

Tuning fork

Version 1.1

[www.ugoaudio.com](http://www.ugoaudio.com)

## Installation

Open the zip and place the Ironhead folder in your host's VST folder. Yup, that's it. No annoying copy protection, no tricky registration and no troublesome installers.

## Overview of Tunguska

Tunguska is a multi effect that was designed specifically to be a companion to Ironhead. It can be useful as a master effect for the whole kit, or on specific percussion sounds sent to Tunguska from Ironhead's additional outputs.

Of course while Tunguska may have been designed with Ironhead in mind, it can be great with other sources as well.

Tunguska may be a small effect, but it can go from providing useful, subtle, tweaks to your sound, to mutating it into something completely different from the original...and all with the same fast and easy interface style of Ironhead.

Another element borrowed from Ironhead is the morphing. Tunguska's two key components are its granulator and filter, both of which can be morphed between two states, allowing you to bring additional movement to your grooves.

Tunguska's effects are wired in series and the order of the effect controls from left to right indicates the signal path, starting with the Grain, then into the Dirt, the Filter, and ending with the Delay. Turning off a section will bypass it, letting the signal flow directly to the next section.

Also, Tunguska has a stereo signal path, so the positioning of your incoming audio can be retained.

## Master Controls



### Input

Adjusts the volume of the incoming audio.

### Mix

Adjusts the ratio of unaffected (dry) to effected (wet) signal you will hear.

### Output

Sets the output volume.

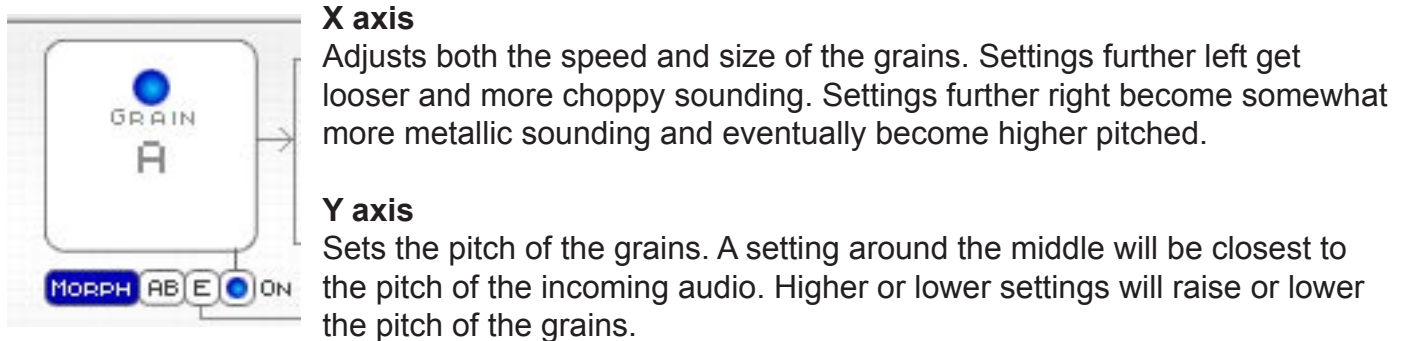


### ES

This knob adjusts the sensitivity of the envelope follower.

## Grain

While Tunguska can be used with any source, the granulator's is most useful on drums because its pitch shifting does not track incoming pitch or midi notes. The granulator can be cool with any piece in Ironhead's kit, but it can be particularly fun with the Thuds and Dings, and it can really do wonders with the Bonks.



**Hint:** Holding down CTRL while adjusting an XY knob (or a slider) will allow you to fine tune your setting.

### On

This turns the granulator on or off.

### Morph

Switching this on will allow the granulator to be morphed between it's A and B control states. (See the Morphing section for more details.)

### A/B

Clicking this lets you switch the display between the A and B control states. The "A" state is the default for normal usage. When morphing, the A state can be thought of as the starting point of the morph. Conversely, the "B" state can be thought of as the destination. Since the B state only applies to the morphing, it's controls only effect the sound during morphing.

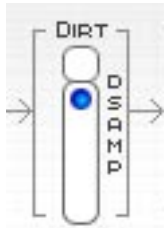
### E

Turning this on allows Tunguska's preset envelope follower to modulate the grain pitch. The attack and decay of the envelope have been preset to what I found to be a particularly useful setting for percussion.

For those who are new to envelope followers, this is a type of modulation that responds to the amplitude of the incoming audio signal, so the more dynamic the incoming audio is, the more variety you'll get from the modulation. In essence, quieter sounds will trigger, the less modulation than louder sounds. This makes for a very "playable" effect.

## Dirt

This consists of a preset distortion and a downsampler, allowing you to go from adding some edge to your sound, to a mean, digital, lofi, freakout.



### Dirt Switch

Turning this on activates both the distortion and the downsampler.

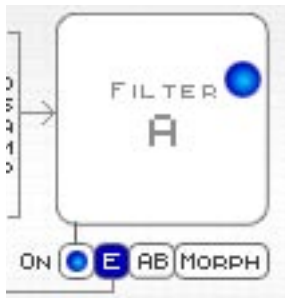
### Dsamp Slider

When in its upper most position, the downsampler is inactive and you will only hear the effect of the distortion. Lowering the slider kicks in the downsampling. The lower the setting, the lower the pitch and the more distorted the sound will be.

## Filter

For the most part, Tunguska's filter is a low pass filter. However, some other bands are mixed in there to make it useful for all instruments in Ironhead's kit. The filter is also highly resonant.

While I have adjusted it in an effort minimize the risk of squeels and other such major frequency spikes while working at its highest resonance settings, side effects of this sort are still possible and can depend on the volume and frequencies of your input material. As a result, some caution is advised when working with the highest resonance settings.



### X axis

Adjusts the resonance

### Y axis

Adjusts the cutoff

### On

This turns the filter on or off.

### E

Turning this on allows Tunguska's preset envelope follower to modulate the grain pitch. Using this in conjunction with high resonance settings and moderate to lower cutoff settings will produce the most squishy sounds. In addition to being cool on drums, this is also a lot of fun with bass, guitar, or keys.

### Morph

Switching this on will allow the filter to be morphed between it's A and B control states. Because the morphing will effect both the cutoff and the resonance, you can achieve the standard filter cutoff sweep effects as well as sweeping between more or less resonant filter sounds.

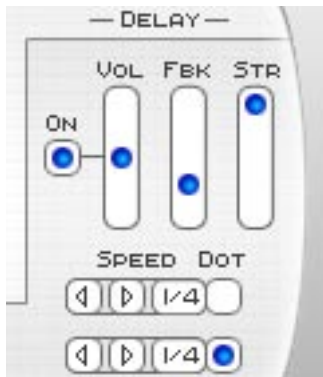
### A/B

Clicking this lets you switch the display between the A and B control states. The "A" state is the default for normal usage. When morphing, the A state can be thought of as the starting point of the morph. Conversely, the "B" state can be thought of as the destination. Since the B state only

applies to the morphing, it's controls only effect the sound during morphing.

## Delay

This delay section actually consists of two delays running at once. They are both controlled by the same On/Off switch, Feedback slider, and Stereo Slider, but they have independent speed controls. When the delays are set to the same speed, it will sound like you've got a single delay running. But if you set them to different speeds, you can create ping-pong delay effects.



### On

Turns the Delay on or off.

### Fbk

Adjusts the amount of feedback for the delays. The higher the setting, the longer the delay will continue to repeat.

### Str

This adjusts the stereo spread of the two delays when they are set to different speeds. Note that when they are set to the same speed, you will not hear any stereo spread.

Also note that the Pan setting for an instrument will also effect the placement of it's delayed sound.

### Speed

These two controls adjust the speed of the delay. The speeds are set to divisions of your host's BPM.

### Dot

Turning these on will create dotted note times for the delays. Setting the delays to different speeds, then making one dotted, can produce some cool delay rhythms.

## Morphing - Overview

Morphing is a term that is most commonly associated with computer graphics and is used to describe the process of transforming one object or image into another. Tunguska and Ironhead offer an audio version of this process.

Both the Gran and Filter have two separate sets of vector controls, these are called the A and B states and they can be adjusted however you wish. You can toggle between the A and B control views by clicking an instrument's A/B button.

The A state controls are the default set and they adjust the sound when the morphing is off. When the morphing is on, you can think of the A state as the starting point of your morph. Conversely, the B state can be thought of as your morph destination. So when you are anywhere in the

process of morphing, you are either going to, or returning from, the B state.

To hear the changes you are making to the B state of in instrument, you must first turn on the Morph button (next to the A/B button), then move the Morph slider up into the B position. The morph slider can be moved by any of the following methods:

- Your keyboard's mod wheel
- The built in LFO
- MIDI CC #1
- VST automation
- Your mouse
- The Morph slider's own A/B jump switch

## Morph Controls



### Morph Slider

This is the master control for morphing. With the slider all the way down, you will hear the A state settings. With the slider all the way up, you'll hear the B state settings. Anything in between the two will be some degree of morph.

### A/B Jump Button

This is the button next to the Morph slider. When the LFO is off, this button will make the Morph Slider jump between A and B. This is handy for when you just want quick access to the B state, and don't actually need to hear the transition. Since the B state can be set to provide

totally different sounds than the A state, jumping between A and B states can provide you with super fast access to dramatically different sounds.

Note that when the LFO is on, the A/B Jump button will switch between the current LFO modulation position and the B state.

### LFO

This LFO will modulate the morphing in sync with your host's BPM. When the LFO is on, other forms of morph control (mod wheel, etc.) will not work properly. The LFO can be setup to morph slowly or very quickly, and a variety of wave shapes are available.

### On

This switch turns the LFO on or off.

### LFO Amount Slider

This controls how close to the B state the modulation will go. So the higher the setting, the closer to the B state the maximum point of the morph will be. With the slider all the way up to the top, the morph can go all the way from full A to full B.

## Speed

This controls the speed of the LFO, based on divisions of your hosts BPM.

## Waveform

This lets you set the waveform shape for the LFO. The options are Sine, Saw, Ramp, Triangle, Square, and S&H (sample and hold / random.)

## Known Bugs

### Morph slider / refresh rate

When the morph slider moves fast enough it exceeds the GUI's refresh rate, which can cause visual glitches such as making it look like there are two knobs, that the is not moving its full distance, or that it appears twitchy and a bit random. This is just a visual issue though. Fast movements from the LFO, automation or CC/mod wheel, all control the morph properly and the sounds change just as fast and smoothly as they are supposed to.

### FL Studio

When Tunguska is loaded you may experience a lag between when you press play and when the sequencer starts. A lag also occurs when pressing the rewind button. This problem is caused by an incompatibility between Tunguska and the reset procedure FL runs every time you play/rewind.

To fix this problem:

1. Press the options button in FL studio (at the top of the screen)
2. Choose the Audio Settings from the drop down menu
3. Turn off "Reset plugins on transport"

### Project5

The same problem occurs in Project5. Unfortunately though, this host does not offer the option of turning off the reset so there is no solution for it right now. However, the faster your computer, the less lag you will notice. So if you've got a newer computer, you may not run into this problem at all.

### Dual core processors + multiple instances

Unfortunately VSTs built with SynthEdit are not properly compatible with dual core processors. Single instances work fine, but multiple instances can cause crashes in hosts that have multi processor support activated. Jeff McClintock, SynthEdit's creator, is aware of the problem and has mentioned that the fix for it will be in the next update (1.1) of SynthEdit. As soon as Jeff releases this fix, I will release an update to Tunguska to solve this problem. In the meantime, there are a few workarounds for this issue.

1. Make additional copies of the Tunguska dll for each extra instance you expect to need, and give each a new name. (eg: tunguska2.dll, tunguska3.dll, etc.) Hosts consider each an individual instance, and therefore do not run into the multiple instance conflict.
2. Freeze each instance before loading another one, especially if your host has an "unload while frozen" option.

3. Turn off multi processing in your host. Of course this is the least desirable of the three options since it negates the benefit of having a dual core, but it does work.

## MIDI Chart

Parameter	MIDI	Parameter	MIDI
Morph Slider	CC 1 / Mod Wheel		
Grain A X	CC 2	Grain B X	CC 4
Grain A Y	CC 3	Grain B	CC 5
Grain Morph	CC 6	Grain AB	CC 7
Grain Env Follower	CC 29	Grain On	CC 8
Dirt On	CC 9	Downsampler	CC 10
Filter A X	CC 11	Filter B X	CC 13
Filter A Y	CC 12	Filter B Y	CC 14
Filter On	CC 15	Filter Env Follower	CC 30
Filter Morph	CC 16	Filter AB	CC 17
Delay On	CC 18	Delay Volume	CC 19
Feedback	CC 20	Stereo Spread	CC 21
Speed 1	CC 22	Dot 1	CC 24
Speed 2	CC 23	Dot 2	CC 25
Input	CC 26	Mix	CC 27
Output	CC 28		
Envelope Sensitivity	CC 31		



## Credits

Tunguska 1.1

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### **This synth incorporates synthedit modules and prefabs by:**

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Dave Haupt- [www.dehaupt.com](http://www.dehaupt.com)

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Etric Van Mayer - [www.evmsynths.com](http://www.evmsynths.com)

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Rick Jelliffe - <http://extra.schematron.com>

### **Presets by:**

PS - Jeff Rhodes of [Perimeter Sound Arts](http://Perimeter Sound Arts)

EA - Elvar Aron

Ugo

### **Additional thanks:**

Jeff McClintock, for creating SynthEdit

Steinberg, for inventing VST

The Yahoo SynthEdit users group

KVR - [www.kvraudio.com](http://www.kvraudio.com)

## License Info

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