_MINI V

ARTURIA
_The sound explorers

Special Thanks

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Special Messages

This manual covers how to use Mini V, provides a comprehensive look at its features, and details how to download and activate it. First, some important messages:

Specifications Subject to Change:

The information contained in this manual is correct at the time of writing. However, Arturia reserves the right to change or modify any of the specifications or features without notice or obligation.

IMPORTANT:

The software, when used in combination with an amplifier, headphones or speakers, may be able to produce sound levels that could cause permanent hearing loss. DO NOT operate for long periods of time at a high volume or at a level that is uncomfortable.

If you encounter any hearing loss or ringing in your ears, please consult an audiologist.

NOTICE:

Service charges incurred due to lack of knowledge relating to how a function or a feature works (when the software is operating as designed) are not covered by the manufacturer's warranty, and are therefore the owner's responsibility. Please study this manual carefully and consult your dealer before requesting additional support.

EPILEPSY WARNING — Please Read Before Using Mini V

Some people are susceptible to epileptic seizures or loss of consciousness when exposed to certain flashing lights or light patterns in everyday life. This may happen even if the person has no medical history of epilepsy or has never had any epileptic seizures. If you or anyone in your family has ever had symptoms related to epilepsy (seizures or loss of consciousness) when exposed to flashing lights, consult your doctor prior to using this software.

Discontinue use and consult your doctor *immediately* if you experience any of the following symptoms while using this software: dizziness, blurred vision, eye or muscle twitches, loss of consciousness, disorientation, or any involuntary movement or convulsion.

Precautions to Take During Use

- Do not stand too close to the screen.
- Sit a good distance away from the screen.
- Avoid using if you are tired or have not had much sleep.
- Make sure that the room is well lit.
- Rest for at least 10 to 15 minutes per hour of use.

Congratulations on your purchase of Mini V!

Excellence is placed at the heart of every Arturia product, and Mini V is no exception. We are thrilled to bring you this latest, greatest take on the synthesizer that changed the world. Explore the presets, tweak a few controls, get lost in the features - and play, play, *play*!

Be sure to visit the www.arturia.com website for information on all our other inspiring hardware and software instruments, effects, MIDI controllers, and more. They have become indispensable tools for many visionary artists around the globe.

Musically yours,

The Arturia team

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1. WELCOME TO MINI V!

Thank you for purchasing **Mini V**, Arturia's lovingly modeled recreation of the Minimoog, the world's most iconic synthesizer. This monophonic monster has appeared on literally millions of albums since its introduction in 1971, and has been part of thousands of charting hits by artists in fields ranging from jazz and rock through funk and soul to hip hop and EDM. It's everywhere and beloved by everyone – and now that sound is yours.

Naturally, since this is an Arturia virtual synthesizer, an accurate recreation of the original hardware, down to the circuit level, this is only the beginning. Step away from the classic layout of three Oscillators, the amazing Moog transistor-ladder filter with its delicious overdrive, and the signature envelopes and other modulation sources, and you'll find a host of things the original could never do – including playing polyphonically! The dream of a truly polyphonic Mini, only partly realized in hardware like the Memorymoog, is now right on your computer. Add an arpeggiator, highly programmable new modulation sources, Unison, built-in FX, and more – and Mini V becomes something entirely new.

This easy-to-use, incredibly rich-sounding synthesizer will form the basis for your own list of greatest hits!

1.1. Meet the Minimoog

In his 1993 book *Vintage Synthesizers*, author Mark Vail quoted an interview with Robert A. Moog, who talked about the development of his genre-defining instruments with typical modesty.

"Mind you, neither of us had any idea where this was leading."

1.1.1. So who was "us"?

It's common among synthesizer fans who haven't studied the history of the Moog company to assign all the credit for Moog synthesizers to Bob himself. While Bob's creations were and remain a vital part of the world of synths, his greatest achievements weren't done alone, and he made sure people knew it.

Bob grew up with a fascination for both music and technology. Learning about the theremin, the remarkable instrument played by waving one's hands before a pair of antennas, he quickly learned to design and build his own, and launched a company to sell them. While barely out of his teens, Bob met music professor Herbert A. Deutsch, who had an equally strong desire to develop electronic musical instruments that combined flexibility of sound with beautiful tonality.

Bob and Herb started working together on components for electronic music that could be wired together to form larger systems. These included *oscillators* to create basic waveforms, *filters* to alter frequency content, *envelopes* to start and stop events, and so on. Originally these circuits were created in large boxes called "instruments", but the term that eventually stuck was, of course, *modules*, with the collected instrument being a *modular synthesizer*.

The pair were also among the first to make use of *control voltages* so one part of the synthesizer could *modulate* (control) others, connected via electrical patch cables similar to those used with guitars. The two developers also made a very important decision that would have a massive impact on the future of music – they decided to equip their machine with a conventional organ keyboard. This would allow musicians to approach the machine from a familiar starting point, and went a long way toward making them accessible to all.

From prototypes developed in 1964 through an initial demonstration of the new instrument at the Audio Engineering Society convention in 1964, R.A. Moog Inc. developed the 900 Series of modules. In order to make it easier for new buyers (who had no idea at the time what all these boxes and wires did), Bob made three synthesizers available that were built from preselected groups of modules: The Synthesizers I, II, and III, each in a "c" version built into a wooden console rack and a "p" version built into portable road cases.

A 'starter' Moog IIIc

Throughout the 196Os, sales of modular systems were brisk, propelled by the unexpected success of *Switched-On Bach*, a chartbusting LP of Bach pieces realized on a Moog Modular system by Wendy Carlos. Major studios and record labels, eager to cash in on the success of Carlos' album, bought up modulars as fast as the company could build them, and many were placed in university music programs as well.

> i One of Arturia's most popular virtual instruments is Moog Modular V, a modeled emulation of one of these magnificent modular synths.

However, Bob Moog had never considered the possibility that eventually, everyone who could afford these gigantic and fabulously expensive instruments would have one... and when they did, and when "Moog records" went out of fashion, sales dried up in a hurry. The company was financially overstretched and in real trouble, and while Bob continued hunting for buyers for the large modulars, a quiet revolution was taking place in the attic near the spare parts pile...

1.1.2. The Min A and its children

Bob Moog liked to let his engineers play with new ideas in their spare time. One of them, Bill Hemsath, got to thinking about how his demonstrations of modular Moogs to new buyers always started with the same patch: a couple of oscillators into a filter into an amplifier, with envelopes and a couple of extra modulation sources (using one oscillator at low frequencies).

If over 99% of the sounds a musician might want could be made with just those pieces in that configuration, why not build a synthesizer that did just that? Eliminating all of the more unusual modules, permanently wiring the essential modules together in the most commonly-used layout, and grouping all of their controls in a logical way on one front panel, could produce an instrument that was small, portable, easy to learn, and best of all, affordable.

Using only one off-the-shelf Moog module, Bill tinkered together a basic synthesizer from broken modules and unused circuits in the "Dungeon" where spares were stored, sawed off the working half of a broken keyboard, and put it all in a little wooden case he'd built himself... and because the left side panel had a little space for it, he added a slide potentiometer to control pitch – the world's first pitch bender.

He dubbed the little synth the "Min A", and when it was finished, quietly put it out on a table in the Moog workshop for his astounded colleagues to play with.

The Min A prototype

Bob Moog knew about the Min A as it was coming together. He found it mildly interesting, but couldn't see past the Min's limitations to recognize its potential to appeal to a wide musical community (and potentially save the company). Still, he didn't tell Bill to stop work, and as other engineers got interested, the Min A (which was used by David Borden in the early electronic group Mother Mallard) gave birth to the Min B (used by Sun Ra and Dick Hyman), and then to the Minimoog Model C, a hand-wired synth nearly identical to the one we know today.

Bob got involved in a big way with the Model C, working as part of an engineering team under the command of Jim Scott. Bob still wasn't convinced that the little synth could save Moog, and continued traveling in search of investors – and in late 1970, the engineers, worried about their jobs, disobeyed Bob's direct orders as soon as he left town. They turned away from hand-wiring more C models as demo units for salespeople, and went ahead to create the printed circuit boards for mass production of the Minimoog Model D. Bob was furious, but in the face of financial disaster, threw his all into getting production of the Model D up and running. He commented at the time that he thought they'd sell perhaps 200 of them....

The final total, when Moog ceased production in 1981, was closer to 12,000. Like Bob said, he and Herb Deutsch had no idea where this was leading.

The Minimoog Model D

Used by everyone from Rick Wakeman and Keith Emerson (already a Moog modular user) to Tangerine Dream, Jean Michel Jarre, and Kraftwerk, the Mini took off like a rocket and redefined rock music. A lead instrument that could compete with an electric guitar, a bass instrument that could shake a stadium, and everything in between, the Mini became the voice of modern rock music until the advent of digital synthesis in the early 1980s, and for thousands of players it never went out of style. Revived in advanced form as the Minimoog Voyager in 2001 and reissued more than once by Moog Music (and imitated by many others), the Minimoog is a true musical legend come to life.

Of course, it's also very heavy, very limited in terms of connectivity in a modern studio, can be highly temperamental with respect to tuning, and in today's synth-crazy gear market, a good-quality vintage unit will cost you as much as a car. Recognizing a potential goldmine, many software companies have attempted to produce a Mini that would run on a computer... with mixed success at best. And then Arturia got into the game, and everything changed.

When Mini V first came out in 2005, Bob Moog himself endorsed its sound not long before cancer claimed him at the age of 71. Since then, the constant improvements to Arturia's TAE® (True Analog Emulation) technology have made a great synthesizer sound even better, and with version 4, an entirely new slate of features has taken this wonderful instrument to the next level.

All photos above provided courtesy of Roger Luther of the Moog Archives, moogarchives.com

1.2. Mini V Features

- Accurately modeled emulation of the famed Minimoog Model D
- Three Oscillators with multiple waveforms and optional LFO (Low Frequency Oscillator) range/routing
- 24 dB/octave low pass transistor ladder circuit filter model: the unparalleled "Moog Ladder Filter"
- Optional bass compensation to restore filter low-end response at high resonance settings
- Filter feedback and Drive controls for massive, rich saturation
- White or pink noise
- Two classic Moog envelopes with switchable Release stages
- Advanced Panel pops up to reveal added features:
    - Dedicated multi-waveform LFO with dual modulation destinations
    - Flexible Function generator with dual modulation destinations
    - Arpeggiator
    - Finely controllable response curves with three modulation destinations each, for Velocity, Aftertouch, Modwheel, and Keyboard Tracking
    - Three Effects Processors with 17 effects algorithms, including Spatial, Dynamics, Filter/EQ, Distortion, and Modulation
- Multiple monophonic and polyphonic play modes
- Velocity control of the amplifier and filter
- Vintage knob adds variability to the modeled circuits for a more authentic "aged" sound
- Assignable Macro knobs
- Advanced searchable Preset Browser
- Windows or macOS compatible in VST2, VST3, Audio Units, and AAX plug-in formats
- Usable in Standalone mode

2. ACTIVATION AND GETTING STARTED

2.1. Compatibility

Mini V works on computers and laptops equipped with Windows 8.1 or later or macOS 10.13 or later. It is compatible with Intel, AMD, and Apple Silicon processors. You can use it as an Audio Unit, AAX, VST2, or VST3 plug-in within your favorite recording software, or in standalone mode.

2.2. Download and Install

You can download Mini V directly from the Arturia Products Page by clicking either the **Buy Now** or **Get Free Demo** options. The free demo is limited to 20 minutes of operation.

If you have not already done so, now is a good time to create an Arturia account by following the instructions on the My Arturia webpage.

Once you install Mini V, the next step is to register the software. This is a simple process that involves a different software program, the **Arturia Software Center**.

2.2.1. Arturia Software Center (ASC)

If you haven't installed ASC yet, please go to this web page: Arturia Downloads & Manuals.

Look for Arturia Software Center near the top of the page, and then download the installer version for the system you're using (Windows or macOS). ASC is a remote client for your Arturia account, letting you conveniently manage all your licenses, downloads, and updates from one place.
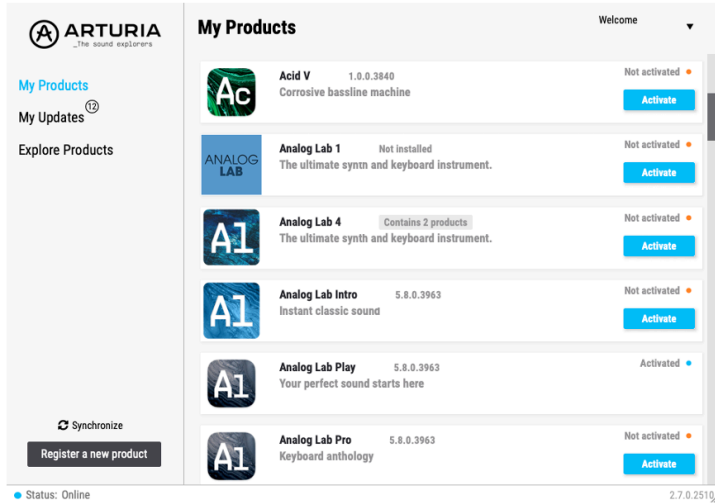
After you complete the installation, do the following:

- Launch the Arturia Software Center (ASC).
- Log into your Arturia account from ASC's interface.
- Scroll down to the 'My Products' section of ASC.
- Click on the 'Activate' button next to the software you want to start using (in this case, Mini V).

It's as simple as that!

2.3. Initial setup for standalone use

If you would like to use Mini V in standalone mode, you will need to ensure that MIDI input and audio output are being routed properly to and from the software. You'll generally only need to do this once, unless you change your MIDI controller or audio/MIDI interface. The setup process is the same on both Windows and macOS.

> ℹ ! This section only applies to readers that plan to use Mini V in standalone mode. If you are only going to use Mini V as a plug-in inside a host DAW or other music software, you can safely ignore this section – your host music software handles these settings.

2.3.1. Audio and MIDI settings: Windows

At the top left of the Mini V application is a three-line "hamburger" icon for the Main Menu, which contains various setup options.
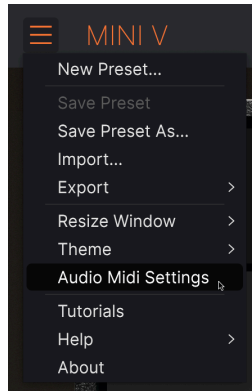
Mini V Main Menu

Click on **Audio Midi Settings** to open the following window. This works in the same way on both Windows and macOS, although the names of the devices available to you will depend on the hardware you are using. Remember, this option is only available (and needed) in the standalone version of Mini V.
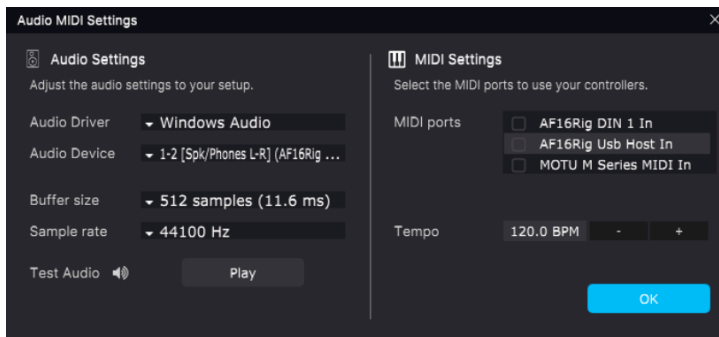
Audio and MIDI Settings for Windows

Starting from the top, you have the following options:

- **Device** selects which audio driver and device will handle playback of Mini V. This can be your computer's internal driver, a generic ASIO driver, or an external soundcard or interface driver. The name of your hardware interface may appear in the field below, depending on your selection.

- **Output Channels** lets you select which of the available outputs will be used to route audio out. If you only have two outputs, this selection box will not be shown. If you have more than two, you can select a specific pair of outputs.

- The **Buffer Size** menu lets you select the size of the audio buffer your computer uses to calculate sound. The latency in milliseconds is displayed after the buffer size setting.

> ! A smaller buffer means lower latency, i.e. a shorter delay between pressing a key and hearing the note, but loads your CPU more heavily and can cause pops or clicks. A larger buffer means a lower CPU load, as the computer has more time to think, but can result in a noticeable delay between playing a note and hearing it. A fast, modern computer should easily be able to operate at a buffer size of 256 or even 128 samples without clicks, but if you do get clicks, enlarge the buffer size until they stop.

- The **Sample Rate** menu lets you set the sample rate at which audio is sent out of the instrument.

> ! The options here will depend on what your audio device can support; nearly every device can operate at 44.1kHz or 48kHz, which will be perfectly fine for most applications. If you have a specific need to use a higher sample rate, up to 96kHz, Mini V will happily support that.

- The **Show Control Panel** button will jump to the system control panel for whatever audio device is selected.

> ! Note that this button is only available in the Windows version.

- **Test Tone** sends a short test tone when you click the **Play** button, to help you troubleshoot audio issues. You can use this feature to confirm that the instrument is routed correctly through your audio interface and that audio is playing back where you expect to hear it (your speakers or headphones, for example).

- The **MIDI Devices** area will display any MIDI devices you have connected to your computer (if any). Click the check box to accept MIDI from the device(s) you want to use to control the instrument; you can select multiple MIDI devices at once with the checkboxes.

> ! In standalone mode, Mini V listens for all MIDI channels, so there's no need to specify a channel.

- **Tempo** sets a base tempo for features inside Mini V such as LFO and effects sync. When using Mini V as a plug-in, the instrument gets tempo information from your host software.

2.3.2. Audio and MIDI settings: macOS
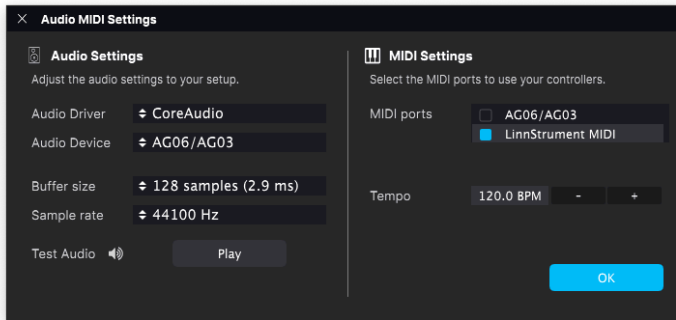
Audio MIDI Settings for macOS

The menu for setting up audio and MIDI devices for macOS is accessed in the same way as for Windows, and the setup process is nearly identical. All options work the same way as described above in the Windows section; the only difference is that all macOS audio devices, including external audio interfaces, use the CoreAudio driver built into macOS to handle routing. In the second dropdown menu under **Device**, choose the audio device you wish to use.

2.4. Working with Mini V as a plug-in

Mini V can be used as a *plug-in* within all major Digital Audio Workstation (DAW) programs including Cubase, Digital Performer, Live, Logic, Pro Tools, Reaper, Studio One, and more.

Plug-ins have numerous advantages over hardware (or even a standalone app):

- You can use as many instances on different tracks as your computer can handle.
- You can automate the plug-in's settings via your DAW's automation feature.
- All settings and changes are saved within your DAW project, letting you pick up right where you left off.

2.4.1. Audio and MIDI settings

Since Mini V is a plug-in, settings for audio and MIDI routing are handled by your recording software or DAW. They are generally located in some type of Preferences menu, though each product does things a bit differently. So, consult your recording software's documentation for information on how to select your audio interface, activate outputs, set the sample rate, assign MIDI ports, set project tempo, adjust buffer size, and the like.

Now that you've set up your software, it's time to start playing!

The Main Panel

The most familiar part of the Mini V user interface is the Main Panel, a representation of the front panel of a Minimoog Model D – with a few exceptions that we'll explain below.

There's a lot more to Mini V than this, but we're taking things one step at a time. In future chapters of their own, we'll cover - the Advanced Panel [p.24] with its powerful 21st-Century features, - the Toolbars [p.55] at the top and bottom of the interface (and their related menus and tabs), and - the Preset Browser [p.77] and its many functions.

The Minimoog is in many ways the standard for the vast majority of the synthesizers that followed it. The idea of signal flow moving from left to right originated here, as did the concept of grouping dedicated modulators (in this case, the Envelopes) with the modules they controlled.

The exception to both of these rules on the Minimoog is the Controllers section, which provides generalized modulation for various parts of the synthesizer – all collected in one place way over on the left, before the audio path even begins!

For that reason, we'll address it last, *after* we've gone through the audio path from start to finish.

3.1. Oscillator Bank

Every analog subtractive synthesizer starts with raw waveforms generated by one or more *oscillators*. On the vast majority of synths, there are two types: *Voltage Controlled Oscillators* (VCOs), for creating audio, and *Low Frequency Oscillators* (LFOs), a special type of VCO used for modulation. LFOs are so named because they can run at rates below the frequency range of human hearing.

While Mini V does have an assignable LFO [p.25] on the Advanced Panel, the original Mini didn't have one. Instead, its three Oscillators (Osc) had to do double duty. They had a LO setting for really low rates, and Osc 3 had a switch so it could run at a set rate without following the notes on the keyboard.

On Mini V, all of the Oscillators' settings are identical to those of the original. Every Osc has the following settings:

- **Range**: Chooses the octave setting for the Osc. (LO, 32', 16', 8', 4', 2')

- **Waveform**: Chooses the output waveform for the Osc.

    - There are six available waveforms on each Osc. For Osc 1 and 2, these are triangle, "tri-saw", ramp (rising sawtooth), square, and two narrower pulse waves.
    - Osc 3 has no "tri-saw" wave. Instead, in addition to the ramp wave, it has a falling sawtooth wave. This was very important, because Osc 3 is often used as an LFO, and because the Minimoog couldn't invert modulations, it had to provide both rising and falling waves.

By combining these waveforms, a wide range of timbres can be created, even before you get to the Filter!

In addition, the **Oscillator-2** and **Oscillator-3** Frequency knobs let you tune each one sharp or flat with respect to Osc 1 by up to 9 semitones (a major 6th). The pitch resolution is 0.01 semitones (one cent).

> ℹ️ Remember that for these knobs and many others on Mini V, you can CTRL-click or right-click and drag for very fine knob movements and exact settings.

The **Osc.3 Control** switch lets you disengage Osc 3 from the control signal on the keyboard that tells the other two Oscs what pitch to play. That lets you set it up for drones at a fixed pitch, or for use as an LFO whose rate doesn't change as you play different notes.

3.2. Mixer

The Mixer is where all of Mini V's audio sources come together. There are individual **Volume** knobs and **On** switches for four sources: Osc 1, Osc 2, Osc 3, and Noise.

The Noise source can generate *white noise* (all frequencies equally weighted) or *pink noise* (weighted toward the low end).

The summed signals are then sent to the Filter.

3.2.1. Drive and Feedback

The layout of five Mixer sources goes all the way back to the very first Minimoog and is one of its most instantly recognizable features. On the original Mini, the fifth switch (second from the top) controlled the level of an external audio source patched into a jack on the rear panel. The External Input Volume knob was accompanied by an Overload light to tell the user when the external signal was pushing the circuitry too hard.

Of course, if a red light tells you not to do something, you immediately have to do it, right? By driving the Oscillators hard and feeding them into the Filter, the Mini's classic warm and thick overdrive was created.

For even more snarl, many users ran a patch cable from the Minimoog's headphone output back into the External Input, creating a feedback loop that would push the Filter even harder.

Mini V doesn't have an external input, but the overdrive and feedback options are there if you want them; they have been hardwired into place so you can quickly put them to use.

> **i** If you'd really like to have a Minimoog filter to process external audio, we suggest the Arturia Filter MINI plug-in!

The **Drive** knob lets you crank up the gain of the mixed signal into the Filter for that signature growl. A red light shows how hard the virtual circuits are being pushed.

The **Feedback** knob lets you add feedback to the signal, with an amount shown by a yellow light. The **I/II** switch lets you choose between two different flavors of feedback tone.

> **i** Play with the Drive and Feedback settings separately and see how Feedback reacts to different amounts of Drive (including none at all). You can find a large number of harmonic distortions, as well as effects where the pitch of the sound actually changes. Experimentation will be rewarded in many cool ways!

3.2.2. Filter

The Filter controls, with Keyboard Control switches

If musicians were asked to choose the single most important component of the Minimoog, the vast majority would choose its filter. This was a *transistor ladder filter*, named that because in the schematic diagram the transistor connections looked like a ladder. It was a low pass filter with a slope of 24 dB/octave. The Moog ladder filter has a distinctive rich sound that could be imitated, but never equaled, by similar circuits like diode ladders.

> **i** Bob Moog patented the filter design and defended that patent fiercely, forcing at least one competitor to redesign a synth whose filter copied the ladder filter too closely.

The Filter section's controls are:

- **Keyboard Control 1 and 2**: These two switches activate voltage control of the Cutoff Frequency by the keyboard voltage.

    - If switch 1 is on, the Cutoff will track the keyboard at 1/3 of the rate that Oscillator pitch tracks the keyboard.
    - If switch 2 is on, the ratio is 2/3.
    - If both switches are on, Cutoff will track pitch precisely, so if the Filter is driven into self-oscillation, its pitch will be in tune with the notes you play.

- **Cutoff Frequency**: sets the base cutoff frequency of the filter, from which it can then be modulated. (15.4 Hz to 15200 Hz)

> ℹ As on the original Minimoog, the Cutoff Frequency knob is marked from -4 to +4. Despite this, it is a unipolar control, from minimum to maximum.

- **Emphasis**: sets the filter resonance. At very high values, the filter will begin to self-oscillate at the cutoff frequency. This produces a distinctive whistling sine wave that can accompany the Oscillators or even be played on its own, as long as both Keyboard Control switches are on.

> ℹ "Emphasis" was the Moog term for what most synthesizers call Resonance. It's a little surprising that Moog's term didn't stick, considering how popular the Minimoog was!

- **Amount Of Contour**: sets how strongly the Filter Contour will control the Cutoff. Turn it up for more drastic envelope following.

3.2.2.1. Loss Compensation

Note the small switch to the right of the Emphasis knob. That's a **Loss Compensation** switch, and it lets Mini V's Filter do something that was impossible on the original hardware....

On a hardware transistor ladder filter, it's a characteristic of the circuit for high resonance settings to lower the low-frequency response, so the higher the resonance, the weaker the bass. When the Loss Compensation switch is on, this effect is removed, leaving bass punchy even at high resonances. Try it yourself and the difference is easy to hear.

> ℹ The idea of being able to do this was taken from the Sallen-Key filter circuit adapted for synthesizers by Nyle Steiner, which doesn't have this problem but has a very different sound than the Moog filter. The Steiner filter was almost lost to history, but has enjoyed a huge comeback... it was modernized by Arturia (with Nyle Steiner's help) as the Brute filter, and is now central to every Arturia Brute synth!

3.2.3. Contours

The Filter and Loudness Contours, with Release switch

"Contour" was Moog terminology for what analog synth players call *envelopes*. The Minimoog had two of them, one for the Filter (contained inside the Filter section) and one for overall amplitude, the **Loudness Contour** in its own section.

The two Contours are identical in their functions. They are unusual in that rather than the usual *ADSR* (Attack, Decay, Sustain, Release) envelopes, the Minimoog Contours have "three and a half" stages:

- **Attack**: the time from pressing a key until the Contour hits its maximum value. (1 millisecond to 10.4 seconds)
- **Decay**: the time from maximum value down to the Sustain level. (Filter 4 ms to 43.6 seconds; Loudness 4 ms to 32.6 seconds)
- **Sustain**: the level at which the envelope stays until the key is released. (0.00 to 10.0, where 10.0 is the maximum value)

In addition, there is a **Release** switch that applies to both Contours. When off, the Contours instantly drop to 0 when a key is released. When on, key release causes the Contours to drop to 0 over a time equal to the Decay time setting. On the original Minimoog, this switch was labeled **Decay** and was placed above the pitch bender and modwheel, because turning it on and off was a common performance trick.

> ℹ Interestingly, there was one Minimoog prototype that *did* have ADSR Contours: the Model B, the second prototype design. Its stages were called Rise, Fall 1, Sustain, and Fall 2.

3.3. Tune / Hold / Vintage

Where the original Minimoog had an Output section with a Master Volume knob, output on/off switch, A-440 Hz tuning oscillator switch, and a headphone output with its own volume knob, Mini V needs none of these things (or has moved them elsewhere). Instead, Mini V has three useful controls of its own.

- **Tune**: This knob fine-tunes Mini V's output pitch to line up with recorded instruments that might be slightly out of tune, or to play in concert with tuning systems that place the A pitch at a different frequency than the usual. Its default setting is A-440 Hz; it can be set anywhere from 400 to 480 Hz. Double click the knob to return to the default setting.

- **Hold**: This switch causes Mini V's output to sustain until it's switched off. In MIDI, this switch is hardwired to the usual Hold (Sustain) Pedal MIDI Control Change message, CC 64. This is handy not only for live playing, but also for setting up patterns on the Arpeggiator [p.30].

- **Vintage**: This controls the overall level of Dispersion [p.22] applied to Mini V's voices. We'll talk about Dispersion in detail below, but you can think of the Vintage knob as a way to control the condition of your virtual Minimoog, from "factory-fresh" to "found in an attic somewhere".

3.4. Left Hand Controls

On the original Minimoog, the left hand controls included the **Pitch Bender**, **Modulation wheel**, and switches (and pedal inputs) to turn Glide and Decay on and off.

Nowadays, everyone who's used a synthesizer knows that the Pitch Bender lets you *bend* notes sharp or flat as you play, and the Modwheel lets you add modulation to the sound (often vibrato from an LFO). However, not everyone knows that the Minimoog was the first synthesizer to ever have these controls!

> ℹ️ When you're playing Mini V from an external controller keyboard, it will respond to MIDI Pitch Bend messages, and by default the Modwheel will respond to MIDI Control Change (CC) 1, the traditional Modulation message type.

On Mini V, the Glide and Decay switches have been replaced by **Filter** and **Loudness** switches. These switches turn MIDI Velocity response on and off for the two Contours. The amount of Velocity response is set with the **Velocity** knob.

3.5. Controllers

Controllers and the Unison switch

The Controllers section of the Minimoog has gone through a few revisions over its history. Originally, the Tune knob was located here, and the other two knobs controlled Glide and Modulation Mix. Switches to turn Oscillator and Filter modulation on and off were elsewhere on the front panel. In later reissues, these controls were moved around or their places switched.

The Mini V Controllers section contains:

- **Glide**
- **Modulation Amount**
- **Modulation Mix**
- **Oscillator Modulation** and **Filter Modulation** switches
- **Unison** switch

3.5.1. Glide

This control causes changes in pitch due to keyboard playing to be less than instantaneous. Play a note, play another note, and the pitch "glides" from one to the other. (On many synths, this control is called *Portamento*.)

Glide can happen at a fixed rate of pitch change (wider intervals take longer) or a fixed time between notes (wider intervals have a faster rate of pitch change). This behavior is stored for each Preset, and is set in the Settings tab of the Side Panel [p.65].

The range is 0 to 0.866 seconds of total glide time, or 0 to 0.866 seconds per octave, depending on the setting.

The **Glide Legato** switch causes Glide to only happen between notes played legato. This produces interesting pitch sweeps in Poly modes, as pitches of previously played and released notes glide to those of current notes according to how notes are being retriggered.

3.5.2. Modulation

While Mini V has many different modulation sources and destinations (all discussed in the chapter on the Advanced Panel [p.24]), these knobs mimic the modulation capabilities of the original Minimoog.

A single amount of modulation is set by the **Mod. Amount** knob, and sent to Oscillator pitch and/or Filter cutoff, depending on which switches are on. This is a default setting, but the Modwheel can be rerouted to control other features, as set in the Side Panel MIDI Tab [p.69].

The source of the modulation signal is a mix of Osc 3 and the Noise source; the proportion of the two is dialed in with the **Mod. Mix** knob.

> ℹ️ It's worthwhile to turn off the Advanced Panel modulators and play with these knobs alone; it's extraordinary how many different effects were created by users of the original Minimoog over the years!

3.5.3. Unison

In Unison mode, every time you play a key, four voices sound. When the **Unison** switch is on, the display of polyphony mode in the Lower Toolbar [p.61] changes to displays for the amount of **Detune** and stereo **Spread** of the voices. Drag the percentages up and down to change them.
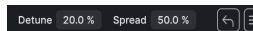
3.6. Dispersion

Remember the **Vintage** knob? Now it's time to learn what it's used for. Dispersion is a special feature of Mini V, allowing you to decide just how "old" your virtual Minimoog is!

The idea behind Dispersion is that every circuit in an analog synthesizer will drift in performance with time, wear, and operating temperature. It's possible to design a synth where this is compensated for to some extent, but a great deal of the organic quality of vintage analog gear is that this drift is unpredictable and different for every note and voice.

> ℹ️ Sometimes this effect goes beyond "really cool" and into "completely frustrating". That's usually what players mean when comparing, say, two Minimoogs and saying that one is "a beauty" and the other one is "a piece of garbage".

Synthesizers of this type are designed to be *calibrated*, where the circuit behaviors are adjusted to bring them back into line with the original factory specs. How much or little the calibration process can correct various issues will also affect the overall tonality.

Unlike a hardware Minimoog, Mini V lets you choose just how much drift there will be in every individual part of the circuit, so one part of the synthesizer might be pretty wobbly while another part is rock solid. You can then use the Vintage knob to turn these settings from zero to their respective maximum values, taking your Mini V from "factory fresh" to "well loved over many years" without sliding into "well past its prime".

The individual Dispersion controls are hidden under the Arturia logo: hover over it to take a peek at it, and click to open it.

The Arturia logo hides the Dispersion controls, visible when you hover your mouse over them.

Click to open the panel and expose the Dispersion controls.

The eight Dispersion controls are:

- **Pitch**: Variability between the pitches of each Oscillator in each voice.
- **Cutoff**: Variability of Filter cutoff for each voice.
- **Res**: Variability of Filter resonance (Emphasis) for each voice.
- **PW**: Variability of Pulse Width for each Oscillator in each voice.

> ℹ️ The original Minimoog had three settings for pulse width (the square, narrow, and very narrow waveforms), but there was no way to modulate pulse width. Some of the thickening of *pulse width modulation* (PWM) can be introduced with this control.

- **KBD**: The three settings of this switch apply different amounts of keyboard tracking drift to the Oscillators. The Vintage knob doesn't affect this setting.
- **Env**: Variability of the Attack and Decay time settings in each envelope (Contour).
- **MOD**: Variability of modulation amounts.
- **Volume**: Variability of the volume of each Oscillator in each voice.

> ℹ️ Remember: the Vintage knob lets you dial in as much or little of this as you need, and all of the settings can be stored for each Preset – so you can turn your Mini V from fresh to funky with one click!

3.7. Set the Time Machine!

Now that we've been through the basics of how Mini V relates to the Minimoog of the 1970s, it's time to jump 50 years into the future and see what Mini V can do in the 2020s...

4. THE ADVANCED PANEL

Pressing the Advanced button on the Upper Toolbar causes the **Advanced Panel** to pop up.

The Advanced Panel, currently on the Mod/Arp tab

The Advanced Panel contains a variety of powerful functions that take Mini V well beyond the capabilities of the original Minimoog. Let's go through them in detail, starting at the top.

The Advanced Panel is organized into three tabs, selected at left: **Mod/Arp**, **Keyboard**, and **Effects**. Each tab's functions can be globally defeated by clicking the Power button at the top right corner of each tab. In addition, when a tab has multiple sub-tabs, each of them has a bypass button as well.

> When a tab or sub-tab is bypassed, its panel is dimmed but parameters can still be selected or changed.

4.1. Mod/Arp

The Mod/Arp tab (shown above) offers tools to create more complex modulation routings that greatly expand Mini V's power, as well as the built-in Arpeggiator.

> Note that the Mod/Arp tab doesn't cover *all* of the modulation routings that Mini V is capable of; in fact, many of the simplest and most common ones are found on the Keyboard tab, which we'll get to later.

4.1.1. LFO

One of the limitations of the original Minimoog is that it didn't have a dedicated LFO. If you wanted to modulate a parameter with an oscillator, you had to set OSC 3 to **LO** and use that. This absence was so keenly felt that when Moog reissued the Model D in the 2010s and added a dedicated LFO, not even the most hardened Minimoog purists complained.

In Mini V, any Oscillator can be used at **LO** frequencies, but the Advanced Panel has its own extra LFO as well... and what an LFO it is!

On the left of the waveform display are buttons to select general LFO behavior.

First there are the Trigger modes: - **ENVELOPE** turns the LFO into a single-cycle envelope triggered when you press a key. - **LFO** is conventional free-running LFO behavior. - **LFO RETRIG** causes the LFO to retrigger with every keypress.

Clicking the **UNIPOLAR** button causes the Function to operate both with all values above 0. Otherwise the Function is *bipolar*, with values alternating above and below 0 (the start/endpoint). The shading of the Visualizer background subtly indicates whether unipolar or bipolar behavior is selected.

Envelopes and Key Trigger settings can be *monophonic* (any keypress causes the Function to retrigger for all notes already held down) or **POLYPHONIC** (new keypresses don't affect currently held notes). Select polyphonic triggering with the **POLYPHONIC** button.

On the right, there are knobs for the LFO **Rate** and **Amplitude**.
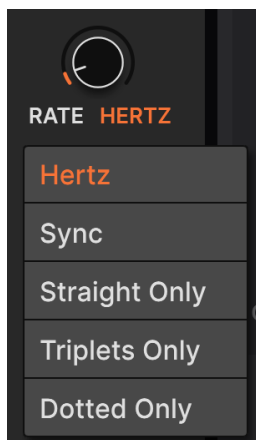
The word in red next to the word **RATE** indicates if, and how, the Function is synchronized to the master tempo of your DAW.

Clicking it pulls up a small pop-up menu that shows the different units available for the Function's sync:

- **Hertz**: cycles per second, not tied to any sync clock. The rate range is 0.010 Hz (one cycle per 100 seconds) to 80 Hz.

- **Sync**: time divisions indicated in bars and beats, from 12/1 to 1/48.

- **Straight Only**: time divisions indicated in note lengths, from 8 whole notes to 1/32 note.

- **Triplets Only**: as above but in triplet values.

- **Dotted Only**: as above but in dotted values.

> ℹ Splitting up the available sync options this way makes it much easier to find a particular sync value in the wide range covered by the knob.

The **Presets** buttons let you choose from among seven waveforms: triangle, sine, saw (down), ramp (up), square, sample & hold (random), and sample & hold with smoothed transitions. The **Phase** control inside the display can be clicked and dragged up and down to change the phase of the waveform with respect to the cycle start. For example, the Square wave starts high and goes low, but changing the phase by 180º changes that to starting low and going high.

The LFO's modulation signal can be sent to one or two Destinations. Each has its own Amount knob, with a range from -1.00 to 1.00. Double click the knob to set it to 0.

The pop-up menu of available modulation destinations is the same for the LFO, Function, and all four Keyboard tab [p.31] windows, and contains a whopping 39 choices (and None):

FUNCTION DESTINATION 1		
	None	
GLOBAL	OSCILLATORS	MODULATIONS
Glide Time	Osc All Freq	Modulation Mix
Arp Rate	Osc 1+2 Freq	Mod Amount
Arp Gate	Osc 1 Freq	LFO Rate
VCA Amp	Osc 1 Range	LFO Amp
FILTERS	Osc 2 Freq	Function Rate
Feedback Amount	Osc 2 Range	Function Amp
Filter Cutoff	Osc 3 Freq	EFFECTS
Filter Emphasis	Osc 3 Range	Reverb 1 D/W
Filter Env Amount	Osc 1 Level	Reverb 1 Decay
ENVELOPES	Osc 2 Level	Chorus 2 D/W
Filter Attack	Osc 3 Level	Chorus 2 Feedback
Filter Decay	Noise Level	FX 3 D/W
Filter Sustain	Drive Amount	FX 3 Param
Amp Attack		
Amp Decay		
Amp Sustain		

4.1.2. Function

Mini V's **Function** sub-tab brings up the Function, a modulation source similar to the LFO but with a user-defined shape.
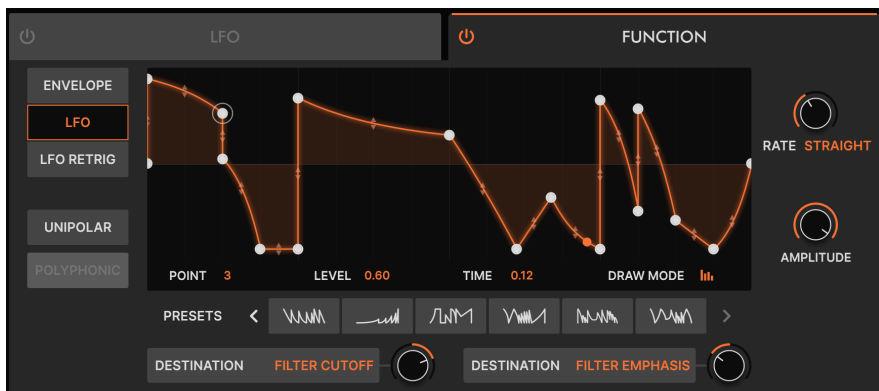
The buttons on the left, knobs on the right, and destination settings work identically to those on the LFO.

To help get you started creating your own Function, the **PRESET** selector offers 24 'starter' shapes, including a flat line, traditional LFO waveforms and envelope types, rhythms, pseudo-random behavior, and combinations of all of them. Use the arrows to scroll through the options, six at a time, and click the one you want to select it.
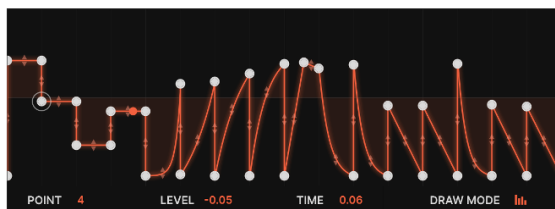
4.1.2.1. The Function Visualizer

The *Function Visualizer* is a graphical representation of the Function's behavior. The waveform or envelope shape can be changed directly with the mouse according to various Draw Modes, and individual stages can be altered at will.
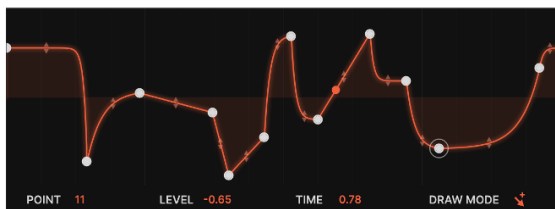
A hand-drawn Function

An envelope

An example of the other Draw Modes

The Function can be shaped to taste using the mouse. Click and drag any of the white *breakpoints* to move it and reshape the wave; click anywhere on the curve to add another breakpoint. Right click on a breakpoint to delete it.

Up to 64 breakpoints can be specified. All of them can be moved vertically or horizontally, with two limitations: the first breakpoint is locked to the start of the Function (the left edge of the display) and you can't move one breakpoint past another one in time (forward or backward).

A pair of vertical arrows appears in the middle of the curve between each pair of breakpoints; click and drag up and down to reshape the curve itself. Example 1 shows a complex Function with different curves between each breakpoint.

Controls under the curve let you manually select a point and precisely change its level and place on the curve. Note that the first and last points will always be at the same level so the waveform or envelope starts and stops at the same place. Example 1 shows some of the things you can do.

When you select **Envelope** mode, one stage is designated as Sustain and is shown with an **S** in its breakpoint. See Example 2 above.

The **DRAW MODE** control pops up a menu that lets you quickly choose between four ways of drawing the curve.
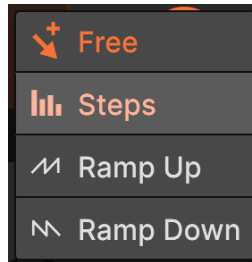
The first button operates as described above; the other three buttons let you quickly draw in periodic waveforms, with 16 levels per cycle, simply by drawing a line from left to right with the cursor. Your choices are square (Steps), upward sawtooth (Ramp Up), or downward sawtooth (Ramp Down). This is a great way to create rhythmic pulses or other shapes that follow your song's tempo.

Once that's done, you can return to the first Draw Mode and edit each step by hand as usual. Example 3 above shows a sine wave that's been redrawn in various sections using the three different draw modes.

4.1.3. Arpeggiator

The Arpeggiator is a nice addition to Mini V's capabilities. By holding down a set of notes, it will play through them in the order you choose.

The display gives a visual "hint" about the currently set behavior. Parameters include:

- **Octave**: the number of octaves the arpeggio will cover on each full cycle. Value ranges from 1 to 4.
- **Mode**: the playing order of notes in the arpeggio: Up, Down, Up & Down Inclusive (notes at the top and bottom of the arpeggio will repeat), Up & Down Exclusive (notes at the top and bottom of the arpeggio will not repeat), As Played, or Random.
- **Repeat**: How many times each note will be repeated before moving to the next note. Value ranges from 1 to 4.
- **Rate**: the speed of the arpeggiation. Available settings and sync types are identical to those of the LFO and Function rates, but the value ranges are slightly different: 0.050 to 31.5 Hz, 12/1 to 1/48 bar/beat, and whole note to 1/64 note.
- **Gate**: the amount of each step that a note is playing, expressed as a percentage. Ranges from 5% (highly staccato) to 100% (full legato).
- **Swing**: the amount of swing (alternating note drag) on the arpeggio. Ranges from 50% (no swing) to 75% (heavy swing).

> ℹ️ Set some of these parameters to be externally controlled using Macros [p.74] or MIDI Learn [p.69] to create fun changes to arpeggios as they play. This simulates the Spice function found on Arturia's MicroFreak and MiniFreak synthesizers, but with more precise control.

4.2. Keyboard

Some of the most common modulations you'll want to perform are linked to the keyboard and its functions. The **Keyboard** tab provides an easy way to set up these modulations without having to use the Modulations tab.

The Keyboard tab is divided into four windows: **Velocity**, **Aftertouch**, **Modulation Wheel**, and **Keyboard Tracking**. Each window has identical features and functions.

The Keyboard tab with its four modulation sources

Each window has its own Visualizer, similar to the Function Visualizer [p.28]. Up to four breakpoints can be placed by clicking with the mouse (right-click to remove a breakpoint), and they can be dragged to appropriate positions, with the small up/down arrows to change the curves between them.

> **i** NOTE: The breakpoints at the low and high ends of the curve can be moved vertically but not removed. After all, a modulation signal has to start and end *somewhere*, right?

Up to three Destinations can be set for each window, each with its own positive or negative Amount. The window that pops up when you click a **DESTINATION** field is the same as the one for the LFO and Function tabs, with 38 possible Destinations.

The four windows are:

4.2.1. Velocity

This window tailors the chosen Destinations' response to how hard you play the keyboard. In the example shown above, the velocity curve has been set to get louder more quickly at lower velocities, then slowly level out to a maximum output value that is slightly below the full range of MIDI velocity. You might use this to tame the response of a keyboard whose behavior at higher velocities isn't very smooth.

4.2.2. Aftertouch

This window tailors the chosen Destinations' response to how hard you press into the keybed after playing a note. Keyboards' aftertouch response can vary widely from product to product, so getting a certain keyboard to play the way you want it to can be quite challenge – unless of course you have this window. Here, an overly-sensitive aftertouch response has been "dumbed down" to something more like an on/off switch: there is no response until the player presses hard, then it rises quickly to maximum just a bit before it would normally get there.

4.2.3. Mod Wheel

The modulation wheel is the one hands-on controller that's closest to your hands when you play. It's good for gradual or set-and-forget modulations that aren't appropriate for the keyboard. The original Minimoog had no mod wheel, but Mini V has MIDI mod wheel data (Control Change 1) as an assignable source. In this example, the mod wheel changes the Feedback Amount and Filter Emphasis quickly from zero to maximum, then through a "dead zone" where the wheel doesn't change anything, and then a decrease back down to zero. This way, one movement of the wheel lets you sweep in and out of a "zone" of powerful feedback and emphasis.

4.2.4. Keyboard Tracking

Keyboard tracking is how a modulation responds to whether the note you're playing is high or low. This is most common in adding brightness to notes that are higher on the keyboard. When keyboard tracking is 100%, then a self-oscillating VCF's resonant tone will be pitch-accurate as you play. This window gives you the opportunity to finely tailor how your modulation is affected across the keyboard – something that Yamaha would revisit in great detail with its later FM synthesizers like the DX7.

4.3. The Effects tab

As a final polish to the Mini V sound, the **Effects tab** adds up to three different effects (**FX**) to a preset, chosen from a set of 16 different FX types.


The Effects tab

The audio signal always runs serially through the three FX from left to right. Any of the FX can be bypassed using the power icon at top left, or set to None (see below). Each effect has an information display, with a **Dry/Wet** or **Amount** slider next to it.

> ℹ️ NOTE: The Dry/Wet slider value is preserved when you change FX Type.

4.3.1. Presets and FX Copy

Every one of the FX has its own menu of **Presets** that drops down when clicked:
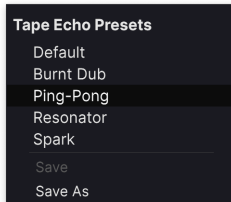
The Preset menu for the Tape Echo

As is common elsewhere in Mini V, the option to **Save** an edited FX preset under the same name, or **Save As** a new name.

If you have one of your FX set up just as you like it but you want to put it elsewhere in the signal routing, click the **Copy FX** icon to get a little drop-down menu of the two other FX in the chain. Click the FX slot where you want to copy your current effect and settings.
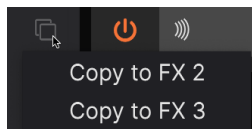
4.3.2. FX Sync

As with other time-related operations in Mini V, some of the effects offer a variety of sync options. These are slightly simpler than the ones attached to the LFO [p.25], Function [p.27], and Arpeggiator [p.30].

When these are available, you can click the red word next to the parameter, which shows the current choice, and change it from this little pop-up:
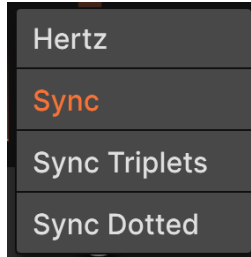

The options are:

- **Hertz**: no sync – time is set in Hertz (Hz), cycles per second. Displays on the panel as **TIME**

- **Sync**: sync to values of notes or bars. Displays on the panel as **SYNC**

- **Sync Triplets**: sync to triplet values of notes or bars. Displays on the panel as **SYNC.T**

- **Sync Dotted**: sync to dotted values of notes or bars. Displays on the panel as **SYNC.D**

> ℹ️ Note that these parameter ranges will be different for every FX type – never be afraid to experiment!

4.3.3. Meet The FX Types

Each of the three FX can be bypassed with the power button at the top left corner of its window. Alternatively, if you're sure you don't need anything in a particular slot, you can select **None** from the pop-up menu of available effects:
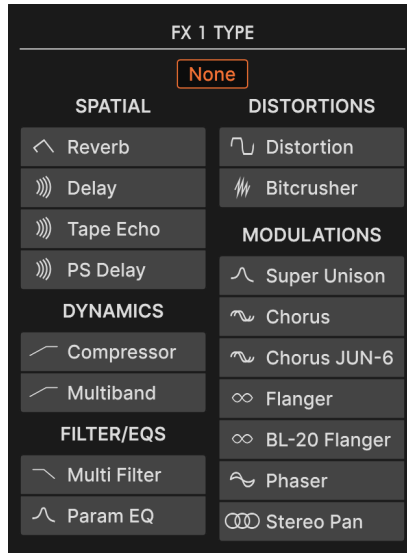
Of course, even though "none" might sometimes be the right choice for a certain preset, it's not very much fun. So let's learn about your 16 other options: the FX Types.

4.3.3.1. Reverb

Reverb (or *reverberation*) is the sound of a space – a recording studio, a concert hall, a stairwell, a tiled bathroom, the inside of an empty oil tanker, you name it. Reverb is often considered the most essential effect for the Minimoog, and so there's an easy-to-use one as our first choice for Mini V.

- **SIZE** is the overall size of the space, a general sense of how open it is. (0.100 to 1.50)

- **PREDELAY** is how long it takes for the first reflected sound to come back to our ears. Longer predelays imply a larger space. (0.00 to 0.20 seconds)

- **DECAY** is how long the reverb takes to decay to silence. It interacts with Size to define the shape of the ambience. (0.00 to 0.925)

- **DAMPING** is how quickly high-frequency sounds roll off before low-frequency sounds in the space. More damping implies a space full of objects or materials that absorb highs first: carpets, ornate wood, even people. Less damping implies a more 'ringy' space with concrete or tile walls. (0.00 to 1.00)

- **STEREO WIDTH** is just what it sounds like: how wide the reverberant image is. It may seem strange to want anything less than full stereo, but remember that old spring and plate reverbs were all mono, as were the earliest 'echo chambers' in studios. Sometimes less width means more depth. (0.00 to 0.500)

- **INPUT HP** rolls off the low frequencies of the input before it hits the reverb. This takes out low-end mud and makes the reverb brighter-sounding. Like any high-pass filter, this one has a cutoff frequency setting: 30 Hz to 10000 Hz.

- **INPUT LP** rolls off the high frequencies of the input before it hits the reverb. This softens the overall sound and removes overly tinny treble effects. Its cutoff frequency ranges from 100 Hz to 20000 Hz.

4.3.3.2. Delay

Delay is a generic term for any effect that makes a copy of an input sound and repeats it a short time later. There are several delay FX in Mini V, and this first one is a good-sounding digital delay for all kinds of applications.

- **TIME** is the time between echoes. It can be set without sync or with different types of sync, as explained in FX Sync [p.34]. (2 ms to 2 seconds, or 1/32 bar to 8 bars)

- **FINE** is a fine-tuning of the basic Time. Sometimes, having a time just slightly off other synchronized effects can give a sense of richness to the overall sound. (-50 to +50 ms)

- **FEEDBACK** is how much of the delayed sound gets fed back to the input. This produces repeating echoes that fade away, rather than a single delayed copy of the input sound (called *slapback*, useful for some cases). High feedback settings lead to longer trails of echo. (0.00 to 1.00)

- **STEREO SPREAD** controls how much the echoes spread out in the stereo soundstage, from full mono to massive panning. (0.00 to 1.00)

- **HP FREQ** and **LP FREQ** control two filters that shape the tone of the delayed sound. Darker echoes die away with less 'clutter' in the audio, and brighter echoes carry a lingering sense of presence. (HP Freq 20 Hz to 10000 Hz, LP Freq 250 Hz to 20000 Hz)

- **PING PONG** is an effect where echoes alternate between the left and right sides of the stereo field. This effect is easy to overuse, and can cause listener fatigue, but when combined with very subtle echoes it can produce a beautiful sense of extra space.

4.3.3.3. Tape Echo

Tape Echo is a type of delay characteristic of early tape-based delay machines such as the Maestro Echoplex and Roland Space Echo. Input sounds are recorded to a loop of tape with one or more playback heads to create the echoes. Because tape loops can be unstable and shift in pitch and timbre, they produce an effect that is warmer and less 'precise' than a conventional digital delay.

- **TIME** is the time between echoes, which has a narrower range than the Delay FX because of the limitations of tape. It can be set without sync or with different types of sync, as explained in FX Sync [p.34]. (10 ms to 1 second, or 1/32 bar to 8 bars)

- **FINE** is a fine-tuning of the basic Time. Sometimes, having a time just slightly off other synchronized effects can give a sense of richness to the overall sound. (-50 to +50 ms)

- **INPUT VOL** is an adjustment of the input gain, not only to make the sound louder or softer, but to gently saturate the tape and produce a warm character at higher settings. (-12 dB to +12 dB)

- **INTENSITY** is another word for feedback – the intensity and persistence of the echoes. The parameter ranges from 0.00 (slapback) to 1.20. Settings above 1.00 can cause the echoes to be louder than the input. This phenomenon is called *runaway* and leads to an ever-increasing audio level that will eventually overload, then distort, then clip… and will keep getting louder until it eventually destroys your headphones, your speakers, and your ears. Please use it responsibly and be ready to turn it down.

- **STEREO SPREAD** provides a sense of spaciousness by having one side of the stereo image have a slightly different delay time than the other. (0.00 to 0.20)

- **PING PONG** is an effect where echoes alternate between the left and right sides of the stereo field.

4.3.3.4. Pitch Shift Delay

Pitch Shift Delay is a classic effect dating back to the early years of digital audio processing, popularized by the Eventide Harmonizer. It works like a conventional delay, but in addition to being fed back to create echoes, the delayed audio signals are subjected to a pitch shift, either up or down.

- **TIME** is the time between echoes. It can be set without sync or with different types of sync, as explained in FX Sync [p.34]. (16 ms to 2 seconds, or 1/32 bar to 8 bars)

- **STEREO OFFSET** is a positive or negative time difference between the left and right Time settings. This produces a realistic widening of the sound due to a psychoacoustic phenomenon called the *Haas Effect*. (-50 to +50 ms)

- **FEEDBACK** is how much of the delayed sound gets fed back to the input. Settings range from 0.00 (slapback) to 1.00 (infinite repeats without runaway).

- **STEREO DETUNE** controls how different the left and right channels' pitches are. (-100 to +100 cents, where 100 cents equals one semitone)

- **PITCH SHIFT** is the base amount that echoes are shifted by. As they repeat, they will be shifted repeatedly, producing an endless spiral upward or downward in pitch. Very subtle amounts can produce a feeling of anticipation (up) or relaxation (down); larger amounts can produce strange, inharmonic results or smoother and more musical 'boom' or 'shimmer' (try setting it to octaves). Pitch shift can be set to 24 semitones (2 octaves) up or down.

- **SPRAY** sets up a 'scattering' effect across the soundstage for each successive echo, with slightly randomized echo times. It's especially noticeable at higher amounts of pitch shift. (0.00 to 500 ms)

- **HP FREQ** and **LP FREQ** control two filters that shape the tone of the delayed sound. Darker echoes die away with less 'clutter' in the audio, and brighter echoes carry a lingering sense of presence. (HP Freq 20 Hz to 10000 Hz, LP Freq 250 Hz to 20000 Hz)

4.3.3.5. Compressor

The **Compressor** is used to control the dynamic range of a sound: it reduces the difference between the softest and loudest levels a sound can have.

Audio that goes above a certain **Threshold** is automatically turned down a bit; the amount it's turned down is the **Ratio**. Ratio of what? If a sound would have gone 6 dB above the threshold but the compressor only lets it rise 2 dB, that's a 3:1 ratio. If a sound would have gone 20 dB above the threshold but it can only go up 1 dB, that's a 20:1 ratio.

While this does lower dynamic range, it also lowers the overall level of the signal. The compressor then adds *makeup gain* to bring the average level of the signal up to where it was before the processing. The loudest sounds stay about where they were, but the softest ones are all louder.

Sometimes it's practically or musically useful for compression to not start or end immediately when a signal passes the threshold. For instance, it might be nice to let the snappy attack of a drum come through before the compressor controls the rest of its sound, or to have the compressor not turn on and off rapidly as new notes are played. In these cases, the compressor will have controls for **Attack** and **Release** to delay the onset or finish of compression.

Sometimes it's useful to blend the dry sound with the compressed sound, making the compression an added effect rather than a 100% control of dynamics. This effect is called *parallel compression*, and you can make use of it with the **DRY/WET** slider.

- **ATTACK** controls the onset of the compression. (0.010 to 1000 ms)

- **RELEASE** controls how quickly the compression 'lets go' of the audio. (1.00 to 2000 ms)

- **THRESHOLD** controls the level at which compression begins. (-60 to +20 dB)

- **OUTPUT GAIN** controls how much gain will be added or removed from the output. (-36 to +36 dB)

- **RATIO** The ratio of uncompressed to compressed level changes. (1.00 to 100)

At 1.00, no compression occurs. Most of the range of the **RATIO** knob happens between 1.00 and 20.0; this covers everything from very light and musical to more forceful compression. Above 20, compression becomes *limiting*, where the idea is to prevent a signal from never going above a certain amount. Hard limiting can have a strong effect on the sound, which might or might not be useful. The top of the range is 100 to 1, which is effectively *brickwall limiting*, where no signal is ever allowed to go above a certain level. This is sometimes used in digital mastering to prevent clipping.

- **MAKEUP** is an automatic makeup gain control that you might find works very well for you.

At any given time, the amount of Gain Reduction is shown by a meter on the right of the display. For this meter, 0 is at the *top* of the range and the meter reads downward with more gain reduction. In the screenshot above, the meter shows about 2 dB of gain reduction.

4.3.3.6. Multiband

A multiband compressor works like a combination of regular compressors, but each one works on a separate range of frequencies (*band*). First used in hardware to allow mastering engineers to squeeze the absolute maximum level out of recordings, these compressors are now used for subtle sculpting, sound design, special effects, and much more.

As you can see in the screenshot above, the display shows controls for three different frequency bands from left to right. The crossover frequencies for the boundaries between the low and mid bands (30-3000 Hz), and for the mid and high bands (300-15000 Hz), are shown below the display. If the low and/or high bands are turned off, the compressor will cover two bands, or the full range of frequencies.

Each band's compressor can work to compress signals above one threshold and/or expand signals below another threshold. The bar graphics control the threshold and ratio for each band/compressor/expander.

Set the threshold amount by clicking and dragging the top/bottom edges of a bar. Set the ratio by clicking and dragging up and down inside a bar; the density of horizontal lines will increase until it becomes solid as the ratio goes up. For ratios under 1:1 (expansion), the lines will be further apart than the 1:1 reference lines shown outside the bars. In this screenshot, the upper limit bars show various ratios of compression, and the lower limit bars show various ratios of expansion.

- **AMOUNT**: Rather than wet/dry mix, this FX type has an Amount control.

- **OUT LOW**, **OUT MID**, and **OUT HIGH** control the makeup gain for each of the three bands.

- **INPUT** and **OUTPUT** control the overall input and output gain.

- **ATTACK** and **RELEASE** adjust the onset and removal of compression (-1.0 to 1.0).

A drop-down menu lets you choose between combined compression and expansion (**ABOVE & BELOW**) and compression alone (**BELOW ONLY**).

4.3.3.7. Multi Filter

Sometimes it's nice to have an extra filter handy for tweaking your tone before it gets to the output. The **Multi Filter** FX gives you five to choose from!

- **Filter Type** is selected from the dropdown menu by clicking the arrow next to the type name. Types include: lowpass (**LP**), highpass (**HP**), bandpass (**BP**), feedback comb filter (**CombFB**), and feed forward comb filter (**CombFF**). The comb filters simulate the behavior of a flanger with two different tonal qualities – CombFB produces a series of evenly spaced peaks, and CombFF produces evenly-spaced notches.
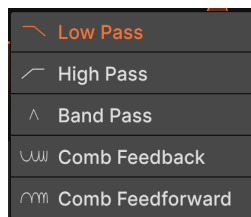
i Evenly spaced? You can see on the display that they're not. Well, actually they are – by *frequency*, not by octave. The display is scaled in octaves, and each octave is *double* the frequency of the one below it. As a result, the display shows a series of peaks that gradually get closer together.

- **CUTOFF**: sets the cutoff frequency from 20.0 Hz to 20000 Hz (LP, HP, BP) or 2000 Hz (CombFB, CombFF)

- **RESONANCE**: sets the resonance of the filter. (0.500 to 15.0)

4.3.3.8. Parametric Equalizer
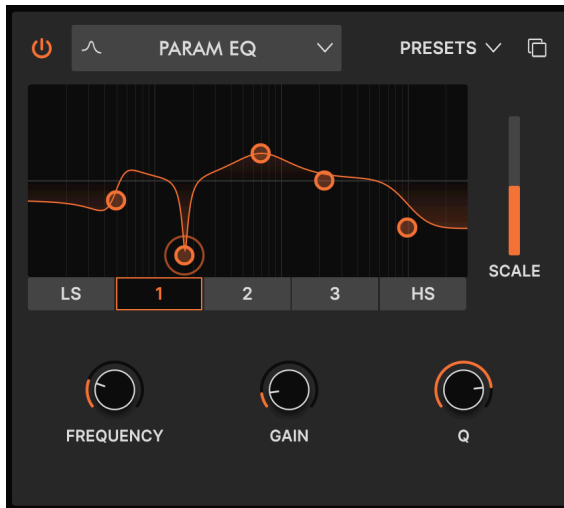
A **Parametric Equalizer** lets you sculpt your sound very precisely, as opposed to the very broad tonal strokes you get from a graphic equalizer or the tone controls on a guitar or amp. It can be used to gently or surgically boost or cut certain frequencies to alter a track's overall sound or remove problem frequencies.

Each of the five bands has its own controls for the center frequency, amount of boost or cut, and bandwidth (Q). These can be dialed in on the knobs for the selected band. Frequency and gain for each band can also be set by clicking and dragging the mouse.

- **SCALE**: Rather than wet/dry mix, this FX type has a Scale control for the overall effect.

- **Band Select**: Selects the band being adjusted. The Parametric EQ has five bands: **LS** (a *low shelf*, where every frequency below the set one is raised or lowered by a certain amount), three *peaking* bands with full control over all parameters, and **HS** (a *high shelf* that works in the same way as the low shelf).

- **FREQUENCY** sets the center frequency of each band: 50.0-500 Hz for LS, 40.0-20000 Hz for the three peaking bands, and 1000-10000 Hz for HS.

- **GAIN** sets the amount of boost or cut. (-15.0 to 15.0 dB)

- **Q** sets the bandwidth of the peak or steepness of the shelf. (0.100 to 2.00 for LS and HS, 0.100 to 15.0 for the three peaking bands)

> ℹ️ In the screenshot above, the Parametric EQ has been set to tightly notch out hum at 60 and 120 Hz, gently boost the lows and lower the highs, and provide a broad bump in the upper mids.

4.3.3.9. Distortion

Distortion offers the most options of any Mini V FX type. It might seem strange to you that all this effort should be put into a 'fuzzbox', but electronic musicians have known for years that there are many different kinds of signal distortion, each with its unique sonic signature – and they can transform sounds in ways ranging from subtle warmth to all-out audio destruction!

This effect can be supplemented by a multi-mode filter that can be applied either before or after the distortion.

Nearly all of the FX parameters are common to all 16 distortion types:

- **DRIVE** controls the amount of overdrive pushing the input signal through the processor. It has a very wide range, from slight saturation to massive boost. (0.00 to 48.0 dB)

- **TONE**: This knob is only available in the **Overdrive** type, and is displayed next to Drive. It adjusts the frequency response of the overdrive from mellow to bright. (0.00 to 1.00)

- The **AUTO** button engages automatic gain compensation to prevent *unintended* overload peaks. (Yes, those happen, even when you're using distortion.)

- **OUT GAIN** sets the output gain of the distorted sound, either lower (to prevent clipping) or higher (to add power) than the input level. (-24.0 to 3.00 dB)
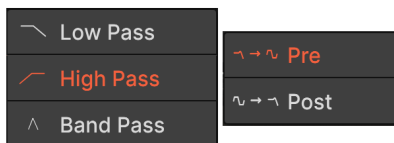
Distortion pop-ups: Filter Type and Pre/ Post

The filter controls are:

- The **FILTER TYPE** drop-down sets the filter to Low Pass, High Pass, or Band Pass.

- **CUTOFF** sets the filter cutoff frequency. (20.0-20000 Hz)

- **RESONANCE** controls the filter's resonant peak. (0.500 to 15.0)

- The **PRE/POST** drop-down controls whether the filtering takes place before or after the distortion.

- **DARK** tames the extreme high-end content that some of the distortion types can produce.

> Try using the same Macro to control the cutoff of the Distortion's filter and the cutoff of a Multi Filter [p.43] in another FX slot. This lets you easily control different combinations of filters, or work with slopes beyond the Moog ladder filter's traditional 24 dB/octave.

A pop-up menu lets you select from among 16 different types of distortion.
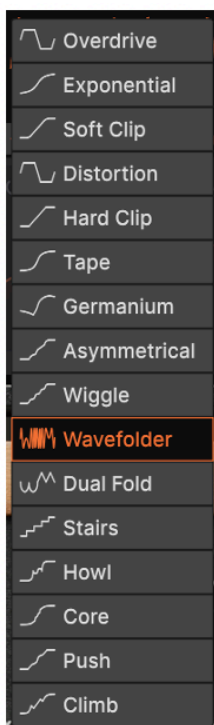
Some of these algorithms come from familiar types of analog distortion – examples include gradually increasing amounts of gain (**Overdrive**, **Exponential**, **Soft Clip**, **Distortion**, **Hard Clip**), **Tape** saturation, and **Germanium** transistor preamp tone.

Other distortions are more digital in character – in addition to **Wavefolder** and **Dual Fold**, which 'fold over' the peaks of waveforms to create more harmonics, there are unusual types such as **Asymmetrical**, **Wiggle**, **Stairs**, **Howl**, **Core**, **Push**, and **Climb**.

Want to know how all these funky shapes sound? Try them for yourself!

4.3.3.10. Bitcrusher
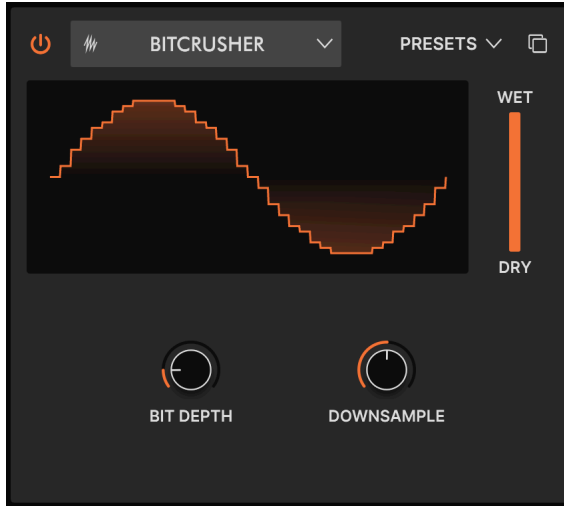
A bitcrusher does what it sounds like: it crushes bits! This FX simulates the 'dirty' audio of old digital converters, whose bit depth and sample rate were limited by the power of current processors. It gives you anything from a slight lo-fi haze to utter destruction of your precious sound.

- **BIT DEPTH**: Sets the resolution of the output from 16 bits (CD quality) down to 1.5 bits (barely recognizable as audio).

- **DOWNSAMPLE**: sets the ratio by which the instrument's internal sample rate is divided, from 1.00 x (highest quality) to 80.0 x (trashed). The more downsampling, the more *aliasing* affects the sound, with inharmonic frequencies 'folding down' below the highest frequency the bitcrusher can deliver.

4.3.3.11. Super Unison

The Super Unison effect is inspired by the Super Saw waveform pioneered on Roland's JP-8000 synthesizer and copied many times after that. It uses delays to create slightly time and pitch shifted copies of a signal that combine with the original to create huge sounds.

- **VOICES**: the number of pairs of added voices, one above and one below the original. (1 to 8 pairs – 8 can be overkill, so start with 2 or 3)

- **DETUNE**: the amount of detuning between voices. (0 to 100%)

- **RATE** is the speed of the LFO that varies the delay time. (0.00 to 1.00 Hz)

- **STEREO WIDTH** is the amount of stereo spread in the cluster of voices. (0.00 to 1.00)

- **HP FREQ** and **LP FREQ** control two filters that shape the tone of the copied voices. This can tailor the final tone to create less 'clutter' in the audio from too much bass buildup or treble sparkle. (HP Freq 10 Hz to 2000 Hz, LP Freq 250 Hz to 20000 Hz)

4.3.3.12. Chorus

Chorus is an effect first developed in the mind-1970s by Roland for the Jazz Chorus amplifier and CE-1 pedal. In a chorus, the dry signal is mixed with one or more slightly delayed copies of itself (called *voices*), whose amount of delay is gently varied by an LFO to create a sense of thickness.

- **RATE** controls the speed of the LFO, which is the most important parameter when adjusting the sound of the chorus. Several famous chorus pedals have had nothing more than a Rate control! (0.1 to 5.0 Hz)

- **DEPTH** controls the relative spacing of the delayed voices, with longer delays leading to thicker, more detuned sounds. (0.00 to 10.0 ms)

- **DELAY** is the length of the basic delay, which is modulated by the LFO and spread out by the Depth knob. It changes the character of the sound, and is a relatively recent addition to chorus pedal designs. (0.600 to 20.0 ms)

- **FEEDBACK**, as the name implies, feeds back some of the delayed signal to be delayed again. This creates a noticeable metallic 'ringing' tone that makes the chorus sound more like a flanger. (0.00 to 0.900)

- **LFO Wave Shape** lets you choose between a sine wave and triangle wave for the LFO, which produce distinctly different types of motion in the sound.

- **MONO/STEREO** chooses whether or not the delay voices are output on the far left and right sides of the stereo field.

- **VOICES** chooses whether the dry signal is followed by one, two, or three delayed copies. This is an important setting, because the overall power of the chorus effect needs to be adjusted to the preset and the song. Sometimes one voice is all you need for a tiny bit of thickening or vibrato, but three voices is overwhelming. (Of course, getting overwhelmed can be fun, too.)

4.3.3.13. Chorus JUN-6

One of the most famous chorus effects is the one built into the Roland JUNO-6 synthesizer and its successors. Designed to thicken the sound of the single VCO, this 2-voice stereo chorus' controls were kept extremely simple: just three buttons for three presets, I, II, and I+II. This version provides bit more control while saving the rich timbre of the original.
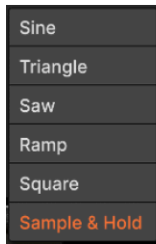
- **RATE** is the speed of the LFO that varies the delay time. It can be set without sync or with different types of sync, as explained in FX Sync [p.34]. (0.05 to 15 Hz, or 1/32 bar to 4 bars)

- **DEPTH** is the amount of variance in the set delay time. (0.00 to 10.0 ms)

- **PHASE** allows the phase of one voice to be offset from the other by up to 180º. The two voices are sent to the left and right sides of the stereo field for a wider effect.

> ℹ️ Note that if a stereo patch where Phase is turned all the way up is mixed to mono, the two sides will cancel each other out and the chorus will disappear – a common and annoying discovery for guitarists whose stereo chorus pedals always worked this way!

4.3.3.14. Flanger

The **Flanger** is the most intense of the time/modulation effects. It originally came from audio engineers gently pressing on the flange (rim) of a moving tape reel to slow down the playback a tiny bit. When combined with the original sound, this effect produced *comb filtering*, a set of regularly spaced notches in the frequency response that look like the teeth of a comb. Varying the pressure on the flange would cause the notches to move, producing the effect we hear as flanging. Later, analog delays controlled by an LFO were used to create the same sort of effect.

- **RATE** is the speed of the LFO that varies the delay time. It can be set without sync or with different types of sync, as explained in FX Sync [p.34]. (0.010 to 10 Hz, or 1/32 bar to 8 bars)

- **DELAY** is the length of the basic delay, which is modulated by the LFO and spread out by the Depth knob. Flanger delays are the shortest of any modulation pedal – longer delays become chorus, then echo. Originally called *Manual* on early flangers, this parameter sets the overall tonality of the flange from bright to dark. (0.001 to 10.0 ms)

- **DEPTH** is the amount of variance in the set delay time. (0.00 to 10.0 ms)

- **FEEDBACK** controls the amount of delayed sound fed back into the input to be delayed again. Unlike chorus, where feedback is an unusual added control that's best used sparingly, Feedback on a flanger is essential to creating its distinctive resonant timbre. (0.00 to 0/990)

- **HP FREQ** and **LP FREQ** control two filters that shape the tone of the delayed sound. This control, unusual on a flanger, allows the effect to focus on a particular tonal range or to ignore extreme lows and highs. (HP Freq 30 Hz to 800 Hz, LP Freq 1000 Hz to 20000 Hz)

- **MONO/STEREO** chooses whether or not the delay voices are output on the far left and right sides of the stereo field.

- **LFO Waveform and Feedback polarity**: These two buttons appear on the flanger display. One changes the LFO waveform from a sine to a triangle, producing a dramatically different flange; the other inverts the polarity of the feedback, producing two different tonal spectra.

4.3.3.15. BL-20 Flanger

The **BL-20 Flanger** is based on the sound of Arturia's Flanger BL-20 plug-in, which is in turn based on the sound of a rare but beautiful-sounding hardware flanger from the 1970s. It doesn't provide all of the BL-20's capabilities, but it still sounds amazing!

- **RATE** is the speed of the LFO that varies the delay time. It can be set without sync or with different types of sync, as explained in FX Sync [p.34]. (0.017 to 5.00 Hz, or 1/32 bar to 8 bars)

- **DEPTH** sets how much the internal LFO modulates the delay time. (0.00 to 1.00)

- **DELAY** is the length of the basic delay, which is modulated by the LFO and spread out by the Depth knob. (0.00 to 1.00)

- **FEEDBACK** controls the amount of delayed sound fed back into the input to be delayed again. Unlike chorus, where feedback is an unusual added control that's best used sparingly, Feedback on a flanger is essential to creating its distinctive resonant timbre. (0.00 to 0/990)

- **WIDE**: This button flips the LFO modulation in the right channel, making the flange sound wider and more three-dimensional... but beware of summing the two sides to mono, or the flanging will cancel itself out!

- **MONO INPUT**: This switch selects whether the circuit's input is mono or stereo.

4.3.3.16. Phaser

The **Phaser** or *phase shifter* is not a time-delay effect, although it can sound like one. The dry signal is mixed with copies of itself that have been sent through a set of *all-pass filters*. Why would anyone need a filter that doesn't filter anything? Because another property of filtering is that regardless of what frequencies you do or don't remove, filters introduce a *phase shift* with respect to the original input. Each pair of these filters (called *poles* or *stages*) will create a notch in the frequency spectrum, whose relative movement to other notches can be varied with an LFO. The resulting effect has many fewer notches than flanging, and a much different sonic character.

- **RATE** is the speed of the LFO that varies the delay time. It can be set without sync or with different types of sync, as explained in FX Sync [p.34]. (0.10 to 10 Hz, or 1/32 bar to 4 bars)

- **FREQUENCY** varies the overall position of the cluster of notch filters. Best heard with Stereo turned down, Frequency causes the overall tonality of the phasing to go from fairly dark to quite bright. (30 to 15000 Hz)

- **FEEDBACK** controls how much of the phase-shifted audio is fed back into the input to be phased again, intensifying the effect and giving it a resonant character. (0.00 to 0.99)

- **LFO AMOUNT** sets the depth of the LFO's modulation control. Turn it down for a more subtle movement and up for more dramatic effects. (0.00 to 1.00)

- **N POLES** controls how many poles the circuit will have. Each two poles adds another notch to the frequency response, letting you design simpler or more dramatic sounds. (2 to 12, for 1 to 6 notches)

- **STEREO** spreads out the effect with a slight time delay between the left and right sides. It can go from very slight spread to a ping-pong effect. (0.00 to 180)

- **LFO Wave** is selected from the waveform button on the display. It opens a drop-down menu of six different waveforms, each of which will produce a significantly different phasing.

| Sine |
| Triangle |
| Saw |
| Ramp |
| Square |
| Sample & Hold |

4.3.3.17. Stereo Pan

Stereo Pan lets you automatically control and move the stereo position of each voice, to provide motion and breadth.

- **AMOUNT**: Rather than wet/dry mix, this FX type has an Amount control to control the width of the panning effect. (0.00% to 100%)

- **RATE** controls the movement of sounds in the stereo field. It can be set without sync or with different types of sync, as explained in FX Sync [p.34]. (0.100 to 20.0 Hz, or 1/32 bar to 8 bars)

- **MONO BASS** and **CUTOFF**: Sometimes, autopanning very low sounds can cause a mix to feel seasick and unbalanced. Clicking Mono Bass keeps low frequencies centered, and Cutoff controls the highest frequency that's mono. (50.0 to 200 Hz)

- **Pan Mode (LINEAR/NATURAL)** lets you choose between two types of pan motion, either of which might sound better with any particular preset. Use your ears!

- **INVERT** inverts the LFO output, which can have an audible effect on certain presets. Again, use your ears!

5. TOOLBARS

Osc 2 Fine: Adjusts Osc 2's fine tuning

The Toolbars above and below the main control area of Mini V contain a number of important functions for Preset selection, housekeeping, and other utility settings.

The Upper Toolbar includes:

- The Main Menu [p.56]
- The Preset Name Pane and Preset Browser [p.77]
- The button to open the Advanced [p.24] features
- The "gear" icon to open the Side Panel [p.65]

The Lower Toolbar includes:

- The Control Description area [p.61]
- The Polyphony setting [p.62]
- Undo, Redo, and History [p.63]
- The CPU Meter [p.63] and Panic [p.63] functions
- Four Macro knobs [p.74]
- A corner grab handle [p.64] for resizing the plug-in window

5.1. Upper Toolbar

Let's start with the Upper Toolbar, covering its functions from left to right.
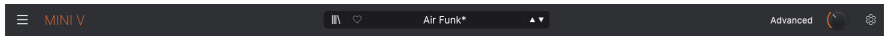
5.1.1. Main Menu
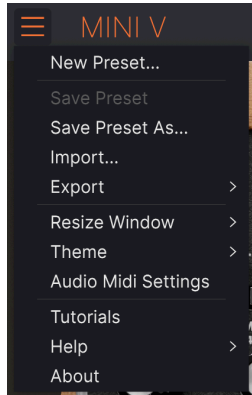
Clicking the "hamburger" icon (three horizontal lines) in the top left corner of the upper toolbar opens the Main Menu, a drop-down menu that lets you access a number of useful functions related to Preset management and more.

5.1.1.1. New Preset

Creates a new Default Preset with initialized settings for all parameters.

5.1.1.2. Save Preset

Overwrites the current Preset with any changes you have made. This applies only to User Presets, so this option is greyed out for Factory Presets. You also have the option to save the current Preset as your Default.

5.1.1.3. Save Preset As...

This option saves the current settings of Mini V under a new Preset name. Clicking this option reveals a window where you can name your Preset and enter more detailed information about it:
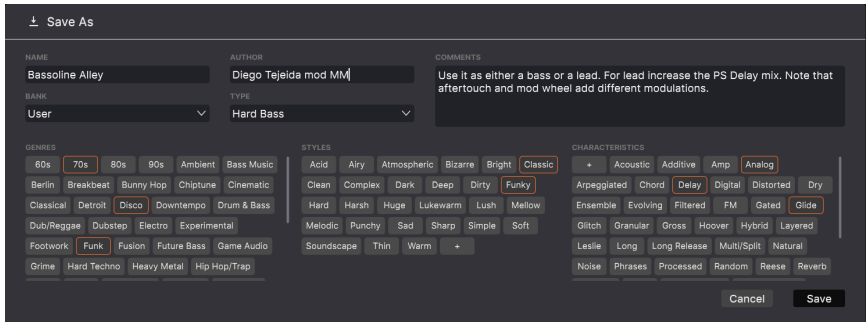
5.1.1.4. Import...

This command lets you import a Preset file or an entire Bank stored on your computer. It opens a navigation window in your computer's OS to find the proper files.

5.1.1.5. Export...

You can export Presets to your computer in two ways: as a single Preset, or as a Bank. In either case, an OS-level navigation window lets you specify where to save the file(s).
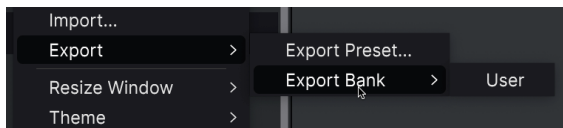
- **Export Preset...:** Exporting a single Preset is handy for sharing a preset with someone else. The saved preset can be reloaded using the **Import** menu option.

- **Export Bank:** This option exports an entire Bank of Presets, which is useful for backing up or sharing many Presets at once. Saved Banks can be reloaded using the **Import** menu option.

5.1.1.6. Resize Window
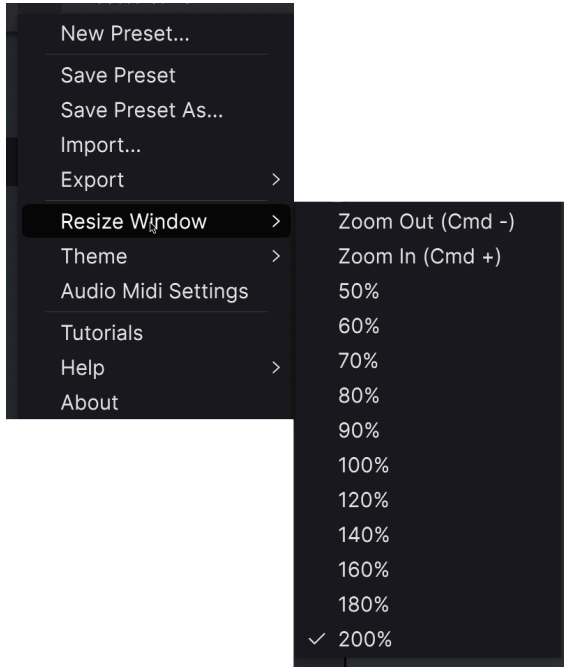
Mini V can be resized from 50% to 200% of its default size (100%) without any visual artifacts. On a smaller screen, such as a laptop, you may want to reduce the interface size so it doesn't dominate the display. On a larger screen or a second monitor, you can increase the size to get a better view of the controls and graphics.

You can also perform this operation using keyboard shortcuts: every time you press CTRL- (Windows) or CMD- (macOS), the window will shrink by one size increment, and every time you press CTRL+ (Windows) or CMD+ (macOS), the window will grow by one size increment.

In addition, you can click-drag the resize handle [p.64] at the right of the lower toolbar to make the Mini V window any size.

5.1.1.7. Theme

This pop-up allows you to select a Classic (Dark) or Light theme for the toolbars, setting them to be black or white.

5.1.1.8. Audio Midi Settings

Available only in the standalone version of Mini V, this pop-up lets you set up which audio and MIDI devices on your computer will communicate with Mini V. See the chapter on Activation [p.8] to learn more.

5.1.1.9. Tutorials
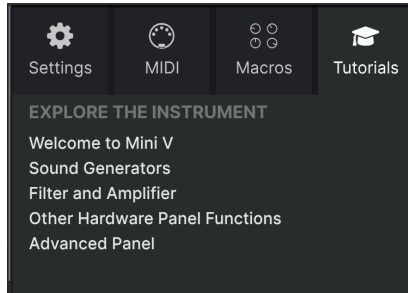
Click on a tutorial's name in the Side Panel
Tutorials tab to get started

Mini V comes with interactive tutorials that walk you through different features of the plug-in. Clicking this option opens the Side Panel [p.65] and selects a list of tutorials in the Tutorials tab [p.76]. Select one to access step-by-step descriptions that highlight relevant controls and guide you through various operations.

> ℹ️ Save your work before you start a tutorial! Each one comes with specialized Presets that will overwrite whatever you're working on.

5.1.1.10. Help

Get more help by visiting links to this user manual and Frequently Asked Questions pages on Arturia's website. You will need an internet connection to access these pages.

5.1.1.11. About

Here you can view the software version and developer credits. Click again anywhere on the screen (outside the About window but inside the plug-in) to make this pop-up window disappear.

5.1.2. Preset Browser access and Name Pane
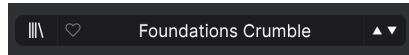
The Preset Name Pane

Clicking the "books on a shelf" button opens the Preset Browser [p.77], which offers a myriad of ways to browse, sort, and organize Presets in Mini V.
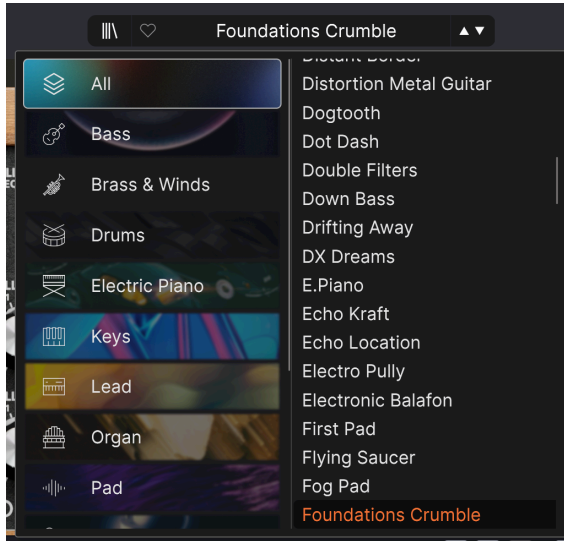
Clicking on the Preset name also opens up quick drop-down menus for selecting Presets outside of the Browser, as shown above. You can select to look at lists of Presets organized by Type, or simply select All.

The available Types are: Bass, Brass & Winds, Drums, Electric Piano, Keys, Lead, Organ, Pad, Piano, Sequence, Sound Effects, Strings, and Template.

> **i** The Template Type only contains the Default Preset at first, but if you create a Preset that you find useful as a starting point for sound design, you can store it here for easy access.

Everything you need to know about managing Presets is covered in detail in the Preset Browser [p.77] chapter. This includes working with Favorites, which are tagged by clicking the heart icon. Up and down buttons let you scroll through the Preset list as well.

> **i** Note: An asterisk just after the name in the Preset Name Pane (*) indicates that you've edited that Preset.

5.1.3. Advanced button, Master Volume knob, and Settings button

Near the upper right corner of the top toolbar is the **Advanced** button. This opens up the Advanced Panel [p.24], which is discussed in detail in its own chapter.

Next to that is the Master Volume knob, which controls the overall output level of the entire instrument, including the Effects [p.33].

Finally, there's the gear icon that pops open the **Side Panel**, whose functions are covered in the Side Panel [p.65] chapter.

5.2. Lower Toolbar

Lower toolbar, left side
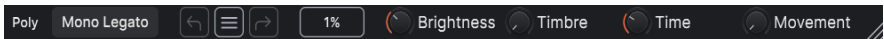
Lower toolbar, right side

The Lower Toolbar of the Mini V interface can be thought of in terms of left and right halves. On the left is the Control Description display, and on the right are buttons for several useful utility functions.

5.2.1. Control Descriptions
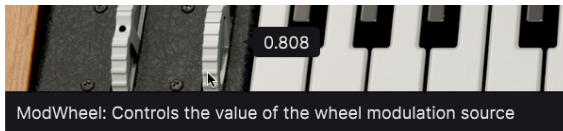
This Control Description pops up when you mouse over the Modwheel

Operate or hover on any knob, button, icon, or other control, and a brief description of what it does appear in the lower left-hand corner.

5.2.2. Utility Functions

Utility functions on the Lower Toolbar: Polyphony, Undo/History/Redo, CPU Meter

The lower right side of the plug-in window gives access to useful global functions.

5.2.2.1. Polyphony

Mini V can be set to operate in various modes of polyphony – a trick the original hardware could never do! Click on the Polyphony setting to pop up a menu of options:

Mini V can be played monophonically, with or without legato retriggering of envelopes, or with up to 6 voices of polyphony. You can choose the appropriate setting based on a particular Preset's needs, or the overall CPU load Mini V is causing.

> NOTE: Mini V can't be played polyphonically if Unison [p.22] is on. When Unison is activated, values for the Depth and Spread, with draggable settings, appear in place of the Polyphony label on the Lower Toolbar.

5.2.2.2. Undo, Redo, and History

When editing a plug-in, it's all too easy to overshoot the sweet spot for one or more controls, and then wonder how to get back to where you were. Like all Arturia plug-ins, Mini V offers comprehensive Undo, Redo, and History functions so that you always have a safe way back.

Use the left (**Undo**) and right (**Redo**) arrows to go back and forward one control movement at a time.

Click the left arrow to revert to the state before the most recent edit you made. You may click repeatedly to undo several edits in reverse time order.

Click the right arrow to redo the most recent edit you undid. If you have undone several, you may click repeatedly to redo them in forward time order.
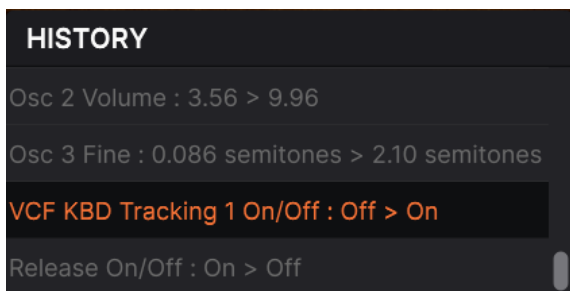
Click the center "hamburger" (three lines) button to open the **History** window, as shown above. This provides a step-by-step account of every move you have made in Mini V since you loaded the plug-in. Clicking on an item in the list not only re-executes that move — it returns the plug-in to the overall state it was in when you first made that move.

5.2.3. CPU Meter

Next is the **CPU Meter**, which displays the overall load Mini V is placing in your computer CPU. Since it deals only with this plug-in, it is not a substitute for the resource metering tools in your DAW. When playing a lot of notes, CPU usage can go over 100%, which causes clicks, pops, and crackles; the CPU Meter gives you a feel for how much of any issues you hear might be coming from how you're using Mini V.

5.2.3.1. Panic

Mousing over the CPU Meter accesses the PANIC function

Mouse over the CPU Meter, and it will display the word **PANIC**. Click to send an all-sounds-off command that silences any sound processed through Mini V. This is a momentary command, so sound will resume if your DAW is still playing.

In the event of serious runaway audio (say, from an unrelated delay effect that has gone into a feedback loop), stop your DAW playback and disable the plug-in causing the problem.

5.2.4. Macro Knobs, Resize Handle, and Max View

The Macro knobs and the Resize handle (see below)

The four Macro knobs allow you to change multiple parameters at once with a single knob turn. They can be set up and renamed in the Side Panel Macros Tab [p.74].

Grab and drag the diagonal lines to the right of the Macro Knobs to resize the Mini V program or plug-in window. This a shortcut for quickly switching between increments in the Resize Window [p.58] menu. When you let go, the window will snap to the nearest size increment.

Click the Max View button to reset the window size

Sometimes, you may see a button with two diagonal arrows (the **Max View** button) over the Resize handle. This happens when, for some reason, the window size is not displaying all of the controls of Mini V. Click it to restore a full view of the open controls.

6. THE SIDE PANEL

The **gear icon** at the top right of the Upper Toolbar opens the **Side Panel**.
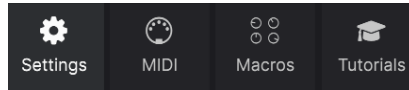
The Side Panel contains four tabs covering important subsystems that you won't have to access quickly when you're playing or editing sounds on Mini V:

- **Settings**: Settings for MIDI Channel, MPE, and certain other global and Preset-level functions.

- **MIDI**: MIDI Learn functions for use with external controllers, as well as MIDI controller configurations.

- **Macro**: Assignments for four Macros that control multiple parameters with a single knob twist.

- **Tutorials**: In-app interactive tutorials, also accessible from the Main Menu.

Let's look at them from left to right.

6.1. Settings Tab

This tab covers settings to control how a Preset responds to incoming MIDI, and certain settings within a Preset.
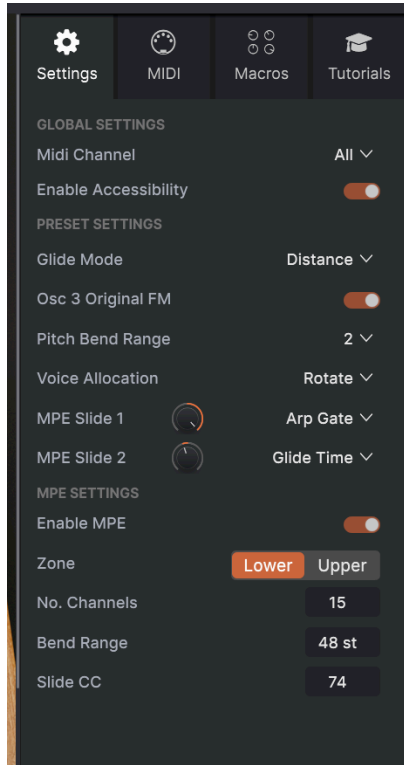
The Side Panel's Settings tab

- **MIDI Channels:** Selects the MIDI channel(s) on which Mini V will receive MIDI input. You can select a particular channel, or choose "All" for Omni Mode.

- **Enable Accessibility**: Allows Mini V to use text-to-speech features for visually impaired users.

- **Glide Mode**: There are two ways the Glide function can cause note pitches to slide from one key to another.

    - In **Distance** mode, glide speed is set so that all glides go at the same rate, so a glide of 2 semitones will take twice as long as a glide of 1 semitone.
    - In **Time** mode, all glides take the same amount of time to complete, regardless of how large the pitch change is.

- **Osc 3 Original FM**: One quirk of the original Minimoog hardware is that Oscillator 3, when used as a filter modulation source, could bleed its audio signal into the output along with everything that was supposed to be there. This behavior can be switched off for cleaner control, or left on for authentic Minimoog weirdness.

- **Pitch Bend Range**: Range of the pitch bend wheel in semitones, settable from 1 to 12.

- **Voice Allocation** determines how voices are played in Poly mode. The two choices are **Reassign**, where playing one note repeatedly uses the same voice again and again, and **Rotate**, where each note played always triggers a new voice.

- **MPE Slide 1 and MPE Slide 2:** Using the pop-up menu, you can select which modulation destination(s) will receive MPE 'Slide' messages, then set their positive or negative amounts with the associated dials.

None	Filter Emphasis
Unison Detune	Filter Env Amount
Unison Stereo Spread	VCA Amp
Glide Time	Filter Attack
Arp Rate	Filter Decay
✓ Arp Gate	Filter Sustain
Osc All Freq	Amp Attack
Osc 1+2 Freq	Amp Decay
Osc 1 Freq	Amp Sustain
Osc 1 Range	Modulation Mix
Osc 2 Freq	Mod Amount
Osc 2 Range	LFO Rate
Osc 3 Freq	LFO Amp
Osc 3 Range	Function Rate
Osc 1 Level	Function Amp
Osc 2 Level	FX1 Dry/Wet
Osc 3 Level	FX1 Param
Noise Level	FX2 Dry/Wet
Drive Amount	FX2 Param
Feedback Amount	FX3 Dry/Wet
Filter Cutoff	FX3 Param

The Side Panel's Settings tab

- **MPE Settings** Enables or disables MPE. When enabled, a drop-down menu for basic MPE functions appears.

For many players, this raises the question: what exactly *is* MPE?

6.1.1. MPE: MIDI Polyphonic Expression

MPE (MIDI Polyphonic Expression) is a relatively new addition to MIDI, which adapts control data for modern controllers that deliver multi-dimensional expression data for each finger. Here are the basics:

A number of new controllers offer five 'dimensions' of touch sensitivity. In addition to the usual *velocity* and *release velocity* per key, there are also *X* (side-to-side movement, sometimes called *Glide*), *Y* (back-and-forth movement, sometimes called *Slide*), and *Z* (pressure, also called *aftertouch*).
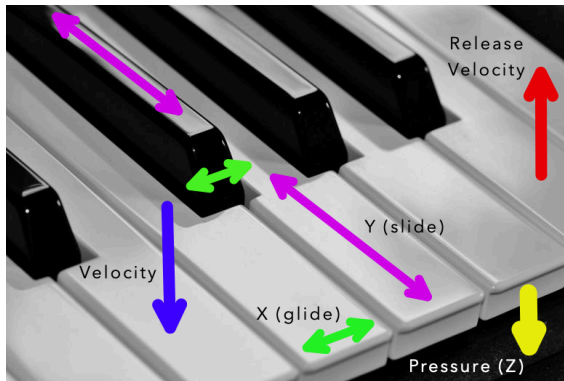
The five dimensions of MPE, shown on a conventional piano keyboard

On a fully implemented MPE controller, you can hit a key and release it with variable velocity; move a finger from side to side in order to create pitch bend or vibrato; slide a finger on top of a key away from you or toward you (the key acts like a data slider); or press harder or softer on the key... and you can do this all at the same time, with each key sending information that doesn't depend on what's happening on any other key!

Imagine a whole keyboard where every key is a pressure-sensitive joystick, and you'll start to get the idea.

You don't have to use all of these parameters at once, of course, but the ability to alter one note inside a chord in various ways can bring out amazing expressive possibilities. The original Minimoog was monophonic, of course, but if we make it polyphonic, why not give it some 21st Century expressiveness?

If you obtain an MPE controller, you'll have to research precisely how it sends these different types of data; here, we'll just cover what Mini V's particular settings do.

- MPE can be enabled on either the Lower or Upper Zone;
- you can decide how many MIDI Channels it will watch (MPE uses a Master Channel for global MIDI messages, and assigns other channels to each voice as it plays);
- the range of each finger's pitch bend (48 semitones is the default for most controllers);
- and which MIDI Control Change number is sent for Slide (the default is CC 74, filter cutoff frequency). As explained above, you can select two different MPE Slide destinations and scale each one positively or negatively.

If you have a non-MPE controller, don't worry: you can still get all of the nuance of the original Minimoog when you play it – and then some, since the original's keyboard didn't sense dynamics at all!

6.2. MIDI Tab

This is where Mini V may be placed in MIDI Learn mode. In this mode, all MIDI-assignable parameters on the Main and Advanced Panels are highlighted and you can map physical controls on your MIDI controller to them. A typical example might be to map a real expression pedal to the Master Volume control, or a physical knob on the MIDI controller to the Frequency knob of the Filter section.

The Side Panel's MIDI tab

6.2.1. MIDI Controller Menu

The MIDI Controller menu

At the top right of the MIDI tab is the **MIDI Controller** drop-down menu, where you can select templates for many Arturia MIDI controllers. These map physical controls to many "most wanted" parameters in Mini V for a plug-and-play experience. A Generic template is also provided for third-party MIDI controllers.

6.2.2. MIDI Config Menu

The MIDI Config menu

The **MIDI Config** drop-down lets you manage different sets of MIDI maps for controlling Mini V from MIDI hardware. You can Save/Save As the current MIDI assignment setup, Delete it, Import a configuration file, or Export the currently active one.

This is a quick way to set up different hardware MIDI keyboards or controllers with Mini V, without having to build all the assignments from scratch each time you swap hardware.

For example, if you have multiple hardware controllers (small live keyboard, large studio keyboard, pad controller, etc.), you can create a profile for each of them, save them, and then quickly load them here. This saves you from having to redo the MIDI mapping assignments from scratch each time you swap hardware.

Two options in this menu are especially powerful:

- **Default:** Gives you a starting point with predetermined controller assignments.
- **Empty:** Removes the assignments of all controls.

6.2.3. Assigning and Unassigning Controls

Click the **Learn** button in the MIDI tab to put Mini V into Learn mode. Controls available for assignment are purple. Controls that are already assigned are red, but can be reassigned if desired. The screenshot below shows the assigned and unassigned controls for Mini V's Advanced and Main panels.

When MIDI Learn is active, available parameters are purple and already-assigned parameters are red.

Click any purple control and its name will appear in the list. Now, move a control or operate a switch on your MIDI controller. The corresponding control onscreen will turn red and the assigned MIDI CC number will appear in the list to the left of the parameter name.

To unassign a control onscreen, control-click or right-click it. Alternative methods of assignment are available in the MIDI Parameter Menu [p.73] described below.

6.2.4. MIDI Channel/CC, Min and Max Values

The first two columns in every MIDI assignment list the MIDI Channel (**Ch**) and MIDI Control Change number (**CC**) for the assignment. Up to 16 Channels are available on any MIDI stream, and the 127 possible MIDI Control Change numbers, while freely assignable, follow certain conventions on most instruments. For example, Modulation Wheel is almost always MIDI CC 1, Master Volume is CC 7, and Sustain Pedal is CC 64.

The **Min** and **Max** value columns for each parameter in the list let you scale the amount by which a parameter in Mini V changes in response to a physical control movement. For example, you may wish to limit the range of a filter sweep, even though you're probably going to turn the knob all the way during a live performance.

Drag up or down on a value to change it. Values for some parameters are expressed as percentages from 0.00% to 100%, while other parameters have values in appropriate units (dB for levels, ms for times, etc.) Setting the maximum lower than the minimum reverses the polarity of the physical controller; i.e. turning it *up* will turn the assigned parameter *down*.

Switches that only have two positions (On/Off, etc.) would normally be assigned to buttons on your controller, but it's possible to toggle those with a fader or another control if you like.

6.2.5. MIDI Parameter Menu

Control-clicking or right-clicking on any item in the list of assigned parameters brings up a convenient menu with the following options, which can be different for each parameter.

*Right-clicking a parameter gives you
these options*

- **Absolute:** The assigned parameter in Mini V tracks the literal value your physical controller is sending out.
- **Relative:** The assigned parameter in Mini V will go up or down from its current value in response to physical controller movements. This is often useful when using endless 360-degree encoders that don't have physical motion limits.
- **Delete:** Removes the assignment and turns the corresponding onscreen control purple again.
- **Change Parameter:** Brings up a large sub-menu of every assignable parameter in Mini V. This lets you change the assignment of the current CC/physical control manually, and is useful when you know exactly the destination you're looking for.

> ℹ️ You should scroll through this menu yourself as you learn your way around Mini V. It has hundreds of options, far too many to try and squeeze into this manual!

6.2.6. Reserved MIDI Message types

Certain MIDI real-time control message types are reserved and cannot be reassigned to other controls. These are:

- Pitch Bend
- Aftertouch (Channel Pressure)
- All Notes Off (CC #123)

All other MIDI CC numbers may be freely assigned to control any parameter in Mini V.

6.3. Macro Tab

This tab handles assignments for the four Macro knobs on the right side of the Lower Toolbar. You can assign multiple parameters to each one, then use MIDI Learn [p.69] to assign the Macro itself to a physical control if you want.

The Side Panel's Macro Tab

> Macros are saved at the Preset level.

6.3.1. Macro Slots

Click one of the Macro knobs to select which Macros you want to work with. The default names are *Brightness, Timbre, Time,* and *Movement,* but you can rename them by double-clicking the name field. The knob above the name corresponds to the knob of the same name in the Lower Toolbar.

6.3.2. Making Macros

Click the **Learn** button in the Macro tab and you will see that the process works much like MIDI assignments – available destinations turn purple and ones already assigned turn red. Click on a purple control onscreen and its name will appear on the list.

To remove a parameter from the Macro, right-click its name in the list and select **Delete**. Parameters under Macro control have **Min** and **Max** values and may be scaled by dragging up or down directly on the number, just as is done with MIDI assignments. To reverse the polarity of a parameter (i.e. have it go down when you turn the Macro knob up and vice-versa), set the minimum value higher than the maximum.

> ℹ There are no rules for naming and assigning parameters to Macros. Keep in mind, though, that while it may seem funny to name a Macro "Chartreuse", that might not be terribly useful when you're playing the patch in a recording session next year. When in doubt, go for clarity!

6.3.3. Macro Curves

Beyond simple scaling, you can customize a curve that determines how each parameter under the Macro's control proceeds from its minimum to maximum value and back when you turn the Macro knob. Click the **>** icon next to the parameter name to open the curve window.
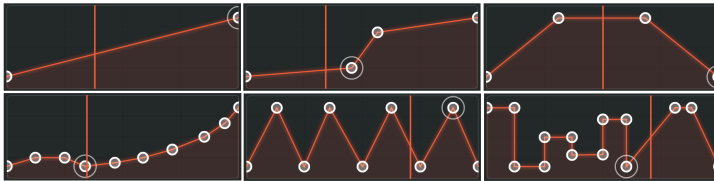
Some example Macro curves

Click on the curve to add a breakpoint, represented by a small circle. You can then drag the point and the curve segments between it and its nearest neighbors will change accordingly. Right- or control-click on a point to remove it. The first and last breakpoints cannot be removed. The vertical line on the display shows the current setting of the Macro knob itself, so you can see what the curve is doing as you turn the knob.

> ℹ ♪ A simple diagonal line would produce a linear curve, but the potential fun here is to make things non-linear.

6.4. Tutorials tab
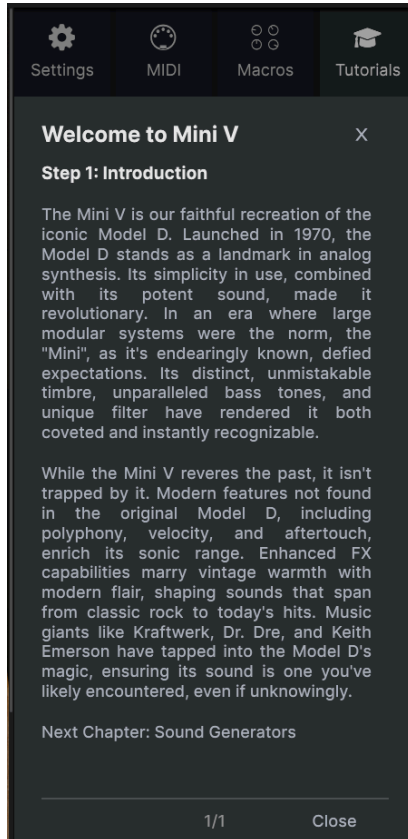
The Side Panel's Tutorials tab

In this tab, which can also be opened by selecting **Tutorials** from the Mini V menu, you can click on titles for the individual chapters, which in turn will take you through different areas of Mini V in steps. The parts of the panel to focus on are highlighted as you go.

> ℹ If you're editing a Preset, make sure to save it before opening the Tutorials, because doing so will load a new Preset and overwrite your changes. The Tutorials also take over the Side Panel space when in use.

ⓘ **Warning**

Launching tutorial will override your current preset. Make sure you have saved your modifications before continuing.

Cancel   Ok

7. WORKING WITH PRESETS
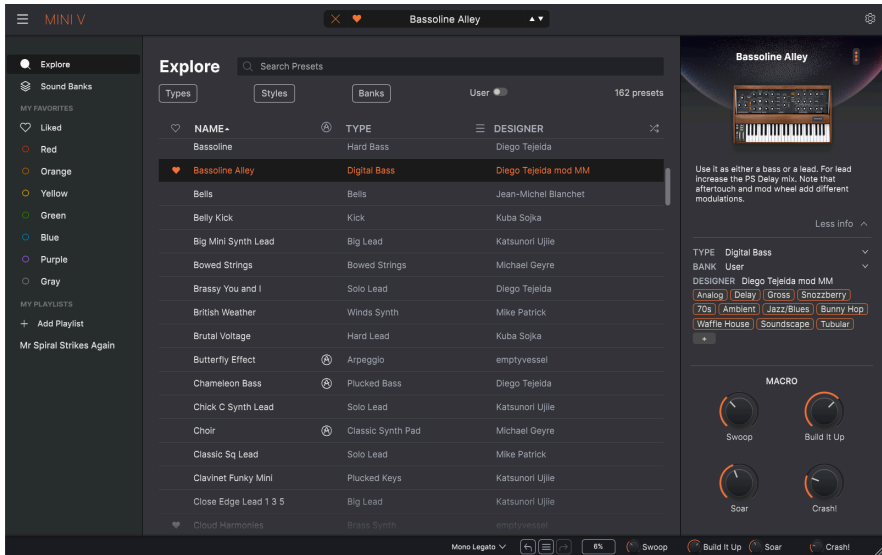
Mini V lets you browse, search, and select Presets from a browser-like interface inside the plug-in. You can also create and save your own Presets in the User Bank. Of course, the state of any instance of the plug-in – including the current Preset – is automatically saved when you save your DAW project, so you can always pick up where you left off.

First, we will cover Preset functions from the Upper Toolbar in more depth.

7.1. Preset Name Pane
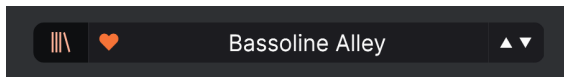
The name pane at top center is always displayed whether you're in the main controls view or the Preset Browser. It displays the name of the current Preset, obviously, but also offers further ways to browse and load Presets. Again, a filled-in heart icon indicates a liked Preset.

7.1.1. The Arrows

The up and down arrows to the right of the Preset name step serially through Presets. This is limited by the results of any currently active search, i.e. the arrows will only step through those Presets. So, make sure any searches are cleared if you simply want to step through all available Presets until you find something you like.

7.1.2. Quick Browser

As described briefly in the Toolbars [p.55] chapter, you can click on the Preset name in the center of the upper tool bar to bring up a drop-down Quick Browser for Presets. The first option in this menu is called All Presets:
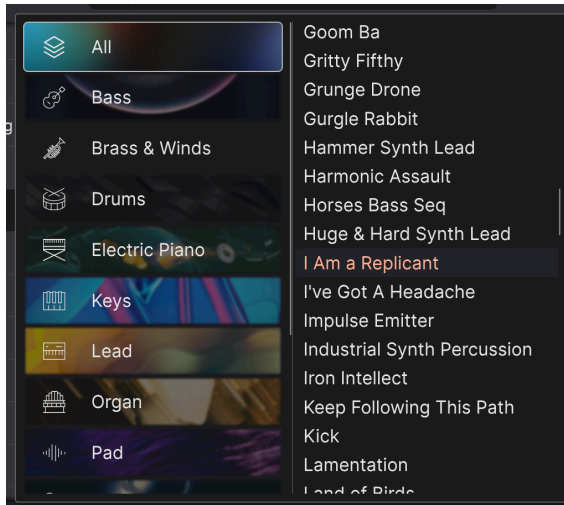
All presets

Below this, there are options that correspond to the Types [p.80]. Clicking on any of these brings up a submenu of all Presets of its Type:
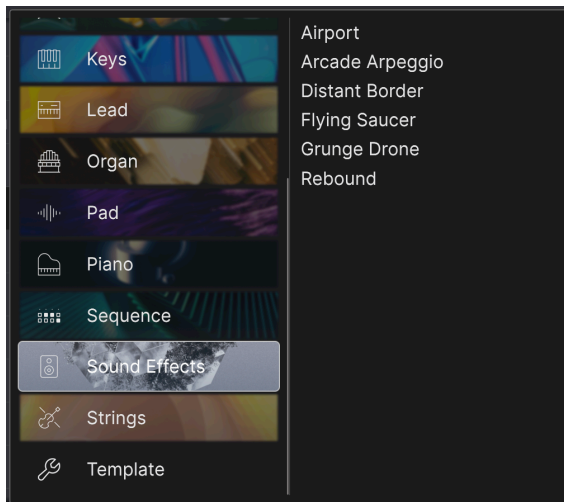
*Selecting Sound Effects from the drop-down menu shows
all the Presets of this type.*

Unlike the up and down arrows, the "All Presets" submenu is independent of search criteria – it simply shows you every Preset available.

7.2. The Preset Browser

Click the "books on a shelf" icon (four vertical and tilted lines) in the Upper Toolbar to access the Preset Browser. When the Preset Browser is open, the icon becomes a large X, and is used to close the Browser when you're done.

You can also toggle the Preset Browser open and closed by holding CTRL or CMD and pressing the Return or Enter key.

The four main areas of the Preset Browser are as follows:
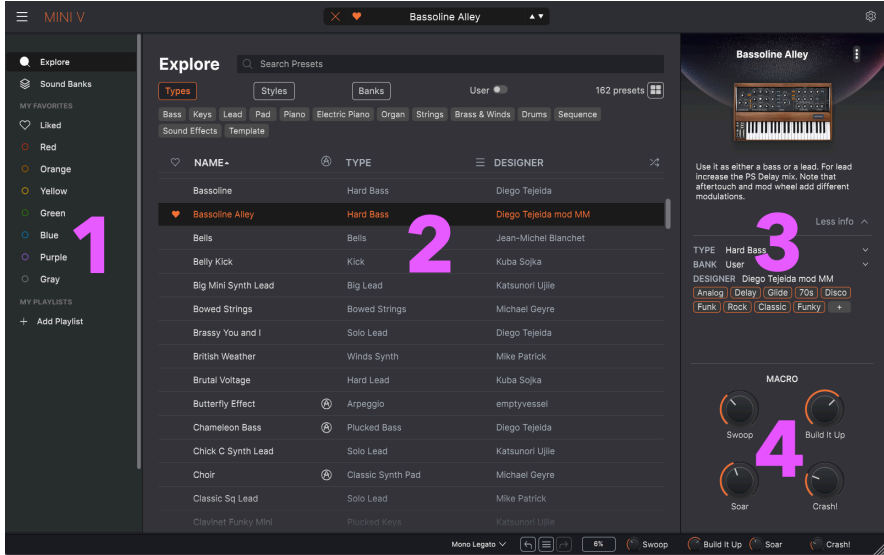
Number	Area	Description
1.	Sidebar [p.89]	Select groups of Presets according to Sound Bank, User Tags, or Playlist.
2.	Explore [p.79]	Searches for Presets via text entry with filters for Type, Style, and Bank.
3.	Preset Info [p.85]	Displays Preset Details; can edit details for Presets in User Bank.
4.	Macro Knobs	Large-size duplicates of the Macro knobs in the Lower Toolbar, for quick auditioning of Macros.

7.3. Explore

Click on the Search Presets field at the top and enter any search term. The browser will filter your search in two ways: First, simply by matching letters in the Preset name. Second, if your search term is close to that of a Type or Style [p.80] it will include results fitting those tags as well.

The Results Pane will show all Presets that fit your search. Click the **CLEAR ALL** text to clear your search terms.
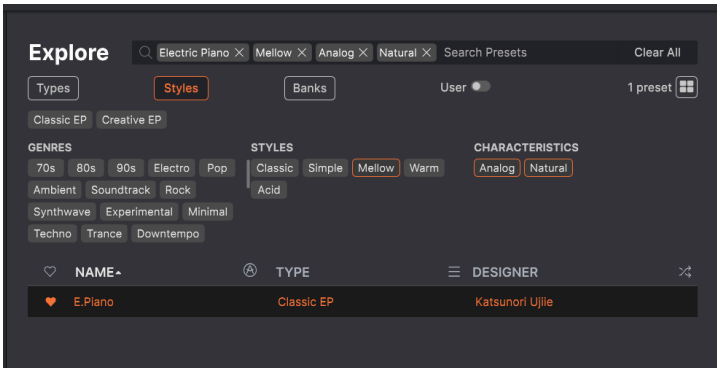
Filtering by typing in the Search field

7.4. Using Tags as a Filter

You can narrow (and sometimes expand) your search using different tags. There are two kinds of tags: *Types* and *Styles*. You can filter by one, the other, or both.

7.4.1. Types

Types are categories of instruments and musical roles: bass, leads, strings, pads, organs, and more. With a clear search bar, click the **Types** button to bring up a list of types. Notice that each type also has several sub-types:
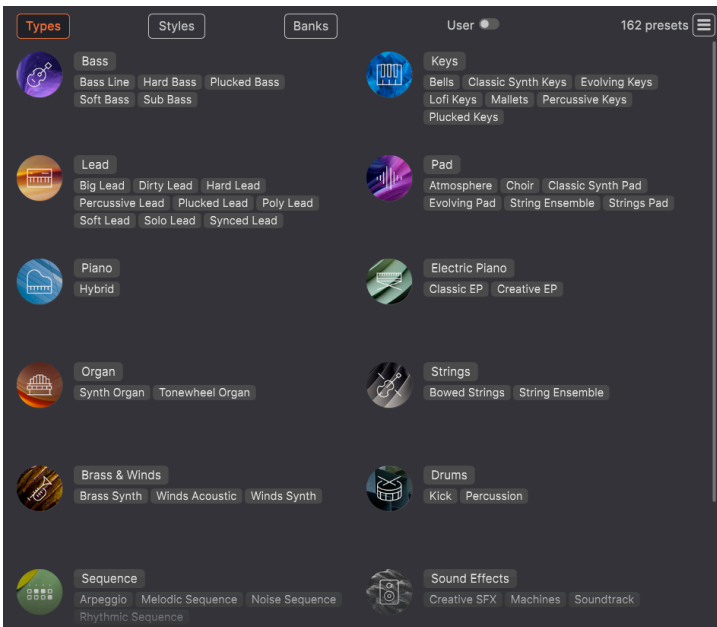
The display order of the Name and Type columns can be inverted by clicking the arrow buttons to the right of their titles.

> ♪ You can specify the Type when saving a Preset [p.57]. That Preset will then show up in searches where you've selected that Type.

7.4.1.1. Styles
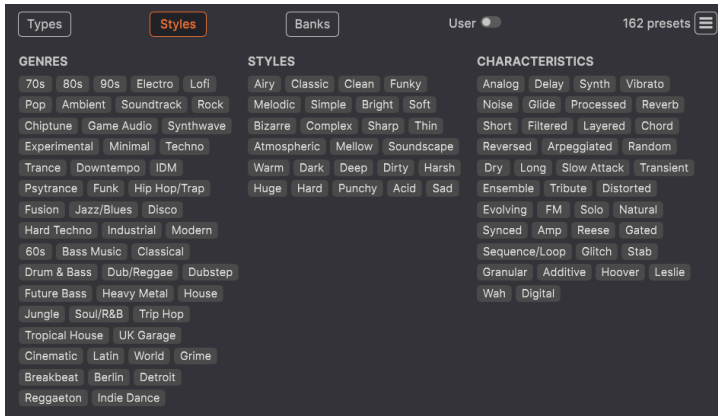
Genres, Styles, and Characteristics

Styles are, well … exactly that. Accessed by the **Styles** button, this area has three further subdivisions:

- *Genres*: Identifiable musical genres such as Ambient, Bass Music, Industrial, etc.:

- *Styles*: General "vibe" such as Bizarre, Metallic, Slammed, etc.:

- *Characteristics*: Even more detailed audio qualities such as Filtered, Resonant, Mechanical, Noise, and more:

Click any one, and the results will show only Presets that match that tag. Notice that when you select any tag, several other tags usually grey out and become unavailable. This is because the browser is *narrowing* your search by a process of elimination.

> Note that this is the opposite of how selecting multiple Types *broadens* your search.

Deselect any tag to remove it and widen the search without having to start all over again. You can also clear the tag by clicking the X to the right of its text, which appears at the top.

Note that you can search by a string of text, Types and Styles, or both, with the search becoming narrower as you enter more criteria. Clicking **CLEAR ALL** in the search bar will remove all Type and Style filters as well as any text entry.

7.4.2. Banks
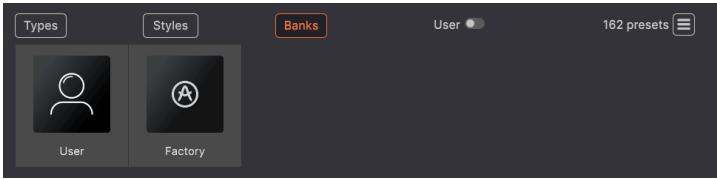
To the right of the **Types** and **Styles** drop-downs is the **Banks** drop-down, which lets you do your search (using all the methods above) within the Factory or User Banks.

There's also a **User** switch to only show User presets, and a tally of how many Presets are currently within the Search Criteria.

Right-click on a User Bank to bring up the following pop-up:
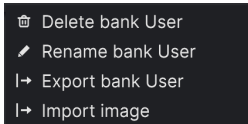
Here, you can rename or delete a User Bank, export it, or upload a PNG image to personalize it and make it easier to find in a hurry if you have a lot of User Banks stored.

7.4.3. Display Options

All the way over on the right, next to the Preset tally, is an icon that switches between two ways of viewing tags. In all the screenshots above, it is in the shape of three lines, indicating that you can click it to switch to a more compact line-based display of tags. When this view is in use, the icon changes to a set of four blocks – click it to return to the full-screen tag views.

7.5. The Results Pane

In the center of the Preset Browser, you'll find a list of your search results, or simply a list of all Presets in the Bank if no search criteria are active. Simply click on a Preset name to load it.

7.5.1. Sorting Presets

Click the **NAME** header in first column of the Results list to sort the results list of Presets in ascending or descending alphabetical order.

Click the **TYPE** header in the second column to do the same thing by Type.

7.5.2. Liking Presets

As you explore and create Presets you can mark them as Liked by clicking the heart icon next to their names. (This icon also appears in the Upper Toolbar's Preset Name Pane [p.77].

Clicking on the heart icon makes all of your Liked Presets show up at the top of the results list, as shown here:

A filled-in heart icon indicates a Liked Preset. An outline indicates a Preset that has not been Liked (yet). Click the heart at the top of the list again to return the list to its previous state.

7.5.3. Featured Factory Presets

Presets accompanied by the Arturia logo are factory creations we think really showcase the capabilities of Mini V.

Clicking the Arturia icon at the top of the Results pane sorts all featured Presets to appear at the top of the list.

The screenshot above shows the results when Liked Presets *and* Featured Presets are highlighted; first are the Presets that fulfill both criteria, then the Likes that aren't Featured, and then the Featured that aren't Liked. Each subset of Presets is itself displayed in alphabetical order.

7.5.4. Designer/Bank

The third column lets you sort by Designer or Bank. Click the name to bring up a pop-up that lets you switch between them.
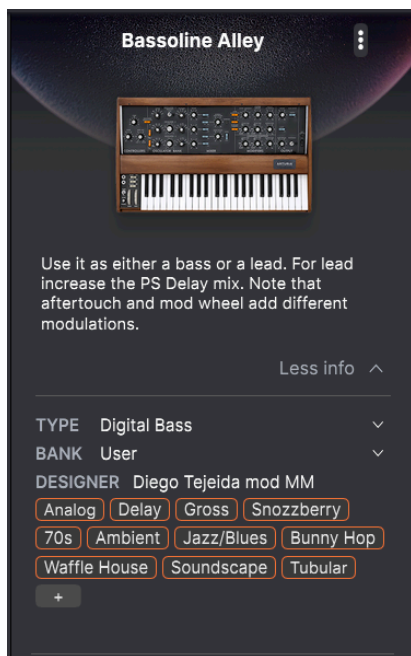
7.5.5. Shuffle Button

This button randomly reorders the Preset list. Sometimes it can help you find a sound that will inspire you more quickly than scrolling through the entire list.
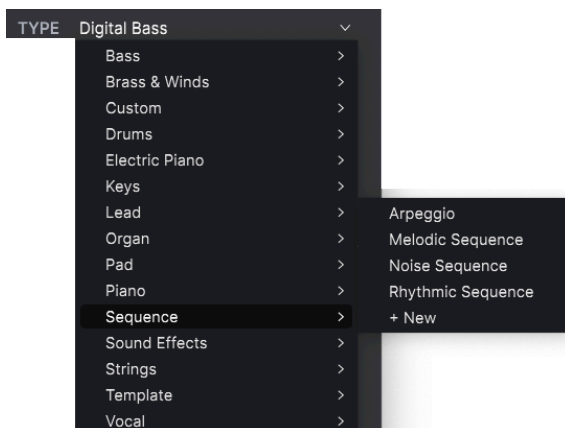
7.6. Preset Info

The right side of the Preset Browser window shows specific information about each Preset.

For Presets in the User bank (as the result of a *Save As* operation), you can enter and edit the information in the Preset Info Section and it will update in real time. This includes the designer (author), Type, all Style tags, and even a custom text description at the bottom.

Click **More Info** to display this information, and click **Less Info** to hide it again. If there are a lot of Style tags, the list will be scrollable.

To make the desired changes, you can type directly in the text fields or use one of the pull-down menus to change the Bank or Type. (This is a very quick way to move a User Preset to a new Bank.) As shown here, you can also use a hierarchical menu to select the Type or even create a new Type or Subtype.
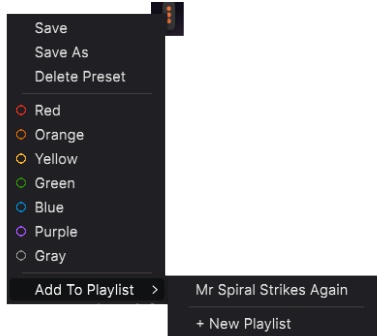
> ℹ Types and Styles changes you make here are reflected in searches. For example, if you remove the "Bright" Style tag from a Preset and then save that Preset, it will not show up in future searches for Bright Presets.

7.6.1. Preset Info Quick Menu

Clicking the icon with three vertical dots brings up a quick menu for Save, Save As, and Delete Preset operations:

For sounds in Factory banks, only **Save As** is available.

You can also add a colored tag to the Preset for quick access in the Sidebar [p.89], or add the Preset to a new or existing Playlist [p.90].

7.6.2. Edit Style

You can also create your own Style tags to help refine searches according to criteria that matter most to you. Clicking on the + icon in the list in the Preset Info pane opens the Edit Style pane, where you can create as many new tags as you'll ever need:

Under Genres, the + icon has been clicked, opening a blank box to fill in a new Genre tag

7.6.3. Editing Info for Multiple Presets

It's easy to edit information such as Types, Styles, Designer name, and text description for several presets at the same time. Simply hold CMD (macOS) or CTRL (Windows) and click the names of the Presets you want to change in the Results list. Then enter the comments, change the Bank or Type, etc., and save.
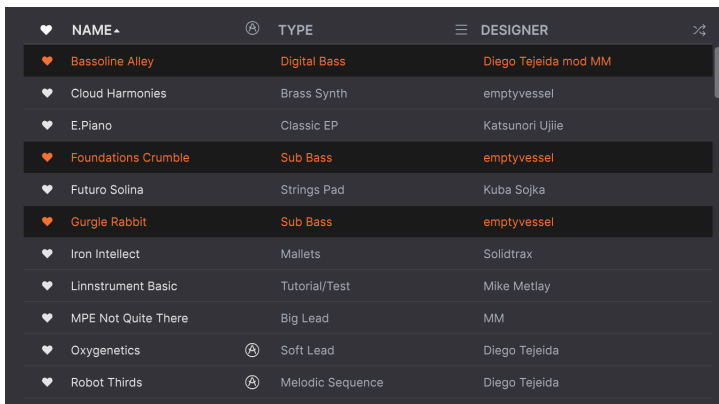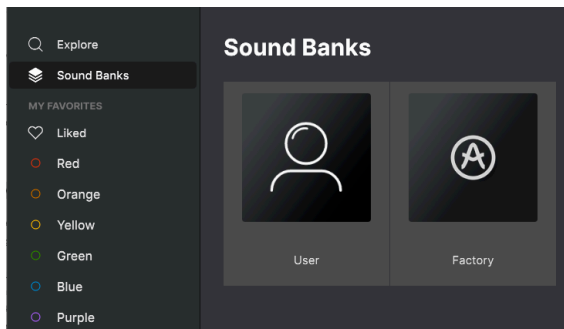
7.7. Sidebar
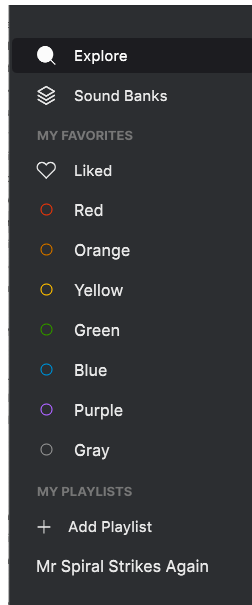
The Sidebar is a quick way to find particular groupings of Presets.
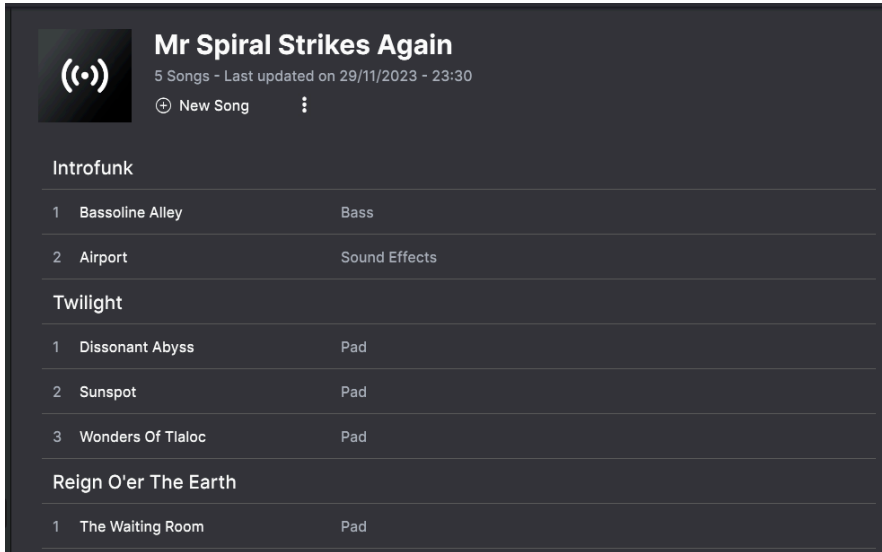
The top two entries open the Explore view or bring up all available Sound Banks.

Under **My Favorites**, you can quickly access Presets that you've Liked, or marked with one of the color tags.

My Playlists lets you create, access, and edit Playlists. (What's a Playlist? We're glad you asked...)
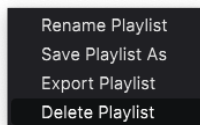
7.7.1. Playlists

A Playlist is just that: a list of Songs, each of which has a list of Presets. You can organize all the Mini V Presets you need for a set of songs, making them quick to access during a show.

Use the **+ Add Playlist** button on the Sidebar to create a new Playlist. Once you've named it, you'll be presented with a blank slate that you can fill up as you need.

Use the New Song button to add and name a Song that you'll be using in your set. Drag and drop Songs into the order you wish.

Next to the New Song button is a set of three dots, which opens a pop-up with Playlist-related commands: Rename, Save As, Export, and Delete.

Once you've selected a Preset you want in your Playlist, open the Preset Info Quick Menu [p.87] and select **Add To Playlist** with the desired Playlist selected.

When you return to the Playlist view, all the Presets you've added will be at the bottom of the Playlist. Just drag and drop them into the appropriate songs in the appropriate order, and you have quick access to all the sounds you'll need at your next gig.

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