



METALLURGY

Version 1.5
www.ugoaudio.com

Metallurgy Users Guide

Overview

Thank you for purchasing Metallurgy. Your support is greatly appreciated.

Metallurgy is a PC VST multi effect that is capable of providing sounds ranging from some basic, subtle, filter tweaks to twisted, complex, walls of sound that have virtually no resemblance to the original audio.

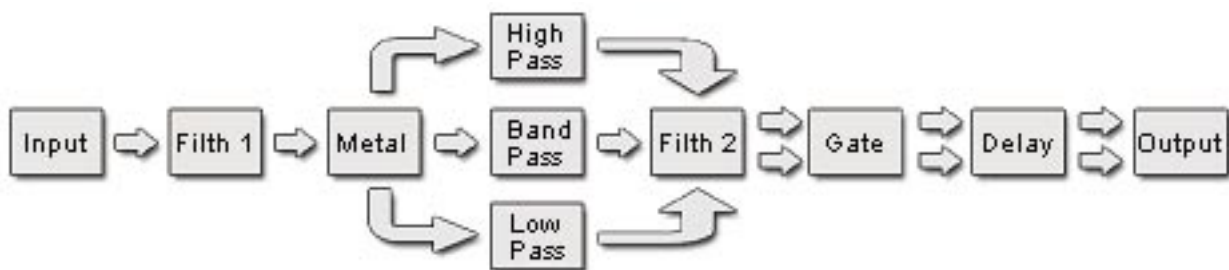
Metallurgy offers 3 filters with multiple modulation options, 2 digital distortions, 2 downsamplers, dual delay, an envelope follower, a gate sequencer, and a Metal effect that, in addition to flanging and metallic effects, also provides the ability to produce pitched sequences, and can even be played in real time via your MIDI controller or sequencer...nearly turning Metallurgy into an synth on its own.

Metallurgy is useful for many styles of music and is effective with a wide variety of input material. I always encourage experimentation with all my VST's but it's especially so with this one since, by virtue of being an effect, you can run anything you want through it. You'll find that some features of Metallurgy work better with certain types of sounds than others, so just feed it lots of different stuff, see what it spits out, and have fun!

Installation

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

Signal Path



Metallurgy is a mono effect up until the second filth section. Because of this, your stereo input signal will be merged nearly as soon as it enters. The signal flow is essentially fixed and most parts run in series, except the three filters which run in parallel and can be panned.

Each section has it's own on/off switch so you can use it on its own or in combination with others. For example, If you just want the Metal and the Gate, turn them on and you'll hear the Metal running into the Gate without the rest of the effects.

Patches / Getting Started

For some, all these controls might look a bit daunting, but Metallurgy is actually a relatively easy VST to use. You just need to get acquainted with each section. The best way to do that is to turn off all but one section and start tweaking it. As you get a feel for how it sounds and works, move on to another section. Once you've got the basic feel for each section, start trying out some combinations. You'll probably start to get the hang of Metallurgy pretty quickly.

Additionally, to help you find out what all those abbreviated controls are...for most of them, if you hover your mouse over the control, a pop up will appear that will tell you the full name of the control. Where applicable, it will also tell you its MIDI CC number.

Of course, if you are feeling less inclined to "roll your own," Metallurgy comes loaded with a wide variety of patches...from basic effects, to serious sonic manglers. The patches are all labeled according to what the designers feel they are most useful for, or what they feel is the defining functions are. Consider these suggestions rather than rules. The vast majority of these patches are useful for far more than what they are labeled as.

Here's what those labels stand for:

(DRM)- Drums

(PAD) - Pads, drones, atmospheres and other sustained floaty stuff

(BAS) - Bass...bass guitar, synth bass, etc.

(LED) - Leads...guitar, synth leads, etc.

(GSQ)- Gate sequenced

(FSQ) - Filter sequenced

(PSQ) - Pitch sequenced (Metal sequencer)

(SFX) - Totally weird stuff

(VOX) - Vocals

(KEY) - Piano, clav, etc.

(GEN) - General purpose...includes basic filtering, simple delay, basic overdrive, etc. and are likely to be useful on lots of stuff.

Important Note: Watch your volume when checking out the patches. It can vary widely depending on the volume and type of the incoming audio.

MIDI

The majority of Metallurgy's performance controls can be tweaked via MIDI. All controls that have CC's assigned to them have their number displayed in their tool tip pop up. Just hover your mouse over a control to see it. In most cases, this will also show you the control's full name.

Metal Sequencer's Octave and Note switches, however, have been assigned NRPN's instead of CC's. The Octave row uses 1-16 and the Note row uses 17-32.

Metallurgy's Controls

Main

This is the master input / output section controls what you would expect it to: input level, output level, and mix. As mentioned above, Metallurgy accepts stereo input, but is a mono effect. However one item of note is that the more dry your Mix setting, the more of the original stereo sound is retained. So with all the effects off, the Mix control can actually be used as an adjustable stereo-to-mono merge. Also, the Mix slider has been assigned to CC#1, which is the default for most keyboard mod wheels, so you can easily tweak the wet/dry (or mono/stereo) mix in real-time.



IN

Input level.

MIX

Sets the wet / dry mix.

OUT

Output level.

Filth 1



Right below the Main section is Filth 1. This consists of a downsampler (DW) and a distortion (DIS), and gets quite filthy.

O

On / off switch for Filth 1.

MIX

Adjusts the mix between the clean signal and the filth.

DW

In it's upper most position, the downsampler is off. As you lower it, you'll hear the sample rate decrease...creating a really nasty digital distortion. Also, the LED indicator below it will light up to show that the effect is active.

DIS

When you turn the Filth on, you'll already get some low level distortion. As you crank up this distortion slider, the signal will get louder and more distorted. All things considered, It's actually a pretty mild distortion, more of an overdrive than anything else. However, see that little round switch below it?...

F

This switches between 3 distortion modes. The filthier things get, the more angry the face.

LFO

Can modulate the downsampler for both Filth 1 and Filth 2.

- Top switches turn the LFO on and select which downsampler gets modulated. Combinations are also possible. The options are as follows:
 - Off...no modulation
 - DW1+...provides positive modulation of the downsampler in Filth 1
 - DW1-...negative modulation
 - DW+/-...both positive and negative modulation
 - DW2+...positive modulation for Filth 2's downsampler
 - DW2-...negative modulation
 - DW2+/-...both positive and negative modulation
 - DW1+ 2-...alternating modulation...positive for downsampler 1, negative for downsampler 2
 - DW1+/- 2+...positive and negative for downsampler 1, positive for downsampler 2.
- Middle switches set the waveform of the LFO.
- Bottom switches set the speed of the LFO.

?

You'll see these all over Metallurgy. They are the randomizers and they will tweak out most controls for that specific section. This one randomizes the downsamplers, distortions, F switches, LFO waveform, and LFO speed for both filth sections.

Metal

Those familiar with my synths Texture and String Theory will recognize this effect, and it has been tweaked and expanded once again. The metal effect is built from high speed delays and its used for creating metallic, clangerous sounds, flanging effects, and now even for creating pitched notes!



O

On / off.

MIX

Adjusts the mix of the non Metal to Metal sound. Note that unlike the main mix, this doesn't adjust the full stereo dry signal, only the mono signal or the signal coming from Filth 1.

V

Volume of the Metal effect.

AP

This is an all pass filter which tweaks the sound made by the Metal effect (not what goes into the effect.)

T1

Adjusts the time of the first of two Metal effects. The lower the setting, the shorter the delay time. Generally speaking, the lower settings give you a tighter, more resonant sound, and the higher settings can give you a kind of ‘trash can reverb’ type of sound.

F1

This sets the feedback. Extreme positive (up) or negative (down) positions give the most metallic resonances, with the top being a brighter, higher ‘clang’ and the bottom being a darker, lower, hollow ‘bong’. The mid range positions are good for basic flanging. However, around dead middle is kind of boring and doesn’t do much. It’s best to have the feedback set somewhere more in the positive or negative positions.

When going for those strong metallic resonances (the extreme feedback settings), the pitch of the Metal sound can be altered by adjusting the time controls. With the feedback in an up/positive position, the pitch of the time controls will be from low (bottom) to high (top). When the feedback is in a down/negative position, the effect is reversed. Yeah, I know it’s a little weird. All I can say is play with it and you’ll get used to it pretty quick.

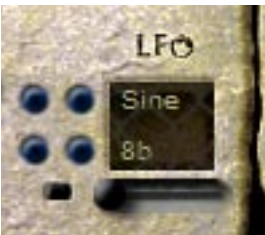
T2

Time for the second Metal.

F2

Feedback for the second Metal.

LFO



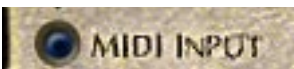
The upper switches set the waveform of the LFO, the lower switches set the speed based on the BPM of your host, and the slider on the bottom sets the depth/level of the LFO. The led next to the slider will light up whenever the LFO is active.

Note: The LFO modulates the two Metal Times (in reverse of each other) as well as modulates the all pass filter.

?

Randomizes the following controls: AP, T1, F1, T2, F2, LFO waveform, LFO speed, and LFO level.

MIDI Input



Remember when I mentioned that Metallurgy can almost be synth in its own right? Here’s why. When this is activated, the Metal effect will switch into pitched mode allow you to actually play it from a MIDI controller. So turn this on, feed Metallurgy some audio, and you’ve got yourself another instrument to work with.

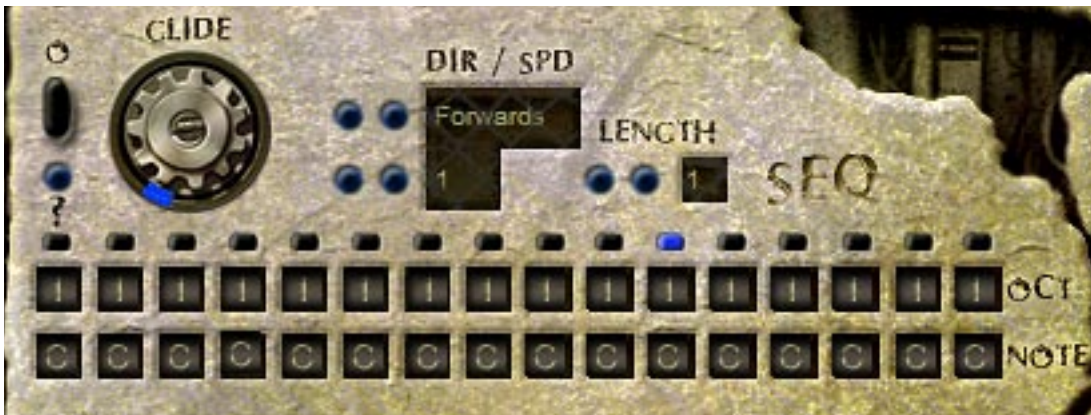
Hint: To really bring this sequenced effect to life, use extreme F1 and F2 settings and feed Metallurgy a drum loop.

Metal Sequencer

When you use this 16 step sequencer, it takes over the Metal Time controls and let's you set notes for each step, turning the Metal effect into a easy to control source of metallic melodic sequences.

Note 1: When the sequencer is active, the Metal Time controls are deactivated so the note and octave switches can do their job.

Note 2: When the MIDI Input switch is on, the Metal sequencer is bypassed.



O
On / off.

GLIDE

Adjust a glide (portamento) effect between notes/steps. Turning the control towards the right increases the effect.

DIR

Sets the direction the sequencer will play in. Options are forwards, backwards, bounce 1, and bounce 2. Bounce 1 is just forwards, then backwards. Bounce 2 is almost the same except that the first and last steps are played twice, thus extending the length of the sequence by 2.

SPD

Sets the speed of the sequencer based on the BPM of your host.

LENGTH

Lets you set the number of steps the sequencer goes to. Range from 1-16.

OCT

This upper row of square indicators set which octave the note of that step will be in. You've got a 5 octave range to pick from. Click in the box and drag your mouse up or down to adjust the setting.

NOTE

Sets the note of the step, ranging from C to B.

?
Randomizes the Octave and Note buttons. Think of it as a melodic slot machine.

Filters

Low pass, high pass and band pass. All three can be active at the same time and they all run in parallel. The controls are the same for each of them.



O

Turns that particular filter on / off.

V

Volume of each filter output.

C

Adjusts the cutoff.

R

Adjusts the resonance.

?

Randomizes the cutoff, resonance, and the LFO controls for all three filters. (By the way, the switch is beneath the low pass filter's on/off switch.)

P

This is a pan control, allowing you to set the placement of the filter's output in the stereo field.

I

Switching this on inverts the pan modulation signal that can be received from the LFO.

LFO

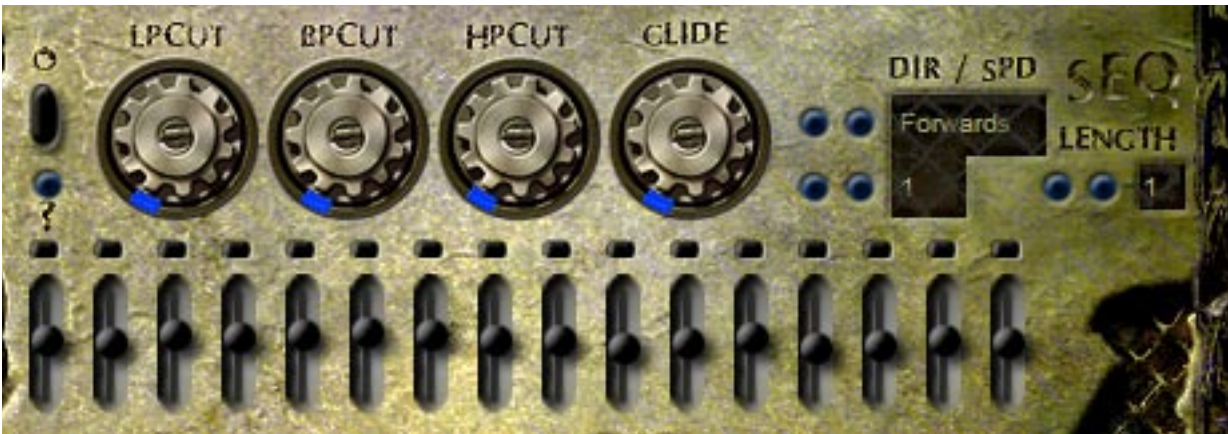
Upper switches - set whether the LFO modulates the filter's cutoff, pan, or both.

Middle switches - set the waveform of the LFO.

Lower switches - set the speed based on the BPM of your host, and the slider on the bottom sets the depth/level of the LFO. The LED next to the slider will light up whenever the LFO is active.

Filter Sequencer

More modulation fun. Sequence the cutoff level for the filter of your choice, or for all 3 filters at once.



O
On / off.

LP MOD
Adjusts how much the sequencer will affect the low pass cutoff.

BP MOD
Adjusts how much the sequencer will affect the band pass cutoff.

HP MOD
Adjusts how much the sequencer will affect the high pass cutoff.

GLIDE
Sets the amount of the glide effect between the steps. The more to the right you turn the control, the more glide you get.

DIR
Sets the sequencer's direction. Options are forwards, backwards, bounce 1, and bounce 2. Bounce 1 is just forwards, then backwards. Bounce 2 is almost the same except that the first and last steps are played twice, thus extending the length of the sequence by 2.

SP
Sets the speed based on the BPM of your host.

LENGTH
Lets you set the number of steps the sequencer goes to. Range from 1-16.

16 Sliders
These adjust the level for each step.

?
Randomizes the 16 sliders.

Filth 2



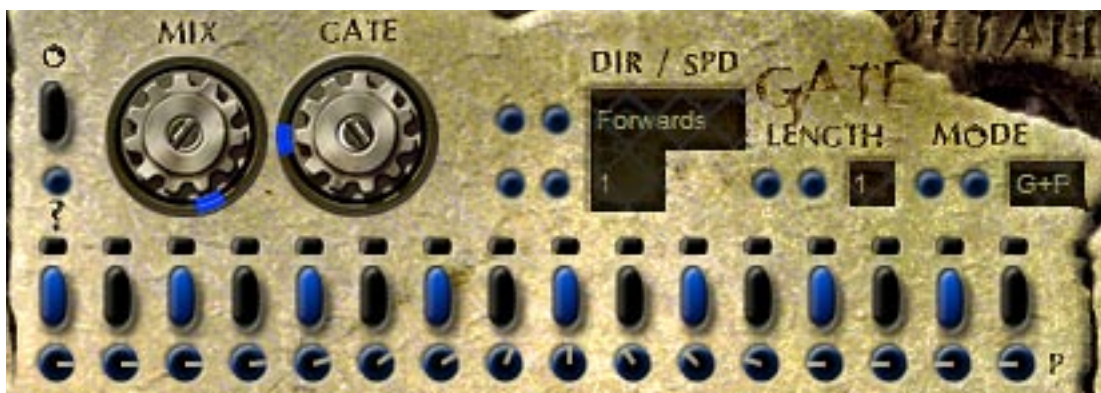
Same as the first Filth, but having two allows you to work with both pre and post filter distortions. You can also have both Filth's on at once. Yup...up to 2 downsamplers and two seriously nasty distortions, with one running into the other...or with Metal and/or three filters in between.

Reminder: The randomizer in the first Filth section will randomize this one too.

Gate / Pan Sequencer

For the benefit of those who may have been out of the current electronic music scene for the last bunch of years, a gate sequencer (or trance gate) effect cuts the sound in or out with each step, giving you a rhythmic chopped up effect.

This one has another trick up it's sleeve though. In addition to sequencing the gate, it can also let you set the pan of each of the 16 steps, allowing you great control over how your sound sweeps and bounces around the stereo field.



O
On / off.

MIX
Sets the mix of the non gated signal to the gated signal.

GATE
Adjusts the length of the gate. Turning the control to the right will increase the length.

DIR
Sets the sequencer direction. Options are forwards, backwards, bounce 1, and bounce 2. Bounce 1 is just forwards, then backwards. Bounce 2 is almost the same except that the first and last steps are played twice, thus extending the length of the sequence by 2.

SPD
Sets the speed based on your host's BPM.

LENGTH

Lets you set the number of steps the sequencer goes to. Range from 1-16.

MODE

Lets you select whether the sequencer effects the gate, pan, or both.

16 Switches

When a switch is lit, it will let the signal pass...when its off, it wont.

16 Knobs

These adjust the pan for each step. They are only active when the mode selector is set to either Pan or G+P (gate plus pan.)

?

Randomizes the 16 switches.

Delay

A simple, but always useful, feature...dual delays.



O

On / off for both delays.

MIX

Sets the mix of the non delayed signal to delayed signal.

V

Volume of the delays.

F

Adjusts the feedback level for the delays.

ST

Sets the stereo width of the delays. You'll only hear this effect when the delays are set to different times, or if one uses a dotted note.

TIME

These set the speed of the delays based on your host's BPM.

DOT

These give you dotted versions of the times.

?

Randomizes the following controls: F, ST, TIME, DOT.

Envelope Follower



An envelope follower modulates a parameter based on the volume of the input signal. So to really get the most out of it, use audio that has a lot of dynamic variation in it...like drums, or guitar or bass lines with some space between the notes and variations in velocity.

MT

Sets whether or not the Metal will be modulated by the Envelope Follower. When active, this modulates both Metal times and the all pass filter.

Note: When the Metal sequencer is on, the envelope follower won't work on the Metal Times, but it will work on the all pass.

MX

Sets whether or not the envelope follower will modulate the master mix. To use this feature, it is recommended that you set the envelope follower's level all the way up, and the master mix slider all the way down. This way your signal will be clean until the follower receives a signal loud enough to bring in the sound of Metallurgy.

IV

This allows the envelope follower to modulate the volume of the input signal. The usefulness of this effect can vary greatly depending on the source material and experimentation will help you find the best settings, but when everything is set as needed you will be able to achieve a volume swell when you play louder notes. I find this sounds especially cool with the delay.

HP / BP / LP - Sets whether or not each filter's cutoff will be modulated by the Envelope Follower. You can have all of these destinations active at the same time, if you want.

L - Sets the level of the effect. The higher the slider, the more pronounced the effect.

A – Attack speed of the envelope.

D – The decay of the envelope.

Extra Sequencer Controls

I have included a few other controls that may come in handy, which you will find in the lower right hand corner of the interface.



SR

Pressing this button will force the sequencers to reset to the first step. This can be useful for musical purposes, and also as a backup in case you find your host is not triggering Metallurgy's auto reset fast enough.

CL + Numeric Display

This allows you to switch Metallurgy's clock source from external/host (off) to an internal clock (on.) By default, Metallurgy is in the off mode and therefore syncs with your hosts clock. In most situations this would be the desired setting, and the display will show the current BPM of your host.

However, some hosts do not transmit their BPM information to effects. If you happen to be working in one of those hosts, you can use this function to set Metallurgy to the desired BPM. To do so, switch the function on, click in the display and type in the BPM you want, then press enter.

Fine Tuning

Holding down the CTRL key while adjusting a slider will allow you to fine tune your setting.

Known Bugs

FLStudio / Live - muting / soloing

Muting / soloing the effect channel that metallurgy is loaded on will cause a momentary stutter of the audio.

FL Studio Lag

When Metallurgy 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 Metallurgy 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

Disturbance will not render in sync within Project5. I have yet to find the cause for this, but I am working on it. Because of this, I cannot recommend using Disturbance in this host. Additionally, during playback Disturbance may not reset correctly unless you use Project5’s “always reset on stop” function.

Cubase SX/SL

Due to an unfortunate conflict between Disturbance’s clock and Cubase’s own clock, a few work-arounds are needed to get Disturbance to play and render in sync. Thankfully they are easy ones. This may also affect Cubase 4.

1. For proper playback timing, set Cubase to use a preroll. 0.0.0.100 seems to work fine but just to be on the safe side you may want to give it something longer. Note that a preroll is also necessary during recording. As a result, you will also have to turn off “start recording at left marker” since that would override the preroll.
2. To get Disturbance to render correctly when using offline (non-real time) exporting, set your playback point so that the time ends in anything other than a zero. For example, instead of starting at 1.01.01.000, start it at 0.01.01.001.

Sound Forge

Metallurgy does not work well with Sound Forge, and may even cause it to crash. However, if you happen to own energyXT, using it as a wrapper for Metallurgy seems to avoid the crashing problems.

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 Metallurgy to solve this problem. In the meantime, there are a few workarounds for this issue.

1. Make additional copies of the Metallurgy dll for each extra instance you expect to need, and give each a new name. (eg: Metallurgy2.dll, Metallurgy3.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.

Credits

Metallurgy - created by Ugo (Chris Scieurba)

www.ugoaudio.com

ugo@ugoaudio.com

Metallurgy was built with Synthedit. VST plugin technology by Steinberg.

This VSTi features modules and prefabs by:

Dave Haupt - www.dehaupt.com

Chris Kerry - www.chriskerry.f9.co.uk

e-phonic - www.e-phonic.com

Kelly Lynch - www.rubidiumhexafluorosilicate.com/synthedit/

Lance Putnum - www.uweb.ucsb.edu/~lputnam/synthedit.html

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

Scoofster Modules - <http://scp.web.elte.hu/synthedit/>

Tweakbench - www.tweakbench.com

Dan Worrall

Patches By

CH - Canned Heat / Hootan Farzad

dB - Darrell Burgan - www.spiritcanyonaudio.com

DEK – dystonia_ek - <http://dystoniaek.org>

HGF – H.G. Fortune - www.hgf-synthesizer.de/

JJ – Jeremy Janzen - Nucleus Soundlab - www.nucleus-soundlab.com

SM - rsmus7 / Stephan Muesch - <http://rsmus7.panicnow.net/index2.htm>

TC – Tim Conrardy / AlgoMusic - <http://www.algomusic.nl>

WR – WaveRider - www.soundclick.com/waverider

RB – Roben Stobenz

WN – White Noise Audio / Dave Wallin - www.whitenoiseaudio.com

ToTc – Frank Genus - www.pro-sounds.net

Sickle – Donovan Stringer

FPI - Anke Scheffler

Koo - Highkoo

PS - Jeff Rhodes of Perimeter Sound Arts

Ugo

Special thanks

- All the beta testers
- Jeff McClintock, for creating SynthEdit.
- Steinberg, for inventing VST
- The Yahoo SynthEdit users group
- KVR www.kvraudio.com

...and Extra Special thanks to Sickle for inspiring me to finally build Metallurgy and assisting with the initial design concept.

License Info

1. Do not distribute this VST or install it on other people's computers. This is a single user license so if you know someone who might like this product, please encourage them to buy copy of their own. So feel free to spread the word about how great Metallurgy is, but just don't spread the VST itself.

2. You are using this software at your own risk. While I do what I can to prevent trouble, I claim no responsibility for damage to your hardware, software, income, reputation, sleep habits, hat size, or person should something go wrong.

3. You may transfer your license if you wish, but you must arrange it with me first so the new owner can get tech support and updates.