DOTMATRIX / LIGHTWEIGHT AUDIO PLUGINS

SCULPT

Pulls kicks, snares, hats and percussion out of any recording and rebuilds them as playable one-shots.



USER GUIDE | VERSION 2.3.1 | AU | VST3 | CLAP | STANDALONE | macOS 10.14+ | INTEL + APPLE SILICON

Kick, snare/clap, hat and perc. Tone, click, noise and residue layers. Drawn curves. Shared library.

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— ABOUT THIS GUIDE

This guide covers every control in Sculpt, how it finds hits and pulls them apart, the drawn curves, the shared library, and the two ways it comes: the **Sculpt Stack** plug-in (AU, VST3 and CLAP) and the **Sculpt** app. Controls are listed with their **range** and **default** as Sculpt shows them. Each element has its own colour, and this guide uses the same ones: **amber** kick, **yellow** snare and clap, **green** hat and **cyan** percussion, with **indigo** for the noise layer.

— QUICK FACTS

Type	Drum rebuilder. Finds kicks, snares and claps, hats and percussion in a song, loop or drum stem, and rebuilds each as a one-shot you can reshape, play from MIDI and export.
Formats	Audio Unit, VST3 and CLAP instruments, plus the Sculpt app (Standalone). Universal: Apple Silicon and Intel, macOS 10.14 Mojave or later.
Products	**Sculpt Stack** (plug-in): all four elements in a stack, played from drum MIDI, with an output per drum. **Sculpt** (app): the same stack on its own.
Layers	Tone (resynthesised, no bleed), Click (the real attack), Noise (a clean model) and Residue (the real rest of the hit)
Curves	Draw the tone's pitch, the tone's loudness and the noise's loudness; the knobs still bend them
Library	Every export lands in ~/Music/SCULPT Library with its settings, and loads back editable in the app or the plug-in
Identity	Manufacturer Dotmatrix (Dtmx). AU code: Sstk.

— NEW IN VERSION 2.3.1

Curves	Opening the PITCH, TONE or NOISE editor no longer changes the sound. The editor shows the measured curve, and it only becomes a drawn curve when you move or add a point.

— NEW IN VERSION 2.3

Light mode	The new LIGHT key switches to a light panel with light grey dials and keys, and back. Every window of the plug-in remembers your choice.
Darker panel	A deeper charcoal chassis with crisper outlines, and stronger, more saturated colour on every LED, dial and waveform.
One plug-in	**Sculpt Stack** already plays all four drums, so the single-drum Kick, Snare, Hat and Perc plug-ins are retired. Installed copies of them keep working but are no longer updated.
Same sound	The engine, parameters and library are unchanged, so your sessions and saved sounds open exactly as before.

— NEW IN VERSION 2.2

New look	The Dotmatrix hardware panel: a slate chassis, raised keys, domed dials with lit scale dots, an LED in each element's colour and backlit read-outs.
Picks A-D	The plug-in and the app hold up to four hits per element (two claps, an open and a closed hat, a soft intro kick), each with its own knobs and its own MIDI note.
Named kits	EXPORT KIT asks for the kit's name; files, drags and library entries carry it, in pad order.
Load a kit	The library opens on KITS, with the last exported kit ready: LOAD KIT puts every sound back on its pick and note.
Any size	Drag the window's corner to make it bigger or smaller; the whole panel scales and the session remembers the size.
Same sound	The engine, parameters and library are unchanged, so your sessions and saved sounds open exactly as before.

— NEW IN VERSION 2.1

Sculpt Stack	The stack as a plug-in. It plays all four from one drum MIDI region, and each drum can have its own output in Logic.
CLAP	Every plug-in now also comes as CLAP, for Bitwig, Reaper and other CLAP hosts.
Library	Every sound you save or export is kept, with its settings, and can be loaded back in the app or any plug-in.
Loop and kits	LOOP replays an element in time while you shape it. EXPORT KIT and DRAG KIT take the whole stack out at once.
Since 2.0	Snare/clap, hat and perc alongside the kick; drawn curves; one plug-in per element; colour per element.

SECTION 01

Getting started

Drop in a recording, pick the hit you like, shape it, play it.

— INSTALLING

Copy the plug-ins into your Plug-Ins folders: the **.component** files into **~/Library/Audio/Plug-Ins/Components** and the **.vst3** files into **~/Library/Audio/Plug-Ins/VST3** (or the same folders under /Library for every user). Copy **Sculpt.app** into Applications. The release is not yet signed through Apple's developer program, so macOS needs one Terminal line before it will load it; **READ ME FIRST.txt** in the download has the exact steps. Logic Pro validates new Audio Units the first time it starts. Sculpt Stack appears under **AU Instruments > Dotmatrix**.

— YOUR FIRST KIT (THE APP)

1	**Drop a recording**	Open **Sculpt** and drop a song, loop or drum stem anywhere on the window (or click LOAD). A drum stem gives the cleanest hits: Logic's Stem Splitter or LIFTER can make one.
2	**Listen**	Each element finds its own hits and starts on the cleanest one. Click PLAY on each strip, or LOOP to keep it going.
3	**Pick another hit**	Use the arrows on a strip, or click a tick on the overview. ORIGINAL plays the hit untouched, at the same loudness.
4	**Shape it**	Click a strip to edit it. Turn the TONE, CLICK and NOISE knobs, or draw the curves (see Section 06).
5	**Take it out**	DRAG WAV onto a Logic track or a Drum Machine Designer pad, or EXPORT KIT for all four. Everything you export also goes into the library.

— IN LOGIC

1	**Load it**	Put **Sculpt Stack** on a software-instrument track (AU Instruments > Dotmatrix) and drop a recording on it.
2	**Play the kit**	Play a drum MIDI region: C1 kick, D1 snare, F#1 hat, C3 perc, as in General MIDI. For a mixer channel per drum, load it as Multi Output (Section 03).
3	**Reuse what you made**	Click LIBRARY: LOAD KIT brings back the last kit you exported; double-click any sound to load it with all its settings.

— MIDI AND THE HOST

Notes	Each pick answers only its own note; click the note on a strip to change the note of the pick you are editing.
Velocity	VEL sets how much velocity changes the level. 0 % plays every hit the same.
All notes off	CC 120 and CC 123 fade out every hit.
Tempo	LOOP follows the host tempo; the app loops at 120 BPM.
Latency	None. Playback is sample-accurate to the MIDI note.

SECTION 02

The interface

One window, laid out like a hardware unit. The selected element's LED colour lights its knobs, buttons and rebuild.



1 Library
Every sound you have saved, in the app and the plug-in.

2 Read-out
The note the tone lands on and where it starts; for hats, where the noise sits.

3 Source
The recording's name.

4 Export kit / Drag kit
Every held pick at once, named after the kit (stack only).

5 Hit browser
LOAD, the arrows, which hit, and BEST for the cleanest.

6 Overview
The whole recording with a tick at each hit of the selected kind.

7 Stack
One strip per element: picks A-D (lit: the one being edited), its note, its hit, arrows and PLAY. Click to edit.

8 Curves
PITCH, TONE and NOISE put the view into drawing mode; RESET undoes.

9 Listen and export
PLAY, LOOP, ORIGINAL, DRAG WAV, SAVE WAV.

10 Rebuilt hit
Each layer in its colour over the original (grey), the pitch line (indigo to coral), and a playhead. Click to hear.

11 Tone
Level, Tune, Drop, Speed, Decay, Drive. Called Body on a kick and Shell on a snare.

12 Click
Level, Length, Tone.

13 Noise
Level, Colour, Decay, Width.

14 Output
Residue, Attack, Length, Gain, Vel, and MONO (plus OUT 3-4 … for its own output).

15 Help
What the control under the mouse does, or what just happened.

— BASIC HANDLING

Knobs	Drag up or down. Double-click returns a knob to its default. Knobs that do not apply (the tone on a hat) are dimmed.
Dropping files	Drop an audio file anywhere on the window. WAV, AIFF, MP3, M4A, FLAC and CAF are read; up to 15 minutes.
Hearing it	Click the rebuilt hit, or PLAY. ORIGINAL plays the untouched hit at the same loudness, so you can compare.

SECTION 03

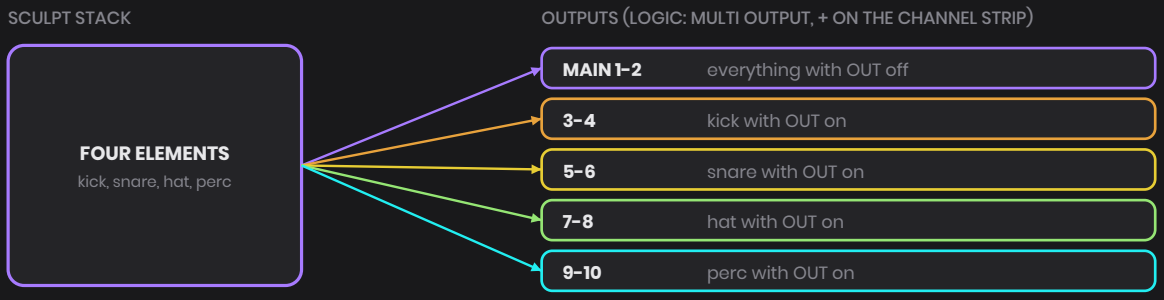
The plug-in and the app

Two ways to use the same engine.

Sculpt Stack (plug-in)	The stack as an AU, VST3 and CLAP instrument for one track. Plays from drum MIDI on each element's NOTE, and each element can go to its own output.
Sculpt (app)	The same stack on its own: kick, snare/clap, hat and perc from one recording, each in its own colour. EXPORT KIT and DRAG KIT take all four out. Plays from a MIDI keyboard or the computer (Audio/MIDI settings in the app's Options menu).
Single-drum plug-ins	Sculpt Kick, Snare, Hat and Perc (one element each) were retired in 2.3: the plug-in does all four. Copies you already have installed still open your old projects.



— OUTPUTS

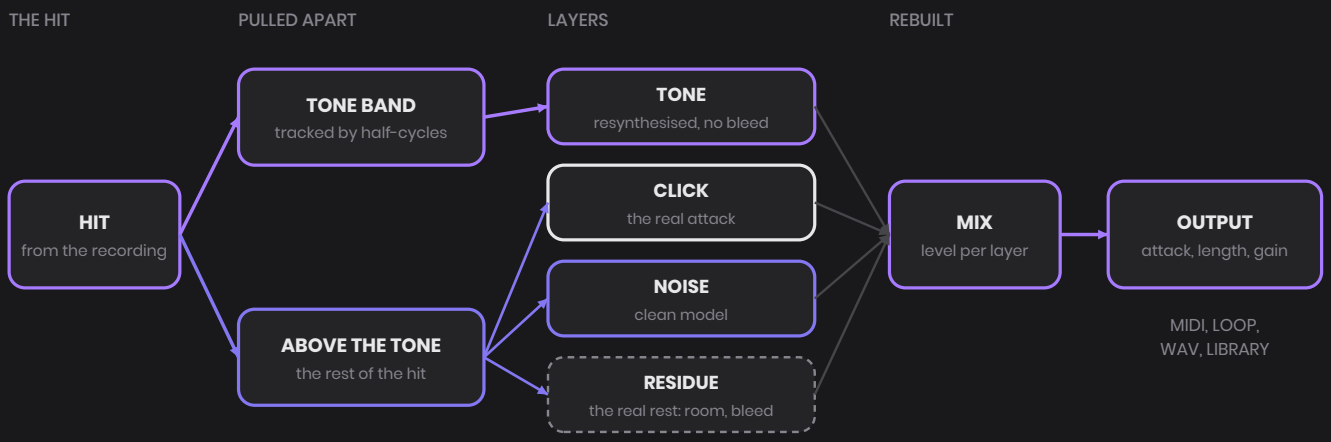


In Logic, load **Sculpt Stack** as **Multi Output**, click **+** on its channel strip, then switch **OUT** on in each element's Output panel. Until Logic switches an output on, that drum stays on the main output.

SECTION 04

How Sculpt rebuilds a hit

Find the hits, pull one apart, rebuild it in layers you can reshape.



Sculpt first finds every hit of a kind in the recording, then takes the one you choose, from where it starts to where the next one of its kind begins. The pitched part (the **tone**) is followed cycle by cycle while it decays cleanly and stops where bleed begins, so a bass note under a kick never gets into the rebuild. It is then resynthesised from the measured pitch and loudness. Everything above the tone becomes the **click** (its first few milliseconds), a clean **noise** model of what rings on, and the **residue**: the real audio, room and bleed included.

— THE FOUR KINDS

KICK

Body: a sine that drops in pitch

Click on top, little noise

SNARE / CLAP

Shell: a short tone near 150-250 Hz

Wires: noise; a clap keeps its bursts

HAT

No tone at all

Bright noise, with its click

PERC

Tone: the drum's note, 90 Hz-1.2 kHz

A small click and noise

Kick	A sharp rise in the low end, with a click or a pitch drop (a bass note has neither). The body is everything below 320 Hz.
Snare / clap	New energy mostly above 600 Hz with some low-mid. The shell tone is found between 110 and 450 Hz. A clap's separate early bursts are kept in the noise.
Hat	New energy almost all above 3 kHz. No tone: the noise is the sound, measured above 1.5 kHz so kick and bass bleed stay out.
Perc	Pitched hits between 90 Hz and 1.2 kHz with little top: bongos, congas, toms. On a full mix this can also catch melodic plucks; a drum stem avoids that.

CLEANEST HITS Each element starts on the hit that is loudest and clearest of what came before it, marked with a dot on the overview. Hits in a quiet intro or a breakdown are often the cleanest of all.

SECTION 05

The controls

Four panels, the same in every element.

— TONE (BODY ON A KICK, SHELL ON A SNARE)

CONTROL	RANGE	DEFAULT	WHAT IT DOES
Level	OFF to +12 dB	0.0 dB	The resynthesised tone. No bleed: it is rebuilt, not cut out.
Tune	-24 to +24 st	0.0 st	Moves the whole pitch curve. The read-out shows the note it lands on.
Drop	0 to 300 %	100 %	How far the pitch falls at the start. 100 % is the original, 0 % a flat tone, 200 % a deeper zap.
Speed	25 to 400 %	100 %	How long the drop takes. Below 100 % is snappier, above a slower sweep.
Decay	25 to 400 %	100 %	How long the tone rings, stretching the measured (or drawn) loudness after its peak.
Drive	0 to 100 %	0 %	Saturates the tone for harmonics and punch on small speakers.

— CLICK

CONTROL	RANGE	DEFAULT	WHAT IT DOES
Level	OFF to +12 dB	0.0 dB	The original attack, taken from above the tone.
Length	1 to 40 ms	8 ms (hat 5 ms)	How much of the attack is kept. It fades out over its last 40 %.
Tone	OFF to 8 kHz	OFF	A high-pass on the click: higher keeps only the snap.

— NOISE

CONTROL	RANGE	DEFAULT	WHAT IT DOES
Level	OFF to +12 dB	0.0 dB	A clean model of what rings on above the tone: snare wires, a clap's tail, the whole of a hat.
Colour	-3 to +3 oct	0.0 oct	Moves the noise darker or brighter.
Decay	25 to 400 %	100 %	How long the noise rings.
Width	25 to 400 %	100 %	How wide a band it covers: narrow rings and sounds pitched, wide is hiss.

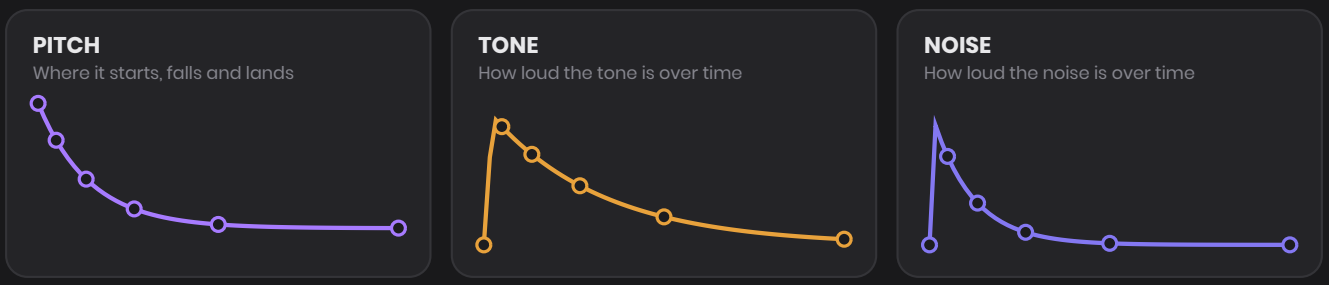
— OUTPUT

CONTROL	RANGE	DEFAULT	WHAT IT DOES
Residue	OFF to +12 dB	OFF	Adds back the real audio above the tone after the click: room and character, and bleed. It stops before the next hit.
Attack	0 to 10 ms	0 ms	Fades the start in. 0 keeps the full snap.
Length	30 to 2000 ms	Kick 1000, snare 700, hat 500, perc 600 ms	The length of the finished sample, with a short fade at the end.
Gain	-24 to +12 dB	0.0 dB	Output level. At the defaults every rebuild peaks at -1 dBFS.
Vel	0 to 100 %	70 %	How much MIDI velocity changes the level.
MONO	on / off	off	Each hit cuts off the one before (a 3 ms fade): tight low end, or an open hat choked by the next.
OUT 3-4 ...	on / off	off	Plug-in only. Sends this element to its own output (see Section 03).
NOTE	C0 to C5	A: C1, D1, F#1, C3	On each strip: the MIDI note of the pick being edited. B-D start on General MIDI neighbours (Section 07).

SECTION 06

Drawing curves

Redraw the pitch and the loudness by hand.



Click **PITCH**, **TONE** or **NOISE** above the rebuilt hit. The view dims and shows that curve with its points, starting from the curve measured from the hit. Points join smoothly: pitch on a musical (log) scale and loudness in decibels, so a straight line between two points is a natural decay.

Move a point	Drag it. The first point stays at the start.
Add a point	Double-click an empty spot.
Remove a point	Double-click it (a curve keeps at least two).
Start again	RESET returns to the measured curve.
Leave	Click the lit button again. The curve stays in use; the read-out says DRAWN.

The knobs still work on a drawn curve: **Speed** and **Decay** stretch it in time, **Tune** and **Drop** move its pitch. A curve belongs to its hit: picking another hit starts from that hit's own curves. Hats have no tone, so only NOISE is available.



Drawing the kick's pitch: the white points are the drop from about 350 Hz down to the note it lands on.

SECTION 07

Loop, export and the library

Hear it in time, take it out, and keep everything you make.

— LOOP

LOOP (next to PLAY) replays an element on every beat, so you can shape it while it plays. It follows the host tempo in a plug-in and 120 BPM in the app. Loops on several elements play in time with each other, which makes a quick kick, snare and hat groove. PLAY on any element stops the other loops, so you hear just that one.

— PICKS: MORE THAN ONE OF EACH

In the stack, each strip has four pick keys, **A** to **D**. The lit key is the pick the knobs and screens show; a small dot marks each other held pick, which still plays on its note. Click an empty key to hold a copy of the pick you are on, then step to another hit with the arrows: keep two claps, an open and a closed hat, or a soft intro kick next to the main one. Click a key with a dot to edit that pick; each keeps its own hit, knobs and curves. Hold a key for a moment (or right-click it) to let go of it; an element always keeps one.

Notes	Each pick plays on its own note, so one Sculpt is a 16-sound player. A keeps the element's note; B-D start on General MIDI neighbours: kick B0, A#0, A0; snare D#1 (clap), E1, C#1 (side stick); hat A#1 (open), G#1 (pedal), A2; perc C#3, D3, D#3. Click the note on the strip to change it.
Shared	VEL, MONO and the output are per element, so with MONO on the hat's picks choke each other, like an open and closed hat.
Saved	Every pick is saved in the session (and in a host preset), with its own audio, so it reopens without the recording.

— EXPORT

DRAG WAV	Drag the chip onto a Logic track, a Drum Machine Designer pad or Finder. A 24-bit mono WAV of the pick being edited.
SAVE WAV	Choose where to save it.
EXPORT KIT	Asks for the kit's name, then saves every held pick as numbered WAVs in a folder of that name, in pad order ("Disco kit - 01 Kick A", "02 Kick B" …), and shows it in Finder. The name is kept with the session.
DRAG KIT	Drags every held pick at once, named after the kit. Dropped on a Drum Machine Designer pad, they fill one pad each, in order.

— THE LIBRARY

Everything you export or save also goes into **~/Music/SCULPT Library**, sorted into Kicks, Snares & Claps, Hats and Perc. Next to each WAV is a small **.sculpt** file with the hit itself, every knob and any drawn curves, so it loads back exactly as you left it and stays editable. The same sound is never saved twice. The app and the plug-in share the library: a kit exported in the app appears in Sculpt Snare in Logic, and the other way round.

Open it	LIBRARY, top right. A plug-in shows its own element; the stack shows all four, with ALL / KICK / SNARE / HAT / PERC and a search box.
Hear	Click a sound.
Kits	The library opens on KITS, with the last exported kit selected. LOAD KIT (or a double-click) puts every sound back on its pick and note, named as it was, ready to edit. Every EXPORT KIT and DRAG KIT records one; exporting under the same name updates it.

Load	Double-click a sound, or select it and click LOAD. It goes into the element of its kind, ready to edit.
Drag out	Drag a row onto Logic or Finder.
Rename, Finder, Trash	Right-click a row. Move to Trash puts the sound in the Trash, never deletes it outright.
Up to date	While open it checks for changes every second. FOLDER opens it in Finder.
Your own samples	Drop any WAV into a library folder: it shows as SAMPLE and loads as a plain sample that Sculpt rebuilds from the WAV.

SECTION 08

Recipes

Starting points. Treat the numbers as a first step, then trust your ears.

01	**Tight techno kick**	Kick strip. Decay 70 %, Drop 120 %, Speed 60 %, Drive 25 %. Click Tone about 1.5 kHz, Length 400 ms, MONO on.
02	**Long, tuned 808-style kick**	Kick strip. Decay 300 %, Length 1500 ms, Drive 30 %. Tune it to the key of the track (watch the read-out).
03	**Zap kick**	Draw the PITCH curve: first point near 800 Hz, the second where it lands within 10 ms. Drop 150 % makes it more extreme.
04	**Crack from a soft snare**	Shell Level -12 dB, Noise Colour +0.5 oct, Width 150 %, Click Length 15 ms, Click Tone 1 kHz.
05	**Shorter, brighter hat**	Noise Colour +1 oct, Decay 50 %, Width 70 %. MONO on so the next hat chokes it.
06	**Keep the room**	Residue -12 dB adds the real air around the hit; raise it until you hear the room, stop before you hear the bleed.
07	**Tuned bongo pair**	Perc strip: hold the same hit on picks A and B and tune B up a fifth (+7 st). Each plays on its own note.
08	**Kit to Drum Machine Designer**	In the app, DRAG KIT onto Logic's Drum Machine Designer, dropped on the C1 pad: the held picks fill the pads in order, kicks first, then snares, hats and perc.

— GLOSSARY

Hit	One drum sound in the recording, from where it starts to where the next one of its kind begins.
Tone	The pitched part of a hit, rebuilt from its measured pitch and loudness.
Bleed	Other instruments under or after the hit. The tone and noise layers leave it out; the residue keeps it.
Drum stem	The drums of a song on their own. Sculpt finds cleaner hits in a stem than in a full mix.
GM notes	General MIDI drum notes: C1 kick, D1 snare, F#1 closed hat, C3 high bongo.

SECTION 09

Reference and troubleshooting

— TECHNICAL NOTES

Finding hits	Kicks: low-band onsets compared with the loudest point of the last 12 ms (so a ringing bass does not count), with a click or a pitch drop. Others: rises in any band above 150 Hz, sorted by how much energy each adds in five bands.
Tone	Followed by zero crossings and half-cycle peaks of a zero-phase band. The pitch is fitted to a fall into a final note; measurement stops where the decay swells or the pitch jumps.
Noise	Its centre and width come from third-octave band energy; its loudness is measured in 1 ms steps while it decays cleanly, then continued with a fitted decay.
Sessions	A project stores each element's chosen hit (about 100 KB), every knob, the drawn curves and where the recording was. Never the recording itself.
Performance	Rebuilding happens when you load or turn a knob, in a few milliseconds. Playing back is just short samples, with no latency.
Compatibility	Universal (Apple Silicon and Intel), macOS 10.14 Mojave or later. VST2 is not available: Steinberg no longer licenses it. CLAP is built with the open-source clap-juce-extensions.

— TROUBLESHOOTING

No sound	Sculpt is an instrument: it needs a MIDI or software-instrument track. In the stack, each element only plays on its NOTE (C1, D1, F#1, C3 by default). Check that a hit is loaded and Gain is up.
It does not appear in Logic	Run the Terminal line in READ ME FIRST.txt, then restart Logic. In Logic > Settings > Plug-in Manager, select it and click Reset & Rescan Selection. Look under AU Instruments > Dotmatrix.
Few or no hits found	Try a drum stem. On a full mix the drums can be hidden by other parts.
Perc picks up synths	Perc looks for pitched hits, which a melody also is. Use a drum stem, or step through hits with the arrows.
The rebuild sounds thin	Raise Residue a little for the room, or Click Length for more attack.
A click at the start	Raise Attack to 0.5 to 1 ms.
OUT 3-4 does nothing	Logic has to switch the output on first: load Sculpt Stack as Multi Output and click + on its channel strip. Until then it plays on the main output.
The library is empty	Sounds arrive when you export or save. It lives in ~/Music/SCULPT Library: FOLDER opens it.

Sculpt by Dotmatrix

Lightweight audio plugins. Documentation for version 2.3.1.