BOLDER *Sounds*

Presents

Crystal Glasses V3

for NI KONTAKT 4+

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About the Crystal Glasses V3

Background on the Crystal Glasses V2

The Crystal Glasses volume 2 is a project I began in 2007. I worked on it sporadically over the last 3 years. Bolder Sounds already has a very popular sound set entitled Crystal Glasses and Meditation Bowls.

So - why create another? The crystals recorded in that library date back to the mid 1990's when 16 bit mono samples was the standard format (the Meditation Bowls were sampled at a later date in stereo). Also - the idea of recording these crystal glasses as a group of glasses opened up the door to different sound design opportunities.

The Picture on the frontpage, is just one group of glasses out of the six sets that were sampled. This new sample library features 24-bit stereo samples, round-robin sampling and numerous articulations. Total size of the Crystal Glasses V2 library is 490 mb.

The new update "Crystal Glasses V3" has been Kontakt compressed (.ncw) down to 254 MB for convenience of downloading and rapid loading into Kontakt.

Organizing the Crystal Glasses

I began with a set of six crystal glasses. Within each set of crystal glasses there were usually 10 glasses to choose from giving me approximately 60 glasses to sample. I've numbered the six crystal glasses 1-6. Each of the 10 glasses in each set were exactly the same size and you would think they would create the same pitch, however they do not. The pitch variation in within each set different by as much as a fifth.

This gave me a great amount of sonic variety to choose from. When I combined to the six glasses I had about 1 1/2 octaves of different pitches to choose from. Among the six sets of crystal glasses there were many overlapping pitch ranges. Again, this gave me many options in the way that these samples were mapped across the keyboard in various combinations with each other.

The Crystals Glasses 1 - 6 *left to right*

Crystal Articulations/Instruments

The V3 Crystal Glasses library includes a variety of articulations described below -

Hits – Crystal hits with a variety of objects ranging from plastic forks, wooden spoons to coat hangers.
There are four different Hit instruments:

"Crystal Hits" - has four different crystal groups (3 to 6), that can be combined via the eight layers.
You also have the option to adjust the Sample Start.

"Crystal Hits 1+2" - has two different crystal groups (1 to 2), that can be combined via the four layers.
You also have the option to adjust the Sample Start.

"Crystal Combi Hits" - has four different combinations of the crystal groups (3 to 6), that can be combined via the eight layers.
You also have the option to adjust the Sample Start.

"Crystal Soft Hits" - has four layers that can be combined.
You also have the option to adjust the Sample Start.

Singing Crystals – a classic sustained sound created by running a wet finger along the edge of the glass.

There are five different singing crystal groups, that can be combined via the five layers.

Bowed Crystals – a sustained sound created with a cello bow.

There are two different bowed instruments – "Bowed Crystals Long" and "Bowed Crystals Short". They both have four layers that can be combined.

The "Bowed Crystals Short" instrument also has the option to adjust the Sample Start.

Granular Crystals – granular synthesis processing uses various software applications to create surreal sustained evolving textures.

There are seven different granular samples, that can be combined via the seven layers.
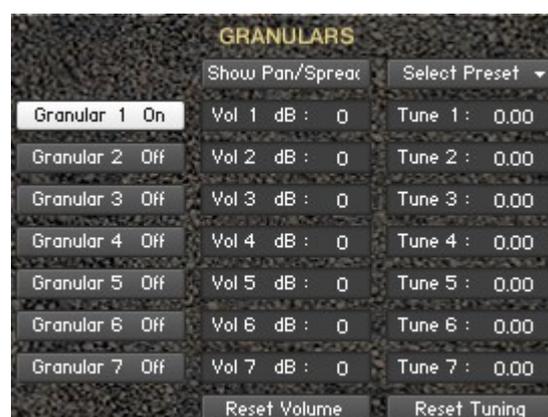
There are two more Instrument groups, that use and combine the different Articulations:

Morphed Crystals – Kontakt multi instruments (.nkm) which crossfade various granular and Singing crystal instruments via modulation wheel control. All the "Morphed Crystals" patches have a convolution reverb added at the Master Output Channel in Kontakt. If you want to adjust this convolution reverb, then open the Output Section in Kontakt.

Crystals Combos – Kontakt multi instruments (.nkm) which combine hits, singing, granular and bowed crystal articulations resulting in some very rich textures.
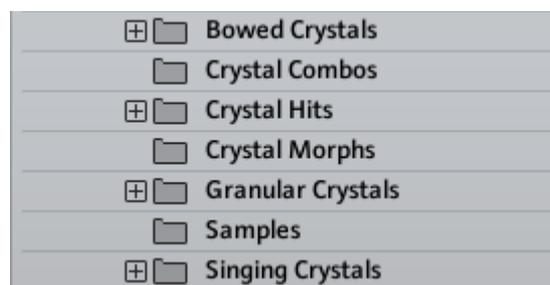
Inside the different Articulation/Instrument folders, you'll find a "Example" folder containing various Example Patches that will give you some insight and ideas into what can be created with the scripted UI and the different crystal articulations.

General Stuff

KONTAKT Compatibility:

This library requires NI KONTAKT version 4.2.4 or higher, and has been tested for compatibility in KONTAKT 5. This library is NOT compatible with the KONTAKT 4 or 5 sample PLAYER, only the full retail KONTAKT SAMPLER. It will only run in demo mode for 30 minutes on the KONTAKT PLAYER.

Hover Over Mouse Help:

If you turn on the **Show Info Pane**, you can simply 'hover' your mouse over a particular control and the information on that control will be displayed in the Info Pane at the bottom of the KONTAKT window.


Reset Knobs:

All knobs can be reset to their default value, if you CTRL + Click (PC) or Command + Click (Mac) on the knob.

MIDI Learn CC#:

All the buttons and knobs can be automated by a MIDI control. Just Right + Click (PC) or Control + Click (Mac) the button or knob and select **Learn MIDI CC# Automation**, and then move your hardware MIDI controller.

Panels:

The User Interface has three Panels. Click on the Panel Tab Name to open the Panel.

The About Page:

Each Panel has an **About Page** that gives you a quick overview of the Panel.
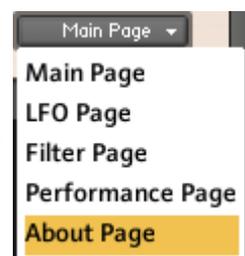
About the Presets

There are a total of 11 Preset drop-down Menus.

<u>On the Instrument Panel:</u>
Layer Presets, **LFO** Presets and **Filter** Presets.

<u>On the Effect Panel:</u>
EQ Presets, **Chorus** Presets, **Flanger** Presets, **Phaser** Presets, **Rotator** Presets, **Delay** Presets, **Space** Presets and **Reverb** Presets.

The Preset Menu:

You can Save and Recall up to six Presets per Preset drop-down Menu.

To Save a Preset, first edit the settings as you like, and then select the **Save as Preset #** in the Preset Menu.

To Recall/Select a Preset, open the Preset Menu and select the **Preset #**.

When you Save a Preset, the changes are written into the data folder and then automatically loaded the next time you load the instrument in Kontakt. So there is no need to save the instrument.

The six Presets can also be Saved and Loaded as a **Bank**.

To Save the six Presets as a **Bank**, select the **Save Bank** in the Preset Menu. A save dialog box opens, pointing to the default Data folder inside the main Instrument folder. For better organization, give the file a name that refers to the Effect – ex. "EQ - my presets".

To Load a Bank, select the **Load Bank** in the Preset Menu. A open dialog box opens, pointing to the default Data folder.

If you have loaded a Bank and you want this Bank to be loaded the next time you load the instrument in Kontakt, then select the **Set as Def. Bank**.


The Reset All Knobs sets all the knobs to their default setting.

PS: All the default Banks are stored in the sub-folder "Default Banks" inside the Data folder.
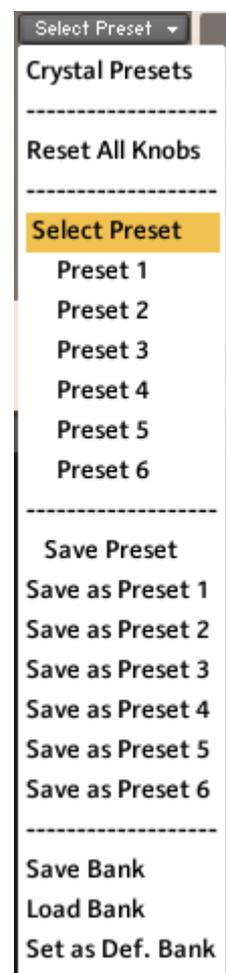
The Instrument Panel

The Instrument Panel has five different Pages that can be selected from the Page drop-down Menu.

The Main Page:

The **Main Page** has two different views, the **Crystal View** and the **Amp-Envelope View**.

The **Select/Hide Crystals** button shifts between the two views.

The Crystal View:

On the **Crystal View** you turn the Crystals On/Off, and adjust the Volume, Tune, Pan and Spread of each Crystal.

The **Crystal buttons** can be turned On/Off either by:

1. Mouse clicking on the Crystal buttons in the User-Interface.
2. Using Key-Switches (the KS can be freely set up on the Setting Panel).
3. MIDI CC# (right click the Crystal button, and MIDI Learn the CC#).

You need to have at least one Crystal selected. If only one Crystal is selected, then it's not possible to turn it off.

To shift between the Volume, Tune, Pan and Spread columns, you use the **Show Pan/Spread – Vol/Tune** button.
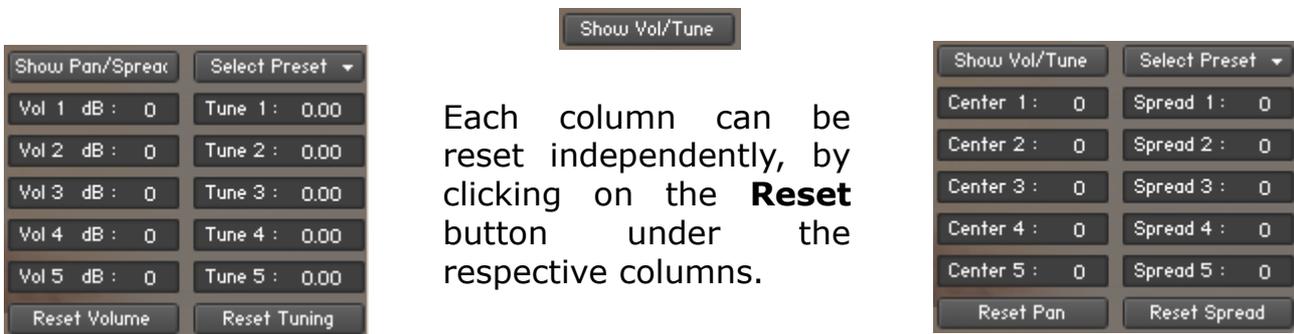
Each column can be reset independently, by clicking on the **Reset** button under the respective columns.

To adjust the values in the columns, you have three options:

1. Click on the value and drag up or down.
2. Use the Up/Down arrows on the right side of the value box.
3. Double-Click and type the desired value and then hit Enter.

To tune in semitones, use the Up/Down arrows. To tune in cent, use Click and drag up or down.

You can also Save/Recall six **Crystal Presets** and Save/Load Crystal Banks.

The Amp-Envelope View:

On the **Amp-Envelope View** you control the amplitude envelope and select the various Sustain and Pedal settings. And here you also select how you want to control the volume.

The **At Curve** knob adjusts the curve shape of the attack phase. A value of zero results in a linear curve, negative values make the shape more concave, and positive values make it more convex.

The **Attack** knob adjusts the initial time it will take the envelope to reach its maximum level after it has been triggered.

The **Release/Damp** knob adjust the release or damp time, depending on the selected **Sustain** and **Pedal** mode:

1. **Sustain On** = release time
2. **Sustain Off** = decay and release time (damp).
3. **P. Damper Mode** = stop, decay and release time.

The **Sustain On/Off** button switches between the two Sustain Modes:

1. When **Sustain On** - everything works as normal.
2. When **Sustain Off** – the notes only rings the amount of time set on the Damp knob. Holding the keys down or pressing the Sustain-Pedal has no effect.

The **Pedal Mode** button switches between the two Pedal Modes:

1. When **P. Sustain Mode** is selected - the Sustain Pedal behaves like a normal Sustain Pedal.
2. When **P. Damper Mode** is selected - the Sustain Pedal behaves like a reversed Sustain Pedal. The ringing notes will be stopped - if not held - when you press the Sustain Pedal. Also, if you play notes with the Sustain Pedal pressed down, you'll get a muted/damped sound.
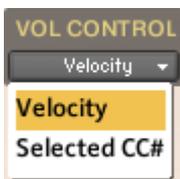
The **Volume** can be controlled either by:

1. Velocity (the Velocity response can be adjusted on the Settings Panel).
2. A MIDI Controller (the CC# can selected on the Settings Panel).

If **MIDI Control** of the **Volume** is selected, then you can adjust the amount of the MIDI Controller. The **Amount** knob is bipolar, so it can either be set to negative or positive amount.

The **Sample Start** knob adjust the start point of the samples.
Ps: This knob is only available in the "Bowed Crystals Short" and all the "Crystal Hits" instruments.

The LFO Page:

On the LFO Page you have two LFOs, each with five different waveforms.
The Main - LFO destinations are Volume, Pan, Pitch and Filter.
The Sub - LFO can either modulate the Main - LFO's Frequency and Pulse, or work as an independent LFO, modulating Volume, Pan, and Pitch.
The two LFO's can be synchronized to an external MIDI clock, and the waveforms can be moved/phased 90 degrees.
Here you also select how the selected CC# controls the two LFO's, and last you can Save/Recall six LFO Presets and Save/Load LFO Banks.

The Main - LFO:

The **LFO On/Off** button activates the LFO's, and opens the LFO View.
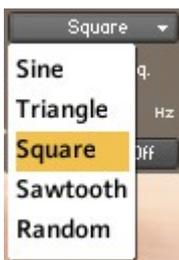
On the **Main - LFO** drop-down menu, you can select between the five different LFO waveforms.

The **Freq.** knob adjust the frequency of the LFO's output signal in Hz.

If **Square** is selected as waveform, then a **Pulse** knob appears to the right of the **Freq.** knob.

The **Pulse** knob adjusts the pulse/shape of the Square wave.

If the **Sync** button is on, the two LFO's are synchronized to an external MIDI Clock.

When the **Phase** button is turned on, the start position of the waveforms, used by the two LFOs, are moved 90 degrees.
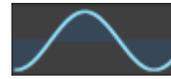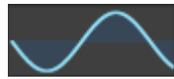
The **Main - LFO** has four **modulation destinations**:

1. **Volume**
2. **Pan**
3. **Pitch**
4. **Filter**

The four destination knobs are bipolar, so they can either be set to a negative or a positive amount. CTRL/Command + Click sets the knob to zero.

The Sub – LFO:
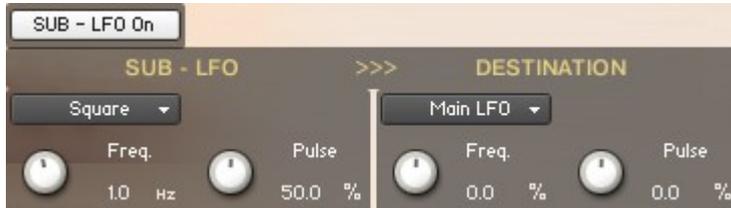
The **SUB - LFO On/Off** button activates the Sub LFO, and opens the related editing knobs and menus.-
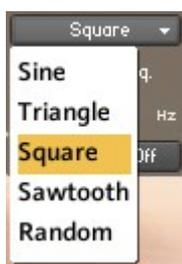
On the **SUB - LFO** drop-down menu, you can select between the five different LFO waveforms.

The **Freq.** knob adjusts the frequency of the Sub LFO's output signal.

If **Square** is selected as waveform, then a **Pulse** knob appears to the left of the **Freq.** knob.

The **Pulse** knob adjusts the pulse/shape of the Square wave.

The **Sub - LFO** has six **modulation destinations**. They can be selected from the **Sub – LFO Destination** drop-down menu.

If **Sub >> Main LFO** is selected, then the **Frequency** and **Pulse** of the Main LFO can be modulated by the Sub LFO.
(It's only possible to modulate the **Pulse,** if Square is selected as the Waveform in the Main LFO).

The **Sub - LFO** can also work as an independent LFO, and modulate the **Volume/Pan** or the **Volume/Pitch**

The six destination knobs are bipolar, so they can either be set to a negative or a positive amount. CTRL/Command + Click sets the knob to zero.

The two LFO's can be controlled by a MIDI Controller. You select the CC# on the Settings Panel.

On the **LFO CONTROL** drop-down menu, you can select the LFO target that will be controlled by the MIDI Controller.

The **Amount** knob controls the amount of the MIDI Controller. The knob is bipolar, and can be set to either a negative or a positive amount. CTRL/Command + Click sets the knob to zero.

The Filter Page:

On the Filter Page you can choose between the different filter types, and you can add Key Tracking to the filter.

The filter can also be controlled by an Envelope (either simple or advanced) and the envelope can be controlled by velocity.

And last you can Save/Recall six Filter Presets and Save/Load Filter Banks.

  The **Filter On/Off** button activates the Filter, and opens the Filter View.

On the **Filter** drop-down menu, you have a choice of selecting Low Pass, High Pass and Band Pass filters in either 2,4 or 6 pole settings.

  The **Cutoff** knob sets the frequency above which signals are attenuated.

The **Resonance** knob sets the resonance (boost at the cutoff frequency).

The **Tracking** knob controls the keyboard tracking of the filter. The knob is bipolar (+-), CTRL/Command + Click sets the tracking to off.
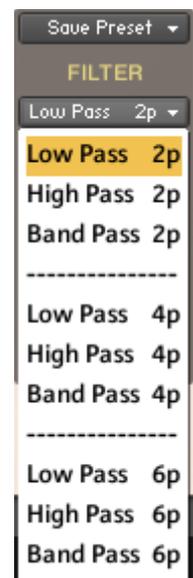
The **Filter Env On/Off** button activates the filter envelope, and the envelope knobs and buttons appear.

The **Attack** knob adjusts the initial time it will take the envelope to reach its maximum level after it has been triggered.

The **Decay** knob adjust the time it will take the envelope to fall from its maximum level to the level set by the Sustain control.

The **Amount** knob adjust the amount of envelope that controls the filter. The knob is bipolar (+-), CTRL/Command + Click sets the amount to zero.

The **Velocity Env On/Off** button selects whether the amount of envelope variation changes according to the velocity of the note played.

The **Advanced Env On/Off** button activates the advanced filter envelope, and three more knobs appear.

The **At Curve** knob adjusts the curve shape of the attack phase. A value of zero results in a linear curve, negative values make the shape more concave, and positive values make it more convex.

The **Sustain** knob adjusts the level at which the envelope will stay as long as the key is being held, after it has completed its attack and decay phases.

The **Release** knob adjusts the time it will take the envelope to fall from its sustain level back to zero after the key has been released.

The Performance Page:

On the Performance Page you control the global stereo Width, Panning, Volume, and the Ping-Pong Pan effect.
Here you also can control the three Humanize knobs - Timing, Tuning and Velocity.

The **Width** knob sets the Width of the Stereo Field. Negative values close it in, and at full counter clockwise the signal becomes mono. Positive values push the Stereo spread outward.

The **Pan** knob adjusts the panning of the Stereo Field.

The **Ping-Pong Pan** knob controls the width of the ping-pong pan effect. When the knob is fully counter clockwise, the ping-pong effect is Off.

The **Volume** knob controls the global volume of the instrument.

The **Timing** knob controls the random timing of each note.

The **Tuning** knob controls the random tuning of each note.

The **Velocity** knob controls the random velocity of each note.

The Settings Panel

On the Settings Page you can select the keys that will act as key-switches for the Crystals. You can control the keyboards Perspective, Spread and Velocity. Here you also can control the Pitch Wheel range, and how it will affect the notes. Finally you can select the CC# that controls the Volume and the LFO. You'll also find the Velocity Filter button, that turns the velocity controlled Low Pass Filter On/Off.

The Key-Switches:

The Key-Switches can be assigned to any key outside the instrument range.

To assign a Key-Switch, do this:

1. Activate the **Learn** button for the Crystal.

2. Then play the Key that you would like to be the Key-Switch for the Crystal. You can either play your connected MIDI keyboard, or click on the virtual keyboard in KONTAKT.

The **Crystal Label** now shows the new note name of the Key-Switch, and the color code on the virtual keyboard updates to the selected key.
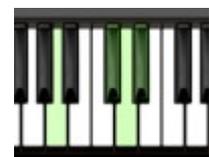
The color code for the Key-Switches are green.

The Keyboard:

The **Perspective** button switches between a Public or a Player keyboard layout/perspective.

The **Spread** knob controls how much each note is panned/spread out across the keyboard.

The **Velocity** knob adjust the Velocity response of the keyboard (if Velocity is selected as Volume Control on the Instrument Panel).

The Pitch Bend:

When the **Only Last Note** button is On, it's only the last played note that is bent by the Pitch Wheel.

The **PB Up** knob controls how many semitones the note will be bent, when the Pitch Wheel is moved upward.

The **PB Down** knob controls how many semitones the note will be bent, when the Pitch Wheel is moved downward.

When the **Link** button is On, the PB Up and PB Down knobs are linked, and they behave like one knob.

The Select CC# :

The **Vol CC#** knob selects the CC# that will control the Volume (if CC# is selected as Volume Control on the Instrument Panel).

The **LFO** CC# knob selects the CC# that will control the LFO (if LFO Control is selected on LFO Page in the Instrument Panel).

The HP Pre Filter:

The **Pre Filter** button turns the fixed predefined High Pass Filter On/Off.
Ps: This button is only available in the "Singing Crystals" and all the "Granular Crystals" instruments.

The Effects Panel

The Effect Panel has four different Pages. Here you select and edit all the various Effect parameters. You can also Save/Recall up to six Presets for each Effect, and Save/Load the Presets as Banks.

The Effects On/Off and the Pages:

The four Effect buttons turn the various Effects On and Off, and open the corresponding Page.

You can also navigate between the different Effect Pages, using the Page Menu.
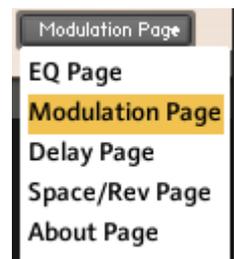
The EQ Page:
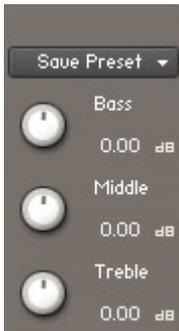
The EQ can either be a simple Bass/Middle/Treble Equalizer, with predefined Frequency and Bandwidth. Or an Advanced 3-Band Parametric Equalizer.

The **Freq.** knob chooses the frequency at which boosting or cutting will appear.

The **Bandw.** knob sets the width of the frequency band in octaves to boost or cut.

The **Gain** knob controls the amount of boost at positive values, or the amount of cut at negative values.

The Modulation Page:

On the Modulation Page, you can choose between four different modulation types.

Chorus:

The **Depth** knob sets the amount of LFO modulation applied to a signal. Higher amounts result in a stronger effect.

The **Speed** knob sets the speed of the LFO modulating the signal.

The **Phase** knob adjusts the phase difference between the two LFOs that drive the left and right stereo channels.

The **Amount** knob sets the amount of processed signal sent to the main output.

Flanger:

The **Depth** knob sets the amount of LFO modulation applied to a signal. Higher amounts result in a stronger effect.

The **Speed** knob sets the speed of the LFO modulating the signal.

The **Phase** knob adjusts the phase difference between the two LFOs that drive the left and right stereo channels.

The **Color** knob adjusts the range of the flanging effect. Lower values sweep the effect toward the higher end of the flanging range, while larger values sweep the effect toward the lower end.

The **Feedback** knob routes the processed signal back to the Module's input. Higher values create a sharper, more intense effect.

Phaser:

The **Depth** knob sets the amount of LFO modulation applied to a signal. Higher amounts result in a stronger effect.

The **Speed** knob sets the speed of the LFO modulating the signal.

The **Phase** knob adjusts the phase difference between the two LFOs that drive the left and right stereo channels.

The **Feedback** knob routes the processed signal back to the Module's input. Higher values create a sharper, more intense effect.

Rotator:

The **Acceleration High/Low** knobs adjusts how quickly the rotors of the treble/bass parts of the cabinets will react to speed changes. At the right-most position, the speaker will change it's speed instantly.

The **Balance** knob sets the ratio of the sound produced by the rotating speakers high frequency horn compared to the low frequency woofer. Higher values produce more highs, lower values more bass.

The **Distance** knob edits the distance between the virtual microphones and the rotating speaker. Higher values increase the distance.

The **Wet Mix** knob controls the effects strength. Turn fully clockwise to hear the rotating speakers only.

The **Output** knob sets the rotators overall output level.

The **Speed** button switches the speed of the rotator speaker. Choose between slow and fast.

The Delay Page:

The **Feedback** knob sends a portion of the output back into the input of the delay line, which creates repeating echoes. A value of 0 produces only one echo, higher values give multiple echoes.

The **Damping** knob reduces high frequencies in the delayed signal. With feedback applied, each successive echo has a progressively lower high-frequency response.

The **Time** knob sets the interval of the delay, in either milliseconds or rhythmical values synchronized to external MIDI Clock, depending on the Sync button state.

The **Pan** knob - setting a value higher than 0 results in a panning effect where each consecutive echo alternates between the left and right channel. The higher the value, the greater the stereo spread.

The **Amount** knob sets the amount of processed signal sent to the main output.

If the **Sync** button is turned on, the Delay is synchronized to an external MIDI Clock.

The Space/Reverb Page:

On the Space/Reverb Page you can choose between two different reverb types – Space (convolution reverb) and Reverb (algorithmic reverb). The Reverb uses less CPU than the Space.

Space:

With the **Select Space** Menu, you can choose between eighteen different Impulse Responses, that can be loaded into the convolution plugin.

The eighteen Impulses are divided into six different categories.
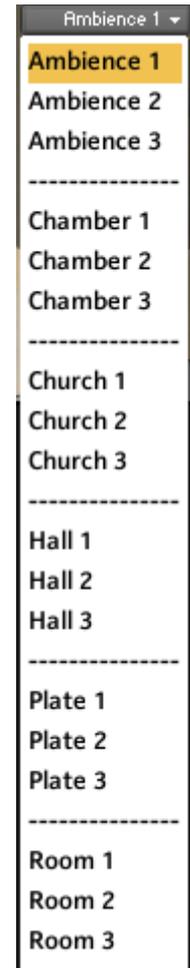
With the **Space Size** Menu, you can choose between five different sizes of the selected Impulse Response.

The **Pre Delay** knob determines the room size by setting the length of the effect. Higher values simulate larger rooms, lower values smaller rooms.

The **High Pass** knob attenuates frequencies below the chosen cutoff frequency.

The **Low Pass** knob attenuates frequencies above the chosen cutoff frequency.

The **Amount** knob sets the amount of processed signal sent to the main output.

Reverb:

The **Predelay** knob introduces a short amount of delay before the reverb takes effect. Increase this parameter to simulate larger rooms, decrease it for smaller rooms.

The **Color** knob determines the type of material used to construct the room. Lower values are softer surfaces, higher values are harder surfaces.

The **Size** knob determines the room size by setting the length of the effect. Higher values simulate larger rooms, lower values smaller rooms.

The **Stereo** knob - higher values increase the stereo effect. Use lower values to simulate sitting closer to the stage, and higher values for sitting further back in the hall.

The **Damping** knob sets the amount of absorption in the room. Higher values simulate more absorption.

The **Amount** knob sets the amount of processed signal sent to the main output.

Thanks and Acknowledgments

My sincere thanks to Diane for allowing me to abuse her crystal set.

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Script, Patches and Presets by Bo Clausen.

Enjoy the Crystal Glasses!

Dennis Burns - Bolder Sounds – August 2014

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Customer Support

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