VERSILIAN STUDIOS LLC.

THE RECORDER

PRODUCT MANUAL

INTRODUCTION

The recorder is a large family of instruments which vary in range, pitch, sound characteristics, and behavior. However, most existing sample libraries of recorders cover only a small selection of these, which isn't enough to create the sound of even fairly common types of recorder ensembles.

With the gracious support of the American Recorder Society and a group of generous backers, we set out to make the definitive recorder sample library, featuring the highest quality instruments available, performed by professional recorder player Emily O'Brien, in an ultra-quiet studio.

Three complete consorts of instruments were recorded, a full set of Baroque instruments in A=440, another full set of Baroque instruments in A=415, and finally a consort of Renaissance recorders in A=440. The instruments sampled are all representative of top-of-the-line professional instruments from world-renowned makers including the Von Huene Workshop, Tom Prescott, and Yamaha.

We hope you enjoy this collection as much as we enjoyed creating such a monumental project. Be sure to check out the included Guide to Recorder by Emily for tips and tricks on composing/working with recorder players.

DEVELOPMENT

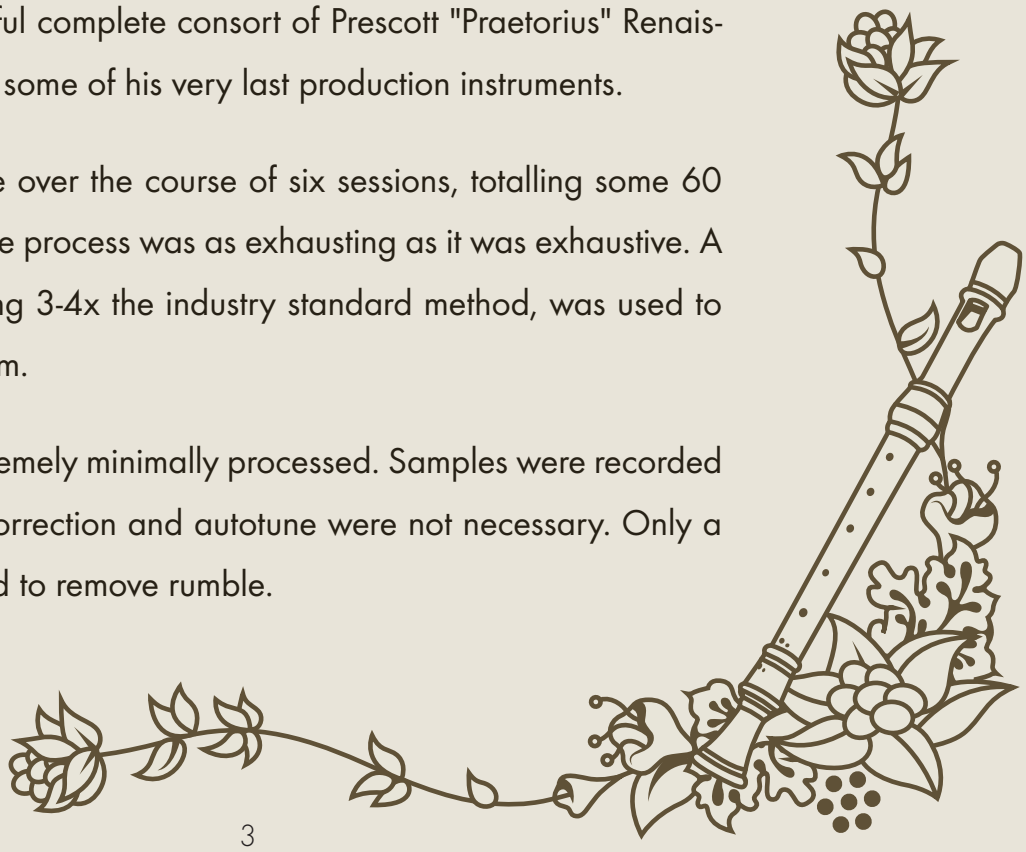
When Emily O'Brien approached me about building a recorder sample library in early 2022, we quickly realized we had the opportunity to make something singularly definitive in realizing a virtual instrument for the recorder.

Boston has been a key hotbed of the study and performance of Early Music since the great revival of the 70's and beyond, featuring numerous magnificent ensembles, colleges, and of course harboring in nearby Brookline, the Von Huene Workshop, which has been producing handmade recorders for over 50 years, as well as the adjoining Early Music Shop of New England.

Thanks to a grant by the American Recorder Society, Emily and I were able to significantly expand the scope of the project to cover not just the basic A=440 Baroque consort we had imagined, but also a full consort of A=415 instruments AND a beautiful complete consort of Prescott "Praetorius" Renaissance recorders, including some of his very last production instruments.

Sampling was done over the course of six sessions, totalling some 60 hours of recording time. The process was as exhausting as it was exhaustive. A novel legato method, taking 3-4x the industry standard method, was used to significantly improve realism.

The Recorder is extremely minimally processed. Samples were recorded in such a way that pitch correction and autotune were not necessary. Only a linear phase filter was used to remove rumble.



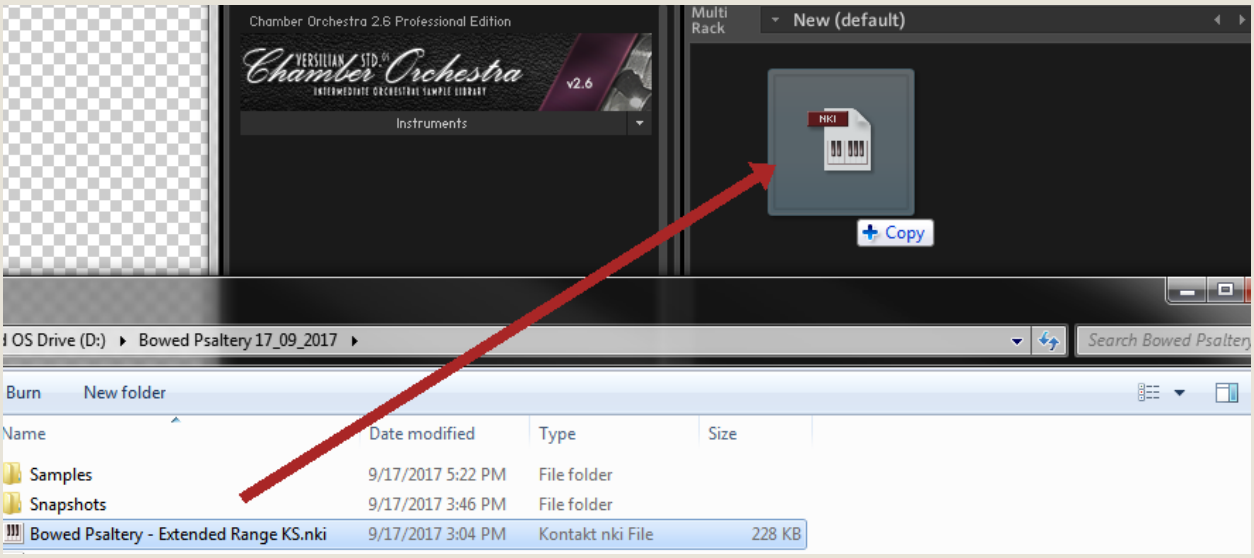
INSTALLATION

Watch on Youtube

Begin installation by downloading the library after completing checkout, using Pulse Downloader. Pulse is a special application designed specifically to distribute, verify, and update sample libraries and is used widely in the industry. Click 'Add a Product' and enter the code given at checkout.

Pulse will prompt you to select an install location– this could be on an external hard drive, an internal SSD, or your main hard drive.

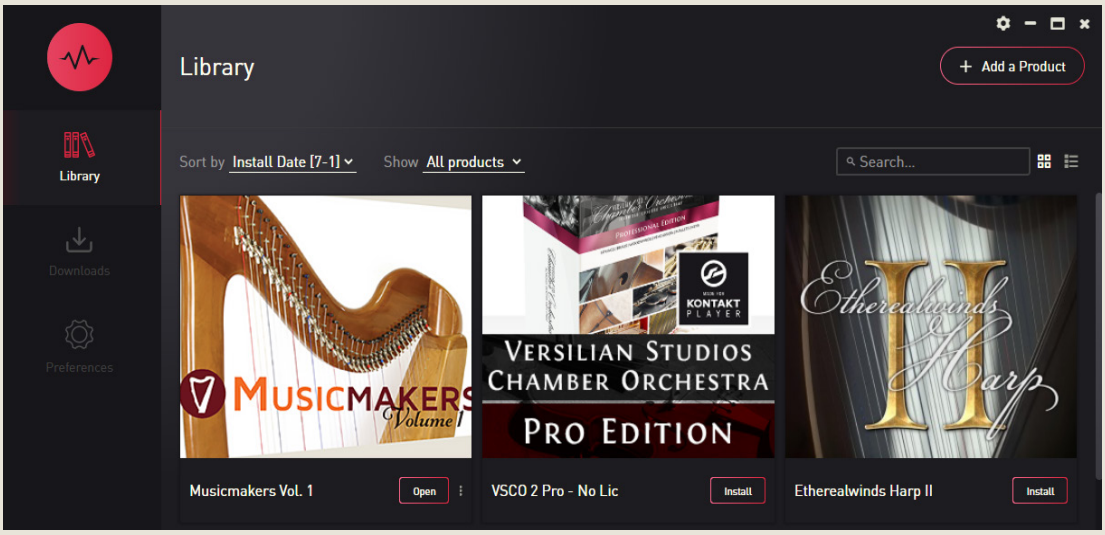
To use the library, drag and drop any of the .nki (Kontakt instruments) into an instance of Kontakt (either standalone or plug-in), as shown below.



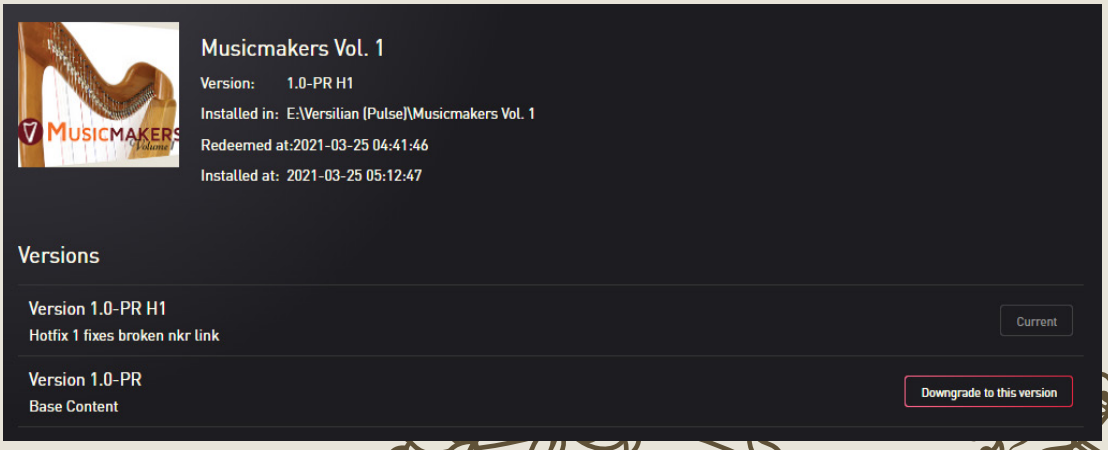
MANAGING YOUR INSTALLATION

Pulse Downloader not only manages the download process, it also allows you to maintain and update your installation in the event updates are provided for the library.

Once you have installed The Recorder, it will appear in your Pulse Library. You can click 'Open' to jump to the files, or use the '...' to reinstall:



If an update is available, Pulse will prompt you to install it. Consider checking back every few months in case an update is provided. If you experience problems with an update or simply wish to learn more about what was changed, select the product and you will be able to see patch notes and select an earlier version to downgrade, as shown here on our internal test branch:



REVERB

Reverb On/Off

Space Type Selection

Reverb Pre-Delay

Reverb Amount (mix -dB)

Reverb Time (T60)

MIXER

Mix Preset:

SAVE the mixer as Preset

RECALL the Preset mix

AUTO load saved mix on open

Microphone Position Name

Microphone Model

Microphone Volume

Microphone Pan

Microphone Stereo Width

Microphone Solo/Mute

Microphone Load/Purge

Microphone Outputs

TONE control tab (active)

TUNING control tab (inactive)

Articulation Name & Info

Keyswitch Mover (drag)

Per-Articulation Settings

Articulation Attack Time

Legato Transition Attack Time

Release Sample Length

Legato Transition Start (early/late)

Relase Sample Volume

Legato Blend (prev. note release)

MIRAGE FX Page

Disable Keyswitching (Lock)

Advanced Features

Active Keyswitch

ARTICULATION CONTROLS

These controls apply only to the currently active articulation, so that you might adjust each articulation to taste and need.

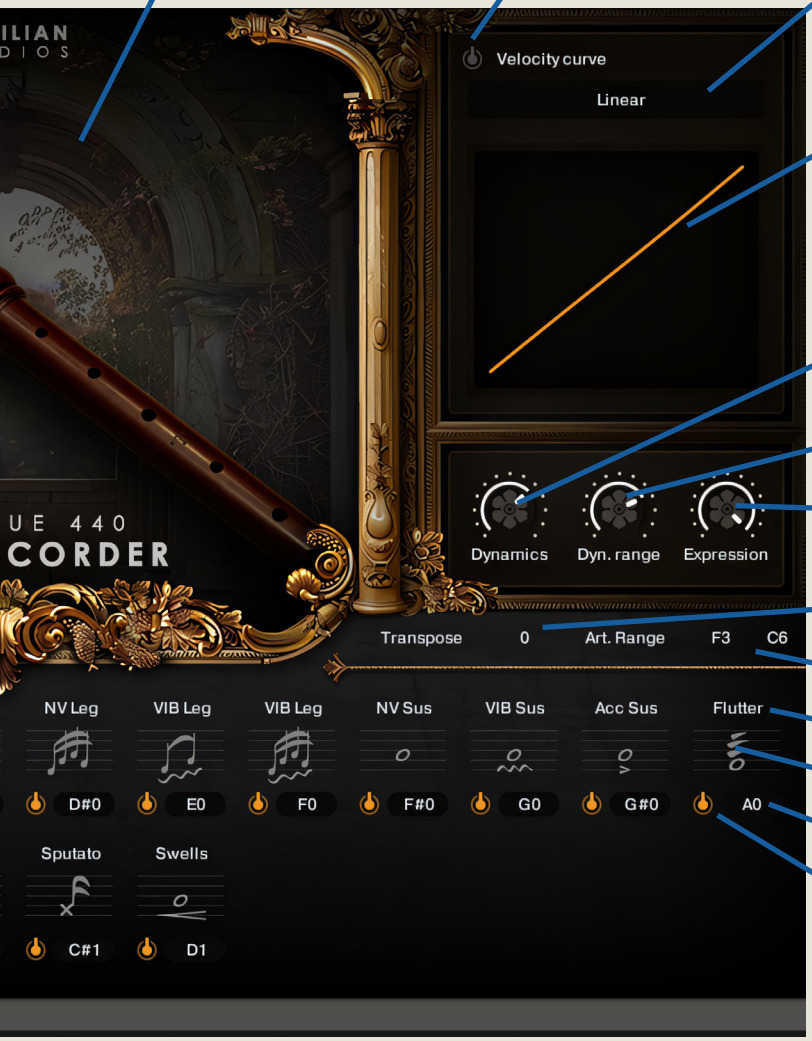
VELOCITY CURVE

Something nice to look at

Velocity Curve On/Off

Curve Selection (Linear/Shelf/Fixed)

Curve Editor (drag to alter curve)



Dynamics (Modwheel/CC1)

Dynamic Range (vol. gamut)

Expression (CC11)

DYN

Transpose (drag)

Range Limits (drag)

Articulation Name

Articulation Icon

Articulation Keyswitch (KS)

Articulation Load/Purge

ART

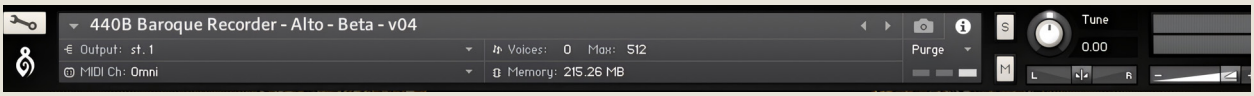
THE RECORDER

QUICK REFERENCE

OPERATION

Watch on Youtube

The Recorder makes use of our brand new Kontakt engine, VISAGE, complete with its own effects system, MIRAGE. VISAGE features numerous advanced systems and functions to simplify and speed up usage regardless of your use case or technical level. In this section, I'll go over all functions of the VISAGE engine and share tips on how to get the most out of this library.



Starting with the top of the instrument, we have the default Kontakt header. This area provides basic instrument settings and allows you to shrink or expand the GUI as needed. Note that VISAGE uses a special 'extra wide' mode, allowing for a larger, easier to read interface.

On the left is the wrench icon, which allows access “under the hood” of the instrument. This is best for veteran Kontakt users only, but is worth exploring if you’re new to Kontakt as well.

The central gray box displays general information and settings for the instrument. You can swap this display over to show the snapshots menu simply by pressing the camera icon to the right, and vice versa by pressing the ‘i’.

Output will control where the audio data goes to. Typically this should be left untouched unless working with a surround mix or bussing specific instruments to different reverb sends or the like.

MIDI Ch. controls what input MIDI channel will send signals to this particular instrument, allowing you to set up multi-timbral sets of several different instruments in a single instance.

Voices displays how many voices are active and the maximum available. You may experience some memory/CPU savings by reducing the max number. When Kontakt runs out of voices, it will stop the oldest voices.

Memory displays how much memory is in use by this instance. You can reduce this by unloading mic positions, articulations, or purging unused files to the right-hand side.

The central part of the GUI is where you can shape the **Tone** of the instrument.

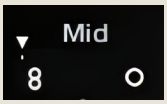
On the left are the controls for Kontakt's new algorithmic **Reverb**, which lets you switch between Room and Hall style reverberances. Time controls the length of the reverb tail. Imagine this as an extra "ambient" pair of mics out in the space, with the 'Amount' as your mixer level. The pre-delay is similar to placing the virtual "mics" farther or closer to the sound source (1 ms = approx. 1'/0.3m).

Below the Reverb you will find the **Mic Mixer**. When we recorded The Recorder, we used 10 different *microphones*, arranged in 5 stereo pairs/arrays, to capture every single note. Here you can load and mix together each of these microphones, blending them together to get a *brighter* or *darker* sound, or a *closer* or *further* sound.

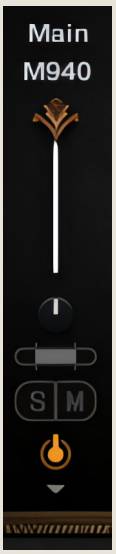
The 5 arrays are organized here in 4 positions: **Close**, **Mid**, **Main**, and **Room**, each progressively further away. The close mic will provide the driest, cleanest sound, while the room mic will provide the most spacious sound. The mics in between provide various colors and widths of sound for various tastes.

The Mid mic has a special feature, where you can *blend between* a more focused, central pair of mics and a less focused, wide pair of mics (omnis), as part of what is called

a "wide Faulkner array". A small slider below 'Mid' can be moved side to side to accomplish this, with any blend between being possible, functioning much like a *zoom lens* on a camera.



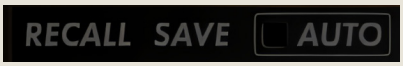
Beneath the positions, small gold *sliders* can be moved up or down to change the **Volume** of mics, followed by a small **Pan** knob, a stereo **Width** control (to reduce width of a mic if needed), and **Solo**/**Mute** buttons.



At the bottom, most critically, is a **Load/Purge** button in the shape of an off/on toggle. When loaded, this will show *orange*. When not loaded, it will be *greyed out*, showing that mic position is not loaded.

Note that each microphone position will consume a lot of RAM, around or beyond **400 MB**. It also may take Kontakt a while to load all the samples, especially if loading from a slow mechanical hard drive. *By default* The Recorder only loads up with the *Main* mic active for this reason, but this can be changed with our next feature, the **Mix Preset** system:

Rather than manually trying to match your mix settings between each instrument, set your *optimal mix* on one instrument, then double-click **'SAVE'** in the top of the mixer window.



Now in each instrument you wish to apply the mix within, simply click **'RECALL'**. The mix settings (excluding *Pan*) will be loaded up. This lets you retain any panning to individual instruments necessary to make an ensemble mix.

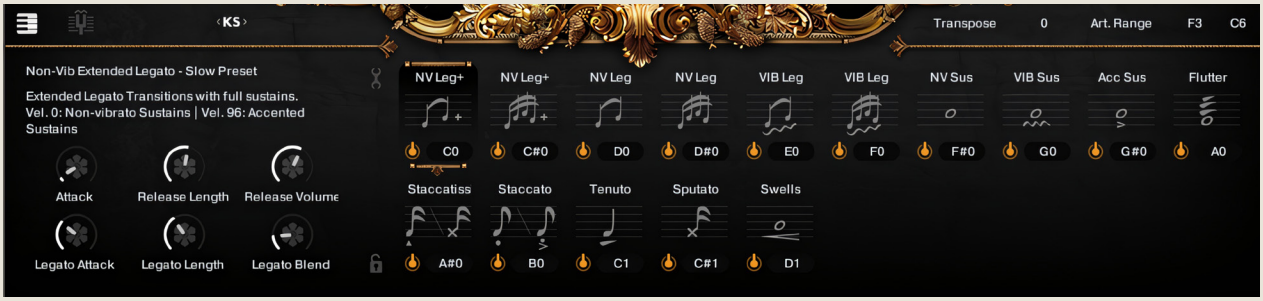
If you toggle **'AUTO'** *before* saving, then every single recorder you open up will *AUTOMATICALLY* load your Mix Preset on loading, saving you tons of setup time. Note that this only applies to your local computer. You may need to reinitialize (press '!' button in top right) Kontakt to load the preset.

The **Velocity Curve** panel in the top right side allows you to adjust how the instrument responds to the velocity input of your keyboard. Select a curve type, then drag the curve around in the box below to change the behavior.

This is mostly useful in the combined staccato/accented staccato and staccatissimo/sputato articulations, where you may want more control over where you transition between the two layers. Sustains also use velocity to accent note starts.

The three controls below the velocity curve shape the volume of the instrument:

- **Dynamics** controls the volume of sound within the gamut of *Dynamic Range*.
- **Dynamic Range** is the total gamut between the highest and lowest velocity.
- **Expression** is an additional volume control for balancing/mixing use.



The bottom third of the user interface controls the articulation, pitch, and performance parameters of the instrument. Here you will find a range of different sampled articulations to choose from, controls for those articulations and their keyswitch triggers, as well as options for transposing and limiting the range of the instrument.

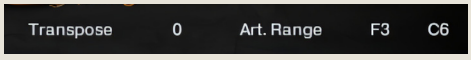
In the upper left of this area, you can toggle the middle of the interface between the Tone controls and Tuning controls. The adjacent **<KS>** slider will allow you to move the keyswitches to a more optimal spot. See pg 16 for more details on Tuning.

Before we sink into the depths of the Articulations section, a quick mention regarding pitch standards & the **Transpose** function. This is particularly important in this case because the recorders in this library come in two pitches, A=440 Hz and A=415 Hz, describing the pitch in Hertz of the note A.

Casual music history buffs might know that pitch varied wildly region to region and town to town across history, approx. 350-550 Hz. Performance practice of Baroque music today has largely standardized around two pitches, A=440 Hz and A=415 Hz, although there are certainly exceptions to this.

A=440 Hz is our modern standard which most virtual instruments are tuned to by default. However, due to the importance of the lower tuning to the 415 instruments, they are left in their "sounding" pitch, i.e. an A played on one of the A=415 recorders will produce 415 Hz (or a multiple thereof).

To use the A=415 instruments with modern virtual instruments in a piece in A=440, simply drag the **Transpose** value up a halfstep from 0 to 1. This will cause the instrument to be treated as transposing, allowing you to use the unique sounds of the uncommon instruments therein in your score without a headache or mess.



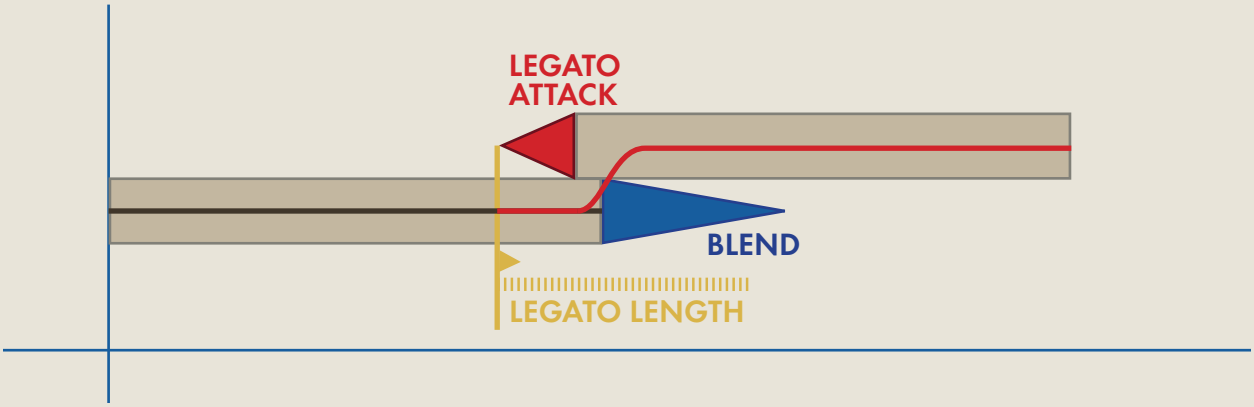
The **Articulation Range** control is also useful if you are building a unison ensemble effect by layering multiple recorders of different voices together. You can limit the high range of lower instruments to avoid the strained, chiffy sound of the extreme high register from entering the mix.

If a recorder is too low/high for your part, consider using a different recorder, or use the wider range Baroque instruments.

The **Articulation Control** panel in the bottom right corner shows which articulation is loaded and allows you to make adjustments specific to the loaded articulation, and only that articulation.

Generally Attack, Release Length, and Release Volume are present, as well as Articulation Volume on the shorter articulations.

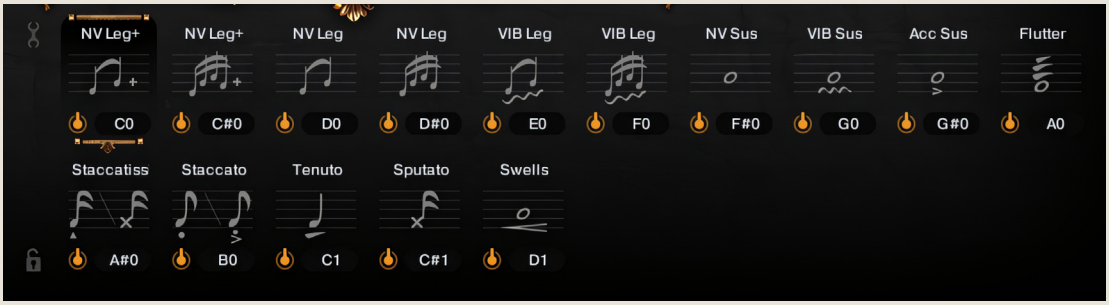
Legato instruments get three extra knobs which allow you complete control over the legato behavior of the instrument. **Legato Attack** controls the attack time at the start of the legato sample. **Legato Length** controls at what point in the transition the legato sample starts (left = earlier start, more transition but slugglish feeling; right = later start, barely any transition left but extremely responsive). Finally, **Legato Blend** controls how much *Release* sample from the preceeding note sounds alongside the new note, helping with the fade out of the previous note.



The Recorder uses an uncommon legato technique in which the entire destination note is recorded following the transition, which is several times more time consuming.

The benefit of the technique is that a second crossfade between the legato transition and the destination sustain is avoided, significantly reducing phasey artifacts or dynamic jumps after the transition.

If all this sounds too complex, no worries! Just use the Slow/Fast preset articulations, which are pre-calibrated per instrument to sound good out of the box.



The **Articulation Palette** shows all available articulations in the instrument, as well as what *Keyswitch* each articulation is tied to. As noted earlier, the keyswitch range can be adjusted by dragging the **<KS>** control.

Articulations can be *selected* either by clicking, or, for changes during a piece, by entering keyswitch notes in the piano roll or recorded during your performance. A gold frame will appear around the active articulation.

If you know you won't be using an articulation, you can disable it by pressing the *on/off toggle*. If the samples are not used elsewhere, they will be purged, saving memory.

If you plan on using only one articulation in your project and do not want to accidentally press a keyswitch, click the **Lock** in the bottom left corner to prevent the chance of changing articulations via any method.

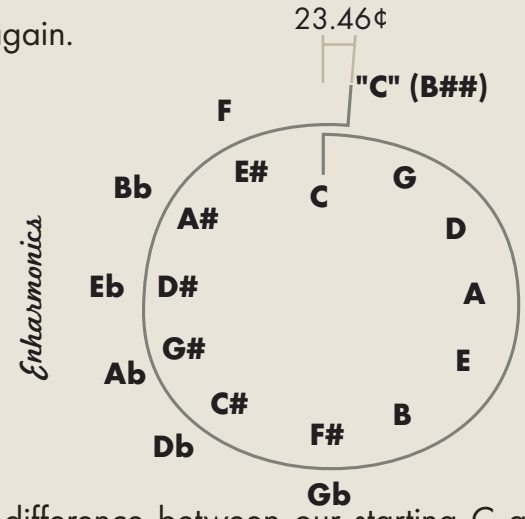
The **Wrench** icon in the top left corner allows access to some extra features, namely neighbor-borrowing round robin and using aftertouch to stop notes. Neither of these is that applicable to this library.

Note that the articulation palette will change icons for Renaissance vs. Baroque instruments. The Baroque shapes are based on the handwriting of J.S. Bach while the Renaissance notation is from an edition by the Renaissance Italian publisher Tini. Don't @ me for the choice of ligatures.

TUNING & TEMPERAMENTS

Throughout history, the problem of tuning harmony has been a continuous thorn in the side of musicians and scholars. While pure diatonic and pentatonic scales are easy to create using simple ratios (2:1, 3:2, 4:3, etc.), we run into an issue once we want to access notes beyond the diatonic scale. Let's say, D major chord in a C major diatonic setting. Due to the fundamental nature of mathematics, a small overshoot begins to develop.

As we work further around the circle of fifths (3:2 ratios multiplied together), G to D to A to E to B and so on, we eventually come to the point of C# major, which we today may enharmonically treat as Db major. But, this is a ruse, for C# major sits entirely several cents sharp of Db major! Thus by the time we finally reach C again, we are in fact at B##, not C as we knew it, now over 23 cents sharp, spiralling away forever into the tonal abyss, never to be heard from again.



The accumulated difference between our starting C and ending C is known as the comma, and over a millenia of theoretical and practical inquriy has been devoted to trying to ameliorate this issue.

This basic method of assembling a chromatic scale using fifths has a name of its own, *Pythagorean Intonation*. Drawing from the ancient language of metalworking, the term *Temperament* was devised to refer to the process of altering *Pythagorean* by distributing the comma across all the intervals, thus bringing the spiral more or less into some form of sense, either by emphasizing the purity of some keys over others such as in meantone, or by distributing the flaw evenly across all keys, as in equal temparament.

Temperaments are alterations made to a tuning system in order to make certain intervals or keys more or less harmonious. There are 20 factory temperaments provided, grouped in logical banks of five based on the underlying principles of the temperament/intonation. To the right, a graph indicates the alterations made to each of the 12 tones relative to Equal Temperament.

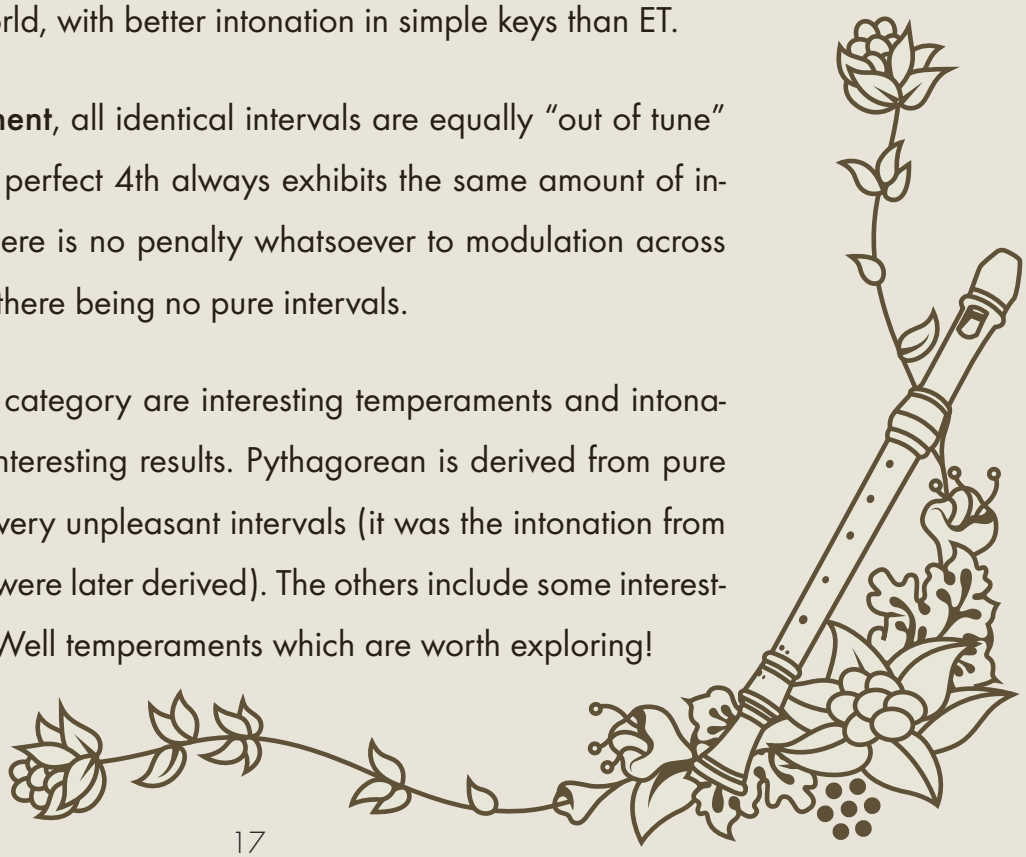
Meantone seeks to maximize pure intervals (in particular 3rds) in the 7-9 "easiest" keys, putting all of the nasty inharmonicities in less used keys (e.g. Ab, Db, Gb/F#). Meantone is most synonymous with the Renaissance period, but is useful as an approximation of Just Intonation when writing non-modulating music. Use this for the greatest purity of intervals, but ***beware the wolf!!***

The wolf tones lurk among the shadowy distant keys, intervals of indescribable horror and disgustingness, they feed on the mistakes of the unwitting keyboardist.

Well temperaments interpolate this behavior, gradually transitioning from being very pure in C Major to very impure in F# Major. This allows for tone color, where each chord and key provides a different feeling due to the gradual increase of inharmonicity as one works towards the more obscure keys at the bottom of the circle. From Bach and beyond, this provides a unique flavor now lost in our modern world, with better intonation in simple keys than ET.

In **Equal Temperament**, all identical intervals are equally "out of tune" (or in tune, if you wish); a perfect 4th always exhibits the same amount of inharmonicity. This means there is no penalty whatsoever to modulation across distant keys, at the cost of there being no pure intervals.

In the final **'Other'** category are interesting temperaments and intonations which may provide interesting results. Pythagorean is derived from pure 5ths, but results in several very unpleasant intervals (it was the intonation from which most temperaments were later derived). The others include some interesting alternatives to ET and Well temperaments which are worth exploring!



PATCHES & ARTICULATIONS

Within the instruments folder, you will find several .nki files, sorted into folders. Each file represents a real instrument, and will let you access all of the sounds recorded for that particular instrument.

Baroque A=440
- Sopranino in Boxwood (Yamaha)
- Soprano in Boxwood (Von Huene)
- Alto in Boxwood (Von Huene)
- Tenor in Satinwood (Yamaha)
- Bass/Bassett in Maple (Yamaha)
- Great Bass in Maple (Yamaha)
- Contrabass in Mahogany (Von Huene)

Baroque A=415
- Sopranino in Boxwood (Von Huene)
- 6th Flute in Boxwood (Von Huene)
- Soprano in Boxwood (Von Huene)
- 4th Flute in Boxwood (Von Huene)
- Alto in Boxwood (Von Huene)
- Voiceflute in Boxwood (Von Huene)
- Tenor in Boxwood (Von Huene)
- Bass in Maple (Yamaha)
- A=392 Alto in Boxwood (Von Huene)*

RENAISSANCE A=440 (Prescott)
- Soprano in d″
- Soprano in c″
- Alto in a′
- Alto in g′
- Alto in f′
- Tenor in d′
- Tenor in c′
- Bass in f
- Greatbass in c
- Contrabass in F

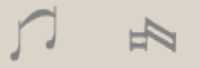
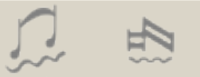
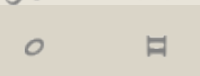
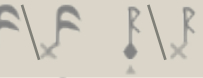
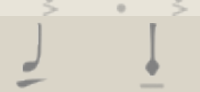
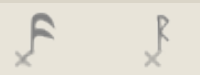
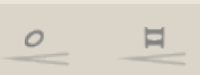
Ganassi A=440
- G Alto in Boxwood (Ralf Netsch)

A detailed overview of EVERY instrument in the sample library may be found in the included "Instrument Guide" PDF, complete with ranges & photos!

*treated as if in A=415

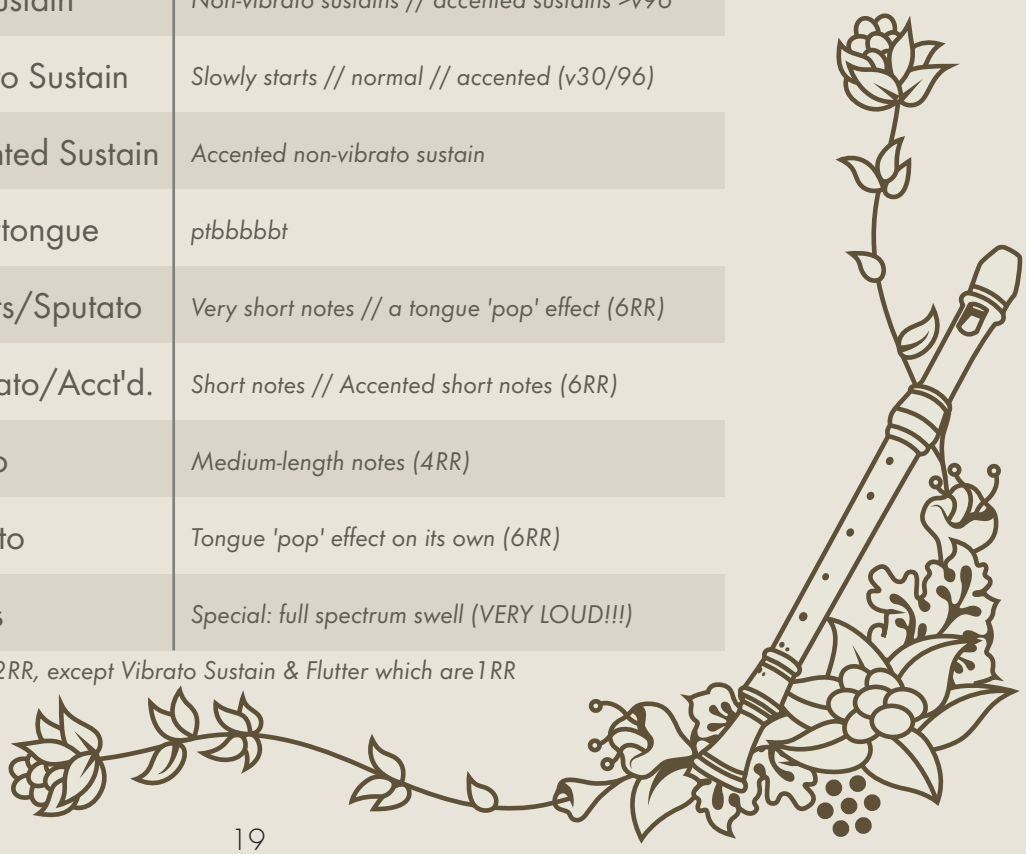
A total of 15 articulations or techniques are provided. Each articulation provides a different effect or color on the instrument. In several cases, we have put two different compatible techniques together in one articulation, such as accented staccato and regular staccato, or sputato and staccatissimo. Here Velocity is used to trigger the more aggressive articulation.

Unlike the modern flute, recorders and most instruments traditionally made very sparing if any use of vibrato, and that is recommended here.

	NV Legato+ Slow	*Extended Legato transitions w/ full sustains (slow)*
	NV Legato+ Fast	*Extended Legato transitions w/ full sustains (fast)*
	NV Legato Slow	*Conventional Legato transitions (slow preset)*
	NV Legato Fast	*Conventional Legato transitions (fast preset)*
	Vib Legato Slow	*Conventional Legato w/ vibrato sustains (slow)*
	Vib Legato Fast	*Conventional Legato w/ vibrato sustains (fast)*
	NV Sustain	*Non-vibrato sustains // accented sustains >v96*
	Vibrato Sustain	*Slowly starts // normal // accented (v30/96)*
	Accented Sustain	*Accented non-vibrato sustain*
	Fluttertongue	*ptbbbbbt*
	Staccts/Sputato	*Very short notes // a tongue 'pop' effect (6RR)*
	Staccato/Acct'd.	*Short notes // Accented short notes (6RR)*
	Tenuto	*Medium-length notes (4RR)*
	Sputato	*Tongue 'pop' effect on its own (6RR)*
	Swells	*Special: full spectrum swell (VERY LOUD!!!)*

*** All articulations not marked are 2RR, except Vibrato Sustain & Flutter which are1RR*

Looking for more details on the articulations included? Check out the included "Introduction to the Recorder" *by performer Emily O'Brien for a detailed description of each articulation and general performance practices.*



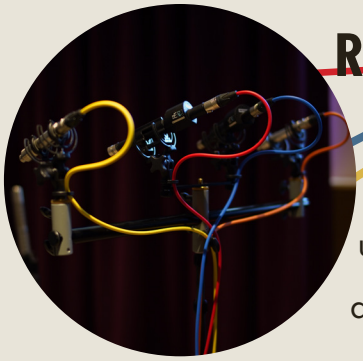
MICROPHONES

Contrary to popular belief, there is no such thing as a "perfect" or "best" microphone. Each microphone presents us with a specific sound concept, sense of space/focus, and character, be it neutral, bright, dark, open, focused, or any number of endless adjectives people who probably have better things to do like to throw around late at night on internet forums.

To provide a suitable range of options, five different pairs or arrays of microphones from around the world were used during recording.

VL373A // SAMAR AUDIO DESIGN

An active stereo ribbon microphone, the VL373A is as glamorous as it is technically impressive. Capable of extended frequency response well beyond that of most ribbon mics, the VL373A nonetheless has a warm, forgiving sound which smooths out higher recorders.



RN17/M310/AL95 // sE/GEFELL/SAMAR

The sE RN17 and Gefell M310 are supercardioid SDC's, with a strong sense of focus and a neutral response. The AL95 on the other hand used on the Baroque A440 instruments, is a compact ribbon mic with a dark, rich sound. These mics serve as the center of the 'Mid' array.

RN17

AL95

M310

SC1 // MESANOVIC MICROPHONES

Created by Detroit-based microphone designer Deni Mesanovic, the SC1 is an omnidirectional SDC with a bright, articulate sound. These provide a sense of width and space to the Mid array, allowing you to blend between the focused center mics and spacious outer mics.

M940 // MICROTECH GEFELL GmbH

Small and unassuming, the supercardioid M940 is a high-tech single-diaphragm LDC with an unusually low noise floor of just 6 dBA. As the main microphone, this presents the most neutral sound character and a balanced sense of space.

TF5 // RØDE MICROPHONES

Rode's flagship SDC, the TF5 was designed in collaboration with famed recording engineer Tony Falkner. Used here in a NOS array, these provide a distant room sound which combines well with reverb to blend with more distant-mic'd sources.

TROUBLESHOOTING

If you are experiencing issues with the library, there are a few steps you can try to resolve the issues before contacting us. Below is a list of common possible problems and 'home remedies' that will work to fix them.

1. Samples missing dialogue.

If you see this window, it means that the samples were moved or are missing from their original location. The best procedure is to redownload via Pulse if feasible. Make sure you have Pulse handle the installation to the desired location for you, to ensure nothing gets left behind.

2. I can't get the download to work in Pulse.

If you continually are unable to complete the download, please reach out to us and we can arrange to send you a physical copy. If you know your internet connection is iffy, please consider purchasing a physical copy from our website in advance.

3. Instrument uses up too much memory or CPU.

Use the circles beneath the articulations to purge any you doubt you will typically

need, and turn off any effects you don't use (filter/reverb). Save this patch (under the floppy disk/save icon at the top of the Kontakt window itself) so that way it will load this way by default. Note that snapshots include which articulations and mic positions are selected and enabled/disabled.

4. Instrument is only available in "DEMO" mode.

Please check this NI Support article, and contact us if the issue does not resolve afterwards.

5. Instrument takes a long time to load.

On Windows 10 devices or devices with 'realtime protection' anti-malware systems, such systems will attempt to scan the literally thousands of samples that Kontakt needs to load before letting Kontakt load them. It is strongly advised that you at least temporarily disable such 'realtime protection' systems while loading libraries, or preferably exempt your samples drive from the scan.

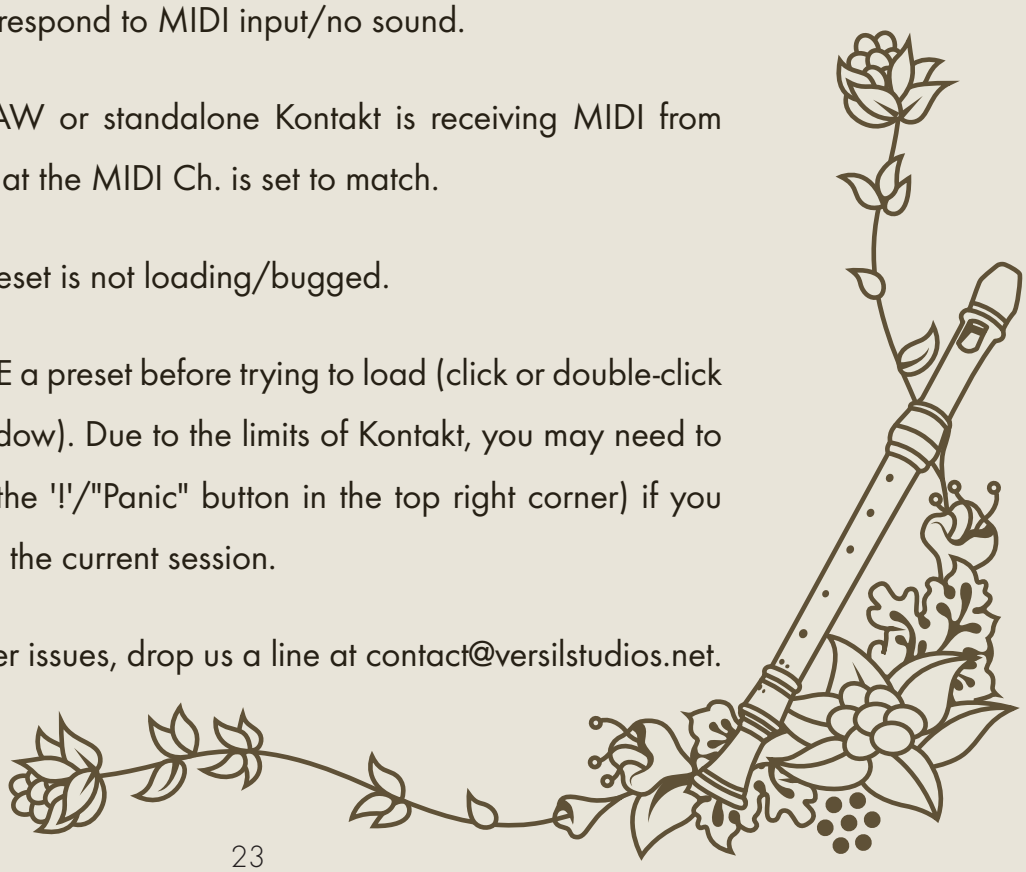
6. Instrument won't respond to MIDI input/no sound.

Make sure your DAW or standalone Kontakt is receiving MIDI from your device, then ensure that the MIDI Ch. is set to match.

7. Mix Preset/FX Preset is not loading/bugged.

Make sure you SAVE a preset before trying to load (click or double-click SAVE text in the mixer window). Due to the limits of Kontakt, you may need to reinitialize Kontakt (press the '!'/"Panic" button in the top right corner) if you have saved a preset within the current session.

If you have any other issues, drop us a line at contact@versilstudios.net.



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