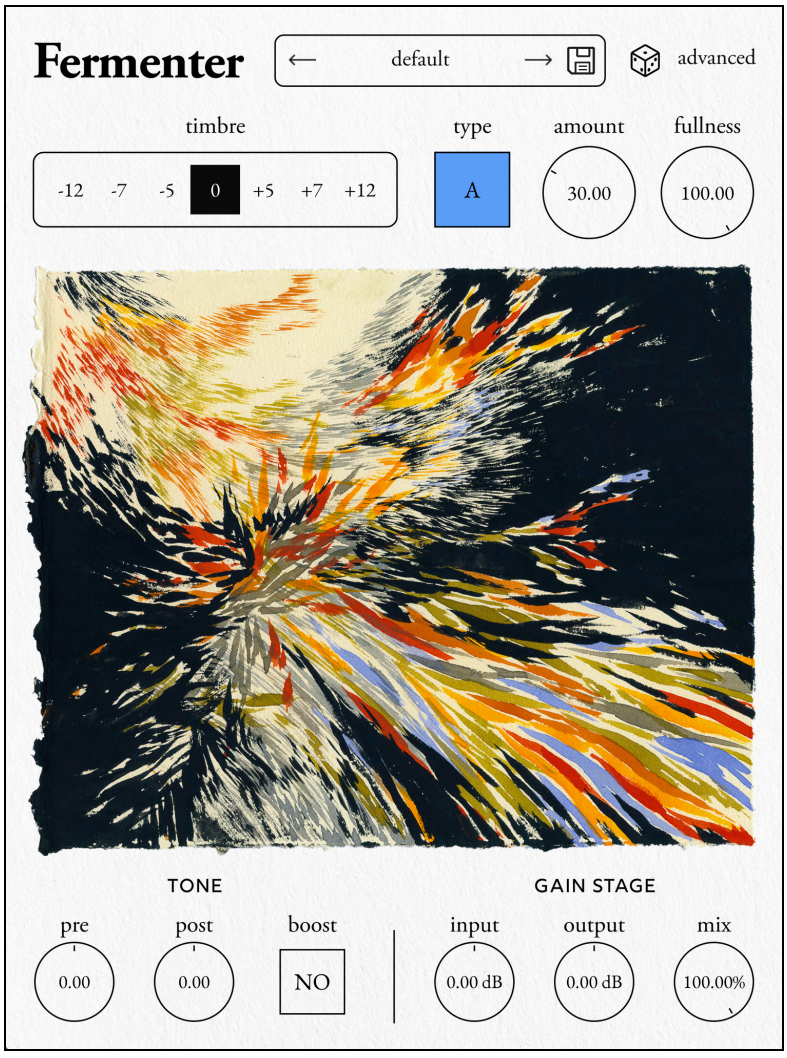
Fermenter User Manual

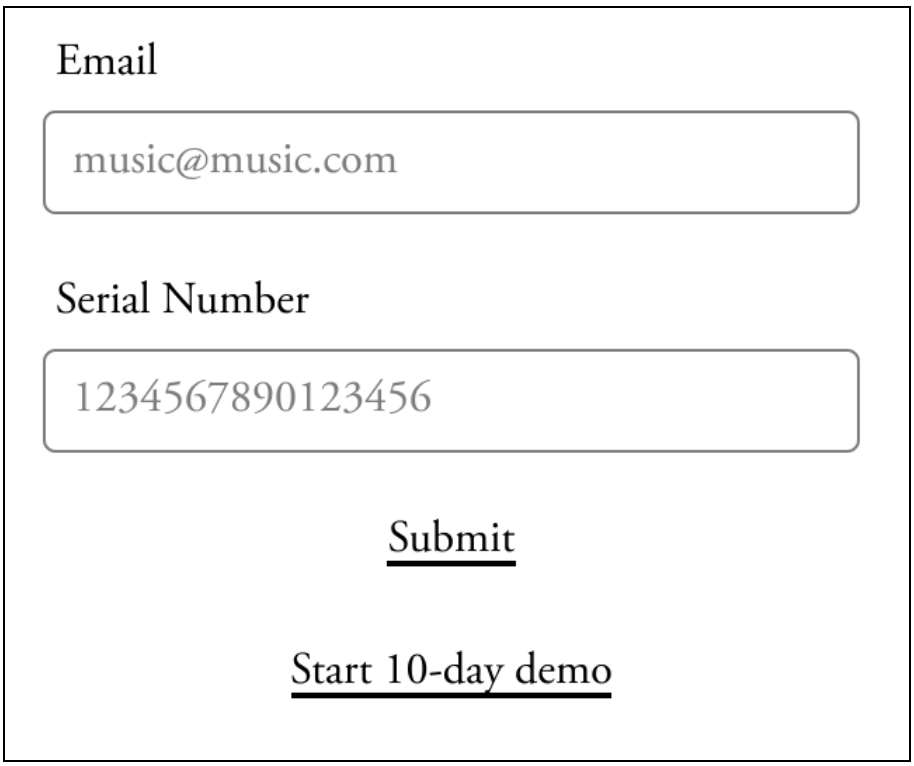
v1.0



Getting Started

You can download Fermenter at nudistaudio.com/download/fermenter. Double-click the installer and follow the on-screen instructions to install the plugin.

The installer will install VST3, AU, and AAX formats to the default locations on each operating system. If you use a custom plugins folder, move these files from the default folder to your custom folder. You may need to restart your DAW before the plugin appears.



When you first open Fermenter, enter your email and serial number to unlock the plugin. Alternatively, you may start the 10-day demo.

If you choose to buy the plugin while the demo is active, you may activate your license at any time by clicking the “activate license” button.

What is this thing?

Fermenter is a timbral shifter: it changes the tonality of the sound without changing its pitch, much like a formant shifter.

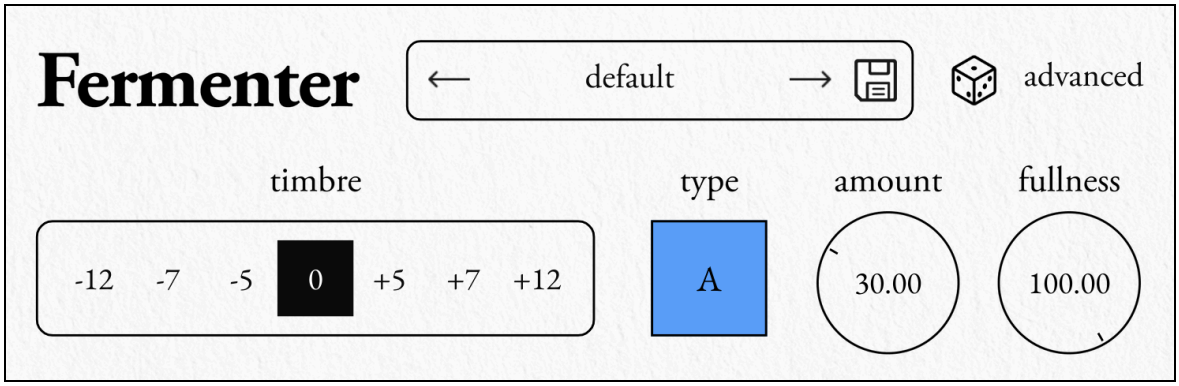
Unlike formant shifters, however, Fermenter is:

Polyphonic, which means that you can use it on any source, not just vocals or single-voice audio. This includes synthesizers, pianos, drums, noisy textures, and anything else you can think of.

Zero-latency, which means that it adds no delay at all into the signal chain, and can be used in realtime scenarios such as live performance.

Weird, which means that it may produce sounds you weren't expecting.

The Most Important Stuff



The top section of the plugin is where the big important controls are.

Use the middle bar to save and load presets.

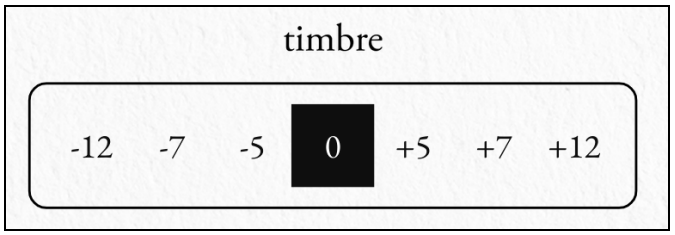
Click the dice icon to randomize all the knobs in the entire plugin. If you accidentally randomize something, don't worry!—just Ctl/Cmd+z to undo.

Click the "advanced" button to open up the advanced side panel, and click the "Fermenter" title to see the credits and check for updates.

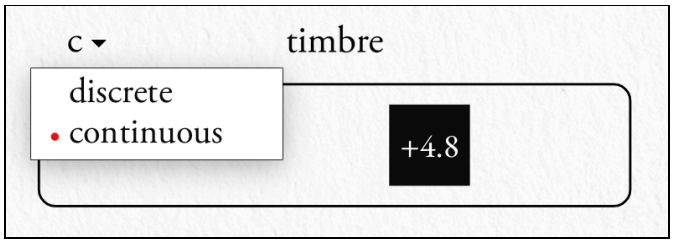
Below the top bar you'll find the main algorithmic controls. This is where most of the fermentation action happens. A surprisingly wide variety of sounds can be produced using just these four knobs!

The Main Controls

timbre



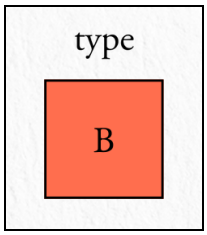
Controls the main timbre-shift. Like a pitch shifter, its units are in semitones: -12 shifts the timbre down by one octave, +7 shifts up by a fifth, etc.



Click the dropdown in the top-left corner to switch between continuous and discrete modes.

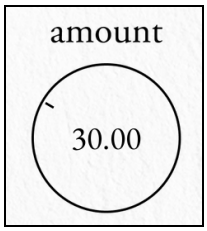
Pro tip: In my mind, the timbre slider has two auditory regions: near zero and far from zero. Try smoothly transitioning between these two domains to see how the sound changes! You may find that they sound different from each other in ways you didn't expect.

type



Controls the method used to perform its main timbre shift. There are three types, each with its own personality.

amount



Controls the intensity of the timbre-shift. A value of 0 does nothing, while a value of 100 runs the algorithm at full force.

Exactly what we mean by "full force" depends on the currently-selected type, meaning that "amount" is really three different knobs in one.

Scrolling down from 20-0 partially mixes back in the unaltered sound in addition to ramping down the algorithm. Over a value of 20, none of the unaltered sound is left; use the "mix" knob if you want to do that.

The Main Controls (cont.)

fullness

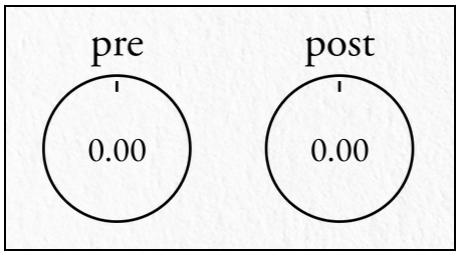
Controls the depth or relative size of the timbre shift.

"fullness" is an interesting one. On some settings, its effect will be subtle; on others, obvious. Lower values often feel sonically thinner, while higher values can feel expansive and often accentuate the timbre shift.

Pro tip: when inputting high-pitched tones, Fermenter can sometimes act more like a pitch shifter than a timbre shifter; you'll hear the note that is a pitched version of the original, occasionally quite clearly. This is an inherent quirk of the algorithm, but is sometimes unwanted, so "fullness" helps you correct for this. If you're ever hearing too much of that pitch-shifted tone, try turning down the fullness!

Tone

The Tone section adds extra processing onto the main algorithm, allowing you to dial in your sound.



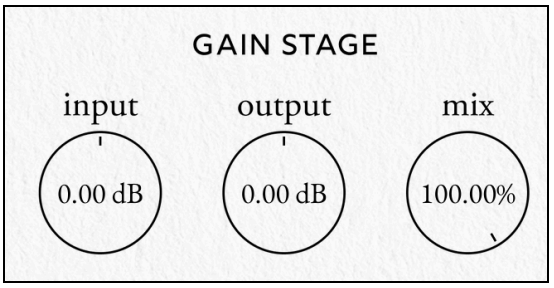
pre / post

Adds filters before or after the main timbral shifting algorithm, respectively. The filter combines a tilt and a lowpass/highpass depending on the position of the knob. Pre- and post-filters have different effects on the sound.

boost

Applies a tonal balancing algorithm to roughly make the frequency bands more equal. It's kind of like a multiband compressor, except that it exactly preserves the dynamics of the original sound—no squashing here. This is applied after the main algorithm.

Gain Stage



input

Controls the input gain of the plugin, in decibels.

output

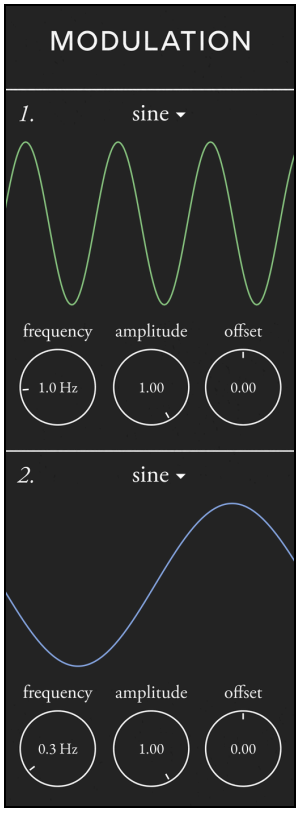
Controls the output gain of the plugin, in decibels.

mix

Controls the dry/wet mix of the plugin. The mix knob comes before the output gain, so that you can control the output gain independently of the dry/wet mix.

Advanced

Click the “advanced” button in the top-right corner to open up the side panel, which includes a modulation section and some weirdo knobs.



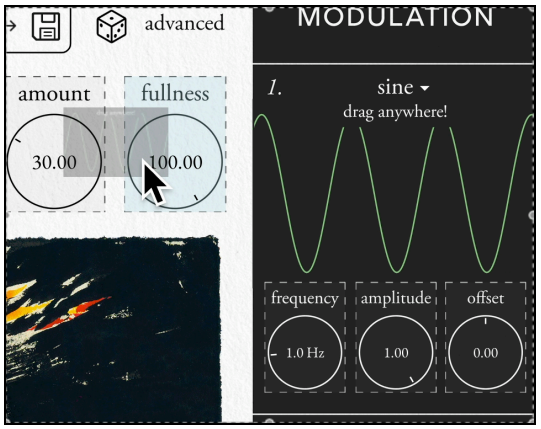
Modulation

Fermenter includes an extensive modulation system, which allows you to easily modulate every parameter of the plugin using a variety of patterns.

There are two modulators, which can each independently modulate any number of knobs. You can even modulate a modulator's own frequency, amplitude, and offset knobs, creating a feedback cycle. For more on this, see *self-modulation,* page 9.

Modulation (cont.)

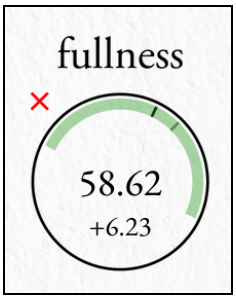
how to modulate



To start modulating something, simply click-and-drag the modulator graph to whatever you want to modulate.

You will now see a ghost tick that moves in realtime over the knob's range, as well as a number indicating how much is being added or subtracted from the knob's original value.

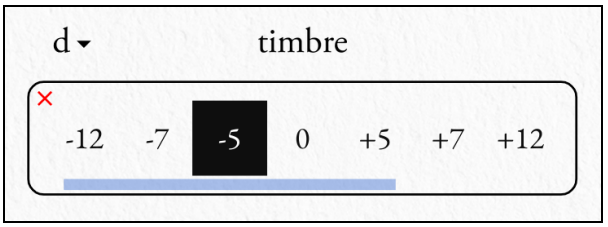
modulation ranges



The colored bar represents the modulation range for that knob, ie. the extent of modulation that is applied to the knob. Click and drag on the bar to change the range.

For the detail-oriented: the range of the colored bar exactly maps onto the range of the modulator graph on the right panel. In other words, the modulator graph's y-axis goes from -1 to +1, and when it's at a value of +1, the ghost tick will be all the way on the right-hand side of the colored bar on the knob.

Other components have similar ranges and colored bars, except for the "type" and "boost" selectors, whose modulation range is fixed. You may still change the modulator's amplitude to change the ranges for these.

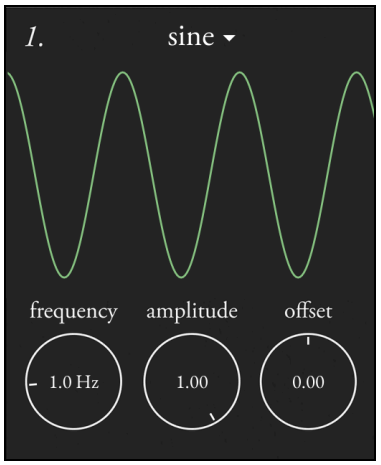


Click on the "x" in the top-left corner of the knob to stop modulating. You may also right-click or double-click on the colored bar.

Pro tip: try modulating the timbre slider on "discrete" mode to create rhythmic patterns, quickly jumping between harmonically-related timbres.

Modulation (cont.)

frequency



Controls the frequency, in Hertz, of the modulator's wave.

Click the arrow in the corner of the knob to lock the frequency to the DAW's tempo. This is in units of whole notes; for example, "1/4" means that the wave repeats each quarter note.

amplitude

Controls the amplitude of the modulator's wave. Negative values invert the wave. For example, to change a sawtooth from rising to decaying, drag the amplitude down to a negative number.

offset

Controls the vertical offset of the wave. +1 moves the wave's midpoint to the very top of the graph; -1 moves the midpoint to the very bottom of the graph.

The modulators will clip at +/-1, meaning that they can never go outside their respective ranges.

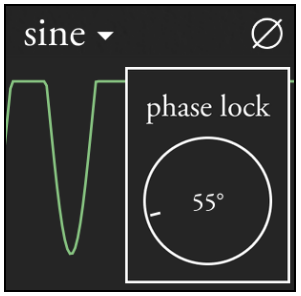
type

Controls the shape of wave. There are four standard shapes, as well as an envelope follower for the input volume, a transient detector, an audio resampler, and a random noise generator.

smoothness

For envelope, transients, audio, and noise, applies a lowpass filter to smooth out the spikes in the signal.

phase lock



For sine, triangle, square and sawtooth waves, controls whether the wave is locked to the DAW's phase, and if so, how much global phase is added. This can be useful for projects where preserving the modulator's phase relative to your sound is important.

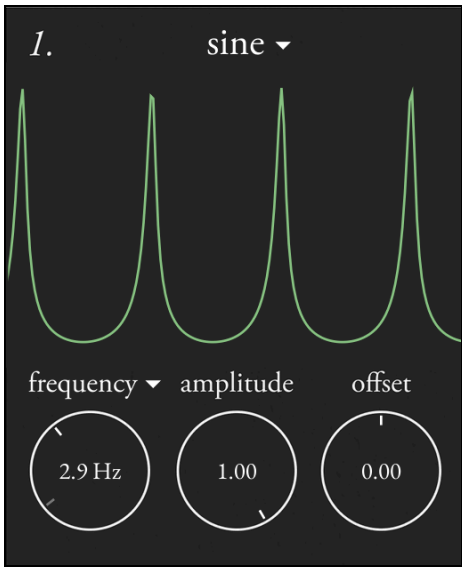
The phase is always in reference to the DAW's start time for consistency. For example, 180° starts the wave halfway through its cycle at your project's 0:00 mark. (you can also always just fiddle with the knob to get the wave to align with what you want!)

Modulation (cont.)

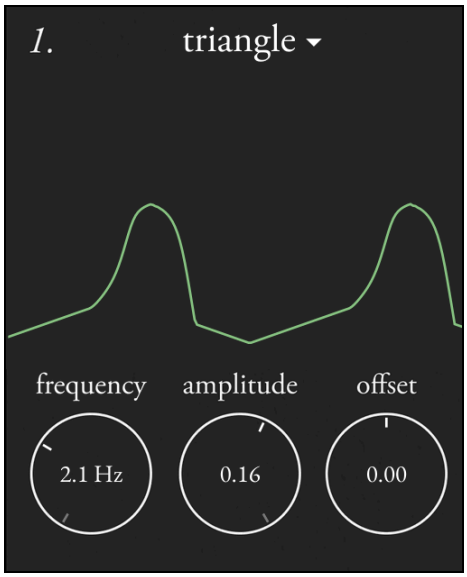
self-modulation

Unlike many modulators, Fermenter allows you to easily modulate a modulator's own parameters, creating a feedback loop between the wave and itself. This means you can get creative and make some really unique shapes. A few examples are shown below.

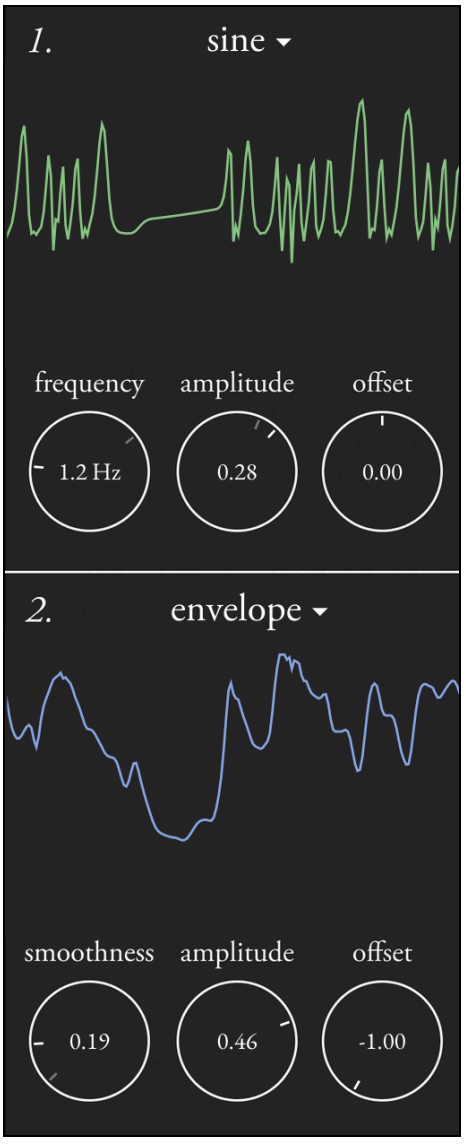
(if you're confused about how this works, don't think too hard about it)



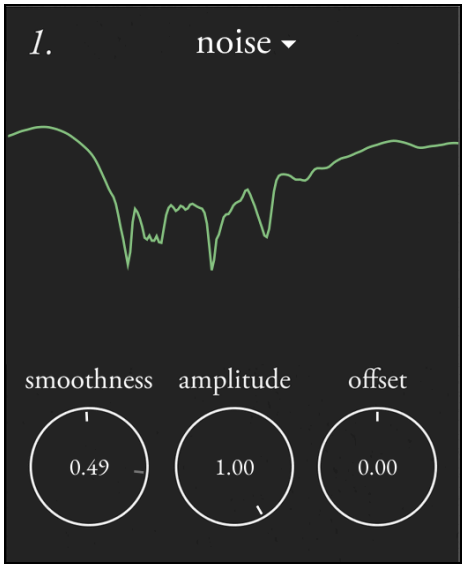
a sine wave modulating its own frequency



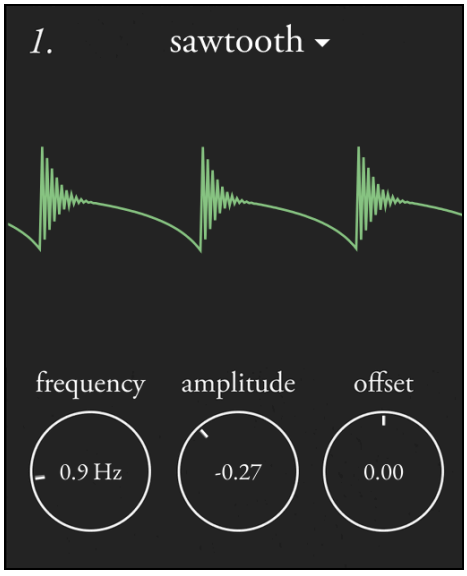
a triangle wave modulating its own frequency and amplitude



an envelope follower and a sine wave modulating each other



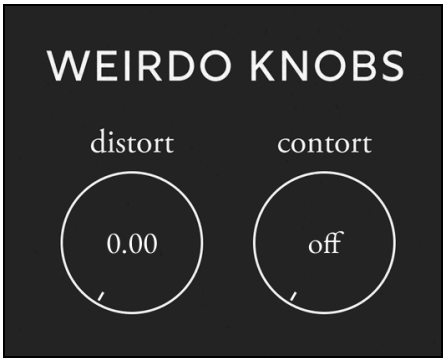
noise modulating its own smoothness



a sawtooth wave modulating all three of its parameters

Weirdo Knobs

These knobs do some unusual things.



distort

A very strange distortion algorithm. It is a constantly-shifting waveshaper that is highly dependent on the input audio's characteristics sample by sample.

Pro tip: try turning up or down the input gain to get wildly different distortion sounds!

contort

Fermenter's "contort" knob is by far the strangest in the plugin. Without going into the details, it essentially adds a resonant frequency into a particular part of the internal workings of the main algorithm. This resonant frequency can be above or below audio-rate.

Importantly, what the resonant frequency does depends on all of the variables in the main algorithm: the timbre, amount, type, and fullness. This means that "contort" is really many knobs in one. Try it out on different settings and see how it changes!

Click the arrow in the upper-right corner to lock the frequency to a specific note.

Pro tip: at very low values (< 1 Hz) on types A and B, contort can turn Fermenter into a strange chorus or tremolo. At audio-rate, it often resonates in the key of whatever note is selected. And at very high values approaching sample-rate, it can make the entire plugin into a kind of noisy textural highpass-sounding thing.

Try modulating the contort knob while it's in any of these ranges to get some *really* weird sounds!

If you have any questions, please contact caleb@nudistaudio.com.