Assign Parameters

You can assign functions to controllers such as the buttons and the thumb lever, and specify how the functions are controlled.

Maximum no. of assignable functions per controller	
Breath	8
Bite Up/Down, <b>AE-30</b> Thumb Pad	4
Lever Up/Down	2
<b>AE-30</b> Motion	2
S1, S2, Side Key	2

\* The Assign parameters work when the settings in "Asgn Src" (assign source) of each controller of the system are set to "System." If Asgn Src is set to "Scene," each scene's assignment settings are used (p. 5).

### Assigning a continuously-variable controller (**AE-30** Breath\_1–Motion\_2 / **AE-20** Breath\_1–LeverUp\_2)

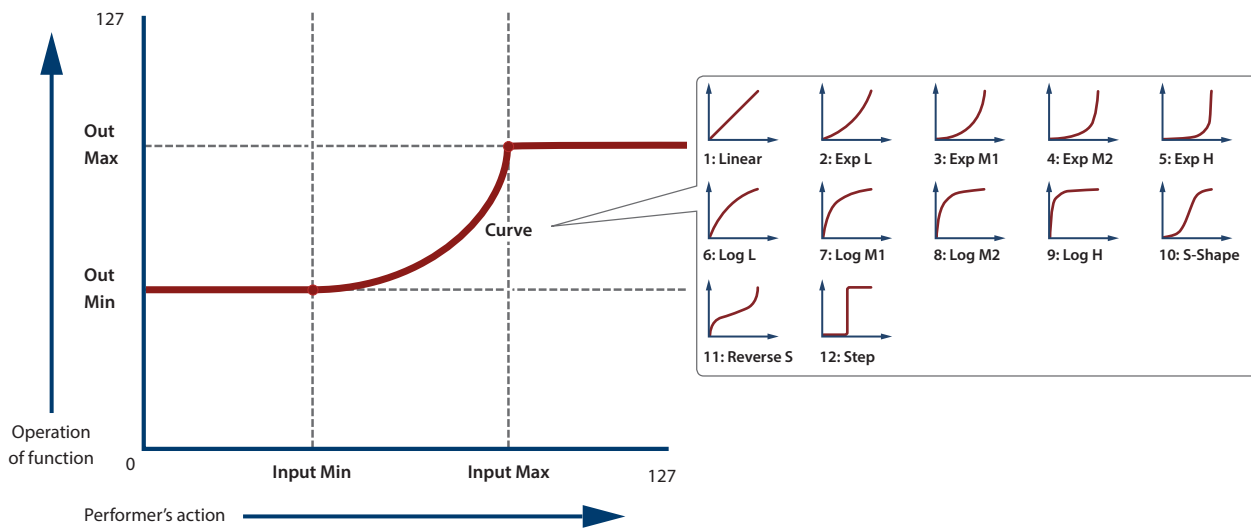
\* Indications of "\*\*\*\*" in the table will contain the following names. The first parameter for Breath is shown as "Breath\_1", the second parameter for S1 is shown as "S1\_2" and so on.

Breath\_1–8, BiteDn\_1–4, BiteUp\_1–4, LeverDn\_1–2, LeverUp\_1–2, **AE-30** ThumbPad\_1–4, **AE-30** Motion\_1–2

\* For controllers whose Func parameter is "Off," their parameters related to the assign settings are not shown.

Indication (Parameter)	Value	Explanation
*** Func	See "Assign Function List" (p. 12)	Specify the function that is assigned to a continuously-operated controller.
*** In Min	0-127	Specify the minimum value (Min) and maximum value (Max) in which controller operations are effective. → "Function assignment (continuous operation)"
*** In Max		
*** Out Min		
*** Out Max		
*** Mode	Specifies the operation mode.	
	Latch	Each operation switches between Output Min Value and Output Max Value.
	Momentary	The function operates like a graph "Function assignment (continuous operation)," according to how you operate the controller.
*** Curve	Specifies the operation curve when the operation mode is "Momentary."	

**Function assignment (continuous operation)**



**Assigning a switch-type controller (S1\_1-Ta\_2)**

\* Indications of "\*\*\*\*" in the table will contain the following names.

S1\_1-2, S2\_1-2, X\_1-2, C1\_1-2, C2\_1-2, C3\_1-2, C4\_1-2, C5\_1-2, Tc\_1-2, Ta\_1-2

\* For controllers whose Func parameter is "Off," their parameters related to the assign settings are not shown.

Indication (Parameter)	Value	Explanation
*** Func	See "Assign Function List"	Specifies the function that is assigned when each controller is pressed.
*** Release Val	0-127	Specify the value when you take your finger off the button (Release) and the value when you press the button (Press).
*** Press Val		
*** Mode	Specifies the operation mode.	
	Latch	Each time you press the button, the Press Value and Release Value alternate.
	Momentary	The Press Value is applied while the button is pressed, and the Release Value is applied while the button is released.



## Assign Function List

Value	Range	Explanation	Remarks
Off		No function is assigned.	
CC 01–31, CC33–95	0–127	Control change	
Bend Down	0–127	Bend down	
Bend Up	0–127	Bend up	
After Touch	0–127	After touch (Channel Key Pressure)	
Scene Down	---	Select previous scene	Not available for breath or bite control
Scene Up	---	Select next scene	
Favorite Down	---	Select the previous favorite scene	
Favorite Up	---	Select the next favorite scene	
Chorus Sw	Off, On	Turns the chorus on.	
Reverb Sw	Off, On	Turns the reverb on.	
Delay Sw	Off, On	Turns the delay on.	
IFX Sw	Off, On	Turns the IFX on.	
Unison Sw	Off, On	Turns unison on.	
Oct Down	---	Octave down	
Oct Up	---	Octave up	
Transpose Down	---	Transpose down (0 → -1 → ... -5 → +6 ... )	
Transpose Up	---	Transpose up (0 → +1 → ... +6 → -5 ... )	
Drone Sw	Off, On	Turns the drone function on.	
Harmony Sw	Off, On	Turns the harmony on.	
X-Fade	0–127	Crossfade	
<b>AE-30</b> Int. Hrmny Scale	Off, On	Sets the scale for intelligent harmony. When this is "Off", a major scale is used; and when this is "On", a minor scale is used.	Not available for breath or bite control
<b>AE-30</b> Key Set	Off, On	When this is "On", the note that you play is the key note (first note) of the scale tune or intelligent harmony. No sound is played while this is on.	
Scale Tune Sw	Off, On	Turns the scale tune on.	

## MIDI Parameters

You can assign a MIDI control function to each controller, and specify how control occurs.

Maximum no. of assignable functions per controller	
Breath	8
Bite, <b>AE-30</b> Thumb Pad	4
Lever Up/Down	2
<b>AE-30</b> Motion	2
S1, S2, Side Key	2

\* As with Assign, the MIDI control parameters work when the settings in "Asgn Src" (assign source) of each controller of the system are set to "System."  
If Asgn Src is set to "Scene," each scene's MIDI control settings are used (p. 5).

## Assigning a continuously-variable controller (AE-30 Breath\_1–Motion\_2 / AE-20 Breath\_1–LeverUp\_2)

\* Indications of "\*\*\*\*" in the table will contain the following names.

Breath\_1–8, BiteDn\_1–4, BiteUp\_1–4, LeverDn\_1–2, LeverUp\_1–2, AE-30 ThumbPad\_1–4, AE-30 Motion\_1–2

\* For controllers whose Func parameter is "Off," their parameters related to the assign settings are not shown.

Indication (Parameter)	Value	Explanation
*** Func	See "Assign Function (MIDI) List" (p. 13)	Specify the function that is assigned to a continuously-operated controller.
*** In Min	0–127	Specify the minimum value (Min) and maximum value (Max) in which controller operations are effective.
*** In Max		
*** Out Min	0–127	Specify the minimum value (Min) and maximum value (Max) in which the assigned function operates.
*** Out Max		
*** Mode	Specifies the operation mode.	
	Latch	Each operation switches between Output Min Value and Output Max Value.
	Momentary	The function operates like a graph "Function assignment (continuous operation)," according to how you operate the controller.
*** Curve	Specifies the operation curve when the operation mode is "Momentary."	

## Assigning a switch-type controller (S1\_1–Ta\_2)

\* Indications of "\*\*\*\*" in the table will contain the following names.

S1\_1–2, S2\_1–2, X\_1–2, C1\_1–2, C2\_1–2, C3\_1–2, C4\_1–2, C5\_1–2, Tc\_1–2, Ta\_1–2

\* For controllers whose Func parameter is "Off," their parameters related to the assign settings are not shown.

Indication (Parameter)	Value	Explanation
*** Func	See "Assign Function (MIDI) List" (p. 13)	Specifies the function that is assigned when each controller is pressed.
*** Release Val	0–127	Specify the value when you take your finger off the button (Release) and the value when you press the button (Press).
*** Press Val		
*** Mode	Specifies the operation mode.	
	Latch	Each time you press the button, the Press Value and Release Value alternate.
	Momentary	The Press Value is applied while the button is pressed, and the Release Value is applied while the button is released.

## Assign Function (MIDI) List

Value	Variable range	Explanation	Remarks
Off		No function is assigned. The side keys follow the fingering mode settings.	
CC 01–31, CC33–95	0–127	Control change	
Bend Down	00 00–00 40	Bend down	
Bend Up	00 40–7F 7F	Bend up	
After Touch	0–127	After touch (Channel Key Pressure)	
Drone Sw	Off, On	Turns the drone function on.	Not available for breath or bite control
Harmony Sw	Off, On	Turns the harmony on.	
Start/Stop	Off, On	Outputs a start (FA)/stop (FC) signal.	Not available for breath or bite control

# Data Backup and Restore Operations

There are two types of user settings that can be backed up and restored: system settings and scene settings.

System Settings	<ul style="list-style-type: none"><li>• Various settings for the unit itself</li></ul>
Scene Settings	<ul style="list-style-type: none"><li>• User scene</li><li>• User tone</li><li>• Multisample</li><li>• User sample</li></ul>

## Items Required

USB flash drive (Type-C)

## Formatting a USB Flash Drive

The Aerophone only recognizes USB flash drives that are formatted with the FAT32 file system.

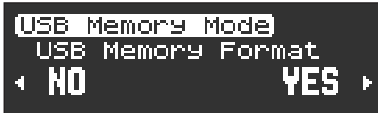
If the instrument doesn't recognize your USB flash drive, try using a USB flash drive that has been formatted with the FAT32 file system on your computer.

### 1. Hold down [MENU] button and turn on the power.

Continue to hold down the [MENU] button until the Roland logo disappears.

### 2. Connect the USB flash drive to the USB port on the unit.

### 3. Press the [▶] button to select "USB Memory Format," and press the [MENU] button.



### 4. To execute formatting, press the [▶] button to select "YES." If you decide to cancel, press the [◀] button to select "NO."

Selecting "YES" displays a confirmation screen.



### 5. Press the [MENU] button.

"Executing..." is displayed on the screen and the USB flash drive is formatted.

When the operation is completed, the display indicates "Completed."

Press the [MENU] button to return to the USB Memory Format screen.

### 6. Turn off the power and disconnect the USB flash drive.

## Backing Up/Restoring System Settings

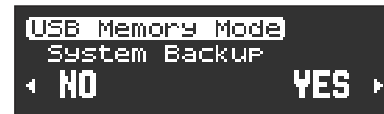
### Backup

#### 1. Hold down [MENU] button and turn on the power.

Continue to hold down the [MENU] button until the Roland logo disappears.

#### 2. Connect the USB flash drive to the USB port on the unit.

#### 3. Press the [◀] [▶] buttons to select "System Backup," and press the [MENU] button.



#### 4. Press the [▶] button to select "YES." If you decide to cancel, press the [◀] button to select "NO."

#### 5. Enter the file name.



Press the [◀] [▶] buttons to move the cursor, then press [▲] [▼] buttons to input the characters. Use [S1] button to insert one character and [S2] button to delete it.

#### 6. Press the [MENU] button.

"Write OK ?" is displayed on the screen.

#### 7. To execute the backup operation, press the [▶] button to select "YES." If you decide to cancel, press the [◀] button to select "NO."

"Writing..." is displayed on the screen and the backup operation is executed.

When the operation is finished, "Complete" appears and then the display returns to the System Backup screen.

#### 8. Turn off the power and disconnect the USB flash drive.

## Restore

### 1. Hold down [MENU] button and turn on the power.

Continue to hold down the [MENU] button until the Roland logo disappears.

### 2. Connect the USB flash drive containing the backed-up data to the USB port on the unit.

### 3. Press the [◀] [▶] buttons to select "System Restore," and press the [MENU] button.

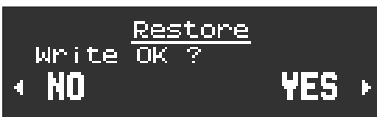


### 4. Press the [▶] button to select "YES." If you decide to cancel, press the [◀] button to select "NO."

### 5. Press the [◀] [▶] buttons to select the backed-up file, and press the [MENU] button.



A confirmation screen appears.



### 6. To execute the restore operation, press the [▶] button to select "YES." If you decide to cancel, press the [◀] button to select "NO."

"Writing..." is displayed on the screen and the restore operation is executed.

When the operation is completed, the display indicates "Completed."

Press the [MENU] button to return to the System Restore screen.

\* If files could not be read in correctly, "Read Error!" is displayed. Verify the connection of the USB flash drive, then carry out the restore operation again. Also, if the backed-up data of the scene setting is selected at "System Restore," "Read Error!" is displayed.

### 7. Turn off the power and disconnect the USB flash drive.

## Backing Up/Restoring Scene Settings

### Backup

### 1. Hold down [MENU] button and turn on the power.

Continue to hold down the [MENU] button until the Roland logo disappears.

### 2. Connect the USB flash drive to the USB port on the unit.

### 3. Press the [◀] [▶] buttons to select "Scene Backup," and press the [MENU] button.



### 4. Press the [▶] button to select "YES." If you decide to cancel, press the [◀] button to select "NO."

### 5. Enter the file name.



Press the [◀] [▶] buttons to move the cursor, then press [▲] [▼] buttons to input the characters. Use [S1] button to insert one character and [S2] button to delete it.

### 6. Press the [MENU] button.

"Write OK?" is displayed on the screen.

### 7. To execute the backup operation, press the [▶] button to select "YES." If you decide to cancel, press the [◀] button to select "NO."

"Writing..." is displayed on the screen and the backup operation is executed.

When the operation is finished, "Complete" appears and then the display returns to the Scene Backup screen.

### 8. Turn off the power and disconnect the USB flash drive.

### Restore

---

**1. Hold down [MENU] button and turn on the power.**

Continue to hold down the [MENU] button until the Roland logo disappears.

**2. Connect the USB flash drive containing the backed-up data to the USB port on the unit.**

**3. Press the [◀] [▶] buttons to select "Scene Restore," and press the [MENU] button.**

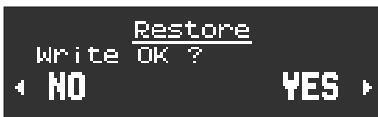


**4. Press the [▶] button to select "YES." If you decide to cancel, press the [◀] button to select "NO."**

**5. Press the [◀] [▶] buttons to select the backed-up file, and press the [MENU] button.**



A confirmation screen appears.



**6. To execute the restore operation, press the [▶] button to select "YES." If you decide to cancel, press the [◀] button to select "NO."**

"Writing..." is displayed on the screen and the restore operation is executed.

When the operation is completed, the display indicates "Completed."

Press the [MENU] button to return to the Scene Restore screen.

- \* If files could not be read in correctly, "Read Error!" is displayed. Verify the connection of the USB flash drive, then carry out the restore operation again. Also, if the backed-up data of the system setting is selected at "Scene Restore," "Read Error!" is displayed.

**7. Turn off the power and disconnect the USB flash drive.**

# Exporting and Importing User Scenes

You can now export user scenes or import user scenes from another AE-30 or AE-20.

\* If this is the first time you're using the USB flash drive, format it on the Aerophone (p. 14).

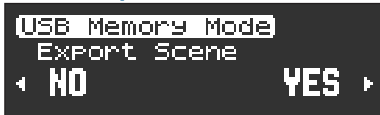
## AE-30 Exporting User Scenes

There are two ways to export the user scenes, either by selecting more than one target user scene from all of the scenes, or by selecting one target bank.

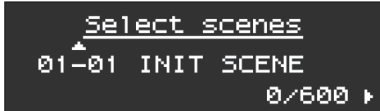
\* The target tones or samples are also automatically exported when the user scene is using a user tone, or when a user tone that's being used by a user scene contains a user sample.

## Selecting from All User Scenes

1. **While holding down the [MENU] button, turn on the power.**  
Hold down the [MENU] button until the Roland logo disappears.
2. **Insert the USB flash drive into the USB port of this instrument.**
3. **Use the [◀] [▶] buttons to select "Export Scene", and then press the [MENU] button.**



4. **Press the [▶] button and select "YES".**  
To cancel, press the [◀] button and select "NO".
5. **Select the user scenes to export.**



Use the [▲] [▼] buttons to switch between scenes, use the [▶] button to select, and use the [◀] button to disregard your selection.

A [+] mark is shown on the selected user scene number.

6. **Press the [MENU] button.**
7. **Enter the file name.**



Use the [◀] [▶] buttons to move the cursor, and use the [▲] [▼] buttons to input the characters.

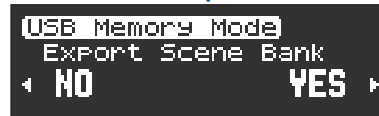
Press the [S1] button to insert a character, and press the [S2] button to delete a character.

8. **Press the [MENU] button.**  
"Export OK?" is shown on the screen.
9. **To continue exporting, press the [▶] button and then select "YES".**  
To cancel, press the [◀] button and select "NO".  
When export is finished, the message "Completed" appears.

10. **Press the [MENU] button to return to the Export Scene screen.**

## Selecting a Single Bank

1. **While holding down the [MENU] button, turn on the power.**  
Hold down the [MENU] button until the Roland logo disappears.
2. **Insert the USB flash drive into the USB port of this instrument.**
3. **Use the [◀] [▶] buttons to select "Export Scene Bank", and then press the [MENU] button.**



4. **Press the [▶] button and select "YES".**  
To cancel, press the [◀] button and select "NO".
5. **Select the bank to export.**  
Use the [▲] [▼] buttons to switch between banks, and press the [MENU] button.



6. **Enter the file name.**  
Use the [◀] [▶] buttons to move the cursor, and use the [▲] [▼] buttons to input the characters.  
Press the [S1] button to insert a character, and press the [S2] button to delete a character.
7. **Press the [MENU] button.**  
"Export OK?" is shown on the screen.
8. **To continue exporting, press the [▶] button and then select "YES".**  
To cancel, press the [◀] button and select "NO".  
When export is finished, the message "Completed" appears.
9. **Press the [MENU] button to return to the Export Scene Bank screen.**

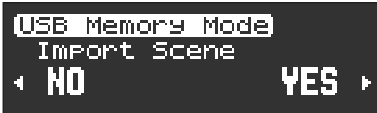
## Importing User Scenes

There are two ways to import, either by selecting the user scenes one at a time or by overwriting a bank.

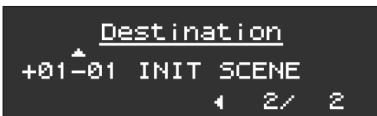
- \* Only the AE-30 supports the use of scenes that have user samples or multisamples.
- \* You can only export the imported user samples or multisamples via the steps listed in “Backing Up/Restoring Scene Settings” (p. 15) or “**AE-30** Exporting User Scenes” (p. 17).

### Selecting One User Scene at a Time

1. **Save the SVD file that contains the tones to the “ROLAND/SOUND” folder on your USB flash drive.**
2. **While holding down the [MENU] button, turn on the power.**  
Hold down the [MENU] button until the Roland logo disappears.
3. **Connect the USB flash drive containing the user scene to the USB port of this instrument.**
4. **Use the [◀] [▶] buttons to select “Import Scene”, and then press the [MENU] button.**



5. **Press the [▶] button and select “YES”.**  
To cancel, press the [◀] button and select “NO”.
6. **Use the [◀] [▶] buttons to select the file to import, and press the [MENU] button.**
7. **Select the user scene to import.**  
Use the [▲] [▼] buttons to switch between scenes, use the [▶] button to select, and use the [◀] button to disregard your selection.  
A [+] mark is shown on the selected user scene number.
8. **Press the [MENU] button.**
9. **Select the import destination for the user scene.**



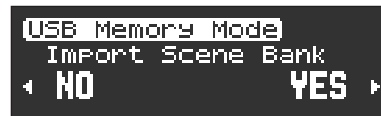
Use the [▲] [▼] buttons to switch between scenes, use the [▶] button to select, and use the [◀] button to disregard your selection.

A [+] mark is shown on the selected user scene number.

10. **Press the [MENU] button.**  
“Import OK?” is shown on the screen.
11. **To continue importing, press the [▶] button and then select “YES”.**  
To cancel, press the [◀] button and select “NO”.  
When import is finished, the message “Completed” appears.
12. **Press the [MENU] button to return to the Import Scene screen.**

### Overwriting a Bank

1. **Save the SVD file that contains the tones to the “ROLAND/SOUND” folder on your USB flash drive.**
2. **While holding down the [MENU] button, turn on the power.**  
Hold down the [MENU] button until the Roland logo disappears.
3. **Connect the USB flash drive containing the user scene to the USB port of this instrument.**
4. **Use the [◀] [▶] buttons to select “Import Scene Bank”, and then press the [MENU] button.**



5. **Press the [▶] button and select “YES”.**  
To cancel, press the [◀] button and select “NO”.
6. **Use the [◀] [▶] buttons to select the file to import, and press the [MENU] button.**
7. **Select the import destination bank.**



Use the [▲] [▼] buttons to switch between banks, and press the [MENU] button.

“Import OK?” is shown on the screen.

8. **To continue importing, press the [▶] button and then select “YES”.**  
To cancel, press the [◀] button and select “NO”.  
When import is finished, the message “Completed” appears.
9. **Press the [MENU] button to return to the Import Scene Bank screen.**



# Importing Tones

You can import and use user tones and scenes that you created on a different unit.

**AE-30** For tones that were created on another instrument (FANTOM-6/7/8, FANTOM-06/07/08) and which contain user samples or multisamples, you can import up to 128 user samples and multisamples.

- \* If this is the first time you're using the USB flash drive, format it on the Aerophone (p. 14).
- \* You can only export the imported user samples or multisamples via the steps listed in "Backing Up/Restoring Scene Settings" (p. 15) or "**AE-30** Exporting User Scenes" (p. 17).

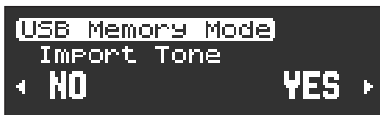
## 1. Save the SVZ file that contains the tones to the "ROLAND/SOUND" folder on your USB flash drive.

## 2. While holding down the [MENU] button, turn on the power.

Hold down the [MENU] button until the Roland logo disappears.

## 3. Connect the USB flash drive containing the SVZ file to the USB port of this instrument.

## 4. Use the [◀] [▶] buttons to select "Import Tone", and then press the [MENU] button.



## 5. Press the [▶] button and select "YES".

To cancel, press the [◀] button and select "NO".

## 6. Use the [◀] [▶] buttons to select the file to import, and press the [MENU] button.

## 7. Select the tone to import.

Use the [▲] [▼] buttons to switch between scenes, use the [▶] button to select, and use the [◀] button to disregard your selection.

A [+] mark is shown on the selected tone number.

## 8. Press the [MENU] button.

## 9. Select the import destination for the tone.

Use the [▲] [▼] buttons to switch between scenes, use the [▶] button to select, and use the [◀] button to disregard your selection.

A [+] mark is shown on the selected tone number.

## 10. Press the [MENU] button.

## 11. A scene is generated for the imported tone.

Use the [▲] [▼] buttons to switch between scenes, use the [▶] button to select, and use the [◀] button to disregard your selection.

A [+] mark is shown on the selected user scene number.

## 12. Press the [MENU] button.

"Import OK?" is shown on the screen.

## 13. To continue importing, press the [▶] button and then select "YES".

To cancel, press the [◀] button and select "NO".

When import is finished, the message "Completed" appears.

## 14. Press the [MENU] button to return to the Import Tone screen.

# Installing a SOUND PACK/WAVE EXPANSION

## Preparing the Sound Files

\* If you're using the USB flash drive for the first time, format it using the Aerophone.

→ "Formatting a USB Flash Drive" (p. 14)

1. Prepare the sound file that you will add on the Aerophone, and place the file on your computer.

### MEMO

Sound files such as SOUND PACK or WAVE EXPANSION can be obtained via the Roland Cloud.

\* Wave expansions can only be installed on the AE-30.

For more about Roland Cloud, refer to the Roland website.

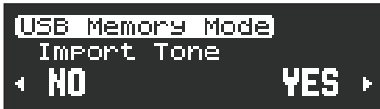
→ <https://www.roland.com/>

2. Connect the USB flash drive to your computer.
3. Save the file in the appropriate directory of your USB flash drive.  
SOUND PACK (extension: .SDZ): ROLAND/SOUND folder  
WAVE EXPANSION (extension: .EXZ): Root directory
4. Disconnect the USB flash drive from your computer.

## Importing a SOUND PACK

This is how to import a SOUND PACK to the user tone/scene.

1. While holding down the [MENU] button, turn on the power.  
Hold down the [MENU] button until the Roland logo disappears.
2. Connect the USB flash drive containing the tone file to the USB port of this instrument.
3. Use the [◀] [▶] button to select "Import Tone," and then press the [MENU] button.



4. Use the [▶] button to select "YES."  
If you decide to cancel, press the [◀] button to select "NO."
5. Use the [◀] [▶] buttons to select the file to import, and press the [MENU] button.  
If this is the first time to import data, a screen appears that asks you to install the user license.  
To continue importing, press the [▶] button and then select "YES."
6. Select the tones/scenes to import.

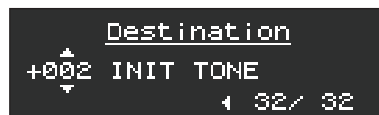


Use the [▲] [▼] buttons to switch between tones/scenes, use the [▶] button to select, and use the [◀] button to disregard your selection.

A [+] mark is shown on the selected tone/scene number.

Press the [MENU] button when you're finished selecting.

7. Select the import destination for the tones/scenes.



Use the [▲] [▼] buttons to switch, use the [▶] button to select, and use the [◀] button to disregard your selection.

A [+] mark is shown on the selected tone/scene number.

8. Press the [MENU] button when you're finished selecting.

### When importing tones

1. When "Make Scene" is displayed, generate a scene for the tone to be imported.
2. Use the [▲] [▼] buttons to switch between scenes, use the [▶] button to select, and use the [◀] button to disregard your selection.  
A [+] mark is shown on the selected scene number.
3. Press the [MENU] button when you're finished selecting.  
"Import OK?" is shown on the screen.

9. To import, press the [▶] button and select "YES"; and to cancel, press the [◀] button and select "NO."

Selecting "YES" imports the data.

When the operation is completed, the display indicates "Completed."

Press the [MENU] button to return to the Import Tone screen.

### MEMO

Hold down the [MENU] button to return to the Import Tone screen.

**AE-30** Installing a WAVE EXPANSION

1. **While holding down the [MENU] button, turn on the power.**

Hold down the [MENU] button until the Roland logo disappears.

2. **Connect the USB flash drive containing the sound file to the USB port of this instrument.**
3. **Use the [◀] [▶] button to select “Install Expansion,” and then press the [MENU] button.**



4. **Use the [▶] button to select “YES.”**  
If you decide to cancel, press the [◀] button to select “NO.”
5. **Use the [◀] [▶] buttons to select the file to install, and press the [MENU] button.**  
If this is the first time to install data, a screen appears that asks you to install the user license.  
To continue installing, press the [▶] button and then select “YES.”  
“Install OK?” is shown on the screen.
6. **To install, press the [▶] button and select “YES”; and to cancel, press the [◀] button and select “NO.”**

Selecting “YES” installs the data.

When the operation is completed, the display indicates “Completed.”

Press the [MENU] button to return to the Install Expansion screen.

**MEMO**

Hold down the [MENU] button to return to the Install Expansion screen.

**AE-30** Managing the WAVE EXPANSION Data

This shows you how to manage the WAVE EXPANSION data you’ve installed.

1. **While holding down the [MENU] button, turn on the power.**  
Hold down the [MENU] button until the Roland logo disappears.
2. **Use the [◀] [▶] button to select “Expansion Manager,” and then press the [MENU] button.**
3. **Use the [▶] button to select “YES.”**  
If you decide to cancel, press the [◀] button to select “NO.”
4. **Use the [◀] [▶] buttons to select the installed WAVE EXPANSION data, and press the [MENU] button.**
5. **Use the [◀] [▶] buttons to select what to do with the data you’ve selected, and press the [MENU] button.**  
The “Make Scene” operation creates scenes used for WAVE EXPANSION data tones in the user region. The Tone Select screen appears. (Go to step 6.)  
The “Uninstall” operation uninstalls the WAVE EXPANSION data. (Go to step 10.)
6. **Select the tone used to create the scene data.**  
Use the [▲] [▼] buttons to switch, use the [▶] button to select, and use the [◀] button to disregard your selection.  
A [+] mark is shown on the selected tone number.
7. **Press the [MENU] button when you’re finished selecting.**  
The Destination screen appears.
8. **Select where the scene is to be created.**  
Use the [▲] [▼] buttons to switch, use the [▶] button to select, and use the [◀] button to disregard your selection.  
A [+] mark is shown on the selected scene number.  
Press the [MENU] button when you’re finished selecting.  
“Make OK?” is shown on the screen.
9. **To create (make), press the [▶] button and select “YES”; and to cancel, press the [◀] button and select “NO.”**  
Selecting “YES” creates the scene.  
When the operation is completed, the display indicates “Completed.”  
Press the [MENU] button to return to the Expansion Manager screen.
10. **The message “Uninstall OK?” appears.**  
To uninstall, press the [▶] button and select “YES”; and to cancel, press the [◀] button and select “NO.”
11. **A confirmation message appears onscreen.**  
Press the [MENU] button to execute, or press the [◀] button to cancel and return to the Expansion Manager screen.

**MEMO**

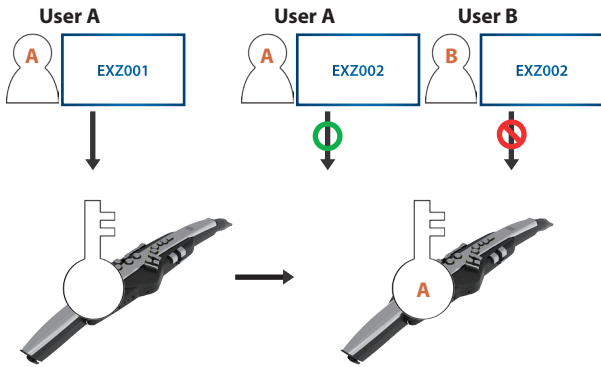
Hold down the [MENU] button to return to the Expansion Manager screen.

## Initializing a User License

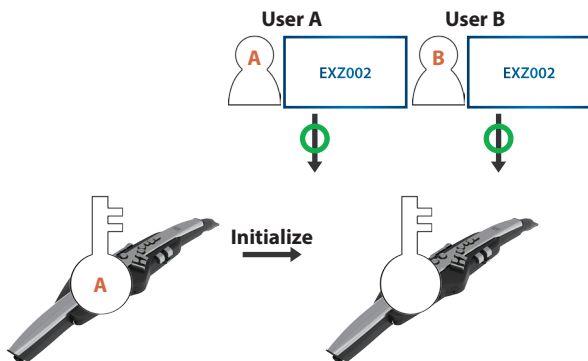
### User License

SOUND PACK and WAVE EXPANSION are associated with the user licenses of the user who downloaded them.

SOUND PACK or WAVE EXPANSION that have differing user licenses cannot be imported into the same Aerophone.



If you want to import or install SOUND PACK and WAVE EXPANSION that has a different user license than what is already registered to this Aerophone unit, you must initialize the user licenses.



Here's how to reset a user license.

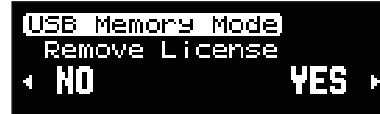
When a license is reset, the installed wave expansion is uninstalled.

1. While holding down the [MENU] button, turn on the power.

Hold down the [MENU] button until the Roland logo disappears.

2. Use the [◀] [▶] button to select "Remove License," and then press the [MENU] button.

3. Press the [▶] button and select "YES." To cancel, press the [◀] button and select "NO."



4. The Remove License confirmation message appears. Press the [MENU] button to execute.

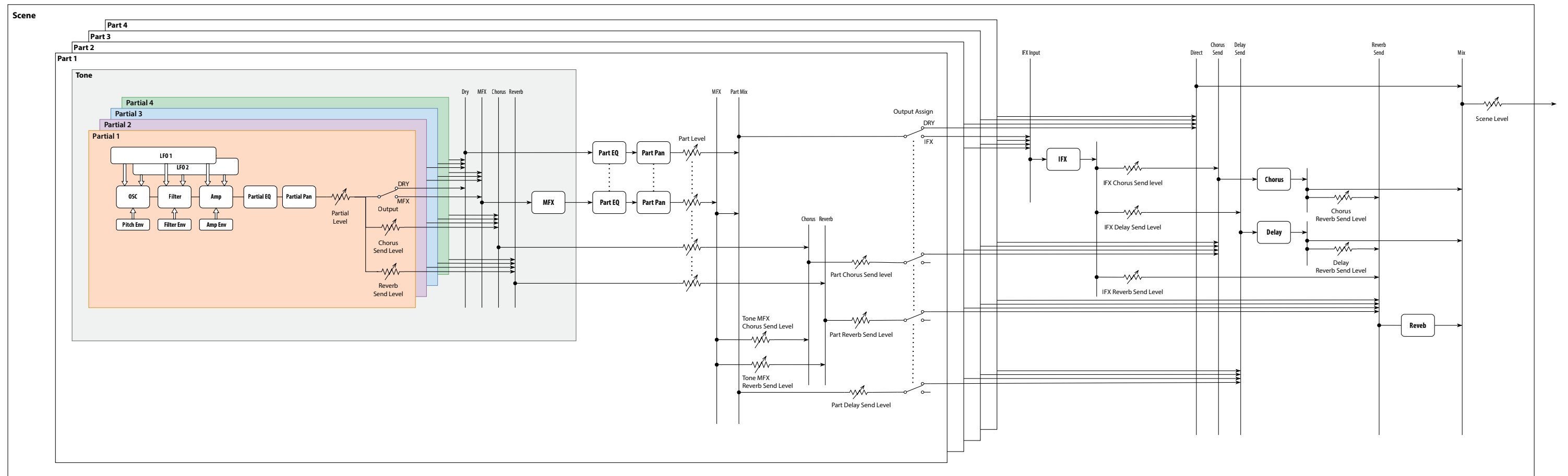
If you decide to cancel, press the [◀] button.

When the reset is complete, the message "Completed" appears.

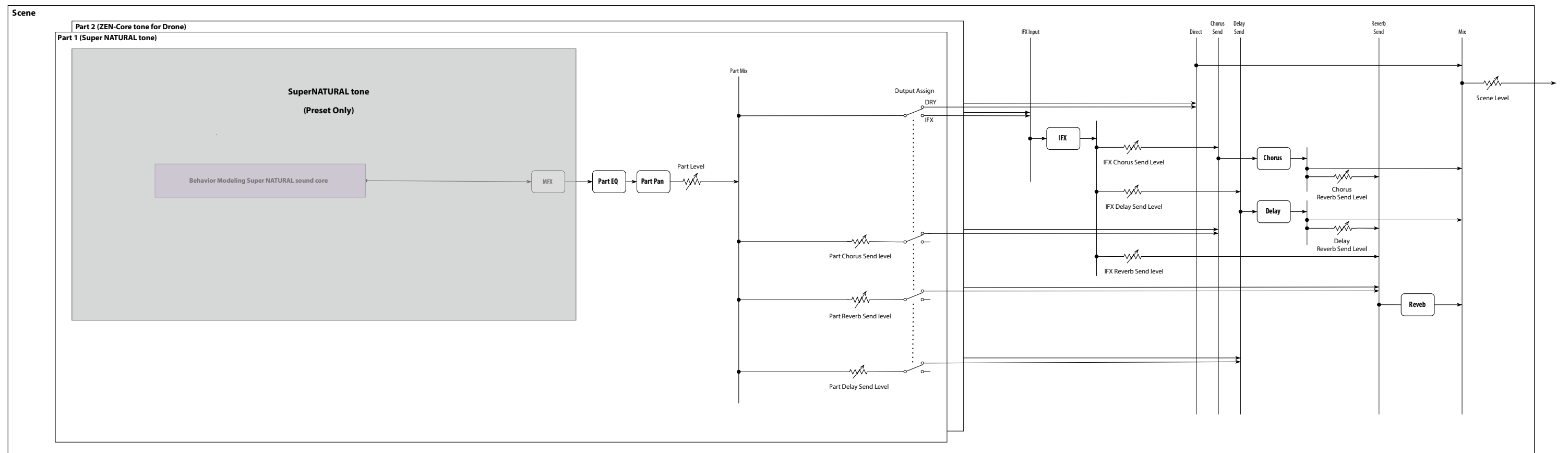
Press the [MENU] button to return to the Remove License screen.

# How the Scenes are Structured

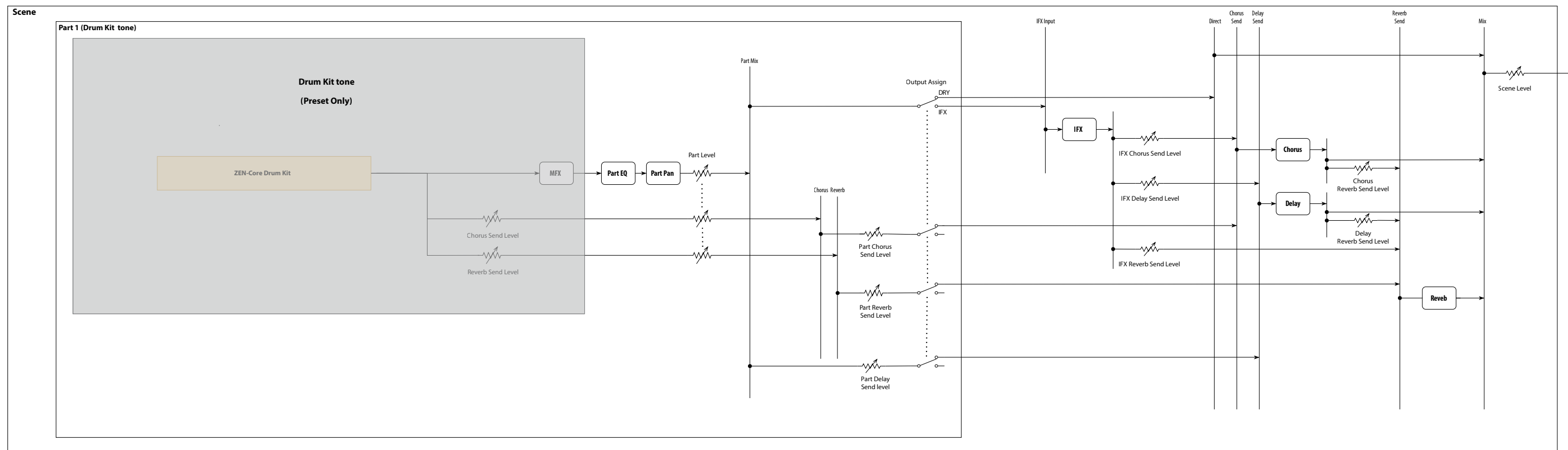
## ZEN-Core Tone



## SuperNATURAL Tone



# Drum Kit



# Scene Parameters

You can use the app "Aerophone Pro Editor" to configure the scene parameters.

Parameter	Value	Explanation
Scene Name	Specifies the scene name (maximum of 16 characters).	

## SCENE/COMMON

Parameter	Value	Explanation
Scene Volume	0–127	Sets the overall scene volume.
Scene Tempo	20.00–300.00	Sets the scene tempo. This is used for effects and other purposes.
Scene Transpose	-5 (G)–0 (C)–+6 (F <sup>♯</sup> )	Sets how much the scene is transposed. * This is enabled when the Transpose Mode system parameter is "Scene" (p. 3).
Scene Octave Shift	-3–0–+3	Sets how many octaves the scene is shifted.
Bend Range Ctrl	0–24	Sets the bend range in semitones, when "Bend Down" or "Bend Up" is assigned to the thumb lever or to another controller.
Bend Range Bite Dn	0, 5, 10–100, 200–2400 (cent)	Sets the bend range in cents, when "Bend Down" or "Bend Up" is assigned to the bite controller.
Bend Range Bite Up		You can set this differently for the "Sax" and "E-Wind" values of the Bite Ctrl Mode parameter.
<b>AE-30</b> Bend Range Motion Dn	0–2400 (cent)	Sets the bend range in cents, when "Bend Up/Down" is assigned to the motion control.
<b>AE-30</b> Bend Range Motion Up		You can set this differently for the "Normal" and "Vibrato" values of the Motion Ctrl Mode parameter. * This is enabled when Bend Range Source is "Scene."
<b>AE-30</b> Motion_1 Setting Motion_2 Setting	Elevation	The motion of lifting the Aerophone up is used. This works through the range of tilting the instrument up to 180° upwards.
	Tilt	The motion of tilting the Aerophone either to the left or to the right is used. This works through the range of tilting the instrument up to 90° to the left or right.
	Tilt Full	The motion of tilting the Aerophone either to the left or to the right is used. The base value is when the instrument is tilted 90° to the left, and this works through the range of tilting the instrument up to 90° to the right.
	Tilt Left	The motion of tilting the Aerophone to the left is used. This works through the range of tilting the instrument up to 90° to the left.
	Tilt Right	The motion of tilting the Aerophone to the right is used. This works through the range of tilting the instrument up to 90° to the right.
<b>AE-30</b> Harmony Tune	Scale Tune	The pitches of harmony notes added by the harmony function follow the tuning set with the scale tune function.
	Just	The pitch of harmony notes that are added when you use the harmony function are tuned in just intonation.
<b>AE-30</b> Harmony Type	Normal, Intelligent	Selects the type of harmony.
Harmony 1 Harmony 2 Harmony 3 Harmony 4	Sets the pitch of the harmony notes. Up to four harmony notes can be added. * This is enabled when the Harmony Source is "Scene," <b>AE-30</b> the Harmony Type is "Normal."	
<b>AE-30</b> Int. Hrmny Scale	Major, Minor	Sets the scale for intelligent harmony.
<b>AE-30</b> Int. Hrmny Key	C–B	Sets the root for the intelligent harmony.
<b>AE-30</b> Int. Harmony 1 Int. Harmony 2 Int. Harmony 3 Int. Harmony 4	Sets the pitch of the harmony notes. Up to four harmony notes can be added. * This is enabled when the Harmony Source is "Scene," the Harmony Type is "Intelligent." Oct below, 7th below, 6th below, 5th below, 4th below, 3rd below, 2nd below, Off, 2nd above, 3rd above, 4th above, 5th above, 6th above, 7th above, Oct above	



## SCENE/ASSIGN (INT)

\* These settings are enabled when the following system parameters (p. 5) are set to "Scene:"

- Asgn Src Breath
- Asgn Src Bite
- Asgn Src Lever
- AE-30** Asgn Src Thumb Pad
- AE-30** Asgn Src Motion
- Asgn Src S1/S2
- Asgn Src Key

Controller		Explanation
Breath	1–8	Assigns the settings for the breath controller.
Bite Down	1–4	Assigns the settings for the bite controller.
Bite Up		
Thumb Lever Down	1, 2	Assigns the settings for the thumb lever.
Thumb Lever Up		
<b>AE-30</b> Thumb Pad	1–4	Assigns the settings for the thumb pad.
<b>AE-30</b> Motion	2	Assigns the settings for the motion controller.
S1, S2	1, 2	Assigns the settings for the [S1] and [S2] buttons.
X, C1–5, Tc, Ta	1, 2	Assigns the settings for the [X] key and the side keys ([C1]–[C5], [Tc] and [Ta]).

### ■ Assignment settings for continuously-variable controllers

Parameter	Value	Explanation
Assign Function		For details on the parameters, refer to "Assigning a continuously-variable controller" (p. 10).
Input Min, Max		
Output Min, Max		
Assign Mode		
Curve		

### ■ Assignment settings for switch-type controllers

Parameter	Value	Explanation
Assign Function		For details on the parameters, refer to "Assigning a switch-type controller" (p. 13).
Release Val		
Press Val		
Assign Mode		
Curve		

## SCENE/CONTROL SOURCE (INT)

\* This is enabled when the Contorl Source Select system parameter is "Scene:"

Parameter	Value	Explanation
Control Source 1–4	OFF, CC01–31, CC33–95, BEND, AFTER TOUCH	Sets the MIDI messages to be used as tone controls.

## SCENE/ASSIGN (MIDI)

\* These settings are enabled when MIDI control mode is on, and when the following system parameters (p. 5) are set to "Scene."

Asgn Src Breath

Asgn Src Bite

Asgn Src Lever

**AE-30** Asgn Src Thumb Pad

**AE-30** Asgn Src Motion

Asgn Src S1/S2

Asgn Src Key

Controller		Explanation
Breath	1–8	Assigns the settings for MIDI control with the breath controller.
Bite Down	1–4	Assigns the settings for MIDI control with the bite controller.
Bite Up		
Thumb Lever Down	1, 2	Assigns the settings for MIDI control with the thumb lever.
Thumb Lever Up		
<b>AE-30</b> Thumb Pad	1–4	Assigns the settings for MIDI control with the thumb pad.
<b>AE-30</b> Motion	2	Assigns the settings for the motion controller.
S1, S2	1, 2	Assigns the settings for MIDI control with the [S1] and [S2] buttons.
X, C1–5, Tc, Ta	1, 2	Assigns the settings for MIDI control with the [X] key and the side keys ([C1]–[C5], [Tc] and [Ta]).

### ■ Assignment settings for continuously-variable controllers

Parameter	Value	Explanation
Assign Function		For details on the parameters, refer to "Assigning a continuously-variable controller" (p. 13).
Input Min, Max		
Output Min, Max		
Assign Mode		
Curve		

### ■ Assignment settings for switch-type controllers

Parameter	Value	Explanation
Assign Function		For details on the parameters, refer to "Assigning a switch-type controller" (p. 13).
Release Val		
Press Val		
Assign Mode		
Curve		

## SCENE/CONTROL (MIDI)

\* The following settings are enabled when MIDI control mode is on.

Parameter	Value	Explanation
<b>Tx Channel</b>	1–16	Specifies the MIDI transmit channel.
<b>Bank MSB (CC#0)</b>	OFF, 0–127	Sets the bank select/program change message that is transmitted when a scene is selected.
<b>Bank LSB (CC#32)</b>	OFF, 0–127	
<b>PC</b>	OFF, 1–128	When this is set to "OFF," no bank select/program change is transmitted. * These parameters are enabled when the MIDI Ctrl PC and MIDI Ctrl BS (p. 7) system parameters are set to "On."
<b>Velocity</b>	These parameters set the note-on velocity values for MIDI output.	
	REAL	The velocity value is determined by the strength of your tonguing.
	1–127	Transmits the specified value (a fixed value).
<b>Volume (CC#7)</b>	OFF, 0–127	Sets the value transmitted for Volume (CC#7) when a scene is selected. When this is set to "OFF," no bank select/program change is transmitted.
<b>Pan (CC#10)</b>	OFF, L64–0–63R	Sets the value transmitted for PAN (#CC#10) when a scene is selected. When this is set to "OFF," no bank select/program change is transmitted.
<b>Modulation (CC#1)</b>		Sets the value transmitted for Modulation (CC#1) when a scene is selected. When this is set to "OFF," no bank select/program change is transmitted.
<b>Reverb (CC#91)</b>	OFF, 0–127	Sets the value transmitted for Reverb Send (CC#91) when a scene is selected. When this is set to "OFF," no bank select/program change is transmitted.
<b>Chorus (CC#93)</b>		Sets the value transmitted for Chorus Send (CC#93) when a scene is selected. When this is set to "OFF," no bank select/program change is transmitted.
<b>Coarse (RPN#2)</b>	OFF, -48–0–+48	Sets the value transmitted for Coarse Tune (RPN#2) when a scene is selected. When this is set to "OFF," no bank select/program change is transmitted.
<b>Fine Tune (RPN#1)</b>	OFF, -50–0–+50	Sets the value transmitted for Fine Tune (RPN#1) when a scene is selected. When this is set to "OFF," no bank select/program change is transmitted.
<b>Bend Rng (RPN#0)</b>	OFF, 0–24	Sets the value transmitted for Bend Range (RPN#0) when a scene is selected. When this is set to "OFF," no bank select/program change is transmitted.
<b>Cutoff (CC#74)</b>		Sets the value transmitted for Cutoff Offset (CC#74) when a scene is selected. When this is set to "OFF," no bank select/program change is transmitted.
<b>Resonance (CC#71)</b>		Sets the value transmitted for Resonance Offset (CC#71) when a scene is selected. When this is set to "OFF," no bank select/program change is transmitted.
<b>Attack (CC#73)</b>	OFF, 0–127	Sets the value transmitted for Attack Time Offset (CC#73) when a scene is selected. When this is set to "OFF," no bank select/program change is transmitted.
<b>Decay (CC#75)</b>		Sets the value transmitted for Decay Time Offset (CC#75) when a scene is selected. When this is set to "OFF," no bank select/program change is transmitted.
<b>Release (CC#72)</b>		Sets the value transmitted for Release Time Offset (CC#72) when a scene is selected. When this is set to "OFF," no bank select/program change is transmitted.
<b>MONO/POLY (CC#126/127)</b>	OFF, MONO (CC#126), POLY (CC#127)	Sets the value transmitted for Mono/Poly (CC#126/127) when a scene is selected. When this is set to "OFF," no bank select/program change is transmitted.

## SCENE/PART

Parameter	Value	Explanation
PartSW	OFF, ON	Turns each part (PART 1–4) on/off.
Scale Tune Type	CUSTOM	Custom: This lets you create a custom scale.
	EQUAL	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.
	PYTHAGORE	Pythagorean: This scale, devised by the philosopher Pythagoras, eliminates dissonance in fourths and fifths. Dissonance is produced in thirds, but melodies are euphonious.
	KIRNBERGE	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.
	WERCKMEIS	Werckmeister: This is a combination of the meantone and Pythagorean scales. Performances are possible in all keys (first technique, III).
	ARABIC 1	Arabic Scale 1: This scale is suitable for Arabic music.
	ARABIC 2	Arabic Scale 2: This scale is suitable for Arabic music.
Scale Tune Key	C–B	Sets the keynote of the scale tune.
Scale Tune 1–12	-64–+63	Finely adjusts the pitch of the scale tune.

Example: If the Scale Tune Key is “C”, the following settings are used.

Scale Tune Type	Note name											
	C	C <sup>#</sup>	D	E <sup>b</sup>	E	F	F <sup>#</sup>	G	G <sup>#</sup>	A	B <sup>b</sup>	B
Equal	0	0	0	0	0	0	0	0	0	0	0	0
Just-Maj	0	-30	4	15	-14	-2	-32	2	-28	-16	17	-12
Just-Min	0	33	4	15	-14	-2	31	2	13	-16	17	-12
Pythagore	0	14	4	-6	8	-2	12	2	16	6	-4	10
Kirnberge	0	-10	-7	-6	-13	-2	-10	-3	-8	-10	-4	-11
Meantone	0	-24	-7	11	-13	4	-20	-3	-27	-10	7	-17
Werckmeis	0	-10	-8	-6	-10	-2	-12	-4	-8	-12	-4	-8
Arabic 1	0	51	4	-6	-45	-2	49	2	53	6	-4	-43
Arabic 2	0	0	0	0	-50	0	0	0	0	0	0	-50

## SCENE/MODE

Parameter	Value	Explanation
Part Mode	Specifies the part mode.	
	LEAD	This is the usual mode for playing melodies and the like.
	DRONE	This is a special mode for playing sustaining low notes. This mode is used with the assign function set to “Drone Sw” (p. 12).

## SCENE/RANGE

Parameter	Value	Explanation
Key Range	(Lower) C-1–G9 (Upper) C-1–G9	Sets the key range for each part. Specifies the upper and lower limits of the key range. Set this when you want different tones to play depending on the key played.
Key Fade Width Lower	0–127	Sets how far the range extends in which tones sound, when a key is played that’s lower than Key Range Lower. When no sound is to be heard for keys played outside of this range, set this to “0.”

## Scene Parameters

Parameter	Value	Explanation
Key Fade Width Upper	0–127	Sets how far the range extends in which tones sound, when a key is played that's higher than Key Range Upper. When no sound is to be heard for keys played outside of this range, set this to "0."
Velocity Range	(Lower) 1–127 (Upper) 1–127	Sets the lower/upper limits for the velocities at which tones play. Use this to make different tones sound when playing at different velocities.
Velocity Fade Width Lower	0–127	Sets the intensity at which tones sound when played softer than the Velocity Range Lower. When no sound is to be heard, set this to "0."
Velocity Fade Width Upper	0–127	Sets the intensity at which tones sound when played louder than the Velocity Range Upper. When no sound is to be heard, set this to "0."
X-Fade Range	(Lower) 0–127 (Upper) 0–127	Sets the X-Fade (CC30) lower/upper limits within which tones play. Set this when you want different tones to play according to the X-Fade (CC30) value.
X-Fade Fade Width Lower	0–127	Sets how strongly the sound is played when the X-Fade (CC30) value is lower than X-Fade Range Lower. When no sound is to be heard, set this to "0."
X-Fade Fade Width Upper	0–127	Sets how strongly the sound is played when the X-Fade (CC30) value is higher than X-Fade Range Upper. When no sound is to be heard, set this to "0."

## SCENE/PITCH

Parameter	Value	Explanation
Part Octave Shift	-3–0–+3	Sets the pitch of the part's sound in octaves (up to $\pm 3$ octaves).
Part Coarse Tune	-48–0–+48	Shifts the pitch of the part in semitones.
Part Fine Tune	-50–0–+50 cent	Finely adjusts the part's pitch in units of one cent.

## SCENE/OFFSET

Parameter	Value	Explanation
Cutoff	-64–0–+63	Adjusts how wide the filter is open. Increasing this value makes the sound brighter, and decreasing it makes the sound darker.
Resonance	-64–0–+63	Emphasizes the portion of the sound in the region of the cutoff frequency, adding character to the sound. Excessively high settings can produce oscillation, causing the sound to distort. Increasing this value strengthens the character, and decreasing it weakens the character.
Attack Time	-64–0–+63	Sets the time from note-on to when the volume rises. Larger settings of this value make the attack gentler, and smaller settings make the attack sharper.
Decay Time	-64–0–+63	Sets the time over which the volume decreases from its attack level. Larger settings of this value make the decay longer, and smaller settings make the decay shorter.
Release Time	-64–0–+63	Sets the time from note-off to when the volume fades out. Larger settings of this value make the sound linger, and smaller settings make the sound end more abruptly.
Vibrato Rate	-64–0–+63	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	-64–0–+63	This 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	-64–0–+63	Adjusts the time until vibrato (pitch modulation) starts to apply. Higher settings produce a longer time before vibrato begins, while lower settings produce a shorter time.

## SCENE/EQ

Parameter	Value	Explanation
EQ Switch	OFF, ON	Sets whether to use the part EQ (an equalizer applied to each part) is used (ON) or not used (OFF).
Input Gain	-24+24 dB	Adjusts the amount of boost/cut for the input to the EQ.
Low Gain	-24+24 dB	Adjusts the amount of boost/cut of the low frequency range.
Low Freq	20–16000 Hz	Sets the center frequency of the low range.
Mid Gain	-24+24 dB	Adjusts the amount of boost/cut of the middle frequency range.
Mid Freq	20–16000 Hz	Sets the center frequency of the middle range.
Mid Q	0.5–16.0	Sets the bandwidth of the middle frequency range. Higher values make the width narrower.
High Gain	-24+24 dB	Adjusts the boost/cut of the high frequency range.
High Freq	20–16000 Hz	Sets the center frequency of the high range.

## SCENE/OUTPUT

Parameter	Value	Explanation
Part Level	0–127	Sets the volume of each part.
Part Pan	L64–0–63R	Sets the panning of each part's sound when using stereo output.
Chorus Send	0–127	Specifies the send level to chorus.
Delay Send	0–127	Specifies the send level to delay.
Reverb Send	0–127	Specifies the send level to reverb.
Output Assign	DRY, IFX	Selects the output destination for each part.

## SCENE/CONTROL

Parameter	Value	Explanation
Mono/Poly	MONO, POLY, TONE	Choose "MONO" if you want the tone assigned to the part to play monophonically; choose "POLY" if you want to play it polyphonically. Choose "TONE" if you want to use the setting specified by the tone.
Legato Switch	OFF, ON, TONE	Legato is enabled when Legato Switch is "ON" and Mono/Poly is set to "MONO." Choose "TONE" if you want to use the setting specified by the tone. This makes the pitch change smoothly while you are playing one note and then play legato by fingering another key.
Portamento Switch	OFF, ON, TONE	Select "ON" to apply portamento, or "OFF" if you don't want to apply portamento. Choose "TONE" if you want to use the setting specified by the tone.
Portamento Time	0–127, TONE	When portamento is used, this specifies the time over which the pitch changes. A higher value increases the time it takes for one pitch to slide to the next. Choose "TONE" if you want to use the setting specified by the tone.
Unison Switch	OFF, ON, TONE	This layers a single tone. Choose "ON" if you want to use unison, or "OFF" if you don't. Choose "TONE" if you want to use the setting specified by the tone. * Parts whose Unison Switch is "ON" play in mono.
Velocity	These parameters set the note-on velocity values.	
	REAL	The velocity value is determined by the strength of your tonguing.
	FIXED	The specified value (a fixed value) is used.
Fixed Velocity	1–127	This sets the velocity value used for the "FIXED" velocity setting.

## SCENE/CONTROL RX

Parameter	Value	Explanation
Rx S1, Rx S2	OFF, ON	Sets whether to receive [S1] and [S2] button operations (ON) or not (OFF).
Rx X, Rx C1–5, Rx Tc, Rx Ta	OFF, ON	Sets whether to receive side key button operations (ON) or not (OFF).
Rx Breath	OFF, ON	Sets whether to receive breath controller operations (ON) or not (OFF).
Rx Bite Down Rx Bite Up	OFF, ON	Sets whether to receive bite controller operations (ON) or not (OFF).
Rx Thumb Lever Down Rx Thumb Lever Up	OFF, ON	Sets whether to receive thumb lever operations (ON) or not (OFF).
<b>AE-30</b> Rx Thumb Pad	OFF, ON	Sets whether to receive thumb pad operations (ON) or not (OFF).
<b>AE-30</b> Rx Motion	OFF, ON	Sets whether to receive motion controller operations (ON) or not (OFF).

## SCENE/IFX

Parameter	Value	Explanation
IFX SW	OFF, ON	Switches the IFX on/off.
IFX Type	See “MFX/IFX Parameters” (p. 55)	Selects the IFX type.
<b>FX</b>		
IFX parameters	See “MFX/IFX Parameters” (p. 55)	Configure the parameters for the selected IFX. The available parameters differ depending on the type of the effects you selected in IFX Type.
<b>SEND</b>		
Chorus Send Level	0–127	Sets the amount of chorus. If you don’t want to add the chorus effect, set it to 0.
Reverb Send Level	0–127	Sets the amount of reverb. If you don’t want to add the reverb effect, set it to 0.
Delay Send Level	0–127	Sets the amount of delay. If you don’t want to add the delay effect, set it to 0.



## SCENE/CHORUS

Parameter	Value	Explanation
CH SW	OFF, ON	Turns the chorus on/off.
Chorus Type	Selects the chorus type.	
	OFF, 1 Chorus, 2 CE-1, 3 SDD-320, 4 JUNO-106 Chorus	
FX		
Chorus parameters	Configure the parameters of the selected chorus type.	
	See "Chorus parameters"	The available parameters differ depending on the type of chorus you selected in Chorus Type.
OUTPUT		
Chorus Level	0–127	Sets the amount of chorus. If you don't want to add the chorus effect, set it to 0.
Reverb Send Level	0–127	Sets the amount of reverb. If you don't want to add the reverb effect, set it to 0.

## Chorus Parameters

### 1 Chorus

This is a stereo chorus.

Parameter	Value	Explanation
Rate	0–127	Frequency of modulation
Depth	0–127	Depth of modulation
Feedback	0–127	Level at which chorus sound is returned to the input

### 4 JUNO-106 Chorus

This models the chorus effects of the Roland JUNO-106.

Parameter	Value	Explanation
Mode	I, II, I+II, JX I, JX II	Type of Chorus <b>I+II</b> : The state when two buttons are pressed simultaneously.
Noise Level	0–127	Amount of noise produced by the chorus

### 2 CE-1 (Chorus)

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

Parameter	Value	Explanation
Intensity	0–127	Chorus depth

### 3 SDD-320 (Dimension D)

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

Parameter	Value	Explanation
Mode	1, 2, 3, 4, 1+4, 2+4, 3+4	Switches the mode.

## SCENE/DELAY

Parameter	Value	Explanation
DLY SW	OFF, ON	Switches the delay on/off.
Delay Type	Selects the types of delay. OFF, 1 Delay, 2 T-Ctrl Dly, 3 Delay → Trem, 4 2Tap PanDly, 5 3Tap PanDly	
<b>FX</b>		
Delay parameters	Configure the parameters of the selected delay type. See "Delay parameters"	
<b>OUTPUT</b>		
Delay Level	0–127	Sets the amount of delay. If you don't want to add the delay effect, set it to 0.
Reverb Send Level	0–127	Sets the amount of reverb. If you don't want to add the reverb effect, set it to 0.

## Delay Parameters

### 1 Delay

This is a stereo delay.

Parameter	Value	Explanation
Delay Time (sync sw)	OFF, ON	If this is "ON," the delay synchronizes with the tempo.
Delay Time (msec)	1–1300	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay Time (note)	Note (*1)	
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	(*2)	Adjusts the frequency above which the delay sound fed back to the effect is filtered out (BYPASS: no cut).

### 2 T-Ctrl Dly (Time Control Delay)

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

Parameter	Value	Explanation
Delay Time (sync sw)	OFF, ON	If this is "ON," the delay synchronizes with the tempo.
Delay Time (msec)	1–1300	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay Time (note)	Note (*1)	
Acceleration	0–15	When you change the delay time, this specifies the time over which the current delay time changes to the specified delay time. This affects the speed of 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	(*2)	Adjusts the frequency above which the delay sound fed back to the effect is filtered out (BYPASS: no cut).

### 3 Delay→Trem (Delay→Tremolo)

Tremolo is applied to the delay sound.

Parameter	Value	Explanation
Input Mode	MONAURAL	The input is mono-mixed.
	STEREO	The sound is input in stereo.
Delay Time (sync sw)	OFF, ON	If this is "ON," the delay synchronizes with the tempo.
Delay Time (msec)	1–1300	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay Time (note)	Note (*1)	
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	(*2)	Adjusts the frequency above which the delay sound fed back to the effect is filtered out (BYPASS: no cut).
Tremolo Switch	OFF, ON	Switches the tremolo effect on/off
Tremolo Mod Wave	Modulation Wave of panning	
	TRI	Triangle wave
	SQR	Square wave
	SIN	Sine wave
	SAW1	Sawtooth wave
	SAW2	
TRP	Trapezoidal wave	
Tremolo Rate (sync sw)	OFF, ON	If this is "ON," the tremolo synchronizes with the tempo.
Tremolo Rate (Hz)	0.05–10.00 (Hz)	Tremolo rate
Tremolo Rate (note)	Note (*1)	
Tremolo Depth	0–127	Tremolo depth

### 4 2Tap PanDly (2 Tap Pan Delay)

Delayed sound is heard from the two locations you specify.

Parameter	Value	Explanation
Delay Time (sync sw)	OFF, ON	If this is "ON," the delay synchronizes with the tempo.
Delay Time (msec)	1–1300	Adjusts the delay time from the direct sound until the second delay sound is heard.
Delay Time (note)	Note (*1)	
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	(*2)	Adjusts the frequency above which the delay sound fed back to the effect is filtered out (BYPASS: no cut).
Delay 1 Pan	L64–63R	Stereo location of Delay 1
Delay 2 Pan	L64–63R	Stereo location of Delay 2
Delay 1 Level	0–127	Volume of Delay 1
Delay 2 Level	0–127	Volume of Delay 2

### 5 3Tap PanDly (3 Tap Pan Delay)

Delayed sound is heard from the three locations you specify.

Parameter	Value	Explanation
Delay Time (sync sw)	OFF, ON	If this is "ON," the delay synchronizes with the tempo.
Delay Time (msec)	1–2600	Adjusts the delay time from the direct sound until the third delay sound is heard.
Delay Time (note)	Note (*1)	
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	(*2)	Adjusts the frequency above which the delay sound fed back to the effect is filtered out (BYPASS: no cut).
Delay 1 Pan	L64–63R	Stereo location of Delay 1
Delay 2 Pan	L64–63R	Stereo location of Delay 2
Delay 3 Pan	L64–63R	Stereo location 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

(\*1) 1/64T, 1/64, 1/32T, 1/32, 1/16T, 1/32., 1/16, 1/8T, 1/16., 1/8, 1/4T, 1/8., 1/4, 1/2T, 1/4., 1/2, 1T, 1/2., 1, 2T, 1., 2

(\*2) 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 (Hz), BYPASS

## SCENE/REVERB

Parameter	Value	Explanation
RV SW	OFF, ON	Switches the reverb on/off.
Reverb Type	Selects the types of reverb. OFF, 1 INTEGRA7Rev, 2 Warm Hall, 3 Hall, 4 GS Reverb, 5 SRV-2000, 6 SRV-2000NL, 7 GM2 Reverb	
FX		
Reverb parameters	Configure the parameters of the selected reverb type. See "Reverb parameters"	
		The available parameters differ depending on the type of reverb you selected in Reverb Type.
OUTPUT		
Reverb Level	0–127	Sets the amount of reverb. If you don't want to add the reverb effect, set it to 0.

## Reverb Parameters

### 1 INTEGRA7Rev (INTEGRA 7 Reverb)

Parameter	Value	Explanation
Char	ROOM1–2, HALL1–2, PLATE	Type of reverb
PreDelay	0–100	Adjusts the delay time from the direct sound until the reverb sound is heard.
Time	0.1–10.0 (sec)	Adjusts the decay length of the reverb sound.
Density	0–127	Adjusts the density of the reverb sound.
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

### 2 Warm Hall

Parameter	Value	Explanation
PreDelay	0–100	Adjusts the delay time from the direct sound until the reverb sound is heard.
Time	0.3–30.0 (sec)	Adjusts the decay length of the reverb sound.
Pre LPF	(*3)	Frequency above which to cut the high-frequency portion of the sound entering the reverb
Pre HPF	(*4)	Frequency below which to cut the low-frequency portion of the sound entering the reverb
PreLoop LPF	(*3)	Frequency above which to cut the high-frequency portion of the extended reverberation
Diffusion	0–127	Adjusts the change in the density of the reverb over time.
HF Damp Freq	(*5)	Adjusts the frequency above which to cut the high-frequency portion of the reverb.
HF Damp Ratio	0.1–1.0	Adjusts the amount by which to attenuate the high-frequency portion of the reverb.

(\*1) 16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 15000 (Hz), BYPASS

(\*2) BYPASS, 16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 15000 (Hz)

(\*3) 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 (Hz)

### 3 Hall

Parameter	Value	Explanation
PreDelay	0–100	Adjusts the delay time from the direct sound until the reverb sound is heard.
Time	0–127	Adjusts the decay length of the reverb sound.
Size	1–8	Size of room/hall
High Cut	(*6)	Adjusts the frequency above which the high-frequency portion of the final output sound is cut (BYPASS: no cut)
Density	0–127	Adjusts the density of the reverb sound.
Diffusion	0–127	Adjusts how reverb density increases over time. (This effect is especially noticeable with long reverb times.)
LF Damp Freq	(*7)	Adjusts the frequency below which the low-frequency portion of the reverb sound is cut.
LF Damp Gain	-36–0 (dB)	LF damp attenuation amount (0: no effect)
HF Damp Freq	(*8)	Adjusts the frequency above which the high-frequency portion of the reverb sound is cut.
HF Damp Gain	-36–0 (dB)	HF damp attenuation amount (0: no effect)

(\*4) 160, 200, 250, 320, 400, 500, 640, 800, 1000, 1250, 1600, 2000, 2500, 3200, 4000, 5000, 6400, 8000, 10000, 12500 (Hz), BYPASS

(\*5) 50, 64, 80, 100, 125, 160, 200, 250, 320, 400, 500, 640, 800, 1000, 1250, 1600, 2000, 2500, 3200, 4000 (Hz)

(\*6) 4000, 5000, 6400, 8000, 10000, 12500 (Hz)

### 4 GS Reverb

Parameter	Value	Explanation
Character	ROOM1–3, HALL1–2, PLATE, DELAY, PAN-DELAY	Selects the type of reverb.
Pre LPF	0–7	Adjusts the amount of high-frequency attenuation for the sound being input to the reverb.
Time	0–127	Adjusts the decay length of the reverb sound.
Delay Feedback	0–127	Adjusts the level at which the reverb sound is returned to the input.

### 5 SRV-2000

Parameter	Value	Explanation
Selection	R0.3, R1.0, R7.0, R15, R22, R26, R32, R37, H15, H22, H26, H32, H37, P-B, P-A	Selects the type of reverb offered by the Roland SRV-2000 digital reverb.
PreDelay	0–160	Adjusts the delay time from the direct sound until the reverb sound is heard.
Time	0.1–99.0 (sec)	Adjusts the decay length of the reverb sound.
HF Damp	0.05–1.00	Adjusts the high-frequency portion of the reverb.
Density	0–9	Adjusts the density of the late reverberation.
Attack Gain	0–9	Adjusts the gain of the early reflections.
Attack Time	0–9	Adjusts the time of the early reflections.
ER Density	0–9	Adjusts the density of the early reflections.
ER Level	0–99	Adjusts the volume of the early reflections.
EQ Low Freq	0.04–1.00 (kHz)	Frequency of the low range.
EQ Low Gain	-24+12 (dB)	Gain of the low range.
EQ Mid Freq	0.25–9.99 (kHz)	Frequency of the middle range.
EQ Mid Gain	-24+12 (dB)	Gain of the middle range.
EQ Mid Q	0.2–9.0	Width of the middle range. Set a higher value to narrow the range to be affected.
EQ Hi Freq	0.80–9.99 (kHz)	Frequency of the high range.
EQ Hi Gain	-24+12 (dB)	Gain of the high range
EQ Hi Q	0.2–9.0	Specifies the width of the high-frequency range. Set a higher value to narrow the range to be affected.

## 6 SRV-2000NL (NON-LINEAR)

Parameter	Value	Explanation
PreDelay	0–120	Adjusts the delay time from the direct sound until the reverb sound is heard.
ReverbTime	-0.9–99.0 (sec)	Adjusts the decay length of the reverb sound.
GateTime	10–450	Adjusts the time from when the reverb starts being heard until the reverb sound is cut off.
EQ Low Freq	0.04–1.00 (kHz)	Frequency of the low range.
EQ Low Gain	-24–+12 (dB)	Gain of the low range.
EQ Mid Freq	0.25–9.99 (kHz)	Frequency of the middle range.
EQ Mid Gain	-24–+12 (dB)	Gain of the middle range.
EQ Mid Q	0.2–9.0	Width of the middle range. Set a higher value to narrow the range to be affected.
EQ Hi Freq	0.80–9.99 (kHz)	Frequency of the high range.
EQ Hi Gain	-24–+12 (dB)	Gain of the high range
EQ Hi Q	0.2–9.0	Specifies the width of the high-frequency range. Set a higher value to narrow the range to be affected.

## 7 GM2 Reverb

Parameter	Value	Explanation
Character	SMALL ROOM, MEDIUM ROOM, LARGE ROOM, MEDIUM HALL, LARGE HALL, PLATE	Selects the type of reverb.
Time	0–127	Adjusts the decay length of the reverb sound.

# Tone Parameters

You can use the app "Aerophone Pro Editor" to configure the tone parameters.

\* The tone parameters are used in common with Roland ZEN-Core products. For example, if the description reads "how hard you press the keys," substitute "how hard you blow into the instrument" for the Aerophone.

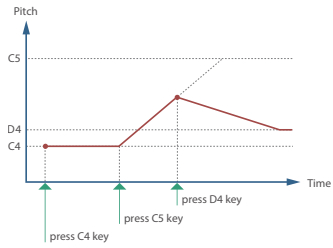
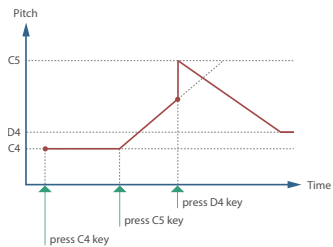
Parameter	Value	Explanation
Tone Name		Specifies the tone name (maximum of 16 characters).

## TONE/COMMON

Parameter	Value	Explanation
Category	Selects the tone's category.	
	No Assign	E.Guitar Synth Lead
	Ac.Piano	Dist.Guitar Synth Brass
	Pop Piano	Ac.Bass Synth Pad/Str
	E.Grand Piano	E.Bass Synth Bellpad
	E.Piano1	Synth Bass Synth PolyKey
	E.Piano2	Plucked/Stroke Synth FX
	E.Organ	Solo Strings Synth Seq/Pop
	Pipe Organ	Ensemble Strs Phrase
	Reed Organ	Orchestral Pulsating
	Harpsichord	Solo Brass Beat&Groove
	Clav	Ensemble Brass Hit
	Celesta	Wind Sound FX
	Accordion	Flute Drums
	Harmonica	Sax Percussion
Bell	Recorder Stack	
Mallet	Vox/Choir Zone	
Ac.Guitar	Scat	
Tone Level	0-127	Adjusts the overall volume of the tone.
Tone Pan	L64-0-63R	Specifies the pan of the tone. "L64" is far left, "0" is center, and "63R" is far right.
Priority	This determines how notes will be managed when the maximum polyphony is exceeded.	
	LAST	The last-played voices will be given priority, and currently sounding notes will be turned off in order, beginning with the first-played note.
	LOUDEST	The voices with the loudest volume will be given priority, and currently sounding notes will be turned off, beginning with the lowest-volume voice.
Analog Feel	0-127	Applies time-varying change to the pitch and volume of the tone that is producing sound, adding a sense of variability. As you increase this value toward the maximum, the variability becomes greater, producing instability.
Mono/Poly	Specifies whether the tone will play polyphonically (POLY) or monophonically (MONO).	
	MONO	Sound only the last-played key one at a time.
	POLY	Two or more notes can be played simultaneously.
<b>PITCH</b>		
Coarse Tune	-48-+48 (semitone)	Adjusts the pitch of the sound up or down in semitone steps ( $\pm 4$ octaves).
Fine Tune	-50-+50 (cent)	Adjusts the pitch of the sound up or down in 1-cent steps ( $\pm 50$ cents).
Octave Shift	-3-+3	Adjusts the pitch of the tone's sound up or down in units of an octave ( $\pm 3$ octaves).
Stretch Tune Depth	OFF, 1-3	This setting allows you to apply "stretched tuning" to the tone. (Stretched tuning is a system by which acoustic pianos are normally tuned, causing the lower range to be lower and the higher range to be higher than the mathematical tuning ratios would otherwise dictate.) With a setting of "OFF," the tone's tuning will be equal temperament. A setting of "3" will produce the greatest difference in the pitch of the low and high ranges.

Parameter	Value	Explanation
<b>UNISON</b>		
Unison Switch	OFF, ON	This layers a single sound. If the Unison Switch is "ON," the number of notes layered on one key will change according to the number of keys you play. <ul style="list-style-type: none"> <li>If the OSC Type (p. 44) is "PCM," this is limited to mono playing.</li> <li>If the Legato Switch is "ON," the Delay Time is ignored while playing legato.</li> <li>Even if Legato Retrigger Interval is specified, it operates as off.</li> </ul>
Size	2-8	If Unison Switch is "ON," this specifies the number of notes that are assigned to each key that is pressed. Increasing the Unison Size increases the polyphony, making it more likely that notes will be cut off.
Detune	0-100	Detunes each of the notes that are allocated by the Unison Size number, producing a detuned effect. As you increase this value, each note is detuned more greatly, producing a thicker sound.
<b>LEGATO</b>		
Legato Switch	OFF, ON	Use this to make the pitch change smoothly while you are playing one note and then change your fingering to play a different note (playing legato). The way in which the change occurs depends on the Legato Retrigger Interval. * This is valid when MONO/POLY is set to "MONO" and Legato Switch is turned "ON"
Retrigger Interval	When Legato Switch is enabled and you play legato, this specifies whether retriggering occurs (0-12) or does not occur (OFF).	
	OFF	Only the pitch of the currently-sounding tones changes according to the pitch of the key.
	0-12	Retriggering occurs smoothly when the pitch difference during legato performance exceeds the specified value. For example, if this is set to 4, and using C4 as the reference pitch, playing notes Db4-E4 legato will change only the pitch without retriggering, but playing the F4 note (which is five semitones away from C4) legato will retrigger F4. When F4 is retriggered at this time, F4 now becomes the reference pitch. If this is set to "0," each note is retriggered every time regardless of the pitch difference. For acoustic-type sounds in particular, an unnatural impression can occur if only the pitch is changed, so you'll need to adjust the Legato Retrigger Interval.

## Tone Parameters

Parameter	Value	Explanation
<b>PORTAMENTO</b>		
Portamento Switch	OFF, ON	Specifies whether the portamento effect will be applied (ON) or not applied (OFF). <b>MEMO</b> Portamento is an effect which smoothly changes the pitch from the first-played key to the next-played key. By applying portamento when MONO/POLY is set to "MONO," you can simulate slide performance techniques on a violin or similar instrument.
Mode	Specifies the performance conditions for which portamento will be applied.	
	NORMAL	Portamento will always be applied.
	LEGATO	Applies portamento only when you play legato (while you are playing one note and then change your fingering to play another note).
Type	Specifies the type of portamento effect.	
	RATE	The time it takes will depend on the distance between the two pitches.
	TIME	The time it takes will be constant.
Start	When another key is pressed during a pitch change produced by portamento, a new pitch change will begin. This setting specifies the pitch at which the change will begin.	
	Pitch	Starts a new portamento when another key is pressed while the pitch is changing. 
	NOTE	Portamento will begin from the pitch where the current change would end. 
Time	0-1023	When portamento is used, this specifies the time over which the pitch will change. Higher settings will cause the pitch change to the next note to take more time.
Curve Type	Specifies the pitch change curve for portamento.	
	LIN	Change on a linear curve.
	EXP-L	Change on a non-linear curve (gentle slope).
	EXP-H	Change on a non-linear curve (steep slope).

Parameter	Value	Explanation
<b>BEND</b>		
* These ZEN-Core tone parameters are not used in Aerophone.		
Range Up	0-48 (semitone)	Specifies the degree of pitch change in semitones when the Pitch Bend lever is all the way right. For example, if this parameter is set to "48," the pitch will rise four octave when the pitch bend lever is moved to the right-most position.
Range Down	0-48 (semitone)	Specifies the degree of pitch change in semitones when the Pitch Bend lever is all the way left. For example if this is set to "48" and you move the pitch bend lever all the way to the left, the pitch will fall 4 octaves.
Range Fine Up	0-100 (cent)	Finely adjusts the degree of pitch change in one-cent units when the Pitch Bend lever is moved to the right.
Range Fine Down	0-100 (cent)	Finely adjusts the degree of pitch change in one-cent units when the Pitch Bend lever is moved to the left.
Bend Mode	Specifies the bend mode.	
	NORMAL	The pitch bend lever works in the conventional way.
	CATCH+LAST	The pitch bend effect applies only to the last-played note. If a note-on occurs while pitch bend is already applied, the new note sounds at the center pitch. The pitch starts changing only after the controller passes through the center position.
<b>SOFT PEDAL</b>		
Soft Level Sens	0-100	Specifies the amount of volume change that occurs when you operate the soft pedal (CC#67). This is effective when specified for piano sounds.
<b>PARTIAL MIX TABLE</b>		
Velocity Control	Sets how the partials sound when different partials are used according to how hard you initially blow (the velocity).	
	OFF	Off
	ON	Different partials are sounded according to the playing velocity and the Velocity Range Lower/Upper and Velocity Fade Low/Up (p. 45) settings.
	RANDOM	Each partial is sounded randomly or cyclically.
	CYCLE	Each partial is sounded randomly or cyclically.
<b>In the case of "RANDOM" or "CYCLE"</b>		
<ul style="list-style-type: none"> <li>When Structure 1-2 (3-4) has a setting other than "OFF," partials 1 and 2 (3 and 4) are sounded as a pair, either randomly or in alternation.</li> <li>Velocity has no effect, but you'll need to make settings for each partial so that the Velocity Range (p. 45) does not conflict.</li> </ul>		
Level Curve	These parameters set the curve for the change in level when using Velocity Control to produce different sounds.	
	EXP	When using Velocity Control between partials, the crossfade level changes in a non-linear curve.
	LINEAR	When using Velocity Control to switch between partials, the crossfade level changes in a linear curve.
<b>CONDITION</b>		
Pitch Drift	0-255	Adjusts the slight pitch drift that occurs when notes are played on an analog synthesizer. Use this to adjust the amount of drift.
Condition	0-100	Simulates the changes that occur as a unit ages.



## TONE/STRUCTURE

Structure lets you sound two partials as a set.

You can create a wide range of sounds by using partial 2 or 4 (the modulator) to modulate partial 1 or 3 (the carrier).

Since the Structure uses two partials as a pair, it provides parameters that are used in common by the carrier and modulator.

For the following parameters, only the partial settings of the carrier are valid (the settings of the modulator are ignored).

### TONE/PARTIAL/RANGE

- Key Range Lower
- Key Range Upper
- Key Fade Lower
- Key Fade Upper
- Velocity Range Lower
- Velocity Range Upper
- Velocity Fade Low
- Velocity Fade Up

### TONE/PARTIAL

- Partial Switch

### TONE/PARTIAL/OSC

- Delay Mode
- Delay Time Sync
- Delay Time (note)
- Delay Time

### TONE/PARTIAL/CONTROL

- Envelope Mode
- Receive Hold-1
- Redamper Switch
- Damper Free Note

### TONE/PARTIAL/MATRIX CONTROL

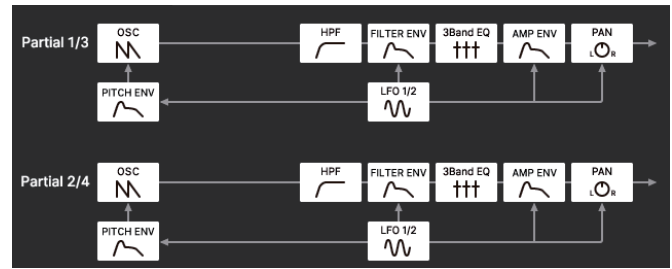
- Destination: PMT
- Destination: CROSS-MOD

Parameter	Value	Explanation
Structure1-2		The sound of partial 1 is modulated by partial 2.
	OFF	Off
	SYNC	Implements the oscillator sync function that is provided by an analog synthesizer. The partial 1 oscillator is reset at intervals of partial 2's pitch cycle. * This is valid when the OSC Type (p. 44) is "VA" or "PCM-Sync."
	RING	Implements the ring modulator function that is provided by an analog synthesizer. The output sound of partial 2 is multiplied with partial 1.
	XMOD, XMOD2	Implements the cross modulation function that is provided by an analog synthesizer. The output sound of partial 2 is applied as the pitch of partial 1. XMOD2 is available only when Partial 1 and 3 are OSC Type (p. 44) "VA."
Structure3-4		The sound of partial 3 is modulated by partial 4.
	OFF	Off
	SYNC	Implements the oscillator sync function that is provided by an analog synthesizer. The partial 3 oscillator is reset at intervals of partial 4's pitch cycle. * This is valid when the OSC Type (p. 44) is "VA" or "PCM-Sync."
	RING	Implements the ring modulator function that is provided by an analog synthesizer. The output sound of partial 4 is multiplied with partial 3.
	XMOD, XMOD2	Implements the cross modulation function that is provided by an analog synthesizer. The output sound of partial 4 is applied as the pitch of partial 3. XMOD2 is available only when Partial 1 and 3 are OSC Type (p. 44) "VA."
Partial Phase Lock	OFF, ON	It locks the waveform phase between partials. It is effective to use this with XMOD2. * This is valid when the OSC Type (p. 44) is "VA."
<b>RING</b>		
1-2 Level	0-127	RING level when Structure1-2 is "RING."
3-4 Level	0-127	RING level when Structure3-4 is "RING."
OSC1 Level	0-127	Sets the partial 1 OSC level. * This is valid when the Structure1-2 is "RING."
OSC2 Level	0-127	Sets the partial 2 OSC level. * This is valid when the Structure1-2 is "RING."
OSC3 Level	0-127	Sets the partial 3 OSC level. * This is valid when the Structure3-4 is "RING."
OSC4 Level	0-127	Sets the partial 4 OSC level. * This is valid when the Structure3-4 is "RING."

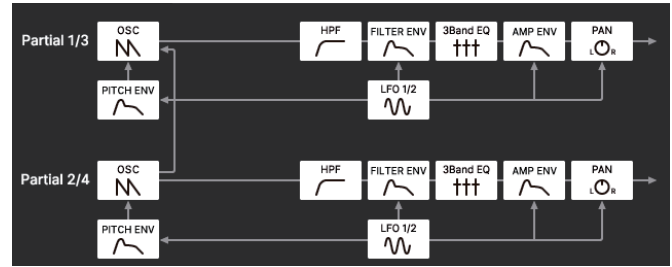
# Tone Parameters

Parameter	Value	Explanation
<b>CROSS MOD</b>		
1-2 Depth	0-10800 (cent)	Cross Modulation Depth when Structure1-2 is "XMOD."
3-4 Depth	0-10800 (cent)	Cross Modulation Depth when Structure3-4 is "XMOD."
OSC1 Level	0-127	Sets the partial 1 OSC level. * This is valid when the Structure1-2 is "XMOD" or "XMOD2."
OSC2 Level	0-127	Sets the partial 2 OSC level. * This is valid when the Structure1-2 is "XMOD" or "XMOD2."
OSC3 Level	0-127	Sets the partial 3 OSC level. * This is valid when the Structure3-4 is "XMOD" or "XMOD2."
OSC4 Level	0-127	Sets the partial 4 OSC level. * This is valid when the Structure3-4 is "XMOD" or "XMOD2."
XM2 1-2 Depth	0-127	Cross Modulation Depth when Structure1-2 is "XMOD2."
XM2 3-4 Depth	0-127	Cross Modulation Depth when Structure3-4 is "XMOD2."

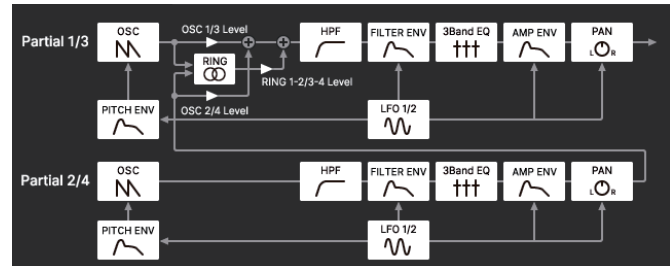
## OFF



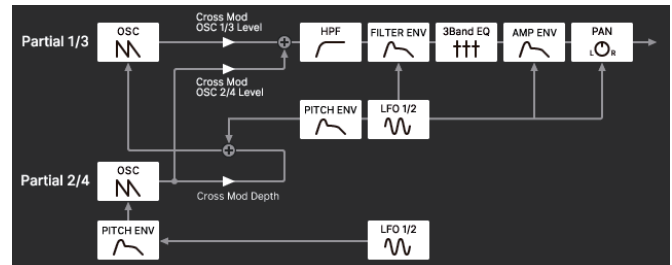
## SYNC



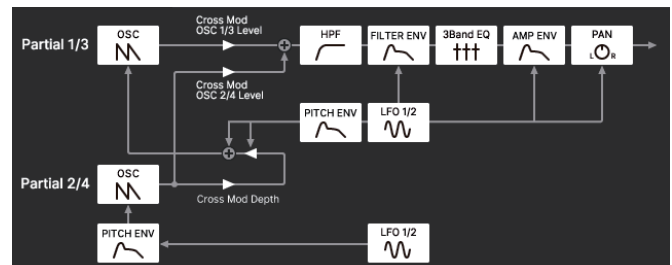
## RING



## XMOD



## XMOD2



## TONE/MFX

Parameter	Value	Explanation
MFX Switch	OFF, ON	Switches the MFX on/off.
MFX Type		Selects the MFX type.
MFX parameters	See "MFX/IFX Parameters" (p. 55)	Edit the parameters for the selected MFX. The available parameters differ depending on the type of the effects you selected in MFX Type.
<b>SEND</b>		
Chorus Send Level	0–127	Adjusts the amount of chorus. If you don't want to add the chorus effect, set it to "0."
Reverb Send Level	0–127	Adjusts the amount of reverb. If you don't want to add the reverb effect, set it to "0."
<b>CONTROL</b>		
Control Source 1–4	Specifies the MIDI message that will control the corresponding MFX CONTROL parameter.	
	OFF	MFX CONTROL will not be used.
	CC01–31	Controller number 1–31
	CC33–95	Controller number 33–95
	BEND	Pitch bend
	AFTER TOUCH	Aftertouch
	SYS-CTRL1–4	Use the controller that is assigned by the System Control Source 1–4.
Control Destination 1–4	Specifies the multi-effect parameters that are controlled by MFX CONTROL. The multi-effects parameters available for control will depend on the multi-effects type.	
Control Sens 1–4	-63–+63	Specifies the depth of MFX CONTROL. Specify a positive (+) value if you want to change the value of the assigned destination in a positive direction (larger, toward the right, faster, etc.), or specify a negative (-) value if you want to change the value in a negative direction (smaller, toward the left, slower, etc.). Larger values will allow a greater amount of control.

## Controlling a MFX via MIDI (MFX CONTROL)

You can use MIDI messages such as control change messages to control the principal MFX parameters.

This capability is called "MFX CONTROL (multi-effects control)."

The editable parameters are pre-determined according to the MFX type. You can specify up to four parameters for multi-effect control.

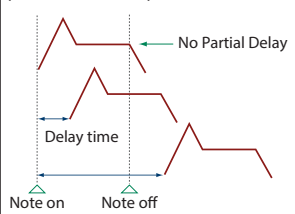
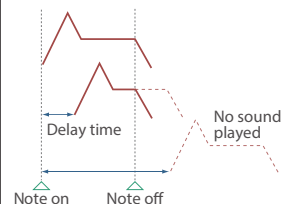
To use MFX CONTROL, you'll need to specify which MIDI message (Source) will affect which parameter (Destination), and how greatly (Sens).

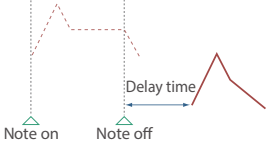
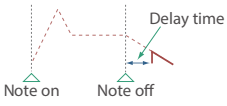
## TONE/PARTIAL

Parameter	Value	Explanation
Partial SW	OFF, ON	Turns each partial on/off.

## TONE/PARTIAL/OSC

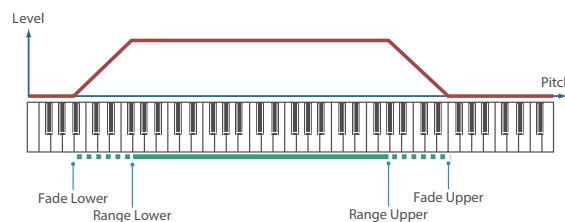
Parameter	Value	Explanation
OSC Type	Specifies the oscillator type.	
	PCM (INT A–D)	The wave of the number specified by the Wave Group (INT A–D) and Wave LEFT/RIGHT is used.
	VA	A numerically calculated analog-modeled wave is generated. The wave of the number specified by Wave is used.
	PCM-Sync	The wave of the number specified by PCM-Sync Wave Number is used.
	SuperSAW	SuperSAW is used.
	Noise	White noise is used.
Wave LEFT/RIGHT	Specifies the wave that is used when OSC Type is "PCM." Specifies the wave within the group specified by Wave Group. If using mono, specify only the LEFT and leave RIGHT at "0: OFF." If using stereo, specify the RIGHT as well. If you specify only RIGHT, no sound is heard.	
Waveform	Specifies the wave that is used when OSC Type is "VA."	
	SAW	Sawtooth wave
	SQR	Square wave
	TRI	Triangle wave
	SIN	sine wave
	RAMP	Ramp wave
	JUNO	Modulated sawtooth wave
	TRI2	Triangle wave variation
	TRI3	Triangle wave variation
	SIN2	Sine wave variation
VA Waveform Invert Switch	OFF, ON	If this is "ON," the phase of the VA waveform is inverted.
PCM-Sync Wave	Specifies the wave that is used when OSC Type is "PCM-Sync." The PCM-Sync oscillator is effective when specified as the Slave (the sync-modulated partial 1 or 3) when Structure is set to "SYNC."	
Gain	-18–+12 [dB]	Specifies the gain (amplitude) of the waveform. The value will change in 6 dB (decibel) steps. Each 6 dB increase doubles the gain.
Pulse Width	0–127	This effect is produced when the waveform is deformed by varying the duty cycle of the pulse width. It is effective when OSC Type is "VA," and is also effective with waveforms other than SQR (square wave). * If the value is 64, the pulse width has a 50%:50% duty cycle.
PWM Depth	-63–+63	Specifies the amount (depth) of LFO applied to PW (Pulse Width). PW is modulated according to the LFO2 setting.
Click Type	SOFT, HARD, NATURAL, OFF	Changes the sense of attack by varying the position at which the sound starts. This is available if OSC Type is "VA." However, HARD is effective only when Waveform is "TRI," "TRI2," "SIN," or "SIN2."
Fat	0–127	Boosts the low-frequency region. * This is valid when the OSC Type is "VA."
SuperSAW Detune	0–127	Adjusts the Detune depth for SuperSAW. Higher values produce a deeper Detune effect. * This is valid when the OSC Type is "SuperSAW."

Parameter	Value	Explanation
OSC Attenuator	0–255	Specifies the OSC level. 255 is the reference value. If you want only the self-oscillation of the filter to be heard, set this to 0.
FXM Switch	OFF, ON	This sets whether FXM will be used (ON) or not (OFF). <b>MEMO</b> FXM (Frequency Cross Modulation) uses a specified waveform to apply frequency modulation to the currently selected waveform, creating complex overtones. This is useful for creating dramatic sounds or sound effects.
FXM Color	1–4	Specifies how FXM will perform frequency modulation. Higher settings result in a grainier sound, while lower settings result in a more metallic sound.
FXM Depth	0–16	Specifies the depth of the modulation produced by FXM.
Delay Mode	<p><b>Partial Delay</b></p> <p>This produces a time delay between the moment a key is pressed (or released), and the moment the partial actually begins to sound. You can also make settings that shift the timing at which each partial is sounded.</p> <p>This differs from the Delay in the internal effects, in that by changing the sound qualities of the delayed partials and changing the pitch for each partial, you can also perform arpeggio-like passages just by pressing one key.</p> <p>You can also synchronize the partial delay time to the tempo of the external MIDI sequencer.</p> <p>If Legato Retrigger Interval is other than OFF, legato operation occurs only when Delay Mode is NORMAL.</p> <p>Also in this case, Legato Retrigger Interval operates as 0 (retriggers at each Delay Time).</p>	
	NORMAL	<p>The partial begins to play after the time specified in the Partial Delay Time parameter has elapsed.</p> 
HOLD	<p>Although the partial begins to play after the time specified in the Partial Delay Time parameter has elapsed, if the key is released before the time specified in the Partial Delay Time parameter has elapsed, the partial is not played.</p> 	

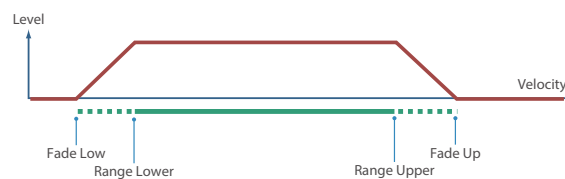
Parameter	Value	Explanation
Delay Mode	KEY-OFF-NORMAL	<p>Rather than being played while the key is pressed, the partial begins to play once the period of time specified in the Partial Delay Time parameter has elapsed after release of the key.</p> <p>This is effective in situations such as when simulating noises from guitars and other instruments.</p> 
	KEY-OFF-DECAY	<p>Rather than being played while the key is pressed, the partial begins to play once the period of time specified in the Partial Delay Time parameter has elapsed after release of the key. Here, however, changes in the TVA Envelope begin while the key is pressed, which in many cases means that only the sound from the release portion of the envelope is heard.</p> 
Delay Time Sync	OFF, ON	Set this "ON" if you want the partial delay time to synchronize with the tempo.
Delay Time (note)	1/64T-2	It specifies the delay time in terms of a note value. * This is available when Delay Time Sync is "ON."
Delay Time	0-1023	It specifies the delay time without regard to the tempo. * This is available when Delay Time Sync is OFF.

## TONE/PARTIAL/RANGE

Parameter	Value	Explanation
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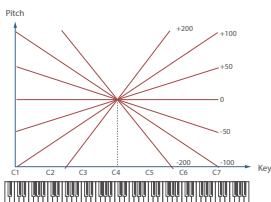
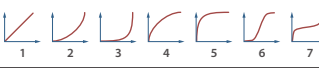


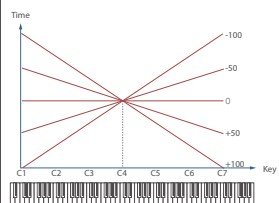
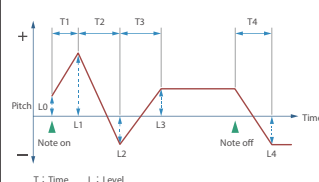
Key Range Lower	C-1-G9	Specify the key range for each partial. Make these settings when you want different key ranges to play different tones.
Key Range Upper	C-1-G9	Specify the lower limit (Lower) and upper limit (Upper) of the key range.
Key Fade Lower	0-127	Specifies the degree to which the partial is sounded by notes played below the Keyboard Range Low. If you don't want the tone to sound at all, set this parameter to "0."
Key Fade Upper	0-127	Specifies the degree to which the partial is sounded by notes played above the Keyboard Range Up. If you don't want the tone to sound at all, set this parameter to "0."



Velocity Range Lower	1-127	Specify the lower limit (Lower) and upper limit (Upper) of the velocities that will sound the partial.
Velocity Range Upper	1-127	Make these settings when you want different partials to sound depending on keyboard playing dynamics.
Velocity Fade Low	0-127	Specifies the degree to which the partial is sounded by notes played more softly than Velocity Range Low. If you don't want the tone to sound at all, set this parameter to "0."
Velocity Fade Up	0-127	Specifies the degree to which the partial is sounded by notes played more strongly than Velocity Range Up. If you don't want the tone to sound at all, set this parameter to "0."

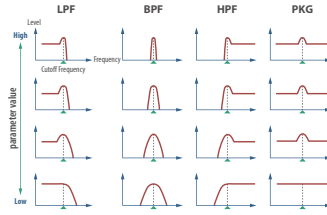
## TONE/PARTIAL/PITCH

Parameter	Value	Explanation
Coarse Tune	-48~+48 (semitone)	Adjusts the pitch of the sound up or down in semitone steps (+/-4 octaves).
Fine Tune	-50~+50 (cent)	Adjusts the pitch of the sound up or down in 1-cent steps (+/-50 cents).
Random Depth	0~1200 [cent]	This specifies the width of random pitch deviation that will occur each time a key is pressed. If you do not want the pitch to change randomly, set this to "0." * These values are in units of cents (1/100th of a semitone).
Pitch Keyfollow	-200~+200	This specifies the amount of pitch change that will occur when you play a key one octave higher (i.e., 12 keys upward on the keyboard). If you want the pitch to rise one octave as on a conventional keyboard, set this to "+100." If you want the pitch to rise two octaves, set this to "+200." Conversely, set this to a negative (-) value if you want the pitch to fall. With a setting of "0," all keys will produce the same pitch. 
Vibrato Pitch Sens	-100~+100	Specifies the amount by which the Pitch Depth of LFO1 is changed by the program's Modify Vib Depth.
Stereo Detune	-50~+ 50 (cent)	Specifies the detune between L↔R when outputting in stereo.
<b>PITCH ENVELOPE</b>		
Depth	-100~+100	Adjusts the effect of the Pitch Envelope. Higher settings will cause the pitch envelope to produce greater change. Negative (-) value will invert the shape of the envelope. If OSC Type () is other than VA, this is limited to ±63.
Velocity Curve	FIXED, 1~7	Selects one of the following 7 curves that will determine how keyboard playing dynamics will affect the pitch envelope. Set this to "FIXED" if you don't want the pitch envelope be affected by the keyboard velocity. 
Velocity Sens	-100~+100	Keyboard playing dynamics can be used to control the depth of the pitch envelope. If you want the pitch envelope to have more effect for strongly played notes, set this parameter to a positive (+) value. If you want the pitch envelope to have less effect for strongly played notes, set this to a negative (-) value.
T1 Velocity Sens	-100~+100	This allows keyboard dynamics to affect the Time 1 of the Pitch envelope. If you want Time 1 to be speeded up for strongly played notes, set this parameter to a positive "+" value. If you want it to be slowed down, set this to a negative "-" value.
T4 Velocity Sens	-100~+100	Use this parameter when you want key release speed to affect the Time 4 value of the pitch envelope. If you want Time 4 to be speeded up for quickly released notes, set this parameter to a positive (+) value. If you want it to be slowed down, set this to a negative (-) value.

Parameter	Value	Explanation
Time Keyfollow	-100~+100	Use this setting if you want the pitch envelope times (Time 2~Time 4) to be affected by the keyboard location. Based on the pitch envelope times for the C4 key, positive (+) value will cause notes higher than C4 to have increasingly shorter times, and negative (-) value will cause them to have increasingly longer times. Higher values will produce greater change. 
LFO Trigger Switch	OFF, ON	If this is ON, the pitch envelope is cyclically retriggered by LFO1. * This is valid when the Envelope Mode (p. 52) is "SUSTAIN."
Time1 (Attack) Time2 Time3 (Decay) Time4 (Release)	0~1023	Specify the pitch envelope times (Time 1~Time 4). Higher settings will result in a longer time until the next pitch is reached. (For example, Time 2 is the time over which the pitch changes from Level 1 to Level 2.) * If ADSR Envelope Switch is "ON," the Time 2 has no effect. 
Level0 Level1 Level2 Level3 (Sustain) Level4	-511~+511	Specify the pitch envelope levels (Level 0~Level 4). It determines how much the pitch changes from the reference pitch (the value set with Coarse Tune or Fine Tune on the Pitch screen) at each point. Positive (+) value will cause the pitch to be higher than the standard pitch, and negative (-) value will cause it to be lower. * If ADSR Envelope Switch (p. 52) is "ON," only Level 3 (Sustain) has an effect. Also in this case, settings with a negative value are ignored.

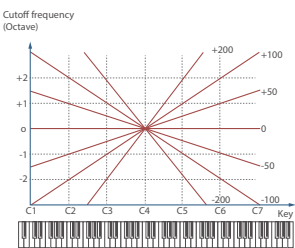
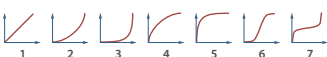
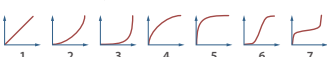
# TONE/PARTIAL/FILTER

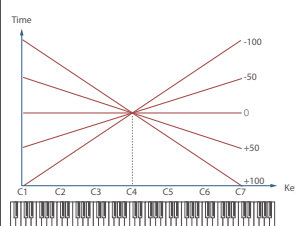
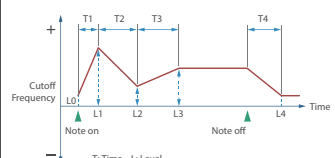
Parameter	Value	Explanation
<b>FILTER</b>		
Filter Type	TVF, VCF	Selects the type of filter. <b>MEMO</b> TVF stands for Time Variant Filter, a filter that lets you specify in detail how the frequency components of the sound change over time. If you select VCF, the polyphony will be lower than if you select TVF.
		Selects the type of TVF filter. * If Filter Type is set to VCF, this will be LPF.
TVF Type	OFF	No filter is used.
	LPF	Low Pass Filter. This cuts the frequencies in the region above the cutoff frequency (Cutoff Frequency). Since this cuts the high-frequency region, the sound becomes more mellow. This is the most common filter used in synthesizers.
	BPF	Band Pass Filter. This leaves only the frequencies in the region of the cutoff frequency (Cutoff Frequency), and cuts the rest. This can be useful when creating distinctive sounds.
	HPF	High Pass Filter. This cuts the frequencies in the region below the cutoff frequency (Cutoff Frequency). This is suitable for creating percussive sounds emphasizing their higher tones.
	PKG	Peaking Filter. This emphasizes the frequencies in the region of the cutoff frequency (Cutoff Frequency). You can use this to create wah-wah effects by employing an LFO to change the cutoff frequency cyclically.
	LPF2	Low Pass Filter 2. Although frequency components above the Cutoff frequency (Cutoff Frequency) are cut, the sensitivity of this filter is half that of the LPF. This makes it a comparatively warmer low pass filter. This filter is good for use with simulated instrument sounds such as the acoustic piano. * If you set "LPF2," the setting for the Resonance parameter (p. 47) will be ignored.
	LPF3	Low Pass Filter 3. Although frequency components above the Cutoff frequency (Cutoff Frequency) are cut, the sensitivity of this filter changes according to the Cutoff frequency. While this filter is also good for use with simulated acoustic instrument sounds, the nuance it exhibits differs from that of the LPF2, even with the same TVF Envelope settings. * If you set "LPF3," the setting for the Resonance parameter (p. 47) will be ignored.
VCF Type	VCF1, JP, MG, P5	Each setting simulates the operation of an analog synthesizer's LPF. In particular, MG, JP, and P5 are types that are suitable for reproducing synthesizer sounds of the past. * This is valid when the Filter Type is "VCF."

Parameter	Value	Explanation
Filter Slope	-12, -18, -24 (dB/Oct)	Selects the slope (steepness) of the filter. For VCF, you can choose -12, -18, or -24. For TVF, only -12 or -24 can be selected. If Filter Type is TVF, the following limitations apply. <ul style="list-style-type: none"> <li>You can specify only -12 dB or -24 dB. If you specify -18 dB, the sound generator operates internally with the -12 dB setting.</li> <li>If you specify -24 dB, the polyphony will be lower than if you specify -12 dB.</li> </ul>
Resonance	0-1023	Emphasizes the portion of the sound in the region of the cutoff frequency, adding character to the sound. Excessively high settings can produce oscillation, causing the sound to distort. 
Reso Velo Sens	-100-+100	Use this parameter when changing the resonance to be applied as a result of changes in playing velocity. Specify a positive "+" value if you want resonance to increase when you play strongly, or a negative "-" value if you want it to decrease.
Vib Cutoff Sens	-100-+100	Specifies how the TVF Depth of LFO1 is affected by the program's Modify Vib Depth.
HPF Cutoff	0-1023	Specifies the cutoff frequency of the -6 dB high-pass filter. * This is valid when the Filter Type is "VCF."
Cutoff Freq	0-1023	Selects the frequency at which the filter begins to have an effect on the waveform's frequency components. With "LPF/LPF2/LPF3" selected for the TVF Filter Type parameter, lower cutoff frequency settings reduce a tone's upper harmonics for a more rounded, warmer sound. Higher settings make it sound brighter. If "BPF" is selected for the Filter Type, harmonic components will change depending on the TVF Cutoff Frequency setting. This can be useful when creating distinctive sounds. With "HPF" selected, higher Cutoff Frequency settings will reduce lower harmonics to emphasize just the brighter components of the sound. With "PKG" selected, the harmonics to be emphasized will vary depending on Cutoff Frequency setting.



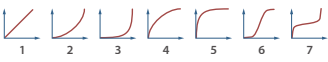
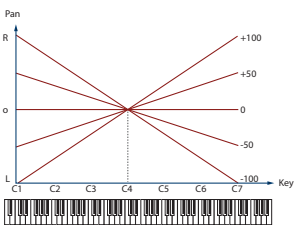
## Tone Parameters

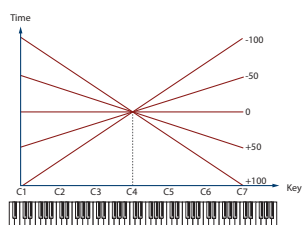
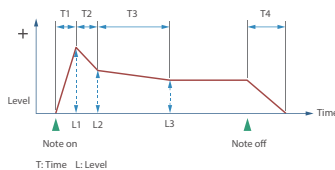
Parameter	Value	Explanation
Cutoff Keyfollow	-200+200	Use this parameter if you want the cutoff frequency to change according to the key that is pressed. Relative to the cutoff frequency at the key specified by Cutoff Keyfollow Base Point, positive "+" values cause the cutoff frequency to become higher as you play above the reference key, and negative "-" values cause the cutoff frequency to become lower. Higher values will produce greater change. 
Cutoff Velo Curve	FIXED, 1-7	Selects one of the following seven curves that determine how keyboard playing dynamics (velocity) influence the cutoff frequency. Set this to "FIXED" if you don't want the Cutoff frequency to be affected by the keyboard velocity. 
Cutoff Velo Sens	-100+100	Use this parameter when changing the cutoff frequency to be applied as a result of changes in playing velocity. Specify a positive "+" value if you want the cutoff frequency to raise when you play strongly, or a negative "-" value if you want it to lower.
Cut KF Base Point	0-127	Specifies the reference key when using Keyfollow to modify the cutoff frequency. If this is 60, the C4 key (middle C) is the reference key.
<b>FILTER ENVELOPE</b>		
Depth	-63+63	Specifies the depth of the Filter envelope. Higher settings increase the change produced by the Filter envelope. Negative (-) value will invert the shape of the envelope.
Fine Depth	-63+63	Finely adjusts the depth of the filter envelope.
Velocity Curve	FIXED, 1-7	Selects one of the following seven types of curve by which keyboard playing dynamics affect the depth of the filter envelope. If you don't want keyboard playing dynamics to affect the filter envelope depth, specify "FIXED." 
Velocity Sens	-100+100	Specify this if you want keyboard playing dynamics to affect the filter envelope depth. Specify a positive "+" value if you want the filter envelope to apply more deeply as you play more strongly, or a negative "-" value if you want it to apply less deeply.
T1 Velocity Sens	-100+100	Specify this if you want keyboard playing dynamics to affect Time 1 of the filter envelope. If you want Time 1 to be speeded up for strongly played notes, set this parameter to a positive "+" value. If you want it to be slowed down, set this to a negative "-" value.

Parameter	Value	Explanation
T4 Velocity Sens	-100+100	Specify this if you want key release velocity to affect Time 4 of the filter envelope. If you want Time 4 to be speeded up for quickly released notes, set this parameter to a positive (+) value. If you want it to be slowed down, set this to a negative (-) value.
Time Keyfollow	-100+100	Specify this if you want the filter envelope times (Time 2-Time 4) to vary depending on the keyboard position you play. Relative to the filter envelope times at the C4 key (middle C), positive "+" values shorten the times for notes played in the region above C4, and negative "-" values lengthen the times. Higher values will produce greater change. 
LFO Trigger Switch	OFF, ON	If this is "ON," the filter envelope is cyclically retriggered by LFO1. * This is valid when the Envelope Mode (p. 52) is "SUSTAIN."
Time1 (Attack) Time2 Time3 (Decay) Time4 (Release)	0-1023	Specify the filter envelope times (Time 1-Time 4). Higher settings will lengthen the time until the next cutoff frequency level is reached. (For example, Time 2 is the time over which Level 1 will change to Level 2.) * If ADSR Envelope Switch (p. 52) is "ON," the Time 2 has no effect. 
Level0 Level1 Level2 Level3 (Sustain) Level4	0-1023	Specify the filter envelope levels (Level 0-Level 4). Specify the amount of cutoff frequency change at each point relative to the reference cutoff frequency (the cutoff frequency value specified in the Filter screen). * If ADSR Envelope Switch (p. 52) is "ON," only Level 3 (Sustain) has an effect.



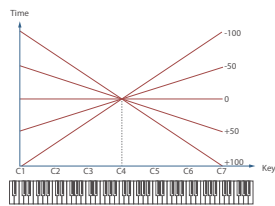
# TONE/PARTIAL/AMP

Parameter	Value	Explanation
<b>AMP</b>		
Level	0–127	Sets the volume of the partial. This setting is useful primarily for adjusting the volume balance between partials.
Velocity Curve	FIXED, 1–7	Selects one of the following seven curves that determine how keyboard dynamics will affect the volume. Set this to "FIXED" if you don't want the volume of the partial to be affected by the keyboard velocity. 
Velocity Sens	-100–+100	Set this when you want the volume of the partial to change depending on the force with which you press the keys. Set this to a positive (+) value to have the changes in partial volume increase the more forcefully the keys are played; to make the partial play more softly as you play harder, set this to a negative (-) value.
Bias Level	-100–+100	Adjusts the angle of the volume change that will occur in the selected Bias Direction. Higher values will produce greater change. Negative (-) values will invert the change direction.
Bias Position	0–127	Specifies the key relative to which the volume will be modified. A setting of 64 is the C4 key (middle C).
Bias Direction	Selects the direction in which change will occur starting from the Bias Position.	
	LOWER	The volume will be modified for the keyboard area below the Bias Point.
	UPPER	The volume will be modified for the keyboard area above the Bias Point.
	LOWER&UPPER	The volume will be modified symmetrically toward the left and right of the Bias Point.
	ALL	The volume changes linearly with the bias point at the center.
Pan	L64–63R	Sets the pan of the partial. "L64" is far left, "0" is center, and "63R" is far right.
Pan Keyfollow	-100–+100	Use this parameter if you want key position to affect panning. Positive (+) value will cause notes higher than C4 key (center C) to be panned increasingly further toward the right, and negative (-) value will cause notes higher than C4 key (center C) to be panned toward the left. Higher values will produce greater change. 
Rand Pan Depth	0–63	Use this parameter when you want the stereo location to change randomly each time you press a key. Higher values will produce a greater amount of change.
Alt Pan Depth	L64–63R	This setting causes panning to be alternated between left and right each time a key is pressed. Higher values will produce a greater amount of change. "L" or "R" settings will reverse the order in which the pan will alternate between left and right. For example if two partials are set to "L" and "R" respectively, the panning of the two tones will alternate each time they are played.

Parameter	Value	Explanation
Vibrato Level Sens	-100–+100	Specifies how the program's Modify Vib Depth affects the Amp Depth of LFO1.
Stereo Width	0–100	Adjusts the amount of width when outputting in stereo. This has no effect when outputting in mono.
<b>AMP ENVELOPE</b>		
T1 Velocity Sens	-100–+100	Specify this if you want keyboard dynamics to affect the AMP envelope's Time 1. If you want Time 1 to be speeded up for strongly played notes, set this parameter to a positive (+) value. If you want it to be slowed down, set this to a negative (-) value.
T4 Velocity Sens	-100–+100	Specify this if you want key release velocity to affect the AMP envelope's Time 4. If you want Time 4 to be speeded up for quickly released notes, set this parameter to a positive (+) value. If you want it to be slowed down, set this to a negative (-) value.
Time Keyfollow	-100–+100	Specify this if you want keyboard position to affect the AMP envelope's times (Time 2–Time 4). Relative to the AMP envelope times at the C4 key (middle C), positive (+) values cause the times to shorten as you play higher on the keyboard, and negative (-) values cause the times to lengthen. Higher values will produce greater change. 
LFO Trigger Switch	OFF, ON	If this is ON, the amp envelope is cyclically retriggered by LFO1. * This is valid when the Envelope Mode (p. 52) is "SUSTAIN."
Time1 (Attack) Time2 Time3 (Decay) Time4 (Release)	0–1023	Specify the AMP envelope times (Time 1–Time 4). Higher settings lengthen the time until the next volume level is reached. (For example, Time 2 is the time over which Level 1 will change to Level 2.) * If ADSR Envelope Switch (p. 52) is "ON," the Time 2 has no effect.
Level1 Level2 Level3 (Sustain)	0–1023	Specify the AMP envelope levels (Level 1–Level 3). These specify the amount of change at each point relative to the reference volume (the partial level value specified in the Amp screen). 
		* If ADSR Envelope Switch (p. 52) is "ON," only Level 3 (Sustain) has an effect.

# TONE/PARTIAL/LFO1, LFO2

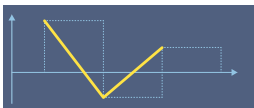
Parameter	Value	Explanation
Waveform	Selects the waveform of the LFO.	
	SIN	Sine wave
	TRI	Triangle wave
	SAW-UP	Sawtooth wave
	SAW-DW	Sawtooth wave (negative polarity)
	SQR	Square wave
	RND	Random wave
	TRP	Trapezoidal wave
	S&H	Sample & Hold wave (one time per cycle, LFO value is changed)
	CHS	Chaos wave
Waveform	VSIN	Modified sine wave. The amplitude of a sine wave is randomly varied once each cycle.
	STEP	A waveform generated by the data specified by LFO Step 1–16. This produces stepped change with a fixed pattern similar to a step modulator.
Rate Sync	OFF, ON	Set this "ON" if you want the LFO rate to synchronize with the tempo.
Rate (note)	1/64T–4	Specifies the LFO rate in terms of a note value. * This is valid when the Rate Sync is "ON."
Rate	0–1023	Specifies the LFO rate without regard to the tempo. Higher values produce a faster LFO rate (a shorter cycle). * This is valid when the Rate Sync is "OFF"
Offset	-100–100	Raises or lowers the LFO waveform relative to the central value (pitch or cutoff frequency). Positive (+) value will move the waveform so that modulation will occur from the central value upward. Negative (-) value will move the waveform so that modulation will occur from the central value downward.
Rate Detune	0–127	Subtly changes the LFO cycle speed (Rate parameter) each time you press a key. Higher values produce greater change. * This is invalid when Rate is set to "note."
Delay Time	0–1023	Specifies the time elapsed before the LFO effect is applied (the effect continues) after the key is pressed (or released). * After referring to "How to Apply the LFO," change the setting until the desired effect is achieved.
Delay Time KF	-100–+100	Adjusts the value for the Delay Time parameter depending on the key position, relative to the C4 key (center C). To decrease the time that elapses before the LFO effect is applied (the effect is continuous) with each higher key that is pressed in the upper registers, select a positive (+) value; to increase the elapsed time, select a negative (-) value. Higher values will produce greater change. If you do not want the elapsed time before the LFO effect is applied (the effect is continuous) to change according to the key pressed, set this to "0."
Fade Mode	ON-IN	Specifies how the LFO will be applied. * After referring to "How to Apply the LFO," change the setting until the desired effect is achieved.
	ON-OUT	
	OFF-IN	
	OFF-OUT	



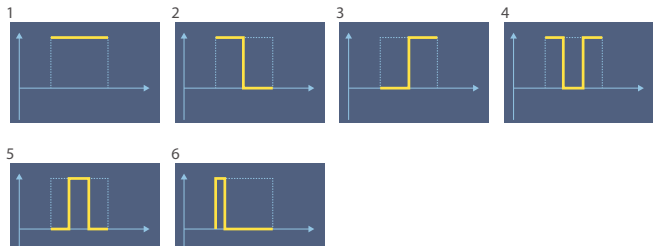
Parameter	Value	Explanation
Fade Time	0–1023	Specifies the time over which the LFO amplitude will reach the maximum (minimum). * After referring to "How to Apply the LFO" (p. 51), change the setting until the desired effect is achieved.
Key Trigger Switch	OFF, ON	Specifies whether the LFO cycle will be synchronized to begin when the key is pressed (ON) or not (OFF).
Pitch Depth	-100–100	Specifies how deeply the LFO will affect pitch. * If OSC Type (p. 44) is other than VA, the range is limited to -63–+63.
Filter Depth	-100–100	Specifies how deeply the LFO will affect the cutoff frequency.
Amp Depth	-100–100	Specifies how deeply the LFO will affect the volume.
Pan Depth	-63–+63	Specifies how deeply the LFO will affect the pan. <b>MEMO</b> Positive (+) and negative (-) value for the Depth parameter result in differing kinds of change in pitch and volume. For example, if you set the Depth parameter to a positive (+) value for one partial, and set another partial to the same numerical value, but make it negative (-), the modulation phase for the two partials will be the reverse of each other. This allows you to shift back and forth between two different partials, or combine it with the Pan setting to cyclically change the location of the sound image.
		Specifies the LFO's starting phase value when Key Trigger is ON. * This has no effect if Waveform is "RND," "S&H," or "CHS."
Phase Position	0	1 cycle
	1	1/4 cycle
	2	1/2 cycle
	3	3/4 cycle
Step Size	1–16	Specifies the length of the step change. * This is effective if Waveform is "STEP"
Step1–16	-72–+72	Specify the Depth value of each step. If you want to specify this in pitch scale degrees (100 cents), the settings are as follows. <b>1 Pitch Depth: 51, Step: multiples of 6</b> up to one octave of change <b>2 Pitch Depth: 74, Step: multiples of 3</b> up to two octaves of change <b>3 Pitch Depth: 89, Step: multiples of 2</b> up to three octaves of change  * If OSC Type is not VA, the Pitch Depth setting range is limited to -63–+63, so only "1" above is possible.
		Specifies the type of curve at each step. ➔ "Step curve types"
Step Curve1–16	0–36	

## Step curve types

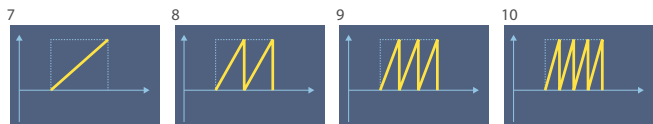
### Step Curve 0



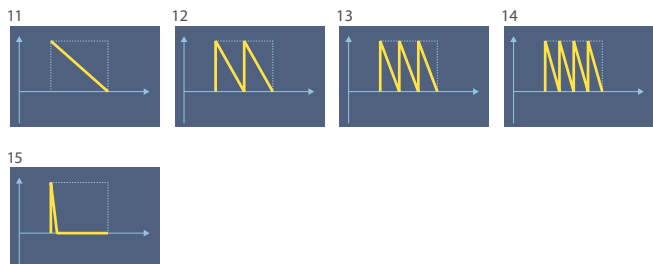
### Curve Type 1–6 (variations of square wave)



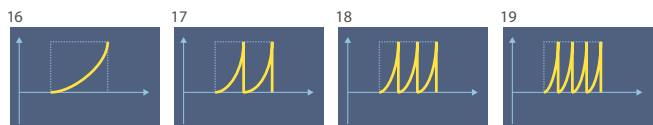
### Curve Type 7–10 (variations of ascending saw)



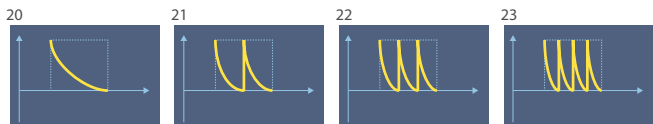
### Curve Type 11–15 (variations of descending saw)



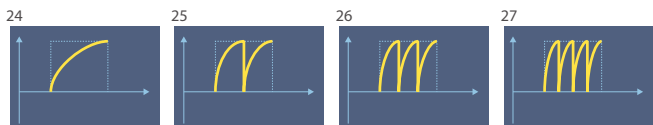
### Curve Type 16–19 (variations of ascending exponential)



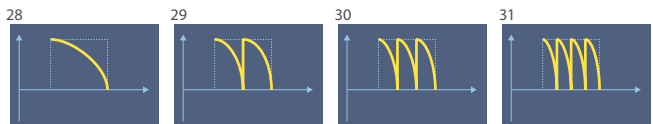
### Curve Type 20–23 (variations of descending exponential)



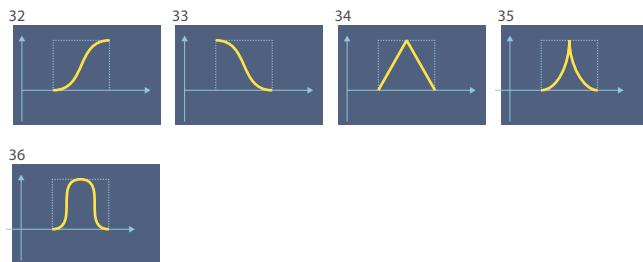
### Curve Type 24–27 (variations of ascending charging curve)



### Curve Type 28–31 (variations of descending charging curve)



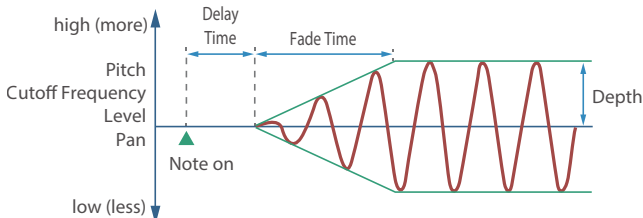
### Curve Type 32–36 (other variations)



## How to Apply the LFO

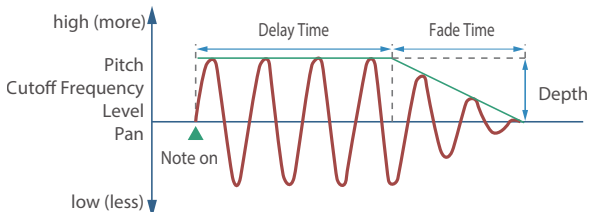
### Apply the LFO gradually after the key is pressed

Fade Mode: ON-IN



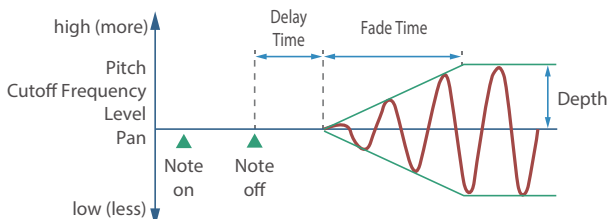
### Apply the LFO immediately when the key is pressed, and then gradually begin to decrease the effect

Fade Mode: ON-OUT



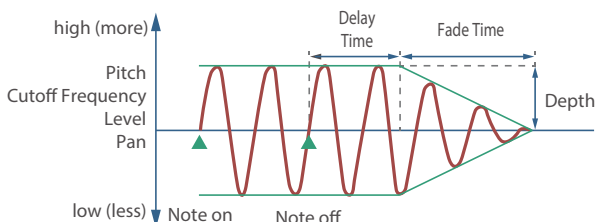
### Apply the LFO gradually after the key is released

Fade Mode: OFF-IN



### Apply the LFO from when the key is pressed until it is released, and gradually begin to decrease the effect when the key is released

Fade Mode: OFF-OUT



## TONE/PARTIAL/PARTIAL EQ

Parameter	Value	Explanation
Switch	OFF, ON	Turns the equalizer on/off for each partial.
Low Gain	-24.0+24.0 (dB)	Gain of the low range.
Low Frequency	20-16000 (Hz)	Frequency of the low range.
Mid Gain	-24.0+24.0 (dB)	Gain of the middle range.
Mid Frequency	20-16000 (Hz)	Frequency of the middle range.
Mid Q	0.5-16.0 (0.1step)	Width of the middle range. Set a higher value to narrow the range to be affected.
High Gain	-24.0+24.0 (dB)	Gain of the high range
High Frequency	20-16000 (Hz)	Frequency of the high range.

## TONE/PARTIAL/OUTPUT

Parameter	Value	Explanation
Output Assign	DRY, MFX	Specifies how the sound of each partial will be output.
Chorus Send Level	0-127	Specifies the level of the signal sent to the chorus for each partial.
Reverb Send Level	0-127	Specifies the level of the signal sent to the reverb for each partial.

## TONE/PARTIAL/CONTROL

Parameter	Value	Explanation
ADSR Envelope Switch	OFF, ON	This imitates the operation of the ADSR envelope that is provided on an analog synthesizer. * If ADSR Envelope Switch is "ON," the "Time 2" parameters of Pitch/Filter/Amp Env Time respectively are ignored, and only the "Level 3" parameters of Pitch/Filter/Amp Env Level are valid.
Envelope Mode	Specifies the envelope mode.	
	NO-SUS	The envelope transitions to the release segment after passing Time 3 regardless of the note-off timing, operating according to the times specified by the envelope.
Envelope Mode	SUSTAIN	The Envelope Level 3 is held from when the envelope Time 3 has elapsed until note-off. When note-off occurs, the envelope transitions from the current value to the Time 4 segment (release segment).
	Damper Free Note	OFF, 1-127 For notes above the specified note number, the Envelope Mode operates as "NO-SUS." Use this to simulate the undamped region of a piano sound.
D.Free Decay Offset	-100+100	Specifies a fine adjustment to the time over which the sound decays when the Damper Free Note effect is applied.
Receive Bender	OFF, ON	Specifies for each partial whether MIDI pitch bend messages are received (ON) or not received (OFF).
Receive Expression	OFF, ON	Specifies for each partial whether MIDI expression messages are received (ON) or not received (OFF).
Receive Hold-1	OFF, ON	Specifies for each partial whether MIDI hold 1 messages are received (ON) or not received (OFF).
Redamper Switch	OFF, ON	If Redamper Switch is ON, you can perform the Half Damper operations used for piano sounds. However, the following conditions must be satisfied in order to use this operation. <ul style="list-style-type: none"> <li>Envelope Mode is NO-SUS</li> <li>Amp Envelope's Level 1 and 2 are 1 or greater</li> <li>Amp Envelope's Times are Time 3 &gt; Time4</li> </ul>
Soft EQ Sens	0-100	Increases the proportion by which the EQ's HighGain is lowered by the amount of pedal. With a setting of "0," this has no effect.
Wave Tempo Sync	OFF, ON	Turn this on to match the phrase loop with the clock (tempo). * This is enabled with when you select a waveform for which a tempo (BPM) is shown.

## TONE/PARTIAL/MATRIX CONTROL

Ordinarily, if you wanted to change partial parameters using an external MIDI device, you would need to send System Exclusive messages-MIDI messages designed exclusively for the Aerophone. However, System Exclusive messages tend to be complicated, and the amount of data that needs to be transmitted can get quite large.

For that reason, a number of the more typical of the Aerophone's partial parameters have been designed so they accept the use of Control Change (or other) MIDI messages for the purpose of making changes in their values. This provides you with a variety of means of changing the way tones are played.

The function which allows you use MIDI messages to make these changes in realtime to the partial parameters is called the "Matrix Control."

Up to four Matrix Controls can be used in a single tone.

To use Matrix Control, you specify which MIDI message (Source) controls which parameter (Destination) and how deeply (Sens: sensitivity).

Parameter	Value	Explanation
	Sets the MIDI message used to change the partial parameter with the Matrix Control.	
	OFF	Matrix control will not be used.
	CC01-31, CC33-95	Controller numbers 1-31, 33-95
	BEND	Pitch bend
	AFTER TOUCH	Aftertouch
	SYS-CTRL1-4	MIDI messages assigned by the SYSTEM parameters SYS-CTRL 1-4
	VELOCITY	Velocity (pressure you press a key with)
	KEYFOLLOW	Keyfollow (keyboard position with C4 as 0)
	TEMPO	Tempo specified by the tempo assign source
	LFO1, LFO2	LFO 1 LFO 2
	PIT-ENV	Pitch envelope
	FLT-ENV	Filter envelope
	AMP-ENV	Amp envelope
Source	<ul style="list-style-type: none"> <li>* Velocity and Keyfollow correspond to Note messages.</li> <li>* Although there are no MIDI messages for LFO 1 through AMP Envelope, they can be used as Matrix Control. In this case, you can change the partial settings in realtime by playing tones.</li> <li>* If you want to use common controllers for the entire Aerophone, select "SYS-CTRL1"- "SYS-CTRL4." MIDI messages used as System Control 1-4 are set with the System Control Source1-4.</li> </ul>	
	<b>NOTE</b>	
	There are parameters that determine whether or not Pitch Bend, Controller Number 11 (Expression) and Controller Number 64 (Hold 1) are received (p. 52). When these settings are "ON," and the MIDI messages are received, then when any change is made in the settings of the desired parameter, the Pitch Bend, Expression, and Hold 1 settings also change simultaneously. If you want to change the targeted parameters only, then set these to "OFF."	

Parameter	Value	Explanation
	Selects the partial parameter that is to be controlled when using the Matrix Control. The following parameters can be controlled.	
	When not controlling parameters with the Matrix Control, set this to "OFF."	
	Up to four parameters can be specified for each Matrix Control, and controlled simultaneously.	
	OFF	Matrix control will not be used.
	PCH	Changes the pitch.
	CUT	Changes the cutoff frequency.
	RES	Emphasizes the overtones in the region of the cutoff frequency, adding character to the sound.
	LEV	Changes the volume level.
	PAN	Changes the pan.
	CHO	Changes the amount of chorus.
	REV	Changes the amount of reverb.
	PIT-LFO1	Changes the vibrato depth.
	PIT-LFO2	
	FLT-LFO1	Changes the wah depth.
	FLT-LFO2	
Destination 1-4	AMP-LFO1	Changes the tremolo depth.
	AMP-LFO2	
	PAN-LFO1	Changes the effect that the LFO will have on pan.
	PAN-LFO2	
	LFO1-RATE	Changes the speed of the LFO cycles. The speed will not change if LFO Rate is set to "note."
	LFO2-RATE	
	PIT-ATK	Changes the Time 1 of the PITCH envelope.
	PIT-DCY	Changes the Time 2 and Env Time 3 of the PITCH envelope.
	PIT-REL	Changes the Time 4 of the PITCH envelope.
	FLT-ATK	Changes the Time 1 of the FILTER envelope.
	FLT-DCY	Changes the Time 2 and Env Time 3 of the FILTER envelope.
	FLT-REL	Changes the Time 4 of the FILTER envelope.
	AMP-ATK	Changes the Time 1 of the AMP envelope.
	AMP-DCY	Changes the Time 2 and Env Time 3 of the AMP envelope.
AMP-REL	Changes the Time 4 of the AMP envelope.	

## Tone Parameters

Parameter	Value	Explanation
Destination 1–4	PMT	<p>If the Matrix Control is used to split partials, set the Velocity Control (p. 40) to "OFF".</p> <ul style="list-style-type: none"> <li>If the Matrix Control is used to split partials, we recommend setting the Sens to "+63." Selecting a lower value may prevent switching of the partials. Furthermore, if you want to reverse the effect, set the value to "-63."</li> <li>If you want to use matrix control to switch smoothly between partials, use the Velocity Fade Low and Velocity Fade Up (p. 45). The higher the values set, the smoother the switch is between the partials.</li> </ul>
	FXM	Changing the depth of frequency modulation produced by FXM
	MFX-CTRL1	Applies a change to MFX CONTROL 1–4 Source. If this is specified for more than one partial, the result will be the summed values.
	MFX-CTRL2	
	MFX-CTRL3	
	MFX-CTRL4	
	PW	Applies change to PW.
	PWM	Applies change to PWM.
	FAT	Applies change to FAT.
	XMOD	This setting is valid only for the carrier partial (Partial 1 or 3), and applies change to the CROSS MOD 1-2 Depth or CROSS MOD 3-4 Depth.
	LFO1-STEP	Specifies the step position. In this case, the Sens value is ignored.
	LFO2-STEP	* This is valid when the LFO1/LFO2 Waveform (p. 50) is "STEP"
	SSAW-DETN	Applies change to SuperSAW Detune. * This is valid when the OSC Type (p. 44) is "SuperSAW."
	PIT-DEPTH	Changes the depth of the PITCH envelope.
	FLT-DEPTH	Changes the depth of the FILTER envelope.
	AMP-DEPTH	Changes the depth of the AMP envelope.
	XMOD2	Applies change to XMOD2 1-2 (3-4) Depth. * This is valid when the Structure 1-2 (3-4) (p. 41) is "XMOD2."
	ATT	Applies change to OSC Attenuator.
	RING-OSC1-LEV	Applies change to RING OSC1 Level. * This is valid when the Structure 1-2 (3-4) (p. 41) is "RING."
	RING-OSC2-LEV	Applies change to RING OSC2 Level. * This is valid when the Structure 1-2 (3-4) (p. 41) is "RING."
XMOD-OSC1-LEV	Applies change to CROSS MOD OSC1 Level. * This is valid when the Structure 1-2 (3-4) (p. 41) is "XMOD" or "XMOD2."	
XMOD-OSC2-LEV	Applies change to CROSS MOD OSC2 Level. * This is valid when the Structure 1-2 (3-4) (p. 41) is "XMOD" or "XMOD2."	
Sens 1–4	-63–+63	<p>Specify the effective depth of the matrix controls.</p> <p>To make an increase in the currently selected value (to get higher values, move to the right, increase rates, and so on), select a positive (+) value; to make a decrease in the currently selected value (to get lower values, move to the left, decrease rates, and so on), select a negative (-) value.</p> <p>For either positive or negative value, greater absolute values will allow greater amounts of change.</p> <p>Set this to "0" if you don't want to apply the effect.</p>

# MFX/IFX Parameters

You can use the app "Aerophone Pro Editor" to configure the MFX/IFX parameters.

## 00 Thru

### 01 Equalizer

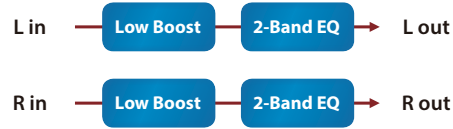
This is a four-band stereo equalizer (low, mid x 2, high).



Parameter	Value	Explanation
Low Freq	20, 25, 31, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400 (Hz)	Frequency of the low range
Low Gain	-15--+15 (dB)	Gain of the low range
Mid1 Freq	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 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, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 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, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 16000 (Hz)	Frequency of the high range
High Gain	-15--+15 (dB)	Gain of the high range
Level	0-127	Output Level

### 04 Low Boost

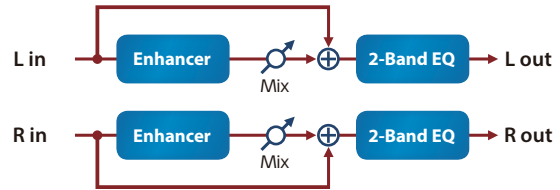
Boosts the volume of the lower range, creating powerful lows.



Parameter	Value	Explanation
Boost Frequency	50, 56, 63, 71, 80, 90, 100, 112, 125 (Hz)	Center frequency at which the lower range will be boosted
Boost Gain	0--+12 (dB)	Center frequency at 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 range
High Gain	-15--+15 (dB)	Gain of the high range
Level	0-127	Output Level

### 07 Enhancer

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

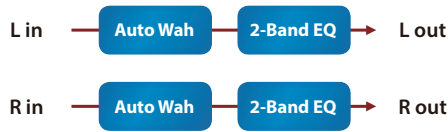


Parameter	Value	Explanation
Sens	0-127	Sensitivity of the enhancer
Mix	0-127	Level of the overtones generated by the enhancer
Low Gain	-15--+15 (dB)	Gain of the low range
High Gain	-15--+15 (dB)	Gain of the high range
Level	0-127	Output Level



## 08 Auto Wah

Cyclically controls a filter to create cyclic change in timbre.



Parameter	Value	Explanation
Filter Type	LPF, BPF	Type of filter <b>LPF:</b> Produces a wah effect in a broad frequency range. <b>BPF:</b> Produces a wah effect in a narrow frequency range.
Manual	0–127	Center frequency at which the wah effect is applied
Peak	0–127	Width of the frequency region at which the wah effect is applied Increasing this value will make the frequency region narrower.
Sens	0–127	Adjusts the sensitivity with which the filter is controlled.
Polarity	UP, DOWN	Direction in which the filter will move <b>UP:</b> The filter will change toward a higher frequency. <b>DOWN:</b> The filter will change toward a lower frequency.
Rate (sync sw)	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. → <b>"Scene Tempo"</b> (p. 25)
Rate (Hz)	0.05–10.00 (Hz)	Modulation frequency of the wah effect
Rate (note)	Note → <b>"Note"</b> (p. 69)	
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

## 09 Humanizer

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



Parameter	Value	Explanation
Drive Switch	OFF, ON	Overdrive on/off
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 rate synchronizes with the tempo of the rhythm. → <b>"Scene Tempo"</b> (p. 25)
Rate (Hz)	0.05–10.00 (Hz)	Frequency at which the two vowels switch
Rate (note)	Note → <b>"Note"</b> (p. 69)	
Depth	0–127	Depth of the effect
Input Sync Switch	OFF, ON	LFO reset on/off If this is ON, the LFO for switching the vowels is reset by the input signal.
Input Sync	0–127	Volume level at which reset is applied
Manual	0–100	Point at which Vowel 1/2 switch <b>0–49:</b> Vowel 1 will have a longer duration. <b>50:</b> Vowel 1 and 2 will be of equal duration. <b>51–100:</b> Vowel 2 will have a longer duration.
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



## 10 Speaker Sim (Speaker Simulator)

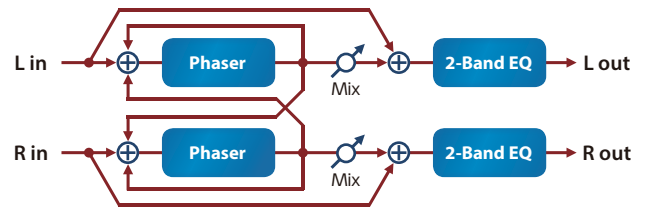
Simulates the speaker type and microphone settings used to record the speaker sound.



Parameter	Value	Explanation																																																																			
Speaker Type		<table border="1"> <thead> <tr> <th>Cabinet</th> <th>Diameter (in inches) and number of the speaker</th> <th>Microphone</th> </tr> </thead> <tbody> <tr> <td>SMALL 1</td> <td>Small open-back enclosure</td> <td>10</td> <td>Dynamic</td> </tr> <tr> <td>SMALL 2</td> <td>Small open-back enclosure</td> <td>10</td> <td>Dynamic</td> </tr> <tr> <td>MIDDLE</td> <td>Open back enclosure</td> <td>12 x 1</td> <td>Dynamic</td> </tr> <tr> <td>JC-120</td> <td>Open back enclosure</td> <td>12 x 2</td> <td>Dynamic</td> </tr> <tr> <td>BUILT-IN 1</td> <td>Open back enclosure</td> <td>12 x 2</td> <td>Dynamic</td> </tr> <tr> <td>BUILT-IN 2</td> <td>Open back enclosure</td> <td>12 x 2</td> <td>Condenser</td> </tr> <tr> <td>BUILT-IN 3</td> <td>Open back enclosure</td> <td>12 x 2</td> <td>Condenser</td> </tr> <tr> <td>BUILT-IN 4</td> <td>Open back enclosure</td> <td>12 x 2</td> <td>Condenser</td> </tr> <tr> <td>BUILT-IN 5</td> <td>Open back enclosure</td> <td>12 x 2</td> <td>Condenser</td> </tr> <tr> <td>BG STACK 1</td> <td>Sealed enclosure</td> <td>12 x 2</td> <td>Condenser</td> </tr> <tr> <td>BG STACK 2</td> <td>Large sealed enclosure</td> <td>12 x 2</td> <td>Condenser</td> </tr> <tr> <td>MS STACK 1</td> <td>Large sealed enclosure</td> <td>12 x 4</td> <td>Condenser</td> </tr> <tr> <td>MS STACK 2</td> <td>Large sealed enclosure</td> <td>12 x 4</td> <td>Condenser</td> </tr> <tr> <td>METAL STACK</td> <td>Large double stack</td> <td>12 x 4</td> <td>Condenser</td> </tr> <tr> <td>2-STACK</td> <td>Large double stack</td> <td>12 x 4</td> <td>Condenser</td> </tr> <tr> <td>3-STACK</td> <td>Large triple stack</td> <td>12 x 4</td> <td>Condenser</td> </tr> </tbody> </table>	Cabinet	Diameter (in inches) and number of the 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
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Mic Setting	1, 2, 3	Adjusts the location of the microphone that is recording the sound of the speaker. This can be adjusted in three steps, with the microphone becoming more distant in the order of 1, 2, and 3.																																																																			
Mic Level	0–127	Volume of the microphone																																																																			
Direct Level	0–127	Volume of the direct sound																																																																			
Level	0–127	Output Level																																																																			

## 11 Phaser 1

This is a stereo phaser. A phase-shifted sound is added to the original sound and modulated.



Parameter	Value	Explanation
Mode	4-STAGE, 8-STAGE, 12-STAGE	Number of stages in the phaser
Manual	0–127	Center frequency at which the sound is modulated
Rate (sync sw)	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. → "Scene Tempo" (p. 25)
Rate (Hz)	0.05–10.00 (Hz)	Modulation rate
Rate (note)	Note → "Note" (p. 69)	
Depth	0–127	Depth of modulation
Polarity	INVERSE, SYNCHRO	<p>Selects whether the left and right phase of the modulation will be the same or the opposite.</p> <p><b>INVERSE:</b> The left and right phase will be opposite.</p> <p>When using a mono source, this spreads the sound.</p> <p><b>SYNCHRO:</b> The left and right phase will be the same.</p> <p>Select this when inputting a stereo source.</p>
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 Tremolo

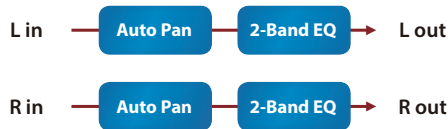
Cyclically changes the volume.



Parameter	Value	Explanation
Mod Wave	TRI, SQR, SIN, SAW1, SAW2, TRP	Modulation wave <b>TRI:</b> Triangle wave <b>SQR:</b> Square wave <b>SIN:</b> Sine wave <b>SAW1/2:</b> Sawtooth wave <b>TRP:</b> Trapezoidal wave
	SAW1      SAW2	
Rate (sync sw)	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. → "Scene Tempo" (p. 25)
Rate (Hz)	0.05–10.00 (Hz)	Frequency of the change
Rate (note)	Note → "Note" (p. 69)	
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

## 19 Auto Pan

Cyclically modulates the stereo location of the sound.

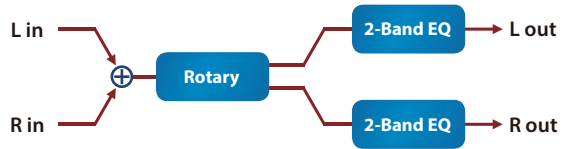


Parameter	Value	Explanation
Mod Wave	TRI, SQR, SIN, SAW1, SAW2, TRP	How the pan changes <b>TRI:</b> Triangle wave <b>SQR:</b> Square wave <b>SIN:</b> Sine wave <b>SAW1/2:</b> Sawtooth wave <b>TRP:</b> Trapezoidal wave
	SAW1      SAW2	
Rate (sync sw)	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. → "Scene Tempo" (p. 25)
Rate (Hz)	0.05–10.00 (Hz)	Frequency of the change
Rate (note)	Note → "Note" (p. 69)	
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

## 22 VK Rotary

This type provides modified response for the rotary speaker, with the low end boosted further.

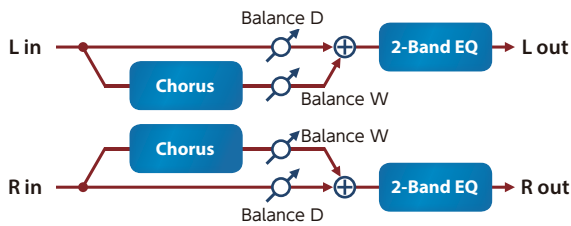
This effect features the same specifications as the VK-7's built-in rotary speaker.



Parameter	Value	Explanation
Speed	SLOW, FAST	Rotational speed of the rotating speaker <b>SLOW:</b> Slow <b>FAST:</b> Fast
Brake	OFF, ON	Switches the rotation of the rotary speaker. When this is turned on, the rotation will gradually stop. When it is turned off, the rotation will gradually resume.
Wf Slow Speed	0.05–10.00 (Hz)	Low-speed rotation speed of the woofer
Wf Fast Speed	0.05–10.00 (Hz)	High-speed rotation speed of the woofer
Wf Trans Up	0–127	Adjusts the rate at which the woofer rotation speeds up when the rotation is switched from Slow to Fast.
Wf Trans Down	0–127	Adjusts the rate at which the woofer rotation speeds up when the rotation is switched from Fast to Slow.
Wf Level	0–127	Volume of the woofer
Tw Slow Speed	0.05–10.00 (Hz)	Settings of the tweeter The parameters are the same as for the woofer.
Tw Fast Speed	0.05–10.00 (Hz)	
Tw Trans Up	0–127	
Tw Trans Down	0–127	
Tw Level	0–127	
Spread	0–10	Sets the rotary speaker stereo image.
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

## 23 Chorus

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



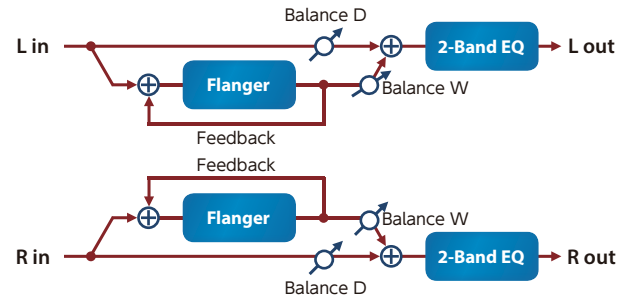
Parameter	Value	Explanation
Filter Type	OFF, LPF, HPF	Type of filter <b>OFF:</b> No filter is used. <b>LPF:</b> Cuts the frequency range above the Cutoff Freq <b>HPF:</b> Cuts the frequency range below the Cutoff Freq
Cutoff Freq	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 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 rate synchronizes with the tempo of the rhythm. → "Scene Tempo" (p. 25)
Rate (Hz)	0.05–10.00 (Hz)	Frequency of modulation
Rate (note)	Note → "Note" (p. 69)	
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

## 24 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.

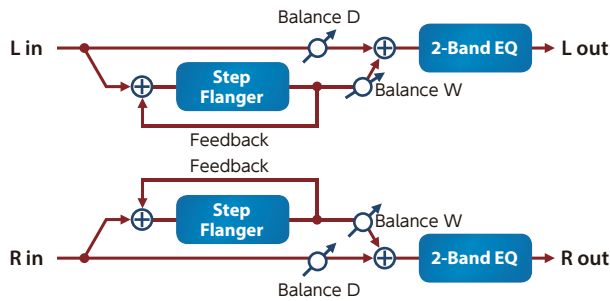
A filter is provided so that you can adjust the timbre of the flanged sound.



Parameter	Value	Explanation
Filter Type	OFF, LPF, HPF	Type of filter <b>OFF:</b> No filter is used. <b>LPF:</b> Cuts the frequency range above the Cutoff Freq <b>HPF:</b> Cuts the frequency range below the Cutoff Freq
Cutoff Freq	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 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 rate synchronizes with the tempo of the rhythm. → "Scene Tempo" (p. 25)
Rate (Hz)	0.05–10.00 (Hz)	Frequency of modulation
Rate (note)	Note → "Note" (p. 69)	
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

## 25 Step Flanger

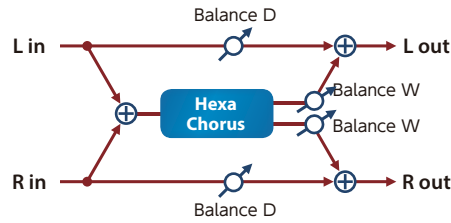
This is a flanger in which the flanger pitch changes in steps. The speed at which the pitch changes can also be specified in terms of a note-value of a specified tempo.



Parameter	Value	Explanation
Filter Type	OFF, LPF, HPF	Type of filter <b>OFF:</b> No filter is used. <b>LPF:</b> Cuts the frequency range above the Cutoff Freq <b>HPF:</b> Cuts the frequency range below the Cutoff Freq
Cutoff Freq	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 (Hz)	Basic frequency of the filter
Pre Delay	0.0–100.0 (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 rate synchronizes with the tempo of the rhythm. → "Scene Tempo" (p. 25)
Rate (Hz)	0.05–10.00 (Hz)	Frequency of modulation
Rate (note)	Note → "Note" (p. 69)	
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 rate synchronizes with the tempo of the rhythm. → "Scene Tempo" (p. 25)
Step Rate (Hz)	0.10–20.00 (Hz)	Rate (period) of pitch change
Step Rate (note)	Note → "Note" (p. 69)	
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

## 26 Hexa-Chorus

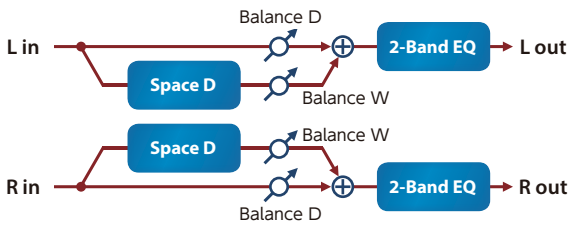
Uses a six-phase chorus (six layers of chorused sound) to give richness and spatial spread to the sound.



Parameter	Value	Explanation
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 rate synchronizes with the tempo of the rhythm. → "Scene Tempo" (p. 25)
Rate (Hz)	0.05–10.00 (Hz)	Frequency of modulation
Rate (note)	Note → "Note" (p. 69)	
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. <b>0:</b> All chorus sounds will be in the center. <b>20:</b> 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

## 28 Space-D

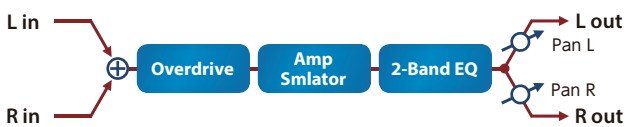
This is a multiple chorus that applies two-phase modulation in stereo. It gives no impression of modulation, but produces a transparent chorus effect.



Parameter	Value	Explanation
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 rate synchronizes with the tempo of the rhythm. → "Scene Tempo" (p. 25)
Rate (Hz)	0.05–10.00 (Hz)	Frequency of modulation
Rate (note)	Note → "Note" (p. 69)	
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

## 29 Overdrive

This is an overdrive that provides heavy distortion.



Parameter	Value	Explanation
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 <b>SMALL:</b> Small amp <b>BUILT-IN:</b> Single-unit type amp <b>2-STACK:</b> Large double stack amp <b>3-STACK:</b> 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

## 30 Distortion

This is a distortion effect that provides heavy distortion.



Parameter	Value	Explanation
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 <b>SMALL:</b> Small amp <b>BUILT-IN:</b> Single-unit type amp <b>2-STACK:</b> Large double stack amp <b>3-STACK:</b> 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

## 31 T-Scream

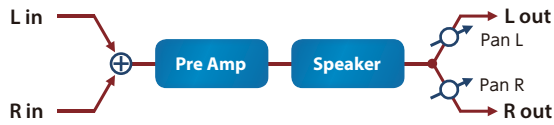
This models a classic analog overdrive. It is distinctive in adding an appropriate amount of overtones without muddying the sound.



Parameter	Value	Explanation
Distortion	0–127	Degree of distortion Also changes the volume.
Tone	0–127	Tonal character of the overdrive
Level	0–127	Output Level

## 32 Guitar Amp Sim (Guitar Amp Simulator)

This is an effect that simulates the sound of a guitar amplifier.



Parameter	Value	Explanation	
<b>Pre Amp Switch</b>	OFF, ON	Turns the amp switch on/off.	
<b>Pre Amp Type</b>	<b>Type of guitar amp</b>		
	JC-120	This models the sound of the Roland JC-120.	
	CLEAN TWIN	This models a Fender Twin Reverb.	
	MATCH DRIVE	This models the sound input to left input on a Matchless D/C-30. A simulation of the latest tube amp widely used in styles from blues and rock.	
	BG LEAD	This models the lead sound of the MESA/Boogie combo amp. The sound of a tube amp typical of the late '70s to '80s.	
	MS1959I	This models the sound input to Input I on a Marshall 1959. This is a trebly sound suited to hard rock.	
	MS1959II	This models the sound input to Input II on a Marshall 1959.	
	MS1959I+II	This models the sound of connecting inputs I and II on a Marshall 1959 in parallel. It creates a sound with a stronger low end than I.	
	SLDN LEAD	This models a Soldano SLO-100. This is the typical sound of the eighties.	
	METAL 5150	This models the lead channel of a Peavey EVH5150.	
	METAL LEAD	This is distortion sound that is ideal for performances of heavy riffs.	
	OD-1	This models the sound of the BOSS OD-1. This produces sweet, mild distortion.	
	OD-2 TURBO	This is the high-gain overdrive sound of the BOSS OD-2.	
	DISTORTION	This gives a basic, traditional distortion sound.	
	FUZZ	A fuzz sound with rich harmonic content.	
	<b>Pre Amp Volume</b>	0-127	Volume and amount of distortion of the amp
	<b>Pre Amp Master</b>	0-127	Volume of the entire pre-amp
	<b>Pre Amp Gain</b>	LOW, MIDDLE, HIGH	Amount of pre-amp distortion
<b>Pre Amp Bass</b>			
<b>Pre Amp Middle</b>	0-127	Tone of the bass/mid/treble frequency range	
<b>Pre Amp Treble</b>			
<b>Pre Amp Presence</b>	0-127	Tone for the ultra-high frequency range	
<b>Pre Amp Bright</b>	OFF, ON	Turning this "On" produces a sharper and brighter sound. * This parameter applies to the "JC-120," "CLEAN TWIN," "MATCH DRIVE," and "BG LEAD" Pre Amp Types.	
<b>Speaker Switch</b>	OFF, ON	Determines whether the signal passes through the speaker (ON), or not (OFF).	

Parameter	Value	Explanation		
<b>Speaker Type</b>		<b>Cabinet</b>	<b>Diameter (in inches) and number of the speaker</b>	<b>Microphone</b>
	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 STACK1	Sealed enclosure	12 x 2	Condenser
	BG STACK2	Large sealed enclosure	12 x 2	Condenser
	MS STACK1	Large sealed enclosure	12 x 4	Condenser
	MS STACK2	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	
<b>Mic Setting</b>	1, 2, 3	Adjusts the location of the microphone that is recording the sound of the speaker. This can be adjusted in three steps, with the microphone becoming more distant in the order of 1, 2, and 3.		
<b>Mic Level</b>	0-127	Volume of the microphone		
<b>Direct Level</b>	0-127	Volume of the direct sound		
<b>Pan</b>	L64-63R	Stereo location of the output sound		
<b>Level</b>	0-127	Output Level		

### 33 Compressor

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



Parameter	Value	Explanation
Attack	0–124	Sets the time from when the input exceeds the Threshold until the volume starts being compressed
Release	0–124	Adjusts the time after the signal volume falls below the Threshold Level until compression is no longer applied.
Threshold	-60–0 (dB)	Adjusts the volume at which compression begins
Knee	0–30 (dB)	This is a function that smooths the onset of compression from the uncompressed state; it gradually applies compression starting earlier than Threshold. Higher values produce a smoother transition.
Ratio	1:1, 1.5:1, 2:1, 4:1, 16:1, INF:1	Compression ratio
Post Gain	0–+18 (dB)	Adjusts the output gain.
Level	0–127	Output Level

### 34 Limiter

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

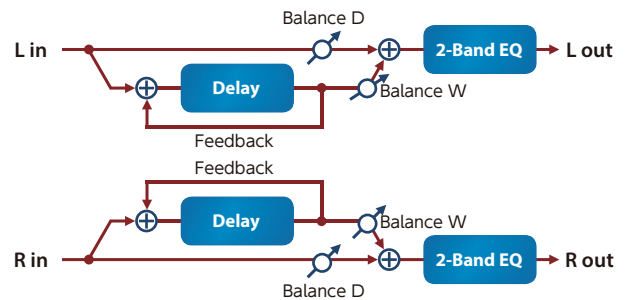


Parameter	Value	Explanation
Release	0–127	Adjusts the time after the signal volume falls below the Threshold Level until compression is no longer applied.
Threshold	0–127	Adjusts the volume at which compression begins
Ratio	1.5:1, 2:1, 4:1, 100:1	Compression ratio
Post Gain	0–+18 (dB)	Adjusts the output gain.
Low Gain	-15–+15 (dB)	Gain of the low range
High Gain	-15–+15 (dB)	Gain of the high range
Level	0–127	Output Level

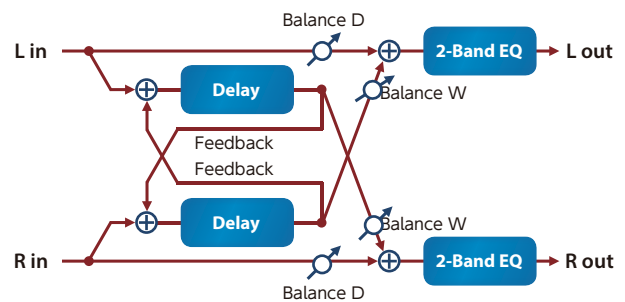
### 37 Delay

This is a stereo delay.

When Feedback Mode is NORMAL:



When Feedback Mode is CROSS:



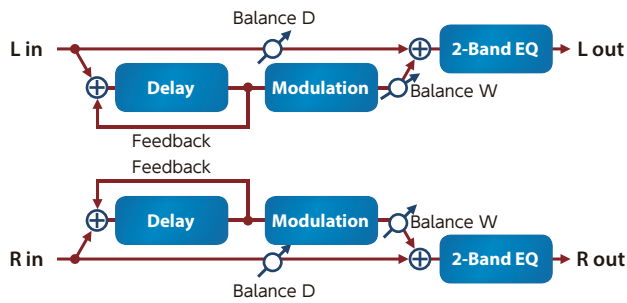
Parameter	Value	Explanation
Delay L (sync sw)	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. → "Scene Tempo" (p. 25)
Delay L (msec)	1–1300 (msec)	Adjusts the time until the left delay sound is heard.
Delay L (note)	Note → "Note" (p. 69)	
Delay R (sync sw)	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. → "Scene Tempo" (p. 25)
Delay R (msec)	1–1300 (msec)	Adjusts the time until the right delay sound is heard.
Delay R (note)	Note → "Note" (p. 69)	
Phase Left	NORMAL, INVERSE	Phase of left and right delay sound <b>NORMAL:</b> Non-inverted <b>INVERT:</b> Inverted
Phase Right	NORMAL, INVERSE	
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 proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS (Hz)	Adjusts the frequency above which the delay sound fed back to the effect is filtered out (BYPASS: no cut).
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 delay sound (W)
Level	0–127	Output Level



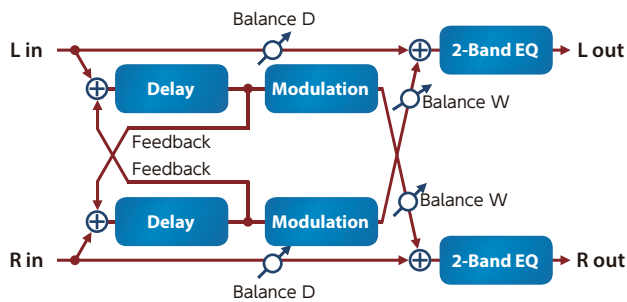
### 38 Mod Delay (Modulation Delay)

Adds modulation to the delayed sound.

When Feedback Mode is NORMAL:



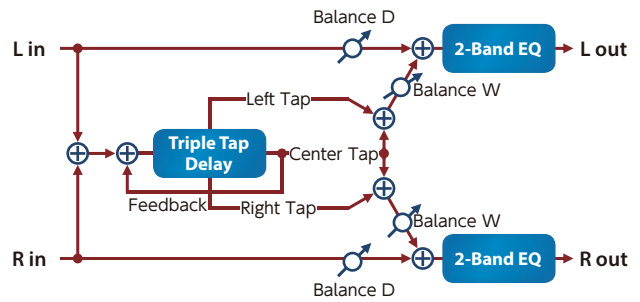
When Feedback Mode is CROSS:



Parameter	Value	Explanation
Delay L (sync sw)	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. → "Scene Tempo" (p. 25)
Delay L (msec)	1–1300 (msec)	Adjusts the time until the left delay sound is heard.
Delay L (note)	Note → "Note" (p. 69)	
Delay R (sync sw)	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. → "Scene Tempo" (p. 25)
Delay R (msec)	1–1300 (msec)	Adjusts the time until the right delay sound is heard.
Delay R (note)	Note → "Note" (p. 69)	
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 proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS (Hz)	Adjusts the frequency above which the delay sound fed back to the effect is filtered out (BYPASS: no cut).
Rate (sync sw)	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. → "Scene Tempo" (p. 25)
Rate (Hz)	0.05–10.00 (Hz)	Frequency of modulation
Rate (note)	Note → "Note" (p. 69)	
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 delay sound (W)
Level	0–127	Output Level

### 39 3Tap Pan Dly (3 Tap Pan Delay)

Produces three delay sounds; center, left and right.

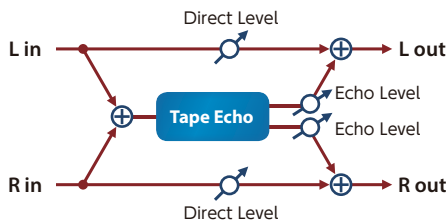


Parameter	Value	Explanation
Delay L (sync sw)	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. → "Scene Tempo" (p. 25)
Delay L (msec)	1–2600 (msec)	Adjusts the time until the left delay sound is heard.
Delay L (note)	Note → "Note" (p. 69)	
Delay R (sync sw)	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. → "Scene Tempo" (p. 25)
Delay R (msec)	1–2600 (msec)	Adjusts the time until the right delay sound is heard.
Delay R (note)	Note → "Note" (p. 69)	
Delay C (sync sw)	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. → "Scene Tempo" (p. 25)
Delay C (msec)	1–2600 (msec)	Adjusts the time until the center delay sound is heard.
Delay C (note)	Note → "Note" (p. 69)	
Center 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, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS (Hz)	Adjusts the frequency above which the delay sound fed back to the effect is filtered out (BYPASS: no cut).
Left Level	0–127	Volume of each delay sound
Right Level	0–127	
Center 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 delay sound (W)
Level	0–127	Output Level



## 44 Tape Echo

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
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. <b>S:</b> Short <b>M:</b> Middle <b>L:</b> 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
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	L64–63R	
Head L Pan	L64–63R	
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

## 45 LOFI Comp (LOFI Compress)

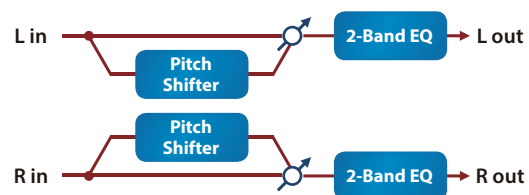
Degrades the sound quality.



Parameter	Value	Explanation
Pre Filter Type	1, 2, 3, 4, 5, 6	Selects the type of filter applied to the sound before it passes through the Lo-Fi effect. <b>1:</b> Compressor off <b>2–6:</b> Compressor on
LoFi Type	1, 2, 3, 4, 5, 6, 7, 8, 9	Degrades the sound quality. The sound quality grows poorer as this value is increased.
Post Filter Type	OFF, LPF, HPF	Selects the type of filter applied to the sound after it passes through the Lo-Fi effect. <b>OFF:</b> No filter is used. <b>LPF:</b> Cuts the frequency range above the Cutoff Freq <b>HPF:</b> Cuts the frequency range below the Cutoff Freq
Post Filter Cutoff	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 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

## 47 Pitch Shifter

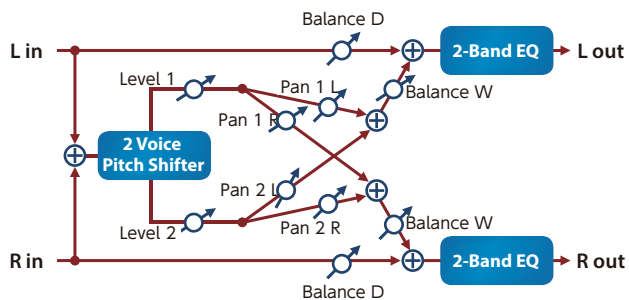
A stereo pitch shifter.



Parameter	Value	Explanation
Coarse	-24–+12 (semi)	Adjusts the pitch of the pitch shifted sound in semitone steps.
Fine	-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 rate synchronizes with the tempo of the rhythm. → "Scene Tempo" (p. 25)
Delay Time (msec)	1–1300 (msec)	Adjusts the delay time from the direct sound until the pitch shifted sound is heard.
Delay Time (note)	Note → "Note" (p. 69)	
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

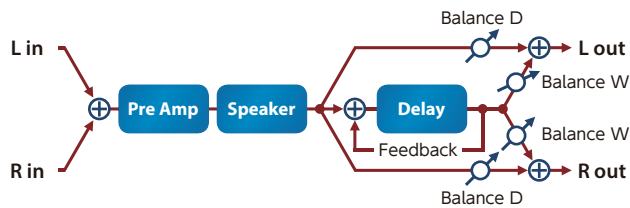
48 2V Pshifter (2 Voice Pitch Shifter)

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	
Pitch1 Coarse	-24+12 (semi)	Adjusts the pitch of Pitch Shift 1 in semitone steps.	
Pitch1 Fine	-100+100 (cent)	Adjusts the pitch of Pitch Shift Pitch 1 in 2-cent steps.	
Pitch1 Delay (sync sw)	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. → "Scene Tempo" (p. 25)	
Pitch1 Delay (msec)	1-1300 (msec)	Adjusts the delay time from the direct sound until the Pitch Shift 1 sound is heard.	
Pitch1 Delay (note)	Note → "Note" (p. 69)		
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	-24+12 (semi)	Settings of the Pitch Shift 2 sound. The parameters are the same as for the Pitch Shift 1 sound.	
Pitch2 Fine	-100+100 (cent)		
Pitch2 Delay (sync sw)	OFF, ON		
Pitch2 Delay (msec)	1-1300 (msec)		
Pitch2 Delay (note)	Note → "Note" (p. 69)		
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	

60 Gt (Guitar Amp Simulator) -> Delay



Parameter	Value	Explanation
Pre Amp Switch	OFF, ON	Turns the amp switch on/off.
Pre Amp Type	<b>Type of guitar amp</b>	
	JC-120	This models the sound of the Roland JC-120.
	CLEAN TWIN	This models a Fender Twin Reverb.
	MATCH DRIVE	This models the sound input to left input on a Matchless D/C-30. A simulation of the latest tube amp widely used in styles from blues and rock.
	BG LEAD	This models the lead sound of the MESA/Boogie combo amp. The sound of a tube amp typical of the late '70s to '80s.
	MS1959I	This models the sound input to Input I on a Marshall 1959. This is a trebly sound suited to hard rock.
	MS1959II	This models the sound input to Input II on a Marshall 1959.
	MS1959I+II	This models the sound of connecting inputs I and II on a Marshall 1959 in parallel. It creates a sound with a stronger low end than I.
	SLDN LEAD	This models a Soldano SLO-100. This is the typical sound of the eighties.
	METAL 5150	This models the lead channel of a Peavey EVH5150.
	METAL LEAD	This is distortion sound that is ideal for performances of heavy riffs.
	OD-1	This models the sound of the BOSS OD-1. This produces sweet, mild distortion.
	OD-2 TURBO	This is the high-gain overdrive sound of the BOSS OD-2.
	DISTORTION	This gives a basic, traditional distortion sound.
	FUZZ	A fuzz sound with rich harmonic content.
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	
Pre Amp Treble	0-127	
Speaker Switch	OFF, ON	Determines whether the signal passes through the speaker (ON), or not (OFF).

Parameter	Value	Explanation																																																			
Speaker Type		<table border="1"> <thead> <tr> <th>Cabinet</th> <th>Diameter (in inches) and number of the speaker</th> <th>Microphone</th> </tr> </thead> <tbody> <tr> <td>SMALL 1</td> <td>Small open-back enclosure 10</td> <td>Dynamic</td> </tr> <tr> <td>SMALL 2</td> <td>Small open-back enclosure 10</td> <td>Dynamic</td> </tr> <tr> <td>MIDDLE</td> <td>Open back enclosure 12 x 1</td> <td>Dynamic</td> </tr> <tr> <td>JC-120</td> <td>Open back enclosure 12 x 2</td> <td>Dynamic</td> </tr> <tr> <td>BUILT-IN1</td> <td>Open back enclosure 12 x 2</td> <td>Dynamic</td> </tr> <tr> <td>BUILT-IN2</td> <td>Open back enclosure 12 x 2</td> <td>Condenser</td> </tr> <tr> <td>BUILT-IN3</td> <td>Open back enclosure 12 x 2</td> <td>Condenser</td> </tr> <tr> <td>BUILT-IN4</td> <td>Open back enclosure 12 x 2</td> <td>Condenser</td> </tr> <tr> <td>BUILT-IN5</td> <td>Open back enclosure 12 x 2</td> <td>Condenser</td> </tr> <tr> <td>BG STACK1</td> <td>Sealed enclosure 12 x 2</td> <td>Condenser</td> </tr> <tr> <td>BG STACK2</td> <td>Large sealed enclosure 12 x 2</td> <td>Condenser</td> </tr> <tr> <td>MS STACK1</td> <td>Large sealed enclosure 12 x 4</td> <td>Condenser</td> </tr> <tr> <td>MS STACK2</td> <td>Large sealed enclosure 12 x 4</td> <td>Condenser</td> </tr> <tr> <td>METAL STACK</td> <td>Large double stack 12 x 4</td> <td>Condenser</td> </tr> <tr> <td>2-STACK</td> <td>Large double stack 12 x 4</td> <td>Condenser</td> </tr> <tr> <td>3-STACK</td> <td>Large triple stack 12 x 4</td> <td>Condenser</td> </tr> </tbody> </table>	Cabinet	Diameter (in inches) and number of the 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-IN1	Open back enclosure 12 x 2	Dynamic	BUILT-IN2	Open back enclosure 12 x 2	Condenser	BUILT-IN3	Open back enclosure 12 x 2	Condenser	BUILT-IN4	Open back enclosure 12 x 2	Condenser	BUILT-IN5	Open back enclosure 12 x 2	Condenser	BG STACK1	Sealed enclosure 12 x 2	Condenser	BG STACK2	Large sealed enclosure 12 x 2	Condenser	MS STACK1	Large sealed enclosure 12 x 4	Condenser	MS STACK2	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
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Delay Switch	OFF, ON	Delay on/off																																																			
Delay Time	1–1300 (msec)	Delay time from when the original sound is heard to when 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, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS (Hz)	Frequency at which the high-frequency portion of the delay sound will be cut ( <b>BYPASS</b> : 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																																																			

**72 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
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

**73 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
Mode	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 synchronizes with the tempo of the rhythm. → "Scene Tempo" (p. 25)
Rate (Hz)	0.02–5.00 (Hz)	Modulation frequency of the flanger effect
Rate (note)	Note → "Note" (p. 69)	
Depth	0–127	Modulation depth of the flanger effect
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 Mod Phase	NORM, INV	Phase of the right channel modulation: Normally, 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 <b>NORM</b> : normal phase <b>INV</b> : inverse phase
CH-R Phase		
Level	0–127	Output Level

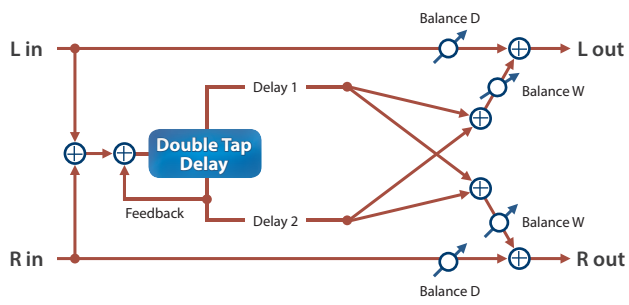
**74 SDD-320 (DIMENSION D)**

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



Parameter	Value	Explanation
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

**75** 2Tap Pan Dly (2 Tap Pan Delay)



Parameter	Value	Explanation
Delay Time (sync sw)	OFF, ON	If this is ON, the delay synchronizes with the tempo.
Delay Time (msec)	1–2600 (msec)	Adjusts the delay time from the direct sound until the second delay sound is heard.
Delay Time (note)	Note → “Note” (p. 69)	
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, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS (Hz)	Adjusts the frequency above which the delay sound fed back to the effect is filtered out (BYPASS: no cut).
Delay 1 Pan	L64–63R	Stereo location of Delay 1
Delay 2 Pan	L64–63R	Stereo location of Delay 2
Delay 1 Level	0–127	Volume of delay 1
Delay 2 Level	0–127	Volume of delay 2
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	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

**86** Fuzz

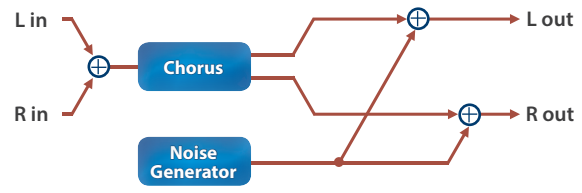
Adds overtones and intensely distorts the sound.



Parameter	Value	Explanation
Drive	0–127	Adjusts the amount of distortion. This also changes the volume.
Tone	0–100	Sound quality of the Overdrive effect
Level	0–127	Output Level

**87** JUNO-106 Chorus

This models the chorus effects of the Roland JUNO-106.

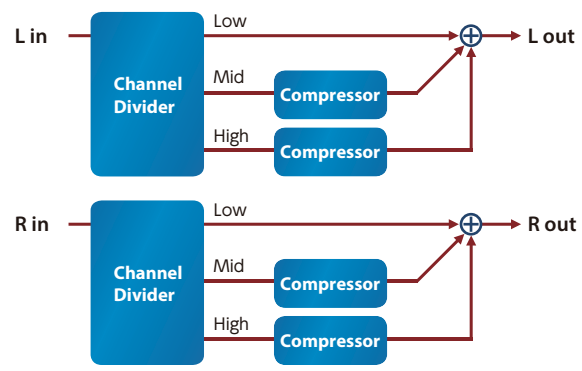


Parameter	Value	Explanation
Mode	I, II, I+II, JX I, JX II	Type of Chorus I+II: The state in which two buttons are pressed simultaneously.
Noise Level	0–127	Volume of the noise produced by chorus
Balance	D100:0W–D0:100W	Volume balance between the dry sound (D) and effect sound (W)
Level	0–127	Output Level

**92** Exciter























This adds dynamics to the sound, by dynamically bringing up the high end using a split-band compressor.

\* This effect can be used as an IFX. The effect is not available for the MFX.



Parameter	Value	Explanation
Band2 Threshold	-80.0–0.0 (dB)	Raises the midrange frequency levels when they fall below the specified amount.
Band2 Max Gain	0–+24 (dB)	Sets how much to raise the levels when the midrange volume is low.
Band3 Threshold	-80.0–0.0 (dB)	Raises the high-end frequency levels when they fall below the specified amount.
Band3 Max Gain	0–+24 (dB)	Sets how much to raise the levels when the high-end frequency volume is low.
Split1 Frequency	2000–5000 (Hz)	Frequency at which the low and midrange frequencies are split
Split2 Frequency	3000–10000 (Hz)	Frequency at which the midrange and high-end frequencies are split
Level	0–127	Output Level

## Note

	Sixty-fourth-note triplet		Sixty-fourth note		Thirty-second-note triplet		Thirty-second note
	Sixteenth-note triplet		Dotted thirty-second note		Sixteenth note		Eighth-note triplet
	Dotted sixteenth note		Eighth note		Quarter-note triplet		Dotted eighth note
	Quarter note		Half-note triplet		Dotted quarter note		Half note
	Whole-note triplet		Dotted half note		Whole note		Double-note triplet
	Dotted whole note		Double note				

# Control Change List

These control change messages are used when controlling the Aerophone from an external MIDI device such as a MIDI foot controller.

CC#	Functions that are controlled	Explanation
0	Bank Select MSB	
1	Mudulation (depend on scene)	vib, tone, filter, level, rotary
2	Breath (depend on scene)	cutoff, dynamics, PMT
4	(depend on scene)	growl, sfx, tremolo
5	Portamento Time	
6	Data Entry MSB	
7	Volume	
9	(depend on scene)	resonance
10	Pan	
11	Expression (depend on scene)	Expression, dynamics
14	<b>AE-30</b> Int. Hrmny Scale	
15	<b>AE-30</b> Key Set	
16	(SuperNATURAL Control1)	noise level
18	(SuperNATURAL Control2)	growl
19	(SuperNATURAL Control3)	bend mode, glissando mode, hold legato mode
20	Scene Down	
21	Scene Up	
22	Favorite Down	
23	Favorite Up	
24	Octave Down	
25	Octave Up	
26	Transpose Down	
27	Transpose Up	
28	Harmony Sw	
29	Drone Sw	
30	X-Fade	
31	Scale Tune Sw	
32	Bank Select LSB	
38	Data Entry LSB	
64	Hold1	
65	Portamento	
66	Sostenuto	
68	Legato	
71	Resonance	
72	Release Time	
73	Attack Time	
74	Cut Off	
75	Decay Time	
76	Vibrato Rate	
77	Vibrato Depth	
78	Vibrato Delay	
80	(SuperNATURAL Control 4)	staccato, drone, ornament, tambura, strum, nail, voice woo
81	(SuperNATURAL Control 5)	fall, pizz
82	(SuperNATURAL Control 6)	subtone, tremolo
84	Portamento Control	
91	Reverb Send Level	
93	Chorus Send Level	
98	NRPN LSB	
99	NRPN MSB	
100	RPN LSB	
101	RPN MSB	
120	All Sound Off	
121	Reset All Controllers	
123	All Note Off	
126	Mono Mode On	
127	Poly Mode On	

# Fingering Chart

## Sax

A#/B <sub>b</sub> 3	B3	C4	C#/D <sub>b</sub> 4	D4	D#/E <sub>b</sub> 4	E4	F4

F#/G <sub>b</sub> 4	G4	G#/A <sub>b</sub> 4	A4	A#/B <sub>b</sub> 4	B4

C5	C#/D <sub>b</sub> 5	D5	D#/E <sub>b</sub> 5	E5

F5	F#/G <sub>b</sub> 5

# Recorder

The side keys are disabled so that the note does not change even if you inadvertently press the left or right side key.

A#/B <sub>3</sub>	B <sub>3</sub>	C <sub>4</sub>	C#/D <sub>4</sub>	D <sub>4</sub>	D#/E <sub>4</sub>	E <sub>4</sub>	F <sub>4</sub>
F#/G <sub>4</sub>	G <sub>4</sub>	G#/A <sub>4</sub>	A <sub>4</sub>	A#/B <sub>4</sub>			
B <sub>4</sub>	C <sub>5</sub>	C#/D <sub>5</sub>	D <sub>5</sub>				



# Electronic Wind

1, 2, 3, 4, 5, 6, C	The same "C D E F G A B C" fingering as a standard sax or recorder
Tc, G#, C#	Raise by a semitone
Ta, Tf, Eb, B	Lower by a semitone
Bb	Lower by a whole tone

A3	A#/B <sub>3</sub>	B3	C4	C#/D <sub>4</sub>	D4	D#/E <sub>4</sub>	E4
F4	F#/G <sub>4</sub>	G4	G#/A <sub>4</sub>	A4	A#/B <sub>4</sub>	B4	C5
C#/D <sub>5</sub>	D5	D#/E <sub>5</sub>	E5	F5	F#/G <sub>5</sub>	G5	

# Trumpet

Right-hand keys 4, 5, and 6 correspond to pistons 1, 2, and 3 of a trumpet.

F#/G <sub>b</sub> 3	G3	G#/A <sub>b</sub> 3	A3	A#/B <sub>b</sub> 3	B3	C4	C#/D <sub>b</sub> 4
D4	D#/E <sub>b</sub> 4	E4	F4	F#/G <sub>b</sub> 4	G4	G#/A <sub>b</sub> 4	A4
A#/B <sub>b</sub> 4	B4	C5	C#/D <sub>b</sub> 5	D5	D#/E <sub>b</sub> 5	E5	F5
F#/G <sub>b</sub> 5	G5						

# Left Hand

Fingering that lets you perform using only the left hand.

C4	C#/D $\flat$ 4	D4	D#/E $\flat$ 4	E4	F4
F#/G $\flat$ 4	G4	G#/A $\flat$ 4	A4	A#/B $\flat$ 4	B4
C5	C#/D $\flat$ 5	D5	D#/E $\flat$ 5	E5	F5

# Right Hand

Fingering that lets you perform using only the right hand.

C4	C#/D <sub>b</sub> 4	D4	D#/E <sub>b</sub> 4	E4	F4	F#/G <sub>b</sub> 4	

G4	G#/A <sub>b</sub> 4		A4	A#/B <sub>b</sub> 4		B4	

C5	C#/D <sub>b</sub> 5		D5	D#/E <sub>b</sub> 5		E5	F5

# Flute

Flute fingering.

x, C1, C2, C3	Raise by a semitone
p, B, C4, Tc, Ta	Lower by a semitone
Bb	Lower by a whole tone

C4	C#4/Db4	D4	D#4/Eb4	E4	F4	F#4/Gb4

G4	G#4/Ab4	A4	A#4/Bb4	B4	C5	C#5/Db5

D5	D#5/Eb5			E5	F5

# Fingering Chart

$F^{\#}5/G^{\flat}5$	$G5$	$G^{\#}5/A^{\flat}5$	$A5$

$A^{\#}5/B^{\flat}5$	$B5$	$C6$

# Clarinet

Clarinet fingering.

C1	Raise by a semitone
p, C5	Lower by a semitone

E3	F3	F#3/Gb3	G3	G#3/Ab3	A3	A#3/Bb3

B3	C4	C#4/Db4	D4	D#4/Eb4	E4

F4	F#4/Gb4	G4	G#4/Ab4	A4	A#4/Bb4

# Fingering Chart

B4	C5	C#5/Db5	D5	D#5/Eb5	E5	F5

F#5/Gb5	G5	G#5/Ab5	A5	A#5/Bb5	B5

C6	C#6/Db6	D6	D#6/Eb6	E6

F6	F#6/Gb6	G6	G#6/Ab6	A6