



Clavichord

user guide

Soniccouture

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THE CLAVICHORD



Ancestor of the Clavinet

The Clavichord is a European stringed keyboard instrument that was largely used from the end of the fourteenth century through the Renaissance, Baroque, and Classical eras. Historically it was used as a practice instrument or as an aid to composition, not being loud enough for public performances. It thrived as a personal instrument, a kind of precursor to the piano, from 1400 to 1800.

Having a dynamic range "from quiet to extremely quiet", it's quite a difficult instrument to capture in recording. The instrument creates sound by striking brass or iron strings with small metal blades called tangents. As the tangent strikes the string it also frets it at that point, which means that on some models (including ours) different notes can result from striking the same string at



different places. It also means that you can bend the pitch of the string by applying some key pressure, and this is used for vibrato or “bebung”. This is the oldest keyboard instrument with polyphonic aftertouch.

Our clavichord was designed after an anonymous instrument that was in a collection of instruments belonging to the King of Sweden. It’s a customised Zuckermann King of Sweden model built by Victor Mio of Canada, featuring hand-cut dovetail joints in the case, specialty brass hardware, hand coloured decorative papers, custom Victor Mio rose, carved scroll on the bridge, carved key levers, hinged tool box, and suede padding on the music desk.

Our instrument is a double strung, fretted model, meaning that there are two strings for each pitch, and that sometimes more than one note is played using the same pair of strings.

Although typically used to play period music from the Baroque and Classical era, there has been some interesting use of the Clavichord in modern music. The Clavinet is essentially a solid body electric Clavichord with magnetic pickups, and of course this has been famously used by Stevie Wonder and Garth Hudson, among others. Guy Sigsworth has played the clavichord with Bjork, and Paul McCartney played one on the Beatles “For No One”. There is a fabulous album of Keith Jarrett playing clavichords called “The Book of Ways”.



From quiet to extremely quiet



TECHNICAL INFO

Zuckermann "King of Sweden" Clavichord

Single String and Double String Options

17-20 velocity layers

2 microphone pairs (Schoeps, Earthworks), 2 contact mics (Trance Audio)

10,492 samples

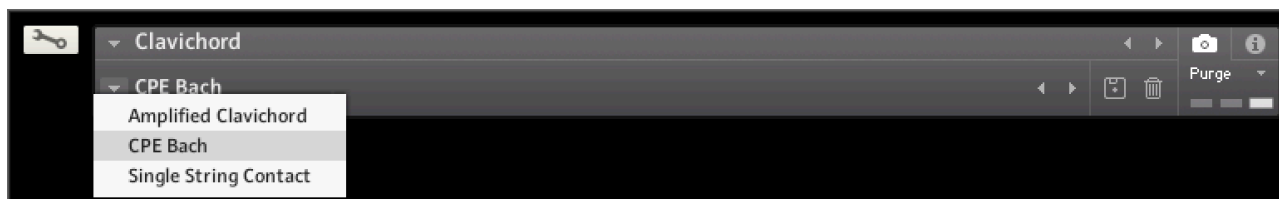
Stereo 24 bit, 48 kHz

10 GB library, 5 GB with NCW compression



THE KONTAKT INSTRUMENT

SNAPSHOTS

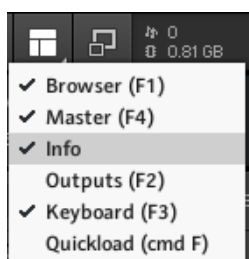


Kontakt stores presets as Snapshots, and you can use these to save your own setups or load presets we've made.

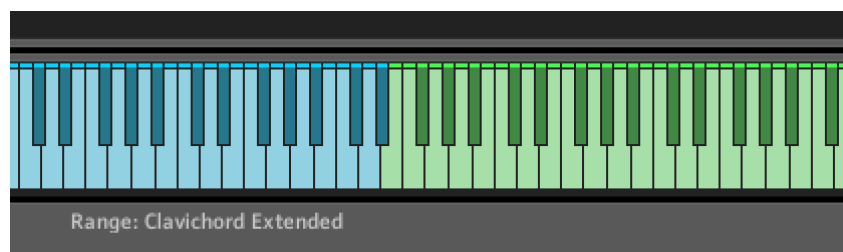
If the Snapshot menu doesn't appear, be sure to click on the small Camera Icon at the far right of the title bar (see above).

BUILT-IN HELP

THIS IS REALLY USEFUL!

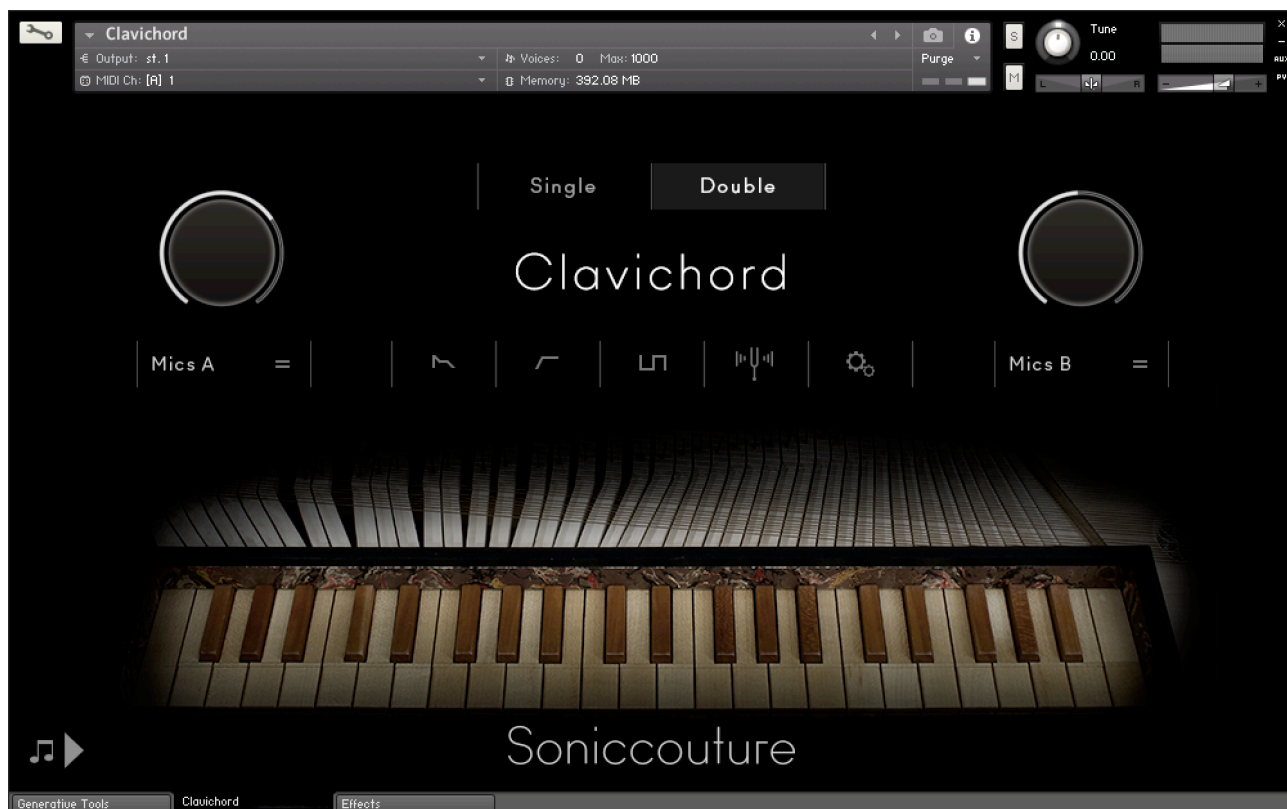


If you activate the Info pane in Kontakt, you can hover over any control in the instrument and a short note will appear in the Info pane at the bottom describing what that control does.

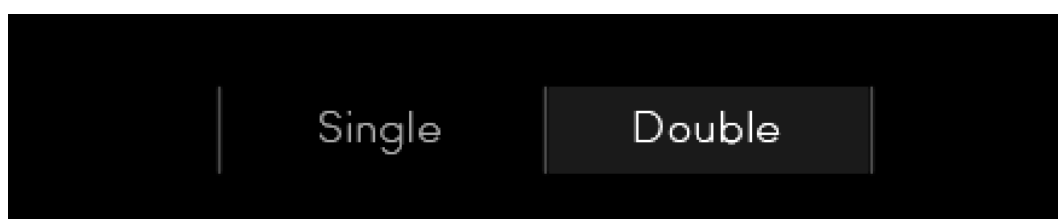


OVERVIEW

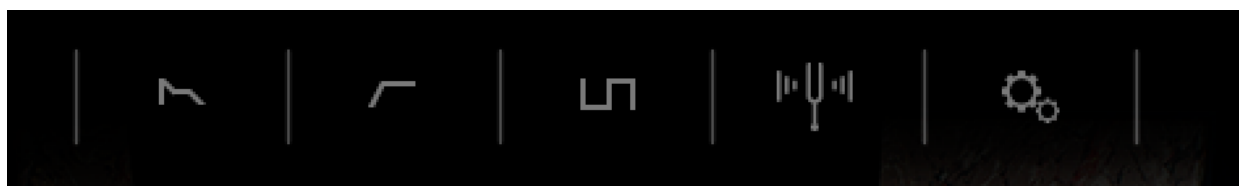
The main page of the Clavichord has two knobs either side, which are the levels of two microphone pairs. Mics A are above the middle of the soundboard, and Mics B are above the bridge. These can also be changed to contact microphone options using the menu below the knob.



Across the middle at the top you can choose from single or double string versions.



THE EDITOR



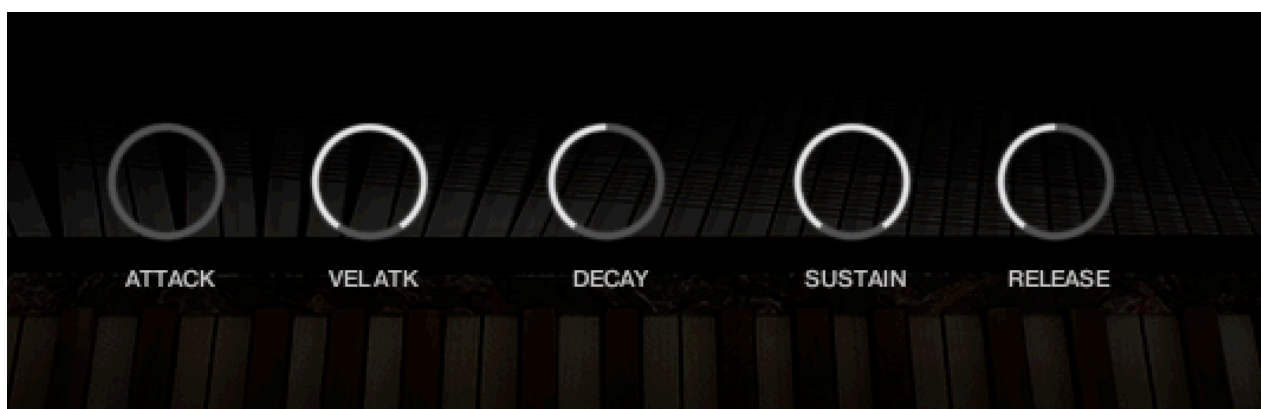
In the centre is a row of icons. These open the various edit pages, should you want to edit any of the playback parameters within Kontakt.

These five switches open five different parameter editors. From left to right they are Envelope, Filter, LFO, Tuning, and Performance Options.



ENVELOPE

The ENVELOPE tab gives you control of the ADSR Amplitude envelope.



VEL ATK is a velocity to attack time modulator... when raised, the attack time is increased at higher velocities.

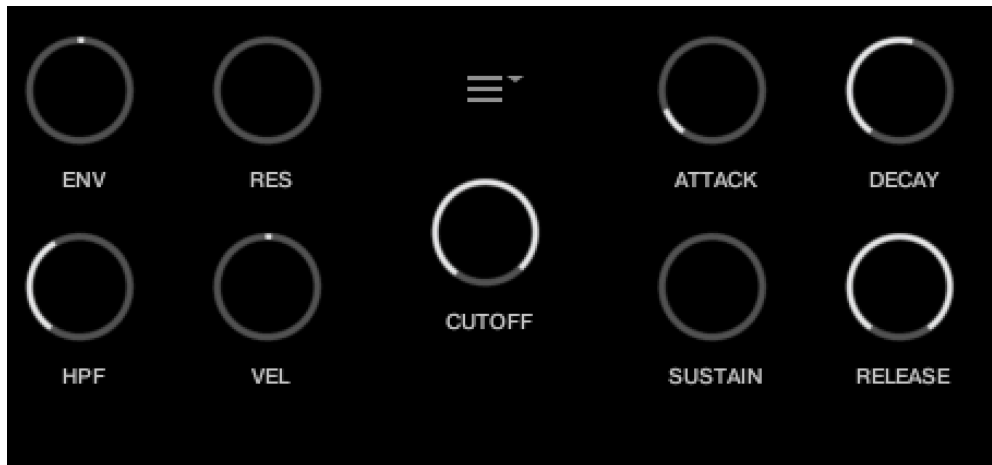




FILTER

On the FILTER tab you can control the filter CUTOFF frequency, as well as choose the filter type with a drop down menu. Here you can also control the RESONANCE of the filter, the ENV depth, the High Pass Filter cutoff, and the VELOCITY to filter cutoff depth.

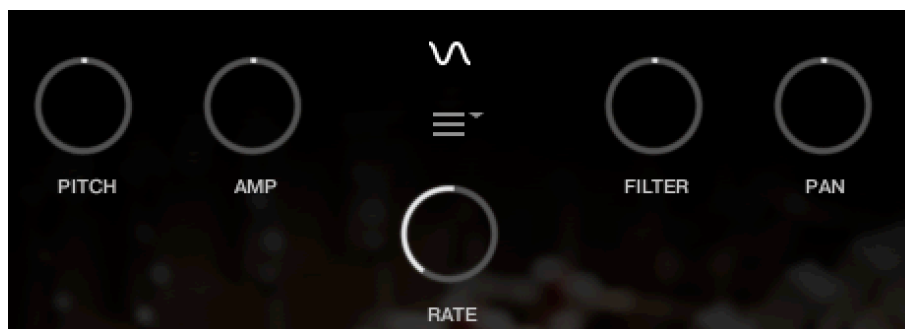
The ADSR controls of the Filter envelope are on this same tab.



LFO

The LFO tab lets you control the LFO RATE, as well as the depth of modulation to the PITCH, AMPLitude, FILTER cutoff or PAN of that department.

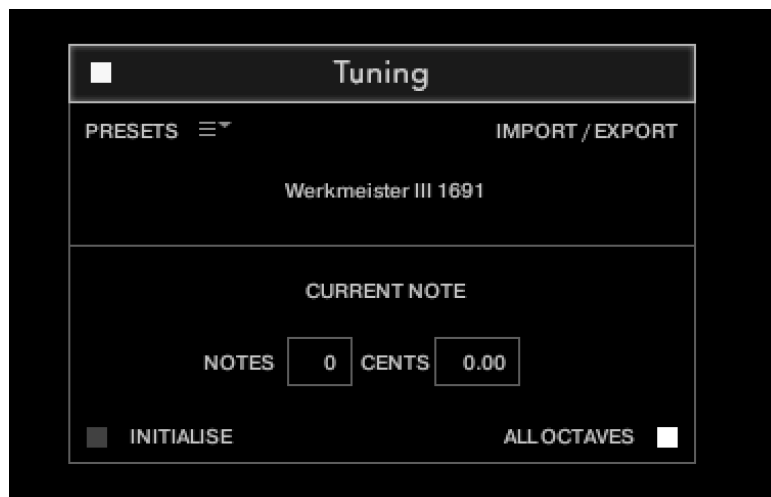
There are two menus beside the large RATE knob. One of these lets you set the LFO WAVEFORM, and the other lets you set LFO Sync options.





MICROTUNING

In the Microtuning Editor you can design or import/export scales to and from other Soniccouture instruments.



The title bar is a switch that turns the microtuning function on or off.

There is a menu of some typical historic keyboard tunings at the top left, and the import/export menu on the top right.

In the middle is displayed the current TUNE KEY, the key that is currently being edited. You can adjust the NOTES (semitone) or CENTS offset of this key.

If ALL OCTAVES is checked (at the bottom right) then all instances of that key will change together... this is very useful if you're designing a scale that repeats at the octave, which many of course do.

INITIALISE will set the microtuning to nominal, no offsets for any notes.

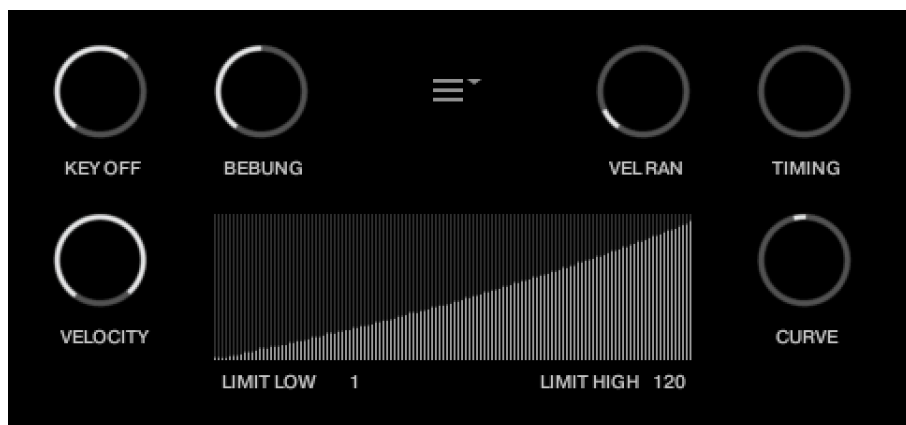




PERFORMANCE OPTIONS

In this editor you can adjust the velocity response, curve and limits.

There are also a knob for the the KEY OFF noise level, the depth of the BEBUNG effect (aftertouch pitch bend) and two 'humanise' controls; VELOCITY RANDOM, and TIMING random. There is VELOCITY depth to amplitude here, as well as a CURVE control for the velocity response.

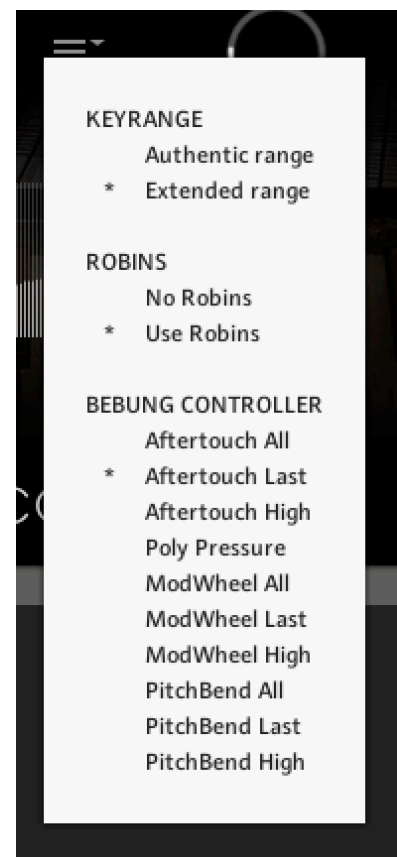


There is a menu in the centre with some other options that can be turned on or off.

The KEYRANGE can be limited to the original range, or extended further.

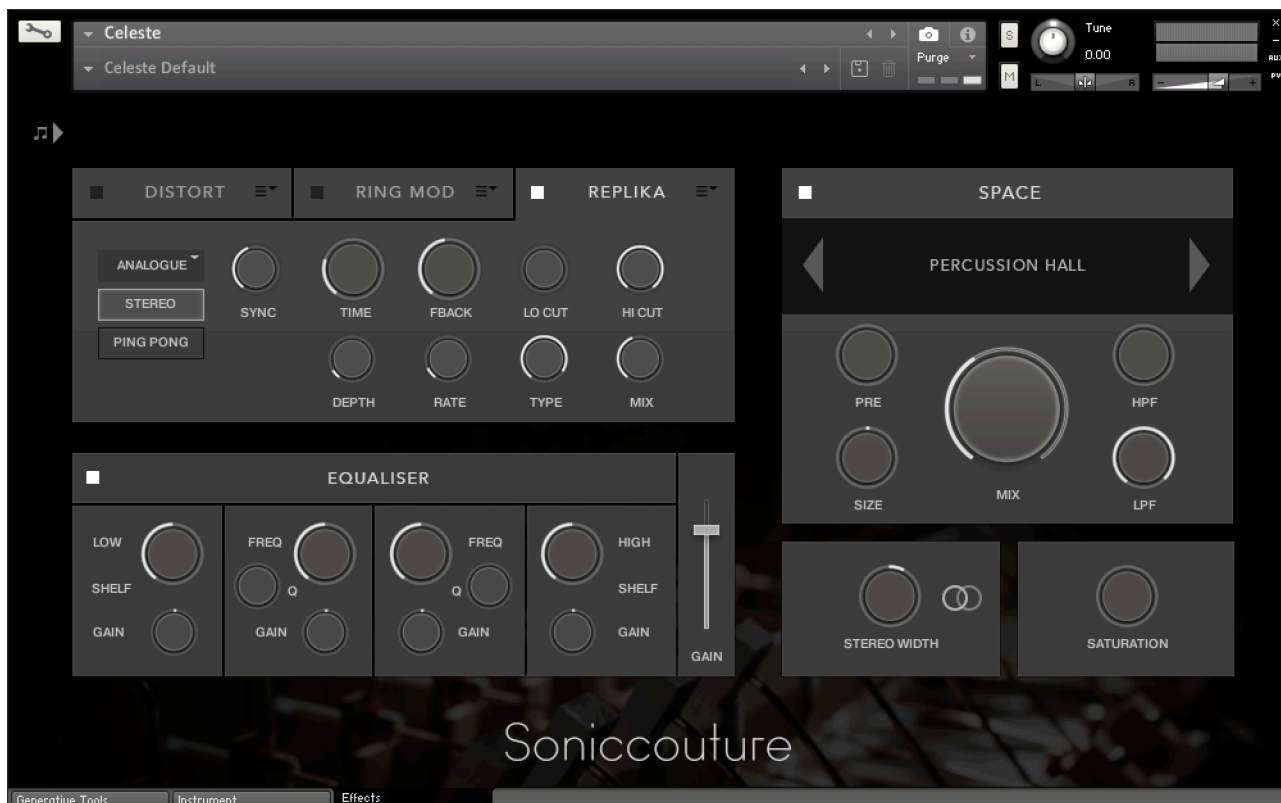
You can disable ROUND ROBIN behaviour if you like.

You can also alter the BEBUNG controller. By default this uses standard channel aftertouch and only affects the LAST played note, but you can also use Poly Aftertouch if you have a keyboard that supports it. If you prefer, you can also choose to use the ModWheel or Pitchbend controllers, but this is not as intuitive for performance as aftertouch.



EFFECTS

The EFFECTS panel is divided into 5 sections.



Insert Effects

Equaliser

Stereo

Saturation

Space



THE INSERT EFFECTS

Here you can choose up to 3 insert effects. The effect is enabled with the square power switch to the left of its name at the top of the tab, and the appropriate controls will appear below when its tab is selected.

You can select from a list of effects using the menu to the right of the effect name in the tab.



The effects are in routing order from left to right, and are before the EQ and other effects on this panel.

You can only select each type of effect once, if you select an effect already in use, then the position of those effects will be swapped.

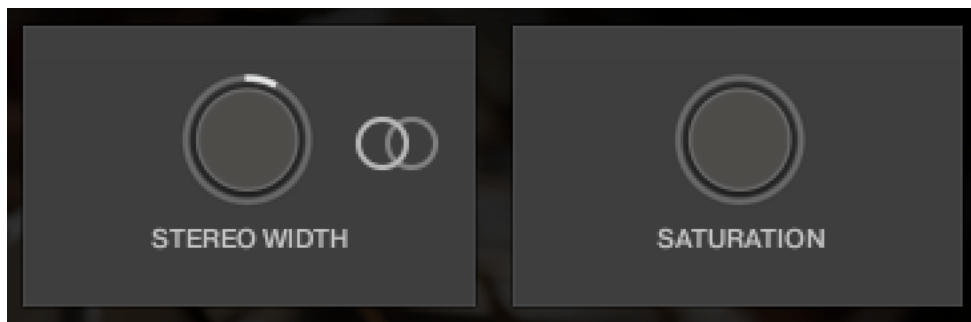


EQUALISER

This is a fairly obvious four band parametric EQ. The fader on the far right is the output level from the EQ.



Note that BELL and SHELF are drop down menus, you can choose either for the top and bottom bands. You can enable or disable the EQ with the power switch at the top left.



STEREO AND SATURATION

Here you can adjust the STEREO WIDTH (the natural recording is nominal at 12 o'clock). Moving the control left narrows the width, and to the right increases it.

There is a stereo SWAP feature, enabled with the symbol:

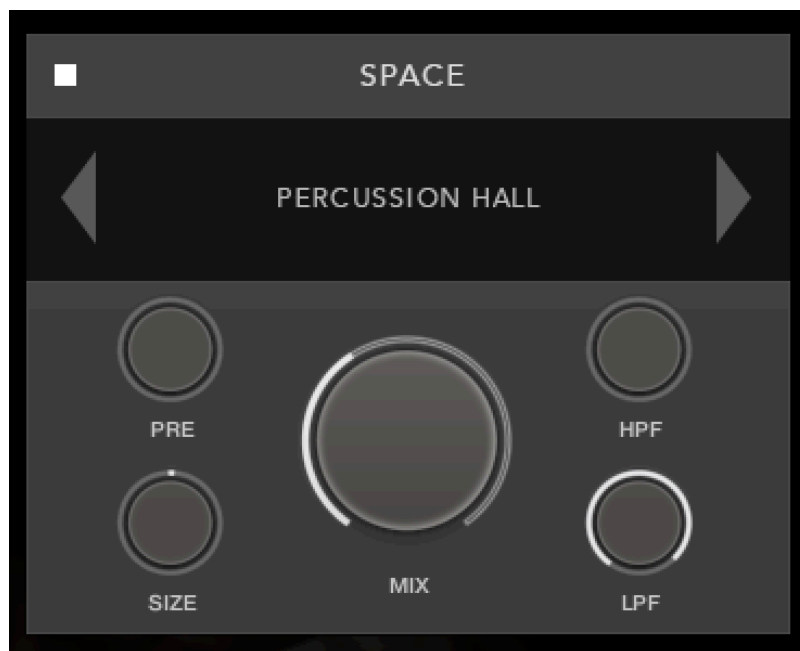


SATURATION will adjust the SATURATION effect.



SPACE

This is the convolution reverb section. In the middle there is a drop down menu with a selection of our impulse responses.



As usual, the power switch is at the top left.

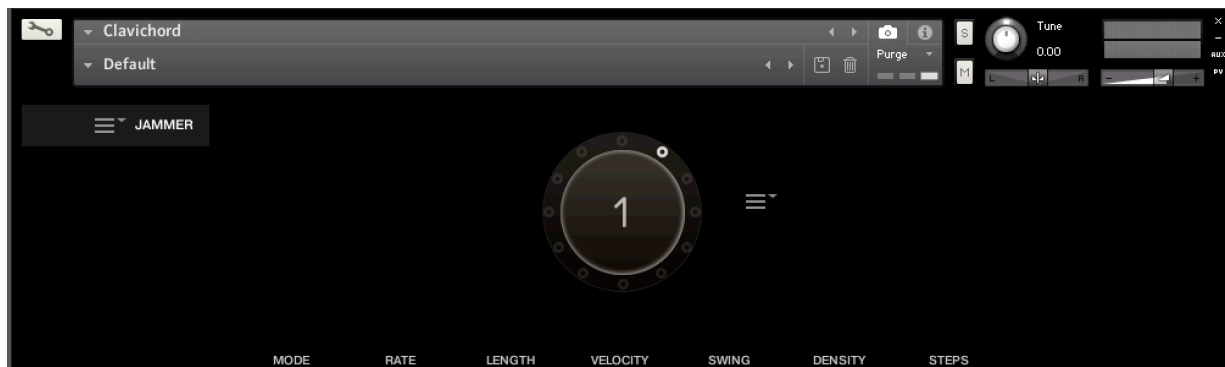
The controls below are the PREDELAY, the convolution impulse SIZE, a High Pass and Low Pass Filter, as well as the return MIX level on the large central knob.



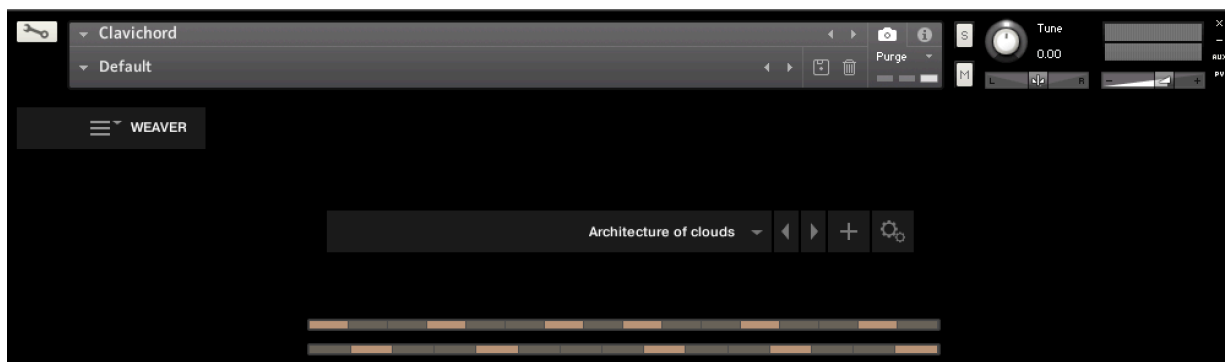
GENERATIVE TOOLS

This panel has three options, chosen with the menu at the top left:

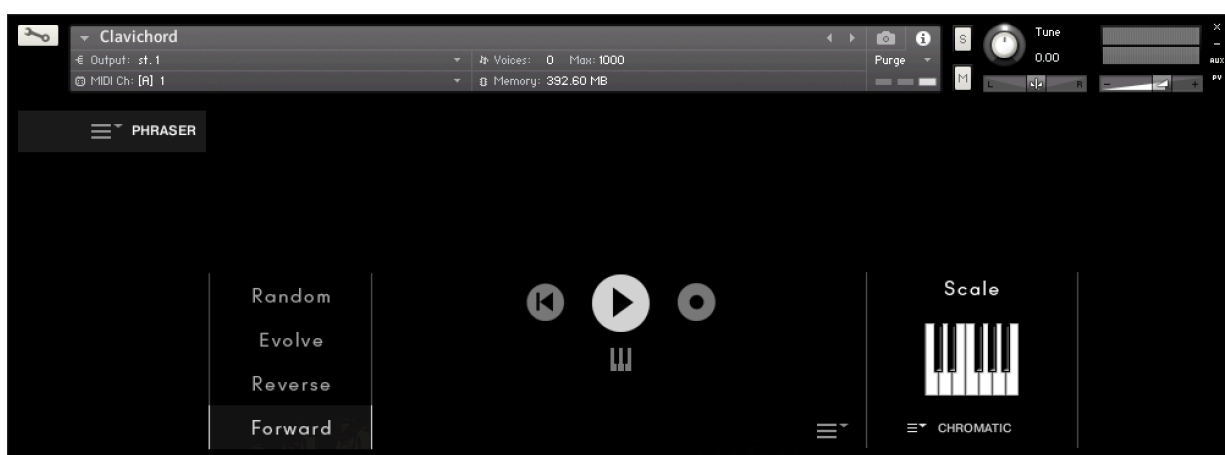
JAMMER



WEAVER



PHRASER



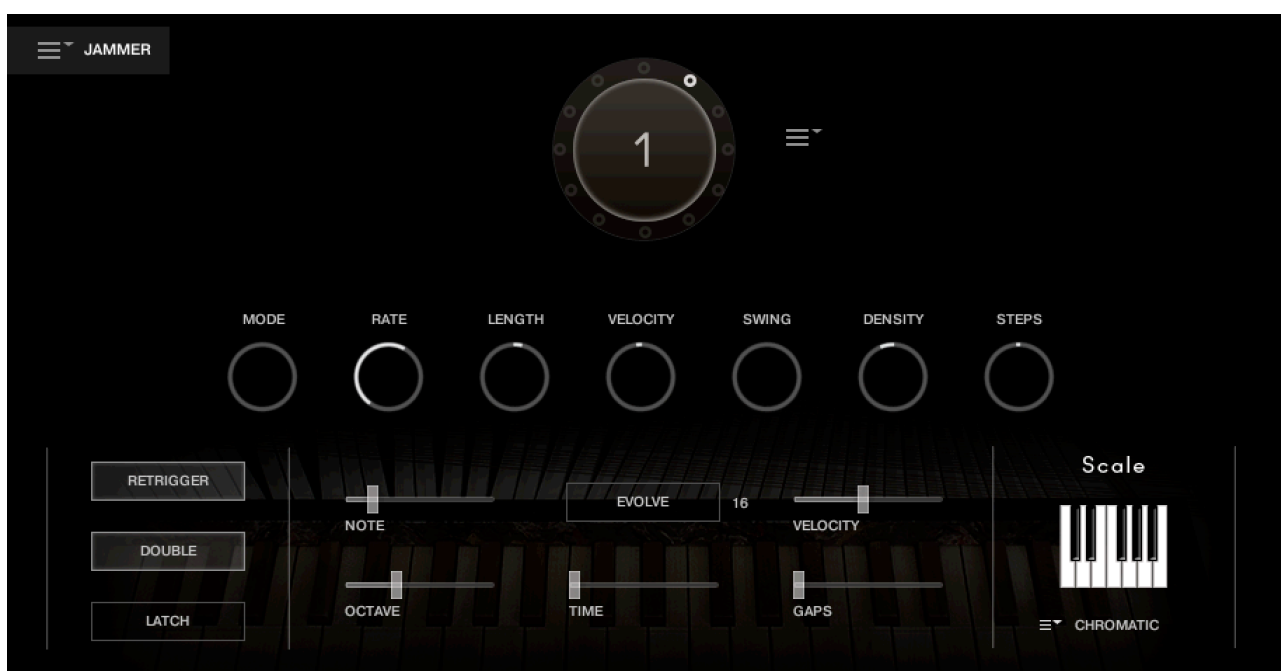
JAMMER



The play-notes icon at the bottom left enables or disables the Jammer. This control is duplicated on the other pages for convenience.

The large knob in the top middle is a Preset wheel with 12 presets. You can overwrite these, copy them, import and export them, using the menu to the right of the wheel.

The seven knobs along the middle of the Jammer are global controls, these are:



MODE This sets the type of arpeggiation used to create patterns. The original Jammer mode is Random mode, but you can also choose Up, Down, or Up Down, for somewhat more traditional arpeggiator results. This controls how the notes are selected from what you are holding down.

RATE controls the speed of the Jammer, this is always related to the tempo of Kontakt or the host sequencer.

LENGTH is an offset to the duration of the created notes. In the centre position, the notes are created at the same duration set by the Rate knob, but using LENGTH you can make these longer or shorter.



VEL OFFSET adds or subtracts from the velocity of the notes created by the Jammer. Automating this can be useful for creating fades.

SWING adds some time to the offbeat notes to give a shuffle or swing feeling to the rhythm.

DENSITY and STEPS are controls that allow you to create Euclidean rhythms with the Jammer. If DENSITY is as big as STEPS then you won't hear anything different, since all the steps are "active". However, when DENSITY is LESS THAN STEPS, then there will be some rhythmic gaps spread equally throughout the pattern (this is the essence of Euclidean rhythm; ***distribute a determined number of onsets as evenly as possible across a determined number of steps.***) Due to the universality of rhythms created by this method, there has been a lot of interest in the algorithm over the last 15 years or so.

The next five sliders, below the knobs, are controls for the generative part of Jammer, which are essentially randomising various aspects of note generation. These are:


NOTE add random offsets to the pitches you give Jammer (are holding down). This is in semitones, so if it's set to "1" the Jammer will output notes plus or minus 1 from the notes you play, as well as the note you play.

OCTAVE add random octave offsets to the pitches created by Jammer. This control only ADDS octaves, it doesn't subtract octaves.

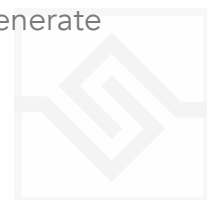
TIME add random changes to the timing of the Jammer, so that the result is less stable and rhythmic.

VELOCITY add random changes to the velocity of the output notes. This always uses the input velocity as a starting point, so if the VELOCITY range is small, it will just add small changes to your input velocity.

GAPS add random rests or silent beats into the Jammer sequence.



In the middle of this section you'll see a button titled "EVOLVE", with the number 16 to the right of it (by default). EVOLVE mode means that the Jammer is working to generate

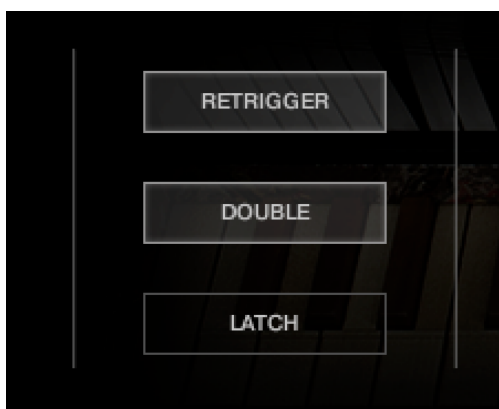


new data constantly, the randomisers are always creating new patterns from your input notes.

If you click on EVOLVE, the button changes to display LOOP. Now the Jammer is repeating the pattern it most recently created. The length of this pattern is determined by the number to the right, so by default it repeats the last 16 generated 'notes'.

It's important to remember that the Jammer is not storing the 'notes' themselves, but rather the choice of, and offsets to, the input notes you play into it. So even in LOOP mode, the Jammer will output different notes depending on what notes you play. The pattern is stored, not the exact notes themselves. This means you can create quite complicated patterns, but play them with any chord or input notes.

There are three buttons on the left:

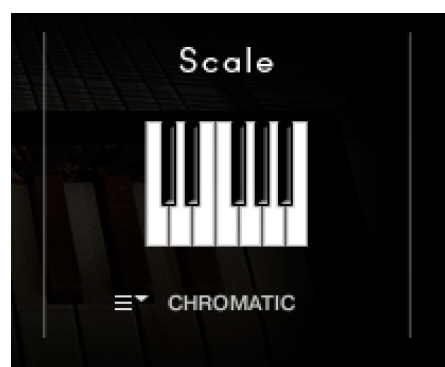


RETRIGGER will force the Jammer to start from the beginning after all notes are lifted (legato).

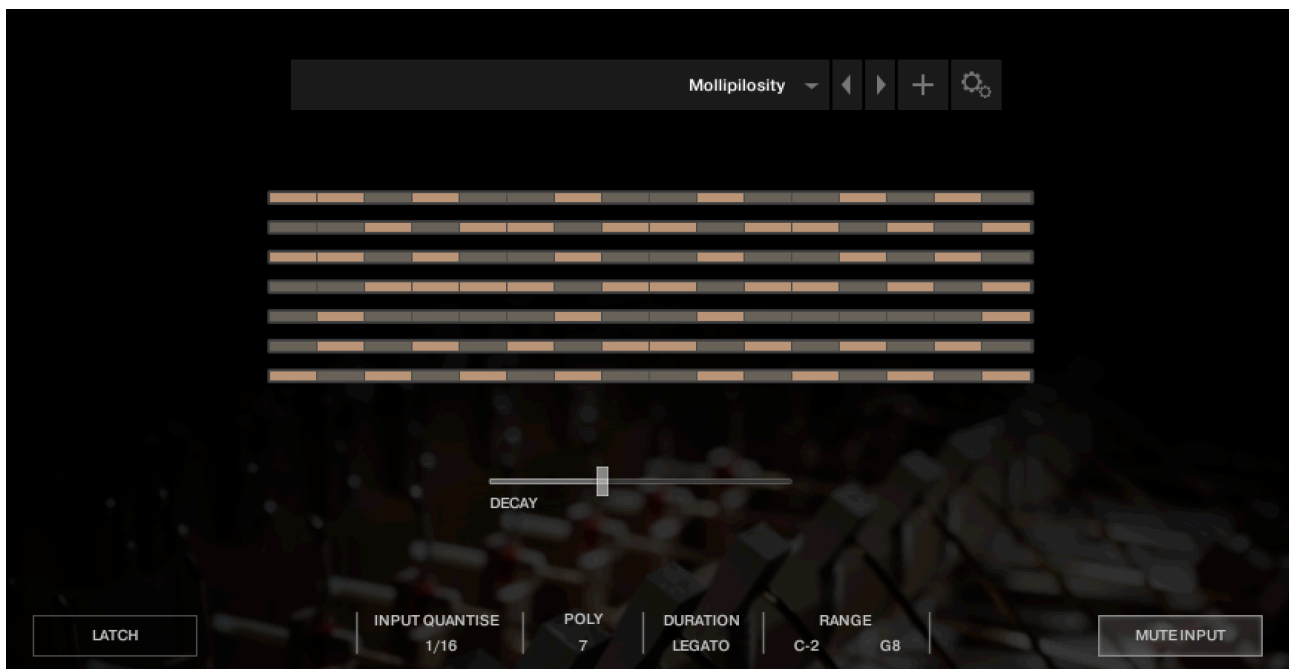
DOUBLE will trigger two notes on each step, as if you are playing with both hands simultaneously.

LATCH will tell the Jammer to hold the current notes until new notes are received.

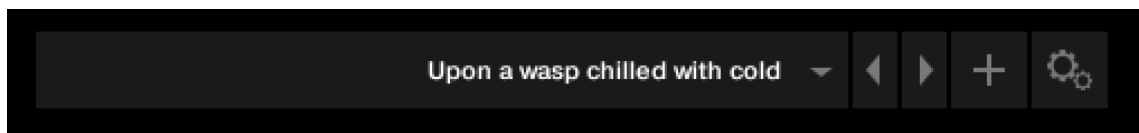
At the right is a small keyboard that represents a pitch filter. Here you can limit the output notes of the Jammer to a certain key or chord or any selection of notes you like. At the bottom of the small keyboard is a drop down menu with some popular scales, but you can click on the keyboard directly to allow or disallow any pitch as you like.



WEAVER



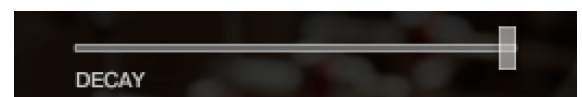
The WEAVER is a tool that allows you to define a rhythmic sequence to be played by an input note. More about how this works later, in the Weaver Editor section below.



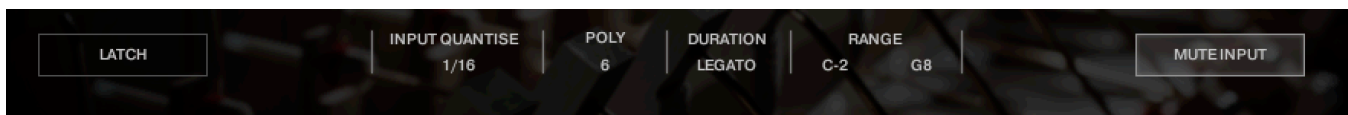
The main page has a PRESET menu at the top, you can choose these from the drop down or by stepping through them. You can store your own settings to any of these menu positions using the + button. And you can import and export presets if you need with the cog menu on the far right of the PRESET bar.

In the middle of the page is a rough representation of the WEAVER pattern, and if you click on that you will open the WEAVER EDITOR.

Below that, there is a large slider labeled DECAY. This controls the overall decay time of the sequence, since each pattern will loop. If set all the way to the right, the pattern will never decay.



At the bottom are some global controls for the WEAVER sequence.



LATCH will hold the current notes, even if you let go of the keys.

INPUT QUANTISE. This is very useful, but only works if Kontakt is running its own transport, or else is inside a running DAW. But when this is the case, none of the WEAVER patterns will trigger until they're in sync with the value set in INPUT QUANTISE. (ie. 1/16th note) This keeps your patterns really tight and in sync with the song you might be working on.

POLY is the polyphony of the WEAVER pattern. From 1 to 8. If you play more notes than that, they are ignored by the WEAVER engine.

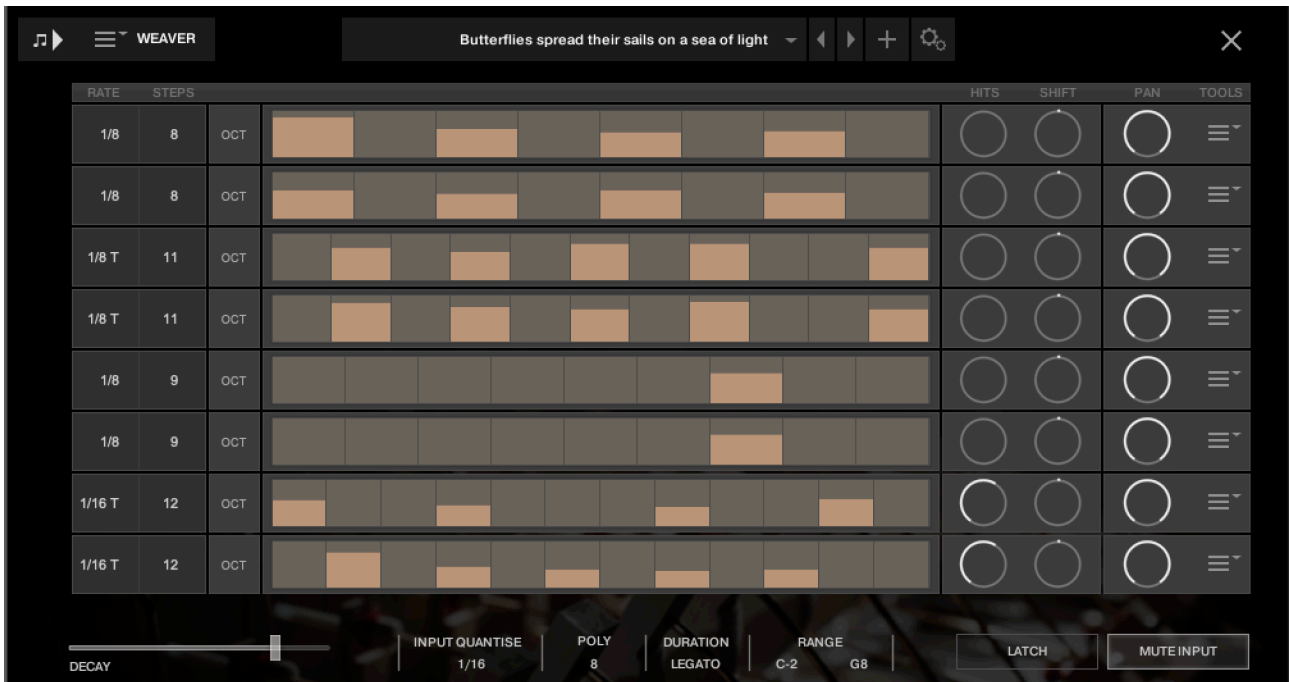
DURATION is the duration of the notes generated by WEAVER, and this can be set to a value, or else to LEGATO, in which case it will play until the next note on any given row comes along.

RANGE allows you to limit the range of the WEAVER, so you could in theory play a bassline with your left hand and have WEAVER only respond to notes played with your right hand.

MUTE INPUT turns off the MIDI sent into WEAVER, so you'll only hear the notes generated by WEAVER. Sometimes this is what you want, but also sometimes it's nice to hear the original notes and have WEAVER accompany them, respond to the notes you play.

Let's click on the middle panel and open up the WEAVER editor. It can look a little intimidating at first.



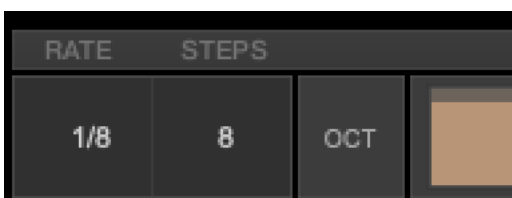


You can close this window again with the X at the top right.

The above display shows all 8 rows active (POLY set to 8). All rows are the same.



Notes are assigned a row in the order they're received. You can see the notes assigned to each row at the far left when you play.



At the left of each row, you can set the RATE and the number of STEPS for the row. Here this row is set to 8 steps of 1/8th notes.

There is also an OCT switch here, OCTAVE, which we'll discuss a bit later.



In the middle is the velocity steps table. You can draw in here as you like. This pattern uses the input velocity, so the maximum output velocity will be the velocity of the note that triggered the pattern.



If you ALT-drag, you can set all active steps to the same velocity.

On the right there are two EUCLID generator controls. HITS and SHIFT. Be careful with these, because they will write new data into the pattern table, and overwrite anything you may have drawn.

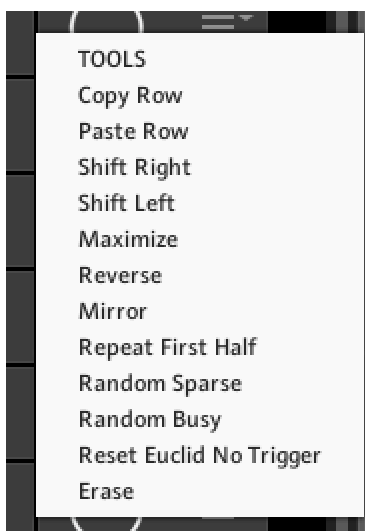
EUCLID rhythm generators basically spread a number of hits, as evenly distributed as possible, within a number of STEPS. So if you set this HITS to 5, it will try to evenly distribute those 5 hits among the 8 steps we set that row to contain.



SHIFT shifts the position of those EUCLID HITS, left or right, in the pattern.

The PAN control introduces random panning to notes generated on that row.

POWER TIP IF YOU WANT TO SET ALL ROWS THE SAME, HOLD DOWN ALT OR OPTION WHILE ADJUSTING A PARAMETER



And lastly at the far right, there is a menu with some drop down tools to manipulate the row.



OCTAVE

When you press the OCT button on the left, you see a blue table instead of the orange one. This is an octave shift table that can transpose the incoming note one or two octaves up. This is nice for adding some variation to the WEAVER pattern.



A NOTE ABOUT THE PRESET STORE BUTTON

When you press the preset store button, it turns green:

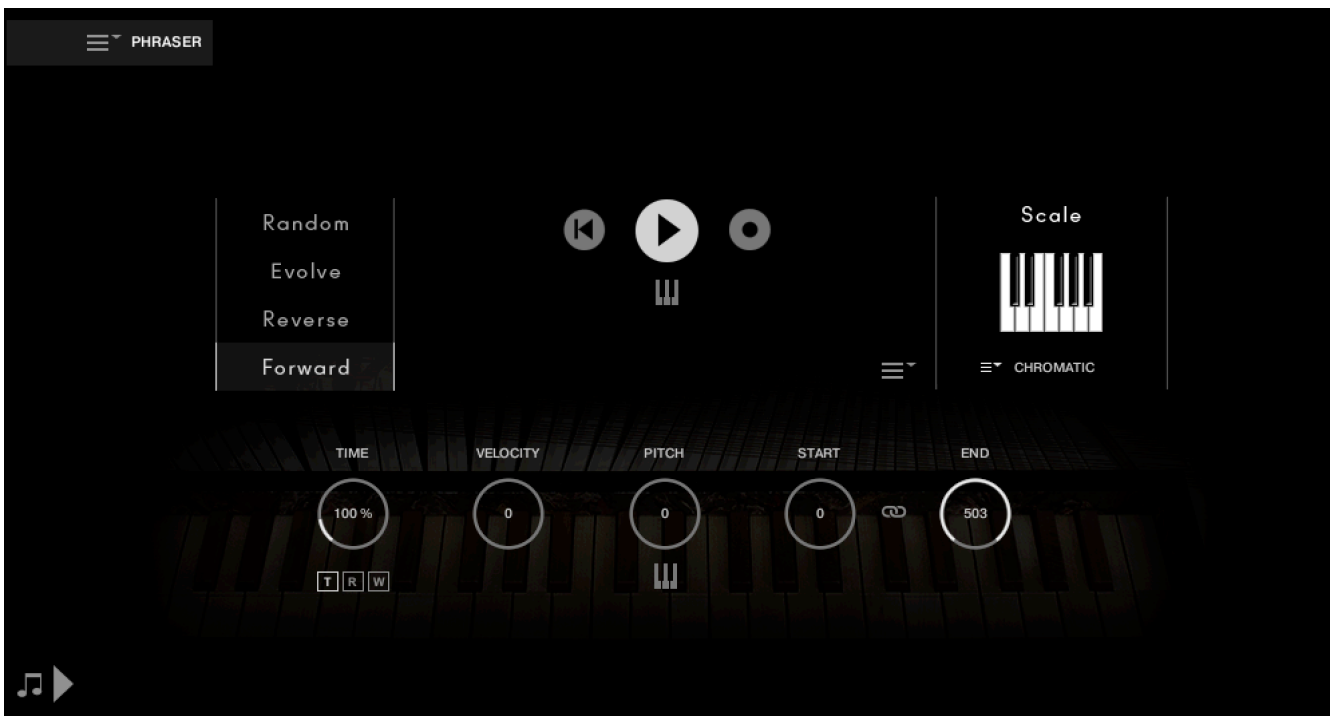


This is a kind of “store enable” mode. If you now choose a menu item, your preset will be stored at the menu location you store.

If you just hit the store button again, it will overwrite the preset you had selected when you started editing. So you can just click it twice quickly to store the preset where it is.

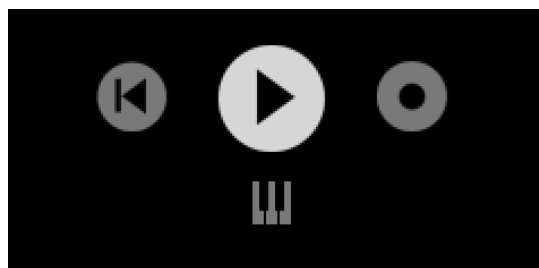


PHRASER



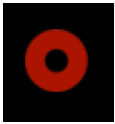
The PHRASER is a tool that originally appeared in our Scriptorium product back in 2008. This is an updated version with several new features.

The main concept is that you can record a series of notes, a phrase, into a buffer. This buffer is then re-triggered by the MIDI input, replacing the notes you play and generating new melodic material based on your recorded phrase. You can trigger the phrase manually or automatically have it play back at a certain rate.

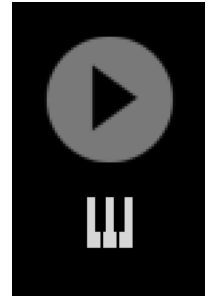


In the middle you can see transport controls, Rewind, PLAY, and Record buttons, with a small keyboard icon below the PLAY button. To record a new phrase, or erase the existing one completely, click on the Record button. Note, you cannot Record if the Phraser is OFF, so you must first activate it with the main Generator Activate button at the bottom left.





To get the general idea, enable the Record button and play a few notes on your keyboard. Turn Record OFF again, and enable the Real Time Play switch under the main PLAY button in the middle.

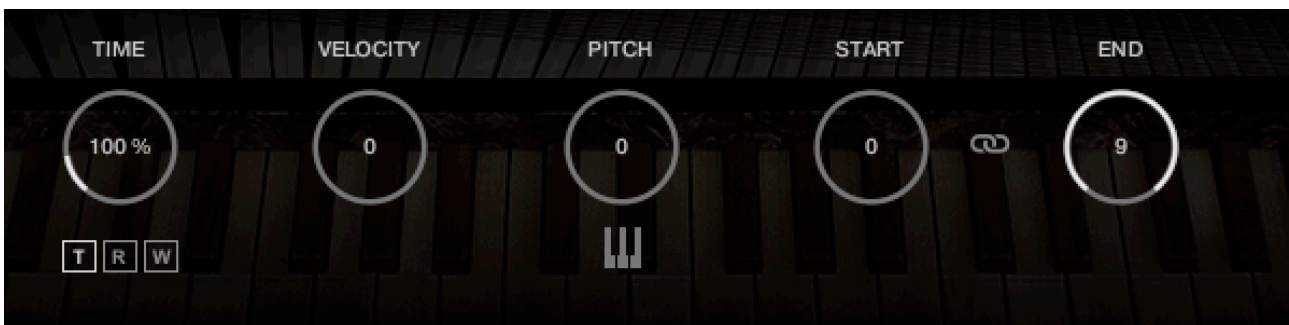


Now when you play your MIDI keyboard, no matter what notes you play, you will be triggering the notes of your recorded phrase.



Now activate the main PLAY button and you should hear your phrase play back automatically, similar to how you played it in.

While it's playing try adjusting the TIME knob at the bottom left, you should hear the timing of your phrase slow down or speed up.

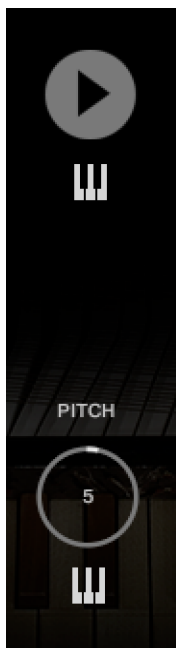


There are five knobs here, that all affect the playback of the Phrase. Obviously the TIME control only affects the automatic PLAY, but the other four affect both your phrase in automatic PLAY and Real Time trigger. The second knob is a VELOCITY offset, so you can adjust the velocity of the phrase, the middle one is PITCH, so you can transpose your phrase, and the last two are the START and END point of the phrase, so you can modulate where in a long phrase you want to play back.

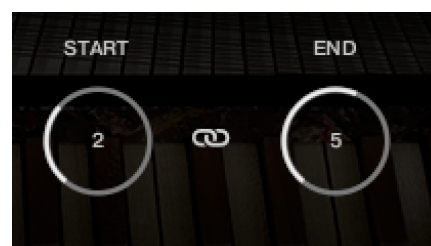
Beneath the PITCH knob is another small keyboard icon, which enables the Real Time Transpose, turn this on and now the incoming MIDI is going to transpose the pitch of the phrase. (relative to Middle C, which is transpose = 0).



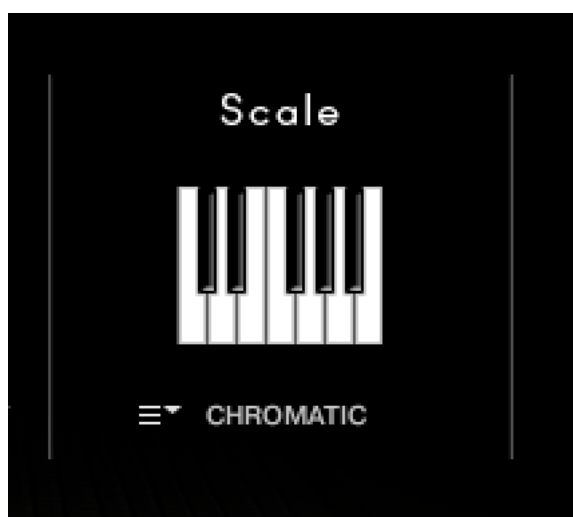
Try playing your phrase with the main PLAY off, but both Real Time Play and Real Time Transpose on at the same time, like this:



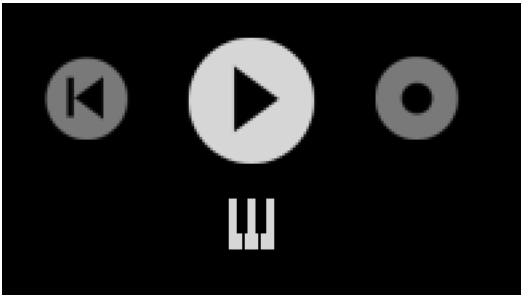
You can also experiment with the START and END knobs, or link them together to move through a window of notes on your phrase.



When you start transposing your phrase, often the results are outside the original key signature of your original phrase, so we include the same pitch filter as in Jammer to limit the output of the Phraser to a certain set of notes. This is explained a bit further in the Jammer section of this manual.



Options for automatic PLAY mode.

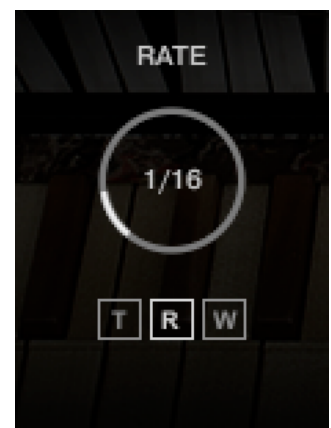


When PLAY is enabled, you can always hit the REWIND button to go back to the beginning of the phrase (or to the START position of the phrase if START is not at the beginning.)

There are also two other TIME modes for automatic play, controlled with the small T R W switches beneath the TIME knob.

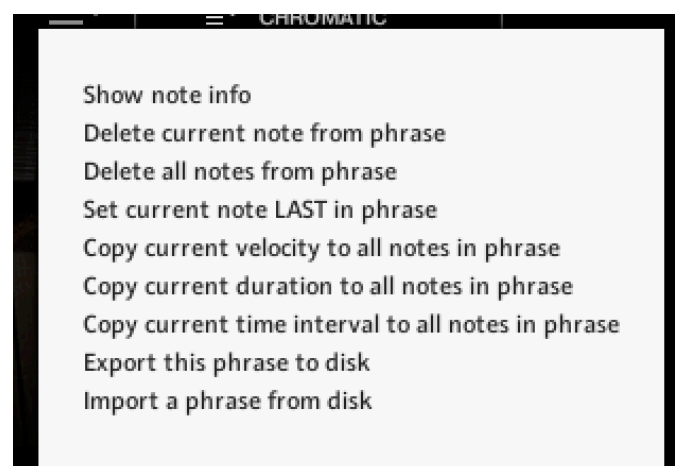
RATE mode plays back the phrase at a constant tempo RATE.

WAIT mode only allows notes at the time intervals on the RATE knob, but it won't play a note early. So if two notes are played at the same time in the original phrase, they will still play at the same time in WAIT mode. It's a kind of primitive quantise for your played phrase.



TOOLS MENU & NOTE INFO

In the middle of the screen, just to the left of the Scale filter, there is a menu dropdown with some commands for exporting and importing a phrase, as well as some other commands. The first item in this menu is Show Note Info.



When you Show Note Info, a display opens in the middle that shows all the information of your phrase as it is stored within Phraser.



NOTE	PITCH	VEL	DUR	TIME
2	A3	48	198	248

The NOTE is the position of the note in the recording, the PITCH is the pitch obviously. The VEL is the velocity of that pitch, the DUR is the duration of that note in milliseconds. The TIME is the time between that note and the next note, in milliseconds.

This can be useful for checking what you've recorded. But you can also edit any of these values if you want to make fine adjustments to your phrase.

IMPORTING MIDI TO PHRASER

You can drag a MIDI file onto Phraser and it will become the current phrase. Note that there is a maximum of 1000 notes in Phraser.



SUPPORT

If you have any problems or questions relating to the use of this product, please feel free to contact us. You can email us at :

<http://www.soniccouture.com/en/support/>

We will always endeavour to reply to any enquiry within 24 hours. We are based in the UK, so please bear in mind differences in time zones.

While you are waiting, you will find lots of answers to common questions in our FAQ.



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