



# Hammersmith Pro

user guide

Soniccouture

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## RECORDING THE HAMMERSMITH



The Hammersmith is Soniccuture's first traditional piano instrument. We have created sampled instruments using the piano before, in our Xtended Piano set of instruments, but this was the first straight piano.



We thought long and hard about how we wanted to approach it. We spent some time researching 'special' pianos with some significant recording or historical provenance, but none seemed right for us.

Eventually we discovered a Steinway specialist called Andrew Giller who had among his stable of pianos a Model D (the legendary full size Steinway Grand) which had been retro-fitted with a self-play MIDI system. This is very unusual to find in a full size concert grand; generally these systems are fitted to baby grands that will fit easily in the home. However, for whatever reason, a previous owner of this piano had spent a great deal of money to do so.



The reason this was exciting to us was that it would enable us to trigger the piano using MIDI, which has the following advantages:

1. It would give us a very even, consistent velocity response - the same levels for each and every key of the piano.
2. We would not need someone to play the piano: meaning that we could run much longer recording sessions with no mistakes, coughs or lunch breaks. In short, we would be able to capture huge amounts of clean, consistent data from the piano during our studio time.



## BRITISH GROVE STUDIOS

It was important to record the piano data in the most high-quality environment available - controlled, very sound-proof, and with a great acoustic. Peter Henderson, the recording engineer for the piano project suggested British Grove Studios in.. Hammersmith, West London. Built in 2002 by Mark Knopfler to represent the state of the art both in digital and analogue recording, there is no better studio in the UK. The recording room is large with a double height ceiling, and a very clear, pure acoustic.

Once in the studio, having ensured that the MIDI playback functioned properly and silently, we set up a great deal of microphones. Various options were recorded, and a final selection made in post production, away from the studio in 'real-world' listening conditions:



## MICROPHONE SELECTION

CLOSE MICS: NEUMANN M49 PAIR, AKG D19  
MID MICS : SCHOEPS MK4 PAIR, NEUMANN KM133D PAIR  
ROOM MICS: NEUMANN M50 DECCA TREE, NEUMANN KU100 HEAD

## SAMPLING SPECIFICATION

Over a 5 day session at British Grove, we planned to sample every note of the Steinway with 21 velocity layers, with the sustain pedal up, and then the entire process again, with the sustain pedal on. This doubled the studio time required, but would give us the sympathetic resonance of the all the strings ringing when the sustain pedal is pressed. The result is a very natural sustain sound, clearly different from using the unsustained samples in the usual sample-library way. Other details such as key-off noises, damper noise and pedal thumps were captured as well.

## FINAL LIBRARY SPECIFICATIONS

24 bit / 48 kHz stereo  
52 GB  
over 30,000 sample  
21 Velocity Layers  
Intelligent Round Robin  
Real Sustain Pedal sampling  
6 microphone channels

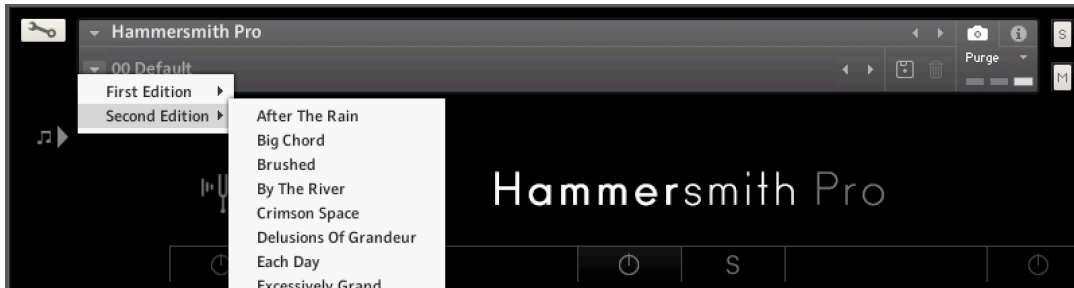
## MIDI

The Hammersmith will respond to MIDI notes from 21 (A-1) to 108 (C7), and to Continuous Controllers 64 (sustain), 66 (sostenuto), and 67 (soft pedal).



# THE KONTAKT INSTRUMENT

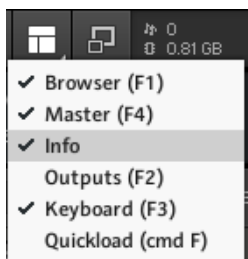
## SNAPSHOTS - SAVING YOUR SETUPS



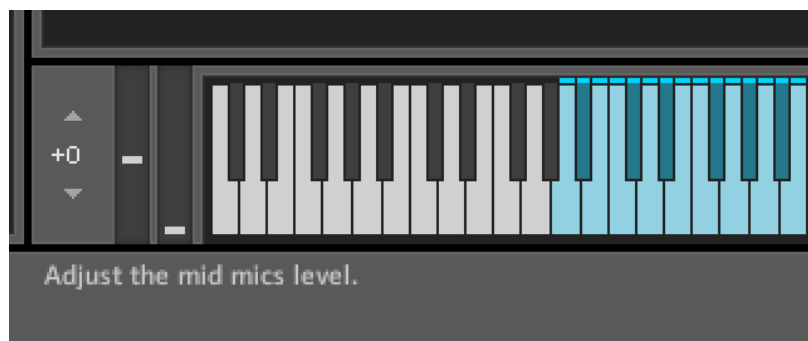
Kontakt stores presets as Snapshots, and you can use this function to save your own organ setups or registrations. We've also provided a few of these ourselves to give you an idea.

## 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 instrument looks like this. There are three volume knobs, one for each microphone channel loaded, Close, Mid, and Room.



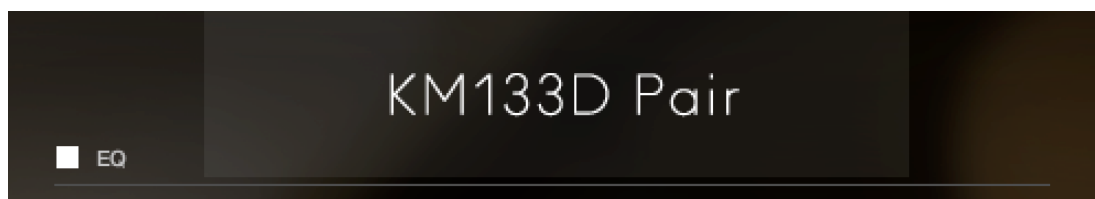
Above each volume knob is a power button and a solo button. The power button loads the samples for that mic channel, so you only load the sample you need. Solo will solo that channel.



If you click on the name below the volume knob, Close, Mid, Room, you open the editor for that channel.



For each channel you have a four band EQ, and a control for Attack and Decay. The EQ is turned on with the small box beside the word EQ. At the bottom you can also flip the PHASE of the channel.



Clicking the NAME of the microphone swaps it to the other option. For each position, Close, Mid, Room, there are two microphone options:

CLOSE	NEUMANN M49 PAIR, AKG D19
MID	SHOEPS MK4 PAIR, NEUMANN KM133D PAIR
ROOM	NEUMANN M50 DECCA TREE, NEUMANN KU100 HEAD





## VIRTUAL PEDALS

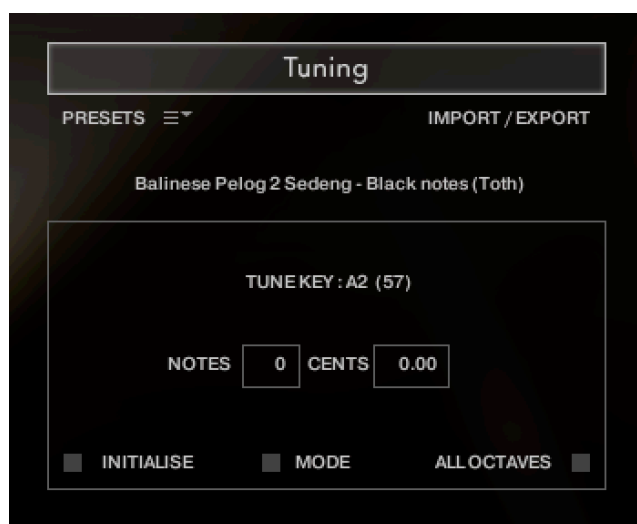
In the middle of the page are three piano pedals, which duplicate the pedals on the Steinway. These are the Soft pedal, the Sostenuto Pedal, and the Damper or Sustain Pedal. These are controlled with CCs 67, 66, and 64 respectively.





## MICROTUNING

At the top left, there is a tuning fork icon, this opens the microtuning editor. In the Microtuning Editor you can design or import/export scales.



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

There is a menu of some example factory tunings at the top left, and an 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.

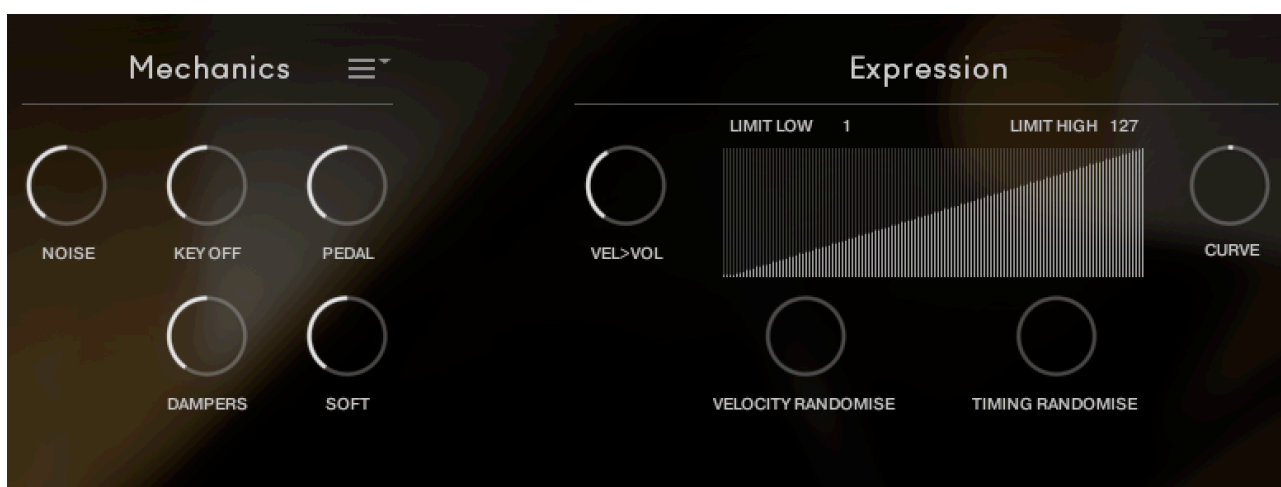
MODE. There are two modes, when the button is OFF the microtuning finds the nearest MIDI note to the desired pitch, plays that and adjusts it's tuning. When MODE is ON, it always plays the original pitch for each key and stretches it to the desired tuning, no matter how far this is from the original pitch. Usually you want MODE OFF, but there are some tunings that may sound better with MODE ON.





## PERFORMANCE OPTIONS

At the top right, there is a cog icon, this opens the Options editor. In this editor you can adjust the Expression, velocity response, curve and limits. You can also edit the Mechanics, various aspects of the piano.



### Mechanics Controls

**NOISE** adjusts the level of the ambient room noise.

**KEY OFF** adjusts the level of the release of the key.

**PEDAL** adjusts the level of the pedal mechanical noise.

**DAMPERS** adjusts the level of the dampers falling back into place after each note.

**SOFT** adjust the amount of damping of the soft pedal, CC67

### Expression Controls

Velocity **LIMIT LOW** and **LIMIT HIGH** can be set less than the entire range.

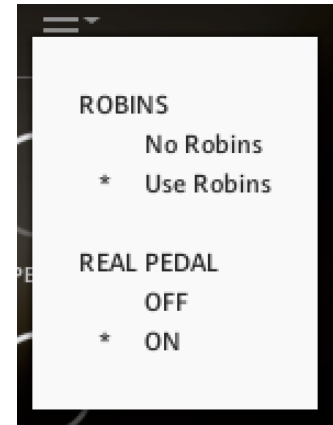
**VEL>VOL** adjust the velocity to volume depth.

**CURVE** adjust the velocity curve.

**VELOCITY RANDOMISE** and **TIMING RANDOMISE** can be used to introduce some 'human error' into a performance.



There is a menu over the Mechanics section with some other options that can be turned on or off. You can disable ROUND ROBIN behaviour if you like. You can turn on or off the REAL PEDAL feature.



# 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.

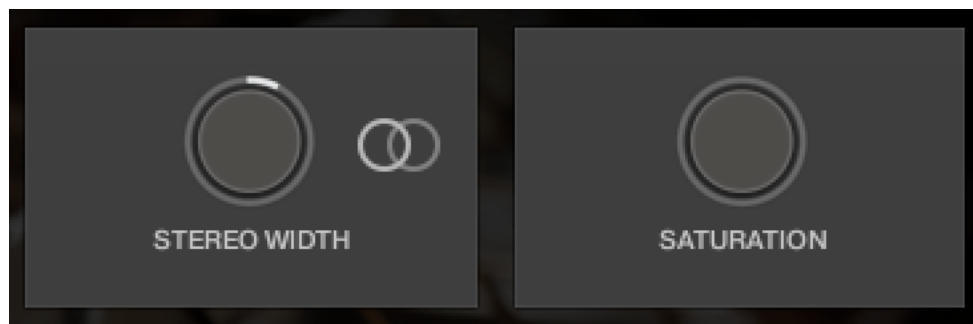


## EQUALISER

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:

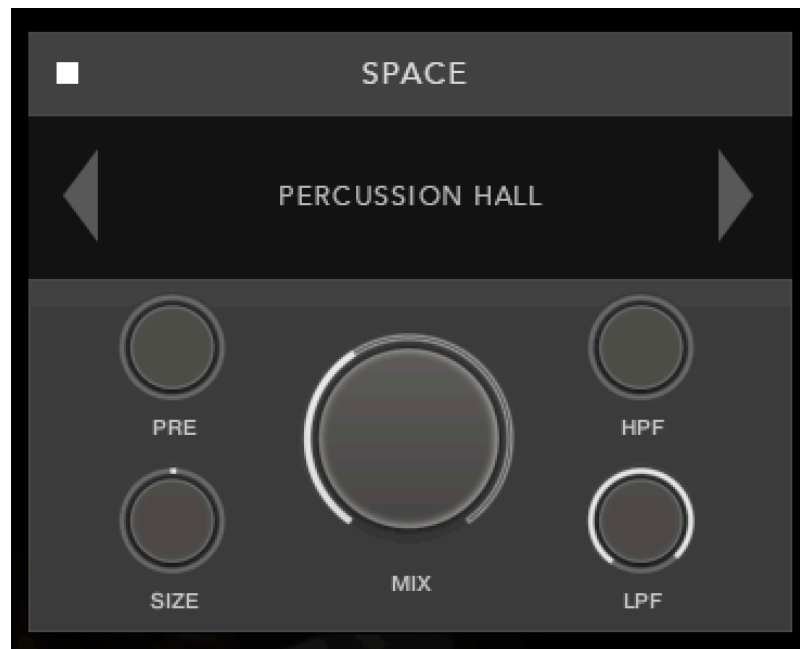


SATURATION will adjust the SATURATION effect.



## 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.





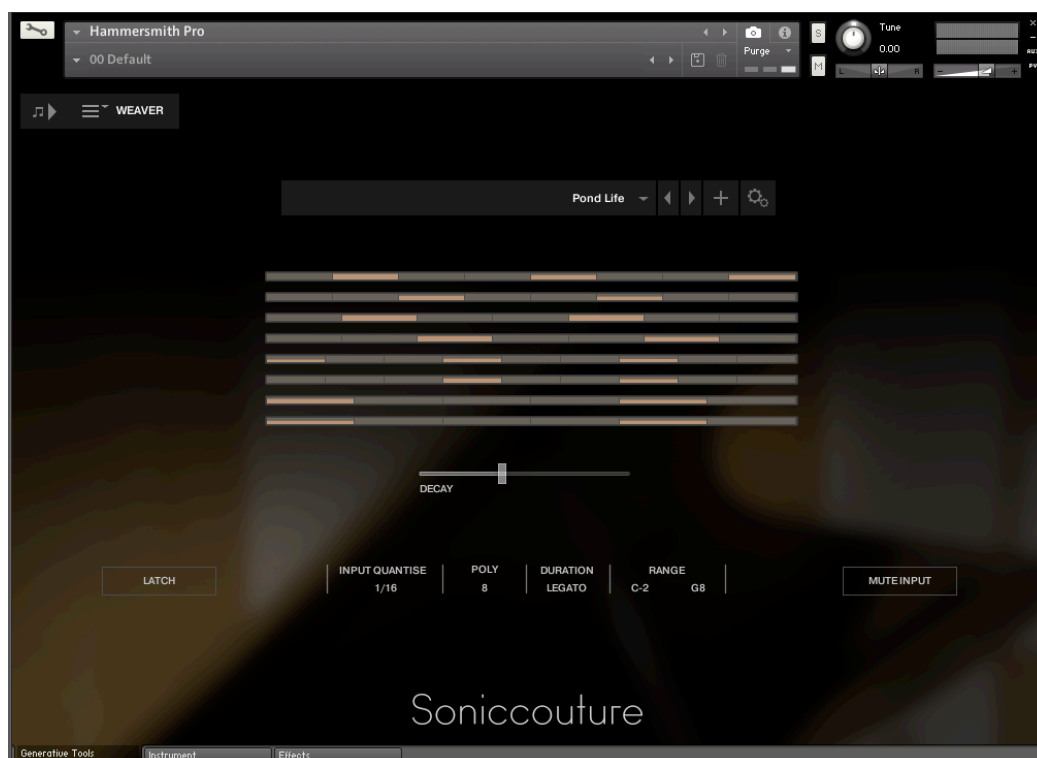
# GENERATIVE TOOLS

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

## JAMMER



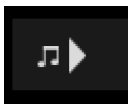
## WEAVER



PHRASER



## JAMMER



The play-notes icon at the top 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 five knobs along the top 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

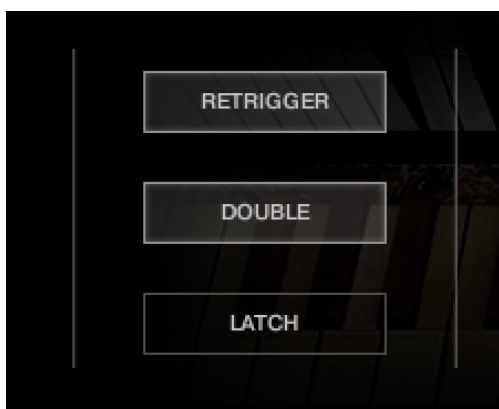


new data constantly, the randomisers are always creating new patterns from your input notes.

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:

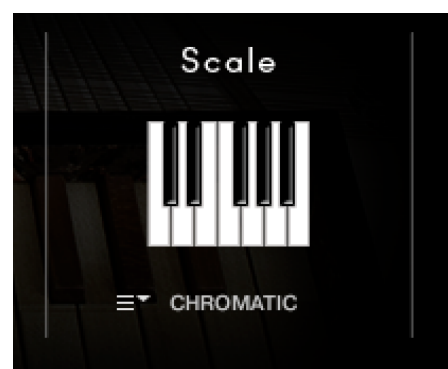


RETRIGGER will force the Jammer to start from the beginning after all notes are lifted (legato).

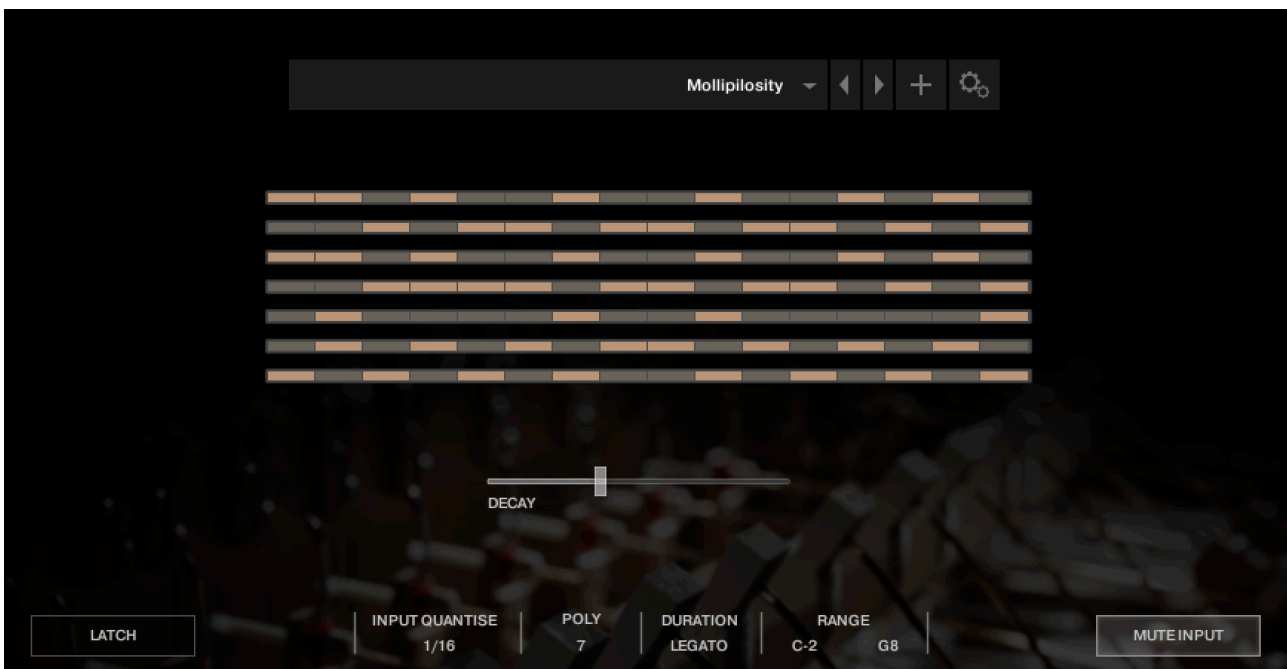
DOUBLE will trigger two notes on each step, as if you are playing with both hands simultaneously.

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



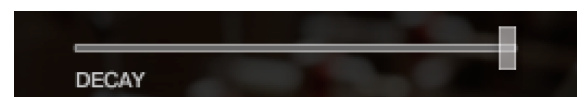
The WEAVER is a tool that allows you to define a rhythmic sequence to be played by an input note. More about how this works later, in the Weaver Editor section below.



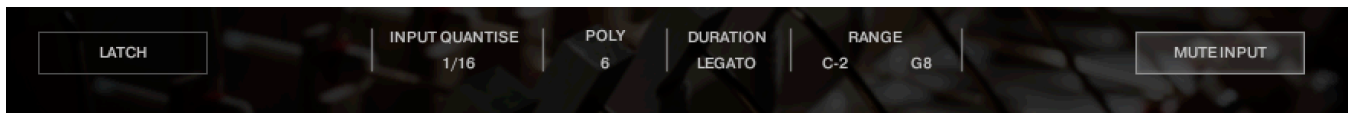
The main page has a PRESET menu at the top, you can choose these from the drop down or by stepping through them. You can store your own settings to any of these menu positions using the + button. And you can import and export presets if you need with the cog menu on the far right of the PRESET bar.

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.

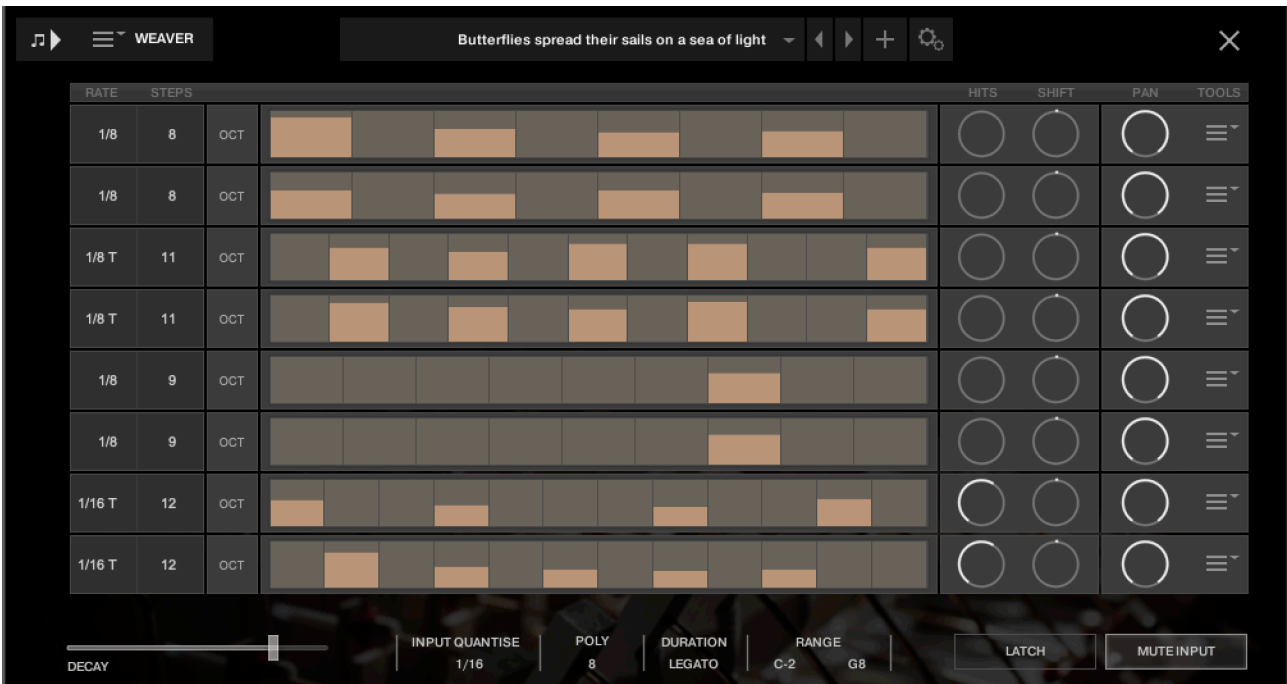
DURATION is the duration of the notes generated by WEAVER, and this can be set to a value, or else to LEGATO, in which case it will play until the next note on any given row comes along.

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.

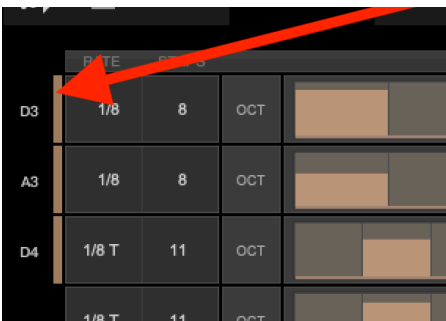
Let's click on the middle panel and open up the WEAVER editor. It can look a little intimidating at first.



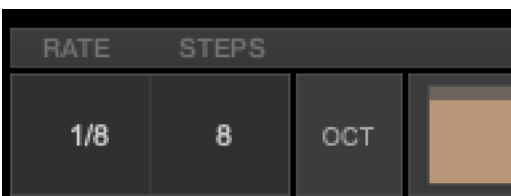


You can close this window again with the X at the top right.

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:

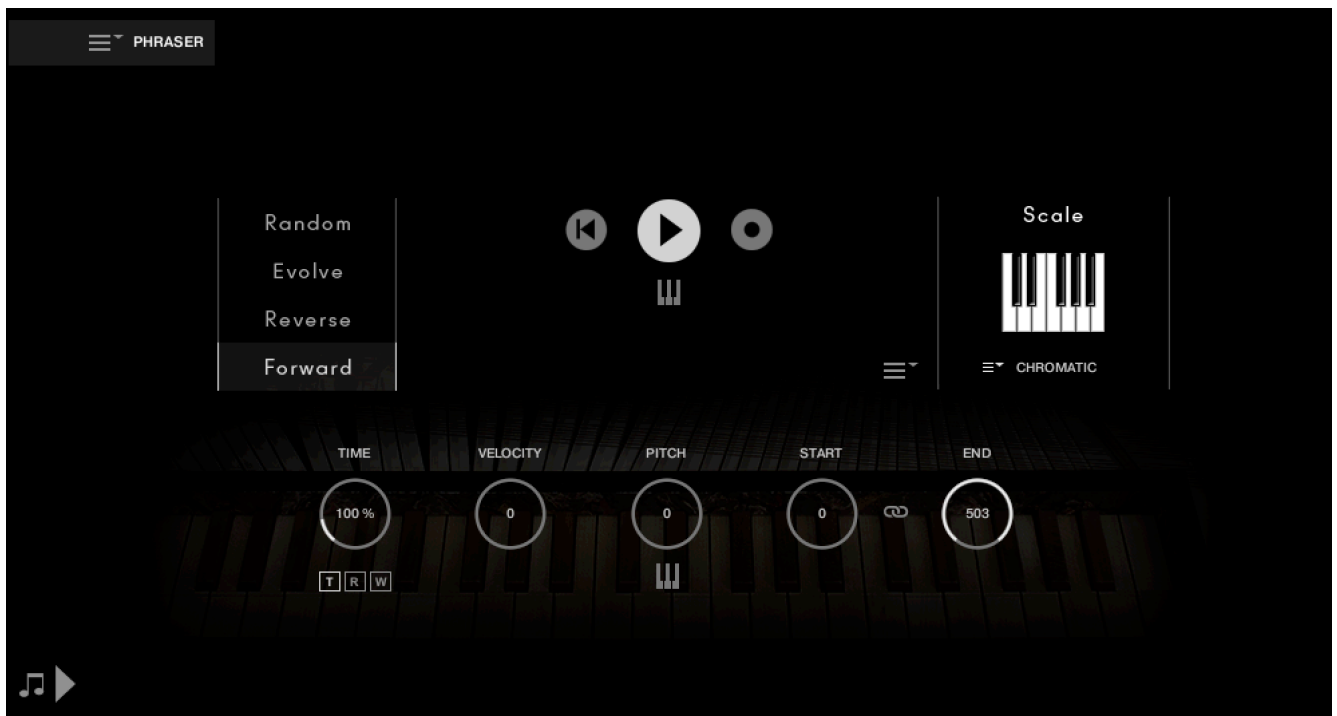


This is a kind of “store enable” mode. If you now choose a menu item, your preset will be stored at the menu location you store.

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.

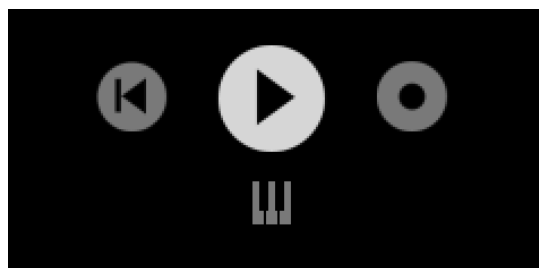


## PHRASER



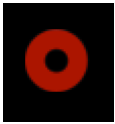
The PHRASER is a tool that originally appeared in our Scriptorium product back in 2008. This is an updated version with several new features.

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.

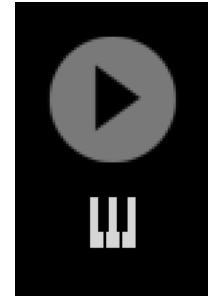


In the middle you can see transport controls, Rewind, PLAY, and Record buttons, with a small keyboard icon below the PLAY button. To record a new phrase, or erase the existing one completely, click on the Record button. Note, you cannot Record if the Phraser is OFF, so you must first activate it with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

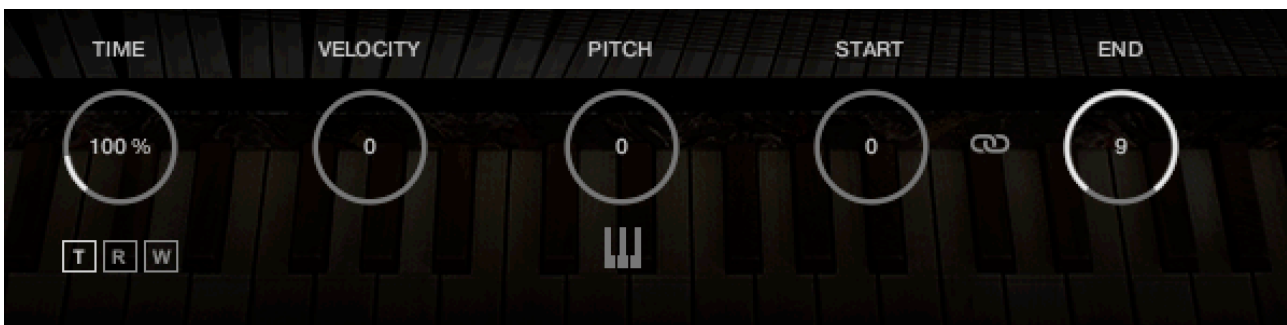


Now when you play your MIDI keyboard, no matter what notes you play, you will be triggering the notes of your recorded phrase.



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.

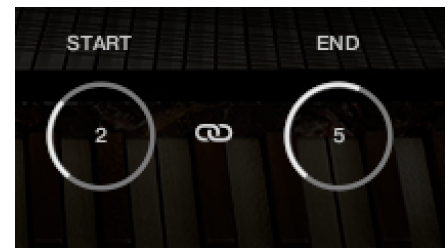
Beneath the PITCH knob is another small keyboard icon, which enables the Real Time Transpose, turn this on and now the incoming MIDI is going to transpose the pitch of the phrase. (relative to Middle C, which is transpose = 0).



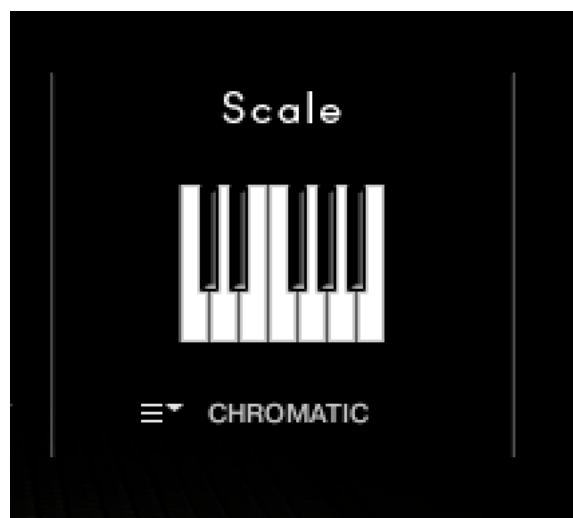
Try playing your phrase with the main PLAY off, but both Real Time Play and Real Time Transpose on at the same time, like this:



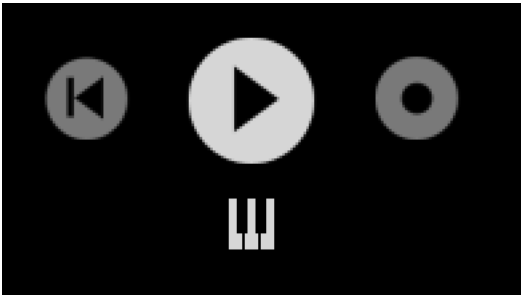
You can also experiment with the START and END knobs, or link them together to move through a window of notes on your phrase.



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.

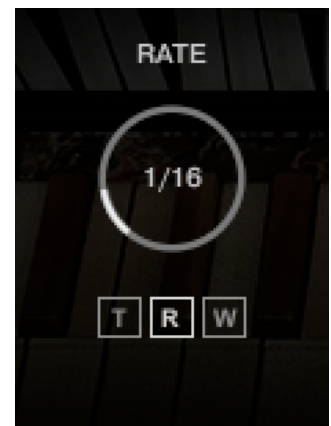


When PLAY is enabled, you can always hit the REWIND button to go back to the beginning of the phrase (or to the START position of the phrase if START is not at the beginning.)

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

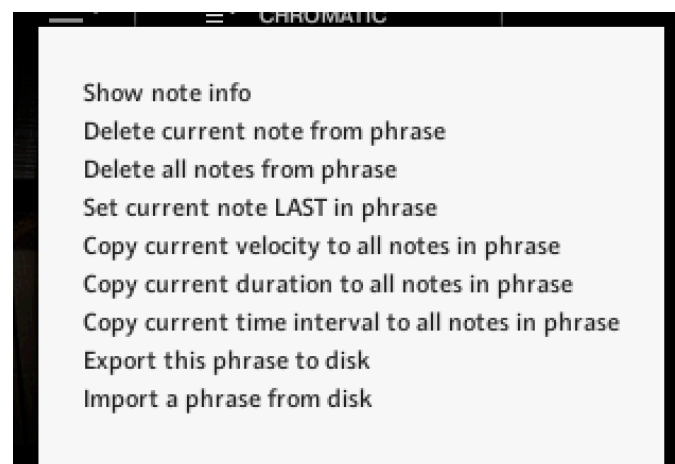
RATE mode plays back the phrase at a constant tempo RATE.

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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