FrozenPlain

FOR FLOE 2.0.5 · 2026-12

MUTANT PIANO

USER MANUAL

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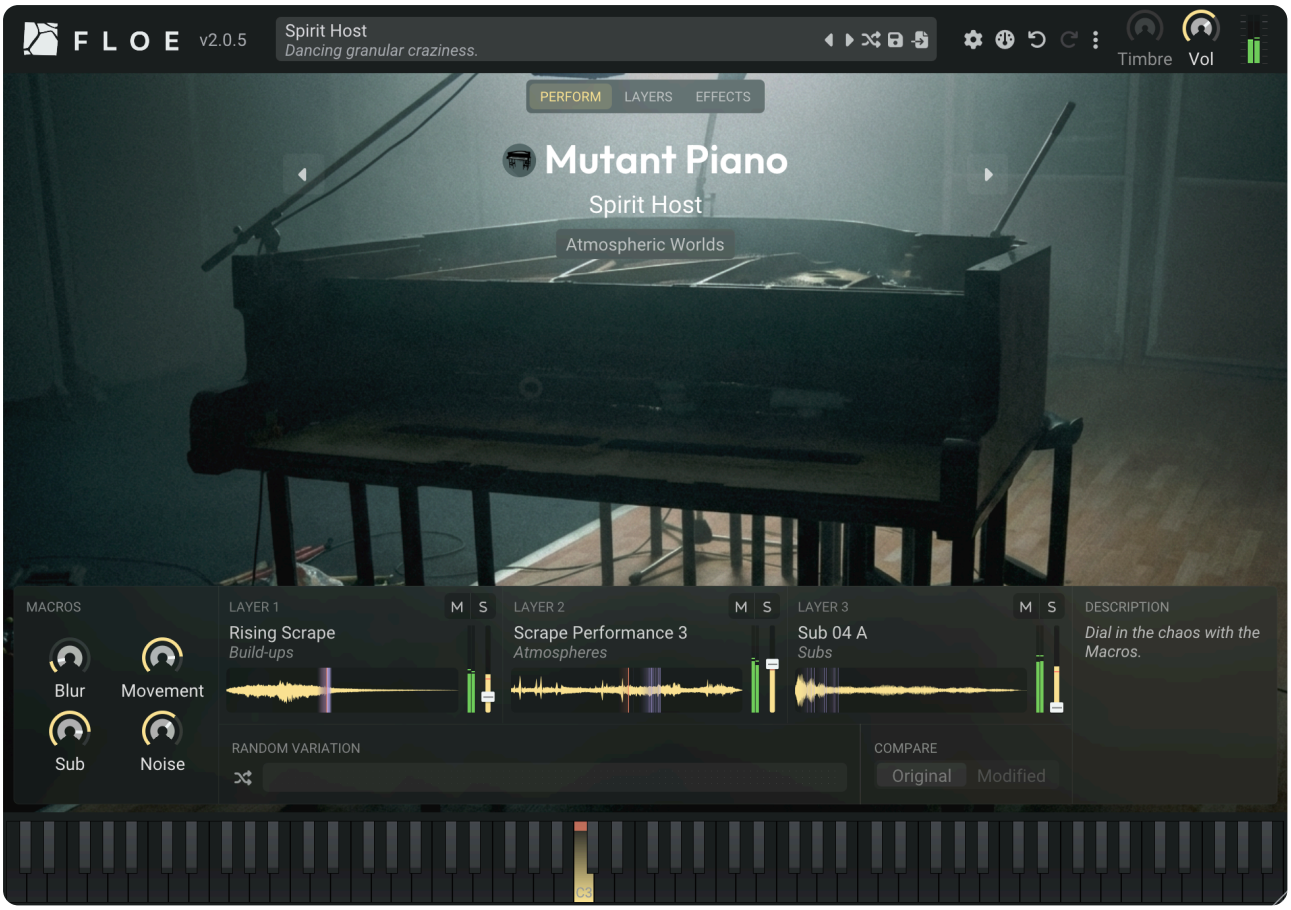


Welcome to Mutant Piano

From mysterious soundscapes to intriguing rhythmic pulses and thunderous metallic impacts, Mutant Piano can create a remarkably wide variety of evocative and inspiring sounds. It is equally at home in the worlds of music or sound design.

The concept for Mutant Piano emerged from a unique recording session featuring a grand piano stripped of its legs and keys. For several hours, the soundboard and casing were scraped and pounded using experimental playing techniques and unconventional tools. From the resulting recordings, over 300 samples and performances were created.

Mutant Piano allows you to twist, fracture and manipulate these sounds in innovative and stimulating ways using, amongst other features, its ingenious granular engine. To get you started, we have crafted 360 bespoke presets. Our hope is that you will use these as a springboard to explore and experiment with Mutant Piano and push it to the extreme.

— Sam and Richard

System Requirements

Mutant Piano runs inside Floe, our free plugin for playing sample libraries. These are Floe's requirements:

- **macOS:** macOS 11 (Big Sur) or later, on an Apple Silicon or Intel Mac.
- **Windows:** Windows 10 or later, on a processor with SSE2 support (almost every PC since about 2006).
- **Linux:** an x86 distribution with glibc 2.31 or later. Floe also needs the libcurl, OpenGL, GLX and X11 libraries (including Xcursor and Xext), plus `zenity` and `xdg-open`, which most desktop distributions already have.

Floe is 64-bit only, so your DAW needs to be 64-bit too.

Mutant Piano needs Floe 2.0.4 or later and 0.5 GB of disk space.

Plugin formats

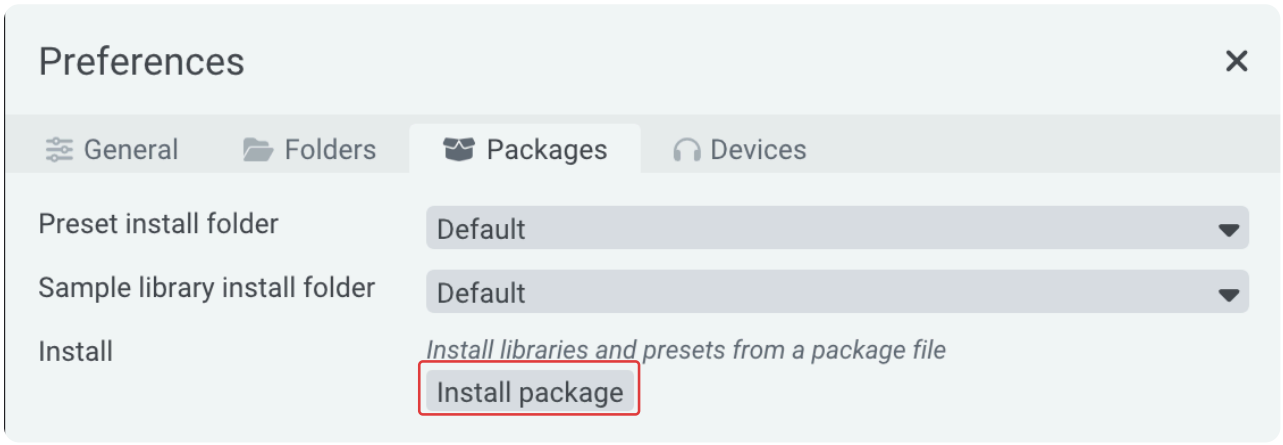
Floe comes as a CLAP and a VST3 plugin, plus an AU (v2) plugin on macOS. If your DAW supports CLAP, we recommend using that version. There's no standalone application and no AAX (Pro Tools) support at the moment.

- **CLAP** hosts include Reaper, Bitwig, FL Studio (2024 or newer) and Studio One Pro (v7 or newer).
- **VST3** hosts include Cubase, Studio One, Ableton Live, Reason and Ardour.
- **AU** hosts include Logic Pro and GarageBand.

Quick Start Guide

Install Floe and Mutant Piano

1. **Download Floe** from floe.audio/download and run the installer for your computer. See Install Floe if you need more detail.
2. **Download Mutant Piano** from your emails or your account on frozenplain.com. You need two files: the Mutant Piano package (ending `.floe-pkg-enc`) and your license file (ending `.floe-license`).
3. **Open your DAW** and add Floe to an instrument track. It's usually listed as a virtual instrument under *Floe Audio*.
4. **Open Floe's preferences** by clicking ⚙ in the top panel, then choose the *Packages* tab.
5. **Click *Install package*** and select your package file.



Floe asks for your license key to unlock Mutant Piano as it installs.

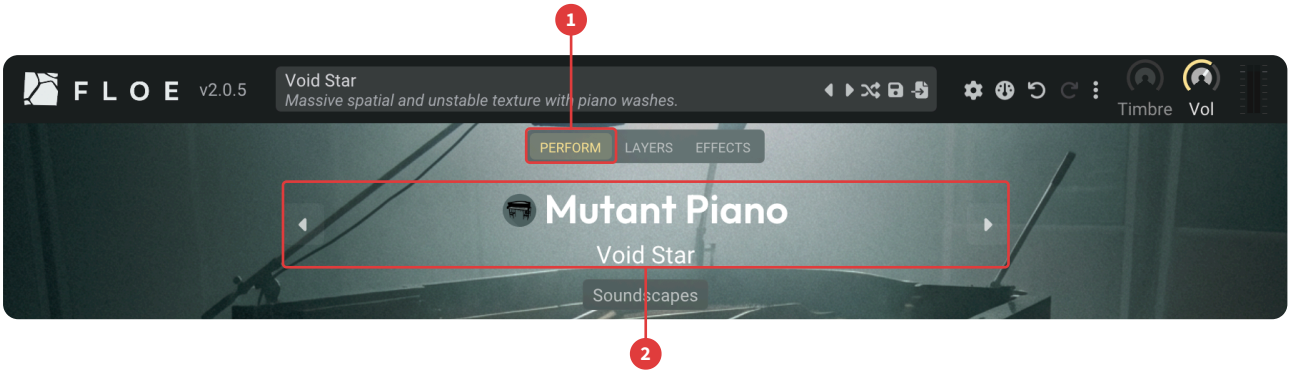
When the installation finishes, Floe shows a summary. Once you click *Done*, Mutant Piano and its presets are ready to use. There's no need to restart anything.

You can delete the package file afterwards; Floe doesn't need it anymore. If you want to install to a different drive, or want more details, have a look at Install Mutant Piano Package.

Play your first preset

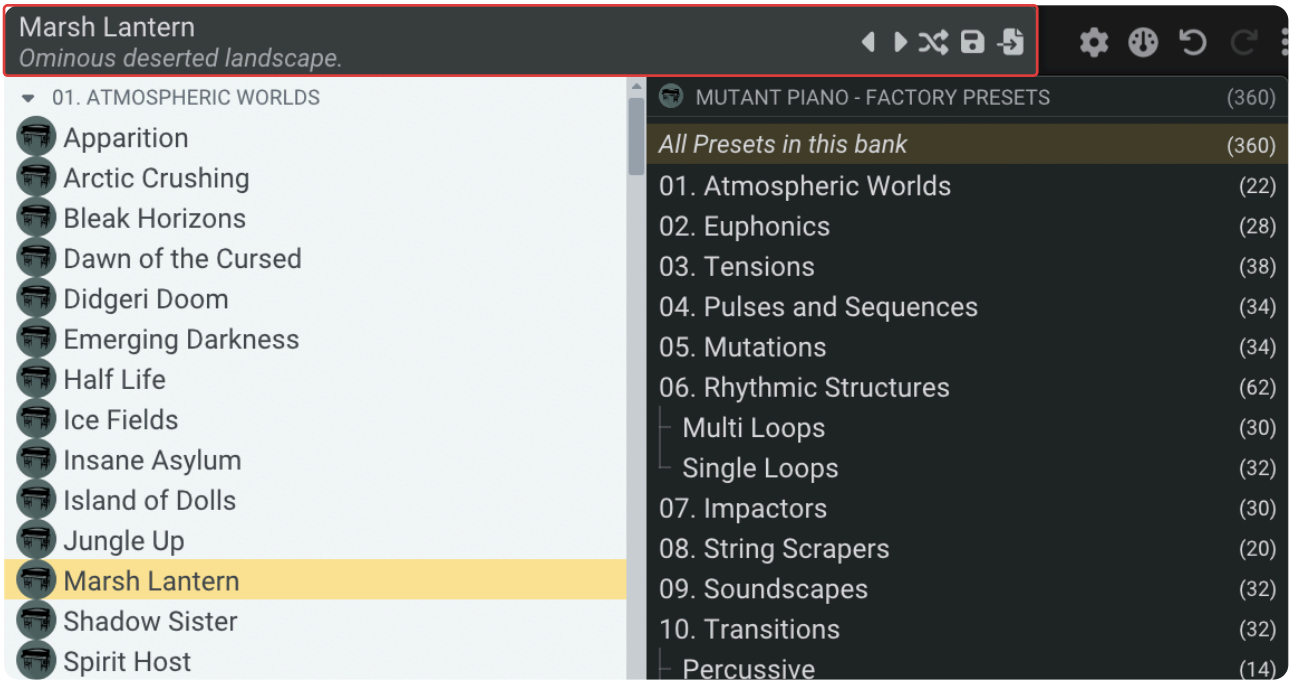
If the plugin was empty when you installed the package, it will have already loaded one of Mutant Piano's presets for you — begin playing some notes on your MIDI controller.

Try some presets



1. Click the PERFORM tab button near the top of Mutant Piano's UI.
2. Use the large arrow buttons, ◀ and ▶, to step through presets.

Explore the preset categories



1. Open the preset browser by clicking the preset's name in the top panel.
2. Click Factory Preset Banks, then Mutant Piano - Factory Presets.
3. Click a preset in the list on the left to load it.
4. Close the browser by moving the mouse away from it, clicking outside it, or pressing `escape`.

Finding your way around

Tooltips

If you hover over a control for a moment, a tooltip pops up explaining what it does. They go well beyond naming the control: each one tells you how it behaves and what's worth knowing about it. When you're not sure what something does, a tooltip is usually the quickest way to find out. If you'd rather not see them, turn off *Show tooltips*

in the ⚙ preferences.

Using the controls

Knobs and sliders all work the same way: drag up or right to increase the value, hold `shift` for finer control, and double-click to type an exact value. Right-click a control, or a whole section such as a layer's tab or an effect, for more options like copy and paste, resetting and MIDI CC Learn. See Controls for the full details.

Window size

To make the window bigger or smaller, drag its bottom-right corner. In some DAWs, such as Logic Pro, you need to grab this exact corner of Mutant Piano rather than the corner of the DAW's window around it.

Some terminology

A few words come up often in this manual. We mean something specific when we use them:

- **Preset** — a complete, saved sound, with its own name, description and tags.
- **Layer** — one of the three sound layers that this engine revolves around. See them side by side on the LAYERS page.
- **Instrument** — the sound source that a layer plays. It might be a single sample or many samples spread across the keyboard.

The three main pages

Most of your time in Mutant Piano is spent on its three main pages. In future chapters we'll cover them in full detail:

- **Perform** — a distraction-free view for exploring presets and making quick changes. The easiest place to start with Mutant Piano.
- **Layers** — the three layers and their Instruments, each with its detailed controls.
- **Effects** — the effects rack that colours the whole sound.

Mutant Piano - The Origin Story

The magnificent keyless and legless grand piano, which became Mutant Piano, was found in an alleyway behind Hampstead Piano shop, in Abbey Road, some 15 years ago. Its discovery was the culmination of my search for an instrument that could provide unusual acoustic sounds to add unique flavours to my orchestral and electronic film and game scores. Dissonant, scary and moody sounds that could not be achieved on a conventional grand piano, because who was going to let me smash up their immaculate Steinway - certainly not my agent - Air-Edel!

The piano I found, which had no maker's mark or price tag, was ideal for the purpose. Unusually rich and resonant, it had not been tuned for ages, which made it sound all the more intriguing and less piano-like. Plucking and scraping the strings in that alleyway gave me a shiver of anticipation.

A few months later, Rob Foster, Andy Reynolds and I set the piano up on stools in Air-Edel Studios ready for a recording session where none of us really knew what was going to happen next. That morning I'd bought an assortment of implements from B&Q - chains, wires and other strange metal objects, and Andy had brought along various beaters and balls. To complete our arsenal we commandeered the massive Air-Edel brass doorstop.

One of the main objectives we set ourselves was to create unfamiliar and experimental sounds using unconventional playing techniques - sounds that you wouldn't instinctively associate with or believe came from a piano.

Air's talented resident engineer Nick Taylor set up an array of vintage microphones, ranging from Neumann U47s to Coles 4038s. Everything was recorded into Pro Tools through Air's vintage Cadac desk.

The session flew by, each of us taking turns to experiment or make suggestions. Throughout, Nick kept Pro Tools running to capture every demented scraping, scratching and banging. There was no real time to think, just play and move on. At one point Rob picked up and smashed the brass doorstop into the strings and soundboard (see video).

After 3 hours, the end of what had been an exhilarating session was a bittersweet moment because my wonderful piano was taken away and broken up. It had given its final and certainly most unconventional performance and now it was seemingly lost for ever.

Back in the studio, I painstakingly edited and sorted about 500 recordings into folders - named Balls, Wires, Chains and suchlike. These samples have been used in every film, game and TV score I have worked on since. It was, without doubt, the most useful and unusual recording session of my career.

Last year, following a chance meeting with Sam from FrozenPlain, we began discussing the possibility of bringing my piano back to life in virtual form. Simply revisiting the original samples didn't feel like enough. Sam rose to my various challenges, redesigning Floe, adding a versatile granular engine and arpeggiator. This opened up a wealth of new programming possibilities.

The original samples were intended for use in horror and dark drama projects, but Floe 2.0's versatility and new sound-design capabilities have allowed us to venture much further into action and ambient genres and beyond. And this is no longer a plugin that simply adds interest to an existing track. You can now create an entire piece of music using just Mutant Piano. (See demos.) From a modest original concept, Mutant Piano has grown to include over 300 samples and 360 presets.

Perhaps the most gratifying thing of all is that we've brought my piano back from the dead. Reborn in virtual form, it's brimming with creative potential and possibility. Sounding better than ever and for the first time available to composers and sound designers around the world.

I hope you have as much fun exploring, playing and experimenting with Mutant Piano as we had bringing my piano back to life.

— Richard Wells

Preset Categories

Mutant Piano's 360 handcrafted presets are organised into 12 categories, which you can explore in Floe's preset browser. Here's what to expect from each one.

Atmospheric Worlds

A collection of complex and often evolving soundscapes, many based on the longer performance samples. These reward experimentation with the macros and granular controls.

Mutations

These sounds are the closest to the original spirit of the recording session. Weird, experimental and rarely in tune.

Euphonics

Playable instruments or ambiences. We never intended that any of the sounds created in the session would be "in tune", but thanks to the wonders of Floe's granular engine and some creative editing this is a musical collection of playable sounds. Unlike much of Mutant Piano, many of these are soft or ambient in character.

Impactors

At the heart of the original session were some truly bone-crunching piano impacts. These have now been expanded into a much wider palette of sounds, from low thudding bass drums to triple-layered thunderous doorstop droppers.

Tensions

From subtly creepy to full-blown horrific, this category spins from high scrapy strings down to low ominous effects. Perfect for adding a little anxiety or fear.

Rhythmic Structures

These tempo-synced patterns are divided into **Multi Loops** and **Single Loops**. None were originally intended to play in tune, but when editing the recordings I discovered that the piano's casing, on which several were played, resonated as a G. To make the patterns more playable they are now, where possible, tuned to C.

Presets or sounds tuned to G are identified in their descriptions. In these cases, G2 generally replaces C3 as the original pitch. Many of the sounds work best when played at their original pitch.

Pulses and Sequences

Utilising Floe's arpeggiator and LFOs, this category showcases many sounds that would have been completely impossible when just using the original samples. These range from very subtle pulsing tension effects, through arpeggiated note sequences to full-on ultra-violent cacophony.

String Scrapers

Similar to Impactors, these sounds slide and scrape, sometimes subtly and sometimes in a truly frightening fashion.

Transitions

A category divided into **Percussive** effects and **Reverses** designed to help you shift from one musical idea to another.

Soundscapes

Like Atmospheric Worlds, Soundscapes offers evolving, complex textures that reward experimentation with macros, granular controls and other Floe parameters. The more minimal presets make ideal starting points for ambient computer game beds, as the note sequences generated by Floe's granular engine are designed never to repeat!

Drones

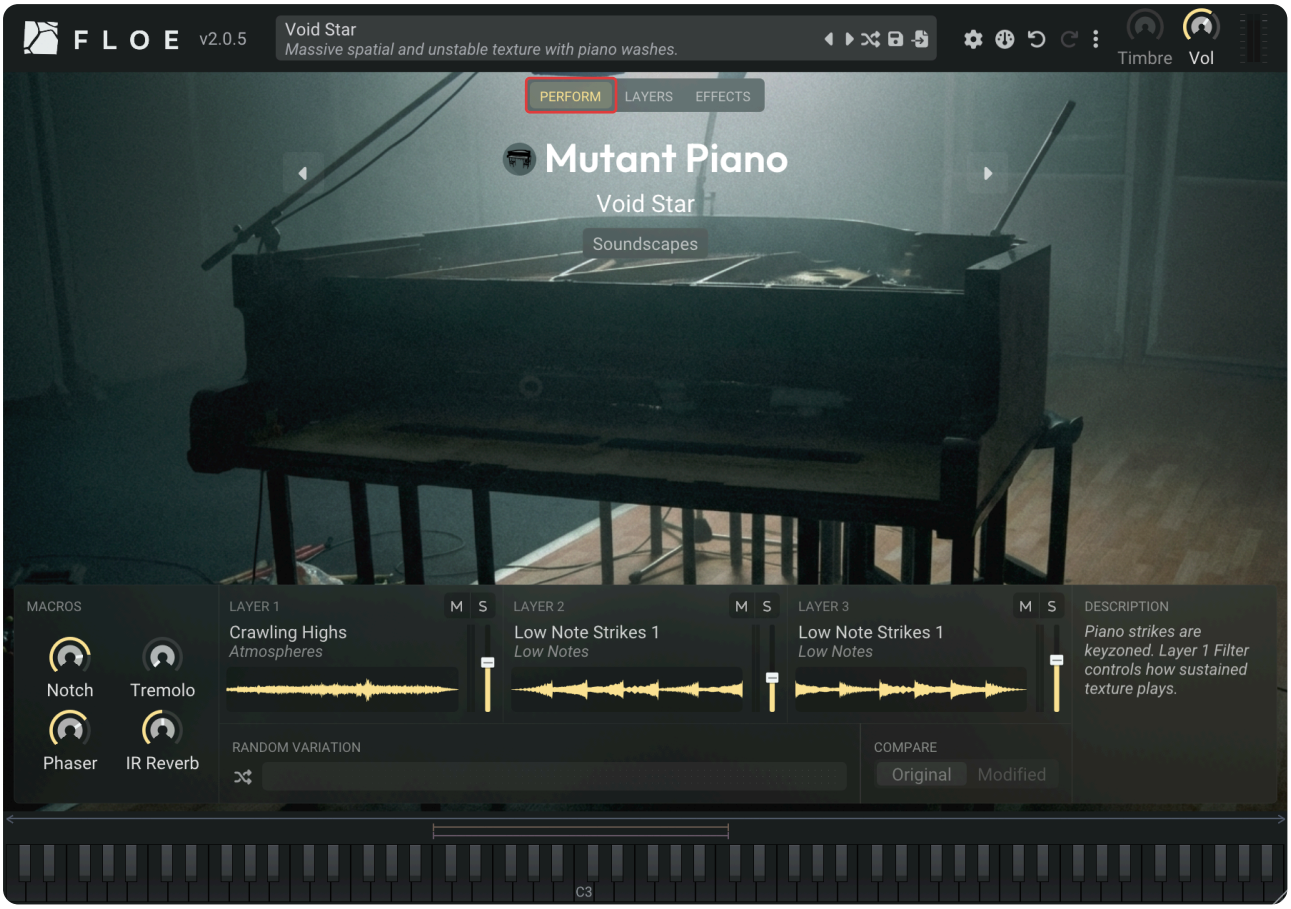
A collection of different drones for underpinning soundscapes or to use on their own.

Menus

There are four different menus: **Hits**, **Scrapes**, **Subs** and **Mutant Trash Kit**.

Hits and Scrapes are made up of original samples with minimal effects, spread across several octaves. Subs is a collection of low frequency material derived from the original samples. Mutant Trash Kit is a collection of drum hits extracted from the original session and presented as a lo-fi kit.

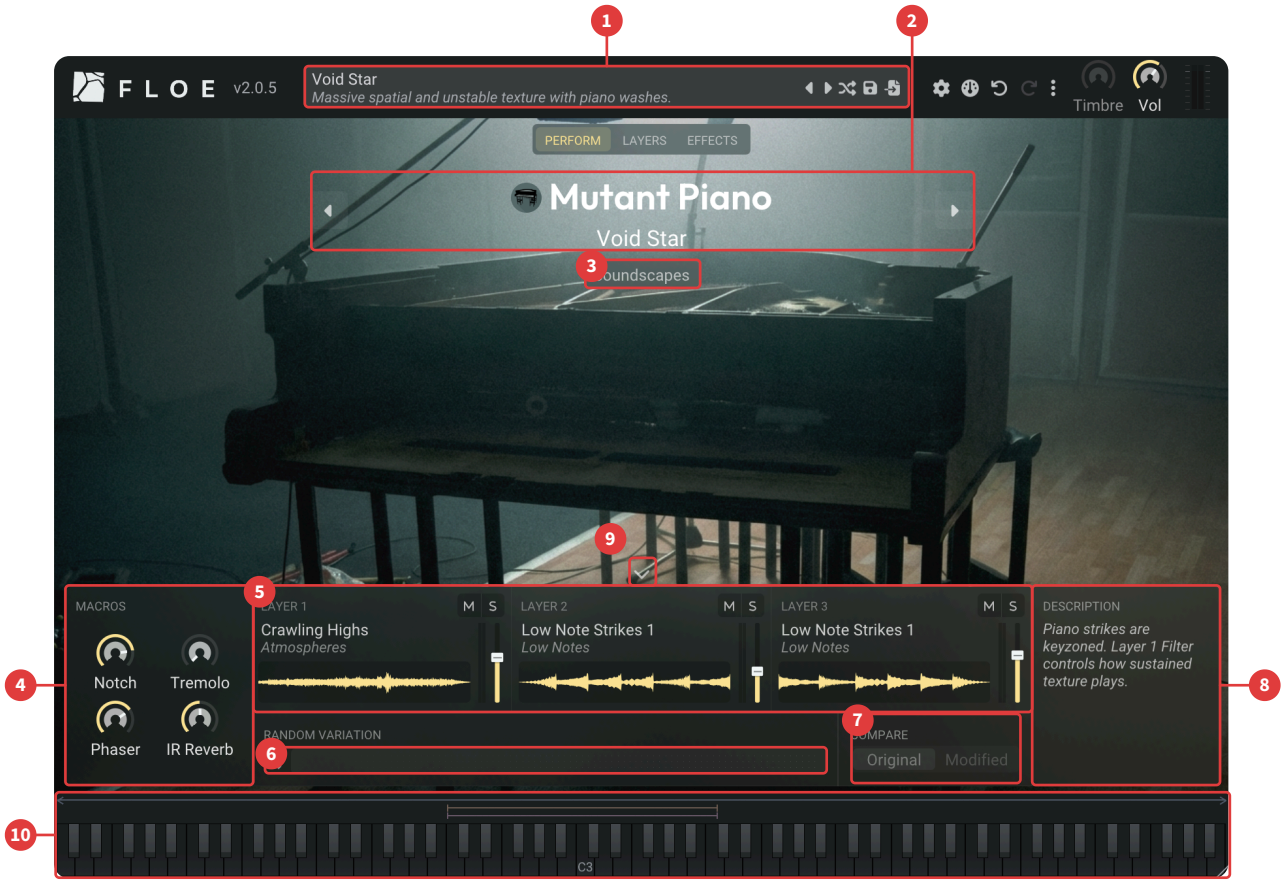
Perform Page



The *Perform* page is a good place to start when you're getting to know Mutant Piano and its presets. It shows the artwork in full, and gathers the controls you'll reach for most often into one uncluttered panel.

Most of the controls here also appear elsewhere in the interface. They're the same controls, so a change on one page shows up on the other.

When you're ready to go deeper, everything else can be found on the *Layers* and *Effects* pages.



1. **Preset box** — in the top panel. Click it to open the preset browser.
2. **Preset** — the name of the current preset's sample library, with the preset's name beneath it. The arrows either side, ◀ and ▶, step to the previous or next preset, just like the arrows in the top panel.
3. **Folder** — the folder the preset lives in, which usually tells you what kind of sound it is.
4. **Macros** — four knobs set up to shape this particular sound.
5. **Layers** — the Instrument on each of the three layers, with its mute, solo and volume controls.
6. **Random variation** — click the strip for a fresh take on the preset.
7. **Compare** — switch between the preset as it was loaded and your changes.
8. **Description** — more about the preset, from its author or written automatically by Floe.
9. **Hide panel** ⌄ — hides the panel so you can see the artwork in full. The arrow only appears when you hover just above the panel.
10. **Keyboard** — lights up with the notes you play, and you can click it to play notes too. See Keyboard.

Choosing presets

The arrows (2) are the quickest way to audition presets: play a few notes, click an arrow, and play again. To look through them by folder or tag, click the preset name in the top panel (1) to open the preset browser. See Loading Presets for more ways to find presets.

Once you change anything, the preset's name is marked *(modified)*.

Macros

Use the macros (4) to shape the preset to your liking. Each one is tuned to move one or more settings in a musical way, and the knob's name hints at what it does. A greyed-out macro isn't used by the preset. By default, your mod wheel is linked to the first macro, so you can shape the sound as you play. See also Macros and MIDI.

Layers

Each preset is built from up to three layers (5). Not every preset uses all three. For each active layer you'll see:

- **Instrument** — the name of the layer's Instrument, with the folder it comes from in italics. Click it to open the Instrument browser and choose a different one.
- **Waveform** — a picture of the Instrument's sound.
- **Mute and Solo** — *M* silences the layer, and *S* lets you hear it on its own. Try each layer in turn to hear what it adds to the whole.
- **Volume** — the slider sets the layer's level, with its level meter alongside.

For everything else a layer can do, switch to the *Layers* page.

Random variation

Click anywhere on the *Random Variation* strip (6) for a fresh take on the preset. Where you click sets how far it strays. Towards the left gives gentle, related tweaks; towards the right gets wilder, with Instruments swapped, layers added and effects changed. Hover over the strip to see how big a change you'll get. The button at its left edge rolls another variation at the same amount as last time.

Every variation starts from the preset as you loaded it, so you can keep clicking without drifting ever further away. *Undo* in the top panel steps back through them. When you find one you like, save it as a preset to keep it. See Randomisation.

Compare

Once you've changed something, the *Original/Modified* switch (7) lets you flick between the preset as it was last loaded or saved and your changed version. It's an easy way to check that your changes really are an improvement. If you edit anything while you're listening to the original, that edit replaces your modified version, but you can always get it back with *Undo*.

Description

The description tells you about the preset, such as any unusual tuning or tips for playing it. The top panel shows its opening, usually a summary of the sound, and the rest continues here (8).

If the whole description fits in the top panel, Floe fills this space with a generated summary of the preset instead.

Seeing the artwork in full

Hover just above the panel, in the middle, and a small arrow appears (9). Click it to hide the panel and see the artwork uncovered. Click the arrow again to bring the panel back.

Layers Page



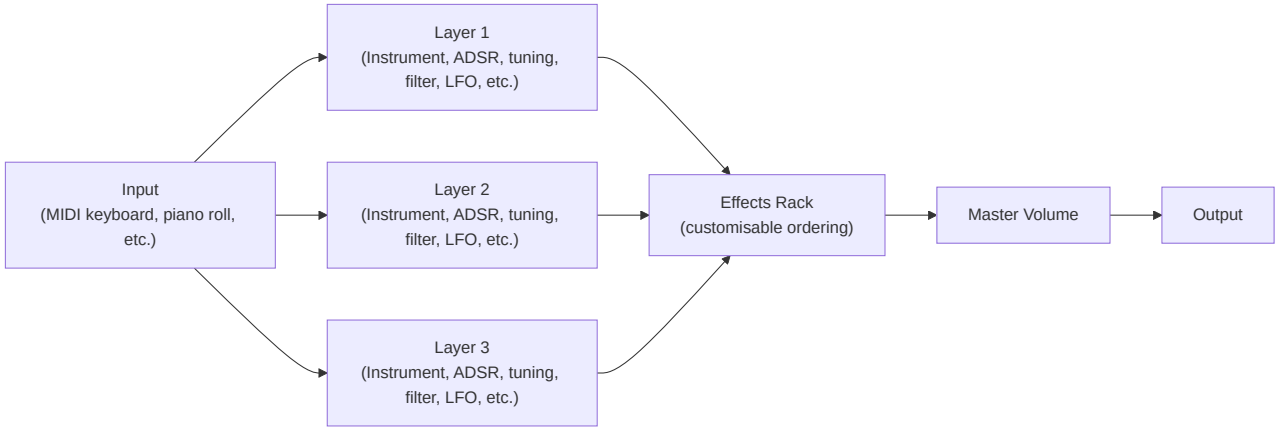
Mutant Piano is built around three layers, each holding a sound of its own, playing together as one.

For each layer, you pick a sound source, its *Instrument*, then shape it further with envelopes, filters, an LFO, looping and more.

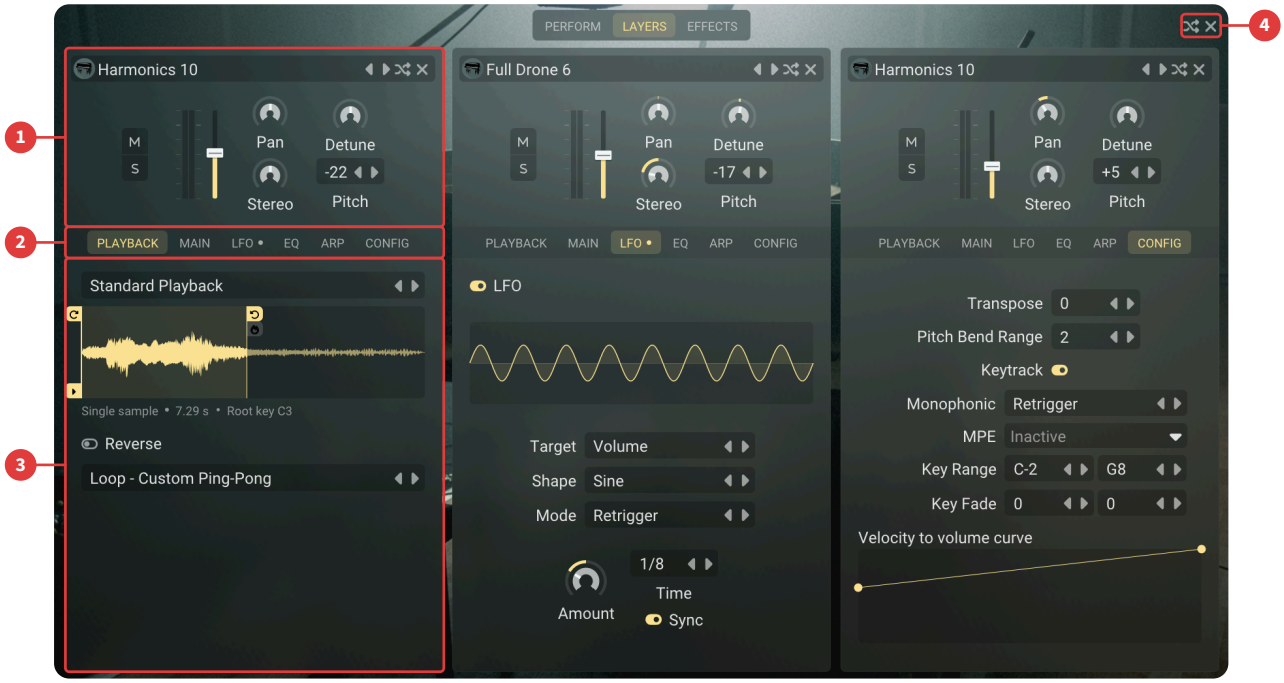
A sound can use a single layer or blend two or three together. The LAYERS page is where you control all aspects of these identical layers.

How sound flows through the engine

When you play a note, all three layers play at once (unless a layer is limited to a key range). Each is processed on its own, then the three are mixed together and sent through the effects rack and the master volume. A layer with no Instrument is simply silent.

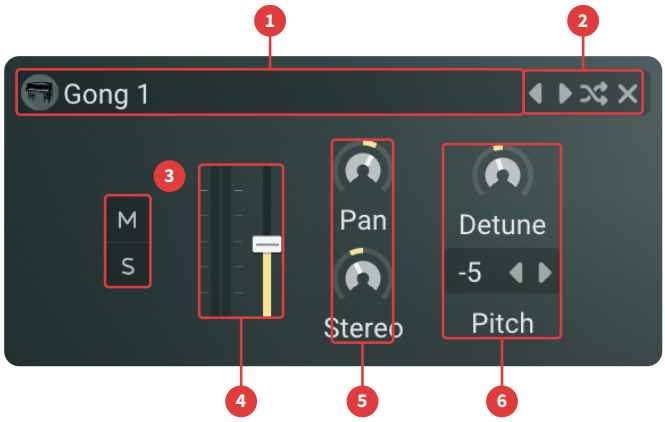


The layer layout



1. **Layer header** — the layer's Instrument and its mixing controls, always visible.
2. **Tabs** — switch between the layer's groups of controls: *PLAYBACK*, *MAIN*, *LFO*, *EQ*, *ARP* and *CONFIG*. A dot on the *EQ*, *LFO* or *ARP* tab shows that it's switched on.
3. **Tab controls** — the controls for the selected tab. Each tab has its own chapter. You can right-click these to copy, paste or reset all of its settings at once. It's a quick way to give two layers the same configuration.
4. **All-layer buttons** — these act on all three layers together. 🔀 loads a random Instrument into every layer, with each layer following its own Instrument browser filters (see Randomisation). ✕ clears every layer.

Layer header



1. **Instrument selector** — shows the layer's Instrument. Click it to open the Instrument browser and choose a different one. Right-click for more options: unload the Instrument, copy and paste the Instrument or the whole layer, or swap this layer with the one to its left or right (macro assignments move with a swapped layer).
2. **Instrument navigation** — the arrows ◀ ▶ step to the previous or next Instrument, and 🔀 jumps to a random one: a quick way to audition sounds without opening the browser. They follow the filters you've set in the Instrument browser, so they only move between the Instruments that match. ✕ unloads the Instrument, leaving the layer empty and silent.
3. **Mute and Solo** — *Mute* silences this layer, and *Solo* lets you hear it on its own. Silenced layers keep running in the background, so if you unmute or unsolo them they carry on seamlessly from wherever they've got to. To save CPU, unload the Instrument instead. It's simplest to just use either Solo or Mute across the layers, not both — if you do mix them, Solo is prioritised over Mute.
4. **Volume** — the layer's level, with its level meter alongside. While notes are sounding, red marks on the slider show the level of each voice. A voice's level depends on its velocity, where it falls in a key range fade, and any MPE volume expression.
5. **Pan and Stereo** — *Pan* places the layer anywhere from left to right. It uses a constant-power pan law (-3 dB at centre), so the layer keeps the same perceived loudness wherever you put it. *Stereo* narrows or widens the layer: negative values pull it toward mono, positive values push it wider. Pan comes after Stereo, so you can narrow a wide sound and then place it as a single point. A mono sound has nothing to widen, so pushing it to maximum stereo width silences it.
6. **Detune and Pitch** — *Pitch* moves the layer up or down in semitones, and *Detune* fine-tunes it in cents (hundredths of a semitone). Both work by speeding up or slowing down the audio. Right-click *Pitch* to jump up or down an octave. Right-click *Detune* and choose *Fold into Pitch* to move any whole semitones from *Detune* into *Pitch*, leaving the overall tuning unchanged.

See Controls for the ways to adjust knobs, sliders and number fields.

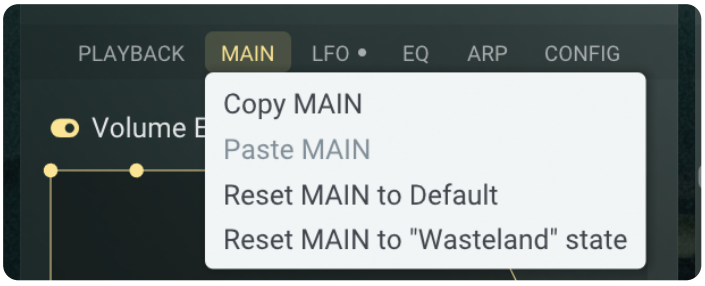
The tabs

Below the header, each layer's controls are grouped into six tabs. Each has its own chapter:

- **PLAYBACK** — how the layer plays its samples: play mode, sample start, reverse, granular synthesis and looping.
- **MAIN** — the volume envelope and filter.
- **LFO** — add movement to various aspects.

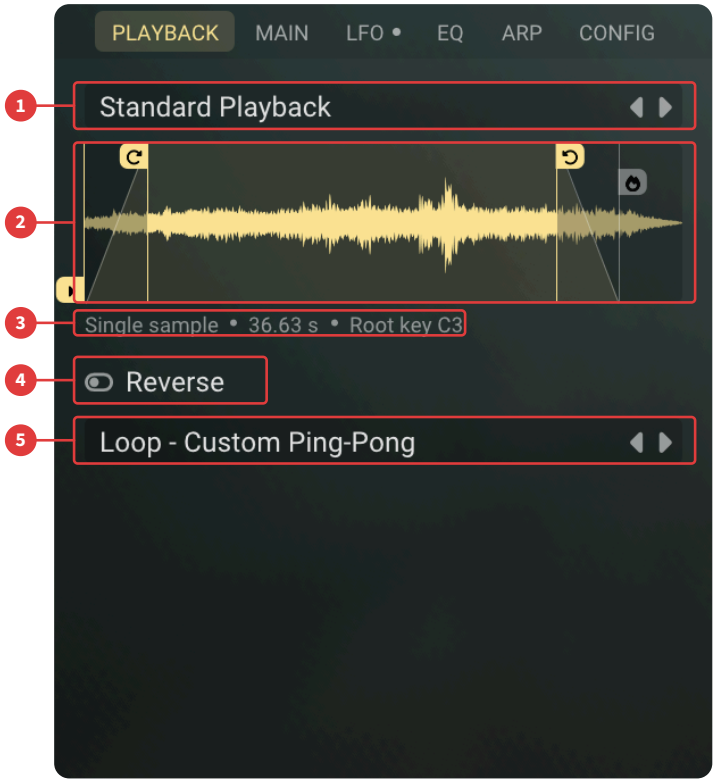
- **EQ** — a three-band equaliser to shape the layer's tone.
- **ARP** — the arpeggiator, which turns held notes into rhythmic patterns.
- **CONFIG** — how the layer responds to your playing: transpose, pitch bend, keytracking, monophonic, MPE, key ranges and the velocity curve.

Right-click a tab to copy, paste or reset all of its settings at once. Copy a tab on one layer and paste it into another to give both layers the same settings, or reset a tab to start it afresh.



Playback Tab

The *PLAYBACK* tab controls how the layer plays its Instrument's samples: straight through, rebuilt into textures by the granular engine, or looping for as long as you hold a note.



1. **Play mode** — there are three modes:
   - *Standard Playback* plays each sample straight through (or loops part of it).
   - *Granular Playback* uses granular synthesis, with the point the grains come from moving through the sample at a speed you choose (and looping, if a loop is set).
   - *Granular Fixed* also uses granular synthesis, with the point the grains come from set directly by a *Position* control rather than moving on its own.
2. **Waveform display** — for a single-sample Instrument, this is the sample itself. A multi-sampled Instrument contains many samples, so this shows the one from the most recent note (or a representative one until you play). If notes change too quickly to follow, it pauses on a recent sample, shown with a checkered overlay. When you play, red markers track each voice through the sample. The waveform often has looping controls as well.

   Most of Mutant Piano's Instruments are a single sample. *Mutant Trash Kit* and the Menus (*Hits Menu*, *Scrapes Menu* and *Subs Menu*) are kits instead: each key plays a different sound.

   - **Sample start** ▸ — the arrow on the bottom edge of the waveform sets where playback begins. Drag it to skip the beginning of the sound; the skipped part is shaded. If you move it into the audio, a few milliseconds of *Attack* on the volume envelope avoids clicks. It isn't available for sliced Instruments.
3. **Sample info** — shows whether the Instrument is a single sample or a multisample, with details such as the number of samples, or a single sample's length and root key.

4. **Reverse** — play the samples backwards. It works in every play mode, with or without looping. The waveform flips to match, so playback always runs from left to right.
5. **Loop mode** — choose how the sound loops, if at all. For example, you can use the Instrument's built-in loops, or set your own loop points on the waveform. Hover over the selector to see what the current setting does for this Instrument, and why some options may be unavailable.

Floe comes with a few simple built-in waveforms (oscillators). Many of the controls above don't apply to them, and so are hidden. Since they're algorithmic waveforms, the red voice markers are placed left to right by pitch instead of moving through a sample.

Granular synthesis

As well as playing samples the usual way, from start to finish, each layer can switch to the granular engine. Granular synthesis plays lots of small snippets of the sample, called grains. Each grain can come from a different part of the sample, and play in a different direction, at a different pitch, or from a different place in the stereo field. It can completely transform a sample.

It's particularly good at smooth, lush textures. You can isolate a tiny fraction of a sample, such as one particular tonal moment, and hold it for as long as you like by running lots of grains over it. It's just as good at crackly, gritty textures, or at sparse ones where the grains are spread out so you can hear each one coming from a different point in the sample.

The granular engine works with any sampled Instrument. For each note, the grains come from the sample that note would normally play.

Granular synthesis uses randomness to keep the grains spontaneous and natural-sounding, rather than a mechanical, machine-gun-like repetition. Because of that, the sound can vary from note to note. When you want the same result every time, you have full control over that too: see Reproducibility.

The two granular modes

Choose a granular mode from the play mode menu at the top of the tab, where *Standard Playback* is the usual way of playing samples.

- **Granular Playback** — the point the grains come from travels through the sample at a steady speed, set by *Speed*. Use it to slow a sample down or speed it up without changing its pitch. It's not as precise as a dedicated time-stretching algorithm, but it gives a grainy or lush kind of time-stretch that's useful in its own right. Turn *Speed* right down and the playhead barely moves, so a sample only a couple of seconds long can give you a whole minute of slowly changing texture. *Speed* at 100%, the centre of the knob, is the sample's original speed, and the playhead still follows the sample start, looping and *Reverse* settings.
- **Granular Fixed** — instead of *Speed* there's a *Position* knob, which picks a precise point in the sample for all the grains to come from. *Spread* sets how wide that region is.

Apart from *Speed* and *Position*, the two modes have exactly the same controls.

Getting started

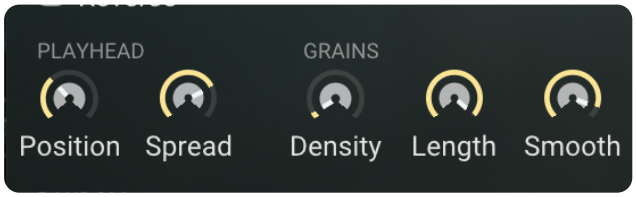
Granular Fixed is perhaps the best place to start, because you can see and hear exactly what each control does.



1. **Share grains** — how grains build up when you play several notes at once.
2. **Variation** — take the element of chance out of the grains.
3. **Waveform display** — shows where the grains come from.
4. **Playhead** — where in the sample the grains come from.
5. **Grains** — the shape of each grain, and how much they overlap.
6. **Random** — how much each grain differs from the next.

Choose *Granular Fixed* from the play mode menu, then use *Position* to pick the point in the sample you want to isolate. The highlighted region on the waveform shows where grains will come from. Play some keys: all the sound you hear is coming from that exact point, and lilac lines on the waveform show each grain as it plays.

From there, try these controls:

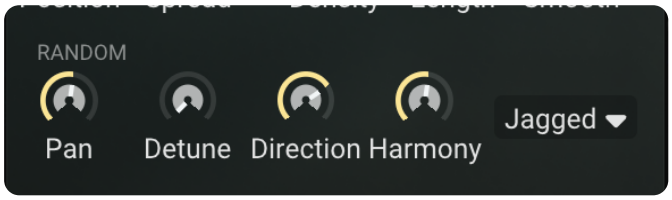


- **Density** — perhaps the next most useful control. It works a bit like an overlap percentage: at 0%, each grain starts as the previous one ends. Turn it up and new grains start sooner, so they overlap more and more, up to 100% where there may be hundreds of grains playing. Low values give an open texture where you can pick out individual grains; high values build a thick, continuous wash. High *Density* uses more CPU.
- **Length** — how long each grain lasts. Short grains chop the sound into a fine, buzzy texture; long grains keep much more of the sample's natural character. *Density* and *Smooth* are both measured relative to *Length*, so changing it changes how they feel too.

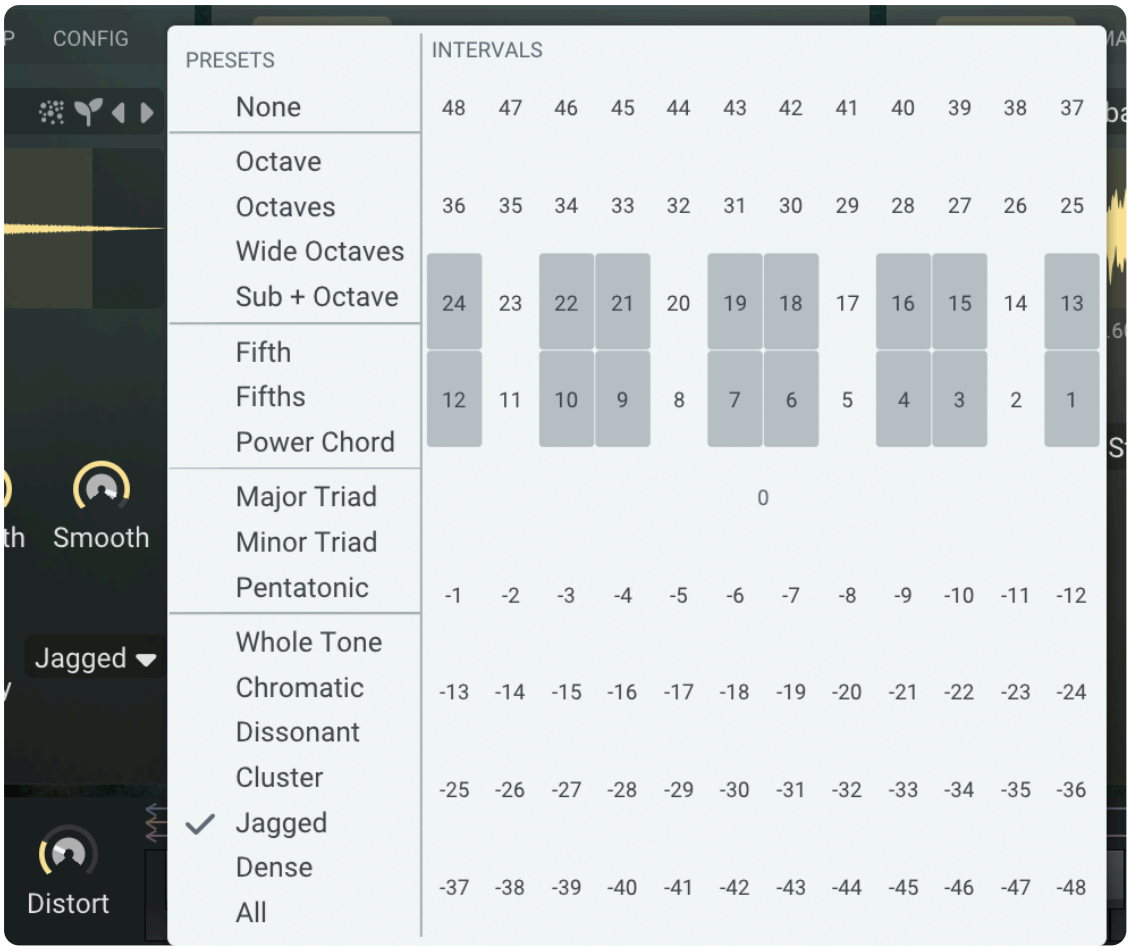
- **Smooth** — how gently each grain fades in and out. High values give a softer texture, with neighbouring grains blending into each other. Low values make grains start and stop abruptly, for a grittier, glitchier texture.
- **Spread** — widens the region that grains can come from, which you can see straight away on the waveform: each grain starts somewhere between *Position* and a point this far past it. A narrow spread gives an isolated, pinpoint tone. Spread it out completely and grains come from all over the sample, for a texture that's much more varied, unexpected and full of different tones.

Random

The controls under the *RANDOM* heading (6) make the texture even more varied. Each grain picks its own settings at random as it starts, within the range you set. At 0% every grain is the same.



- **Pan** — the higher it goes, the more likely grains are to be panned left and right. Especially with a high *Density*, it gives a rich stereo image, with grains spread right across it.
- **Detune** — sets each grain's pitch at random, up to a semitone up or down. Low values give a chorus or unison-like thickness; high values sound obviously out of tune.
- **Direction** — the chance of each grain playing in the opposite direction, backwards if the playhead is going forwards. At 100%, each grain is equally likely to play either way.
- **Harmony** — the chance of a grain playing at a musical interval from the note you played. It works with the *Intervals* menu beside it, and does nothing until you've chosen at least one interval there. For example, click *12* in the menu's grid and some grains will play 12 semitones (an octave) above your note; turn up *Harmony* and more of them will. Click a selected interval again to turn it off. You can pick lots of intervals at once, or choose a preset such as *Wide Octaves*, *Major Triad* or *Pentatonic*. The note you played is always included. It's a great way to make lush, interesting tones.

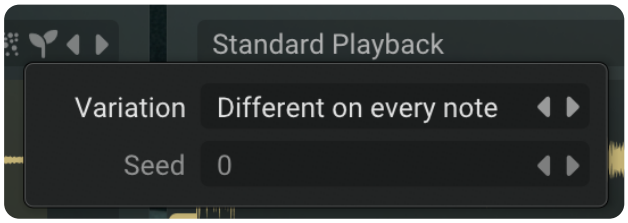


Share grains

The button just to the right of the mode's name, showing a cloud of dots (1), chooses how grains build up when you play several notes at once. Hover over it to see which way it's set. It's there for both granular modes.

- **Shared grains** — the number of grains stays the same however many notes you play. If you're after a sparse texture, it stays sparse even when you play a whole chord. Each grain plays from one of the held notes, so at a low *Density* you can hear the grains hop between the notes of the chord. This is the default setting.
- **Per-voice grains** — every note you play adds its own full set of grains. If your *Density* setting gives 20 overlapping grains, a second note adds another 20, so the sound gets denser, and possibly louder, with each note.

Variation



Each grain picks its starting point, pan, detune and so on at random, so every note you play scatters its grains differently. That keeps a granular sound alive, but it also means a pattern of grains you love might not come back. *Variation* lets you make the grains the same every time instead.

Click the button (2), to the right of the share grains button, and choose one of these:

- **Different on every note** (default) — every note scatters its grains differently. The best choice for most sounds, especially dense, textural ones. Even in this mode, you can get reproducible renders of your DAW track, see Reproducibility.
- **Identical on all notes** — every note plays exactly the same grains. Hold a chord and each note plays them at its own pitch. With shared grains, the notes take turns, so you hear the same grains come back at different pitches.
- **Identical on each key** — each key gets its own pattern of grains. C3 always sounds the same, D3 always sounds the same (but is different to C3), etc..

With either *Identical* option, the *Seed* number picks which pattern repeats. Try a few numbers until you find one you like. It's saved with the preset, so the grains you chose are the grains everyone hears. The button lights up while one of the *Identical* options is chosen.

See Reproducibility for more on seeds, and on making a whole performance come out the same every time in your DAW.

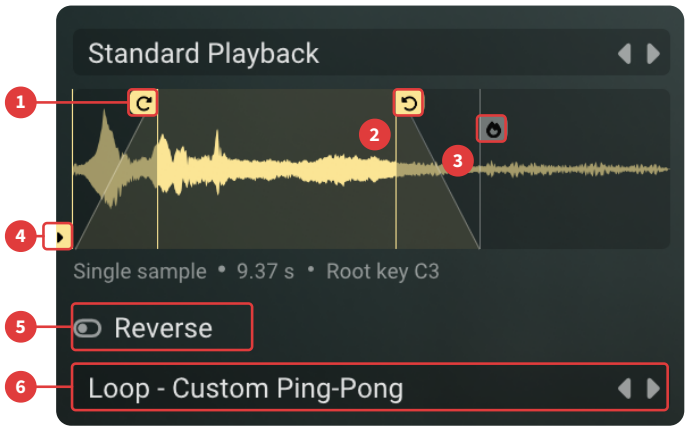
Granular tips

- In *Granular Fixed* mode, the point the grains come from only moves when *Position* does. To make it wander through the sample on its own, set the LFO's target to *Grain Position*: the LFO sweeps *Position* back and forth, so the texture keeps changing as you hold a note. Or link *Position* to a macro to move it by hand as you play.
- The volume envelope, filter, EQ and effects all shape the granular sound just as they would in *Standard Playback*.
- When designing a sound, try *Identical on all notes* with a low *Density* and step through a few *Seed* values. Once you hear a grain scatter you like, save the preset and it's kept exactly.

Looping

You can loop part of a sample for as long as you hold a note. Even a short sample can then sustain indefinitely, or you can pick out a section that has some movement in it, so the sound cycles through it over and over. You have full control over where the loop sits and how smoothly it joins up.

Looping works in *Standard Playback* and in the *Granular Playback* granular mode.



1. **Loop start** — where the loop begins.
2. **Loop end** — where the loop finishes, and playback goes back round.
3. **Crossfade** — how smoothly the loop joins up.

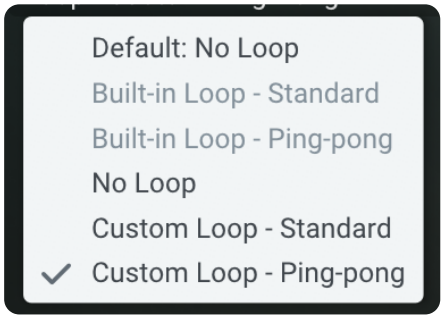
4. ▸ **Sample start** — where playback begins when you press a key. It isn't part of the loop, but it lives alongside it.
5. **Reverse** — play the samples, and the loop, backwards. The loop end then appears on the left and the loop start on the right, though the loop points themselves don't change.
6. **Loop mode** — how the sound loops, if at all.

Loop modes

There are two modes of looping:

- **Standard** — when playback reaches the loop end, it jumps back to the loop start, optionally smoothing the jump with a crossfade.
- **Ping-pong** — uses the same start and end points, but at each end of the loop the playback direction reverses, so it goes back over what it just played, the other way.

Choose the loop mode from the selector (6). Which options are available depends on the Instrument. Some let you set your own loop points, some come with loops already built in, and some keep that control to themselves, such as sounds that are perfectly sustained or already loop.



- **Default** — let the Instrument decide: each sound loops, or doesn't, just as it was designed to. The menu shows what that means for the current Instrument.
- **Built-in Loop - Standard** and **Built-in Loop - Ping-pong** — use the loop points that come built into the Instrument, looping in the direction you choose.
- **No Loop** — each sound plays straight through.
- **Custom Loop - Standard** and **Custom Loop - Ping-pong** — set your own loop points on the waveform.

Options that aren't available for the current Instrument are dimmed: hover over one to see why. Some Instruments have no built-in loops, for example, or don't allow custom loop points, or have sounds that must always loop. The selector itself shows what's actually happening, and hovering over it explains the current setting. The arrows beside it, ◂ and ▸, step through only the options that are available.

Setting your own loop

Choose one of the *Custom Loop* modes, and the loop's handles appear on the waveform. Drag the loop start (1) and loop end (2) to set where the loop sits. The highlighted region between them is the part that loops. Drag inside the region to move the whole loop without changing its length.

The handles work like Mutant Piano's other controls: double-click one to type an exact value, `shift`-drag for finer control, and `ctrl`/`cmd`-click to reset it. Double-clicking the highlighted region types a value for the loop start.

For a multi-sampled Instrument, the loop points are positions through the sample, as a percentage of its length. Whichever sample a note triggers, it loops between those same percentages.

With a built-in loop on an Instrument that has just one sample, the handles show where the loop sits, but they're greyed out and can't be moved. To set your own, choose one of the *Custom Loop* modes.

Crossfade

A loop can click as playback jumps from one point in the sample to another. The crossfade (3) blends the audio across the join to smooth it out. A small crossfade usually helps, especially for sustained or tonal sounds. Drag its handle to change it.

- In *Standard* mode, the crossfade happens as playback nears the loop end, blending into the audio just before the loop start. Its handle sits inside the loop.
- In *Ping-pong* mode, the crossfade smooths each turnaround, blending in the audio just beyond the loop point. Its handle sits outside the loop.

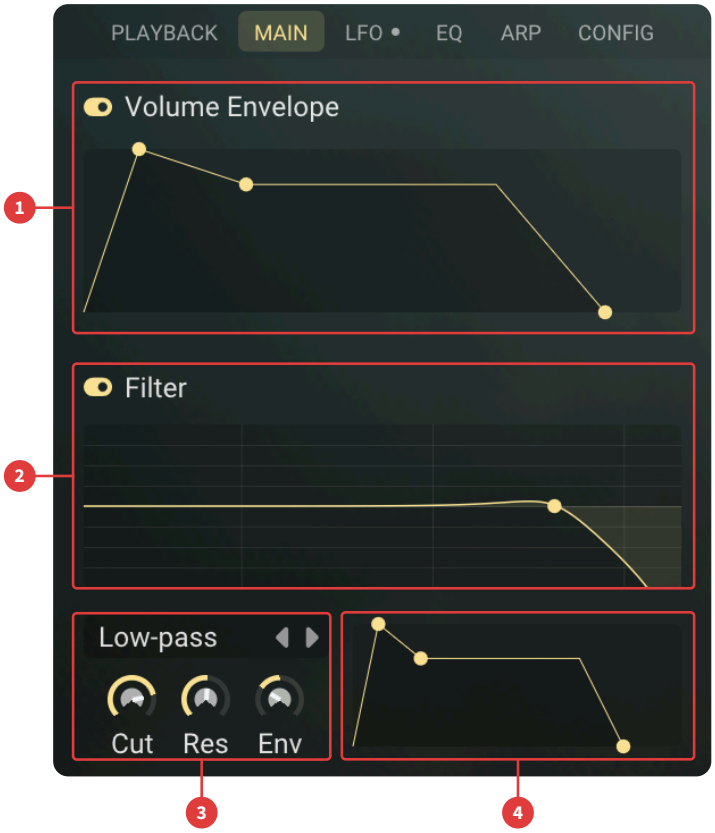
The crossfade needs audio before the loop start to blend in from, so it can't be used while the loop starts at the very beginning of the sample: its handle is greyed out until you move the loop start later. The crossfade also has to fit within the loop and the sample, so it shrinks automatically if you make the loop too small for it. In *Ping-pong* mode, it also needs room after the loop end.

Looping tips

- Looping needs the volume envelope to be on. With it off, nothing would ever bring a looping note to an end.
- Pitch is changed by speeding up or slowing down playback. So the higher you play, the faster the loop cycles, and the lower you play, the slower. In *Granular Playback* mode, the loop cycles at the rate set by *Speed* instead.
- In *Granular Fixed* mode the grains always come from the *Position* you choose, so there's no looping and the loop controls are hidden.
- A loop can be moved by a macro. The highlighted region then shows where the loop actually is, while the handles stay at their own settings.

Main Tab

The *MAIN* tab shapes how each note's volume and tone change over time, using the volume envelope and the filter.



1. **Volume envelope** — its switch and graph.
2. **Filter** — its switch and graph.
3. **Filter controls** — *Type*, *Cut*, *Res* and *Env*.
4. **Filter envelope** — shapes how the cutoff moves over time.

Volume envelope

- **On/off** — the volume envelope is typically best left on. If you turn it off every note plays its sample straight through to the end, however briefly you press the key: handy for one-shot sounds that should always be heard in full. Looping is disabled while the envelope is off. And since notes can't be cut short, voices can pile up and use a lot of CPU if you play quickly.
- **Envelope graph** — drag its three points to shape each note's volume over time: the first sets the *Attack*, the second the *Decay* and *Sustain* together, and the third the *Release*.

Filter

Each note gets its own filter, so the filter envelope and the LFO can sweep every note independently. It's a clean, digital-sounding state-variable filter (12 dB per octave). For broader tone shaping, see the EQ tab.

- **On/off** — switch the filter on or off.

- **Filter graph** — shows the filter's response. Drag the point left and right to set the cutoff, and up and down for the resonance.
- **Type** — choose the kind of filter, such as low-pass, high-pass or band-pass. Hover over the options in the menu for a description of each.
- **Cut** — the cutoff frequency, where the filter takes effect. The filter envelope and LFO move the cutoff around this setting. If MPE press or slide is routed to the filter (see the CONFIG tab), red marks show each voice's current cutoff.
- **Res** — resonance, which emphasises the frequencies around the cutoff. It never self-oscillates. For the band-pass, notch and band-shelving types it also narrows the band, and for the peak type it sets the size of the boost.
- **Env** — how strongly the filter envelope moves the cutoff on each note. At the centre it does nothing. Turn it up and the cutoff rises and falls with the envelope; turn it down and the cutoff moves the opposite way. With a low-pass filter, for example, a long attack opens the sound up gradually as each note begins.
- **Filter envelope** — works like the volume envelope, shaping how the cutoff moves over time, scaled by *Env*.

LFO Tab

Use the LFO (low frequency oscillator) to add movement to the sound, modulating one of the layer's controls such as its volume or filter cutoff.



1. **On/off** — switch the LFO on or off. A dot on the *LFO* tab shows that it's on.
2. **LFO display** — a live preview of the LFO's shape and speed. Drag it left and right to change *Time*, and up and down to change *Amount*.
3. **Target, Shape and Mode**:
   - **Target** — what the LFO moves: *Volume*, *Filter*, *Pan*, *Pitch* or *Grain Position*. The movement happens around the target's current setting. Some targets need their feature switched on first: for example, the filter must be on for the *Filter* target, and the play mode must be *Granular Fixed* for *Grain Position*.
   - **Shape** — the LFO's waveform. Alongside the classic shapes there are random and plucky ones.
   - **Variation** — appears when a random shape (*Random Steps* or *Random Glide*) is selected. It allows you to remove the element of chance from random movement. *Different on every note* gives each note a fresh random pattern. *Identical on all notes* plays exactly the same pattern every time, chosen by the **Seed** number: try a few until you find a movement you like. It's saved with the preset, so everyone hears the same movement. *Identical on each key* gives each key its own repeatable pattern. In *Free* mode, a note that joins already-sounding notes follows their pattern. The Seed works because the random steps follow a sequence of numbers that only looks random: the Seed is where that sequence starts. Learn more about seeds and reproducibility on the Reproducibility page.
   - **Mode** — with *Retrigger*, every note starts the LFO from the beginning of its cycle. With *Free*, a new note joins in wherever the layer's sounding notes have reached, so all the notes move together.

4. **Amount and Time**:
    - **Amount** — how far the LFO moves its target. Negative values flip the shape upside down. If MPE press or slide is routed to the LFO amount (see the CONFIG tab), red marks show each voice's current amount.
    - **Time** — how long each cycle lasts. With *Sync* on, it's a note length at your DAW's tempo, such as 1/4; a D means dotted and a T means triplet. With *Sync* off, it's a speed in Hz.
    - **Sync** — tie the LFO to your DAW's tempo. Both the synced and free *Time* settings are remembered, so you can switch between them without losing either.

EQ Tab

The *EQ* tab has a three-band equaliser for shaping the layer's tone before it's mixed with the other layers.



1. **On/off** — switch the EQ on or off. A dot on the *EQ* tab shows that it's on.
2. **EQ graph** — shows the combined effect of all three bands. Drag a band's point to move it, use your mouse scroll wheel over it to change its resonance, or right-click it to change its type or copy and paste the whole band. For band types without a gain control, dragging up and down changes the resonance.
3. **Bands** — the three bands have identical controls:
    - **Type** — a peak or shelf for boosting and cutting, a notch for removing a narrow slice, or a pass filter for rolling off one end of the spectrum.
    - **Freq** — where the band does its work: the centre of a peak or notch, the corner of a shelf, or the cutoff of a pass filter.
    - **Reso** — how tightly the band is focused. For peaks and notches it's the width; shelves use it to steepen their corner, and pass filters to add a peak at the cutoff.
    - **Gain** — how far the band boosts or cuts. Only the peak and shelf types use it.

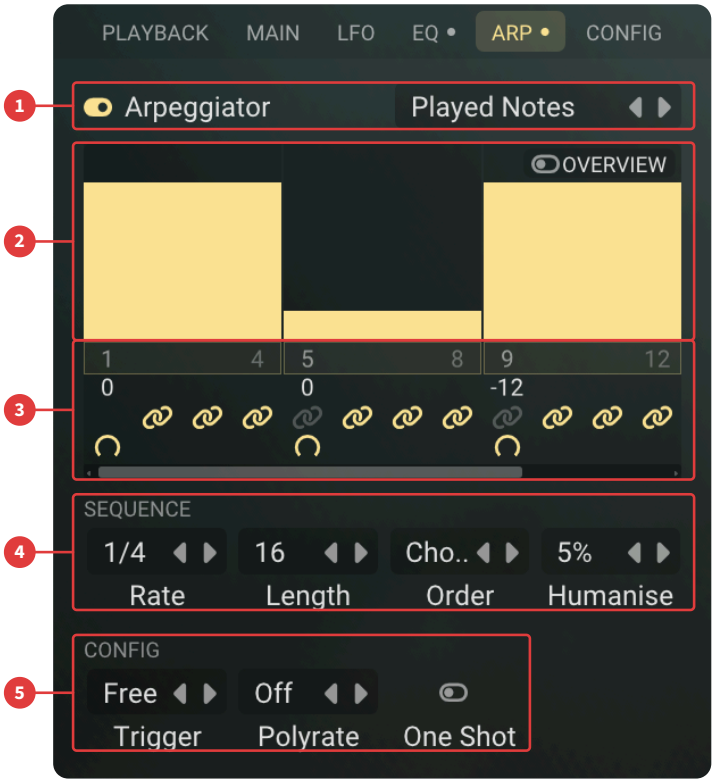
Arp Tab

The arpeggiator turns the notes you hold down into a tempo-synced rhythmic pattern. You choose how fast the steps go, the order the notes of your chord are played in, and the velocity, length, and pitch of each step.

Every layer has its own arpeggiator, so you can build sounds with several rhythmic parts playing off each other: fast, high hits over slow, booming drums, say, or a melody over a pulsing bass. With a couple of arpeggiated layers, a single preset can drive a whole track.

Switch the arpeggiator on and hold a chord: you'll hear its notes play one after another in a rhythm. Each step triggers the layer's Instrument just as if you'd played the note yourself; each step runs through all the layer's usual settings, such as its play mode, volume envelope, filter and LFO.

The arpeggiator lives on each layer's *ARP* tab. A dot on the tab shows that it's on.



1. **On/off and mode** — the *Arpeggiator* switch, and a menu choosing where the steps get their notes from: *Played Notes* or *Fixed Notes*.
2. **Velocity bars** — one bar for each step, setting its velocity. Click and drag to change them, or drag sideways across the bars to draw a whole pattern in one go.
3. **Step settings** — under each bar, from top to bottom, are the step number (click it to turn the step on or off), its pitch, a tie to the previous step, and its gate.
4. **Sequence** — the step *Rate*, the pattern's *Length*, the note *Order* and *Humanise*.
5. **Config** — *Trigger*, *Polyrate* and *One Shot*, plus the *Record* button in *Fixed Notes* mode.

While the arpeggiator is off, its controls are greyed out.

The step sequencer

Velocity bars

The height of each bar (2) is that step's velocity — typically, that's how loud the step is played. The taller the bar, the louder the step. Use this to accent every 4th step, for example.

`ctrl`/`cmd`-click a bar to reset it, or `ctrl`/`cmd`-drag across several to reset them all.

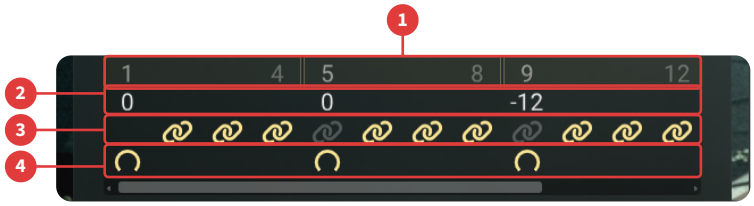
There are a few things that are good to know about velocities in Floe.

Velocity usually corresponds to volume, but how much depends on the layer's velocity to volume curve on the *CONFIG* tab. That curve sometimes doesn't start at zero, so even the lowest bar may still be heard quietly.

In *Played Notes* mode, whilst the step's velocity is a major factor, how hard you play the note that triggers the sequence also plays a part — it scales the step velocities down. In other words, when you play the triggering note as softly as possible (MIDI velocity 1), the step velocities will be 50% as intense. When you play as hard as possible (MIDI velocity 127), the step velocities reach their full intensity. This upholds the natural way you use velocity on a keyboard. Play at full velocity to make the step velocities the only thing that matters. In *Fixed Notes* mode, how hard you play is ignored.

Step settings

Under each velocity bar is a column of smaller controls (3):



1. **Step number** — click to skip the step, leaving a gap in the pattern. A skipped step keeps its other settings, so you can bring it back later. It still ends the note before it, just as an active step would.
2. **Pitch** — drag up or down to nudge the step's note. In *Played Notes* mode it's an offset in semitones from whichever held note the step plays. In *Fixed Notes* mode it's the exact note the step plays. Double-click to type a value.
3. **Tie** — the link icon joins the step to the previous one, so they play as one longer note. Use ties to place some long notes among the short ones.
4. **Gate** — the small knob sets how long each note lasts, as a proportion of the step. Pull it right down for short, percussive notes; at 100% the notes run into each other for a more legato feel. Remember that the volume envelope's release on the layer's *MAIN* tab may affect what you hear.

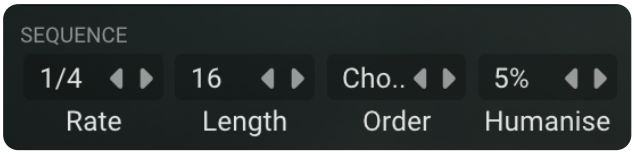
More step options

Right-click a velocity bar for a menu of options for that step: reset it, apply its settings to all the steps, reset all the steps, or rotate the whole pattern forwards or backwards by one step. Right-click a pitch or gate control to type a value or reset it, or to apply it to every step or reset it on every step.

When the pattern has more steps than fit across the tab, scroll sideways to see the rest; while it plays, the view follows the current step. Alternatively, click *OVERVIEW* in the top-right corner to squeeze every step on screen at once. You can still draw velocities there, but the other step settings are hidden until you switch back.

Sequence controls

The *SEQUENCE* section (4) sets the shape and feel of the whole pattern:

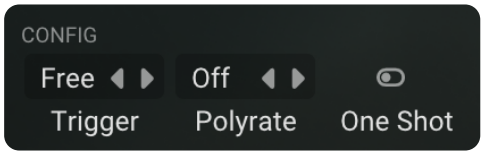


- **Rate** — how long each step lasts, as a note length at your DAW's tempo. The T and D suffixes are triplet and dotted divisions, useful for swung or lopsided patterns. Together with *Length* it decides how long the pattern takes to come round: eight steps at 1/8 fills one bar of 4/4.
- **Length** — how many steps the pattern runs through before it loops. Steps beyond the length are hidden but keep their settings, so you can shorten a pattern and lengthen it again without losing anything.
- **Order** — how the notes you're holding are shared out across the steps. The options include going from lowest to highest or highest to lowest, bouncing between the two, playing at random, and some less common shapes. Hover over the options in the menu for a description of each. *Chord* is the odd one out: it plays every held note together on each step, which is ideal for rhythmic stabs and percussion. Not available in *Fixed Notes* mode.
- **Humanise** — nudges each step's timing and velocity by a random amount, to counteract the machine-gun effect of perfectly identical steps. A few percent takes the mechanical edge off; higher settings give a much looser, hand-played feel. Steps are only ever pushed later, never earlier.

Humanise works especially well with *Chord* order: instead of every note of the chord starting at exactly the same instant, they spread out slightly, for a more natural, wider sound.

Config controls

The *CONFIG* section (5) sets how the pattern responds to your playing:



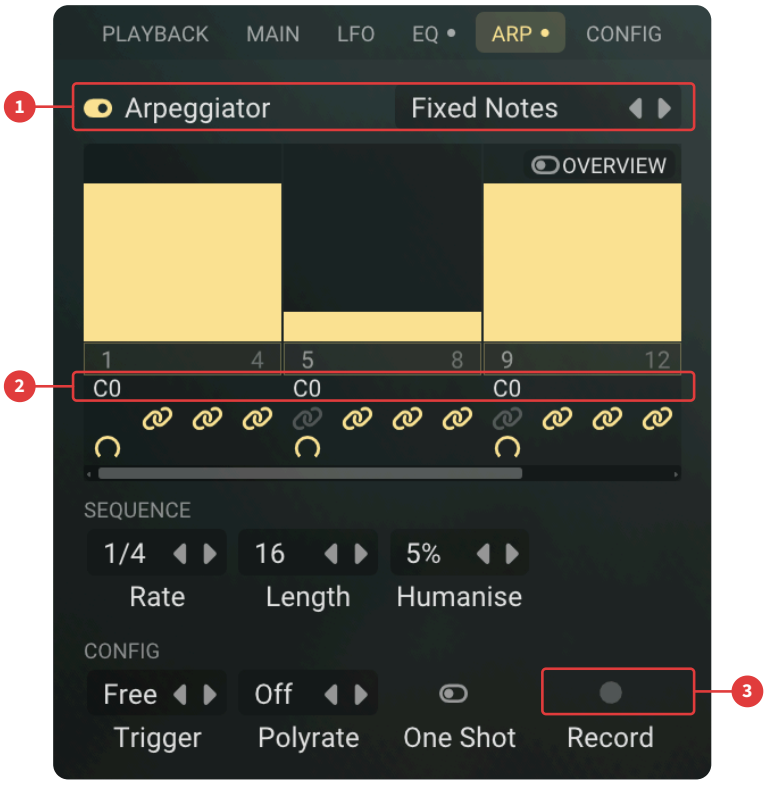
- **Trigger** — what a new note does to a pattern that's already running. *Free* is usually the one you want: the pattern carries on, so you can change chord underneath it without breaking the groove. *Retrigger* restarts the pattern from the first step every time you press a note, which keeps it locked to your playing. In both modes, letting go of every key (and the sustain pedal) resets the pattern, so the next chord starts from the first step.
- **Polyrate** — gives each octave of the notes you're holding its own speed, so one chord can produce several interweaving rhythms. The octave starting at middle C (C3) plays at the *Rate*, and the octaves above and below scale from there. *Double at octaves* is particularly good: each octave up plays twice as fast as the one below. *3:2 at octaves* and *4:3 at octaves* create polyrhythms, where the octaves drift apart and meet up again. Hold two notes an octave apart to hear it most clearly.
- **One Shot** — the pattern plays through once and stops, rather than looping for as long as you hold the notes. It's handy for fills and one-off flourishes. To play it again, release the keys and press again, or use *Retrigger*.
- **Record** — in *Fixed Notes* mode only; see below.

Played Notes and Fixed Notes

The menu next to the *Arpeggiator* switch (1) chooses where the steps get their notes from.

Played Notes arpeggiates whatever you're holding. Each step plays one of your held notes, chosen by *Order*, moved up or down by the step's pitch offset.

Fixed Notes ignores which notes you play, and each step plays a specific note that you set. You still hold a key to make the pattern run, but which key doesn't matter. Every step starts on C3, and you can set each one to any note by dragging its pitch.



1. **Mode** — the menu beside the *Arpeggiator* switch, set to *Fixed Notes*.
2. **Step notes** — each step's note, shown by name. Drag one up or down to change it.
3. **Record** — play the pattern in from your keyboard.

Fixed Notes works especially well with the Menus presets, where each key plays a different sound: try *Mutant Trash Kit*, *Hits Menu*, *Scrapes Menu* or *Subs Menu*.

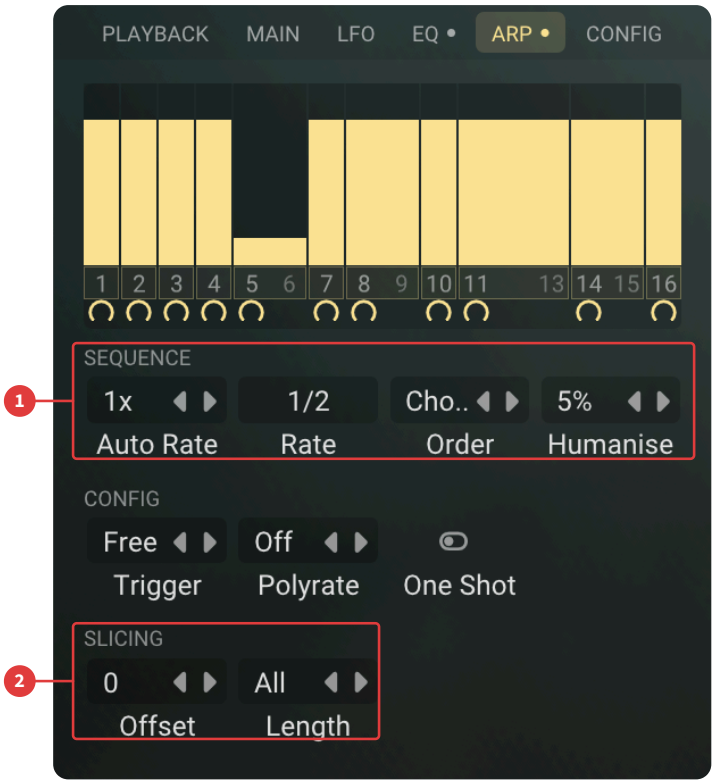
You can also play the pattern in with the *Record* button (3) in the *CONFIG* section. Click it, then play notes on your keyboard in your own time: each note you press lands on the next step. Recording stops by itself once the last step is filled, or you can click again to stop early. Only the notes are recorded; each step keeps the velocity, gate and tie you've already set. While recording, your notes play normally rather than through the pattern.

In *Mutant Trash Kit*, for example, the bass drums are on the white keys from C0 and the snares on the white keys from C1: play C0, C1, C0, C1 for an alternating pattern.

Sliced loops

Some Instruments are sliced loops: rhythmic loops marked up with slice points. The arpeggiator is what powers them: each slice becomes a step, so the loop plays in time with your DAW at any tempo. Because each slice is played as it was recorded, rather than being time-stretched, the loop still sounds natural even when your tempo is a long way from the one it was recorded at.

With a sliced Instrument loaded, the arpeggiator is always on, and the *ARP* tab changes a little:



- The *Arpeggiator* switch, mode menu and *Length* are hidden.
- Each step has its velocity bar, step number and gate, but no pitch or tie: ties are set for you, so slices longer than one step play in full.
- **Auto Rate** appears in the *SEQUENCE* section (1). It picks the step rate for you, so the loop plays close to the speed it was recorded at rather than leaving silent gaps between slices. It's most useful when making presets: the preset keeps the same feel whether it's loaded into a 60 BPM track or a 170 BPM one. While it's on, the chosen rate is shown in place of the *Rate* menu. The multiplier shifts that choice: *2x* for double speed, *0.5x* for half, with dotted and triplet variants for a different feel. Set it to *Off* to choose the rate yourself.
- A *SLICING* section (2) appears. **Offset** picks which slice the pattern starts from, so you can begin part-way into the loop: an easy way to get a fresh groove out of a familiar loop. **Length** sets how many slices play before the pattern loops back to the offset, wrapping round the end of the loop if it needs to. Set it to *All* to play every slice. Looping a short run of slices turns a long loop into a tight, repeating figure.

Auto Rate and tempo changes

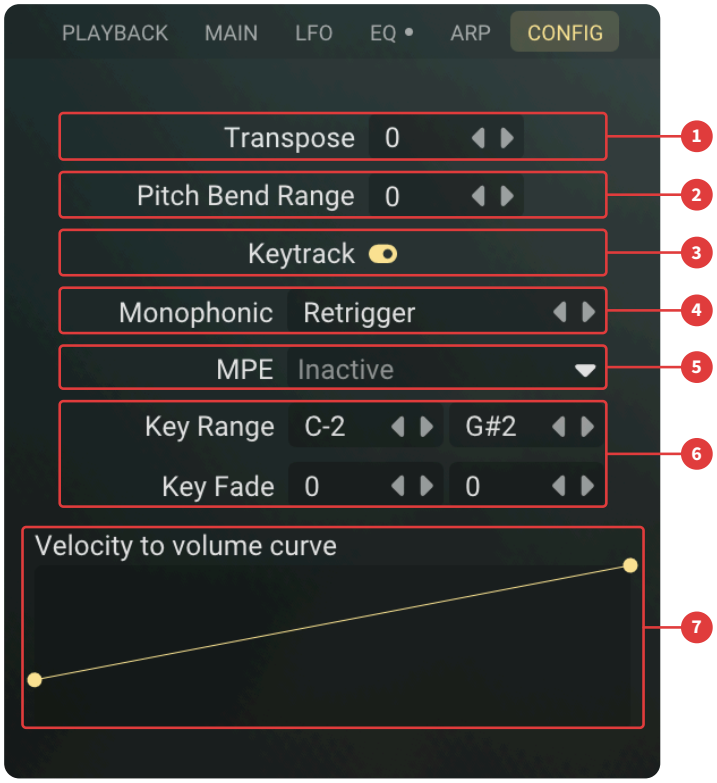
You may notice that raising the tempo sometimes makes a loop using *Auto Rate* play slower, and lowering it can make it play faster: for example, a loop can feel faster at 147 BPM than at 148 BPM. That's because *Auto Rate* aims to play the loop at roughly the speed it was recorded at, where it sounds most natural, with the fewest silent gaps or overlaps between slices. It can only choose from the tempo-synced note lengths, so when the tempo moves far enough from the loop's own speed, it switches to whichever note length is now closer. Every layer using *Auto Rate* switches at the same tempos, so they stay in the same rhythmic relationship.

Good to know

- The pattern starts the moment you press the first key, and runs whether or not your DAW is playing. It follows your DAW's tempo, but it isn't lined up to its bars and beats.
- The sustain pedal counts as holding notes, so it keeps the pattern running.
- The layer's key range applies to the notes the arpeggiator plays, not the keys you hold. In *Played Notes* mode a step whose note lands outside the range is silent.
- The *Monophonic* setting has no effect while the arpeggiator is running.
- In *Free* mode with *Chord* order, press the notes of a chord at the same moment. If one arrives slightly late, the first step plays without it, and it joins on the next step. When playing from your DAW, quantising the recorded notes lines them up so every step plays the whole chord.
- Right-click the *ARP* tab to copy and paste the whole arpeggiator, steps included, to another layer.

Config Tab

The *CONFIG* tab sets how the layer responds to your playing: which keys it uses, and how it follows velocity, pitch bend and MPE controllers.



1. **Transpose** — shift the layer in semitones, as if you'd played a different key. For an Instrument that's a single sample, this re-pitches it just as *Pitch* in the layer header does. For one with a different sound on each key, such as a drum kit, it changes which sound each key plays.
2. **Pitch Bend Range** — how far the pitch wheel bends this layer, in semitones. Each layer has its own, so one layer can bend a whole tone while another ignores the wheel entirely.
3. **Keytrack** — with it on, higher keys play higher pitches. Switch it off and every key plays the sample at its recorded pitch, which suits drum hits, loops and sound effects.
4. **Monophonic** — what happens when notes overlap. *Off* is polyphonic: every note gets its own voice. *Retrigger* plays one note at a time, with each new note releasing the previous one. *Latch* holds on to the first note, ignoring any new ones, until you let go of every key: useful for drones and textures. Because it's per layer, one layer can play one note at a time while another stays polyphonic. While the layer's arpeggiator is on, this setting has no effect.
5. **MPE** — choose what an MPE controller's press (channel pressure) and slide (CC74) control on this layer, such as volume, filter cutoff, timbre or LFO amount, and by how much. Negative amounts reverse the response. Timbre has no effect on Mutant Piano's Instruments. MPE must be switched on in the Performance Controls panel first. See MIDI for details.
6. **Key Range** and **Key Fade** — give the layer its own portion of the keyboard, with soft edges if you like.
7. **Velocity to volume curve** — how hard you play turns into how loud each note sounds. Steepen the curve for a wider dynamic range, or flatten it to even out your playing. When you play, a red line shows where your note landed.

Key ranges

Key ranges let you split the keyboard into zones, with each layer responding to specific keys. Use them to split the keyboard, stack zones on top of each other, or crossfade smoothly from one sound to another as you play up the keys.

Setting up key ranges

Key Range is the lowest and highest note the layer plays, and *Key Fade* is how many semitones it takes to fade in at the bottom of the range, and to fade out at the top. Drag a value up or down, click its arrows (◀ ▶), or double-click to type it in (a note name, for the range).



Fades are what make smooth transitions possible: overlap two layers' ranges by a few notes, fade the lower layer out and the upper layer in across the overlap, and one sound crossfades into the other as you play up the keyboard.

To play a different part of a multi-sampled Instrument's mapping, use *Transpose* on the same tab. It shifts which samples are triggered, so higher or lower samples play, while the layer's *Pitch* re-pitches the audio by speeding it up or slowing it down. *Transpose* doesn't move the key range itself.

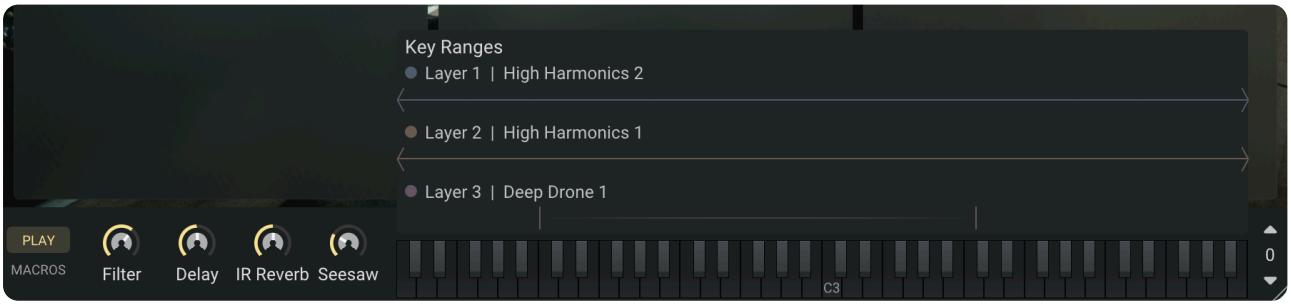
Key range display

A bar above the keyboard at the bottom of the interface shows which keys trigger each layer, with colours corresponding to each layer. Only layers with an Instrument loaded appear. The bar is hidden when every layer uses the full keyboard range (C-2 to G8), unless an Instrument has named ranges (see below).



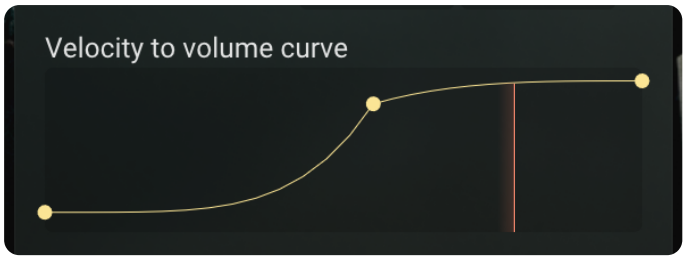
On the *Layers* and *Effects* pages, the keyboard shows a section of the full 128 keys: use the octave controls to scroll it, and the bar scrolls with it. The *Perform* page shows a wider, fixed stretch of nine octaves. Vertical lines mark where each range starts and ends, and small chevrons show when a range carries on past the visible keys. Fades show as gradients on the bars: the more transparent, the quieter.

Hover over the display to see an enlarged view with more detail. An Instrument can also have named ranges, such as the name of the sound on each key, or each group of drums in a kit. They appear as thicker capsules, labelled in the enlarged view.



Velocity to volume curve

Each layer has its own *velocity to volume curve*, which shapes how hard you play (MIDI velocity) into the volume of each note.



How the curve works

The horizontal axis is velocity — far left is the softest possible velocity (MIDI value 1), far right is the hardest (MIDI value 127). The vertical axis is the resulting note volume. When you play a note, a red indicator appears at its velocity position on the curve so you can see where you're playing.

While notes are sounding, each active voice also gets a red line on the layer's volume slider, showing the level that voice is playing at, once the curve, any key range fade and any MPE volume expression are taken into account.

A straight line from bottom-left to top-right gives a natural response: the harder you play, the louder the note.

Move, add or remove points, or reshape the curve between them, to change this relationship: make soft playing louder than it would be naturally, cap the volume of hard hits, or create a non-linear response that emphasises a particular dynamic range.

The curve pictured above is one example. The softest notes stay quiet, the volume climbs steeply as you play a little harder, then it levels off so the hardest hits can't get much louder.

Setting different curves across the three layers also opens up creative sound design — for example, fading one layer in as you play harder while another fades out.

By default the curve doesn't start at zero, so even the softest notes still make a quiet sound. Drag the left-most point down to the bottom if you want the softest notes to be silent.

Editing the curve

- **Double-click** anywhere on the curve to add a control point (up to 8 in total)
- **Drag control points** to move them
- **Drag between points** to adjust curve shape
- **Double-click a point** to remove it
- **Shift-drag** for finer control
- `ctrl`/`cmd`**-click** a point to reset its height, or between points to reset that stretch's shape
- **Right-click** to add or remove points, copy and paste the curve between layers, or reset it

Effects Page



The *Effects* page is where you colour the whole sound. The three layers are mixed together and then passed through a single rack of effects, from top to bottom. Use them lightly to add some space or warmth, or push much further with heavy distortion, filtering and modulation to take the sound somewhere new. There's 12 effects available. Each can be used once in the rack, in whatever order you like.



1. **Switchboard** — every effect listed in order, each on its own card. Tick a card's checkbox to add that effect to the rack.
2. **Rack** — the effects that are in use, with their controls.
3. **Effect name** — drag it to move the effect up or down the chain. Right-click for more options.
4. **Mix, remove and bypass** — *Mix* sets how much of the effect you hear, ✕ removes the effect from the rack, and ⏻ bypasses it.
5. **All-effect buttons** — these act on the whole rack at once: randomise ⤮, bypass all ⏻, and remove all ✕.

Adding and removing effects

The switchboard (1) lists every effect. Those in the rack are shown brightly with a ticked checkbox; the rest are dimmed.

- **Add an effect** by ticking its checkbox. Doing so will add it to the rack, and the rack will scroll to show it.
- **Remove an effect** by unticking its checkbox, or clicking ✕ next to its *Mix* knob (4). Removing an effect doesn't reset its controls, it will be the same if you re-add it later.
- **Jump to an effect** by clicking its card anywhere other than the checkbox. The rack will scroll to show it, with a brief flash so you can spot it.

Bypassing effects

Bypassing an effect lets the sound pass straight through it while it stays in the rack, ready to switch back on. It's the easiest way to hear exactly what an effect is contributing. A bypassed effect is greyed out and uses no CPU.

Click ⏻ next to an effect's *Mix* knob (4), or the coloured light at the left of its switchboard card, to bypass it. Click again to switch it back on.

The ⏻ button at the top right of the page (5) bypasses every effect in the rack at once, so you can hear your layers without any processing. Click it again to switch them all back on.

Changing the order

The effects run from top to bottom, and the order can make a big difference: a reverb after a distortion gives a clean tail on a gritty sound, while a reverb before it distorts the tail too.

Drag an effect's name (3) up or down the rack to move it. You can also drag the cards in the switchboard: hover over a card and a grip appears to show it can be moved. Because the switchboard also shows the effects that aren't in the rack, after some reordering the effects in use can end up scattered among the unused ones. Right-click the switchboard and choose *Tidy FX Order* to group the effects in the rack at the top, without changing their order.

Mix

Every effect has a *Mix* knob (4). It blends the sound going into the effect with the effect's output. At 100% you hear only the effect's output; turn it down to bring back more of the unprocessed sound. It's a quick way to set an effect's strength without changing its other settings: a touch of reverb, gentle distortion, or parallel compression, say.

The all-effect buttons

The buttons at the top right of the page (5) act on the whole rack:

- **Randomise** — randomly puts each effect in or takes it out of the rack, and shuffles the order. The effects' settings aren't changed. It's a quick way to stumble on combinations you'd never have reached for. Use *Undo* from the top panel if you don't like the result. For bigger changes, including new settings, try the Random Variation strip on the *Perform* page.
- **Bypass all** — deactivates all effects.
- **Remove all** — removes every effect from the rack.

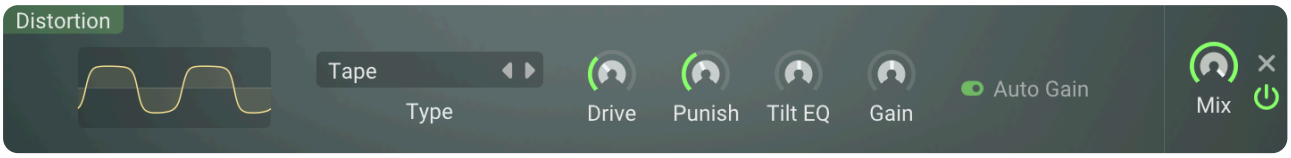
Copying, pasting and resetting

Right-click an effect's name in the rack or its card in the switchboard for a menu to:

- **Copy and paste one effect** — copy an effect's settings, then paste them onto the same effect on another preset.
- **Copy and paste the whole rack** — copy every effect, its order and its settings, then paste them all at once to a new preset.
- **Reset** — return the effect's settings to their defaults.

Copying works between presets: copy from one, load another, and paste. Right-click an empty part of the switchboard or rack for the whole-rack options, and to paste a single copied effect.

Distortion



Distortion adds harmonics to a sound, anything from gentle tape warmth to outright destruction. Choose a character from the *Type* menu, then set how hard you push it with the *Drive* knob. That's the whole workflow; everything else is there to shape the result. The display on the left passes a sine wave through your current settings, so you can see how each type and setting reshapes it.

It runs with 4× oversampling and is anti-aliased to stay clean and musical. It also has built-in gain compensation to keep the level steady as you turn up *Drive* or *Punish*. For the Legacy types, you opt in to this with the *Auto Gain* switch; for the other types it's always on.

- **Type** — the character of the distortion. See below.
- **Drive** — how hard the sound is pushed into the distortion, and the main control for how much distortion you hear. Each step of the knob adds a similar amount. For the Mangle types it also moves the effect itself, so the character changes as well as the intensity.
- **Punish** — stacks extra distortion stages after the first, each driven harder than the last, like an amp cascading its gain stages. Turn it up for a denser, grittier, more compressed drive that holds its character as notes decay.
- **Tilt EQ** — shifts the tone going into the distortion. Turn it up to saturate the highs for a brighter result, or down to push the lows for a warmer, fatter drive.
- **Gain** — a flat level adjustment to the distorted sound, before *Mix* blends it with the unprocessed sound. It's separate from the automatic gain compensation.
- **Auto Gain** — for the Legacy types, holds the loudness steady as you turn up *Drive*. For the other types it's always on.

The types are grouped into two families in the menu. *Bite* types saturate and thicken the sound, from clean warmth to hard clipping:

- **Tape** — warm and smooth. Rounds off the loud peaks while quieter passages and tails stay clean.
- **Valve** — rich, even harmonics that stay musical however hard you push, instead of collapsing into a harsh square.
- **Overdrive** — pedal-style grit with a threshold. A note cleans up as it decays, and playing harder brings the bite in.
- **Hard Clip** — clean, aggressive brickwall clipping.
- **Octave** — adds a hard octave-up edge, then saturates. It squares up on hot notes and follows their dynamics.

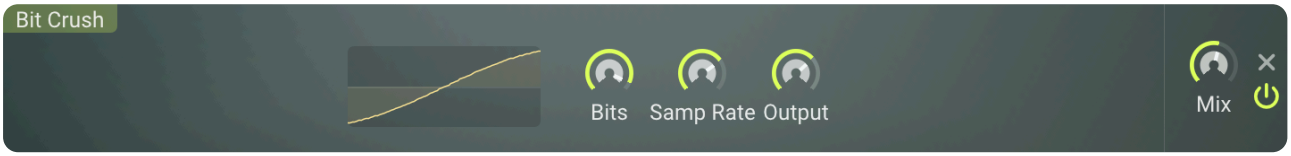
Mangle types are more extreme, tearing the sound apart and adding new tones rather than just thickening it:

- **Bitcrush** — lo-fi digital crunch, made by lowering the effective sample rate. More *Drive* means coarser and grittier.
- **Ring Mod** — multiplies the sound by a low oscillator for clangorous, metallic, bell-like tones. *Drive* raises the oscillator's pitch and deepens the effect.
- **Sine Fold** — folds the wave through a sine curve for interesting, chaotic harmonics.

- **Warp** — an asymmetric shaper that bends the wave lopsidedly into a gritty, off-kilter drive.
- **Wavefolder** — folds the peaks back on themselves for bright, metallic harmonics.

The Legacy types are the original distortion algorithms, kept so that older presets and projects sound the same. They load with *Auto Gain* off to keep their original level; turn it on to give them the same steady loudness as the other types.

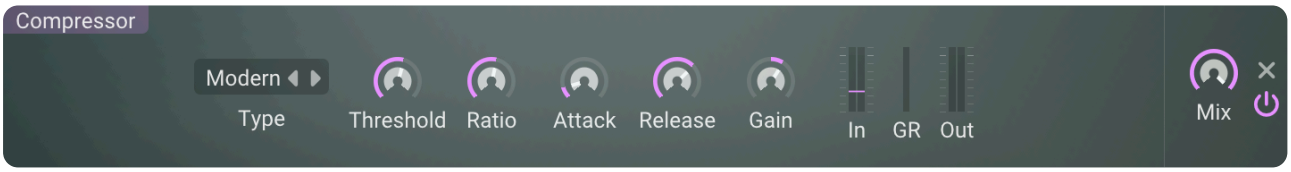
Bit Crush



Bit Crush is a lo-fi effect that degrades the sound in two ways: lowering the sample rate for ringing, metallic aliasing, and lowering the bit depth for gritty noise. The display shows a preview of the crushing applied to a rising test signal. Both controls start at full quality, so turn them down to hear the effect.

- **Bits** — lowers the bit depth, adding a gritty digital noise that's most obvious in quiet passages and tails. At the lowest settings quiet sounds crush to silence, so feed the effect a strong signal.
- **Samp Rate** — lowers the sample rate by holding each sample for longer. Lower rates fold high frequencies back down into ringing, metallic aliasing: the sound of early samplers and retro hardware.
- **Output** — the level after the *Mix* blend.

Compressor

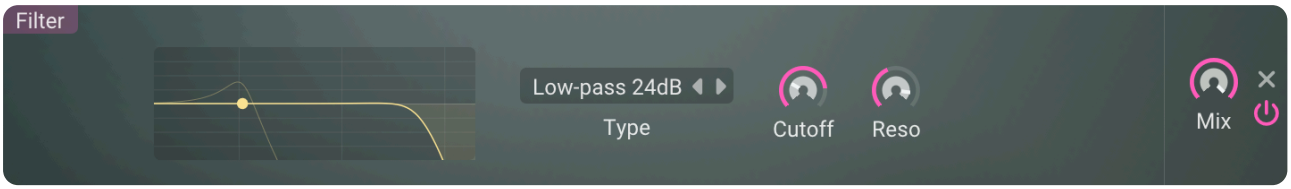


The compressor shapes the dynamics of the sound, evening out the difference between its loud and quiet parts. It has two types, each with its own character.

- **Type** — *Modern* is precise, and gives you the *Attack* and *Release* knobs. *Vintage* has a bit more character, and sets its attack and release for you.
- **Threshold** — the level the sound has to rise above before it's compressed.
- **Ratio** — how strongly the sound is compressed once it's above the threshold. Higher ratios compress more, and above about 2:1 the pumping becomes much more noticeable.
- **Attack** and **Release** (*Modern* only) — how quickly the compressor responds to a rise in level, and how quickly it recovers after the level drops.
- **Gain** — adjusts the level after compression.
- **Auto Gain** (*Vintage* only) — automatically adjusts the level so the sound stays consistently loud however hard it's compressed.

Three meters show what the compressor is doing: *In* is the incoming level, with a marker at the threshold; *GR* (gain reduction) is how much it's turning the sound down; and *Out* is the final level.

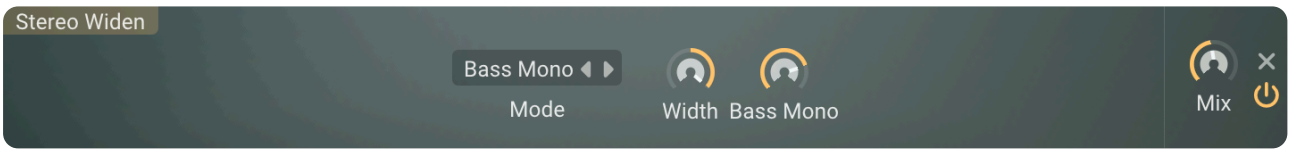
Filter



The Filter cuts away part of the frequency range, or boosts or dips it. It's a single filter across the whole mix; each layer also has its own filter for shaping notes individually (see Layers).

- **Type** — the shape of the filter, such as low-pass, high-pass, band-pass, notch, peak or shelf. The low-pass and high-pass types come in 12 and 24 dB per octave slopes.
- **Cutoff** — where the filter does its work: where the low-pass and high-pass filters roll off from, the centre of the band for band-pass and notch, or the corner for the shelves.
- **Reso** — resonance, which emphasises the frequencies right at the cutoff, adding a peak there on the low-pass and high-pass filters. For band-pass and notch it narrows the band, for peak it tightens the boost, and for the shelves it steepens the corner.
- **Gain** — how far the peak and shelf types boost or cut. It only appears for those types.

Stereo Widen



Stereo Widen narrows the sound towards mono or spreads it out wider. Each layer also has its own *Stereo* control, if you want to widen just one of them.

- **Mode** — how the widening is done. Hover over the options in the menu for a description of each.
  - *Balanced* keeps the loudness the same wherever *Width* is set. It's the one to reach for by default.
  - *Bass Mono* widens in the same way, but keeps everything below the *Bass Mono* frequency in the centre.
  - *Legacy* is the widening from older versions of Floe, kept so that existing presets sound as they always did. It gets louder as *Width* goes up.
- **Width** — negative values pull the sound towards mono, positive values push it wider, and 0% leaves it as it is. It works by rebalancing the mid (what both channels share) against the side (what differs between them). At the far left only the mid is left; at the far right only the side is left, so anything dead centre disappears.
- **Bass Mono** (*Bass Mono* mode only) — the frequency below which the sound is kept in the centre. Holding the low end in the middle keeps kicks and basslines solid, and stops them losing power on mono systems. The split uses a 24 dB per octave Linkwitz-Riley crossover, so the two bands recombine without a dip around the crossover point.

Chorus



The Chorus thickens the sound by layering it with delayed copies that drift in pitch. Gentle settings add a subtle shimmer and movement, while deeper settings give an obvious, tape-like wobble.

- **Rate** — how quickly the pitch drifts up and down. Low settings give a gentle swelling movement, while turning it up gives a quicker, shimmering warble.
- **Depth** — how far the pitch drifts away from the original. Small amounts thicken the sound, while larger amounts give an obvious wobble. At zero, the delayed copies are still there, adding a static colouration.
- **High-pass** — removes low frequencies from the chorused copies, leaving the unprocessed sound untouched. Raise it to keep the bass tight and free from movement.
- **Output** — the level after the *Mix* blend.

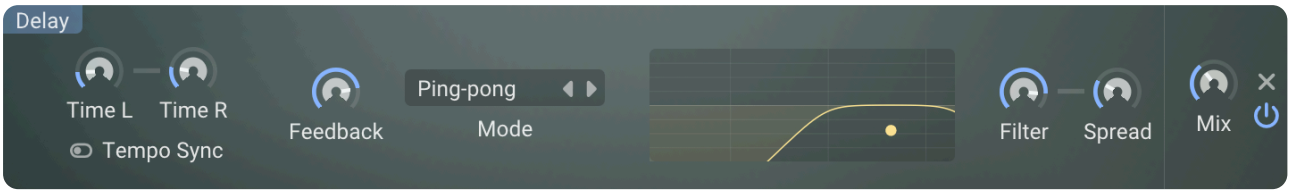
Reverb



The Reverb simulates the reflections of a real space, from a small, tight room to a vast hall that takes many seconds to fade. It can also modulate its tail for a shimmering, moving sound.

- **Pre LP** and **Pre HP** — low-pass and high-pass filters on the sound going into the reverb. *Pre LP* rolls off the highs for a darker, more distant space. *Pre HP* rolls off the lows, keeping the tail clear so the bass stays tight and centred. The unprocessed sound keeps its full range.
- **Lo-Shelf** and **Lo-Gain** — cut the reverb's tail below the *Lo-Shelf* frequency by the *Lo-Gain* amount. The cut builds up as the tail recirculates, so the low end thins out as the reverb fades: handy for stopping long tails clouding the bass. Turn *Lo-Gain* down to hear it work.
- **Hi-Shelf** and **Hi-Gain** — the same for the highs, so they die away first, just as soft furnishings absorb them in a real room.
- **Decay** — how long the tail takes to fade away once a sound stops. It holds steady whatever the *Size*, so you can choose the length of the reverb and the character of the space separately.
- **Size** — how large the space feels. Small values pack the reflections together for a boxy, coloured character; large values spread them out for something open and airy.
- **Predelay** — holds the reverb back for a moment so the unprocessed sound is heard on its own first. Short amounts keep the sound upfront and defined, while longer amounts push the walls further away.
- **Mod Rate** and **Depth** — make the reflections drift, smearing the resonances that build up in the tail. A little *Depth* stops long tails ringing; more gives an obvious shimmer and movement. *Mod Rate* sets how quickly the drift moves: keep it low for a gentle, breathing wash, or turn it up for a quicker, more distinct warble.

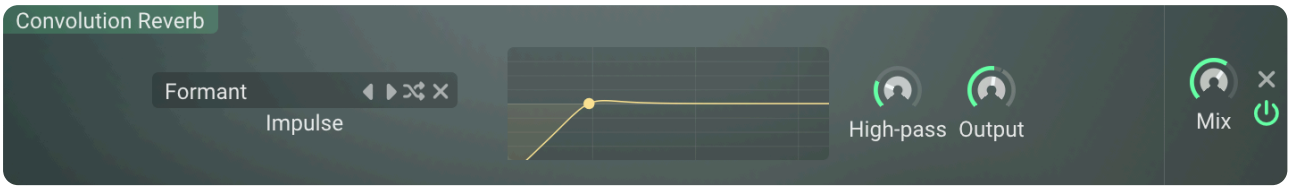
Delay



The Delay is a stereo echo. You can set the left and right times separately, either freely or synced to tempo, bounce the repeats between the speakers with the ping-pong modes, and thin them out with a filter as they fade.

- **Time L** and **Time R** — the gap between the repeats in the left and right channels. With *Tempo Sync* off, they're set freely in milliseconds. Very short times stop sounding like separate echoes and become a metallic, resonant tone instead.
- **Tempo Sync** — sets the times as note lengths that follow your DAW's tempo, keeping the repeats in time with your track.
- **Feedback** — how long the echoes trail on for. Low amounts give a handful of repeats, while high amounts carry on long after the note has gone. It works by feeding each repeat back in to make the next one.
- **Mode** — how the repeats move around the stereo image:
  - *Mono* — both channels repeat at the *Time L* setting, so the echoes sit where the original sound sits in the stereo image. *Time R* is unused.
  - *Stereo* — each channel has its own delay, so setting *Time L* and *Time R* apart spreads the repeats across the stereo image.
  - *Ping-pong* — the sound is summed to the centre, and the repeats then bounce from one side to the other, with *Time L* and *Time R* setting how long each half of the bounce lasts.
  - *Mid ping-pong* — the repeats bounce from side to side as in *Ping-pong*, but the sound keeps its stereo image on the way in. Choose *Ping-pong* for the clearest left-right bounce, especially from a wide sound, and *Mid ping-pong* when you want the echoes to keep some of the original's width.
- **Filter** and **Spread** — a band-pass filter the repeats run through, leaving the unprocessed sound untouched. *Filter* sets the centre of the band and *Spread* its width. Wide open, the repeats stay close to the original sound; narrowed, they squeeze towards the *Filter* frequency. The filter sits inside the feedback loop, so every repeat is filtered again and the echoes thin out as they fade.

Convolution Reverb

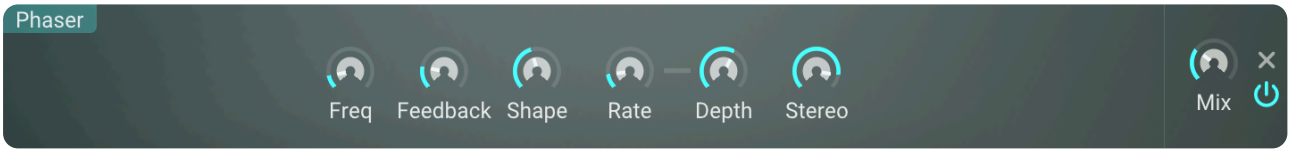


The Convolution Reverb gets all its character from an impulse response (IR): a recording of how a space or object responds to sound. Floe's IRs are chosen for character. Some are realistic spaces, but most are stranger: textures and resonances that can transform a sound, making this as much a sound-design tool as a reverb.

- **Impulse** — click the IR's name to choose one in the IR browser. The arrows beside it, ◂ and ▸, step to the previous or next IR, and ⤮ jumps to a random one. All three follow the filters you've set in the IR browser. ✕ unloads the IR. There's no reverb until one is loaded.
- **High-pass** — rolls off the low end of the reverb to avoid muddy bass, before the *Mix* blend.
- **Output** — the level after the *Mix* blend.

Floe always has its own built-in IRs, and Mutant Piano adds more of its own.

Phaser



The Phaser sweeps a series of peaks and notches through the sound, giving it the classic swooshing, jet-like motion. Gentle settings add a subtle sense of movement to sustained sounds, while faster or more resonant ones become an unmistakable whoosh.

- **Freq** — the centre of the sweep. Keep it low for a deep, throaty movement, or raise it to place the phasing amongst the brighter harmonics.
- **Feedback** — sharpens the peaks and deepens the notches. Small amounts keep it a gentle swoosh, while higher amounts give the sweep a resonant, whistling edge.
- **Shape** — how many peaks and notches there are. Turned down, there's a single broad one for a soft, vowel-like sweep; turned up, there are more of them for a richer, more obvious phasing.
- **Rate** — how quickly the peaks sweep up and down. Low settings give a gentle, drifting movement, while turning it up makes the sweep a warble.
- **Depth** — how far the peaks travel either side of *Freq*. Small amounts give a narrow, shimmering movement, while larger amounts sweep across the whole spectrum. With *Depth* all the way down, the peaks hold still, leaving a fixed colouration that you can sweep by hand with *Freq*.
- **Stereo** — offsets the left and right sweeps from each other so the movement drifts across the stereo image. At zero both channels sweep together; at maximum they sweep in opposite directions, for a wide, swirling feel.

EQ



The EQ is a three-band equaliser for lifting or taming parts of the frequency range, from broad tonal shaping to surgical cuts. Each layer also has its own EQ (see Layers).

The graph shows the combined effect of all three bands. Drag a band's handle to move it, scroll over it to change its resonance, or right-click it to change its type or copy and paste the whole band. The three bands have identical controls:

- **Type** — a peak or shelf for boosting and cutting, a notch for removing a narrow slice, or a low-pass or high-pass filter for rolling off one end of the spectrum.
- **Freq** — where the band does its work: the centre of a peak or notch, the corner of a shelf, or the cutoff of a pass filter.
- **Reso** — how tightly the band is focused. For peaks and notches it's the width, from broad and gentle to tight and focused. The shelves use it to steepen their corner, and the pass filters to add a peak at the cutoff.
- **Gain** — how far the band boosts or cuts. Only the peak and shelf types use it.

Limiter



The limiter is a brickwall limiter: it holds your output firmly below a maximum level, whether you just want to catch stray peaks or push the overall level up without clipping. It's usually best placed last in the rack, so it catches everything above it.

- **Gain** — drives the sound harder into the limiter. The harder you push, the more it's limited, making the sound louder and denser.
- **Ceiling** — the level the output is never allowed to go above. Leave a small safety margin below 0 dB, giving headroom for whatever comes after Floe.

Three meters show what the limiter is doing: *In* is the incoming level, *GR* (gain reduction) is how much it's turning the sound down, and *Out* is the final level.

It's a true-peak limiter, so the *Ceiling* is a reliable maximum for the output. It looks a fraction of a millisecond ahead in the audio so it can react before a peak arrives. The delay is so small (0.5 ms) that Floe absorbs it rather than asking your DAW to compensate for it, so you don't need to do anything about it.

Thanks to that short lookahead, the limiter is fast and transparent for moderate amounts of limiting. Push it hard and there's less room for the gain change to ramp smoothly, so you may start to hear it colour or slightly distort the sound. If that happens, back off the *Gain* or raise the *Ceiling* a little.

Controls

Almost everything you shape is done with knobs and sliders, and they all work the same way.

Knobs and sliders

- **Drag** — click and drag up or right to increase the value, down or left to decrease it. Use whichever direction feels natural.
- **Fine adjustment** — hold `shift` while dragging for four times finer control. You can press or release `shift` mid-drag.
- **Reset** — `ctrl`-click (`cmd`-click on macOS) to return the control to its default value.
- **Type a value** — double-click to type an exact number. You can typically use abbreviations like `2k` instead of 2000 Hz.
- **More options** — right-click for a menu of extra actions (see below).

When you hover over a control it lights up, and its current value appears below it. Pause on it for a moment and a short description appears too, with a reminder of these shortcuts underneath. Both are adjustable in the ⚙ preferences: *Show tooltips* turns the descriptions off, and turning off *Instant value readouts* makes the value appear only after a moment or while you're dragging.

Sometimes controls are greyed out — showing it currently has no effect; such as a filter knob while the filter is switched off.

Reading a knob

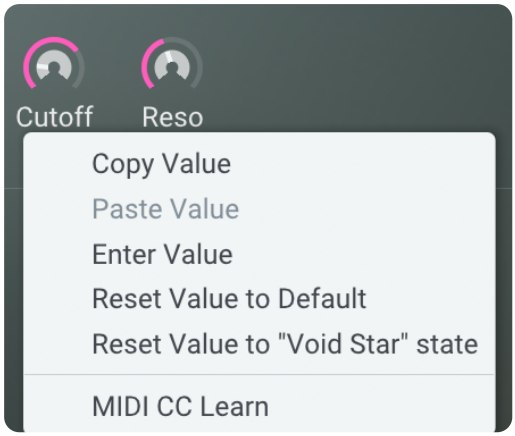
A knob shows its value in two places: the line on the dial, and the coloured arc around the edge.

These 2 aspects can differ when a macro is controlling the knob. The dial shows the knob's own setting, the one you drag. The coloured arc shows the value you actually hear once the macros have been applied. Hover over the knob to see both readouts.



Here, a macro is raising the Filter's *Cutoff*. The dial points to where the knob is set, while the arc reaches further round, to the cutoff you hear.

The right-click menu



Right-click any knob or slider for extra actions, including:

- **Copy Value** and **Paste Value** — carry a setting from one control to another.
- **Enter Value** — type an exact value, the same as double-clicking.
- **Reset Value to Default** — the same as `ctrl`/`cmd`-click.
- **Reset Value to "..." state** — appears when you've loaded a preset, and names it. It returns just this control to how the preset had it.
- **MIDI CC Learn** — link the control to a knob or fader on your MIDI controller. See MIDI.

Some controls add their own shortcuts. A layer's *Pitch*, for example, has *+1 Octave* and *-1 Octave*, and *Detune* can fold whole semitones into *Pitch*.

Many sections have a right-click menu of their own too. Right-click a layer's tab, an envelope or an effect to copy, paste or reset the whole section at once: a quick way to give two layers the same filter settings, for example.

Menus, buttons and number fields

- **Menus** — click to open the list of options. The arrows either side, ◂ and ▸, step to the previous or next option, which is a quick way to audition them. Hover over an option in the open menu to see what it does.
- **Buttons** — click to switch on or off. Most can be right-clicked for more options.
- **Number fields**, such as a layer's *Pitch* — drag them like a knob, double-click to type, or use the arrows beside them (◂ ▸).

Menus reset to their default with `ctrl`/`cmd`-click, just like knobs.

Graphs

Envelopes, filters and EQs have graphs with points you can drag directly. Dragging a point is simply another way of moving the knobs beneath it. Everything above still applies: `shift` for fine adjustment, `ctrl`/`cmd`-click to reset, double-click to type.

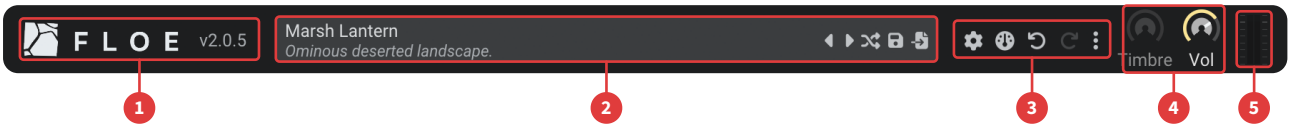
Hover over a point to see exactly what it controls. On a filter point, for example, moving left and right changes the cutoff, and moving up and down changes the resonance. On some points, such as the EQ bands, the mouse wheel adjusts the resonance.

Undo

Every change you make can be undone. Use the *Undo* and *Redo* buttons in the top panel to step back and forth through your edits.

Top Panel and Main Menu

The top panel runs along the top of Mutant Piano's window and stays there on every page. It holds the things that apply to the whole sound rather than to one page: the current preset, undo and redo, the master controls and the output meters, along with the buttons that open Floe's other windows.



1. **Logo and version** — the version of Floe you're running. If you turn on *Show instance name* on the *General* tab of Preferences, this instance's name appears after it.
2. **Preset box** — the current preset's name and description, with buttons to step through presets, save, and load a preset from a file. Click the name to open the preset browser. See The preset box.
3. **Buttons** — Preferences, Performance Controls, undo and redo, and the main menu.
4. **Timbre and Volume** — the master controls, which act on everything you hear.
5. **Meters** — the level of the final output.

Buttons

- **Preferences** — settings for Floe itself rather than for your sound, such as how the interface looks and where your sounds and presets are installed. They're saved on your computer and apply to every instance of Floe.
- **Performance Controls** — how you play Floe: mostly MIDI settings, plus options for making performances exactly reproducible. They're saved with this instance in your DAW project, and loading a preset never changes them. See Performance Controls.
- **Undo** — step back through your changes to the sound, including tweaks to controls and loading Instruments or effects, so you can experiment freely. Hover over the button to see which change it will undo.
- **Redo** — bring back a change you've just undone. If you make a new change instead, there's nothing left to redo.
- **Main menu** — more options, and Floe's other windows. A red dot on the button means a new version of Floe is available: see Updating.

Master controls

- **Volume** — the final stage of the sound. It comes after the effects rack, so it sets the overall level of everything just before the audio leaves Floe.
- **Timbre** — sweeps between an Instrument's crossfade layers. Mutant Piano's Instruments don't use crossfade layers, so this knob stays greyed out.

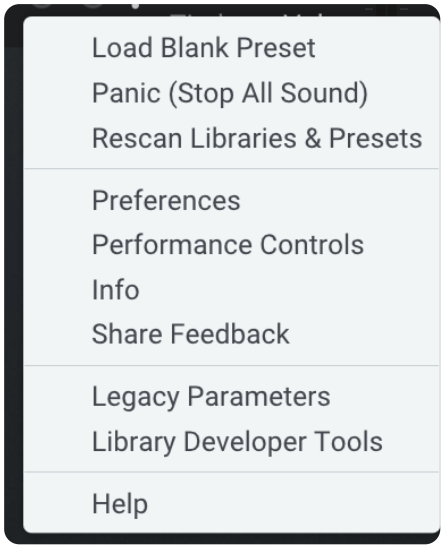
Meters

The peak meter (5) shows the level of the final output, measured after the master *Volume*. It flashes red if the signal clips above 0 dB.

There's also an optional loudness (LUFS) meter, mostly useful if you're making presets and want them to sit at a consistent level. Turn on *Show Loudness (LUFS) meter* on the *General* tab of Preferences, and hover over it for details.

The main menu

Click ⋮, the last of the buttons (3), to open the main menu.



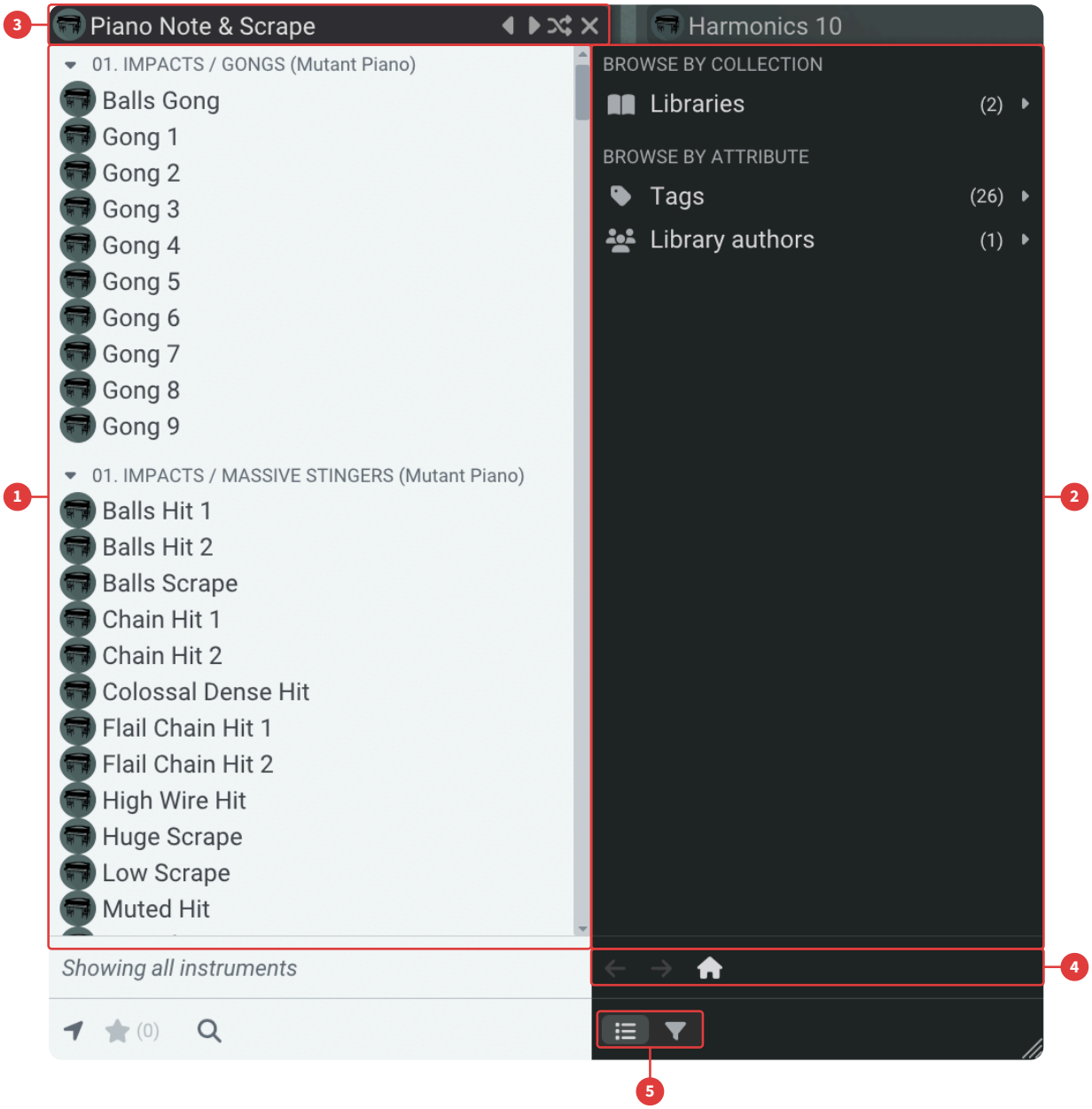
- **Load Blank Preset** — return every setting to its default and clear all the Instruments and IRs, ready to build a sound from scratch. Remember, if you need it, ↺ *Undo* brings back what you had.
- **Panic (Stop All Sound)** — stop all audio and clear every playing note. Handy if a note gets stuck.
- **Rescan Libraries & Presets** — Floe notices new and changed files in its folders by itself, but if something you've added doesn't show up, this makes it look through every folder again.
- **Preferences** and **Performance Controls** — the same as the buttons in the top panel.
- **Info** — the *Libraries* tab shows what's installed and is where you can uninstall it. The other tabs show your version of Floe and whether an update is available, the legal notices, and some metrics, such as how many voices are playing and how much memory the samples use.
- **Library Terms of Use** — open the license file that comes with each of your installed libraries. It sets out how you're allowed to use the sounds.
- **Share Feedback** — send a message to the developers, such as a bug report or an idea. See Share feedback.
- **Legacy Parameters** — controls kept from older versions of Floe so that projects made with them still sound the same. You only need this window if a control shows a yellow badge. See Legacy Parameters.
- **Library Developer Tools** — tools for people making their own sample libraries for Floe.
- **Help** — open Floe's documentation website, or the user manual of any installed library that comes with one. A library's manual can also be opened from its card in the *Libraries* tab of the Info window.

Browsers

The browsers help you find the right items quickly, without scrolling through long lists. Think of them as supercharged drop-down menus.

There are three browsers, and they all work the same way. Each one opens when you click the name of the item it loads:

- **Preset browser** — click the preset's name in the top panel, which is there on every page.
- **Instrument browser** — click the Instrument name at the top of a layer, on the *Layers* page.
- **IR browser** — click the IR name in the Convolution Reverb effect, on the *Effects* page.



1. **Items** — the light panel on the left lists everything you can load. Click one to load it.
2. **Narrowing down** — the dark panel on the right is for narrowing down the list on the left, such as to one tag.
3. **Selector** — the box you clicked to open the browser. It stays usable while the browser is open.

4. **Navigation** — step back and forth through the pages of the right-hand panel.
5. **Mode** — switch the right-hand panel between browse mode and filter mode.

Loading items

Click an item (1) to load it. The browser stays open, so you can try one sound after another, playing as you go. Once you've loaded something, the browser closes by itself as soon as you move the mouse away from it. You can also double-click an item to load it and close the browser in one go, or close it at any time by clicking outside it or pressing `escape`.

While the browser is open, the selector you clicked (3) can still be used: ◀ previous, ▶ next, 🔀 random and ✕ unload, where it has them.

Hover over an item for a moment to see more about it, such as its description.

Favourites

If there are items you keep coming back to, mark them as favourites. Hover over an item and click the ★ next to its name. The star stays lit to show it's a favourite. To see only your favourites, click the ★ in the toolbar at the bottom of the list. Click it again to see everything. Favourites are shared by every instance of Floe, so anything you star in one project is there in the next.

The list of items

The left panel (1) starts off showing everything, and shrinks as you narrow it down with the right panel.

Beneath the list, a line of italic text says what you're looking at, such as *Showing all instruments*. As you narrow things down it changes to match. Each part of it that narrows the list has a ✕: click one to remove it.

At the very bottom is a small toolbar:

- ➤ — jump to the item that's currently loaded. The right panel jumps to where it came from, too.
- ★ — show only your favourites.
- 🔍 — search. As you type, the list shows only the items containing your text. `ctrl+F` (`cmd+F` on macOS) opens it too.

Narrowing down

The right panel (2) has pages that you click through to narrow down the list. In the Instrument browser, for example, you might click *Browse by attribute*, then *Tags*, then one of the tags. The list on the left then shows only the Instruments with that tag. Numbers in brackets, such as *(26)*, show how many items each option holds.

The first page offers two ways in. *Browse by collection* narrows down by where items come from. *Browse by attribute* narrows down by their properties, such as their tags or who made them.

As you click through the pages, a trail of the pages you've visited builds up at the bottom of the panel (4) — a bit like a web browser. Click any step to jump back to it, or click 🏠 to go back to the first page. The ← and → arrows step back and forth.

Right-click menus

Right-click items in the browsers for options to do with their files:

- **A preset** — open the folder it's in, make it your default preset, or send it to the bin.
- **A preset bank or folder** — open it in your file manager, or uninstall it.
- **A sample library** — open its folder, or uninstall it. See Uninstalling.

Keyboard navigation

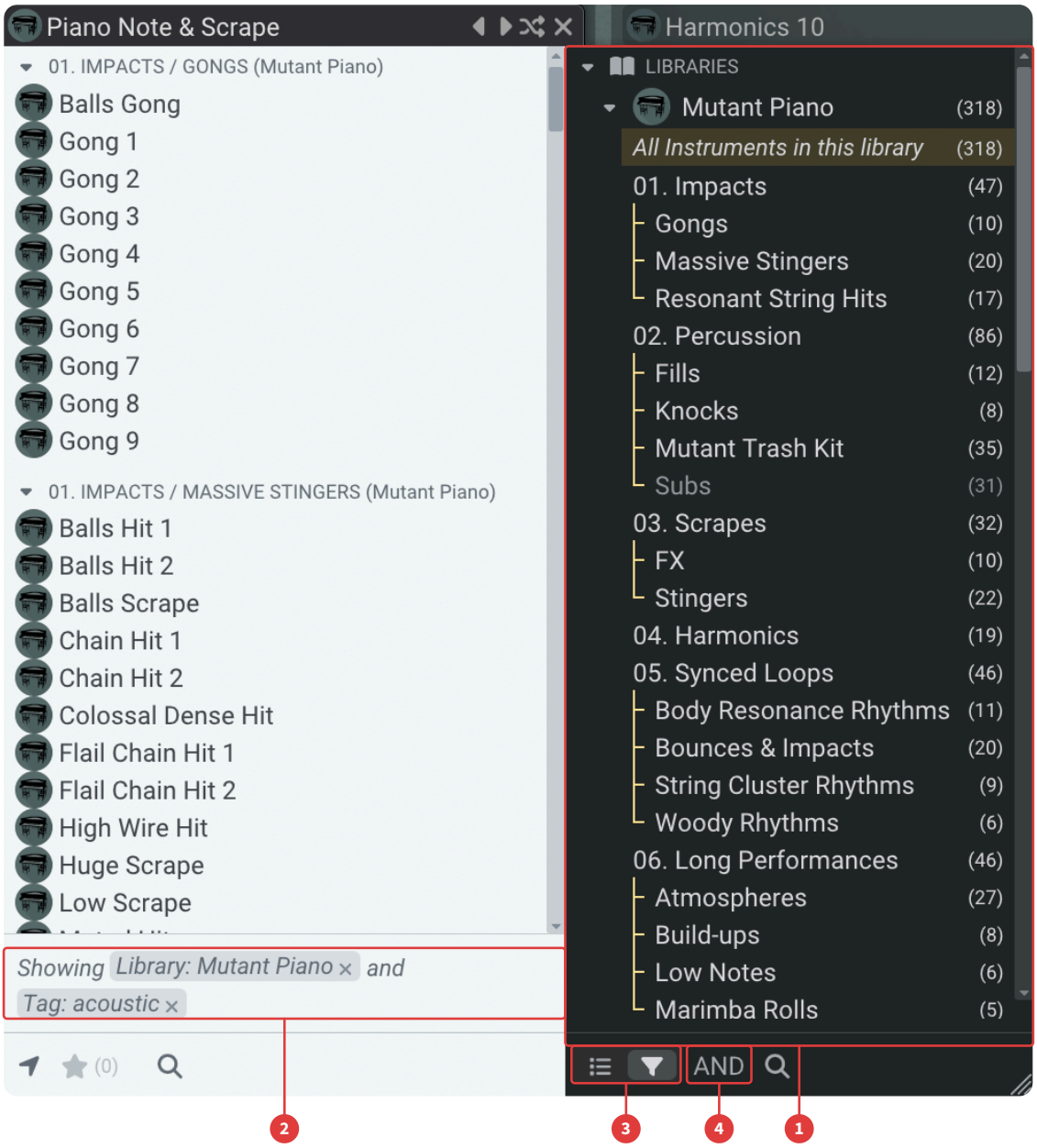
You can use the browsers from your computer keyboard. The focused item gets a blue outline, which appears once you press an arrow key.

- `up`/`down` move through the list.
- `enter` clicks the focused item.
- `tab` moves between the left and right panels.
- `left`/`right` move along the trail at the bottom of the right panel.
- `ctrl`+`F` (`cmd`+`F` on macOS) opens the search.
- `home`/`end` jump to the start or end of the list.
- `ctrl`+`up`/`down` (`cmd` on macOS) jump to the previous or next folder.
- `page up`/`page down` jump 8 items at a time.

Filter mode

Browse mode, where you click through one page at a time, is all most people need. When you know exactly what you're after, filter mode goes further: it lets you combine several ways of narrowing down at once, such as showing only Instruments that have two particular tags.

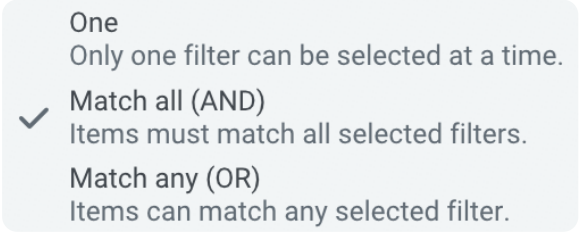
Switch to it with the ▼ button (5), and back to browse mode with ☰.



1. **Filters** — every option in one tree, rather than pages to click through. Click a ▸ to open a section, then click the options you want.
2. **Summary** — what's currently showing. Click the ✕ next to a filter to remove it.
3. **Mode** — switch between browse mode and filter mode.
4. **Matching** — choose how your filters combine.

The list on the left updates as soon as you click an option.

Choose how the filters combine with the button next to the mode switch (4):



- **Match all (AND)** — the one you'll usually want. Only items that match every selected filter are shown, so the more filters you choose, the shorter the list gets. Filters that would leave nothing to show are greyed out, so you don't hit dead ends.
- **Match any (OR)** — items that match any of the selected filters are shown, so the more filters you choose, the longer the list gets.
- **One** — only one filter at a time, like browse mode but with the tree layout.

Filter mode has its own search, at the bottom of the right panel, for finding a filter in the tree, such as the *aggressive* tag.

Filter mode pairs well with the random button: narrow the list down to the kind of sound you're after, then jump around within it for inspiration. See Randomisation.

Tips

- The previous, next and random buttons ( ) always stay within the list you've narrowed down to, whether the browser is open or closed. On the *Perform* page and in the top panel, the preset arrows follow the preset browser in the same way.
- Drag the bottom-right corner of a browser to resize it. To make room for longer names, drag the line where the two panels meet. Double-click either to reset it.
- Each layer's Instrument browser remembers its own settings. On the *Layers* page, set up each one the way you like, perhaps the first narrowed to the *bass* tag and the second to *keys*. Then click the button that randomises every layer, and each one jumps to a random Instrument within its own selection.

Keyboard

The bottom panel of Mutant Piano's window is home to the on-screen keyboard. It's there on every page, and it's a quick way to see which notes are coming in, how many voices each one is playing, and which keys play which layer. You can click it to play notes too.



1. **Tabs** — *PLAY* shows the keyboard and macros. *MACROS* shows the panel where you set up the macros.
2. **Macros** — the four macro knobs, the same ones as on the *Perform* page. A greyed-out macro has nothing linked to it. See Macros.
3. **Key range bars** — which keys play each layer, shown when any layer is limited to part of the keyboard.
4. **Keys** — held notes light up, and red marks along the top show the voices sounding on each note.
5. **Octave** — scroll the keyboard up or down to see a different part of the note range.

On the *Perform* page, the bottom panel is simpler: there are no tabs, macros or octave controls, and the keyboard stretches across the whole panel to show nine octaves at once.

Playing notes

Click a key to play it. Where you click sets the velocity: near the top of the key for the softest note, lower down for harder. A clicked note plays just like a note from your MIDI keyboard, so the layers' key ranges, the arpeggiator and everything else apply as usual.

Throughout the UI we label middle C (MIDI note 60) as C3. But some DAWs call that note C4.

What the keyboard shows

The keys light up when you play, whether that's from your MIDI keyboard, your DAW, or a click, on any MIDI channel.

The red marks along the top of a key show the voices currently sounding on that note. A note can have more than one voice, such as one for each layer, and the mark gets stronger the more voices there are. Marks often linger after you let go, because each voice plays on through the release of its volume envelope.

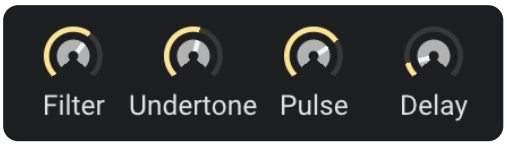
If you've set a *Reset keyswitch* in Performance Controls, that key has a blue marker along its bottom edge. See Reproducibility.

Key range bars

When a layer is limited to part of the keyboard, the bars above the keys (3) show which keys trigger each layer, with a separate colour for each layer. Hover over them for an enlarged view that names each layer's Instrument. See Key range display for everything the bars show, and Key ranges for how to set ranges up.

Macros

A macro is a knob that moves other controls for you. Floe has four of them, and each can be linked to up to six controls anywhere in Floe, each by its own amount.



Preset authors use macros in two main ways. Sometimes a macro simply brings forward one control that matters a lot for this particular sound, tuned to a useful range, so you don't have to go looking for it. Other times it moves several controls together to create something that feels like a brand-new control made for the preset. A macro called *Surge* might push up a distortion's drive, open a low-pass filter and thicken a granular texture, all with one turn.

Each macro has a name, chosen by whoever made the preset, that hints at what it does. Not every preset uses all four.

Playing with macros

The macro knobs appear on the *Perform* page, and on the *PLAY* tab of the bottom panel when you're on the *Layers* or *Effects* page. They're the same four knobs in both places. A greyed-out macro isn't linked to anything, so it does nothing.

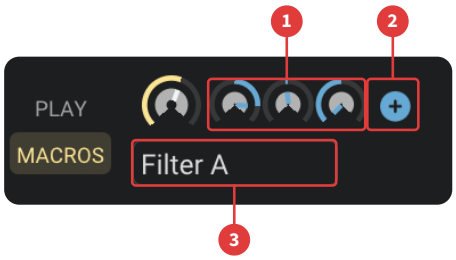
Your MIDI keyboard's mod wheel is linked to the first macro, so you can shape the sound as you play. You can change this, and link the other macros to knobs or faders on your controller, in the Performance Controls panel. Macros are also handy for automation in your DAW: one lane can move several controls at once.

When a macro moves a knob, the knob's coloured arc separates from its dial. The dial shows the knob's own setting; the arc shows the value you actually hear. See Controls.

Making your own macros

Macros aren't only for preset authors. Once you're comfortable designing your own sounds, a macro or two can give your own presets a few expressive controls that shape the sound exactly the way you want, ready for your MIDI controller or DAW automation. The first macro is a good one to start with, since your mod wheel already moves it.

To set up macros, go to the *Layers* or *Effects* page and click the *MACROS* tab on the left of the bottom panel. Each macro's knob is shown alongside its settings.



1. **Destination knobs** — one blue knob for each control the macro is linked to, setting how far the macro moves it.
2. **Add destination** — link another control to the macro.
3. **Name** — click to rename the macro.

Linking a control

1. **Click** ⊕ next to the macro (2). Every control you can link to gets a blue plus icon ⊕ of its own, across the whole window.
2. **Hover** over one of them. A line joins it to the macro, with a note of what's about to be connected.
3. **Click** to make the link. A new blue destination knob (1) appears next to the macro. To cancel instead, press `escape` or click somewhere empty.

You can link knobs, sliders and number fields. You can also link the handles you drag around, such as the points on the envelopes and the EQ graph, or the loop points on the waveform.

Setting the amount

There are two kinds of knob here, and they do different jobs. The macro knob is the one you play: turning it moves every control linked to it at once. Each blue destination knob (1) is one you set and then leave alone: it decides how far the macro moves its one control, anywhere from a subtle nudge to a sweep across the control's whole range. A new link starts at zero, so the macro does nothing to that control until you change it.

The easiest way to set it is to turn the macro all the way up, then drag the destination knob while you play. Watch the linked control's coloured arc move, and listen until it sounds right.

- **Right of centre** — the control goes up as the macro goes up.
- **Left of centre** — the control goes down as the macro goes up.

The destination knob isn't linear: more of its travel is given to small amounts, so they're easier to set precisely.

Hover over a destination knob to see what it's linked to. It also shows the control's value right now, and what it will be with the macro at 0% and at 100%. Rest the cursor there for a moment and Floe draws a line to the linked control, scrolling it into view if needed.

Double-click a destination knob to type an amount, or right-click it for more options: copy and paste the amount between destinations, type a value, reset it to zero, invert it, or edit its range.

Editing the range

Instead of setting an amount, you can set the two values the control moves between, in the control's own units: a filter sweeping from 200 Hz to 2 kHz, say. Right-click a destination knob and choose *Edit Range…*. The popup has two knobs:

- **Macro at 0%** — the control's value when the macro is fully down.
- **Macro at 100%** — the control's value when the macro is fully up.

Each knob changes only its own end, so you can raise the bottom of a filter sweep without changing where it ends up. While you hold either knob, you hear the sound as it would be with the macro at that end, though the macro itself doesn't move. Play some notes as you drag to find exactly the right values.

Changing an end also changes what you hear with the macro where it is now. To keep the current sound, tick *Move (macro name) to keep this value*: Floe moves the macro to whichever position gives the control the value it has now. Everything else the macro controls moves with it.

How a macro moves a control

A macro moves a control relative to the control's own setting. With the macro at 0%, the control is exactly where you set it, and turning the macro up adds the amount on top. So adjusting the control itself shifts the whole sweep up or down.

If more than one macro is linked to the same control, their movements add together. A control can never go beyond its normal range, however far the macros push it.

Removing a link

Hover over a destination knob and a red ⊖ appears beneath it. Click it to remove the link. The control keeps its own setting; it just stops following the macro.

Naming macros

Click the name (3) and type a new one. Choose a name that says what the macro does to the sound, such as *Brightness* or *Swell*. The name is saved with the preset and labels the macro knob everywhere it appears.

Copying, swapping and resetting

Right-click a macro knob for these options, alongside the usual ones for any knob:

- **Copy Macro** and **Paste Macro** — copy a macro's value, name and links onto another macro.
- **Swap with Left** and **Swap with Right** — exchange the macro with its neighbour, along with its value, name and links. This doesn't move MIDI CC assignments or DAW automation, though.
- **Reset Macro to Default** — start the macro afresh, with no links and its original name. The next option resets it to how it was in the loaded preset instead.

Legacy destinations

A yellow ⚠ on a destination knob means it's linked to a legacy parameter. These are kept so older DAW projects still work, and you'll only hear the macro move it while the legacy override is active. Legacy destinations can't use *Edit Range…*.

Randomisation

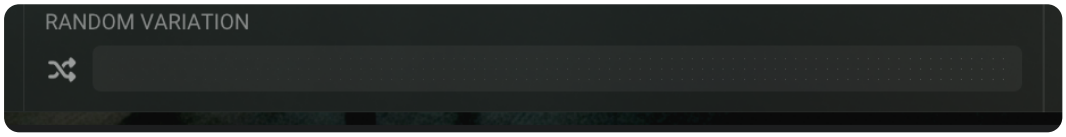
Mutant Piano has a few features that bring in an element of chance. It's a way to find spontaneous inspiration, and sounds you might not have reached for yourself. They're also good fun.

As with anything left to chance, sometimes the results are great and sometimes they're a bit too wacky. The ↺ *Undo* button in the top panel is always available.

All of these randomisation buttons use the same 🔀 shuffle icon, so you can identify them at a glance.

Random variation

The main random feature is the *Random Variation* strip on the *Perform* page. It takes the preset you've loaded and changes some of its properties, giving you a fresh take on the sound.



Click anywhere on the strip. Where you click sets how far the variation strays from the preset. Towards the left, the changes are mostly subtle and the sound keeps its character. Move towards the right to venture into wilder changes. As you hover, the strip shows the amount and a word for it, from *small variation* to *extreme variation*.

The 🔀 button at the left of the strip rolls another variation at the same amount as last time, so you can try several takes at an intensity you like.

Every variation starts from the preset as you loaded it, not from the previous variation, so you can keep clicking without drifting ever further away. When you find one you like, save it as a preset. That keeps it, and makes it the new starting point for further variations.

If nothing is loaded, the strip builds a random sound instead, around an Instrument picked at random.

What a variation changes

A variation reworks the preset rather than starting from scratch, so it usually keeps something of the original's feel. Depending on how far right you click, it may:

- **Swap Instruments** — each layer can get a different Instrument. Further left, the new one is usually a close relative, from the same folder or with similar tags. Further right, it can come from anywhere. With more than one layer in use, one is sometimes left as it is. Layers using a built-in waveform are never changed.
- **Fill or empty layers** — an empty layer may get an Instrument, and occasionally a layer is cleared. Filling is much more likely than emptying, so wilder variations tend to add to the sound rather than thin it out. At least one layer always keeps an Instrument.
- **Move the macros** — some of the preset's macros are turned by a noticeable amount, taking everything they control with them.
- **Change the effects** — some effects' mix levels move, and a few effects are switched on or off. An effect that's switched on gets fresh settings, kept within sensible limits so it won't suddenly jump in level.
- **Shift octaves** — now and then, a layer's *Transpose* moves up or down an octave or two.

Jumping to a random item in a browser

Wherever you can choose a preset, an Instrument or an impulse response, there's a 🔀 button that jumps to a random one:

- **Presets** — in the top panel, next to the preset name.
- **Instruments** — in each layer's header on the *Layers* page. It loads a random Instrument into that layer only.
- **Impulse responses** — on the Convolution Reverb effect.

Each button is linked to its browser: it only picks from what that browser's filters allow, so you can set the bounds of what "random" means. Filter the preset browser to one folder and a tag such as *ambient*, say, then keep clicking 🔀 to jump around within that selection. The same goes for the browser's own 🔀 button while it's open.

Layers and effects

The 🔀 button at the top right of the *Layers* page loads a random Instrument into all three layers at once, as if you'd clicked each layer's button in turn. Each layer has its own Instrument browser filters, so narrow the first layer to bass sounds and the second to textures, for example, then click it to roll through combinations that stay within those bounds.

The 🔀 button at the top right of the *Effects* page randomly puts each effect in or takes it out of the rack, and shuffles their order. It leaves each effect's settings alone, so anything you've dialled in is still there when the effect comes back.

Randomness in the sound itself

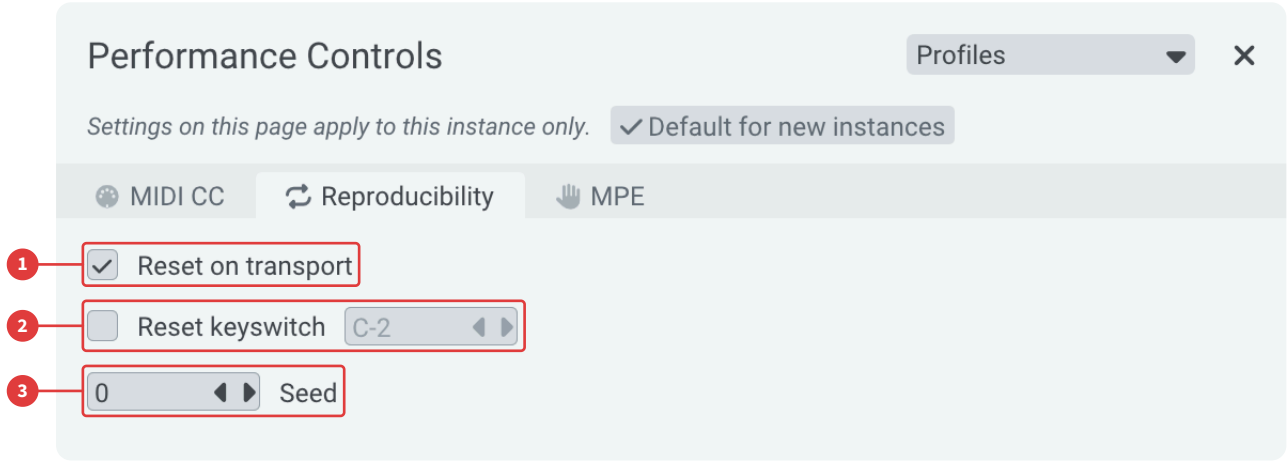
Parts of the audio engine, such as the granular engine, also use randomness while you play, to create varied, natural-sounding performances. See Reproducibility.

Reproducibility

Some features, most noticeably granular synthesis and the random LFO shapes, are designed around randomness to make the sound more natural and lively. Normally you don't need to worry about reproducibility: Floe's default setting, *Reset on transport*, covers most uses by making every render of your track in your DAW come out exactly the same. But sometimes those choices aren't quite what you want, such as grains landing in the wrong places or a random LFO moving the wrong way at a key moment. For that, Floe has *seed* settings that let you take more control.

To understand what a seed does, it helps to know that Floe's randomness isn't truly random. It comes from a sequence of numbers that looks random. The sequence is so long that it never comes round again in practice, but it's fixed: from the same starting point, it always unfolds the same way. The seed is that starting point. So you keep all the spontaneity of random choices, but the same seed always gives the same choices.

Floe goes back to the start of the seed's sequence only at certain moments, called resets. You choose when they happen, and which seed to use, on the *Reproducibility* tab of the Performance Controls panel:



1. **Reset on transport** — reset whenever you press play or start a render in your DAW. Play your track from the top twice and you hear exactly the same thing both times. It's on by default.
2. **Reset keyswitch** — reset whenever Floe receives the MIDI note you choose here. Put that note in your MIDI just before a section, and that section plays back identically every time, wherever you start playback from. The keyswitch note makes no sound, and it's shown as a blue marker on the on-screen keyboard.
3. **Seed** — which sequence Floe starts from. Change it to hear a different take, just as lively as the last and just as repeatable.

You can use either kind of reset, or both.

The *Seed* also covers these smaller sources of variation:

- The arpeggiator's *Humanise* and random note orders
- The *White Noise* Instruments

Workflow

The *Seed* settings are a finishing step. You choose a seed once your MIDI is recorded and you're getting ready to render, rather than while you're improvising.

There's one *Seed* for the whole instance of Floe, and every random choice Floe makes moves its sequence along. So each choice affects all the choices that come after it. That's why it's important to ensure that you play the exact same notes with the exact same timing. A saved MIDI item in your DAW ensures this.

With *Reset on transport*

This is the default. Floe starts from the *Seed* whenever you press play or render, so everything from that point on comes out the same every time.

To judge a seed properly, render the whole track again, or play it from the very start. It won't sound the same if you start playback in the middle of a MIDI item, or between MIDI items played by the same instance of Floe, because Floe needs to make all the same choices from start to finish, not starting in the middle.

So the workflow is:

1. Render your track, or play it from the very start.
2. If something isn't quite right, change the *Seed*.
3. Render again and listen, repeating until you have a take you like.

If Floe only plays in one part of your track, you don't need to go right back to the start. Anywhere before Floe's first note works just as well, since Floe hasn't made any choices before then.

With *Reset keyswitch*

A *Reset keyswitch* lets you lock in a performance with more granularity. Floe starts again from the *Seed* every time the keyswitch note plays, so everything after it comes out the same no matter where you started playback or what Floe played before. You can add several of these lock-in points through your track, allowing you to audition the section after each one by starting playback just before its keyswitch.

This also suits looping a section: put the keyswitch at the start of the loop. A DAW loop jumping back to its start doesn't count as pressing play, so without the keyswitch each pass carries on from where the last one left off.

The catch is that every keyswitch uses the same *Seed*. If you change the seed to get a better take of one section, every other section that follows a keyswitch changes too. If a seed suits one section of your track but not another, load a second instance of Floe for that section and give it its own seed.

Per-layer seeds instead

The granular engine and the LFO's random shapes offer an alternative to all of this: a per-layer seed 🌱, saved with the preset. Rather than waiting for a reset, it applies every time a note starts, so each note gets its own sequence. Choose one of the *Identical* modes and try a few *Seed* values until you like the result. It then sounds exactly the same on any computer, in any instance of Floe, without needing any of the settings above. Unlike the instance's *Seed*, it's a sound-design setting you can choose at any time.

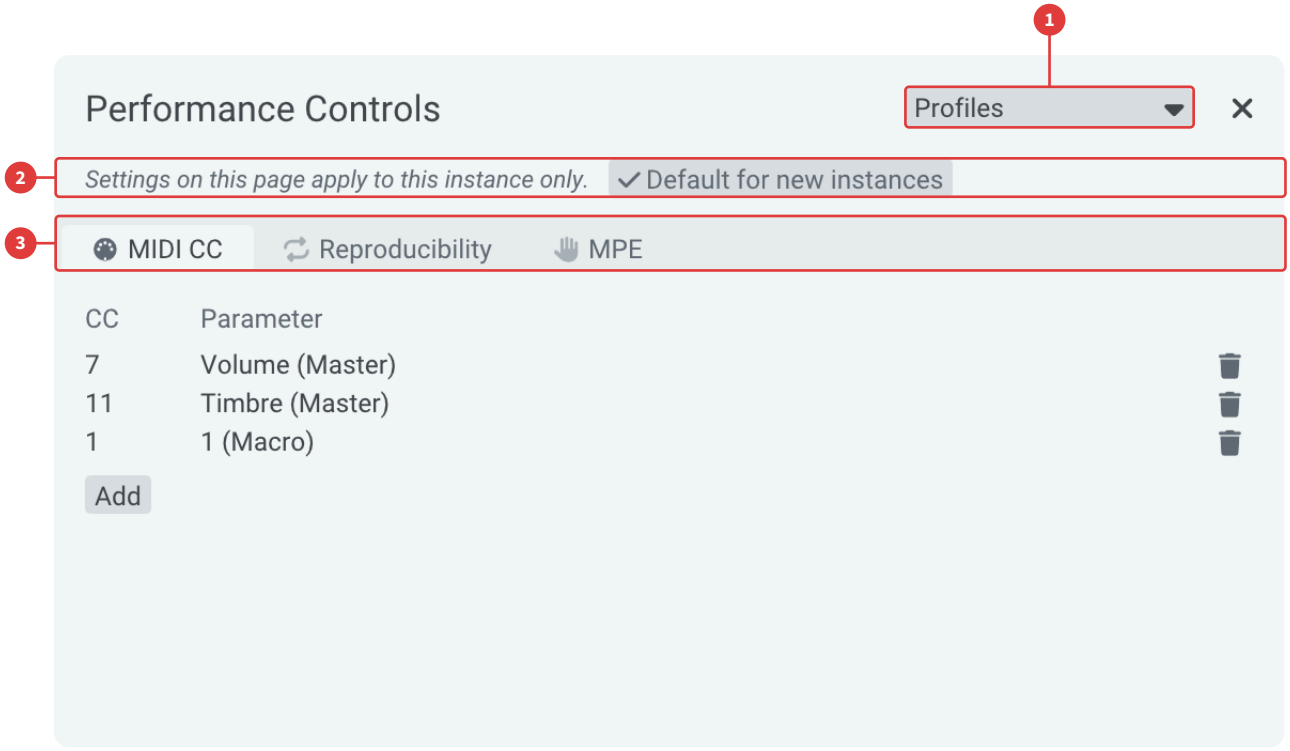
Tips

- Floe can't recapture a variation after the fact. If an improvised take sounds great, the random choices behind it are gone. Record the MIDI first, then try seeds against it.
- Performance Controls settings belong to the instance, so loading a preset leaves them untouched: you can try out presets without losing your seed and reset setup.

- When designing a granular sound, try *Identical on all notes* with a low *Density* and step through a few *Seed* values.

Performance Controls

The *Performance Controls* panel is where you set up how Floe responds to your playing and your controllers. Open it with in the top panel, or from the main menu.



1. **Profiles menu** — load and save profiles. It reads *Profiles* until you load one, and then shows that profile's name.
2. **Settings for new instances** — make this panel's settings the ones new instances start with.
3. **Tabs**:
   - **MIDI CC** — every MIDI CC mapping on this instance. Remove one with its button, or click *Add* to create one by choosing a CC number and a parameter, as an alternative to right-clicking a knob and using *MIDI CC Learn*.
   - **Reproducibility** — the *Seed* and reset settings that make Floe's random elements play back the same every time. See Reproducibility.
   - **MPE** — switch on MPE for expressive controllers, and set how smoothly per-note expression responds.

Scope

Everything in this panel belongs to the current instance rather than being a global preference. When you save your DAW project, these settings are saved with it, so the next time you open the project you can perform it the same way. Different instances in the same project can each have their own settings. However, loading a *preset* leaves it untouched, meaning you can audition presets without disturbing your performance setup.

Settings for new instances

Each Floe instance has its own performance controls, but you can choose what new instances start with: their MIDI CC mappings, MPE, and Reproducibility settings. Set the panel up the way you like, then click *Make default* (2), just below the panel's title. The ↺ reset button beside it does the reverse, returning this instance to your defaults. Both only appear when the current settings differ from your defaults; otherwise a *Default for new instances* label shows in their place.

For example, say your keyboard has a fader that you always want on the second macro. Assign it once with *MIDI CC Learn*, click *Make default*, and every new instance you add from then on starts with that fader ready to go. Instances already in your projects keep their own settings.

Floe's own defaults include some common MIDI CC mappings, such as the mod wheel (CC1) to the first macro. See MIDI for the full list.

Profiles

A profile is a named, saved bundle of the panel's settings, like a save file for this Performance Controls. Profiles are useful when you switch between MIDI controllers regularly: save one profile per controller, then switch between them as you swap hardware.

Open the *Profiles* menu (1) at the top-right of the panel to:

- Load a profile, applying it to the current instance immediately. This is a one-shot copy, not a persistent link: further changes to the instance don't affect the saved profile unless you save over it.
- Save the current settings as a new profile.
- Overwrite, rename, or delete an existing profile.

Once a profile is loaded, the menu shows its name, with an asterisk when you've changed the settings since.

MIDI

Floe responds to MIDI the way you'd expect from a software instrument: notes and velocity, the sustain pedal and pitch wheel, CC controllers mapped to its parameters, and MPE for expressive controllers.

- **Velocity** — how hard you play sets each note's volume, shaped by each layer's velocity to volume curve on its *CONFIG* tab.
- **Sustain pedal** — CC-64 holds notes after you release the keys, until you lift the pedal, just like a piano's sustain pedal.
- **Pitch wheel** — how far it bends is set per layer with *Pitch Bend Range* on the layer's *CONFIG* tab, so one layer can bend a whole tone while another underneath it stays put. A range of 0 disables pitch bend for that layer.
- **All Notes Off and All Sound Off** — the channel messages that DAWs and controllers send to stop stuck notes. All Notes Off (CC-123) releases every note on that channel, including sustained ones, so they fade out naturally; All Sound Off (CC-120) silences them immediately.

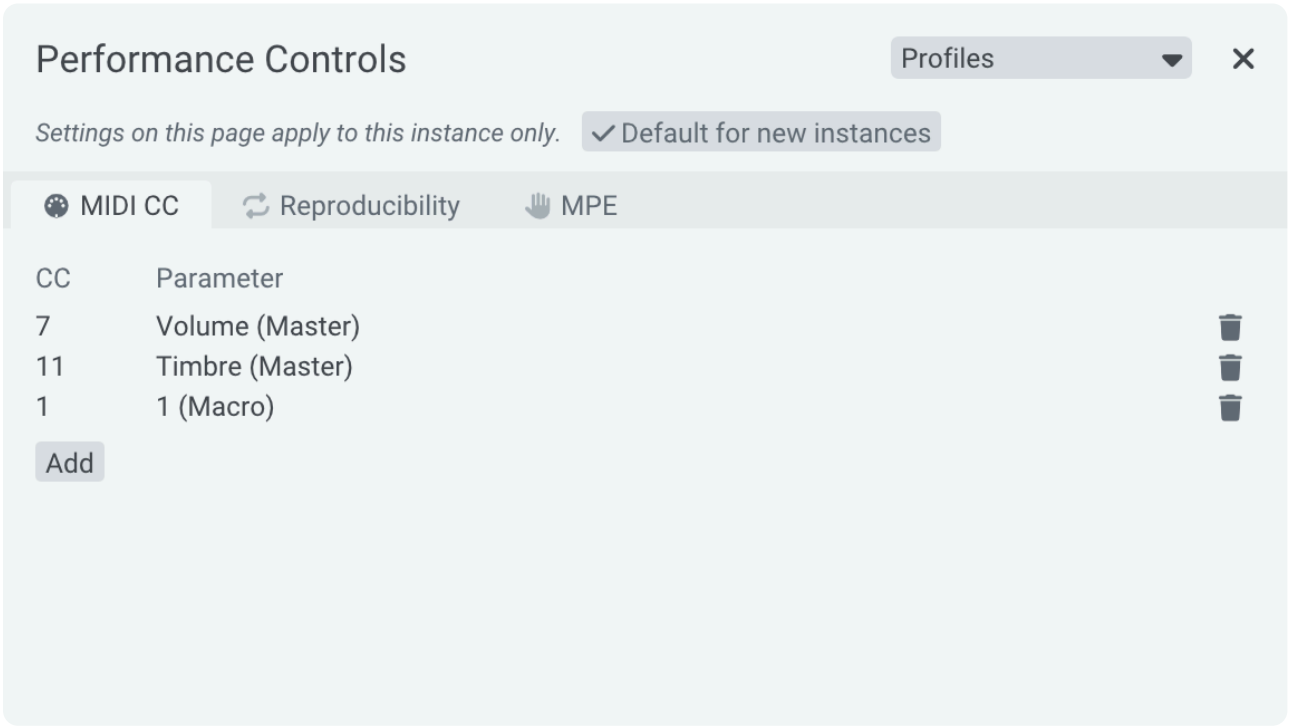
MIDI CC

All automatable parameters can be assigned to a MIDI CC, so you can move them with the knobs and faders on your MIDI controller.

Creating a mapping

Right-click a parameter (a knob or slider anywhere on the UI) and select *MIDI CC Learn*, then move the dial on your MIDI controller that you want to assign. To remove a mapping, right-click the parameter and select *Remove MIDI CC* (followed by the CC number). A mapped CC works on any MIDI channel.

You can also add and remove mappings from the Performance Controls panel, which lists every mapping on the current instance in one place.



Default mappings

Unless you have changed your default Performance Controls, these mappings will be assigned:

- **CC 1 (Modwheel)** — Macro 1
- **CC 7** — Master Volume
- **CC 11** — Master Timbre

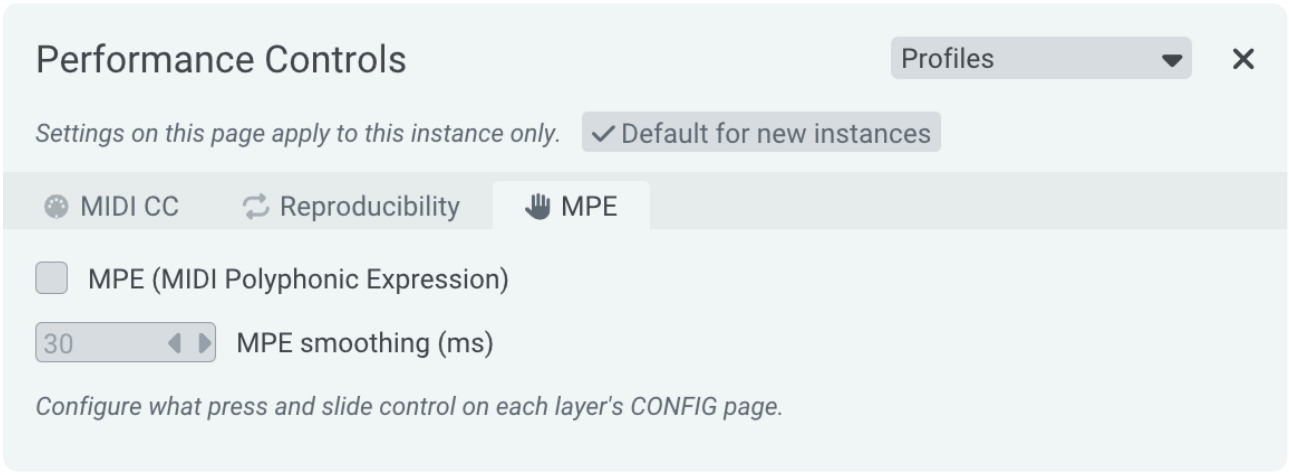
How mappings are saved

MIDI CC mappings are part of the Performance Controls system. They apply only to the current instance of Floe, but you can set up a default configuration that all new instances start with. Presets never touch them, so you can browse presets without your settings changing each time.

MPE

MIDI Polyphonic Expression (MPE) lets compatible controllers, such as the Seaboard, LinnStrument, Osmose and Haken Continuum, shape each note independently.

To switch it on, open the Performance Controls panel with in the top panel, click the *MPE* tab, and tick *MPE (MIDI Polyphonic Expression)*.



Once it's on, each note responds to the standard MPE per-note messages:

- **Glide**: pitch bend on a note's channel bends just that note, following the MPE ±48-semitone convention (or whatever range your controller negotiates). The master channel's pitch wheel still bends everything, using each layer's pitch bend range parameter.
- **Press**: each note's channel pressure (aftertouch).
- **Slide**: each note's CC74.

Choose what press and slide control for each layer with the *MPE* button on its *CONFIG* tab. Each has a target (*Volume*, *Filter*, *Timbre* or *LFO Amount*) and an amount. The amount can be negative to invert the response, or beyond 100% to reach the full effect with a smaller gesture. *Timbre* sweeps between an Instrument's crossfade layers: recordings of the same sound played in different ways, such as soft to hard. Mutant Piano's Instruments don't have crossfade layers, so the *Timbre* target has no effect, and a ⚠ warning appears beside it when it's chosen.

With the *Volume* target, press brings each note up to the level of the layer's *Volume* slider, and slide works like a fader for each note, topping out at the slider's level. So until you apply expression, notes play quieter than the slider. The *Filter* and *LFO Amount* targets nudge a setting for each note individually: *Filter* moves the layer's filter cutoff, and *LFO*

Amount the layer's LFO *Amount*. Press adds to the setting, while slide can move it either way, with its centre position leaving it unchanged.

The *MPE smoothing* setting in the Performance Controls panel sets how gradually press and slide respond: lower is more responsive, higher is smoother.

While notes are sounding, each active voice gets a red line on whichever control press or slide is routed to — the filter cutoff knob or the LFO Amount knob — so you can see the expression from each voice.

The MPE Configuration Message for zone setup is supported too, and a sustain pedal on a zone's master channel sustains the whole zone.

CLAP note expressions (per-note pitch, pressure, and brightness) work the same way in supporting hosts regardless of the MPE setting.

Loading Presets

Presets are the quickest way into Mutant Piano's sounds. Each one is a complete, production-ready setup. Load one and it's ready to play in your track straight away.

The factory presets give you a whole palette of sounds to start from. Their names hint at the sound or how you might use it, and they're sorted into folders so you can narrow down to the kind of sound you need.

Presets are also how you keep sounds of your own. Save it as a preset and you can load it into any instance of Floe in the future. See Saving Presets.

Loading a preset replaces all your settings, except for your Performance Controls. You can always use the *Undo* button in the top panel to undo a preset load.

The preset box

The preset box in the top panel shows what's loaded and gives you quick ways to move between presets.



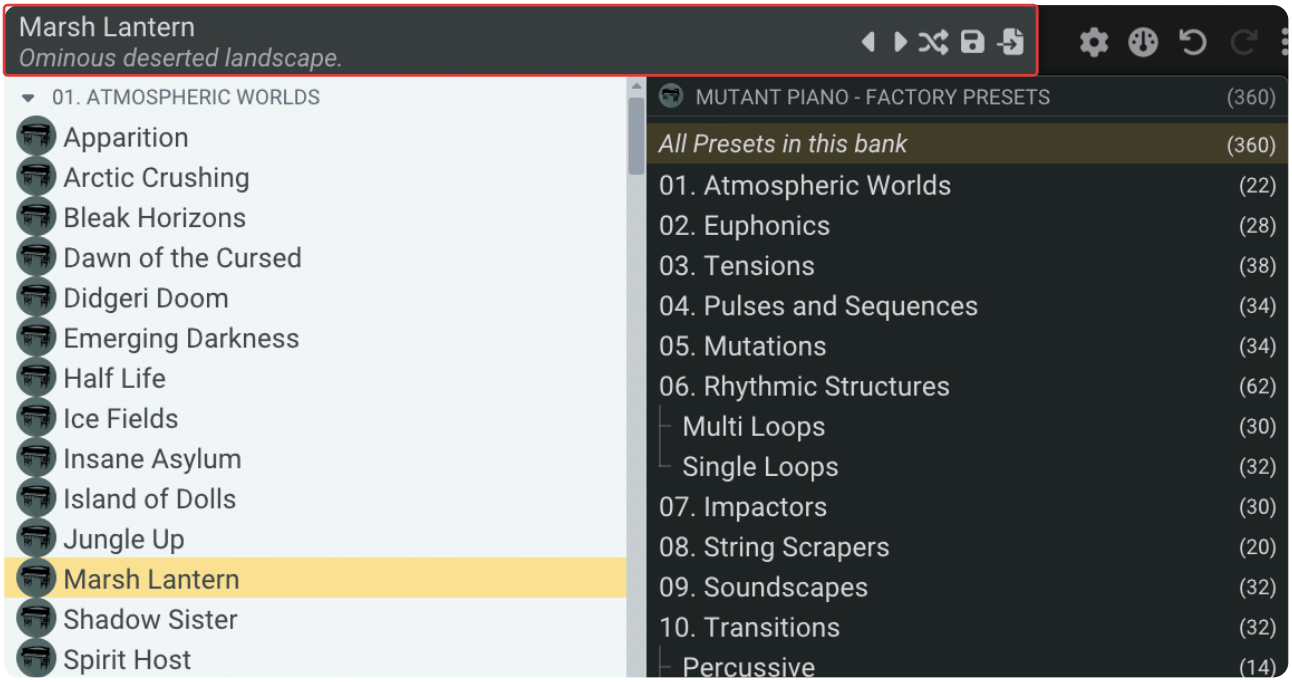
On the left is the name of the current preset, with a short description underneath. If the preset has changed since it was loaded, Floe shows *(modified)* after the name. Click the name to open the preset browser.

The buttons on the right are:

- **Previous/Next** — step to the previous or next preset.
- **Random** — jump to a random preset.
- **Save** — open the Save Preset panel. See Saving Presets.
- **Load from file** — load a preset file from anywhere on your computer, such as one someone has sent you. It doesn't need to be in one of Floe's preset folders.

Right-click the name for two more options. *Load Blank Preset* resets every setting to its default and clears all the Instruments and IRs, ready to build a sound from scratch. *Open Containing Folder* shows the current preset's file in your file manager.

Finding presets



The preset browser is the place for browsing deliberately. Choose a folder or some tags in the dark panel on the right, then click presets on the left to hear them. The browser stays open, so you can play a few notes, click the next preset, and play again. Once you've loaded a preset, if you move your cursor outside of the browser it will close.

See Browsers for everything it can do: filtering, search, keyboard navigation and more.

For a quick audition without the browser, use the previous and next arrows, ◂ and ▸. The large arrows on the *Perform* page do the same. Both follow the filters you've set in the preset browser, so if you've chosen a particular folder or tag there, the arrows only step between presets that match. When you reach the end of the list, they wrap round to the start. Random 🔀 follows the same filters, which makes it a handy way to dip into a chosen corner of your presets. For Floe's other ways to bring in an element of chance, see Randomisation.

Default preset

The default preset is the one a new instance of Floe opens with, instead of a blank state.

There are two ways to set the default preset:

- Right-click any preset in the browser and choose *Set as Default Preset*. The preset is then marked with a 🏠 icon in the browser.
- Or alternatively, load the preset, then open ⚙ Preferences and, in the *Default Preset* row on the *General* tab, click *Use Current Preset*. Click the 🗑 button to remove the default, so Floe opens blank again.

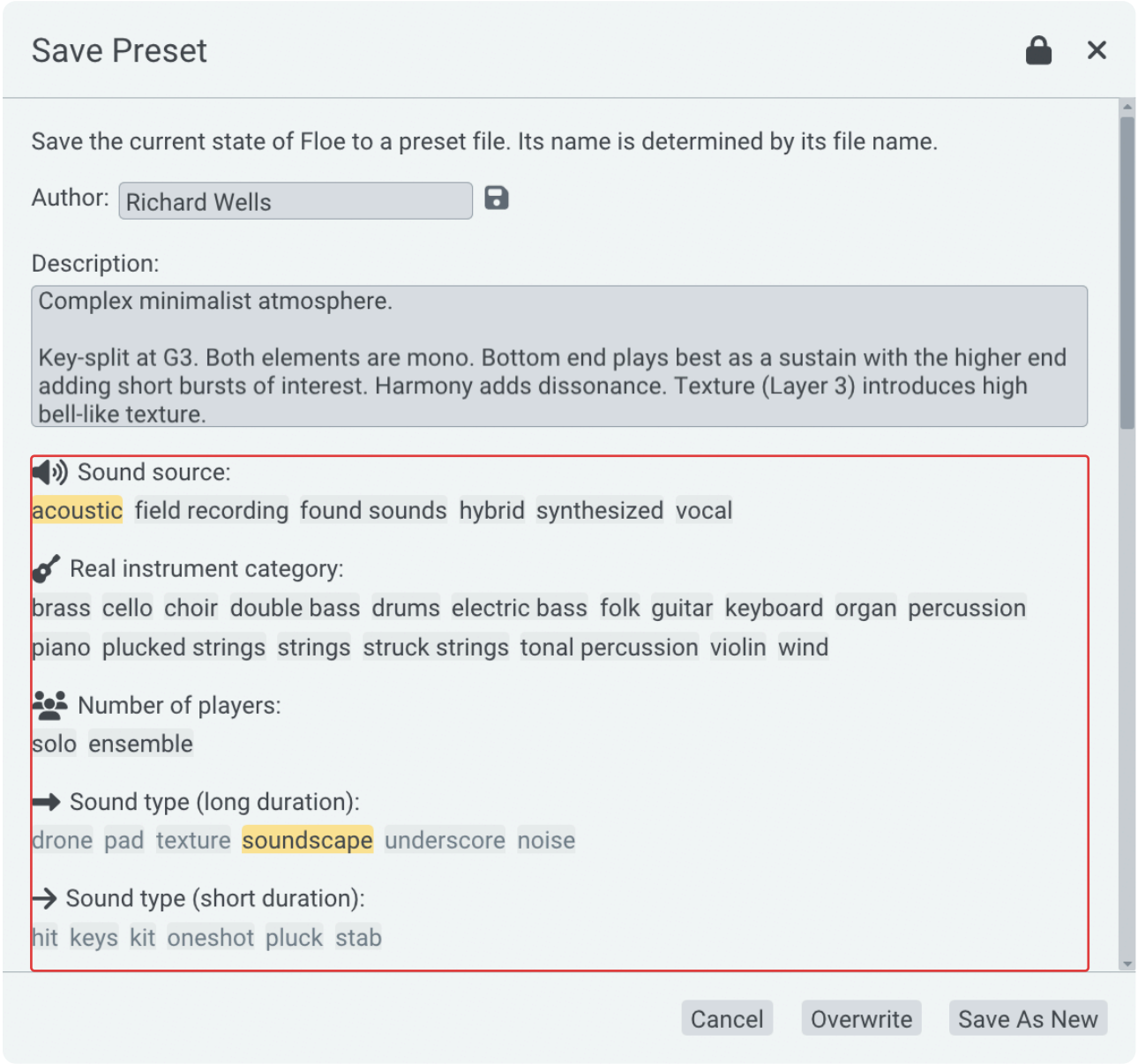
The default preset doesn't apply if you open a saved DAW project — Floe uses the sound saved in the project as usual.

After installing the Mutant Piano package a default preset will be set for you. You can always overwrite this using the options above. Once you set a custom default, installing further packages will not interfere with your choice.

Saving Presets

You can save your own Mutant Piano presets ready to load into another project or another instance of Floe. It's worth doing whenever you've found something you'd hate to lose.

Click the save button in the preset box to open the Save Preset panel. All of its fields are optional: you can click *Save* straight away and just choose a name. Filling them in helps you find the sound again later, especially once you've saved lots of presets.



- **Author** — who made the preset. The buttons beside it store your name, so you don't have to type it out every time: stores the current name, and fills in the stored name.
- **Description** — a few words about the sound.
- **Tags** — the outlined section, describing the sound so you can find it again with the preset browser's filters.

Naming and saving

You name a preset by naming its file. When you click *Save* or *Save As New*, your system's file dialog opens, and the file name you choose there becomes the preset's name. To rename a preset later, rename its file in your file manager (Finder, File Explorer, etc.). The files are portable. Copy/move them as you like.

The buttons at the bottom of the panel depend on where the current sound came from. *Cancel* closes the panel without saving, and the others are:

- **Save** — choose a file name and folder for a new preset. This is the only option after *Load Blank Preset*.
- **Overwrite** — save over the preset file you loaded, keeping its name. It doesn't ask for confirmation, and *Undo* won't bring back the old file, so only use it when you're sure.
- **Save As New** — save a new preset, leaving the one you loaded untouched.

The first time you save, the file dialog opens in a `User` folder inside Floe's preset folder; after that it remembers where you last saved. Save inside one of Floe's preset folders and the preset appears in the preset browser straight away.

The button at the top of the panel keeps it open, so you can step through presets and edit each one's author, description and tags as you go.

Writing a description

When you load a preset, its description appears in two places on Floe's UI. As much as fits goes beneath the preset name in the top panel, and the rest continues on the *Perform* page. To choose where it splits add a newline when you write the description: everything before the first line break goes in the top panel. If that line is too long to fit, Floe splits it where it runs out of room instead.

You can leave the description blank. When Floe loads a preset with no description, it generates one on the fly from what's in the preset and displays that instead, so even quick saves get something helpful.

Choosing tags

Tags are grouped into categories such as sound source, sound type, mood and timbre. Choose the ones that describe the sound: they're what the preset browser's tag filters use.

Some tags turn grey once you've chosen a related one. That's a hint that the combination is unusual, such as a real instrument category on a synthesized sound, but you can still click them if they fit.

How Presets Are Stored

Each preset is a single small file ending in `.floe-preset`, kept in a folder on your computer. Because they're ordinary files, you can organise them with your usual file manager (Finder, File Explorer, etc.): rename them, move them into folders, or delete them. Floe watches its preset folders and updates the preset browser as soon as anything changes.

The file name is the preset's name, so renaming the file renames the preset. The author, description and tags are stored inside the file: to change them, save over the preset in Floe. See Saving Presets.

Presets are tiny, typically just a few kilobytes, so even large collections take up very little space.

Sharing presets

You can simply share `.floe-preset` files. As long as the recipient has the same libraries installed, it works just the same. They can put it in one of their preset folders so it appears in the preset browser, or do a one-off load with the load-from-file button.

Preset banks

A preset bank is a folder of presets, including all its subfolders, that belongs together, such as a set of factory presets. Preset banks are the top level of organisation in the preset browser.

Presets in folders that aren't part of any bank might be grouped together as *Miscellaneous*.

Install Floe

Installing Floe is quick: download the installer for your computer, run it, and open Floe in your DAW. This page has the details for each operating system, in case you need them.

Before you start, check that your computer meets Floe's System Requirements.

Installing

Windows

1. Download the installer from the download page.
2. Extract the downloaded zip file, usually by double-clicking it.
3. Run the installer and follow its steps. It installs both the CLAP and VST3 versions.
4. Open your DAW and add Floe to an instrument track. If it doesn't appear, ask your DAW to rescan its plugins.

To install by hand instead, download the manual-install zip from the same page, extract it, and move the files into your plugin folders:

- `Floe.clap` into `C:\Program Files\Common Files\CLAP`
- `Floe.vst3` into `C:\Program Files\Common Files\VST3`

macOS

1. Download the installer for your Mac from the download page. There are two versions: *Apple Silicon* for M1, M2 and later Macs (most Macs since late 2020), and *Intel* for older Macs. Apple's guide shows how to check which one you have.
2. Double-click the download to extract it.
3. Run the PKG installer and follow its steps. Install it to your main drive (usually *Macintosh HD*). Your libraries and presets can live on any drive.
4. Open your DAW and add Floe to an instrument track. If it doesn't appear, ask your DAW to rescan its plugins.

To install by hand instead, download the manual-install zip files from the same page, extract them, and move the files into your plugin folders:

- `Floe.clap` into `/Library/Audio/Plug-Ins/CLAP`
- `Floe.vst3` into `/Library/Audio/Plug-Ins/VST3`
- `Floe.component` into `/Library/Audio/Plug-Ins/Components`

Linux

1. Copy the installation command from the download page. There's one for CLAP and one for VST3.
2. Paste it into a terminal and run it. It creates your plugin folder if needed, downloads Floe and extracts it there.
3. Open your DAW and add Floe to an instrument track. If it doesn't appear, ask your DAW to rescan its plugins.

To install by hand instead, download the manual-install file from the same page and extract it into your plugin folders:

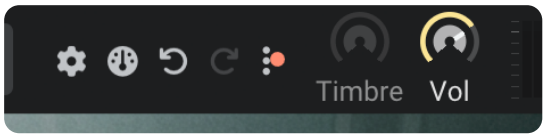
- `Floe.clap` into `~/.clap` or `/usr/lib/clap`
- `Floe.vst3` into `~/.vst3`, `/usr/lib/vst3` or `/usr/local/lib/vst3`

Next, see Install Mutant Piano Package.

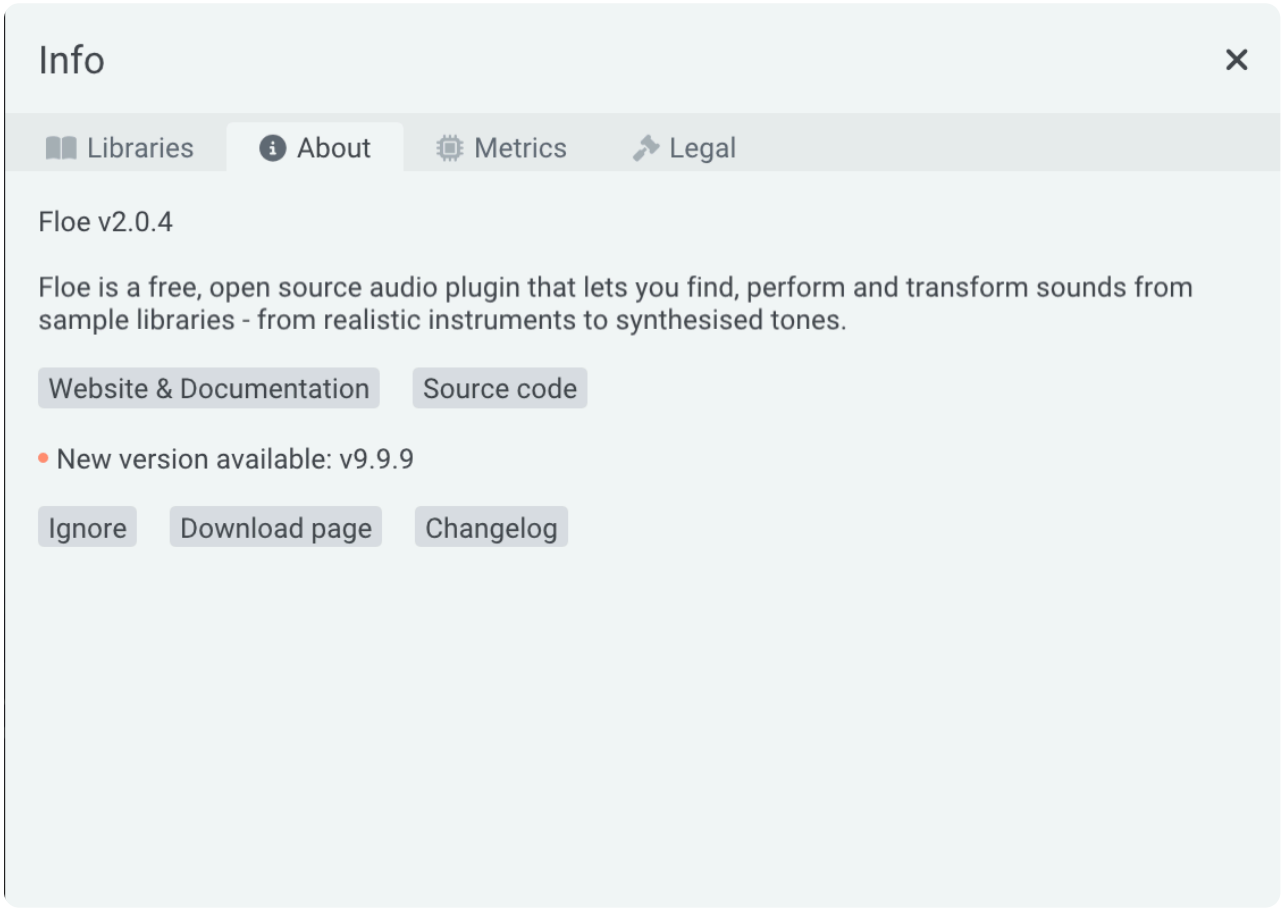
Updating

To update Floe, download and run the latest installer, or run the Linux command again. The new version replaces the old one and is fully backwards-compatible. If you installed by hand, replace the old files with the new ones.

Floe checks for new versions for you. When one is available, a red dot appears on the ⋮ menu in the top panel.



Open the menu and choose *Info*. The *About* tab names the new version and gives you three options: *Download page*, *Changelog* to see what's new, and *Ignore*, which hides the dot until an even newer version comes out.

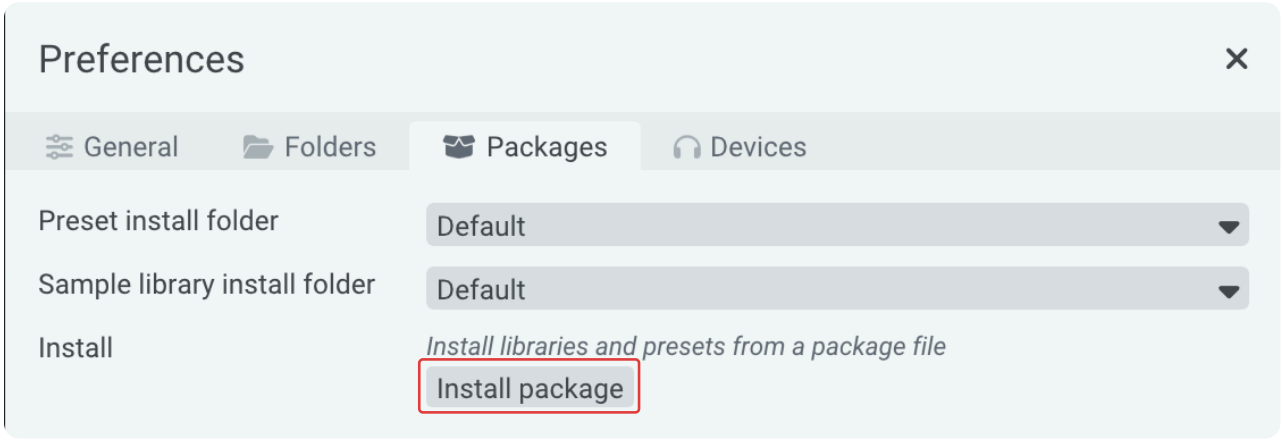


To stop Floe checking, untick *Check for updates* in ⚙ Preferences.

Install Mutant Piano Package

You install Mutant Piano from inside Floe: download its package file, then give it to Floe with the *Install package* button.

1. **Download Mutant Piano** from your emails or your account on frozenplain.com. You need two files: the Mutant Piano package (ending `.floe-pkg-enc`) and your license file (ending `.floe-license`).
2. **Open Floe** in your DAW. If you haven't installed it yet, see Install Floe.
3. **Open ⚙ Preferences** from the top panel, and choose the *Packages* tab.
4. **Click *Install package*** and select your package file.



Entering your license key

Floe asks for your license key to unlock Mutant Piano as it installs. Everything happens offline, without an account or an internet connection.

There are two ways to give Floe your key:

- **Load a license file** — if your purchase came with a `.floe-license` file, choose *Load license file* and select it.
- **Enter a key manually** — paste your key into the box, using *Paste*, then click *Activate*.

A license key is personal to you and contains your details. The summary at the end of the installation shows who the package is licensed to.

When the installation finishes

Mutant Piano and its presets are ready to use straight away, without restarting Floe or your DAW.

Floe shows a summary of what it installed, with a couple of optional extras:

- **Send to Trash** — delete the package file. Floe doesn't need it once it's installed, though you might like to keep a copy as a backup.
- **Load Preset** — load Mutant Piano's default preset. If Floe was blank when you installed, this preset is loaded for you instead.

Click *Done* to close the summary.

What is a package?

A package is simply how content is delivered to Floe. The Mutant Piano package holds the sample library together with its factory presets.

Floe doesn't keep track of packages; they're just the means of getting sample libraries and presets installed into your folders. To remove things, see Uninstalling.

Installing to a different drive

Floe installs into its default folders on your main drive unless you tell it otherwise. To install somewhere else, such as an external drive with more space:

1. On the *Packages* tab, open the *Sample library install folder* menu.
2. Choose *Add folder* and pick or create the folder you want, such as "Floe Libraries" on your external drive. Floe adds it to the folders it scans and selects it for installing.
3. Do the same with the *Preset install folder* menu, if you want your presets somewhere else too.

Future packages install into the folders you've chosen. Libraries and presets you've already installed stay where they are, but Floe updates them in place when you install a newer version. To move them, see Folders.

Updates and conflicts

Most improvements arrive as updates to Floe itself (see Install Floe), so Mutant Piano rarely needs updating. If we do release a new version, we'll let you know by email.

Whenever a new version comes out, install it in the same way. Floe handles upgrades for you:

- If you have an older version, Floe updates it where it is.
- If you already have the same or a newer version, Floe skips it.
- If you've changed the installed files yourself, Floe asks before touching them. You can skip that part to keep your changes, or overwrite it. For presets, you can also keep both.

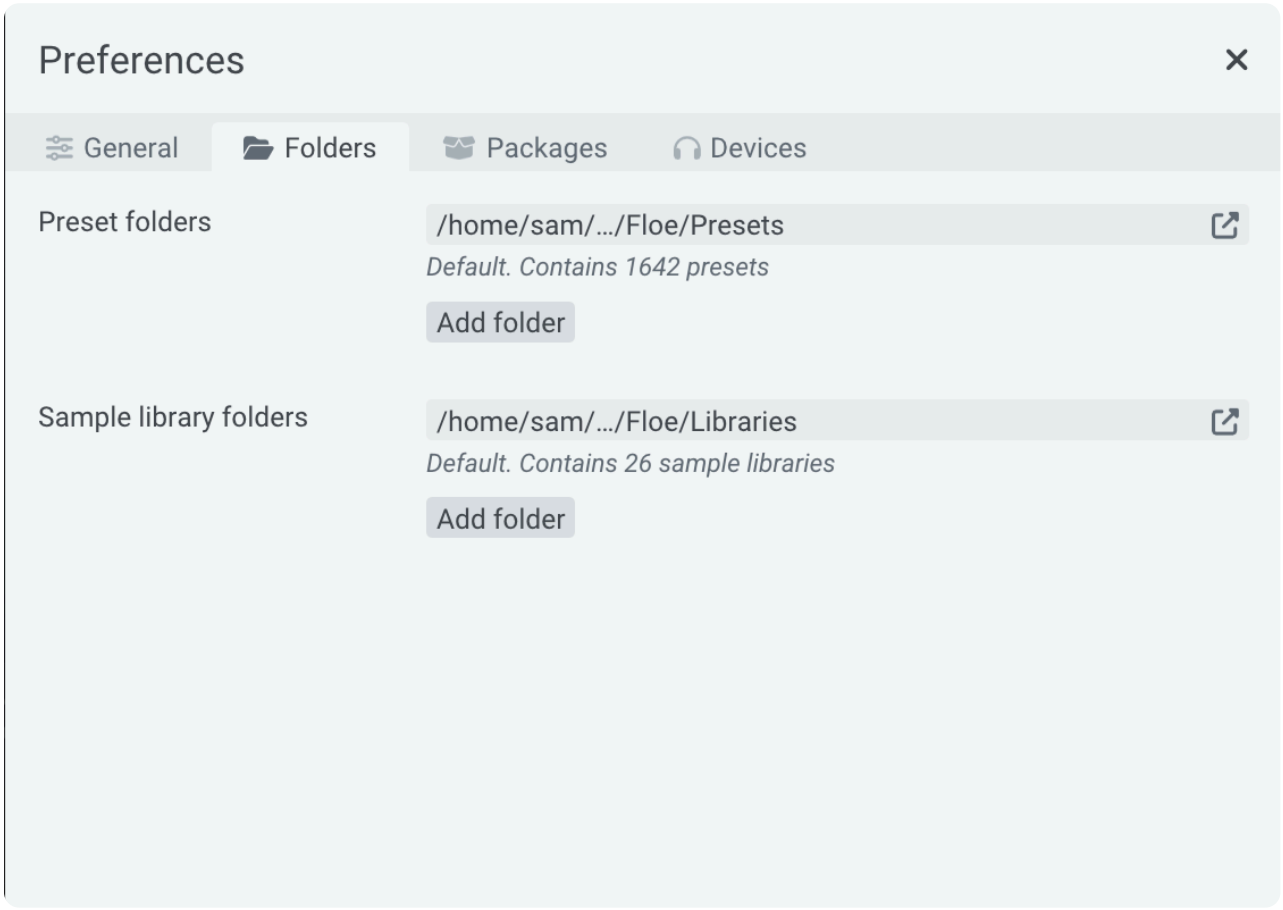
Whenever Floe replaces something, the old version goes to your Trash or Recycle Bin, with a name ending in something like `(old-3KJ9)`. If you change your mind, restore it from there and remove that ending from its name.

Folders

Floe keeps your sample libraries and presets as ordinary files in ordinary folders. You choose which folders it looks in, so you can keep large libraries on an external drive, keep your own presets somewhere you back up, and organise everything with your usual file manager.

There are two separate kinds of folder: sample library folders and preset folders. Floe scans each one, including all its subfolders, and shows what it finds in the browsers. It also watches them, so anything you add, remove or change appears in Floe straight away, without a restart. Floe keeps no separate record of what's installed: whatever is in your folders is what Floe has.

You manage the folders on the *Folders* tab of Preferences.



Each kind of folder has its own list. The first folder in each list is Floe's default one, which is always scanned. Under each folder, Floe shows how many presets or sample libraries it contains.

- **Add folder** — choose a folder for Floe to scan. Pick a top-level folder, such as "Floe Libraries", rather than each library inside it, since the subfolders are scanned too. You can select several folders at once.
- **Open folder** — show the folder in your file manager.
- **Stop scanning this folder** — remove a folder you've added from the list. Nothing is deleted from your computer; Floe simply stops looking there. The default folders can't be removed.

Installing to your own folders

When you install Mutant Piano, Floe puts the library and its presets in the install folders chosen on the *Packages* tab. They start as Floe's default folders on your main drive. To install somewhere else, such as an external drive, choose a different folder from the *Sample library install folder* and *Preset install folder* menus. Each menu lists the folders Floe already scans, plus *Add folder* to add a new one and select it in a single step. See Installing to a different drive.

Moving your libraries or presets

For now, moving is done using your file manager (Finder, File Explorer, etc.). Floe doesn't have a 'move' button.

1. **Create the new folder** in your file manager. For example, "Floe Libraries" on your external drive.
2. **Add it to Floe** with *Add folder* on the *Folders* tab. Be sure to use the right list: sample libraries and presets are separate.
3. **Open the old folder** with its button.
4. **Move everything across** in your file manager, usually by selecting it all and dragging it, or by cutting and pasting.

Floe notices the change and updates its browsers instantly. If anything is missing, restart your DAW. To have future packages install into the new folder too, choose it as the install folder on the *Packages* tab.

Telling libraries and presets apart

If you lose track of which files are which:

- **The sample library** is a folder called `FrozenPlain - Mutant Piano`. It contains a `floe.lua` file and a `Samples` folder.
- **The presets** are a folder called `Mutant Piano - Factory Presets`. It contains category subfolders, such as `04. Impactors` and `11. Drones`, full of small `.floe-preset` files.

We recommend keeping libraries and presets in separate folders, but Floe copes if they're mixed: add the same folder to both lists.

Why libraries and presets are separate

Mutant Piano's presets are installed in a separate folder from the library itself, so it's fair to wonder why. There are a few good reasons:

- **They're edited differently.** Libraries are built by developers with programming tools and you rarely change them. Presets are made and changed by musicians all the time. Keeping them apart means you can save and reorganise presets freely without touching a library.
- **They're different sizes.** A sample library can be large, with hundreds of audio files, so it often belongs on a big external drive. Presets are tiny, easy to back up and easy to share.

See How Presets Are Stored for more about preset files, and File Locations for where the default folders are.

File Locations

You rarely need to know where Floe keeps its files, but it's handy when you're backing up, moving to a new computer or troubleshooting. This page lists them for each operating system. To change where your sample libraries and presets live, see Folders instead.

Your files

Windows

- Default sample library folder: `C:\Users\Public\Floe\Libraries\`
- Default preset folder: `C:\Users\Public\Floe\Presets\`
- Preferences: `C:\Users\Public\Floe\Preferences\floe.ini`
- Autosaves: `C:\Users\Public\Floe\Autosaves\`

macOS

- Default sample library folder: `/Users/Shared/Floe/Libraries/`
- Default preset folder: `/Users/Shared/Floe/Presets/`
- Preferences: `/Users/Shared/Floe/Preferences/floe.ini`
- Autosaves: `/Users/Shared/Floe/Autosaves/`

Linux

- Default sample library folder: `~/Floe/Libraries/`
- Default preset folder: `~/Floe/Presets/`
- Preferences: `~/Floe/Preferences/floe.ini`
- Autosaves: `~/Floe/Autosaves/`

- **Default folders** — where packages install sample libraries and presets unless you've chosen other folders. See Folders.
- **Preferences** — `floe.ini` holds everything you set in Floe's Preferences panel. It's a text file you can edit by hand, and Floe picks up your changes straight away, though its contents aren't documented yet.
- **Autosaves** — recent snapshots of each Floe instance's state, for recovering a lost sound. See Autosave.

Plugins

Windows

- CLAP: `C:\Program Files\Common Files\CLAP\Floe.clap`
- VST3: `C:\Program Files\Common Files\VST3\Floe.vst3`

macOS

- CLAP: `/Library/Audio/Plug-Ins/CLAP/Floe.clap`
- VST3: `/Library/Audio/Plug-Ins/VST3/Floe.vst3`
- AU: `/Library/Audio/Plug-Ins/Components/Floe.component`

Linux

- CLAP (just you): `~/.clap/Floe.clap`
- CLAP (all users): `/usr/lib/clap/Floe.clap`
- VST3 (just you): `~/.vst3/Floe.vst3`
- VST3 (all users): `/usr/lib/vst3/Floe.vst3` or `/usr/local/lib/vst3/Floe.vst3`

Small background files

Windows

- Persistent store: `%APPDATA%\Floe\persistent_store`
- Device ID: `%APPDATA%\Floe\device_id`
- Logs: `%LOCALAPPDATA%\Floe\Logs\`

macOS

- Persistent store: `~/Library/Application Support/Floe/persistent_store`
- Device ID: `~/Library/Application Support/Floe/device_id`
- Logs: `~/Library/Logs/Floe/`

Linux

- Persistent store: `~/.local/state/Floe/persistent_store`
- Device ID: `~/.local/state/Floe/device_id`
- Logs: `~/.local/state/Floe/Logs/`

- **Persistent store** — a small file for things Floe remembers between sessions.
- **Device ID** — a random ID used only when error reporting is on, so that we can measure how often each release crashes. See Error Reporting.
- **Logs** — small text files describing what Floe has been doing. They can help when troubleshooting a problem.

These are safe to delete at any time. Floe recreates them the next time it starts, though you may need to set a few things again.

Uninstalling

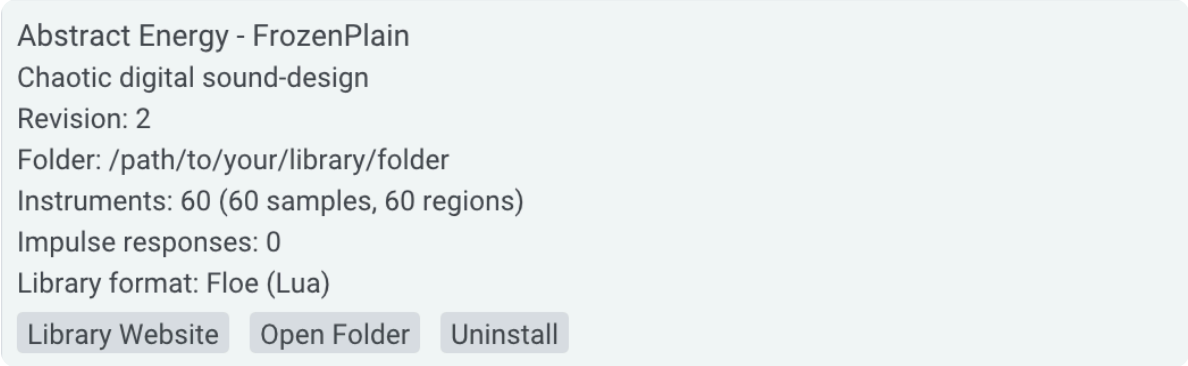
You can remove Mutant Piano's sample library, its presets and Floe itself separately. To remove everything, work through the sections below in order. Libraries and presets are easiest to remove from inside Floe.

When Floe removes a library or preset bank, it sends it to your Trash or Recycle Bin rather than deleting it outright, so if you remove one by mistake, you can restore it from there.

You might be wondering why there's no mention of *packages* on this page. Packages are just the means of installing content into Floe. Sample libraries and presets are what actually get installed, so they're what you uninstall.

Uninstalling sample libraries

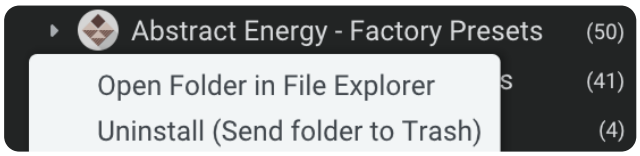
1. Open the ⋮ menu in the top panel and choose *Info*.
2. On the *Libraries* tab, click *Uninstall* on Mutant Piano's card, and confirm.



You can also right-click Mutant Piano in the Instrument or IR browser and choose *Uninstall*.

Uninstalling presets

1. Open the preset browser by clicking the preset's name in the top panel.
2. Right-click the preset bank in the right-hand panel and choose *Uninstall*, then confirm.



The same works for a single folder of presets.

Uninstalling Floe

Windows

Close your DAW, then uninstall Floe like any other program, from *Installed apps* (or *Add or Remove Programs*) in Windows' settings, where it's listed as *Floe Audio Plugin*. See Microsoft's guide if you need help.

This removes the Floe plugins, but not your libraries or presets.

macOS and Linux

There's no uninstaller: delete Floe's files yourself. The plugin files are the important ones, but you can delete the rest of Floe's files too, if you want to be thorough. See File Locations for where they all are.

Getting Help

- **Latest manual** — visit Mutant Piano's product page for the latest version of this manual.
- **Online documentation** — for Floe-specific documentation, you can also find information on floe.audio.
- **Forum** — ask questions and share ideas with other users on the FrozenPlain forum.
- **Contact** — for direct support, get in touch via frozenplain.com/contact.
- **Report a problem** — use the *Share Feedback* form inside Floe to report bugs or request features. See Error Reporting.

FAQ

Can I add my own samples?

Not at the moment. Floe isn't a sampler you drop your own recordings into: it's a platform for complete, polished sample libraries, a bit like an open ROMpler. Each library comes ready to play, with its Instruments set up and presets designed around them.

We're looking into ways to expand this in the future.

If you have some programming experience, you can make your own sample libraries for Floe with its open tools: see Library Development.

Does Floe load SFZ, SoundFont or other formats?

No. Floe loads sample libraries in its own format, an open format with similar ideas to SFZ that uses the Lua programming language.

What's the difference between Floe and Mutant Piano?

Mutant Piano is a sample library and preset bank for the Floe player. Its 300+ samples and 360 presets reflect months of effort crafting intricate and usable sounds. We built numerous new features for Floe alongside our development of Mutant Piano.

Because Floe is a separate player, you get a consistent workflow that improves with updates across all products, and you can mix sounds from different sample libraries. Floe is developed by FrozenPlain's Sam Windell, who worked closely with Richard Wells, Mutant Piano's principal architect. Floe is totally free and open source.

Error Reporting

Floe is built to be dependable for professional work. When something does go wrong, a few systems help keep your project safe and get the problem fixed quickly.

Share feedback

If you find a bug, have an idea for a feature or just want to tell us something, use the feedback form inside Floe. Open the ⋮ menu at the top of Floe's window and choose *Share Feedback*.

- **Description** — what happened, or what you'd like. For a bug, say what you did just before it happened.
- **Email** — optional. Add it if you'd like a reply.
- **Include anonymous diagnostic data** — sends details about your system and Floe's state along with your message, which often makes a bug much quicker to track down.

Please do report anything that doesn't seem right. We want to know about it, and we want to fix it.

Automatic error reports

If Floe crashes, it sends an anonymous error report. The report describes the error, the state of Floe leading up to it, and the computer it was running on. That gives us what we need to fix the bug without asking you to gather the information yourself. Floe also sends anonymous notes of when each session starts and ends, which tell us how reliably Floe is running overall.

To turn all of this off, enable *Disable anonymous error reports* on the *General* tab of Preferences. Floe is open source, so anyone can read the code and see exactly what's sent.

If Floe stops responding

Floe tries never to take your DAW down with it. If it detects a serious problem, it stops itself rather than crashing the DAW: it goes silent and stops responding. Every instance of Floe in that DAW session is affected.

When this happens:

1. Save your DAW project under a new name. That keeps the rest of your work safe without replacing your last good save, since a stopped Floe can't save its sound into the project.
2. Restart your DAW. Floe can't start again within the same DAW session.
3. If a sound in Floe didn't come back as you left it, recover it from an autosave. The instance name in each autosave's file name tells you which instance it came from.

An anonymous report of the problem is usually sent to us automatically, so we can work on a fix.

Autosave

Floe saves a copy of each instance's sound every few seconds while you work, so a sound you've spent time on is never lost for good. That helps if Floe or your DAW crashes, but it's just as handy for everyday accidents: deleting the wrong track, closing a project without saving, or tweaking a sound past the point you liked it.

Autosaves are ordinary preset files. Floe only saves when something has changed, and the files are tiny, so autosaving won't slow your computer down or fill up your drive.

Getting a sound back

1. In the preset box, click *Load from file*.
2. Go to Floe's autosave folder:
   - Windows: `C:\Users\Public\Floe\Autosaves`
   - macOS: `/Users/Shared/Floe/Autosaves`
   - Linux: `~/Floe/Autosaves`
3. Pick the autosave you want. Each file name holds the time and date it was saved, followed by the instance name, such as `autosave 14-32-05 Thu 2 Oct 2026 dawn-205 (4821).floe-preset`.

The autosave folder isn't one of Floe's preset folders, so autosaves don't clutter the preset browser. Once you've loaded the sound you wanted, save it as a normal preset to keep it.

Instance names

Every instance of Floe has a name of its own, such as `dawn-205`. It's saved with your DAW project, so the same instance keeps its name each time you open the project. When you have several instances of Floe running, the name in an autosave's file name tells you which one it came from.

To see each instance's name in the top panel, turn on *Show instance name* on the *General* tab of Preferences. It's worth turning on if you often use several instances of Floe at once.

Settings

The defaults suit most people, but you can change them on the *General* tab of Preferences:

- **Autosave interval (seconds)** — how often Floe checks for changes and saves.
- **Max autosaves per instance** — how many autosaves to keep for each instance. When an instance reaches the limit, its oldest autosave is deleted to make room.
- **Autosave delete after days** — how long to keep autosaves before deleting them.

Glossary

A few words have a specific meaning throughout this manual:

- **Package** — the file that delivers Mutant Piano and its presets to Floe (`.floe-pkg-enc`).
- **Sample Library** — a collection of mapped, playable sounds along with images, tags, and other metadata. Sample libraries provide the Instruments and impulse responses that Floe loads.
- **Layer** — one of the three identical channels, which all play together. Each layer holds an Instrument and has its own playback, envelope, LFO and EQ controls.
- **Instrument** — a playable sound source from a sample library, loaded into one of the layers. It might be a single recording or many samples mapped across the keyboard.
- **Impulse Response** — a recording from a sample library that gives the Convolution Reverb effect its character.
- **Preset** — a saved sound: a snapshot of every parameter and option, along with a name, description and tags.

Instruments

An Instrument is a playable sound source. It might be a single sample that loops, or many samples mapped across the keyboard.

You load an Instrument into any of the three layers with the Instrument browser. A layer with no Instrument loaded shows *None* in place of the name: click it to open the browser.

Legacy Parameters

When you open an older DAW project, some of Floe's controls might show a yellow ⚠ badge and refuse to move. Don't worry: your sound is safe and sounds exactly as it did when you saved it.

What's happened is that a Floe update replaced some parameters with new versions. The old parameters still exist and work exactly as before, but they're hidden out of sight. While one of them is in charge, the matching control on the main UI is locked. That's what the badge means.

You have two options:

- **Do nothing.** If you don't need to change the sound any further, leave it as it is. Floe is stable like this and sounds identical to when the project was saved.
- **Update to the current parameters.** Do this if you want to keep shaping the sound: it unlocks the main UI and the new parameters. The update keeps the sound the same and is normally perfectly safe, but check for DAW automation first, as described below.

Why legacy parameters exist

Floe aims for perfect backwards compatibility: a preset or DAW project saved with any version of Floe loads up sounding exactly the same in every later version. To make that possible without the main interface filling up with outdated controls, Floe never deletes a parameter. When a parameter needs to change, a new one goes on the main UI and the old one moves out of sight as a "legacy" parameter that quietly keeps doing its old job.

When does a parameter become legacy?

A parameter becomes legacy when it changes in a way that would otherwise alter how an existing project sounds. We keep this to a minimum. It can happen, though, when adding options to a menu, improving the response of a knob, or combining or simplifying controls.

In every case, the old parameter stays alive behind the scenes so your projects sound the same, and a new parameter appears on the main UI.

Presets and DAW projects

When you load a preset, Floe usually updates any legacy values it finds by itself: it copies the equivalent value onto the new parameter and clears the legacy one. You won't see any legacy parameters, and the controls on the main UI work as normal.

When you load a DAW project, Floe can't do this automatically, because it has no way of knowing whether your DAW is automating a legacy parameter, and silently changing the target would break your automation. Instead, Floe keeps the legacy value, lets it take charge of the new parameter, and shows the yellow badge on the affected control. The *Legacy Parameters* panel, in the ⋮ menu at the top of Floe's window, lists every legacy parameter that's currently in charge.

Locked controls

While a legacy parameter is in charge, the matching control on the main UI is greyed out and doesn't respond: moving it would do nothing, since the legacy value is what reaches the sound. Click the ⚠ badge in its corner to open the *Legacy Parameters* panel.

The control's position, and any display linked to it (such as filter curves, EQ displays or envelope shapes), shows the new parameter's own value, not the legacy value you're hearing. The sound is right, since the legacy value is the one being applied. Once you update, the display, the control and the sound all match up again.

Updating a legacy parameter

Updating hands control from the legacy parameter to its replacement, copying across a value that sounds the same. The *Legacy Parameters* panel has two ways to do this:

- **Update all to current parameters** — updates every legacy parameter that's in charge at once.
- **Update** — on each row, updates just that parameter.

Your project sounds exactly as it did before, and the control on the main UI works again.

If any DAW automation targets one of these parameters, remove or re-create that automation before updating. Floe decides whether a legacy parameter is in charge simply by checking whether it's at its default value, so as soon as the automation writes a different value, the legacy parameter takes charge again and the control locks.

The recommended order:

1. Check your DAW for any automation lanes targeting the legacy parameter.
2. If there is automation, delete it in your DAW. If you still want it, re-create it on the new parameter.
3. Open the *Legacy Parameters* panel and click *Update* on the row, or *Update all to current parameters*.

If there's no DAW automation on a legacy parameter, you can skip step 2: updating is then completely safe.

Parameters

Shorter parameter names

In your DAW, Floe's parameter names are long and descriptive, such as "Effect Distortion On". If your DAW shows them in a narrow space, you can switch to abbreviated names such as "Dist On": turn on *Abbreviate parameter names in DAW* on the *General* tab of Preferences. You might need to restart your DAW for the change to take effect.

Parameter table

This table lists every one of Floe's parameters, for when you need to look up an ID or a detail. To learn how to use them, see the pages on layers, effects and the rest of the Using Floe chapter.

Module	Name	ID	Abbreviated Name	Description
Layer 1	Volume	160	L1 Volume	The Layer Volume sets the level of this layer. The marks on the slider show the level of each sounding voice: its velocity, key range fade and any MPE volume expression. Tip: to change how velocity relates to volume, edit the velocity to volume curve on the CONFIG tab.
Layer 1	Mute	161	L1 Mute	Mute silences this layer. Handy for hearing how the other layers sit together while you're designing a sound. A muted layer keeps running in the background exactly as if you could hear it, so when you unmute, the sound carries on seamlessly from wherever it has naturally got to. If you're trying to save CPU, unload the Instrument instead. If a layer is still audible after muting it, check whether it's also soloed: Solo takes priority over Mute.
Layer 1	Solo	162	L1 Solo	Solo lets you hear this layer on its own. Any layer that isn't soloed goes quiet. Handy for focusing on one part of a sound while you're designing it. Silenced layers keep running in the background exactly as if you could hear them, so when you unsolo, they carry on seamlessly from wherever they have naturally got to. If you're trying to save CPU, unload their Instruments instead. If a layer has gone quiet unexpectedly, check whether another layer is soloed. And if a muted layer is still audible, that's because Solo takes priority over Mute.
Layer 1	Pan	163	L1 Pan	Pan places this layer in the stereo field, anywhere from fully left to fully right. It uses a constant-power pan law (-3 dB at centre), so the layer stays at the same perceived loudness wherever you put it. Pan is applied after the Stereo control, so you can narrow a wide sound first and then place it as a single point.
Layer 1	Detune Cents	164	L1 Detune Cents	Detune fine-tunes this layer's pitch in cents (100 cents is one semitone). This works by speeding up or slowing down the audio.
Layer 1	Pitch Semitones (Legacy)	165	L1 Pitch Semitones (Legacy)	Legacy layer pitch in semitones. Kept for backwards-compatibility with DAW automation
Layer 1/Playback/Loop	Start	167	L1Lp Start	Set the loop start point, where the loop begins within the sample. While a note is held, playback loops between here and the loop end.
Layer 1/Playback/Loop	End	168	L1Lp End	Set the loop end point, where the loop finishes within the sample. While a note is held, playback loops between the loop start and here.

Layer 1/Playback/Loop	Crossfade Size	169	L1Lp Crossfade Size	Set the size of the loop crossfade, which blends audio across the loop point so the loop doesn't click. A small amount usually helps, especially for sustained or tonal sounds. Floe keeps the crossfade within the loop and the sample, so it shrinks automatically if you make the loop too small for it.
Layer 1/Playback/Loop	Sample Start Offset	171	L1Lp Sample Start Offset	Change the starting point of the sample
Layer 1/Playback/Loop	Reverse On	172	L1Lp Reverse On	Play the Instrument's samples backwards, from the end to the start. It works in every play mode and whether looping is on or off. The waveform display flips to match, so playback always runs from left to right (unless in the reverse portion of a ping-pong loop).
Layer 1/Main/Volume Envelope	On	173	L1Vol On	Switch the volume envelope on or off. It's typically best left on. When it's off, every note plays its sample straight through to the end, however briefly you press the key. Handy for one-shot sounds that should always be heard in full. Looping is disabled while the envelope is off, since nothing would ever bring a looping note to an end. Careful: with the envelope off, notes can't be cut short, so voices pile up if you play quickly, which costs CPU.
Layer 1/Main/Volume Envelope	Attack	174	L1Vol Attack	Attack sets how long each note takes to fade in. A few milliseconds is enough to avoid clicks if you've moved the sample start point.
Layer 1/Main/Volume Envelope	Decay	175	L1Vol Decay	Decay sets how long the note takes to fall to the Sustain level after the attack.
Layer 1/Main/Volume Envelope	Sustain	176	L1Vol Sustain	Sustain sets the level the note holds at while the key is down. At 0 dB, Decay has nothing to do.
Layer 1/Main/Volume Envelope	Release	177	L1Vol Release	Release sets how long the note takes to fade out after you lift the key.
Layer 1/Main/Filter	On	178	L1Filt On	Switch the filter on or off. It's a clean, digital-sounding state-variable filter (12 dB per octave). Every voice gets its own copy, so the filter envelope and the LFO (on the LFO tab) can sweep each note independently. Tip: for broader tone shaping, the EQ tab has a three-band equaliser.
Layer 1/Main/Filter	Legacy Cutoff Frequency	179	L1Filt Legacy Cutoff Frequency	Legacy cutoff parameter. Kept for backwards-compatibility with DAW automation
Layer 1/Main/Filter	Legacy Resonance	180	L1Filt Legacy Resonance	Legacy resonance parameter. Kept for backwards-compatibility with DAW automation
Layer 1/Main/Filter	Legacy Type	181	L1Filt Legacy Type	Legacy filter type parameter. Kept for backwards-compatibility with DAW automation

Layer 1/Main/Filter	Envelope Amount	182	L1Filt Envelope Amount	Envelope Amount sets how strongly the filter envelope (shown to the right) moves the cutoff on every note. At 0% the envelope does nothing. Turn it up and the cutoff follows the envelope's shape, rising and falling with it. Turn it down and the cutoff moves the opposite way, falling as the envelope rises. The envelope is centred on the Cutoff setting: the top half of the display pushes the cutoff above it, the bottom half pulls it below. A negative amount flips this. For example, with a low-pass filter, a long attack opens the sound up gradually at the start of each note.
Layer 1/Main/Filter	Attack	183	L1Filt Attack	Attack sets how long the filter envelope takes to reach its peak.
Layer 1/Main/Filter	Decay	184	L1Filt Decay	Decay sets how long the filter envelope takes to fall to the Sustain level after the attack.
Layer 1/Main/Filter	Sustain	185	L1Filt Sustain	Sustain sets the level the filter envelope holds at while the key is down.
Layer 1/Main/Filter	Release	186	L1Filt Release	Release sets how long the filter envelope takes to fall back after you lift the key.
Layer 1/LFO	On	187	L1Lfo On	Switch this layer's LFO on or off. Enable Floe's LFO (low frequency oscillator) for adding movement to a one of this layer's controls (such as the volume or filter cutoff).
Layer 1/LFO	Legacy Shape	188	L1Lfo Legacy Shape	Legacy LFO shape parameter. Kept for backwards-compatibility with DAW automation
Layer 1/LFO	Mode	189	L1Lfo Mode	Choose where the LFO starts when you play a new note. With Retrigger, every note starts the LFO from the beginning of its cycle. With Free, a new note joins in wherever this layer's sounding notes have reached, so every note modulates precisely together.
Layer 1/LFO	Amount	190	L1Lfo Amount	Amount sets how far the LFO moves its target. 0% is no movement at all and 100% is the full range for that target: silence to full level for Volume, a semitone either way for Pitch, and so on. Negative values flip the shape upside down, so a falling sawtooth becomes a rising one. For random Shapes this only makes a difference when Variation is set to one of the Identical options. The LFO display shows the shape at the current Amount.
Layer 1/LFO	Target (Legacy)	191	L1Lfo Target (Legacy)	Legacy LFO target parameter. Kept for backwards-compatibility with DAW automation
Layer 1/LFO	Time (Tempo Synced) (Legacy)	192	L1Lfo Time (Tempo Synced) (Legacy)	Legacy LFO rate. Kept for backwards-compatibility with DAW automation
Layer 1/LFO	Time (Hz)	193	L1Lfo Time (Hz)	Time sets how fast the LFO cycles, in Hz (cycles per second). Tip: for movement that stays in time with your track, switch Sync on and choose a note length instead.
Layer 1/LFO	Sync On	194	L1Lfo Sync On	Sync ties the LFO's speed to your DAW's tempo. When it's on, Time is chosen as a note length that follows the tempo; when it's off, Time is set freely in Hz. Both settings are remembered, so you can flick between them without losing either.
Layer 1/EQ	On	195	L1Eq On	Switch on this layer's three-band equaliser to shape its tone before it's mixed with the other layers.

Layer 1/EQ/Band 1	Legacy Frequency	196	L1EqB1 Legacy Frequency	Legacy band 1 frequency parameter. Kept for backwards-compatibility with DAW automation
Layer 1/EQ/Band 1	Legacy Resonance	197	L1EqB1 Legacy Resonance	Legacy resonance parameter. Kept for backwards-compatibility with DAW automation
Layer 1/EQ/Band 1	Gain	198	L1EqB1 Gain	Gain sets how far this band boosts or cuts at its frequency. Only the Peak, Low-shelf and High-shelf types use Gain. The notch and pass filters always cut by their own fixed shape, so with those the knob is inactive.
Layer 1/EQ/Band 1	Legacy Type	199	L1EqB1 Legacy Type	Legacy type parameter. Kept for backwards-compatibility with DAW automation
Layer 1/EQ/Band 2	Legacy Frequency	200	L1EqB2 Legacy Frequency	Legacy band 2 frequency parameter. Kept for backwards-compatibility with DAW automation
Layer 1/EQ/Band 2	Legacy Resonance	201	L1EqB2 Legacy Resonance	Legacy resonance parameter. Kept for backwards-compatibility with DAW automation
Layer 1/EQ/Band 2	Gain	202	L1EqB2 Gain	Gain sets how far this band boosts or cuts at its frequency. Only the Peak, Low-shelf and High-shelf types use Gain. The notch and pass filters always cut by their own fixed shape, so with those the knob is inactive.
Layer 1/EQ/Band 2	Legacy Type	203	L1EqB2 Legacy Type	Legacy type parameter. Kept for backwards-compatibility with DAW automation
Layer 1/Config	Legacy Velocity Mapping	204	L1 Legacy Velocity Mapping	Choose how MIDI velocity should affect the volume of this layer. There are 6 modes that can be selected for this parameter via the buttons on the GUI. By setting one layer to be quiet at high velocities and another layer to be quiet at low velocities you can create an instrument that sounds different based on how hard the notes are played. (0) Ignore velocity, always play full volume. (1) Loudest at high velocity, quietist at low velocity (2) Loudest at low velocity, quietist at high velocity (3) Loudest at high velocity, quietist at middle velocity and below (4) Loudest at middle velocity, quietist at both high and low velocities (5) Loudest at bottom velocity, quietist at middle velocity and above,
Layer 1/Config	Keytrack On	205	L1 Keytrack On	With Keytrack on, this layer follows the keyboard: higher keys play higher pitches. Switch it off and every key plays the sample at its recorded pitch, which might be what you want for drum hits, loops and sound effects that shouldn't be transposed. Some sample libraries may override this - marking individual samples as always or never keytracked.
Layer 1/Config	Legacy Monophonic On	206	L1 Legacy Monophonic On	Only allow one voice of each sound to play at a time

Layer 1/Config	MIDI Transpose On	208	L1 MIDI Transpose On	Transpose shifts this layer up or down in semitones by changing which samples get triggered, rather than by speeding the audio up or down. On a multi-sampled Instrument that keeps the character of the sound intact, so it's the better choice for large shifts. The key range isn't affected: you play the same keys as before, they just reach for different samples. Tip: the Pitch control at the top of the layer transposes by re-pitching the audio instead. That's the one to reach for on a single-sample Instrument, and Detune beside it covers amounts smaller than a semitone.
Layer 1/Playback/Loop	Loop Mode	209	L1Lp Loop Mode	Select the Loop Mode for this layer. Floe can loop a portion of the sound for as long as you hold a note, so even a short sample can sustain indefinitely. Some Instruments come with loop points built in, while others let you set your own on the waveform. You can also turn looping off. There's 2 modes: 'standard' wrap-around loops jump from the loop end back to the start; 'ping-pong' loops bounce back and forth, alternating playback direction. The options that are available depend on the Instrument: library authors can provide built-in loops, allow or disallow custom loops, or require that certain sounds always loop.
Layer 1/Config	Key Range Low	210	L1 Key Range Low	This layer only plays within the given range of keys, letting you give each layer its own portion of the keyboard. Key Fade below softens the edges of the range, so the layer eases in and out instead of switching on abruptly. Tip: see each layer's range on the bar above the keyboard in the bottom panel. Hover it to enlarge it, and use the octave arrows beside the keyboard to scroll beyond the keys shown.
Layer 1/Config	Key Range High	211	L1 Key Range High	This layer only plays within the given range of keys, letting you give each layer its own portion of the keyboard. Key Fade below softens the edges of the range, so the layer eases in and out instead of switching on abruptly. Tip: see each layer's range on the bar above the keyboard in the bottom panel. Hover it to enlarge it, and use the octave arrows beside the keyboard to scroll beyond the keys shown.
Layer 1/Config	Key Range Low Fade	212	L1 Key Range Low Fade	Key Fade eases the layer in and out at the edges of its key range instead of letting it switch on abruptly. Both values are in semitones: the left one fades up from Range Low, the right one fades down from Range High. Give two layers overlapping fades and they crossfade into one another as you play up the keyboard. Tip: see each layer's range on the bar above the keyboard in the bottom panel. Hover it to enlarge it, and use the octave arrows beside the keyboard to scroll beyond the keys shown.
Layer 1/Config	Key Range High Fade	213	L1 Key Range High Fade	Key Fade eases the layer in and out at the edges of its key range instead of letting it switch on abruptly. Both values are in semitones: the left one fades up from Range Low, the right one fades down from Range High. Give two layers overlapping fades and they crossfade into one another as you play up the keyboard. Tip: see each layer's range on the bar above the keyboard in the bottom panel. Hover it to enlarge it, and use the octave arrows beside the keyboard to scroll beyond the keys shown.

Layer 1/Config	Pitch Bend Range	214	L1 Pitch Bend Range	Pitch Bend Range sets how far the pitch wheel bends this layer, in semitones. Each layer has its own, so for example, a lead can bend a whole tone while the pad underneath can be set to zero to ignore the wheel entirely. Bending re-pitches the audio by speeding it up or slowing it down, so large bends will noticeably change the character of the sound. With MPE enabled, this governs the wheel on the master channel; the per-note bend of each individual note follows the range the controller asks for.
Layer 1/Config	Monophonic Mode	215	L1 Monophonic Mode	Monophonic decides what happens when notes on this layer overlap. Left off, the layer is polyphonic and every note you play gets a voice of its own; the other two modes hold it to one note at a time, in different ways. It's set per layer, so a monophonic lead can sit on top of a polyphonic pad in the same preset. The arpeggiator handles its own notes, so this has no effect while the arpeggiator is running on this layer.
Layer 1/Playback	Play Mode	216	L1 Play Mode	Select the Play Mode for this layer: the engine it uses to play its Instrument. Standard Playback plays each sample straight through: the playhead moves steadily from start to end, with options for looping and reversing along the way. The granular modes instead rebuild the sound from a stream of tiny snippets called grains. In Granular Playback, the point grains are drawn from moves through the sample at a rate you set with Speed, giving a time-stretch-like effect. In Granular Fixed, you place that point yourself with Position, letting you freeze on one part of the sample and explore its texture.
Layer 1/Playback/Granular	Length	217	L1Grn Length	Length sets how long each grain lasts, from a few milliseconds up to a second. Short grains chop the sound into a fine, buzzy texture that keeps little of the original's shape. Long grains preserve much more of the sample's natural character. Density and Smooth are both measured relative to Length, so changing it here changes how they feel too.
Layer 1/Playback/Granular	Speed	218	L1Grn Speed	Speed sets how fast the playhead travels through the sample in Granular Playback mode. Grains are drawn from wherever the playhead is. 100% is the sample's original speed. Turn it down to slow the sound to a crawl or stop it altogether, or up to race through at up to eight times normal speed. The playhead still respects the sample start, looping and Reverse settings. In Granular Fixed, this knob is replaced by Position.
Layer 1/Playback/Granular	Position	219	L1Grn Position	Position chooses where in the sample grains are drawn from, shown as the highlighted region on the waveform. Grains come from here for as long as you hold the note, so you can freeze on one moment of the sound and sustain it indefinitely. Tip: you can create movement with this parameter by setting the LFO's target to Grain Position, or by assigning this knob to a macro.
Layer 1/Playback/Granular	Density	220	L1Grn Density	Density sets how many grains overlap at once, relative to their Length. At 0%, each grain starts as the previous one ends, so they follow on one after another. Turning it up starts new grains sooner, stacking more and more of them on top of each other. Low values give an open texture where individual grains can be picked out. High values pile up so many grains that they smear into a thick, continuous wash.

Layer 1/Playback/Granular	Spread	221	L1Grn Spread	Spread widens the area of the sample that grains can start from. Each new grain begins somewhere between the playhead and a point up to this far past it, measured as a percentage of the whole sample. Small values keep every grain close to the playhead for a focused, precise sound. Large values scatter grains across a wide stretch of the sample.
Layer 1/Playback/Granular	Smooth	222	L1Grn Smooth	Smooth shapes the envelope of each grain: how gently it fades in and out, relative to its Length. At 0% grains start and stop abruptly, giving a hard, percussive edge. At 100% the fade-in and fade-out meet in the middle, so neighbouring grains blend into each other for a seamless texture.
Layer 1/Playback/Granular	Pan	223	L1Grn Pan	Pan randomises where each grain sits in the stereo field. Every new grain is given its own position, picked at random within the range you set here. At 0% every grain plays dead centre. At 100% grains can land anywhere from fully left to fully right, spreading the cloud from one side to the other. A quick way to create an interestingly wide stereo image.
Layer 1/Playback/Granular	Detune	224	L1Grn Detune	Detune randomises the pitch of each grain. Every new grain is nudged sharp or flat by a random amount within the range you set here. At 0% all grains play in tune. At 100% each grain can be up to a semitone sharp or flat. Small amounts thicken the sound like a chorus; larger amounts get progressively more smeared and out of tune.
Layer 1/Playback/Granular	Direction	225	L1Grn Direction	Direction gives each grain a chance of playing the opposite way to the main playhead. At 0% every grain follows the playhead's direction. At 100% each grain is equally likely to play forwards or backwards. In between, you can dial in a blend of the two for meandering, less predictable tones.
Layer 1/Playback/Granular	Harmony	226	L1Grn Harmony	Harmony gives each grain a chance of playing at a musical interval above or below the note you played, so a single note can bloom into a chord or a shimmering octave. At 0% every grain plays at the root. Turning it up shifts more of the grains, until at 100% every grain picks at random from the root and the intervals you've chosen. Choose which intervals are allowed with the Intervals menu next to this knob: pick a preset such as Octaves or Major Triad, or toggle individual semitones yourself.
Layer 1/LFO	Legacy Shape V2	227	L1Lfo Legacy Shape V2	Legacy LFO shape parameter (v2). Kept for backwards-compatibility with DAW automation
Layer 1/LFO	Target	228	L1Lfo Target	Choose the Target: what the LFO modulates. The modulation is applied relative to the target's current knob/slider. For example, when Volume is chosen, the movement will occur around wherever the layer's volume slider is currently set. Hover over each option for details.
Layer 1/Main/Filter	Resonance	229	L1Filt Resonance	Resonance emphasises the frequencies at the cutoff. At 0% the slope is smooth and rounded; at 100% it peaks by around 20 dB, without ever self-oscillating. For the band-pass, notch and band-shelving types it also narrows the band, and for Peak it sets the size of the boost.

Layer 1/Arp	Note Order	230	L1Arp Note Order	Order sets how the notes you're holding are shared out across the steps: climbing, falling, bouncing between the two, picked at random, or one of the less common shapes. Chord is the odd one out — it plays every held note together on each step, which is ideal for rhythmic stabs and percussion. Not available in Fixed Notes mode.
Layer 1/Arp	Trigger	231	L1Arp Trigger	Trigger decides what a new note does to a pattern that's already running. Free lets it carry on, so you can change chord underneath without breaking the groove. Retrigger restarts it from step 1 every time you press a note, which keeps the pattern locked to your playing.
Layer 1/Arp	Rate (Legacy)	232	L1Arp Rate (Legacy)	Legacy arpeggiator rate. Kept for backwards-compatibility with DAW automation
Layer 1/Arp	Length	233	L1Arp Length	Length sets how many steps the pattern runs through before it loops back to the start. Steps beyond the length are hidden from the sequencer but keep their settings, so you can shorten a pattern and lengthen it again without losing anything.
Layer 1/Arp	Arpeggiator Mode	234	L1Arp Arpeggiator Mode	Choose where the steps get their notes from. Played Notes arpeggiates whatever you're holding, giving each step one of those notes in the order set by Order. Fixed Notes ignores what you play and runs a sequence of notes you've set yourself, either by dragging each step's note or by capturing a performance with the Record button.
Layer 1/Arp	Humanise	235	L1Arp Humanise	Humanise loosens the pattern up by nudging each step's timing and velocity by a random amount. A few percent takes the machine-like edge off; higher settings give a much looser, hand-played feel, which suits percussion especially well. Steps are only ever pushed later, never earlier, and never by more than a fifth of a step.
Layer 1/Arp	Auto Rate	236	L1Arp Auto Rate	Auto Rate lets Floe pick the step rate so a sliced Instrument plays close to the speed it was recorded at, rather than leaving silent gaps between slices when your host tempo is a long way from the loop's own. While it's on, the rate Floe has chosen is shown in place of the Rate menu. The multiplier shifts that choice: 2x for double speed, 0.5x for half, with Dotted and Triplet variants for a different feel. Because the choice has to land on a tempo-synced division it moves in jumps as the tempo changes, and every layer using Auto Rate jumps at the same points so they stay in the same rhythmic relationship.
Layer 1/Arp	Polyrate	237	L1Arp Polyrate	Polyrate gives each octave of the notes you're holding its own speed, so a single chord can produce several interleaving rhythms at once. The octave starting at middle C plays at the Rate you've set, and the octaves above and below scale from there by the ratio you choose. Tip: hold two notes an octave apart to hear the effect at its clearest.
Layer 1/Arp	One Shot	238	L1Arp One Shot	With One Shot on, the pattern plays through once and stops rather than looping for as long as you hold the notes. It's handy for fills and one-off flourishes, or for letting a sliced loop play through exactly once.
Layer 1/EQ/Band 1	Resonance	239	L1EqB1 Resonance	Resonance sets how tightly the band is focused. For the Peak and Notch types it's the width, going from broad and gentle to tight and focused. The shelves use it to steepen the transition at their corner, and the pass filters use it to add a peak at the cutoff.
Layer 1/EQ/Band 2	Resonance	240	L1EqB2 Resonance	Resonance sets how tightly the band is focused. For the Peak and Notch types it's the width, going from broad and gentle to tight and focused. The shelves use it to steepen the transition at their corner, and the pass filters use it to add a peak at the cutoff.

Layer 1/Arp	Arpeggiator	241	L1Arp Arpeggiator	Switch on the arpeggiator to turn the notes you hold into a rhythmic pattern locked to your host's tempo. Each step retriggers this layer's Instrument exactly as if you'd played the note yourself, so the envelopes, filter, LFOs and effects all respond as normal. Every layer has its own arpeggiator, so you can run different patterns side by side.
Layer 1/LFO	Shape	242	L1Lfo Shape	Choose the Shape of the LFO. Alongside the classics there are a few more interesting options, such as random and plucky shapes.
Layer 1/EQ/Band 1	Type	244	L1EqB1 Type	Choose the shape of this band: a peak or shelf for boosting and cutting, a notch for removing a narrow slice, or a pass filter for rolling off one end of the spectrum. Only the Peak, Low-shelf and High-shelf types use the Gain knob; with the others it's inactive.
Layer 1/EQ/Band 2	Type	245	L1EqB2 Type	Choose the shape of this band: a peak or shelf for boosting and cutting, a notch for removing a narrow slice, or a pass filter for rolling off one end of the spectrum. Only the Peak, Low-shelf and High-shelf types use the Gain knob; with the others it's inactive.
Layer 1/EQ/Band 3	Legacy Frequency	246	L1EqB3 Legacy Frequency	Legacy band 3 frequency parameter. Kept for backwards-compatibility with DAW automation
Layer 1/EQ/Band 3	Resonance	247	L1EqB3 Resonance	Resonance sets how tightly the band is focused. For the Peak and Notch types it's the width, going from broad and gentle to tight and focused. The shelves use it to steepen the transition at their corner, and the pass filters use it to add a peak at the cutoff.
Layer 1/EQ/Band 3	Gain	248	L1EqB3 Gain	Gain sets how far this band boosts or cuts at its frequency. Only the Peak, Low-shelf and High-shelf types use Gain. The notch and pass filters always cut by their own fixed shape, so with those the knob is inactive.
Layer 1/EQ/Band 3	Type	249	L1EqB3 Type	Choose the shape of this band: a peak or shelf for boosting and cutting, a notch for removing a narrow slice, or a pass filter for rolling off one end of the spectrum. Only the Peak, Low-shelf and High-shelf types use the Gain knob; with the others it's inactive.
Layer 1/Main/Filter	Cutoff Frequency	250	L1Filt Cutoff Frequency	Cutoff Frequency sets where the filter takes effect. The filter envelope and the LFO sweep the cutoff around this value, so it's the centre of any modulation rather than the starting point.
Layer 1/EQ/Band 1	Frequency	251	L1EqB1 Frequency	Frequency sets where this band does its work: the centre of a peak or notch, the corner of a shelf, or the cutoff of a pass filter.
Layer 1/EQ/Band 2	Frequency	252	L1EqB2 Frequency	Frequency sets where this band does its work: the centre of a peak or notch, the corner of a shelf, or the cutoff of a pass filter.
Layer 1/EQ/Band 3	Frequency	253	L1EqB3 Frequency	Frequency sets where this band does its work: the centre of a peak or notch, the corner of a shelf, or the cutoff of a pass filter.
Layer 1/Main/Filter	Type	254	L1Filt Type	Select the filter type. Hover over the options in the menu for a description of each.
Layer 1	Stereo Width	255	L1 Stereo Width	Stereo narrows or widens this layer's stereo image. Negative values pull it toward mono, positive values push it wider, and 0% leaves the sound as recorded. It works by splitting the sound into mid (what both channels share) and side (what differs between them), then rebalancing the two with a constant-power crossfade. At -100% only the mid remains; at +100% only the side, so anything dead centre disappears. Mono sounds have no side, so pushing to +100% silences them.

Layer 1/Config	MPE Press Target	256	L1 MPE Press Target	Press is the channel pressure, or aftertouch, that an MPE controller sends on each note's own channel. On most keyboards it follows how hard you're pushing into the key once it's sounding. Choose what it controls on this layer here, and how strongly with Amount beside it. Press rests at nothing and climbs from there, so it only ever adds to the destination you point it at. MPE has to be switched on in the Performance Controls panel before press does anything.
Layer 1/Config	MPE Press Amount	257	L1 MPE Press Amount	Amount sets how far press moves its destination, and a negative value flips the direction so the effect runs in reverse. Past 100% the destination reaches its limit before press reaches its own, so you get the full effect from a lighter touch.
Layer 1/Config	MPE Slide Target	258	L1 MPE Slide Target	Slide is CC74, which an MPE controller sends on each note's own channel. On most keyboards it follows where your finger sits along the front-to-back axis of the key. Choose what it controls on this layer here, and how strongly with Amount beside it. Slide rests in the middle, so it pushes the destination either side of where you've set it. MPE has to be switched on in the Performance Controls panel before slide does anything.
Layer 1/Config	MPE Slide Amount	259	L1 MPE Slide Amount	Amount sets how far slide moves its destination, and a negative value flips the direction so the effect runs in reverse. Past 100% the destination reaches its limit before slide reaches its own, so you get the full effect from a smaller movement.
Layer 1/LFO	Time (Tempo Synced)	260	L1Lfo Time (Tempo Synced)	Time sets how long one LFO cycle lasts, as a note length at your DAW's tempo. 1/4 is a quarter note; a D on the end is dotted (one and a half times as long) and a T is triplet (two thirds as long). The LFO follows tempo changes, but it isn't locked to the bar: each cycle starts from the note, as set by Mode.
Layer 1/Arp	Rate	261	L1Arp Rate	Rate sets how long each step lasts, synced to your host's tempo. Together with Length it decides how long the whole pattern takes to come round — eight steps at 1/8 fills one bar of 4/4. The T and D suffixes are triplet and dotted divisions, useful for swung or lopsided patterns.
Layer 1	Pitch Semitones	262	L1 Pitch Semitones	Pitch moves this layer up or down in semitones. This works by speeding up or slowing down the audio. Tip: for a multisampled Instrument, you might get better results from Transpose on the CONFIG tab. It changes which samples are played rather than processing them, which can sound more natural.
Layer 1/Playback/Granular	Variation	263	L1Grn Variation	Variation decides whether each note scatters its grains differently or plays back the exact same grains every time. Different on every note suits most sounds, while the Identical options let you capture a particular pattern of grains and save it with the preset. Open the menu and hover over each option for details.
Layer 1/Playback/Granular	Seed	264	L1Grn Seed	Seed picks which pattern of grains repeats. Try a few numbers until you find one you like: it's saved with the preset, so the grains you choose are the grains everyone hears. Set Variation to one of the Identical options for this to take effect.

Layer 1/LFO	Variation	265	L1Lfo Variation	Variation decides whether the random shapes move differently on each note or play back the exact same pattern every time. Different on every note suits most sounds, while the Identical options let you capture a particular pattern and save it with the preset. In Free mode, a note that joins already-sounding notes follows their pattern. Open the menu and hover over each option for details.
Layer 1/LFO	Seed	266	L1Lfo Seed	Seed picks which random pattern repeats. Try a few numbers until you find one you like: it's saved with the preset, so the movement you choose is the movement everyone hears. Set Variation to one of the Identical options for this to take effect.
Layer 1/Playback/Granular	Share Grains	267	L1Grn Share Grains	Share Grains keeps the number of grains the same whether you play one note or a chord, so the sound keeps the same density however many notes you hold. Each grain plays from one of the held notes, weaving the chord's pitches together. At low Density you can hear the grains hop between the notes of the chord.
Layer 2	Volume	320	L2 Volume	The Layer Volume sets the level of this layer. The marks on the slider show the level of each sounding voice: its velocity, key range fade and any MPE volume expression. Tip: to change how velocity relates to volume, edit the velocity to volume curve on the CONFIG tab.
Layer 2	Mute	321	L2 Mute	Mute silences this layer. Handy for hearing how the other layers sit together while you're designing a sound. A muted layer keeps running in the background exactly as if you could hear it, so when you unmute, the sound carries on seamlessly from wherever it has naturally got to. If you're trying to save CPU, unload the Instrument instead. If a layer is still audible after muting it, check whether it's also soloed: Solo takes priority over Mute.
Layer 2	Solo	322	L2 Solo	Solo lets you hear this layer on its own. Any layer that isn't soloed goes quiet. Handy for focusing on one part of a sound while you're designing it. Silenced layers keep running in the background exactly as if you could hear them, so when you unsolo, they carry on seamlessly from wherever they have naturally got to. If you're trying to save CPU, unload their Instruments instead. If a layer has gone quiet unexpectedly, check whether another layer is soloed. And if a muted layer is still audible, that's because Solo takes priority over Mute.
Layer 2	Pan	323	L2 Pan	Pan places this layer in the stereo field, anywhere from fully left to fully right. It uses a constant-power pan law (-3 dB at centre), so the layer stays at the same perceived loudness wherever you put it. Pan is applied after the Stereo control, so you can narrow a wide sound first and then place it as a single point.
Layer 2	Detune Cents	324	L2 Detune Cents	Detune fine-tunes this layer's pitch in cents (100 cents is one semitone). This works by speeding up or slowing down the audio.
Layer 2	Pitch Semitones (Legacy)	325	L2 Pitch Semitones (Legacy)	Legacy layer pitch in semitones. Kept for backwards-compatibility with DAW automation
Layer 2/Playback/Loop	Start	327	L2Lp Start	Set the loop start point, where the loop begins within the sample. While a note is held, playback loops between here and the loop end.

Layer 2/Playback/Loop	End	328	L2Lp End	Set the loop end point, where the loop finishes within the sample. While a note is held, playback loops between the loop start and here.
Layer 2/Playback/Loop	Crossfade Size	329	L2Lp Crossfade Size	Set the size of the loop crossfade, which blends audio across the loop point so the loop doesn't click. A small amount usually helps, especially for sustained or tonal sounds. Floe keeps the crossfade within the loop and the sample, so it shrinks automatically if you make the loop too small for it.
Layer 2/Playback/Loop	Sample Start Offset	331	L2Lp Sample Start Offset	Change the starting point of the sample
Layer 2/Playback/Loop	Reverse On	332	L2Lp Reverse On	Play the Instrument's samples backwards, from the end to the start. It works in every play mode and whether looping is on or off. The waveform display flips to match, so playback always runs from left to right (unless in the reverse portion of a ping-pong loop).
Layer 2/Main/Volume Envelope	On	333	L2Vol On	Switch the volume envelope on or off. It's typically best left on. When it's off, every note plays its sample straight through to the end, however briefly you press the key. Handy for one-shot sounds that should always be heard in full. Looping is disabled while the envelope is off, since nothing would ever bring a looping note to an end. Careful: with the envelope off, notes can't be cut short, so voices pile up if you play quickly, which costs CPU.
Layer 2/Main/Volume Envelope	Attack	334	L2Vol Attack	Attack sets how long each note takes to fade in. A few milliseconds is enough to avoid clicks if you've moved the sample start point.
Layer 2/Main/Volume Envelope	Decay	335	L2Vol Decay	Decay sets how long the note takes to fall to the Sustain level after the attack.
Layer 2/Main/Volume Envelope	Sustain	336	L2Vol Sustain	Sustain sets the level the note holds at while the key is down. At 0 dB, Decay has nothing to do.
Layer 2/Main/Volume Envelope	Release	337	L2Vol Release	Release sets how long the note takes to fade out after you lift the key.
Layer 2/Main/Filter	On	338	L2Filt On	Switch the filter on or off. It's a clean, digital-sounding state-variable filter (12 dB per octave). Every voice gets its own copy, so the filter envelope and the LFO (on the LFO tab) can sweep each note independently. Tip: for broader tone shaping, the EQ tab has a three-band equaliser.
Layer 2/Main/Filter	Legacy Cutoff Frequency	339	L2Filt Legacy Cutoff Frequency	Legacy cutoff parameter. Kept for backwards-compatibility with DAW automation
Layer 2/Main/Filter	Legacy Resonance	340	L2Filt Legacy Resonance	Legacy resonance parameter. Kept for backwards-compatibility with DAW automation
Layer 2/Main/Filter	Legacy Type	341	L2Filt Legacy Type	Legacy filter type parameter. Kept for backwards-compatibility with DAW automation

Layer 2/Main/Filter	Envelope Amount	342	L2Filt Envelope Amount	Envelope Amount sets how strongly the filter envelope (shown to the right) moves the cutoff on every note. At 0% the envelope does nothing. Turn it up and the cutoff follows the envelope's shape, rising and falling with it. Turn it down and the cutoff moves the opposite way, falling as the envelope rises. The envelope is centred on the Cutoff setting: the top half of the display pushes the cutoff above it, the bottom half pulls it below. A negative amount flips this. For example, with a low-pass filter, a long attack opens the sound up gradually at the start of each note.
Layer 2/Main/Filter	Attack	343	L2Filt Attack	Attack sets how long the filter envelope takes to reach its peak.
Layer 2/Main/Filter	Decay	344	L2Filt Decay	Decay sets how long the filter envelope takes to fall to the Sustain level after the attack.
Layer 2/Main/Filter	Sustain	345	L2Filt Sustain	Sustain sets the level the filter envelope holds at while the key is down.
Layer 2/Main/Filter	Release	346	L2Filt Release	Release sets how long the filter envelope takes to fall back after you lift the key.
Layer 2/LFO	On	347	L2Lfo On	Switch this layer's LFO on or off. Enable Floe's LFO (low frequency oscillator) for adding movement to a one of this layer's controls (such as the volume or filter cutoff).
Layer 2/LFO	Legacy Shape	348	L2Lfo Legacy Shape	Legacy LFO shape parameter. Kept for backwards-compatibility with DAW automation
Layer 2/LFO	Mode	349	L2Lfo Mode	Choose where the LFO starts when you play a new note. With Retrigger, every note starts the LFO from the beginning of its cycle. With Free, a new note joins in wherever this layer's sounding notes have reached, so every note modulates precisely together.
Layer 2/LFO	Amount	350	L2Lfo Amount	Amount sets how far the LFO moves its target. 0% is no movement at all and 100% is the full range for that target: silence to full level for Volume, a semitone either way for Pitch, and so on. Negative values flip the shape upside down, so a falling sawtooth becomes a rising one. For random Shapes this only makes a difference when Variation is set to one of the Identical options. The LFO display shows the shape at the current Amount.
Layer 2/LFO	Target (Legacy)	351	L2Lfo Target (Legacy)	Legacy LFO target parameter. Kept for backwards-compatibility with DAW automation
Layer 2/LFO	Time (Tempo Synced) (Legacy)	352	L2Lfo Time (Tempo Synced) (Legacy)	Legacy LFO rate. Kept for backwards-compatibility with DAW automation
Layer 2/LFO	Time (Hz)	353	L2Lfo Time (Hz)	Time sets how fast the LFO cycles, in Hz (cycles per second). Tip: for movement that stays in time with your track, switch Sync on and choose a note length instead.
Layer 2/LFO	Sync On	354	L2Lfo Sync On	Sync ties the LFO's speed to your DAW's tempo. When it's on, Time is chosen as a note length that follows the tempo; when it's off, Time is set freely in Hz. Both settings are remembered, so you can flick between them without losing either.
Layer 2/EQ	On	355	L2Eq On	Switch on this layer's three-band equaliser to shape its tone before it's mixed with the other layers.

Layer 2/EQ/Band 1	Legacy Frequency	356	L2EqB1 Legacy Frequency	Legacy band 1 frequency parameter. Kept for backwards-compatibility with DAW automation
Layer 2/EQ/Band 1	Legacy Resonance	357	L2EqB1 Legacy Resonance	Legacy resonance parameter. Kept for backwards-compatibility with DAW automation
Layer 2/EQ/Band 1	Gain	358	L2EqB1 Gain	Gain sets how far this band boosts or cuts at its frequency. Only the Peak, Low-shelf and High-shelf types use Gain. The notch and pass filters always cut by their own fixed shape, so with those the knob is inactive.
Layer 2/EQ/Band 1	Legacy Type	359	L2EqB1 Legacy Type	Legacy type parameter. Kept for backwards-compatibility with DAW automation
Layer 2/EQ/Band 2	Legacy Frequency	360	L2EqB2 Legacy Frequency	Legacy band 2 frequency parameter. Kept for backwards-compatibility with DAW automation
Layer 2/EQ/Band 2	Legacy Resonance	361	L2EqB2 Legacy Resonance	Legacy resonance parameter. Kept for backwards-compatibility with DAW automation
Layer 2/EQ/Band 2	Gain	362	L2EqB2 Gain	Gain sets how far this band boosts or cuts at its frequency. Only the Peak, Low-shelf and High-shelf types use Gain. The notch and pass filters always cut by their own fixed shape, so with those the knob is inactive.
Layer 2/EQ/Band 2	Legacy Type	363	L2EqB2 Legacy Type	Legacy type parameter. Kept for backwards-compatibility with DAW automation
Layer 2/Config	Legacy Velocity Mapping	364	L2 Legacy Velocity Mapping	Choose how MIDI velocity should affect the volume of this layer. There are 6 modes that can be selected for this parameter via the buttons on the GUI. By setting one layer to be quiet at high velocities and another layer to be quiet at low velocities you can create an instrument that sounds different based on how hard the notes are played. (0) Ignore velocity, always play full volume. (1) Loudest at high velocity, quietist at low velocity (2) Loudest at low velocity, quietist at high velocity (3) Loudest at high velocity, quietist at middle velocity and below (4) Loudest at middle velocity, quietist at both high and low velocities (5) Loudest at bottom velocity, quietist at middle velocity and above,
Layer 2/Config	Keytrack On	365	L2 Keytrack On	With Keytrack on, this layer follows the keyboard: higher keys play higher pitches. Switch it off and every key plays the sample at its recorded pitch, which might be what you want for drum hits, loops and sound effects that shouldn't be transposed. Some sample libraries may override this - marking individual samples as always or never keytracked.
Layer 2/Config	Legacy Monophonic On	366	L2 Legacy Monophonic On	Only allow one voice of each sound to play at a time

Layer 2/Config	MIDI Transpose On	368	L2 MIDI Transpose On	Transpose shifts this layer up or down in semitones by changing which samples get triggered, rather than by speeding the audio up or down. On a multi-sampled Instrument that keeps the character of the sound intact, so it's the better choice for large shifts. The key range isn't affected: you play the same keys as before, they just reach for different samples. Tip: the Pitch control at the top of the layer transposes by re-pitching the audio instead. That's the one to reach for on a single-sample Instrument, and Detune beside it covers amounts smaller than a semitone.
Layer 2/Playback/Loop	Loop Mode	369	L2Lp Loop Mode	Select the Loop Mode for this layer. Floe can loop a portion of the sound for as long as you hold a note, so even a short sample can sustain indefinitely. Some Instruments come with loop points built in, while others let you set your own on the waveform. You can also turn looping off. There's 2 modes: 'standard' wrap-around loops jump from the loop end back to the start; 'ping-pong' loops bounce back and forth, alternating playback direction. The options that are available depend on the Instrument: library authors can provide built-in loops, allow or disallow custom loops, or require that certain sounds always loop.
Layer 2/Config	Key Range Low	370	L2 Key Range Low	This layer only plays within the given range of keys, letting you give each layer its own portion of the keyboard. Key Fade below softens the edges of the range, so the layer eases in and out instead of switching on abruptly. Tip: see each layer's range on the bar above the keyboard in the bottom panel. Hover it to enlarge it, and use the octave arrows beside the keyboard to scroll beyond the keys shown.
Layer 2/Config	Key Range High	371	L2 Key Range High	This layer only plays within the given range of keys, letting you give each layer its own portion of the keyboard. Key Fade below softens the edges of the range, so the layer eases in and out instead of switching on abruptly. Tip: see each layer's range on the bar above the keyboard in the bottom panel. Hover it to enlarge it, and use the octave arrows beside the keyboard to scroll beyond the keys shown.
Layer 2/Config	Key Range Low Fade	372	L2 Key Range Low Fade	Key Fade eases the layer in and out at the edges of its key range instead of letting it switch on abruptly. Both values are in semitones: the left one fades up from Range Low, the right one fades down from Range High. Give two layers overlapping fades and they crossfade into one another as you play up the keyboard. Tip: see each layer's range on the bar above the keyboard in the bottom panel. Hover it to enlarge it, and use the octave arrows beside the keyboard to scroll beyond the keys shown.
Layer 2/Config	Key Range High Fade	373	L2 Key Range High Fade	Key Fade eases the layer in and out at the edges of its key range instead of letting it switch on abruptly. Both values are in semitones: the left one fades up from Range Low, the right one fades down from Range High. Give two layers overlapping fades and they crossfade into one another as you play up the keyboard. Tip: see each layer's range on the bar above the keyboard in the bottom panel. Hover it to enlarge it, and use the octave arrows beside the keyboard to scroll beyond the keys shown.

Layer 2/Config	Pitch Bend Range	374	L2 Pitch Bend Range	Pitch Bend Range sets how far the pitch wheel bends this layer, in semitones. Each layer has its own, so for example, a lead can bend a whole tone while the pad underneath can be set to zero to ignore the wheel entirely. Bending re-pitches the audio by speeding it up or slowing it down, so large bends will noticeably change the character of the sound. With MPE enabled, this governs the wheel on the master channel; the per-note bend of each individual note follows the range the controller asks for.
Layer 2/Config	Monophonic Mode	375	L2 Monophonic Mode	Monophonic decides what happens when notes on this layer overlap. Left off, the layer is polyphonic and every note you play gets a voice of its own; the other two modes hold it to one note at a time, in different ways. It's set per layer, so a monophonic lead can sit on top of a polyphonic pad in the same preset. The arpeggiator handles its own notes, so this has no effect while the arpeggiator is running on this layer.
Layer 2/Playback	Play Mode	376	L2 Play Mode	Select the Play Mode for this layer: the engine it uses to play its Instrument. Standard Playback plays each sample straight through: the playhead moves steadily from start to end, with options for looping and reversing along the way. The granular modes instead rebuild the sound from a stream of tiny snippets called grains. In Granular Playback, the point grains are drawn from moves through the sample at a rate you set with Speed, giving a time-stretch-like effect. In Granular Fixed, you place that point yourself with Position, letting you freeze on one part of the sample and explore its texture.
Layer 2/Playback/Granular	Length	377	L2Grn Length	Length sets how long each grain lasts, from a few milliseconds up to a second. Short grains chop the sound into a fine, buzzy texture that keeps little of the original's shape. Long grains preserve much more of the sample's natural character. Density and Smooth are both measured relative to Length, so changing it here changes how they feel too.
Layer 2/Playback/Granular	Speed	378	L2Grn Speed	Speed sets how fast the playhead travels through the sample in Granular Playback mode. Grains are drawn from wherever the playhead is. 100% is the sample's original speed. Turn it down to slow the sound to a crawl or stop it altogether, or up to race through at up to eight times normal speed. The playhead still respects the sample start, looping and Reverse settings. In Granular Fixed, this knob is replaced by Position.
Layer 2/Playback/Granular	Position	379	L2Grn Position	Position chooses where in the sample grains are drawn from, shown as the highlighted region on the waveform. Grains come from here for as long as you hold the note, so you can freeze on one moment of the sound and sustain it indefinitely. Tip: you can create movement with this parameter by setting the LFO's target to Grain Position, or by assigning this knob to a macro.
Layer 2/Playback/Granular	Density	380	L2Grn Density	Density sets how many grains overlap at once, relative to their Length. At 0%, each grain starts as the previous one ends, so they follow on one after another. Turning it up starts new grains sooner, stacking more and more of them on top of each other. Low values give an open texture where individual grains can be picked out. High values pile up so many grains that they smear into a thick, continuous wash.

Layer 2/Playback/Granular	Spread	381	L2Grn Spread	Spread widens the area of the sample that grains can start from. Each new grain begins somewhere between the playhead and a point up to this far past it, measured as a percentage of the whole sample. Small values keep every grain close to the playhead for a focused, precise sound. Large values scatter grains across a wide stretch of the sample.
Layer 2/Playback/Granular	Smooth	382	L2Grn Smooth	Smooth shapes the envelope of each grain: how gently it fades in and out, relative to its Length. At 0% grains start and stop abruptly, giving a hard, percussive edge. At 100% the fade-in and fade-out meet in the middle, so neighbouring grains blend into each other for a seamless texture.
Layer 2/Playback/Granular	Pan	383	L2Grn Pan	Pan randomises where each grain sits in the stereo field. Every new grain is given its own position, picked at random within the range you set here. At 0% every grain plays dead centre. At 100% grains can land anywhere from fully left to fully right, spreading the cloud from one side to the other. A quick way to create an interestingly wide stereo image.
Layer 2/Playback/Granular	Detune	384	L2Grn Detune	Detune randomises the pitch of each grain. Every new grain is nudged sharp or flat by a random amount within the range you set here. At 0% all grains play in tune. At 100% each grain can be up to a semitone sharp or flat. Small amounts thicken the sound like a chorus; larger amounts get progressively more smeared and out of tune.
Layer 2/Playback/Granular	Direction	385	L2Grn Direction	Direction gives each grain a chance of playing the opposite way to the main playhead. At 0% every grain follows the playhead's direction. At 100% each grain is equally likely to play forwards or backwards. In between, you can dial in a blend of the two for meandering, less predictable tones.
Layer 2/Playback/Granular	Harmony	386	L2Grn Harmony	Harmony gives each grain a chance of playing at a musical interval above or below the note you played, so a single note can bloom into a chord or a shimmering octave. At 0% every grain plays at the root. Turning it up shifts more of the grains, until at 100% every grain picks at random from the root and the intervals you've chosen. Choose which intervals are allowed with the Intervals menu next to this knob: pick a preset such as Octaves or Major Triad, or toggle individual semitones yourself.
Layer 2/LFO	Legacy Shape V2	387	L2Lfo Legacy Shape V2	Legacy LFO shape parameter (v2). Kept for backwards-compatibility with DAW automation
Layer 2/LFO	Target	388	L2Lfo Target	Choose the Target: what the LFO modulates. The modulation is applied relative to the target's current knob/slider. For example, when Volume is chosen, the movement will occur around wherever the layer's volume slider is currently set. Hover over each option for details.
Layer 2/Main/Filter	Resonance	389	L2Filt Resonance	Resonance emphasises the frequencies at the cutoff. At 0% the slope is smooth and rounded; at 100% it peaks by around 20 dB, without ever self-oscillating. For the band-pass, notch and band-shelving types it also narrows the band, and for Peak it sets the size of the boost.

Layer 2/Arp	Note Order	390	L2Arp Note Order	Order sets how the notes you're holding are shared out across the steps: climbing, falling, bouncing between the two, picked at random, or one of the less common shapes. Chord is the odd one out — it plays every held note together on each step, which is ideal for rhythmic stabs and percussion. Not available in Fixed Notes mode.
Layer 2/Arp	Trigger	391	L2Arp Trigger	Trigger decides what a new note does to a pattern that's already running. Free lets it carry on, so you can change chord underneath without breaking the groove. Retrigger restarts it from step 1 every time you press a note, which keeps the pattern locked to your playing.
Layer 2/Arp	Rate (Legacy)	392	L2Arp Rate (Legacy)	Legacy arpeggiator rate. Kept for backwards-compatibility with DAW automation
Layer 2/Arp	Length	393	L2Arp Length	Length sets how many steps the pattern runs through before it loops back to the start. Steps beyond the length are hidden from the sequencer but keep their settings, so you can shorten a pattern and lengthen it again without losing anything.
Layer 2/Arp	Arpeggiator Mode	394	L2Arp Arpeggiator Mode	Choose where the steps get their notes from. Played Notes arpeggiates whatever you're holding, giving each step one of those notes in the order set by Order. Fixed Notes ignores what you play and runs a sequence of notes you've set yourself, either by dragging each step's note or by capturing a performance with the Record button.
Layer 2/Arp	Humanise	395	L2Arp Humanise	Humanise loosens the pattern up by nudging each step's timing and velocity by a random amount. A few percent takes the machine-like edge off; higher settings give a much looser, hand-played feel, which suits percussion especially well. Steps are only ever pushed later, never earlier, and never by more than a fifth of a step.
Layer 2/Arp	Auto Rate	396	L2Arp Auto Rate	Auto Rate lets Floe pick the step rate so a sliced Instrument plays close to the speed it was recorded at, rather than leaving silent gaps between slices when your host tempo is a long way from the loop's own. While it's on, the rate Floe has chosen is shown in place of the Rate menu. The multiplier shifts that choice: 2x for double speed, 0.5x for half, with Dotted and Triplet variants for a different feel. Because the choice has to land on a tempo-synced division it moves in jumps as the tempo changes, and every layer using Auto Rate jumps at the same points so they stay in the same rhythmic relationship.
Layer 2/Arp	Polyrate	397	L2Arp Polyrate	Polyrate gives each octave of the notes you're holding its own speed, so a single chord can produce several interleaving rhythms at once. The octave starting at middle C plays at the Rate you've set, and the octaves above and below scale from there by the ratio you choose. Tip: hold two notes an octave apart to hear the effect at its clearest.
Layer 2/Arp	One Shot	398	L2Arp One Shot	With One Shot on, the pattern plays through once and stops rather than looping for as long as you hold the notes. It's handy for fills and one-off flourishes, or for letting a sliced loop play through exactly once.
Layer 2/EQ/Band 1	Resonance	399	L2EqB1 Resonance	Resonance sets how tightly the band is focused. For the Peak and Notch types it's the width, going from broad and gentle to tight and focused. The shelves use it to steepen the transition at their corner, and the pass filters use it to add a peak at the cutoff.
Layer 2/EQ/Band 2	Resonance	400	L2EqB2 Resonance	Resonance sets how tightly the band is focused. For the Peak and Notch types it's the width, going from broad and gentle to tight and focused. The shelves use it to steepen the transition at their corner, and the pass filters use it to add a peak at the cutoff.

Layer 2/Arp	Arpeggiator	401	L2Arp Arpeggiator	Switch on the arpeggiator to turn the notes you hold into a rhythmic pattern locked to your host's tempo. Each step retriggers this layer's Instrument exactly as if you'd played the note yourself, so the envelopes, filter, LFOs and effects all respond as normal. Every layer has its own arpeggiator, so you can run different patterns side by side.
Layer 2/LFO	Shape	402	L2Lfo Shape	Choose the Shape of the LFO. Alongside the classics there are a few more interesting options, such as random and plucky shapes.
Layer 2/EQ/Band 1	Type	404	L2EqB1 Type	Choose the shape of this band: a peak or shelf for boosting and cutting, a notch for removing a narrow slice, or a pass filter for rolling off one end of the spectrum. Only the Peak, Low-shelf and High-shelf types use the Gain knob; with the others it's inactive.
Layer 2/EQ/Band 2	Type	405	L2EqB2 Type	Choose the shape of this band: a peak or shelf for boosting and cutting, a notch for removing a narrow slice, or a pass filter for rolling off one end of the spectrum. Only the Peak, Low-shelf and High-shelf types use the Gain knob; with the others it's inactive.
Layer 2/EQ/Band 3	Legacy Frequency	406	L2EqB3 Legacy Frequency	Legacy band 3 frequency parameter. Kept for backwards-compatibility with DAW automation
Layer 2/EQ/Band 3	Resonance	407	L2EqB3 Resonance	Resonance sets how tightly the band is focused. For the Peak and Notch types it's the width, going from broad and gentle to tight and focused. The shelves use it to steepen the transition at their corner, and the pass filters use it to add a peak at the cutoff.
Layer 2/EQ/Band 3	Gain	408	L2EqB3 Gain	Gain sets how far this band boosts or cuts at its frequency. Only the Peak, Low-shelf and High-shelf types use Gain. The notch and pass filters always cut by their own fixed shape, so with those the knob is inactive.
Layer 2/EQ/Band 3	Type	409	L2EqB3 Type	Choose the shape of this band: a peak or shelf for boosting and cutting, a notch for removing a narrow slice, or a pass filter for rolling off one end of the spectrum. Only the Peak, Low-shelf and High-shelf types use the Gain knob; with the others it's inactive.
Layer 2/Main/Filter	Cutoff Frequency	410	L2Filt Cutoff Frequency	Cutoff Frequency sets where the filter takes effect. The filter envelope and the LFO sweep the cutoff around this value, so it's the centre of any modulation rather than the starting point.
Layer 2/EQ/Band 1	Frequency	411	L2EqB1 Frequency	Frequency sets where this band does its work: the centre of a peak or notch, the corner of a shelf, or the cutoff of a pass filter.
Layer 2/EQ/Band 2	Frequency	412	L2EqB2 Frequency	Frequency sets where this band does its work: the centre of a peak or notch, the corner of a shelf, or the cutoff of a pass filter.
Layer 2/EQ/Band 3	Frequency	413	L2EqB3 Frequency	Frequency sets where this band does its work: the centre of a peak or notch, the corner of a shelf, or the cutoff of a pass filter.
Layer 2/Main/Filter	Type	414	L2Filt Type	Select the filter type. Hover over the options in the menu for a description of each.
Layer 2	Stereo Width	415	L2 Stereo Width	Stereo narrows or widens this layer's stereo image. Negative values pull it toward mono, positive values push it wider, and 0% leaves the sound as recorded. It works by splitting the sound into mid (what both channels share) and side (what differs between them), then rebalancing the two with a constant-power crossfade. At -100% only the mid remains; at +100% only the side, so anything dead centre disappears. Mono sounds have no side, so pushing to +100% silences them.

Layer 2/Config	MPE Press Target	416	L2 MPE Press Target	Press is the channel pressure, or aftertouch, that an MPE controller sends on each note's own channel. On most keyboards it follows how hard you're pushing into the key once it's sounding. Choose what it controls on this layer here, and how strongly with Amount beside it. Press rests at nothing and climbs from there, so it only ever adds to the destination you point it at. MPE has to be switched on in the Performance Controls panel before press does anything.
Layer 2/Config	MPE Press Amount	417	L2 MPE Press Amount	Amount sets how far press moves its destination, and a negative value flips the direction so the effect runs in reverse. Past 100% the destination reaches its limit before press reaches its own, so you get the full effect from a lighter touch.
Layer 2/Config	MPE Slide Target	418	L2 MPE Slide Target	Slide is CC74, which an MPE controller sends on each note's own channel. On most keyboards it follows where your finger sits along the front-to-back axis of the key. Choose what it controls on this layer here, and how strongly with Amount beside it. Slide rests in the middle, so it pushes the destination either side of where you've set it. MPE has to be switched on in the Performance Controls panel before slide does anything.
Layer 2/Config	MPE Slide Amount	419	L2 MPE Slide Amount	Amount sets how far slide moves its destination, and a negative value flips the direction so the effect runs in reverse. Past 100% the destination reaches its limit before slide reaches its own, so you get the full effect from a smaller movement.
Layer 2/LFO	Time (Tempo Synced)	420	L2Lfo Time (Tempo Synced)	Time sets how long one LFO cycle lasts, as a note length at your DAW's tempo. 1/4 is a quarter note; a D on the end is dotted (one and a half times as long) and a T is triplet (two thirds as long). The LFO follows tempo changes, but it isn't locked to the bar: each cycle starts from the note, as set by Mode.
Layer 2/Arp	Rate	421	L2Arp Rate	Rate sets how long each step lasts, synced to your host's tempo. Together with Length it decides how long the whole pattern takes to come round — eight steps at 1/8 fills one bar of 4/4. The T and D suffixes are triplet and dotted divisions, useful for swung or lopsided patterns.
Layer 2	Pitch Semitones	422	L2 Pitch Semitones	Pitch moves this layer up or down in semitones. This works by speeding up or slowing down the audio. Tip: for a multisampled Instrument, you might get better results from Transpose on the CONFIG tab. It changes which samples are played rather than processing them, which can sound more natural.
Layer 2/Playback/Granular	Variation	423	L2Grn Variation	Variation decides whether each note scatters its grains differently or plays back the exact same grains every time. Different on every note suits most sounds, while the Identical options let you capture a particular pattern of grains and save it with the preset. Open the menu and hover over each option for details.
Layer 2/Playback/Granular	Seed	424	L2Grn Seed	Seed picks which pattern of grains repeats. Try a few numbers until you find one you like: it's saved with the preset, so the grains you choose are the grains everyone hears. Set Variation to one of the Identical options for this to take effect.

Layer 2/LFO	Variation	425	L2Lfo Variation	Variation decides whether the random shapes move differently on each note or play back the exact same pattern every time. Different on every note suits most sounds, while the Identical options let you capture a particular pattern and save it with the preset. In Free mode, a note that joins already-sounding notes follows their pattern. Open the menu and hover over each option for details.
Layer 2/LFO	Seed	426	L2Lfo Seed	Seed picks which random pattern repeats. Try a few numbers until you find one you like: it's saved with the preset, so the movement you choose is the movement everyone hears. Set Variation to one of the Identical options for this to take effect.
Layer 2/Playback/Granular	Share Grains	427	L2Grn Share Grains	Share Grains keeps the number of grains the same whether you play one note or a chord, so the sound keeps the same density however many notes you hold. Each grain plays from one of the held notes, weaving the chord's pitches together. At low Density you can hear the grains hop between the notes of the chord.
Layer 3	Volume	480	L3 Volume	The Layer Volume sets the level of this layer. The marks on the slider show the level of each sounding voice: its velocity, key range fade and any MPE volume expression. Tip: to change how velocity relates to volume, edit the velocity to volume curve on the CONFIG tab.
Layer 3	Mute	481	L3 Mute	Mute silences this layer. Handy for hearing how the other layers sit together while you're designing a sound. A muted layer keeps running in the background exactly as if you could hear it, so when you unmute, the sound carries on seamlessly from wherever it has naturally got to. If you're trying to save CPU, unload the Instrument instead. If a layer is still audible after muting it, check whether it's also soloed: Solo takes priority over Mute.
Layer 3	Solo	482	L3 Solo	Solo lets you hear this layer on its own. Any layer that isn't soloed goes quiet. Handy for focusing on one part of a sound while you're designing it. Silenced layers keep running in the background exactly as if you could hear them, so when you unsolo, they carry on seamlessly from wherever they have naturally got to. If you're trying to save CPU, unload their Instruments instead. If a layer has gone quiet unexpectedly, check whether another layer is soloed. And if a muted layer is still audible, that's because Solo takes priority over Mute.
Layer 3	Pan	483	L3 Pan	Pan places this layer in the stereo field, anywhere from fully left to fully right. It uses a constant-power pan law (-3 dB at centre), so the layer stays at the same perceived loudness wherever you put it. Pan is applied after the Stereo control, so you can narrow a wide sound first and then place it as a single point.
Layer 3	Detune Cents	484	L3 Detune Cents	Detune fine-tunes this layer's pitch in cents (100 cents is one semitone). This works by speeding up or slowing down the audio.
Layer 3	Pitch Semitones (Legacy)	485	L3 Pitch Semitones (Legacy)	Legacy layer pitch in semitones. Kept for backwards-compatibility with DAW automation
Layer 3/Playback/Loop	Start	487	L3Lp Start	Set the loop start point, where the loop begins within the sample. While a note is held, playback loops between here and the loop end.

Layer 3/Playback/Loop	End	488	L3Lp End	Set the loop end point, where the loop finishes within the sample. While a note is held, playback loops between the loop start and here.
Layer 3/Playback/Loop	Crossfade Size	489	L3Lp Crossfade Size	Set the size of the loop crossfade, which blends audio across the loop point so the loop doesn't click. A small amount usually helps, especially for sustained or tonal sounds. Floe keeps the crossfade within the loop and the sample, so it shrinks automatically if you make the loop too small for it.
Layer 3/Playback/Loop	Sample Start Offset	491	L3Lp Sample Start Offset	Change the starting point of the sample
Layer 3/Playback/Loop	Reverse On	492	L3Lp Reverse On	Play the Instrument's samples backwards, from the end to the start. It works in every play mode and whether looping is on or off. The waveform display flips to match, so playback always runs from left to right (unless in the reverse portion of a ping-pong loop).
Layer 3/Main/Volume Envelope	On	493	L3Vol On	Switch the volume envelope on or off. It's typically best left on. When it's off, every note plays its sample straight through to the end, however briefly you press the key. Handy for one-shot sounds that should always be heard in full. Looping is disabled while the envelope is off, since nothing would ever bring a looping note to an end. Careful: with the envelope off, notes can't be cut short, so voices pile up if you play quickly, which costs CPU.
Layer 3/Main/Volume Envelope	Attack	494	L3Vol Attack	Attack sets how long each note takes to fade in. A few milliseconds is enough to avoid clicks if you've moved the sample start point.
Layer 3/Main/Volume Envelope	Decay	495	L3Vol Decay	Decay sets how long the note takes to fall to the Sustain level after the attack.
Layer 3/Main/Volume Envelope	Sustain	496	L3Vol Sustain	Sustain sets the level the note holds at while the key is down. At 0 dB, Decay has nothing to do.
Layer 3/Main/Volume Envelope	Release	497	L3Vol Release	Release sets how long the note takes to fade out after you lift the key.
Layer 3/Main/Filter	On	498	L3Filt On	Switch the filter on or off. It's a clean, digital-sounding state-variable filter (12 dB per octave). Every voice gets its own copy, so the filter envelope and the LFO (on the LFO tab) can sweep each note independently. Tip: for broader tone shaping, the EQ tab has a three-band equaliser.
Layer 3/Main/Filter	Legacy Cutoff Frequency	499	L3Filt Legacy Cutoff Frequency	Legacy cutoff parameter. Kept for backwards-compatibility with DAW automation
Layer 3/Main/Filter	Legacy Resonance	500	L3Filt Legacy Resonance	Legacy resonance parameter. Kept for backwards-compatibility with DAW automation
Layer 3/Main/Filter	Legacy Type	501	L3Filt Legacy Type	Legacy filter type parameter. Kept for backwards-compatibility with DAW automation

Layer 3/Main/Filter	Envelope Amount	502	L3Filt Envelope Amount	Envelope Amount sets how strongly the filter envelope (shown to the right) moves the cutoff on every note. At 0% the envelope does nothing. Turn it up and the cutoff follows the envelope's shape, rising and falling with it. Turn it down and the cutoff moves the opposite way, falling as the envelope rises. The envelope is centred on the Cutoff setting: the top half of the display pushes the cutoff above it, the bottom half pulls it below. A negative amount flips this. For example, with a low-pass filter, a long attack opens the sound up gradually at the start of each note.
Layer 3/Main/Filter	Attack	503	L3Filt Attack	Attack sets how long the filter envelope takes to reach its peak.
Layer 3/Main/Filter	Decay	504	L3Filt Decay	Decay sets how long the filter envelope takes to fall to the Sustain level after the attack.
Layer 3/Main/Filter	Sustain	505	L3Filt Sustain	Sustain sets the level the filter envelope holds at while the key is down.
Layer 3/Main/Filter	Release	506	L3Filt Release	Release sets how long the filter envelope takes to fall back after you lift the key.
Layer 3/LFO	On	507	L3Lfo On	Switch this layer's LFO on or off. Enable Floe's LFO (low frequency oscillator) for adding movement to a one of this layer's controls (such as the volume or filter cutoff).
Layer 3/LFO	Legacy Shape	508	L3Lfo Legacy Shape	Legacy LFO shape parameter. Kept for backwards-compatibility with DAW automation
Layer 3/LFO	Mode	509	L3Lfo Mode	Choose where the LFO starts when you play a new note. With Retrigger, every note starts the LFO from the beginning of its cycle. With Free, a new note joins in wherever this layer's sounding notes have reached, so every note modulates precisely together.
Layer 3/LFO	Amount	510	L3Lfo Amount	Amount sets how far the LFO moves its target. 0% is no movement at all and 100% is the full range for that target: silence to full level for Volume, a semitone either way for Pitch, and so on. Negative values flip the shape upside down, so a falling sawtooth becomes a rising one. For random Shapes this only makes a difference when Variation is set to one of the Identical options. The LFO display shows the shape at the current Amount.
Layer 3/LFO	Target (Legacy)	511	L3Lfo Target (Legacy)	Legacy LFO target parameter. Kept for backwards-compatibility with DAW automation
Layer 3/LFO	Time (Tempo Synced) (Legacy)	512	L3Lfo Time (Tempo Synced) (Legacy)	Legacy LFO rate. Kept for backwards-compatibility with DAW automation
Layer 3/LFO	Time (Hz)	513	L3Lfo Time (Hz)	Time sets how fast the LFO cycles, in Hz (cycles per second). Tip: for movement that stays in time with your track, switch Sync on and choose a note length instead.
Layer 3/LFO	Sync On	514	L3Lfo Sync On	Sync ties the LFO's speed to your DAW's tempo. When it's on, Time is chosen as a note length that follows the tempo; when it's off, Time is set freely in Hz. Both settings are remembered, so you can flick between them without losing either.
Layer 3/EQ	On	515	L3Eq On	Switch on this layer's three-band equaliser to shape its tone before it's mixed with the other layers.

Layer 3/EQ/Band 1	Legacy Frequency	516	L3EqB1 Legacy Frequency	Legacy band 1 frequency parameter. Kept for backwards-compatibility with DAW automation
Layer 3/EQ/Band 1	Legacy Resonance	517	L3EqB1 Legacy Resonance	Legacy resonance parameter. Kept for backwards-compatibility with DAW automation
Layer 3/EQ/Band 1	Gain	518	L3EqB1 Gain	Gain sets how far this band boosts or cuts at its frequency. Only the Peak, Low-shelf and High-shelf types use Gain. The notch and pass filters always cut by their own fixed shape, so with those the knob is inactive.
Layer 3/EQ/Band 1	Legacy Type	519	L3EqB1 Legacy Type	Legacy type parameter. Kept for backwards-compatibility with DAW automation
Layer 3/EQ/Band 2	Legacy Frequency	520	L3EqB2 Legacy Frequency	Legacy band 2 frequency parameter. Kept for backwards-compatibility with DAW automation
Layer 3/EQ/Band 2	Legacy Resonance	521	L3EqB2 Legacy Resonance	Legacy resonance parameter. Kept for backwards-compatibility with DAW automation
Layer 3/EQ/Band 2	Gain	522	L3EqB2 Gain	Gain sets how far this band boosts or cuts at its frequency. Only the Peak, Low-shelf and High-shelf types use Gain. The notch and pass filters always cut by their own fixed shape, so with those the knob is inactive.
Layer 3/EQ/Band 2	Legacy Type	523	L3EqB2 Legacy Type	Legacy type parameter. Kept for backwards-compatibility with DAW automation
Layer 3/Config	Legacy Velocity Mapping	524	L3 Legacy Velocity Mapping	Choose how MIDI velocity should affect the volume of this layer. There are 6 modes that can be selected for this parameter via the buttons on the GUI. By setting one layer to be quiet at high velocities and another layer to be quiet at low velocities you can create an instrument that sounds different based on how hard the notes are played. (0) Ignore velocity, always play full volume. (1) Loudest at high velocity, quietist at low velocity (2) Loudest at low velocity, quietist at high velocity (3) Loudest at high velocity, quietist at middle velocity and below (4) Loudest at middle velocity, quietist at both high and low velocities (5) Loudest at bottom velocity, quietist at middle velocity and above,
Layer 3/Config	Keytrack On	525	L3 Keytrack On	With Keytrack on, this layer follows the keyboard: higher keys play higher pitches. Switch it off and every key plays the sample at its recorded pitch, which might be what you want for drum hits, loops and sound effects that shouldn't be transposed. Some sample libraries may override this - marking individual samples as always or never keytracked.
Layer 3/Config	Legacy Monophonic On	526	L3 Legacy Monophonic On	Only allow one voice of each sound to play at a time

Layer 3/Config	MIDI Transpose On	528	L3 MIDI Transpose On	Transpose shifts this layer up or down in semitones by changing which samples get triggered, rather than by speeding the audio up or down. On a multi-sampled Instrument that keeps the character of the sound intact, so it's the better choice for large shifts. The key range isn't affected: you play the same keys as before, they just reach for different samples. Tip: the Pitch control at the top of the layer transposes by re-pitching the audio instead. That's the one to reach for on a single-sample Instrument, and Detune beside it covers amounts smaller than a semitone.
Layer 3/Playback/Loop	Loop Mode	529	L3Lp Loop Mode	Select the Loop Mode for this layer. Floe can loop a portion of the sound for as long as you hold a note, so even a short sample can sustain indefinitely. Some Instruments come with loop points built in, while others let you set your own on the waveform. You can also turn looping off. There's 2 modes: 'standard' wrap-around loops jump from the loop end back to the start; 'ping-pong' loops bounce back and forth, alternating playback direction. The options that are available depend on the Instrument: library authors can provide built-in loops, allow or disallow custom loops, or require that certain sounds always loop.
Layer 3/Config	Key Range Low	530	L3 Key Range Low	This layer only plays within the given range of keys, letting you give each layer its own portion of the keyboard. Key Fade below softens the edges of the range, so the layer eases in and out instead of switching on abruptly. Tip: see each layer's range on the bar above the keyboard in the bottom panel. Hover it to enlarge it, and use the octave arrows beside the keyboard to scroll beyond the keys shown.
Layer 3/Config	Key Range High	531	L3 Key Range High	This layer only plays within the given range of keys, letting you give each layer its own portion of the keyboard. Key Fade below softens the edges of the range, so the layer eases in and out instead of switching on abruptly. Tip: see each layer's range on the bar above the keyboard in the bottom panel. Hover it to enlarge it, and use the octave arrows beside the keyboard to scroll beyond the keys shown.
Layer 3/Config	Key Range Low Fade	532	L3 Key Range Low Fade	Key Fade eases the layer in and out at the edges of its key range instead of letting it switch on abruptly. Both values are in semitones: the left one fades up from Range Low, the right one fades down from Range High. Give two layers overlapping fades and they crossfade into one another as you play up the keyboard. Tip: see each layer's range on the bar above the keyboard in the bottom panel. Hover it to enlarge it, and use the octave arrows beside the keyboard to scroll beyond the keys shown.
Layer 3/Config	Key Range High Fade	533	L3 Key Range High Fade	Key Fade eases the layer in and out at the edges of its key range instead of letting it switch on abruptly. Both values are in semitones: the left one fades up from Range Low, the right one fades down from Range High. Give two layers overlapping fades and they crossfade into one another as you play up the keyboard. Tip: see each layer's range on the bar above the keyboard in the bottom panel. Hover it to enlarge it, and use the octave arrows beside the keyboard to scroll beyond the keys shown.

Layer 3/Config	Pitch Bend Range	534	L3 Pitch Bend Range	Pitch Bend Range sets how far the pitch wheel bends this layer, in semitones. Each layer has its own, so for example, a lead can bend a whole tone while the pad underneath can be set to zero to ignore the wheel entirely. Bending re-pitches the audio by speeding it up or slowing it down, so large bends will noticeably change the character of the sound. With MPE enabled, this governs the wheel on the master channel; the per-note bend of each individual note follows the range the controller asks for.
Layer 3/Config	Monophonic Mode	535	L3 Monophonic Mode	Monophonic decides what happens when notes on this layer overlap. Left off, the layer is polyphonic and every note you play gets a voice of its own; the other two modes hold it to one note at a time, in different ways. It's set per layer, so a monophonic lead can sit on top of a polyphonic pad in the same preset. The arpeggiator handles its own notes, so this has no effect while the arpeggiator is running on this layer.
Layer 3/Playback	Play Mode	536	L3 Play Mode	Select the Play Mode for this layer: the engine it uses to play its Instrument. Standard Playback plays each sample straight through: the playhead moves steadily from start to end, with options for looping and reversing along the way. The granular modes instead rebuild the sound from a stream of tiny snippets called grains. In Granular Playback, the point grains are drawn from moves through the sample at a rate you set with Speed, giving a time-stretch-like effect. In Granular Fixed, you place that point yourself with Position, letting you freeze on one part of the sample and explore its texture.
Layer 3/Playback/Granular	Length	537	L3Grn Length	Length sets how long each grain lasts, from a few milliseconds up to a second. Short grains chop the sound into a fine, buzzy texture that keeps little of the original's shape. Long grains preserve much more of the sample's natural character. Density and Smooth are both measured relative to Length, so changing it here changes how they feel too.
Layer 3/Playback/Granular	Speed	538	L3Grn Speed	Speed sets how fast the playhead travels through the sample in Granular Playback mode. Grains are drawn from wherever the playhead is. 100% is the sample's original speed. Turn it down to slow the sound to a crawl or stop it altogether, or up to race through at up to eight times normal speed. The playhead still respects the sample start, looping and Reverse settings. In Granular Fixed, this knob is replaced by Position.
Layer 3/Playback/Granular	Position	539	L3Grn Position	Position chooses where in the sample grains are drawn from, shown as the highlighted region on the waveform. Grains come from here for as long as you hold the note, so you can freeze on one moment of the sound and sustain it indefinitely. Tip: you can create movement with this parameter by setting the LFO's target to Grain Position, or by assigning this knob to a macro.
Layer 3/Playback/Granular	Density	540	L3Grn Density	Density sets how many grains overlap at once, relative to their Length. At 0%, each grain starts as the previous one ends, so they follow on one after another. Turning it up starts new grains sooner, stacking more and more of them on top of each other. Low values give an open texture where individual grains can be picked out. High values pile up so many grains that they smear into a thick, continuous wash.

Layer 3/Playback/Granular	Spread	541	L3Grn Spread	Spread widens the area of the sample that grains can start from. Each new grain begins somewhere between the playhead and a point up to this far past it, measured as a percentage of the whole sample. Small values keep every grain close to the playhead for a focused, precise sound. Large values scatter grains across a wide stretch of the sample.
Layer 3/Playback/Granular	Smooth	542	L3Grn Smooth	Smooth shapes the envelope of each grain: how gently it fades in and out, relative to its Length. At 0% grains start and stop abruptly, giving a hard, percussive edge. At 100% the fade-in and fade-out meet in the middle, so neighbouring grains blend into each other for a seamless texture.
Layer 3/Playback/Granular	Pan	543	L3Grn Pan	Pan randomises where each grain sits in the stereo field. Every new grain is given its own position, picked at random within the range you set here. At 0% every grain plays dead centre. At 100% grains can land anywhere from fully left to fully right, spreading the cloud from one side to the other. A quick way to create an interestingly wide stereo image.
Layer 3/Playback/Granular	Detune	544	L3Grn Detune	Detune randomises the pitch of each grain. Every new grain is nudged sharp or flat by a random amount within the range you set here. At 0% all grains play in tune. At 100% each grain can be up to a semitone sharp or flat. Small amounts thicken the sound like a chorus; larger amounts get progressively more smeared and out of tune.
Layer 3/Playback/Granular	Direction	545	L3Grn Direction	Direction gives each grain a chance of playing the opposite way to the main playhead. At 0% every grain follows the playhead's direction. At 100% each grain is equally likely to play forwards or backwards. In between, you can dial in a blend of the two for meandering, less predictable tones.
Layer 3/Playback/Granular	Harmony	546	L3Grn Harmony	Harmony gives each grain a chance of playing at a musical interval above or below the note you played, so a single note can bloom into a chord or a shimmering octave. At 0% every grain plays at the root. Turning it up shifts more of the grains, until at 100% every grain picks at random from the root and the intervals you've chosen. Choose which intervals are allowed with the Intervals menu next to this knob: pick a preset such as Octaves or Major Triad, or toggle individual semitones yourself.
Layer 3/LFO	Legacy Shape V2	547	L3Lfo Legacy Shape V2	Legacy LFO shape parameter (v2). Kept for backwards-compatibility with DAW automation
Layer 3/LFO	Target	548	L3Lfo Target	Choose the Target: what the LFO modulates. The modulation is applied relative to the target's current knob/slider. For example, when Volume is chosen, the movement will occur around wherever the layer's volume slider is currently set. Hover over each option for details.
Layer 3/Main/Filter	Resonance	549	L3Filt Resonance	Resonance emphasises the frequencies at the cutoff. At 0% the slope is smooth and rounded; at 100% it peaks by around 20 dB, without ever self-oscillating. For the band-pass, notch and band-shelving types it also narrows the band, and for Peak it sets the size of the boost.

Layer 3/Arp	Note Order	550	L3Arp Note Order	Order sets how the notes you're holding are shared out across the steps: climbing, falling, bouncing between the two, picked at random, or one of the less common shapes. Chord is the odd one out — it plays every held note together on each step, which is ideal for rhythmic stabs and percussion. Not available in Fixed Notes mode.
Layer 3/Arp	Trigger	551	L3Arp Trigger	Trigger decides what a new note does to a pattern that's already running. Free lets it carry on, so you can change chord underneath without breaking the groove. Retrigger restarts it from step 1 every time you press a note, which keeps the pattern locked to your playing.
Layer 3/Arp	Rate (Legacy)	552	L3Arp Rate (Legacy)	Legacy arpeggiator rate. Kept for backwards-compatibility with DAW automation
Layer 3/Arp	Length	553	L3Arp Length	Length sets how many steps the pattern runs through before it loops back to the start. Steps beyond the length are hidden from the sequencer but keep their settings, so you can shorten a pattern and lengthen it again without losing anything.
Layer 3/Arp	Arpeggiator Mode	554	L3Arp Arpeggiator Mode	Choose where the steps get their notes from. Played Notes arpeggiates whatever you're holding, giving each step one of those notes in the order set by Order. Fixed Notes ignores what you play and runs a sequence of notes you've set yourself, either by dragging each step's note or by capturing a performance with the Record button.
Layer 3/Arp	Humanise	555	L3Arp Humanise	Humanise loosens the pattern up by nudging each step's timing and velocity by a random amount. A few percent takes the machine-like edge off; higher settings give a much looser, hand-played feel, which suits percussion especially well. Steps are only ever pushed later, never earlier, and never by more than a fifth of a step.
Layer 3/Arp	Auto Rate	556	L3Arp Auto Rate	Auto Rate lets Floe pick the step rate so a sliced Instrument plays close to the speed it was recorded at, rather than leaving silent gaps between slices when your host tempo is a long way from the loop's own. While it's on, the rate Floe has chosen is shown in place of the Rate menu. The multiplier shifts that choice: 2x for double speed, 0.5x for half, with Dotted and Triplet variants for a different feel. Because the choice has to land on a tempo-synced division it moves in jumps as the tempo changes, and every layer using Auto Rate jumps at the same points so they stay in the same rhythmic relationship.
Layer 3/Arp	Polyrate	557	L3Arp Polyrate	Polyrate gives each octave of the notes you're holding its own speed, so a single chord can produce several interleaving rhythms at once. The octave starting at middle C plays at the Rate you've set, and the octaves above and below scale from there by the ratio you choose. Tip: hold two notes an octave apart to hear the effect at its clearest.
Layer 3/Arp	One Shot	558	L3Arp One Shot	With One Shot on, the pattern plays through once and stops rather than looping for as long as you hold the notes. It's handy for fills and one-off flourishes, or for letting a sliced loop play through exactly once.
Layer 3/EQ/Band 1	Resonance	559	L3EqB1 Resonance	Resonance sets how tightly the band is focused. For the Peak and Notch types it's the width, going from broad and gentle to tight and focused. The shelves use it to steepen the transition at their corner, and the pass filters use it to add a peak at the cutoff.
Layer 3/EQ/Band 2	Resonance	560	L3EqB2 Resonance	Resonance sets how tightly the band is focused. For the Peak and Notch types it's the width, going from broad and gentle to tight and focused. The shelves use it to steepen the transition at their corner, and the pass filters use it to add a peak at the cutoff.

Layer 3/Arp	Arpeggiator	561	L3Arp Arpeggiator	Switch on the arpeggiator to turn the notes you hold into a rhythmic pattern locked to your host's tempo. Each step retriggers this layer's Instrument exactly as if you'd played the note yourself, so the envelopes, filter, LFOs and effects all respond as normal. Every layer has its own arpeggiator, so you can run different patterns side by side.
Layer 3/LFO	Shape	562	L3Lfo Shape	Choose the Shape of the LFO. Alongside the classics there are a few more interesting options, such as random and plucky shapes.
Layer 3/EQ/Band 1	Type	564	L3EqB1 Type	Choose the shape of this band: a peak or shelf for boosting and cutting, a notch for removing a narrow slice, or a pass filter for rolling off one end of the spectrum. Only the Peak, Low-shelf and High-shelf types use the Gain knob; with the others it's inactive.
Layer 3/EQ/Band 2	Type	565	L3EqB2 Type	Choose the shape of this band: a peak or shelf for boosting and cutting, a notch for removing a narrow slice, or a pass filter for rolling off one end of the spectrum. Only the Peak, Low-shelf and High-shelf types use the Gain knob; with the others it's inactive.
Layer 3/EQ/Band 3	Legacy Frequency	566	L3EqB3 Legacy Frequency	Legacy band 3 frequency parameter. Kept for backwards-compatibility with DAW automation
Layer 3/EQ/Band 3	Resonance	567	L3EqB3 Resonance	Resonance sets how tightly the band is focused. For the Peak and Notch types it's the width, going from broad and gentle to tight and focused. The shelves use it to steepen the transition at their corner, and the pass filters use it to add a peak at the cutoff.
Layer 3/EQ/Band 3	Gain	568	L3EqB3 Gain	Gain sets how far this band boosts or cuts at its frequency. Only the Peak, Low-shelf and High-shelf types use Gain. The notch and pass filters always cut by their own fixed shape, so with those the knob is inactive.
Layer 3/EQ/Band 3	Type	569	L3EqB3 Type	Choose the shape of this band: a peak or shelf for boosting and cutting, a notch for removing a narrow slice, or a pass filter for rolling off one end of the spectrum. Only the Peak, Low-shelf and High-shelf types use the Gain knob; with the others it's inactive.
Layer 3/Main/Filter	Cutoff Frequency	570	L3Filt Cutoff Frequency	Cutoff Frequency sets where the filter takes effect. The filter envelope and the LFO sweep the cutoff around this value, so it's the centre of any modulation rather than the starting point.
Layer 3/EQ/Band 1	Frequency	571	L3EqB1 Frequency	Frequency sets where this band does its work: the centre of a peak or notch, the corner of a shelf, or the cutoff of a pass filter.
Layer 3/EQ/Band 2	Frequency	572	L3EqB2 Frequency	Frequency sets where this band does its work: the centre of a peak or notch, the corner of a shelf, or the cutoff of a pass filter.
Layer 3/EQ/Band 3	Frequency	573	L3EqB3 Frequency	Frequency sets where this band does its work: the centre of a peak or notch, the corner of a shelf, or the cutoff of a pass filter.
Layer 3/Main/Filter	Type	574	L3Filt Type	Select the filter type. Hover over the options in the menu for a description of each.
Layer 3	Stereo Width	575	L3 Stereo Width	Stereo narrows or widens this layer's stereo image. Negative values pull it toward mono, positive values push it wider, and 0% leaves the sound as recorded. It works by splitting the sound into mid (what both channels share) and side (what differs between them), then rebalancing the two with a constant-power crossfade. At -100% only the mid remains; at +100% only the side, so anything dead centre disappears. Mono sounds have no side, so pushing to +100% silences them.

Layer 3/Config	MPE Press Target	576	L3 MPE Press Target	Press is the channel pressure, or aftertouch, that an MPE controller sends on each note's own channel. On most keyboards it follows how hard you're pushing into the key once it's sounding. Choose what it controls on this layer here, and how strongly with Amount beside it. Press rests at nothing and climbs from there, so it only ever adds to the destination you point it at. MPE has to be switched on in the Performance Controls panel before press does anything.
Layer 3/Config	MPE Press Amount	577	L3 MPE Press Amount	Amount sets how far press moves its destination, and a negative value flips the direction so the effect runs in reverse. Past 100% the destination reaches its limit before press reaches its own, so you get the full effect from a lighter touch.
Layer 3/Config	MPE Slide Target	578	L3 MPE Slide Target	Slide is CC74, which an MPE controller sends on each note's own channel. On most keyboards it follows where your finger sits along the front-to-back axis of the key. Choose what it controls on this layer here, and how strongly with Amount beside it. Slide rests in the middle, so it pushes the destination either side of where you've set it. MPE has to be switched on in the Performance Controls panel before slide does anything.
Layer 3/Config	MPE Slide Amount	579	L3 MPE Slide Amount	Amount sets how far slide moves its destination, and a negative value flips the direction so the effect runs in reverse. Past 100% the destination reaches its limit before slide reaches its own, so you get the full effect from a smaller movement.
Layer 3/LFO	Time (Tempo Synced)	580	L3Lfo Time (Tempo Synced)	Time sets how long one LFO cycle lasts, as a note length at your DAW's tempo. 1/4 is a quarter note; a D on the end is dotted (one and a half times as long) and a T is triplet (two thirds as long). The LFO follows tempo changes, but it isn't locked to the bar: each cycle starts from the note, as set by Mode.
Layer 3/Arp	Rate	581	L3Arp Rate	Rate sets how long each step lasts, synced to your host's tempo. Together with Length it decides how long the whole pattern takes to come round — eight steps at 1/8 fills one bar of 4/4. The T and D suffixes are triplet and dotted divisions, useful for swung or lopsided patterns.
Layer 3	Pitch Semitones	582	L3 Pitch Semitones	Pitch moves this layer up or down in semitones. This works by speeding up or slowing down the audio. Tip: for a multisampled Instrument, you might get better results from Transpose on the CONFIG tab. It changes which samples are played rather than processing them, which can sound more natural.
Layer 3/Playback/Granular	Variation	583	L3Grn Variation	Variation decides whether each note scatters its grains differently or plays back the exact same grains every time. Different on every note suits most sounds, while the Identical options let you capture a particular pattern of grains and save it with the preset. Open the menu and hover over each option for details.
Layer 3/Playback/Granular	Seed	584	L3Grn Seed	Seed picks which pattern of grains repeats. Try a few numbers until you find one you like: it's saved with the preset, so the grains you choose are the grains everyone hears. Set Variation to one of the Identical options for this to take effect.

Layer 3/LFO	Variation	585	L3Lfo Variation	Variation decides whether the random shapes move differently on each note or play back the exact same pattern every time. Different on every note suits most sounds, while the Identical options let you capture a particular pattern and save it with the preset. In Free mode, a note that joins already-sounding notes follows their pattern. Open the menu and hover over each option for details.
Layer 3/LFO	Seed	586	L3Lfo Seed	Seed picks which random pattern repeats. Try a few numbers until you find one you like: it's saved with the preset, so the movement you choose is the movement everyone hears. Set Variation to one of the Identical options for this to take effect.
Layer 3/Playback/Granular	Share Grains	587	L3Grn Share Grains	Share Grains keeps the number of grains the same whether you play one note or a chord, so the sound keeps the same density however many notes you hold. Each grain plays from one of the held notes, weaving the chord's pitches together. At low Density you can hear the grains hop between the notes of the chord.
Effect/Distortion	Legacy Type	3	Dist Legacy Type	Legacy type parameter. Kept for backwards-compatibility with DAW automation
Effect/Distortion	Drive	4	Dist Drive	Drive sets how hard the signal is pushed into the Type's shaping curve, and is the main control for how much distortion you hear. For the Mangle types it also moves the effect itself, so the character changes as well as the intensity.
Effect/Distortion	On	5	Dist On	Enable/disable this effect.
Effect/Bitcrush	Legacy Bits	6	Bitc Legacy Bits	Legacy bits parameter. Kept for backwards-compatibility with DAW automation
Effect/Bitcrush	Legacy Sample Rate	7	Bitc Legacy Sample Rate	Legacy sample rate parameter. Kept for backwards-compatibility with DAW automation
Effect/Bitcrush	Legacy Wet	8	Bitc Legacy Wet	Legacy processed-signal volume. Kept for backwards-compatibility with DAW automation
Effect/Bitcrush	Legacy Dry	9	Bitc Legacy Dry	Legacy unprocessed-signal volume. Kept for backwards-compatibility with DAW automation
Effect/Bitcrush	On	10	Bitc On	Enable/disable this effect.
Effect/Compressor	Legacy Threshold	11	Comp Legacy Threshold	Legacy threshold parameter. Kept for backwards-compatibility with DAW automation
Effect/Compressor	Legacy Ratio	12	Comp Legacy Ratio	Legacy ratio parameter. Kept for backwards-compatibility with DAW automation
Effect/Compressor	Gain	13	Comp Gain	An additional control for volume after compression.
Effect/Compressor	Auto Gain	14	Comp Auto Gain	Automatically re-adjust the gain to stay consistent regardless of compression intensity.
Effect/Compressor	On	15	Comp On	Enable/disable this effect.
Effect/Filter	On	16	Filt On	Enable/disable this effect.

Effect/Filter	Legacy Cutoff Frequency	17	Filt Legacy Cutoff Frequency	Legacy cutoff parameter. Kept for backwards-compatibility with DAW automation
Effect/Filter	Legacy Resonance	18	Filt Legacy Resonance	Legacy resonance parameter. Kept for backwards-compatibility with DAW automation
Effect/Filter	Legacy Gain	19	Filt Legacy Gain	Legacy gain parameter. Kept for backwards-compatibility with DAW automation
Effect/Filter	Legacy Type	20	Filt Legacy Type	Legacy type parameter. Kept for backwards-compatibility with DAW automation
Effect/StereoWiden	Width	21	Ster Width	Width narrows or widens the stereo image. Negative values pull the sound towards mono, positive values push it wider, and 0% leaves it as it is. It rebalances the mid (what both channels share) against the side (what differs between them), so at -100% only the mid is left, and at +100% only the side, which makes anything dead centre disappear. Tip: each layer has its own Stereo control if you want to widen just one of them.
Effect/StereoWiden	On	22	Ster On	Enable/disable this effect.
Effect/Chorus	Rate	23	Chr Rate	The Rate sets how quickly the pitch drifts up and down. Slow rates give a gentle swelling movement, while faster rates become a shimmering warble.
Effect/Chorus	Legacy High-pass	24	Chr Legacy High-pass	Legacy high-pass parameter. Kept for backwards-compatibility with DAW automation
Effect/Chorus	Depth	25	Chr Depth	The Depth sets how far the pitch drifts away from the original. Small amounts thicken the sound, while larger amounts give an obvious, tape-like wobble. At zero, the delayed copies are still there, adding a static colouration.
Effect/Chorus	Legacy Wet	26	Chr Legacy Wet	Legacy processed-signal volume. Kept for backwards-compatibility with DAW automation
Effect/Chorus	Legacy Dry	27	Chr Legacy Dry	Legacy unprocessed-signal volume. Kept for backwards-compatibility with DAW automation
Effect/Chorus	On	28	Chr On	Enable/disable this effect.
Effect/Filter	Resonance	29	Filt Resonance	Resonance emphasises the frequencies right at the cutoff, adding a peak there on the pass filters. For Band-pass and Notch it narrows the band, for Peak it tightens the boost, and for the shelves it steepens the corner.
Effect/Filter	Gain	30	Filt Gain	Gain sets how far the Peak and shelf types boost or cut around the cutoff.
Effect/StereoWiden	Mode	31	Ster Mode	Mode sets how the widening is done. Hover over the options in the menu for a description of each.
Effect/StereoWiden	Bass Mono	32	Ster Bass Mono	Bass Mono sets the point below which the sound is summed to the centre. Holding the low end in the middle keeps kicks and basslines solid, and stops them losing power on mono systems. The two bands are split with a 24 dB per octave Linkwitz-Riley crossover, so they recombine without a dip around the crossover point.

Effect/Compressor	Type	33	Comp Type	The compressor algorithm to use. The Vintage type has a bit of character, and automatically sets the attack and release. The Modern type offers more precision.
Effect/Compressor	Attack	34	Comp Attack	How quickly the compressor responds to a rise in level.
Effect/Compressor	Release	35	Comp Release	How quickly the compressor recovers after the level drops.
Effect/Compressor	Mix	36	Comp Mix	Blend between the dry input and the compressed signal.
Effect/Convolution Reverb	Legacy High-pass	65	Conv Legacy High-pass	Legacy high-pass parameter. Kept for backwards-compatibility with DAW automation
Effect/Convolution Reverb	Legacy Wet	66	Conv Legacy Wet	Legacy processed-signal volume. Kept for backwards-compatibility with DAW automation
Effect/Convolution Reverb	Legacy Dry	67	Conv Legacy Dry	Legacy unprocessed-signal volume. Kept for backwards-compatibility with DAW automation
Effect/Convolution Reverb	On	68	Conv On	Enable/disable this effect.
Effect/Reverb	Decay Time	69	Rvrb Decay Time	The Decay Time sets how long the tail takes to fade away once a sound stops. It holds steady whatever the Size, so you can choose the length of the reverb and the character of the space separately.
Effect/Reverb	Pre Low-pass Cutoff	70	Rvrb Pre Low-pass Cutoff	The Pre LP is a low-pass filter cutoff for rolling the highs off the signal on its way into the reverb, for a darker, more distant space. The dry signal keeps its full range.
Effect/Reverb	Pre High-pass Cutoff	71	Rvrb Pre High-pass Cutoff	The Pre HP is a high-pass filter cutoff for rolling the lows off the signal on its way into the reverb, keeping the tail clear so the bass stays tight and centred. The dry signal keeps its full range.
Effect/Reverb	Low-shelf Cutoff	72	Rvrb Low-shelf Cutoff	The Lo-Shelf sets the frequency below which the reverb tail is cut by the Lo-Gain amount. Turn Lo-Gain down to hear it work.
Effect/Reverb	Low Gain	73	Rvrb Low Gain	The Lo-Gain sets how much the reverb tail is cut below the Lo-Shelf frequency. The cut builds up as the tail recirculates, so the low end thins out as the reverb fades - handy for stopping long tails clouding the bass.
Effect/Reverb	High-shelf Cutoff	74	Rvrb High-shelf Cutoff	The Hi-Shelf sets the frequency above which the reverb tail is cut by the Hi-Gain amount. Turn Hi-Gain down to hear it work.
Effect/Reverb	High Gain	75	Rvrb High Gain	The Hi-Gain sets how much the reverb tail is cut above the Hi-Shelf frequency. The cut builds up as the tail recirculates, so the highs die away first, just as soft furnishings absorb them in a real room.
Effect/Reverb	Chorus Amount	76	Rvrb Chorus Amount	The Depth sets how far the reverb's reflections drift, smearing the resonances that build up in the tail. A little stops long tails ringing; more gives an obvious shimmer and movement.
Effect/Reverb	Chorus Frequency	77	Rvrb Chorus Frequency	The Mod Rate sets how quickly the drift set by Depth moves through the tail. Very slow rates give a gentle, breathing wash, while faster rates add a distinct warble.
Effect/Reverb	Size	78	Rvrb Size	The Size scales the spacing of the simulated reflections, setting how large the space feels. Small values pack them together for a boxy, coloured character; large values spread them out for something open and airy.

Effect/Reverb	Delay	79	Rvrb Delay	The Predelay holds the reverb back for a moment so the dry sound is heard on its own first. Short amounts keep the sound upfront and defined, while longer amounts push the walls further away.
Effect/Reverb	Mix	80	Rvrb Mix	Blend between the dry input and the reverb signal.
Effect/Reverb	On	81	Rvrb On	Enable/disable this effect.
Effect/Phaser	Feedback	82	Phs Feedback	Feedback routes the phased signal back into the filters, sharpening the peaks and deepening the notches. Small amounts keep it as a gentle swoosh, while higher amounts give the sweep a resonant, whistling edge.
Effect/Phaser	Mod Rate	83	Phs Mod Rate	The Rate sets how quickly the peaks sweep up and down the frequency range. Slow rates give a gentle, drifting movement, while faster rates turn the sweep into a warble.
Effect/Phaser	Center Frequency	84	Phs Center Frequency	Freq sets the centre of the sweep: the frequency that the peaks and notches travel around. Keep it low for a deep, throaty movement, or raise it to place the phasing amongst the brighter harmonics.
Effect/Phaser	Shape	85	Phs Shape	Shape sets how many peaks and notches are carved into the sound. Turned down there's a single broad one for a soft, vowel-like sweep; turned up there are more of them stacked up the spectrum for a richer, more obvious phasing.
Effect/Phaser	Mod Depth	86	Phs Mod Depth	The Depth sets how far the peaks travel either side of the Freq setting. Small amounts give a narrow, shimmering movement, while larger amounts sweep across the whole spectrum. Tip: with Depth all the way down the peaks hold still, leaving a fixed colouration that you can sweep by hand with Freq.
Effect/Phaser	Stereo Amount	87	Phs Stereo Amount	Stereo offsets the left and right sweeps from each other so the movement drifts across the stereo image. At zero both channels sweep together; at maximum they sweep in opposite directions, for a wide, swirling feel.
Effect/Phaser	Mix	88	Phs Mix	Blend between the dry input and the phased signal.
Effect/Phaser	On	89	Phs On	Enable/disable this effect.
Effect/Delay	Mode	90	Dly Mode	Mode sets how the repeats move around the stereo image. Hover over the options in the menu for a description of each.
Effect/Delay	Filter Cutoff	91	Dly Filter Cutoff	Filter sets the centre of a band-pass that the repeats run through, with Spread setting how wide that band is. The dry signal is left untouched. It sits inside the feedback loop, so every repeat is filtered again and the echoes thin out as they fade.
Effect/Delay	Filter Spread	92	Dly Filter Spread	Spread sets how wide the repeats' filter band is. Wide open leaves them close to the original sound; narrowed, they squeeze towards the Filter frequency, losing a little more of the top and bottom ends with every pass.
Effect/Delay	Time Left (ms)	93	Dly Time Left (ms)	The gap between the repeats in the left channel, set freely in milliseconds. Tip: very short times stop sounding like separate echoes and become a metallic, resonant tone instead.
Effect/Delay	Legacy Time Right (ms)	94	Dly Legacy Time Right (ms)	The gap between the repeats in the right channel, set freely in milliseconds. It's unused in Mono mode, where both channels follow Time L.

Effect/Delay	Time Left (Tempo Synced) (Legacy)	95	Dly Time Left (Tempo Synced) (Legacy)	Legacy left delay time. Kept for backwards-compatibility with DAW automation
Effect/Delay	Time Right (Tempo Synced) (Legacy)	96	Dly Time Right (Tempo Synced) (Legacy)	Legacy right delay time. Kept for backwards-compatibility with DAW automation
Effect/Delay	On	97	Dly On	Enable Tempo Sync to set the delay times as note lengths that follow the host's tempo, keeping the repeats in time with your track. With it off, the times are dialled in freely in milliseconds.
Effect/Delay	Mix	98	Dly Mix	Blend between the dry input and the delayed signal.
Effect/Delay	On	99	Dly On	Enable/disable this effect.
Effect/Delay	Feedback	100	Dly Feedback	Feedback sets how long the echoes trail on for: low amounts give a handful of repeats, while high amounts carry on long after the note has gone. It works by feeding each repeat back in to make the next one.
Effect/Filter	Type	105	Filt Type	Select the filter type. Peak, Low-shelf and High-shelf bring in the Gain knob, letting you boost as well as cut.
Effect/Filter	Cutoff Frequency	106	Filt Cutoff Frequency	Cutoff sets where the filter does its work: the point the pass filters roll off from, the centre of the band for Band-pass and Notch, or the corner for the shelves.
Effect/Chorus	High-pass	107	Chr High-pass	Remove low frequencies from the chorused copies. The dry signal is unaffected. Raise this to keep the bass tight and free from movement.
Effect/Convolution Reverb	High-pass	108	Conv High-pass	Use the high-pass to roll off the low end of the reverb to avoid muddy bass. It applies to the reverbed signal alone, before the Mix blend.
Effect/Bitcrush	Mix	109	Bitc Mix	Blend between the dry input and the bitcrushed signal.
Effect/Bitcrush	Output	110	Bitc Output	Output level after the mix.
Effect/Chorus	Mix	111	Chr Mix	Blend between the dry input and the chorused signal.
Effect/Chorus	Output	112	Chr Output	Output level after the mix.
Effect/Convolution Reverb	Mix	113	Conv Mix	Blend between the dry input and the reverb signal.
Effect/Convolution Reverb	Output	114	Conv Output	The effect's output level, applied after the Mix blend.
Effect/Distortion	Mix	115	Dist Mix	Blend between the dry input and the distorted signal. Backing it off keeps the clarity of the original sound with the distortion sitting underneath it.
Effect/StereoWiden	Mix	116	Ster Mix	Blend between the dry input and the stereo-widened signal.
Effect/Filter	Mix	117	Filt Mix	Blend between the dry input and the filtered signal.
Effect/Compressor	Threshold	118	Comp Threshold	The threshold that the audio has to pass above before the compression should start taking place.

Effect/Compressor	Ratio	119	Comp Ratio	The intensity of compression (high ratios mean more compression). Above around 2:1 begins to make the pumping effect much more noticable.
Effect/EQ	On	120	Eq On	Enable/disable this effect.
Effect/EQ	Mix	121	Eq Mix	Blend between the dry input and the equalised signal.
Effect/EQ/Band 1	Type	122	EqB1 Type	Choose the shape of this band: a peak or shelf for boosting and cutting, a notch for removing a narrow slice, or a pass filter for rolling off one end of the spectrum. Only the Peak, Low-shelf and High-shelf types use the Gain knob; with the others it's inactive.
Effect/EQ/Band 1	Frequency	123	EqB1 Frequency	Frequency sets where this band does its work: the centre of a peak or notch, the corner of a shelf, or the cutoff of a pass filter.
Effect/EQ/Band 1	Resonance	124	EqB1 Resonance	Resonance sets how tightly the band is focused. For the Peak and Notch types it's the width, going from broad and gentle to tight and focused. The shelves use it to steepen the transition at their corner, and the pass filters use it to add a peak at the cutoff.
Effect/EQ/Band 1	Gain	125	EqB1 Gain	Gain sets how far this band boosts or cuts at its frequency. Only the Peak, Low-shelf and High-shelf types use Gain. The notch and pass filters always cut by their own fixed shape, so with those the knob is inactive.
Effect/EQ/Band 2	Type	126	EqB2 Type	Choose the shape of this band: a peak or shelf for boosting and cutting, a notch for removing a narrow slice, or a pass filter for rolling off one end of the spectrum. Only the Peak, Low-shelf and High-shelf types use the Gain knob; with the others it's inactive.
Effect/EQ/Band 2	Frequency	127	EqB2 Frequency	Frequency sets where this band does its work: the centre of a peak or notch, the corner of a shelf, or the cutoff of a pass filter.
Effect/EQ/Band 2	Resonance	128	EqB2 Resonance	Resonance sets how tightly the band is focused. For the Peak and Notch types it's the width, going from broad and gentle to tight and focused. The shelves use it to steepen the transition at their corner, and the pass filters use it to add a peak at the cutoff.
Effect/EQ/Band 2	Gain	129	EqB2 Gain	Gain sets how far this band boosts or cuts at its frequency. Only the Peak, Low-shelf and High-shelf types use Gain. The notch and pass filters always cut by their own fixed shape, so with those the knob is inactive.
Effect/EQ/Band 3	Type	130	EqB3 Type	Choose the shape of this band: a peak or shelf for boosting and cutting, a notch for removing a narrow slice, or a pass filter for rolling off one end of the spectrum. Only the Peak, Low-shelf and High-shelf types use the Gain knob; with the others it's inactive.
Effect/EQ/Band 3	Frequency	131	EqB3 Frequency	Frequency sets where this band does its work: the centre of a peak or notch, the corner of a shelf, or the cutoff of a pass filter.
Effect/EQ/Band 3	Resonance	132	EqB3 Resonance	Resonance sets how tightly the band is focused. For the Peak and Notch types it's the width, going from broad and gentle to tight and focused. The shelves use it to steepen the transition at their corner, and the pass filters use it to add a peak at the cutoff.
Effect/EQ/Band 3	Gain	133	EqB3 Gain	Gain sets how far this band boosts or cuts at its frequency. Only the Peak, Low-shelf and High-shelf types use Gain. The notch and pass filters always cut by their own fixed shape, so with those the knob is inactive.

Effect/Limiter	On	140	Lmtr On	Enable/disable this effect.
Effect/Limiter	Mix	141	Lmtr Mix	Blend between the dry input and the limited signal.
Effect/Limiter	Gain	142	Lmtr Gain	Boost the level going into the limiter. The harder you push, the more it's limited, making the sound louder and denser.
Effect/Limiter	Ceiling	143	Lmtr Ceiling	The level the output is never allowed to exceed. Leaving a small margin below 0 dB gives headroom for whatever comes after Floe.
Effect/Delay	Time Left (Tempo Synced)	146	Dly Time Left (Tempo Synced)	The gap between the repeats in the left channel, as a note length that follows the host's tempo.
Effect/Delay	Time Right (Tempo Synced)	147	Dly Time Right (Tempo Synced)	The gap between the repeats in the right channel, as a note length that follows the host's tempo. It's unused in Mono mode, where both channels follow Time L.
Effect/Distortion	Auto Gain	148	Dist Auto Gain	Enable Auto Gain to hold this Legacy type's loudness steady as Drive is increased; it's the same compensation that the Bite and Mangle types always use. Presets made before Floe had this switch load with it off, so they sound just as they were made.
Effect/Distortion	Punish	149	Dist Punish	Punish stacks extra distortion stages after the first, each one driven harder than the last, for a denser, grittier, more compressed edge. Drive sets how hard the signal hits the first stage; Punish sets how much is piled on top.
Effect/Distortion	Tilt EQ	150	Dist Tilt EQ	Tilt the tone going into the distortion. Positive lifts the highs so they saturate more for a brighter result; negative lifts the lows for a warmer, fatter drive.
Effect/Distortion	Type	151	Dist Type	The Type sets the character and flavour of the distortion. The Bite types saturate and thicken the sound; the Mangle types tear it apart into something more extreme. The Legacy types are the original algorithms from Floe's early days, kept so that older presets still sound as they were made.
Effect/Distortion	Gain	152	Dist Gain	If needed, you can adjust the level of the distorted signal, applied after all the shaping and before the Mix blend. This is a flat adjustment separate from 'Auto Gain' — which smartly counteracts any change in perceived loudness as you turn up the Drive or Punish.
Effect/Bitcrush	Bits	153	Bitc Bits	Reduce the bit depth of the signal, adding a gritty digital noise that's most obvious in quiet passages and tails. At the lowest settings quiet signals quantise to silence, so feed the effect hot.
Effect/Bitcrush	Sample Rate	154	Bitc Sample Rate	Reduce the sample rate by holding each sample for longer. Lower rates fold high frequencies back down into ringing, metallic aliasing - the sound of early samplers and retro hardware.
Master	Volume	0	Mst Volume	The Master Volume is the final stage of Floe's signal chain: it sits after the effects rack, so it sets the overall level of everything just before the audio leaves Floe.
Master	Legacy Velocity To Volume Strength	1	Mst Legacy Velocity To Volume Strength	Legacy parameter. The amount that the MIDI velocity affects the volume of notes; 100% means notes will be silent when the velocity is very soft, and 0% means that notes will play full volume regardless of the velocity

Master	Timbre	2	Mst Timbre	Sweep between an instrument's crossfade layers, such as soft-to-hard or dark-to-bright variations of the same sound. Only instruments that were built with crossfade layers respond to this knob; they are highlighted while you drag it. If none of the loaded instruments have crossfade layers, the knob is inactive.
Macro	1	101	1	A macro is a single knob that moves one or more other parameters at once. Preset authors usually set these up and give them custom names, so each macro shapes the sound in a way that's tailored to that particular preset. If you want to set up your own, go to the Layers or Effects page and open the MACROS tab in the bottom panel. There you can choose what each macro controls and rename it.
Macro	2	102	2	A macro is a single knob that moves one or more other parameters at once. Preset authors usually set these up and give them custom names, so each macro shapes the sound in a way that's tailored to that particular preset. If you want to set up your own, go to the Layers or Effects page and open the MACROS tab in the bottom panel. There you can choose what each macro controls and rename it.
Macro	3	103	3	A macro is a single knob that moves one or more other parameters at once. Preset authors usually set these up and give them custom names, so each macro shapes the sound in a way that's tailored to that particular preset. If you want to set up your own, go to the Layers or Effects page and open the MACROS tab in the bottom panel. There you can choose what each macro controls and rename it.
Macro	4	104	4	A macro is a single knob that moves one or more other parameters at once. Preset authors usually set these up and give them custom names, so each macro shapes the sound in a way that's tailored to that particular preset. If you want to set up your own, go to the Layers or Effects page and open the MACROS tab in the bottom panel. There you can choose what each macro controls and rename it.

Credits

Mutant Piano is a FrozenPlain product, architected by Richard Wells.

Concept, Samples and Sound Direction: Richard Wells

Sound Presets: Richard Wells, Sam Windell

Demo Music: Richard Wells, Joris de Man

Programming, UI Design and Production: Sam Windell

Documentation: Sam Windell, Richard Wells

Special thanks to the composers who played early versions of Mutant Piano and shared their feedback.

Original Recording Session

Recorded at Air-Edel Studios, London.

Performers: Richard Wells, Rob Foster, Andy Reynolds

Recording Engineer: Nick Taylor