USER MANUAL

_WURLI V

ARTURIA

_The sound explorers

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Product version: 3.0.0

Revision date: 12 December 2023

Thank you for purchasing Wurli V3!

This manual covers the features and operation of Arturia's **Wurli V3**, our powerful virtual instrument that uses physical modeling to fully capture the sound of the legendary Wurlitzer electric piano.

Be sure to register your software as soon as possible! When you purchased Wurli V3, you were sent a serial number and an unlock code by e-mail. These are required during the online registration process.

Special Messages

Specifications Subject to Change:

The information contained in this manual is believed to be correct at the time of printing. However, Arturia reserves the right to change or modify any of the specifications without notice or obligation to update the hardware or software that has been purchased.

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 level or at a level that is uncomfortable.

If you encounter any hearing loss or ringing in the ears, you should consult an audiologist.

EPILEPSY WARNING – Please Read Before Using Wurli V3

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.

Introduction

Congratulations on your purchase of Arturia Wurli V3!

As with all of our products, we believe in offering the best of both worlds in a single package and letting you choose how you want to use it. You can choose to focus on the Hardware Panel and get an improved vintage hardware-like experience, or explore the Advanced Panel and discover sonic and performance possibilities that go well beyond the original electric piano's capabilities.

Here's to a blissful blend of the old and the new – and the beautiful music you'll make with it!

Peace, love, and music,

The Arturia team

Be sure to visit the www.arturia.com website for information about all of our other great hardware and software instruments. They have become indispensable, inspiring tools for musicians around the world.

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1. WELCOME TO WURLI V3!

Arturia thanks you for purchasing Wurli V3. It is an uncannily accurate physical model of the Wurlitzer electric piano, models 200 and 200a. We are confident it will be an invaluable addition to your music production tool kit.

If you've purchased our products before, you know we take great pride in recreating the sound and feel of the original instruments. Then, we top it off with 21st-century features the original products could only dream of, giving new life to vintage sounds in a modern music production environment.

1.1. What is an electric piano?

Wurlitzer model 200a electric piano.
Image via Wikimedia Commons.

Technically, it's any piano that uses hammers to strike a vibrating tone medium, then turns those vibrations into an electrical signal via pickups – not a soundboard. It may or may not have an amplifier and/or speakers built in. In other words, an electric piano is to an acoustic piano what an electric guitar is to an acoustic guitar.

By contrast, an *electronic* piano generates sounds using analog circuitry and a *digital* piano uses samples or physical modeling. Ironically, the Wurlitzer company referred to the "Wurly" as an "electronic piano" – it even says so right on the panel. This was not 100 percent accurate.

1.1.1. Electric vs. electro-acoustic

The Storytone electro-acoustic piano boasted striking art deco design. Image via Wikimedia Commons.

We should make one other distinction, though it's a subtle one. *Electro-acoustic* pianos still used strings as the vibrating tone source; the strings were just electrically amplified, which saved the weight of adding a wooden soundboard. Examples of electro-acoustic pianos include the venerable Story & Clark/RCA Storytone, Yamaha's CP70 and CP80 electric grands, the Kawai EP-308, and the Helpinstill Roadmaster line, marketed to musicians as a "portable" piano alternative.

Arguably, electro-acoustic pianos are a subset of electric pianos. But what keyboardists have come to call the "electric piano" used something *other* than strings as sound sources. In the case of the iconic Fender Rhodes, these were cylindrical tines that produced a flute- or bell-like tone when coupled with an asymmetrical "tuning fork." By contrast, the Wurlitzer employed reeds – flat little strips of metal – that gave a more harmonically rich, almost clarinet-like sound.

1.1.2. Other Technologies

Across the electric piano spectrum, the goal was the same: To give players an instrument which, like an acoustic piano, increased in loudness and harmonic richness as the keys were struck with greater velocity.

Other technologies included plucking the string as on the Baldwin Electric Harpsichord, "fretting" in guitarist fashion using a hammer that remained in contact with the string for as long as the note was held (the Hohner Clavinet), and even using sticky pads that came unstuck from reeds when keys were struck, causing the reeds to vibrate (Hohner Pianet).

1.1.3. Popularity

Across the electric piano spectrum, the goal was the same: To give players an instrument which, like an acoustic piano, increased in loudness and harmonic richness as the keys were struck with greater velocity. Aimed at traveling musicians, EPs were also meant to be far easier to keep in tune and not go out of tune when moved.

Of course, electric pianos sounded nothing like acoustic pianos, but acquired a musical identity of their own. Musicians developed their own playing techniques and employed effects such as phase shifters, delays, and chorus. The popularity of the electric piano reached its height during the 197Os; many legendary bands have used these instruments including The Beatles, the Doors, Herbie Hancock, Chick Corea, Pink Floyd, Led Zeppelin, Ray Charles, Queen, Supertramp, and Elton John.

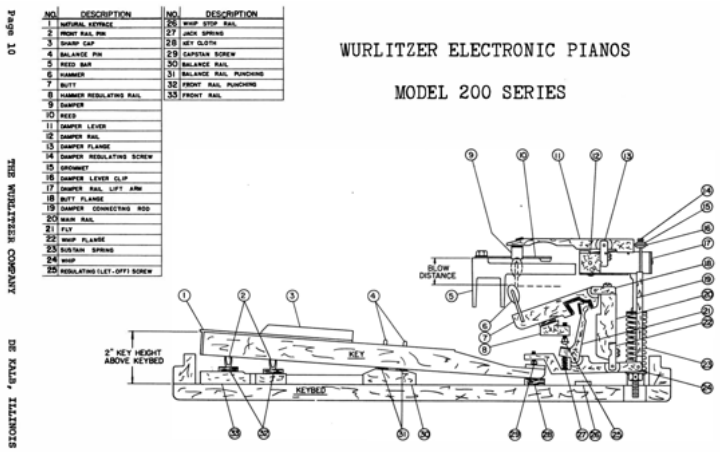
1.2. The original reed electric piano

For many years this legendary electric piano was a staple of the rock´n rollers keyboard players' arsenal. The previous models of the brand were first manufactured in the very early 196Os for domestic usage in the home environment. They were the first electric piano to be manufactured and sold. The sound and portability soon led to professional stage use as the piano proved a useful tool for musicians.

1.2.1. History

Ben F. Meissner is credited with the idea of removing the sound board of an ordinary acoustic piano and placing electromagnetic pickups on each string (like an electric guitar). In 1932, he licensed this concept to the Everett piano company, who then produced the Orgatron. This utilized Meissner´s individual pickup arrangement, but instead of striking a string for a percussive attack, Everett´s system incorporated air blowing over flat reeds for an electric organ / harmonium effect.

Known for their massive theater pipe organs, the Wurlitzer company realized this concept could be worked into an efficient amplified piano by striking a metal reed with a hammer, and thus reed electric pianos were born. The complexity and parts count of its action was notably very close to that of an acoustic grand piano, as the following diagram from the original service manual shows:

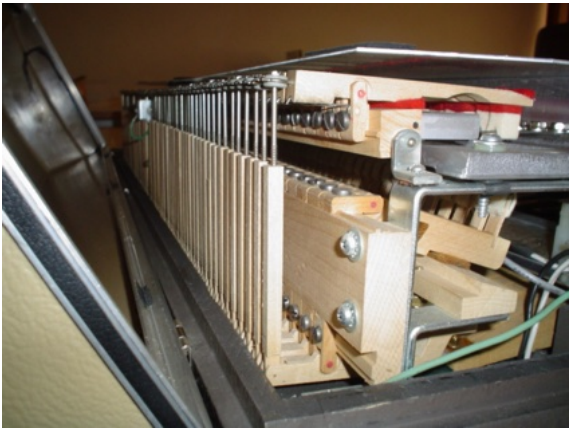


The key action of the Wurly EP

The first version of the instrument entered production in 1954 and continued to be produced in various forms until about 1982.

The inescapable reed electric piano that inspired Wurli V established itself as the most popular model among collectors and players alike. It´s the lightest in weight of the reed pianos, has the best action, and touring pros still employ specialists to keep their vintage Wurlys in top shape.

1.2.2. Maintenance



The reeds inside a Wurly as viewed from the side

Speaking of which, actual Wurlitzers are a nightmare to tune. On the end of each reed is a lump of solder, removing some makes the note sharper in pitch, while conversely, adding more solder flattens the pitch. Just loosening the reed and re-tightening it is enough to change the tuning. Should you dare try removing some of the solder whilst the reed is still in the pickup assembly, microscopic lead filing can cause havoc, shorting out between reed and pickup, and nasty sounds result when played. Also, if the actual overall shape of the lump of solder is altered too radically, the timbre of the note may start to change! Each note has its own exact reed size although it is possible to tune up or down 2 semitones without adversely affecting timbre or pitch.

1.3. Physical modeling synthesis

When you want to create a sound, there are many methods of synthesis from which to choose:

- **Additive**, which creates a timbre by adding various waveforms together.
- **Subtractive**, in which partials of an audio signal are attenuated by a filter to reduce the original harmonic content of the sound.
- **Frequency Modulation (FM)**, where waveforms are used in carrier/modulator relationships and tuned according to the harmonic series to produce overtones in the carrier waves.
- **Wavetable**, which offers a wide selection of digital waveforms and then allows them to be layered, filtered, and/or used as the crossfade targets of an X/Y controller or a looping envelope.
- **Sample Playback**, where recordings of a sound are triggered by a playback device, and can be transposed by increasing the playback speed when different pitches are required.
- **Granular**, which splits samples into very short "grains" and allows them to be manipulated through a myriad of playback options, and finally ...
- **Physical modeling**. In this method the output waveform is calculated according to a set of equations and algorithms derived through extensive analysis of all the physical properties of a sound source and all of the ways the player might interact with it.

The important takeaway here is that physical modeling, which is what Wurly V3 uses, is the closest thing to a virtual reality simulation of all of the nuances of an electric piano. If you were to encounter a Wurly EP inside *The Matrix*, this technique is what it would use.

1.3.1. Music and math: yet another link

A physical model attempts to codify the laws of physics that govern a particular form of sound generation. A model typically will have multiple parameters, some of which are constants that describe the physical materials and dimensions of the instrument, while others are time-dependent components representing the player´s interaction with the instrument.

This idea has been around for a long time, but development has been gradual because until recently, processors that were powerful enough to handle the computational complexity were expensive. Hardware synths that employed modeling, such as the now-collectible Yamaha VL-1, commanded a premium price.

If you've been watching the long-term trends, you know those days are in the past – and we're just as happy about that as you are.

1.3.2. A computational conundrum

Here's an example of what must be taken into account while developing a physical model. To recreate the sound of a drum, for instance, a formula must be in place to represent all of the ways the collision between a drum stick and a drum head sends shockwaves through a two-dimensional membrane. Among other things, the formula must incorporate:

- The properties of the striker: its rigidity, the velocity of the hit, the material, and how/where the strike happens
- The vibrating membrane: its mass, density, elasticity, material, etc.
- The sympathetic resonances of the membrane and the body of the drum
- The conditions at the membrane boundaries: is there a rigid termination to the drum´s body, or are there multiple, adjustable points?
- The response of additional components, such as the snares under a snare drum

Similar complexities can be found in instruments such as an acoustic guitar or indeed, an electric piano. Some years ago, a French scientist finally completed a comprehensive modeling of all acoustic guitar parameters. The calculations to produce the sound took three days!

1.3.3. The endless revolution

We can't emphasize it enough: The physical modeling synthesis used in Wurli V3 recreates the character of the real instrument during performance, including its subtle nuances of expression, while using thousands of times less hard drive space than sampling would take.

When you gather a bunch of music fanatics who also possess a knowledge of the pertinent laws of physics and an in-depth understanding of the characteristics of electronic circuits, you get Arturia. We now offer you our brainchild, Wurli V3.

May it light the fires of creativity for you!

1.4. Wurli V3 feature summary

- Physically modeled sound engine with full polyphony
- Advanced settings allow fine adjustment of the piano's acoustic and mechanical nuances
- Pedalboard-style effects rack with four simultaneous effects slots plus amp and room simulators
- Amp simulator models rotary speaker and Twin guitar amp with all relevant parameters
- Room simulator is a high-quality convolution reverb featuring nine acoustic spaces
- Controls may be fully MIDI-learned for assignment to physical knobs and sliders on a controller keyboard
- Macros can adjust multiple parameters via a single knob twist
- Stand-alone and plug-in operation in all major formats

1.5. Great Wurlitzer EP songs

It´s impossible to list all the records using the electric piano that inspired Wurli V3, but here is a "required reading" list of famous recordings. Above all, it shows the Wurlitzer's cross-genre appeal.

Artist	Song Title
The Archies	Sugar Sugar
Beck	Where It's At
Belle & Sebastian	The Boy with the Arab Strap
Bob Dylan	Til I Fell in Love with You
Chicago	Feelin' Stronger Every day
Daft Punk	Digital Love
The Doors	Queen on the Highway
Eels	Agony
Elton John	Lady Samantha
George Harrisson	All Those Years Ago
John Lennon	How Do You Sleep
Justice	Valentine
The Mars Volta	Inertiatic ESP
Marvin Gaye	I Heard It Through the Grapevine
Muse	Hate This and I´ll Love You
Neil Young	The Old Laughing Baby
Norah Jones	What Am I to You
Panic at the Disco	Mad as Rabbits
Paul McCartney	Ram
Pink Floyd	Money
Queen	You´re My Best Friend
Ray Charles	What´d I Say
Stereolab	Infinity Girl
Stevie Wonder	Love Having You Around
Supertramp	Bloody Well Right
Tori Amos	Pancake
Van Halen	And the Cradle Will Rock

2. ACTIVATION AND FIRST START

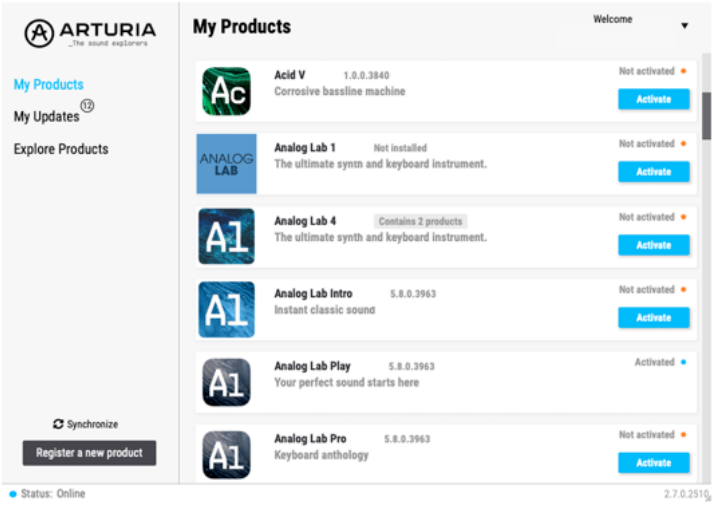
2.1. Register, Activate, and Install Wurli V3

Wurli V3 works on computers equipped with Windows 10 or later and macOS 11 or later. You can use it as a standalone version or as a plug-in for your favorite DAW (Digital Audio Workstation), in Audio Units, AAX, VST2, or VST3 format.

Before you install or register the software, you'll need to create a My Arturia account here, using an email address and password of your choice: https://www.arturia.com/createanaccount/

While it's possible to handle registration, activation, and other tasks manually online, it's far simpler to download and use the Arturia Software Center app, which can be found here: https://www.arturia.com/support/downloads&manuals

You'll enter your email address and password to set up Arturia Software Center, which acts as a central location for all of your Arturia software registrations and activations. It also helps you install and update your software by keeping tabs on current versions.



The Arturia Software center app

You can register, activate, and install your product inside Arturia Software Center by pressing the **Register a new product** button, and clicking the boxes to **Activate** and then **Install** your software. The registration process will require you to enter the serial number and the unlock code you received when you bought your software.

You can also do this online by logging into your account and then following the instructions here: http://www.arturia.com/register

Once you've registered, activated, and installed Wurli V3, it's time to get it to talk to your computer.

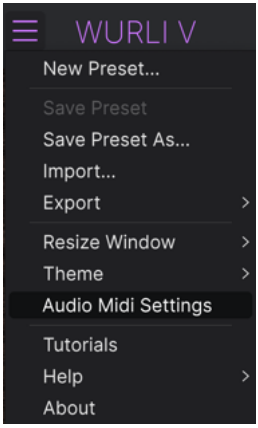
2.2. Initial setup for stand-alone use

If you would like to use Wurli V3 in stand-alone mode, you will need to ensure that its MIDI input/output and audio outputs 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.

> ! This section only applies to those of you who plan to use Wurli V3 in stand-alone mode. If you are only going to use Wurli V3 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.

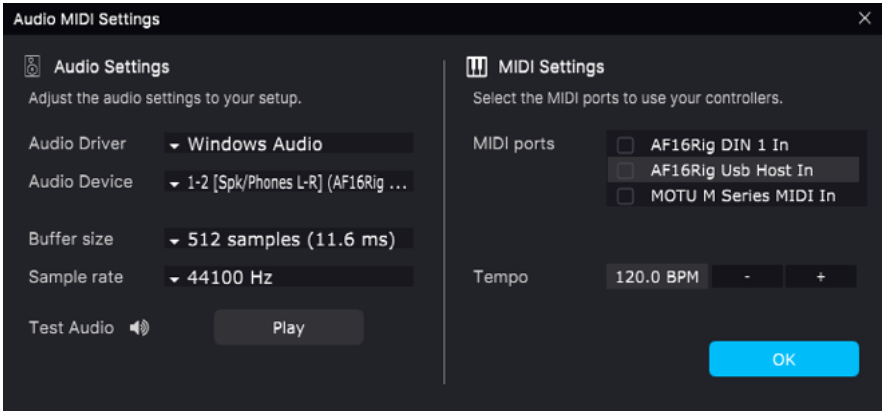
2.2.1. Audio and MIDI settings: Windows

At the top left of the Wurli V3 application is a pull-down menu. It contains various setup options.



Wurli V3 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 Wurli V3.



Starting from the top, you have the following options:

- **Driver:** Selects which audio driver will handle playback of Wurli V3. 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(s) may appear in the field below, depending on your selection.
- **Device** Selects the audio hardware through which you will hear Wurli V3.
- **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 If you still 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 44.1 kHz or 48 kHz, which will be perfectly fine for most applications. If you have a specific need to use a higher sample rate, up to 96 kHz, Wurli V3 will happily support that.

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

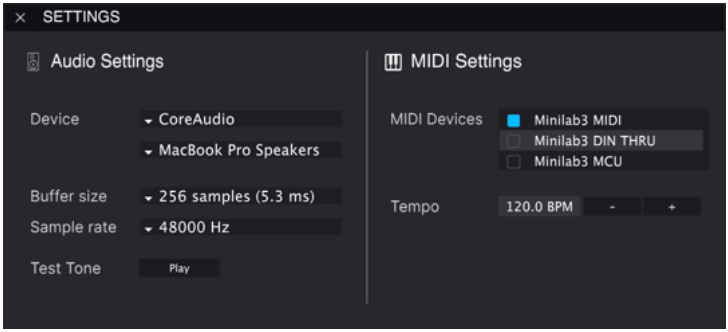
! Note that this button is only available in the Windows version.

- **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, Wurli V3 listens for all MIDI channels, so there's no need to specify a channel.

- **Tempo** sets a base tempo for features inside Wurli V3 such as LFO and effects sync. When using Wurli V3 as a plug-in, the instrument gets tempo information from your host software.

2.2.2. 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 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.

2.2.3. Using Wurli V3 as a plug-in

Wurli V3's interface looks the same in plug-in mode as in standalone mode.

Wurli V3 comes in VST2, VST3, Audio Unit (AU), and AAX plug-in formats, for use in all major DAW software such as Ableton Live, Cubase, Logic, Pro Tools, Studio One, and more.

When using Wurli V3 as a plug-in, all audio and MIDI device settings are handled by your host music software. Please refer to your host music software's documentation if you have any questions about loading or using plug-ins.

Note that when you load Wurli V3 as a plug-in instrument inside your host software, its interface and settings work the same way as in standalone mode (see below), with a few small differences:

- Wurli V3 will synchronize to your DAW's host tempo/BPM when sync is required
- You can automate numerous parameters using your DAW's automation system
- You can use more than one instance of Wurli V3 in a DAW project
- You can run the outputs of Wurli V3 through any additional audio effects available to your DAW, such as delay, chorus, filters, etc.
- You can route Wurli V3's audio outputs creatively inside your DAW, using the DAW's own audio routing system.

2.3. Playing Wurli V3 for the first time

Now that you have Wurli V3 up and running, let's take it for a quick test drive!

If you haven't done so already, launch Wurli V3 as a plug-in or as a stand-alone instrument. If you have a MIDI controller set up, use it to play some notes on Wurli V3. You might first need to activate your MIDI controllers in the MIDI Settings (see above). You can also use your mouse to play the on-screen keyboard or use the keys of your computer keyboard.

The up and down arrows at the top of the instrument let you step through all of Wurli V3's available presets. Try playing a few, and when you find one that you like, try adjusting some of the other on-screen controls to see how they affect the sound.

Play with the controls, and don't worry – nothing is saved unless you specifically save a preset (described later in this User Guide), so there is no risk you'll mess up any of Wurli V3's factory presets.

We hope this chapter has gotten you off to a smooth start. Now that you're up and running, the rest of this guide will help you work your way through all of Wurli V3's features on a section-by-section basis. By the time you reach the end, we hope you'll understand all of Wurli V3's capabilities – and will be using this fantastic instrument to create equally fantastic music!

3. MAIN PANEL

From here you control the key aspects of Wurli V3, which are pretty simple since the hardware instrument itself had few controls. In fact, without the Advanced or FX panel open, you will see just the Volume and Vibrato knobs plus the onscreen keyboard.

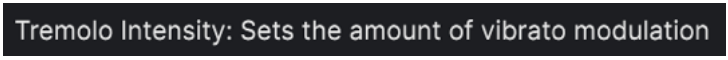
3.1. Common behaviors

All Arturia virtual instruments share some common control behaviors to make editing sounds easier. These behaviors are common across the instrument (such as in the Advanced and FX views), not just the main panel.

3.1.1. Value pop-ups

Move or hover on any control and a pop-up banner or "tool tip" will display its value.

3.1.2. Parameter descriptions



Operating or hovering on any control displays its name and a brief description of its function in the left corner of the lower toolbar [p.54].

3.1.3. Fine adjustment

Hold the right mouse button or Control key while dragging on any knob to adjust it more slowly. This helps when you want to dial in precise values.

3.1.4. Double-click for default

Double-click on any knob to return it to its factory default setting.

3.2. Main Sound Controls

This is the main control panel of Wurli V3, replicating the simple hardware controls found on the original.

3.2.1. Volume

This knob, a duplicate of that on the hardware, simply controls the overall output level of Wurli V3, downstream of any gain changes caused by the effects [p.25]. It is useful for making sure the virtual instrument's signal doesn't overload in a track, without needing to switch to your DAW's mixer window to adjust faders.

3.2.2. Vibrato

We use the word "vibrato" here because it was used on the original. However, it's technically incorrect. Here and on the original, this knob actually controls the depth of a built-in *tremolo* effect, which is separate from any modulation created in the effects section. Vibrato is defined as regular, periodic modulation of *pitch*, whereas tremolo is similar modulation of *volume*.

♪ Speed and tempo sync for the "vibrato" can be adjusted in the Advanced Settings [p.21].

3.2.3. Onscreen Keyboard

As on the original, the Wurli V onscreen keyboard has 64 keys beginning on low *A*. However, it can create sound outside this range if played from a MIDI controller that has more keys or is octave-shifted into a very high or low range.

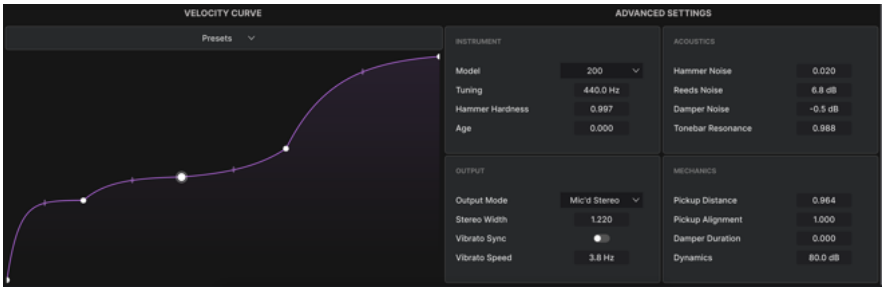
Clicking on a key closer to its front lip increases the MIDI velocity of the note.

3.2.3.1. Playing from a computer keyboard

Notes corresponding to keys on the computer keyboard

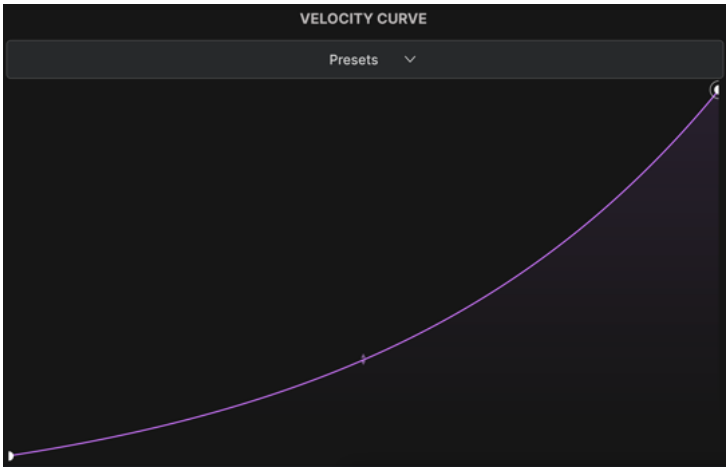
You can play an octave plus a ninth in the key of *C* using a standard QWERTY keyboard, according to the diagram above. In addition, **Z** shifts the pitch range an octave down and **X** shifts it an octave up.

4. ADVANCED PANEL



The Advanced Panel lets you fine-tune how Wurli V3 sounds and responds to your playing. Click the Advanced button [p.53] at the top right of the upper toolbar to expand the Wurli V3 window downward and display all the advanced settings.

4.1. Velocity Curve

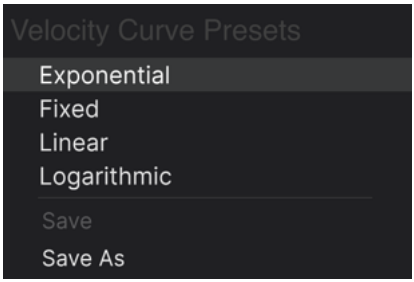


The factory preset exponential velocity curve in Wurli V3

Wurli V3 features an adjustable velocity curve with factory presets as well as the ability to create, save, and recall your own. This lets you customize Wurli V3 to your own touch and MIDI controller keyboard.

The horizontal (X) axis of the graph indicates MIDI velocity as played; the vertical (Y) axis represents the sound you hear – which can be both louder and brighter at higher velocities.

4.1.1. Velocity curve presets



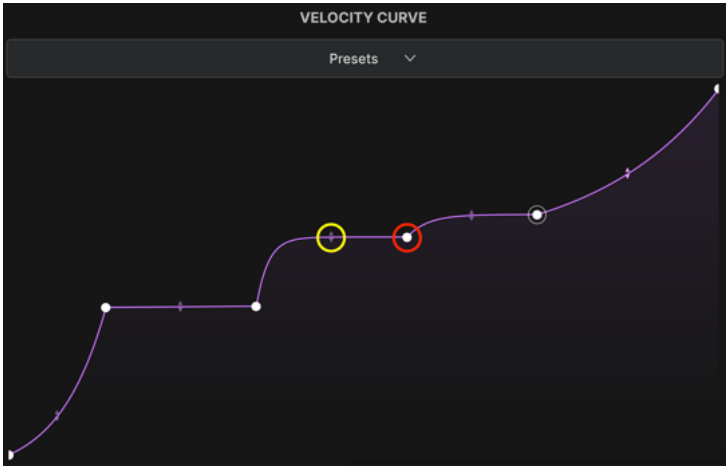
Wurli V3 comes with four velocity presets that behave as follows. Click on the word *Presets* to pull down this menu:

- Exponential: Has a "dip" in the middle regarding a given velocity triggering a given volume, i.e. keyboard response is heavier
- Linear: Regular, progressive relationship between velocity and volume
- Logarithmic: Has a "hump" relating velocity to volume; i.e. keyboard response is lighter
- Fixed: Heard volume is the same at any playing velocity

Note the *Save* and *Save As* options in the menu. If you save a user preset using *Save As*, it will then appear in the same list as the factory velocity presets. Which brings us to the next section.

4.1.2. Creating your own velocity curves

You can make and save your own velocity curves in Wurli V3, then save them as presets. These will then show up in any overall sound Preset you call up.



A breakpoint is circled in red; a grab handle in yellow

Creating your own curves begins with two simple tools: *breakpoints* and *grab handles*. A *breakpoint* is a point at which the slope or shape of the curve can change.

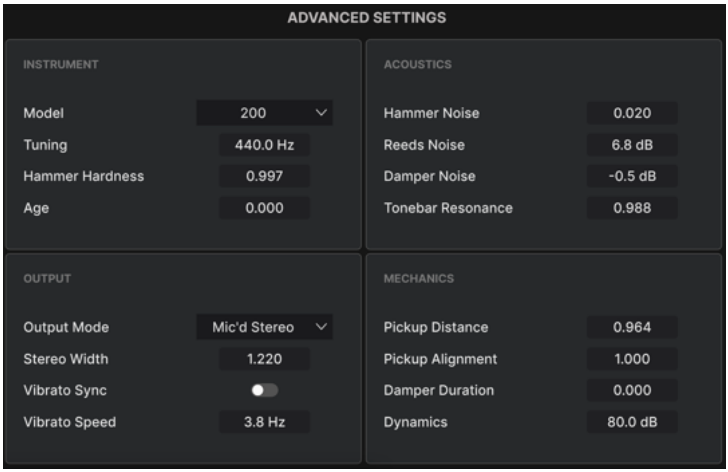
Left-click on the graph to add a breakpoint. Right-click on the point to delete it. A velocity curve can have up to 16 breakpoints including the first and final ones, which cannot be removed.

Between any two breakpoints is a *grab handle* that you can drag to change the shape or intensity of the curve between those two points. Leaving a handle in mid-position would create a more or less straight line between points. Dragging it as far as it will go in a direction generally creates a steep "knee" shape.

Between grab handles and breakpoints, any shape can be created, letting you surgically craft different responses for precise velocity ranges.

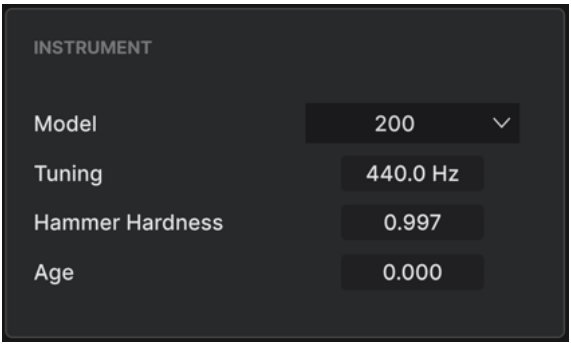
Once you are satisfied with your curve, you can *Save As* it as a velocity preset, then *Save* (user presets only) to overwrite your work with future edits under the same preset name.

4.2. Advanced Settings



Here is where you can finely adjust a myriad of aspects of the sound of Wurli V3, such as the model or series of Wurlitzer piano emulated, mechanical properties of the reeds and pickups and other components, and much more. It is divided into four subsections: Instrument, Acoustics, Output, and Mechanics. Drag up or down on most fields to change the value; for the **Model** and **Output Mode** settings, click on the field to pull down the corresponding menu.

4.2.1. Instrument Settings

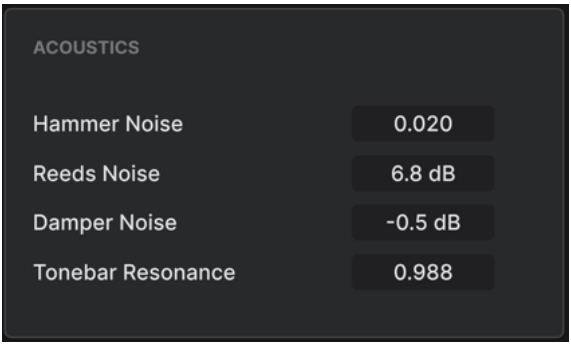


These settings affect the basic characteristics of the instrument Wurli V3 is physically modeling.

- **Model:** You can choose between vintage Wurlitzer 200 and 200a models; versions of both are also optimized for use as a keyboard bass, for a total of four options.
- **Tuning:** This adjusts the overall tuning of Wurli V3, the default being *A* = 440.0 Hz.
- **Hammer Hardness:** Continuously varies the material of the hammers from a soft felt to metal. Generally, a harder hammer (higher value) results in a more aggressive sound.
- **Age:** Virtually ages the model to simulate wear and tear, which will be heard as variations in intonation and increased noises of different sorts.

♪ Where the Wurlitzer model 200 was the first to mount the internal amplifier and speakers above the action and in front of the reed bar, the 200a further improved the amplifier circuit, mounting, and shielding, resulting in reduced noise. The vibrato (actually tremolo) circuits were different as well, with the 200 varying the bias of a transistor and the 200a using an LED-based optical system. Speakers were also different: The model 200 used alnico speakers mounted on the amp rail, where the 200a mounted ceramic speakers on the inside of the plastic cover.

4.2.2. Acoustics Settings



This section governs four acoustic properties of Wurli V:

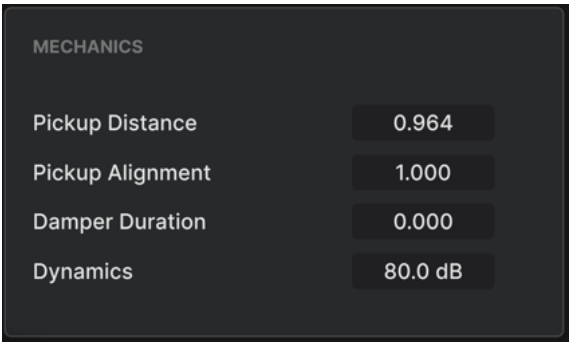
- **Hammer Noise:** Adjusts the mechanical sound of the reeds striking the hammers.
- **Reeds Noise:** Adds a bright, bell-like resonance to both the attack and release of the reeds.
- **Damper Noise:** Increases or decreases the sound of the dampers falling back onto the reeds when keys or a sustain pedal are released.
- **Tonebar Resonance:** Alters the decay of higher reed frequencies; a higher value will produce a more sustained tone.

4.2.3. Output Settings

In the Output section, stereo and vibrato characteristics are controlled. Vibrato settings correspond the tremolo effect whose depth is set by the **Vibrato** knob in the Main Panel, and its rate can be synced to your project tempo.

- **Output Mode menu:** This drop-down offers four choices for how Wurli V3 is heard.
    - *Direct Mono*: As if the piano were run through a direct box in mono
    - *Direct Stereo*: As if the piano were run through a two-channel direct box into mixer channels panned in stereo
    - *Mic'd Mono*: As if the piano speakers or amp cabinet were heard through a microphone in mono
    - *Mic'd Stereo*: As if the piano speakers or amp cabinet were heard through two microphones in stereo
- **Stereo Width:** Increases or decreases the left-right panning when either of the stereo options above are selected.
- **Vibrato Sync:** Toggles whether tremolo free-runs in Hertz or is tempo-synced.
- **Vibrato Speed:** Controls the tremolo Rate With Sync engaged, dragging on this field will step through the full range of straight, dotted, and triplet values. Dotted values are indicated by a *d* suffix in the pop-up tool tip [p.16]; triplet values display a *t*.

4.2.4. Mechanics Settings



This section is concerned with the remaining mechanical factors of the Wurlitzer.

- **Pickup Distance:** Moving the pickups closer to the reeds (lower values) creates more "bark" and even slight distortion.
- **Pickup Alignment:** Adjusts the angle of the pickups relative to the reeds. Lower values generally produce a mellower tone.
- **Damper Duration:** Varies the time between the release of a key and the termination of the heard note.
- **Dynamics:** Adjusts the overall volume distance between notes played very softly and very hard, while retaining differences in timbre (brightness vs. mellowness). The velocity curve still applies within the overall "bookend" limits set by Dynamics.

5. EFFECTS

Wurli V3 includes a suite of powerful stereo effects curated from our latest V Collection of virtual instruments. You can use up to four effects at once, and each of the four effects slots offers a choice of 13 pedal-style effects. Then, there is an Amp Simulator [p.43] with Twin Amp and Rotary Speaker models, followed by a state-of-the art Convolution Reverb [p.46] offering nine room types.

Click the **FX** button at the top right of the Wurli V3 window to navigate here.

5.1. Effects routing

Wurli V3 effects are routed serially

Effects routing in Wurli V3 is "hard wired" as serial. The signal is first processed by the effect in the slot at far left, then simply moves from left to right. This keeps things simple. Just set up the effects chain you want, not unlike a guitar pedalboard. The dedicated amp simulator and reverb/room simulator are always in the next-to-last and last positions, respectively.

5.1.1. Effects swap

In the first four slots, you can change the position of any pedal effect in the chain. Simply click and hold on its background (anywhere but on a switch or knob) and drag it to the desired slot. Whatever effect is currently in the destination slot will swap to the dragged effect's previous position.

5.2. In, Out, and Bypass

There is a global Bypass button on the Effects tab, as well as individual on/off buttons for each of the slots. In all cases, these will disable the effect(s) without losing any of their settings. This is a great tool for comparing dry and wet sounds as you craft your tracks.

There are also pre (In) and post (Out) level controls. **In** determines how strong a signal feeds the effects chain, and **Out** adjusts the level returned to the main outputs. If the global bypass is engaged, these knobs will not affect the audio level.

5.3. Selecting an effect

The pedal effects in Wurli V3 offer 13 types in five categories

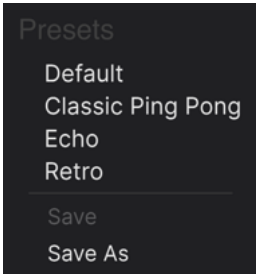
Click the name field at the top of any of the effects slots (you can also click any empty square that says "none" above it) to bring up the effects selection menu. The effects are divided into five categories to make choosing a little easier.

- *Spatial:* Reverb, delays, and tape echo
- *Dynamics:* Compressor and limiter
- *EQ:* Parametric equalizer

- *Distortion:* Distortion effect with five different algorithms
- *Modulation:* Chorus, flanger, phaser, stereo panner, and wah-wah

The full list of effect types [p.27] with descriptions of all their parameters is below.

5.4. Effect presets



The factory presets for the Delay effect in Wurli V3

Each effect types in Wurli V3 comes with a handful of presets, accessed by clicking on "Presets" at the top right of the name bar within an effects slot.

The presets can be great starting places, not to mention convenient for when you want to grab a quick sound, so please do explore them all. Notice the "Save as" option, which will bring up a dialogue box that prompts you to name and save any settings you like as your own FX preset. This is then saved within the overall Wurli V3 Preset. "Save" is available only when working on a user preset, i.e. one you've already copied with a "Save As" operation.

5.5. Pedal Effect types

Now it's time to meet each effect type individually. In this section, we will cover the pedal-style effects, then devote separate sections to the amp and room simulators.

5.5.1. Dry/Wet mix

Every effect except for the Equalizer has a knob (the amp and room simulators have sliders) for **Dry/Wet mix**, i.e. how much pre-effect vs. post-effect signal you hear.

> ♪ Remember that due to the serial routing, a sound that's relatively dry with respect to one effect may still be carrying a lot of the previous one in the chain.

5.5.2. Effects tempo sync

Engaging Sync makes tempo-division options available for the time setting in the Delay

Some effects offer tempo-sync options for their time or rate parameter. This is activated by clicking a **Sync** toggle switch. Then, adjusting the related parameter will display a pop-up that shows the current division or multiple of your project tempo. A *t* suffix after the value indicates a triplet value, *d* denotes a dotted value, and no suffix means a "straight" rhythmic feel.

The effects with tempo sync in Wurli V3 are:

- Delay
- Analog Delay
- Tape Echo
- Phaser
- Stereo Pan

Now let's visit the effects in the order in which they appear on the menu.

5.5.3. Reverb

Reverb is the sound of a space – a recording studio, concert hall, stairwell, tiled bathroom, you name it. Reverb is often used as the final effect in a chain to put everything else that's going on into the same acoustic space, lending cohesiveness to the sound. (Remember that Wurli V3 also offers sophisticated convolution reverb via the room simulator. The pedal reverb here is a "quick and dirty" algorithmic type.)

Control	Description
Pre Delay	Sets the amount of time before the input signal is affected by the reverb
Decay	Determines the length of time the reverb effect will last
Size	Adjusts the size of the room: counter-clockwise is smaller, clockwise is larger
Damping	Controls the rate at which the high frequencies decay
HP Filter	Reduces the low-frequency content and allows highs to pass before processing
LP Filter	Scoops out the high-frequency content and allows lows to pass before processing
MS Mix	Adjusts the reverb from mono to an increasingly wide stereo space

5.5.4. Delay

Delay is a generic term for any effect that makes a copy of an input sound and repeats it later, one or more times. There are three delay effects in Wurli V3, and this first one sounds good all around.

Control	Description
Time	Changes the length of the delay, with unsynced and tempo-sync options (sync, triplets, dotted)
Feedback	Adjusts how many times the delay will repeat
Stereo	Higher values increase the distance between the left and right iterations of the echoes
Sync	Activates tempo sync for the Time setting
Ping Pong	Toggles alternating left/right echoes with exact rhythmic spacing
HP Filter	Higher values cause increased reduction of low-frequency content with each echo
LP Filter	Higher values cause increased reduction of high-frequency content with each echo

5.5.5. Analog Delay

The Analog Delay simulates classic "bucket brigade" delay lines, in which each successive analog circuit added an additional repeat to the incoming signal. Analog Delay in Wurli V3 features a built-in LFO that can modulate the main delay time for trippy effects.

Control	Description
Time	Sets delay time, with unsynced and tempo-sync options
Feedback	Controls how much of the delayed signal feeds back into the effect to be delayed again
Feedback Tone	Adjusts the brightness of the signal feeding back into the effect
Sync	Activates tempo sync option for the time and rate settings
Rate	Adjusts the rate of the LFO that modulates the delay time; also subject to tempo sync
Depth	Adjusts the intensity by which the LFO modulates the delay time

5.5.6. Tape Echo

Tape Echo is a 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 digital delay.

Control	Description
Bass	Boosts or cuts the lower frequencies of the delayed signal only
Treble	Boosts or cuts the higher frequencies of the delayed signal only
Time	Changes the length of the delay, with unsynced and tempo-sync options
Intensity	Sets the feedback amount of the delayed signal.
Sync	Activates tempo sync option for the time setting
Input	Sets the initial gain of the Tape Echo effect; turn up to mimic analog tape saturation
Echo	Sets the output volume of the taps (repeats) only

5.5.7. Compressor

A **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. It does this based on reducing a gain by a certain amount (the ratio) once the audio releases a certain level (the threshold).

Control	Description
Threshold	Sets the level where compression will begin
Ratio	Determines the amount of compression to be applied once the threshold is reached
	Attack
Release	Sets the release curve of the compressor
	Output Gain
	Make Up

♪ There's an old analogy for understanding compressors. Threshold is how loud your music has to be before your parents tell you turn it down. Ratio is how much you turn it down. Attack is how fast your parents react once it's too loud. Release is how soon you turn it back up once they're gone.

5.5.8. Limiter

A limiter is like a compressor in that it manages the loudness of your signal. However, instead of reducing the signal by a certain ratio, it places an absolute ceiling on the sound level. This is why you'll sometimes hear limiters called "brick wall" devices.

Control	Description
Input Gain	Sets the overall level feeding the limiter
Release	Sets the time it takes for the limiter to "let go" of the signal
Output Level	Adjusts the overall output level of the limiter while preserving the internal limiting amount

5.5.9. Equalizer

An equalizer lets you sculpt tone very precisely, as opposed to the very broad tonal strokes you get from a synth filter or tone controls. It can gently or surgically boost or cut certain frequencies to alter the overall sound or remove problem frequencies.

The EQ in Wurli V3 has three bands. You can adjust the frequency and gain (boost or cut) for the high and low bands, as well as the Q (how wide the band is around the selected frequency) for the midrange band.

Control	Description
Gain	Adjusts the boost or cut to the level of the current band
Frequency	Selects the center frequency of the current band
Q	Adjusts the width of the spectrum around the Frequency that is affected by the boost or cut; mid band only
Scale	Adjusts the overall impact of the EQ curve on your sound

5.5.10. Distortion

Distortion in Wurli V3 is actually five different kinds of distortion. They're derived algorithms from our flagship distortion effect called Dist COLDFIRE. Each has its unique sonic signature – and they can transform sounds in ways ranging from subtle warmth to all-out devastation!

The five distortion types

Select the distortion by clicking on the left and right arrows at the top, or bring up a menu by clicking on the distortion type name between the arrows.

5.5.10.1. Overdrive

This simulates the classic overdrive sound achieved by running the input gain "hot" on a transistor or tube amplification circuit.

Controls	Description
Drive	Sets the amount of distortion via driving the input
Out Gain	Use this to compensate for increased output gain caused by the Drive setting

5.5.10.2. Wavefolder

Imagine you could fold over the peaks and valleys of an audio waveform to create a more harmonically complex wave. That's what wavefolding does.

Controls	Description
Drive	Sets the amount of wavefolding via driving the input
Out Gain	Use this to compensate for increased output gain caused by the Drive setting
Type	Selects whether the folded peaks and valleys are smoothed out (sine) or not (hard)

5.5.10.3. Waveshaper

A waveshaper alters the rise and fall time of a waveform's cycle. For example, applying a waveshaper to a triangle wave and shortening the rise time of each cycle turns the triangle wave into a falling sawtooth wave. Further, a waveshaper can affect the curvature of a rising or falling signal, producing even more unusual harmonic changes.

Controls	Description
Drive	Sets the amount of waveshaping via driving the input
Out Gain	Use this to compensate for increased output gain caused by the Drive setting

5.5.10.4. Tape

This algorithm in the Distortion effect simulates the saturation analog tape produces when a "hot" signal is recorded.

Controls	Description
Drive	Sets the amount of tape saturation via driving the input
Out Gain	Sets the post-saturation output level of the effect

5.5.10.5. Bitcrusher

A **bitcrusher** does exactly what it sounds like: it crushes bits! Technically, it can reduce both the bit depth and the sample rate of the signal. Bit depth (e.g. 16-bit vs. 8-bit) deals with differences in volume; sample rate (e.g. 44,100 kHz, like a CD) deals with frequency response. When musicians talk about the "lo-fi" sound of vintage samplers, game consoles, or computers, they're talking about bitcrushing.

Control	Description
Bit Depth	Reduces the number of bits used to render gradations in amplitude.
Downsample	Divides the sample rate used to represent the signal.

5.5.11. Chorus

Chorus is an effect first developed in the mid-197Os 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.

Control	Description
LFO Freq	Adjusts the speed of the chorus
Depth	Controls the intensity of the chorus
Feedback	Adjusts the amount of chorused signal that is fed back into the effect
Delay	Sets the amount of delay applied to the input signal
Stereo	Toggles mono or stereo operation
Voices	Toggle switch selects the number of delay lines the chorus will use (1, 2, or 3), with a different starting phase for each voice
Shape	Toggles modulation LFO between sine and triangle waveforms

5.5.12. Flanger

The **Flanger** is an intense time/modulation effect. It originated with audio engineers pressing on the flange (rim) of a moving tape reel to slow down the playback a tiny bit. Combined with the original signal, this produces the signature "jet engine" effect.

Control	Description
LFO Freq	Adjusts the rate of the LFO that controls the flanging speed
Depth	Sets the intensity of the flanging
Feedback	Adds feedback for a harsher or "ringing" sound. Maximum is 99% to avoid runaway feedback
Stereo	Toggles mono or stereo operation
Phase Invert	Click to toggle flanger between additive and subtractive operation
HP Filter	This determines the amount of low-frequency content that the flanger effect will receive
LP Filter	Use this to reduce the amount of high-frequency content that will enter the flanger effect

5.5.13. Phaser

Phase shifting splits the incoming signal, changes the phase of one side, and recombines it with the unaffected signal. Modulation of this signal via an LFO results in a notch-comb filter that sweeps through the frequency spectrum, causing that familiar "whooshing" sound.

> ♪ Two iconic uses of the phaser are on analog strings by Gary Wright and Jean Michel Jarre, and on electric piano by Steely Dan.

Control	Description
Rate	Adjusts the rate of the phaser, with unsynced and tempo-synced options
Feedback	Controls the amount of phased signal feeding back into the effect for a more resonant sound
Depth	Adjusts the intensity of the phasing effect
NB Poles	Determines the steepness of the phaser's filter frequency response
Sync	Activates tempo sync option for the rate setting
Mono/ Stereo	Toggles the phaser between mono and stereo output

5.5.14. Stereo Pan

Stereo Pan lets you automatically control and move the stereo position of the Wurli V3 sound, to provide motion and breadth.

Control	Description
Rate	Controls the speed of stereo panning
Shape	Selects the waveform according to which the sound is panned: sine, triangle, saw, ramp, or square
Sync	Activates tempo sync option for the rate setting
LP Mono	When engaged, low frequencies will not be panned, as may be desirable for a solid bass sound with movement in the treble

5.5.15. CryWah

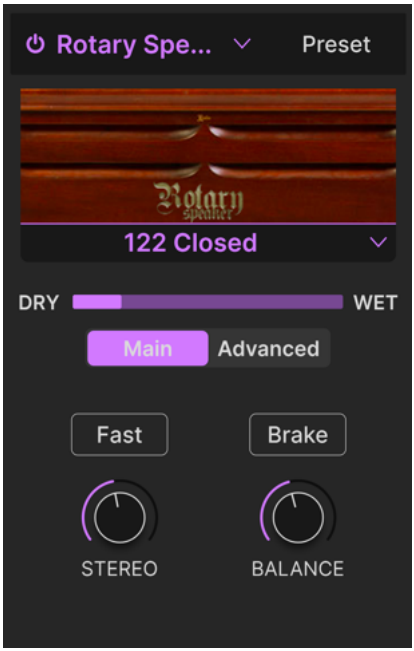
Based on the iconic "cry baby" wah pedal, this effect follows the volume envelope of the sound and applies a filter sweep as notes are struck, for a classic wah-wah tone.

Control	Description
Manual	Sets the center frequency around which the effect is most strongly applied
Sensitivity	Sets the threshold for the envelope follower to engage and trigger the wah effect
Rate	Adjusts the speed of the repeating wah effect
Depth	Determines the intensity of the wah effect

5.6. Amp Simulator

Downstream of the four pedal-type effects slots, this models two kinds of amps a Wurlitzer electric piano might have been plugged into. Click on the effect name to select the Rotary Speaker or Twin Amp.

5.6.1. Rotary Speaker

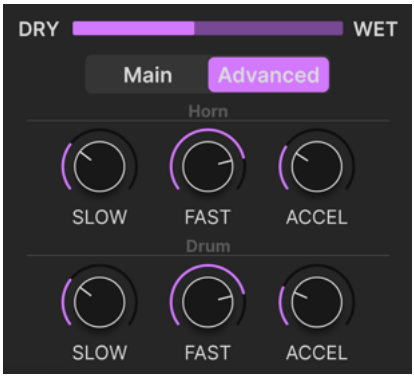


Invented by Don Leslie and most often paired with the tonewheel organ, the rotary speaker fired a treble driver into a spinning horn and a bass speaker into a spinning drum-shaped baffle to create a sense of spaciousness. Its sound is legendary.

Control	Description
Rotary Type Select	Chooses among five rotary cabinet models
Main/Advanced	Toggles display between main and advanced settings (see below)
Fast	Switches rotors between slow and fast speeds
Brake	Stops rotor motion while maintaining the cabinet simulation properties of the effect
Stereo	Adjusts the panning of virtual stereo mics aimed at the rotary cabinet
Balance	Sets the tonal balance between bass and treble rotors

♪ Regarding the rotary types, "closed" and "open" refer to whether the virtual mics are pointed at the cabinet's exterior or directly at exposed rotors, respectively. The *122* and *147* are two classic models of rotary speaker, with the latter generally associated with a brighter, more "rock" sound.

5.6.1.1. Advanced Rotary Controls



The advanced tab lets you tweak slow and fast speeds, plus transition times, for the treble and bass rotors independently.

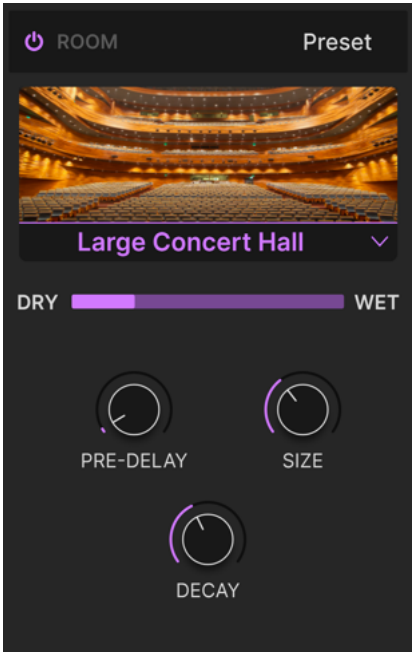
Control	Description
Slow	Sets speed for the treble horn or bass drum rotor when main speed is slow
Fast	Sets speed for the treble horn or bass drum rotor when main speed is fast
Accel	Sets transition time between slow and fast, or fast and slow, for the treble horn or bass drum

5.6.2. Twin Amp

Dedicated keyboard amps weren't a thing in the heyday of the Wurlitzer, so players would often use a bass or guitar amp. Twin simulates an amp from a famous guitar maker, which paired well with the Wurly. Like the original hardware, our Twin model includes a spring-style reverb and tremolo.

Control	Description
On Axis	Simulates pointing a mic directly at the speaker cone at a 90-degree angle, which can result in a more focused sound
Bright	Adds a treble boost
Drive	Sets the input gain; turning this up can produce a somewhat overdriven tone
Reverb	Adjusts the depth of a spring reverb built into the Twin effect
Bass, Mid, Treble	These are simple tone controls that boost or cut the desired frequency range
Speed	Sets the speed of the built-in tremolo
Intensity	Sets the depth of the built-in tremolo

5.7. Room Simulator



The room simulator (reverb by a more familiar name) in Wurli V uses a process called *convolution* to create stunningly realistic acoustic spaces. In convolution, a room model that is initially created by recording sounds with sharp transients (handclaps, gunshots, etc.) in the actual space. It's not unlike sampling, but for reverb. Then, computer code extrapolates how a different audio signal, such as notes from an electric piano, would sound in that space.

5.7.1. Room Types

The room types available in Wurli V3

Click on the room name below the image to select the virtual acoustic space. As shown above, there are nine choices, including two plate simulations based on the large metal plates top studios once used to create reverb.

5.7.2. Room Parameters

For an effect that's doing so much behind the scenes, the settings are simple.

Control	Description
Pre-Delay	Adjusts the time before early reflections heard
Size	Adjusts the size of the virtual acoustic space
Decay	Changes the length of the reverb "tail" as the sound dies out

♪ *Early reflections* are the first reflections of sound inside a space, and often responsible for a perceived echo or slap-back effect.

6. USER INTERFACE

This chapter covers everything that is not in the main panel and advanced views – all the utilitarian functions that make Wurli V3 a joy to use in a modern music production environment.

The toolbars above and below the main panel [p.16] of Wurli V3 contain a number of important functions for Preset selection, housekeeping, and other utility settings.

Then there's the side panel, where you make important global and MIDI settings, can use and create Macros [p.62] to control several settings with a single control movement, and explore Wurli V3 via interactive tutorials.

The Upper Toolbar includes:

- The Main Menu [p.49]
- The Preset Name Pane and Preset Browser [p.65] access button
- The button to open the Advanced Views [p.53]
- The button to open the Effects [p.25] panel
- A gear-shaped icon that opens the side panel [p.57]

The Lower Toolbar includes:

- The parameter description area [p.16] that shows info when you hover over any control
- Undo, Redo, and History [p.55]
- The CPU Meter [p.55] and Panic [p.56] functions
- Duplicate knobs for the Macros [p.56] in the side panel
- A corner grab handle [p.56] for resizing the Wurli V3 window

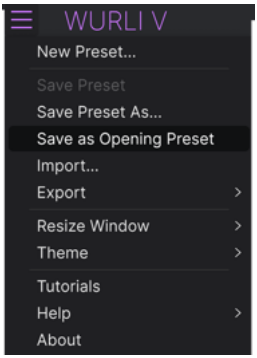
The side panel includes:

- Settings [p.57]
- MIDI [p.58]
- Macros [p.62]
- Tutorials [p.52]

6.1. Upper Toolbar

Let's start with the Upper Toolbar, covering its functions from left to right.

6.1.1. 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.

6.1.1.1. New Preset

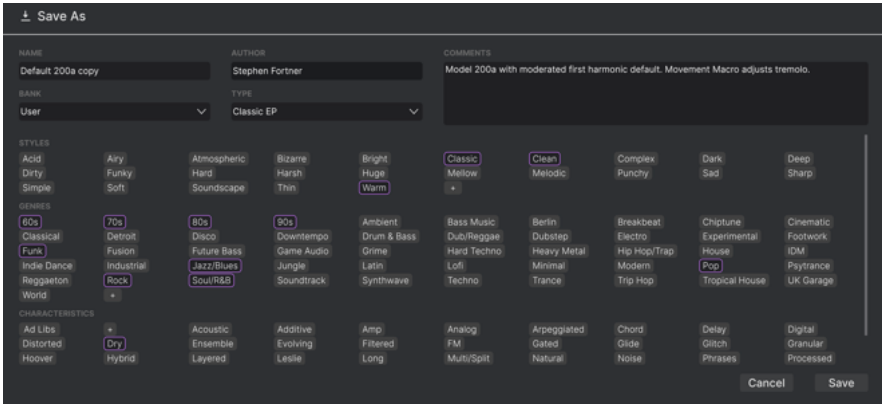
Creates a new Default Preset with initialized settings for all parameters.

6.1.1.2. 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.

6.1.1.3. Save Preset As...

This option saves the current settings of Wurli V3 under a new Preset name. Clicking this option reveals a window where you can name your Preset and enter more detailed information about it:



> ♪ The Bank, Author, and Type fields are all useful when searching for Presets in the Preset Browser [p.65]. All of the words in the boxes below are tags [p.66], which can further help refine searches in the Preset Browser.

6.1.2. Save as Opening Preset

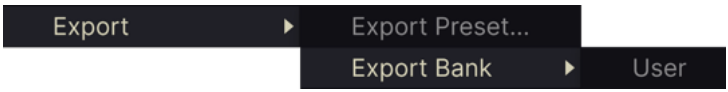
This menu item only appears if you're using Wurli V3 in a DAW as plug-in. It saves the current Preset so that it is the default whenever you instantiate Wurli V3 in an instrument track.

6.1.2.1. Import...

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

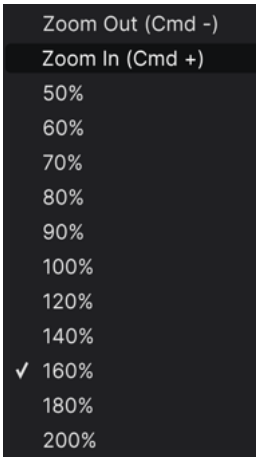
6.1.2.2. Export...

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). Both individual Presets and Banks have the filename extension .wurx.



- **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.

6.1.2.3. Resize Window



Wurli V3 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.

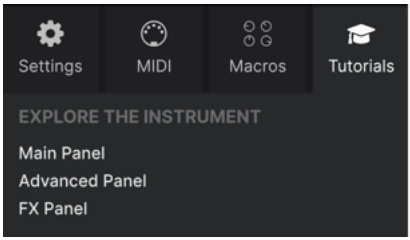
You can also do this using keyboard shortcuts: every time you press CTRL- (Windows) or CMD- (macOS), the window will shrink by one size increment, and every time you press CTRL+ (Windows) or CMD+ (macOS), the window will grow by one size increment.

In addition, you can click-drag the resize handle [p.56] at the right of the lower toolbar to make the Wurli V3 window any size.

6.1.2.4. Audio MIDI Settings

These appear only if Wurli V3 is working in stand-alone mode. Used as a plug-in, these are handled in the context of your DAW or host software. Refer to the chapter on Activation [p.10] for details on the settings for both Windows and macOS. They work in much the same way in stand-alone mode.

6.1.2.5. Tutorials



Wurli V3 comes with interactive tutorials that walk you through different features of the plug-in. Clicking this option opens a pane on the right side of the window where the tutorials appear. Select one to access step-by-step descriptions that highlight the relevant controls and walk you through the process.

6.1.2.6. Help

This item offers links to this user manual and Frequently Asked Questions pages on Arturia's website. You will need an internet connection to access these pages.

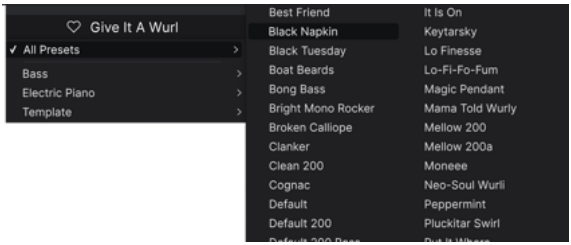
6.1.2.7. About

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.

6.1.3. Preset Browser access and Name Pane

The Preset Name Pane

Clicking the "books on a shelf" button opens the Preset Browser [p.65], which offers a myriad of ways to browse, sort, and organize Presets in Wurli V3.

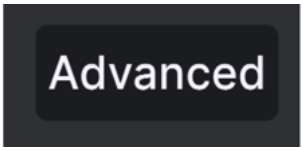


Clicking on the Preset name also opens up quick drop-down menus for selecting Presets outside of the Browser, as shown above. You can select to look at lists of Presets organized by Type, as shown above, or look at All Presets at once.

Everything you need to know about managing Presets is covered in detail in the next chapter [p.65]. This includes working with Favorites, which are tagged by clicking the heart icon.

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

6.1.4. Advanced Button



Near the upper right corner of the top toolbar is the **Advanced Button**. This expands the lower area of the window into the Advanced Panel [p.19], where the velocity curve editor and other advanced settings are found.

6.1.5. FX Button

Clicking this button opens up the Effects [p.25] panel, which is covered in detail in chapter 5 of this manual.

6.1.6. Gear icon

This opens the side panel [p.57] where settings, Macros, and tutorials reside.

6.2. Lower Toolbar

Lower toolbar in Wurli V3

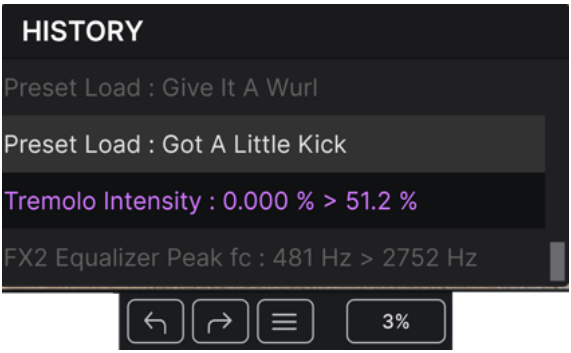
The Lower Toolbar of the Wurli V3 interface can be thought of in terms of left and right halves. On the left is the Control Description display, and on the right are buttons for several useful utility functions.

6.2.1. Parameter descriptions

This control description pops up when you mouse over the Vibrato knob in the Main Panel

Operate or hover on any knob, button, icon, or other control, and a brief description of what it does appears in the lower left-hand corner. That's pretty much the only thing on the left side.

6.2.2. Undo, Redo, and History



When designing your own sounds in a virtual instrument, 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, Wurli V3 offers comprehensive Undo, Redo, and History functions so that you always have a safe way back.

6.2.2.1. Undo

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.

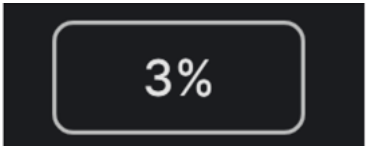
6.2.2.2. Redo

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.

6.2.2.3. History

Click the "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 Wurli V3 since you opened it in stand-alone mode or opened a DAW project containing it. 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.

6.2.3. CPU Meter



Mousing over the CPU Meter accesses the PANIC function

At far right is the **CPU Meter**, which displays the overall load Wurli V3 is placing on your computer CPU. Since it deals only with this plug-in, it is not a substitute for the resource metering tools in your DAW.

6.2.3.1. 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 Wurli V3. This is a momentary command, so sound will resume if your DAW is still driving a Wurli V3 instrument track.

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.

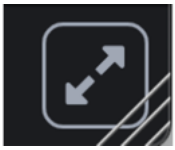
6.2.4. Macro controls

These controls can affect multiple parameters by turning just one of them, and mirror the actions of those found in the Macros [p.62] tab of the side panel. Factory Presets are pre-programmed with useful Macros.

6.2.5. Resize handle

Grab and drag the diagonal lines to the right of the Macro controls to resize the Wurli V3 window. When you release the mouse, the window will snap to the closest size available in the Resize Window [p.51] item of the main menu [p.49].

6.2.6. Max View button



Sometimes, you may see the above button with two diagonal arrows appear over the resize handle. This happens when, for some reason, the window size is not displaying all of the controls of Wurli V3. Click it to restore a full view of the open controls.

6.3. The Side Panel

The gear-shaped icon at the top right of the Upper Toolbar opens the **Side Panel**, which in turn contains four tabs covering important subsystems that you won't have to access quickly when you're playing or editing sounds in Wurli V3:

• **Settings**: Global settings such as MIDI receive channels and accessibility

• **MIDI**: MIDI Learn functions for use with MIDI CC messages sent from a controller or DAW

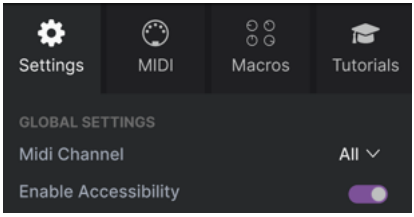
• **Macro**: Assignments for four Macros that can control multiple parameters with a single knob twist

• **Tutorials**: In-app interactive tutorials, also accessible from the main menu

Let's look at them from left to right.

6.3.1. Settings Tab

This tab covers settings to control how a Preset responds to incoming MIDI.



The Side Panel's Settings tab

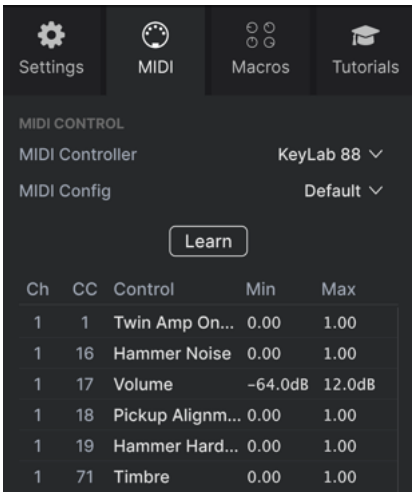
6.3.1.1. MIDI Channel

Selects the MIDI channel(s) on which Wurli V3 will receive MIDI input. You can select a particular channel, or choose "All" for Omni Mode.

6.3.1.2. Enable Accessibility

This gives your computer's system-level accessibility tools for differently abled persons access to Wurli V3.

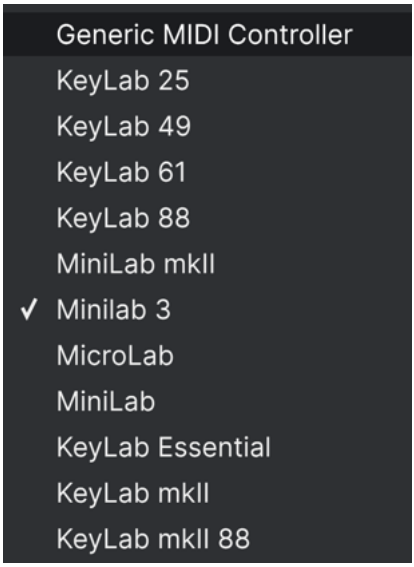
6.3.2. MIDI Tab



The Side Panel's MIDI tab

This is where Wurli V3 may be placed in MIDI Learn mode. In this mode, all MIDI-assignable parameters on the Hardware Panel, the Advanced View,and the FX are highlighted. 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.

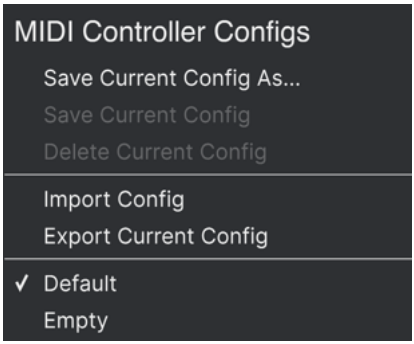
6.3.2.1. MIDI Controller menu



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 Wurli V3 for a plug-and-play experience. A Generic template is also provided for third-party MIDI controllers.

6.3.2.2. MIDI Config menu



The MIDI Config menu

The **MIDI Config** drop-down lets you manage different sets of MIDI maps for controlling Wurli V3 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 Wurli V3, 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.

6.3.2.3. Assigning and unassigning controls

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

Click the **Learn** button in the MIDI tab to put Wurli V3 into Learn mode. Controls available for assignment are purple. Controls that are already assigned are red, but can be reassigned if desired. The screenshot above shows the assigned and unassigned controls for Wurli V3's Default configuration.

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.61] described below.

♪ Controls in the Main, Advanced, and FX areas are all available for MIDI learning, as are the Preset up and down arrows in the upper toolbar.

6.3.2.4. MIDI channel, CC, and min and max values

The first two columns in every MIDI assignment list the MIDI Channel (**Ch**) and MIDI Continuous 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 Wurli V3 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.

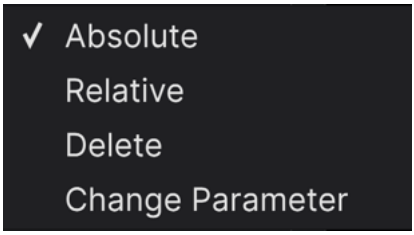
Drag up or down on a value to change it. Setting the maximum lower than the minimum reverses the polarity of the physical controller, i.e. turning it *up* will turn the assigned parameter *down*.

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.

♪ Don't forget that many items in the Advanced views (Sequencer, Modulators, and Effects), not just settings on the main panel, may be MIDI Learned.

6.3.2.5. MIDI Parameter Menu

Control-clicking or right-clicking on any item in the list - only the list, not the main interface - 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 Wurli V3 tracks the literal value your physical controller is sending out.
- **Relative:** The assigned parameter in Wurli V3 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 Wurli V3. 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.

6.3.2.6. Reserved MIDI CC numbers

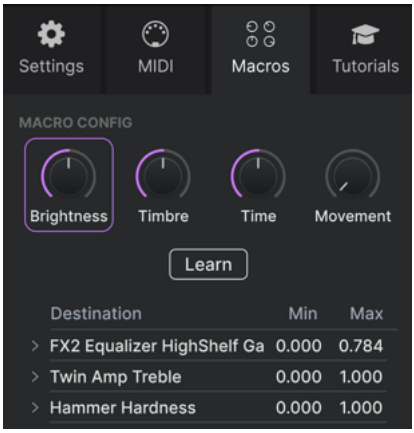
Certain MIDI Continuous Controller (CC) messages are reserved and cannot be reassigned to other controls. These are:

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

All other MIDI CC messages may be freely assigned to control any parameter in Wurli V3.

6.3.3. 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.58] 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.

6.3.3.1. 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 [p.56].

6.3.3.2. 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.

> ♪ You can name and assign parameters as you like to Macros. Keep in mind, though, that clarity is usually better than cleverness when you're working on a track.

6.3.3.3. Macro curves

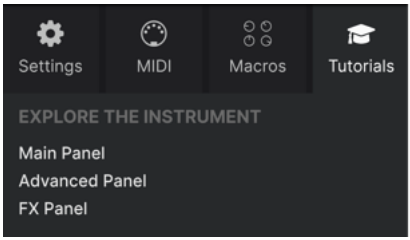
Beyond simple scaling, you can customize a curve that determines how each parameter under the Macro's control proceeds from its minimum to maximum value and back when you turn the Macro knob. Click the > icon next to the parameter name to open the curve window.

The vertical line corresponds to the Macro knob's position

Making Macro curves is a lot like working with the Velocity Curve editor [p.19] in Wurli V3. Here, the X-axis represents how much the corresponding Macro knob is turned clockwise, and the Y-axis represents the scale of change to the target parameters. You can set a different curve for every parameter controlled by a Macro.

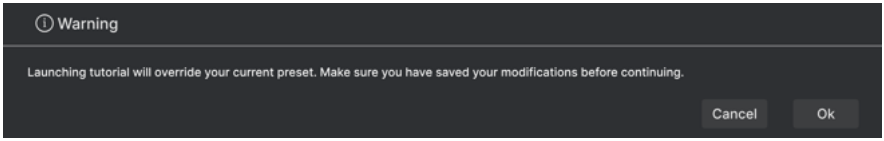
Click on the curve to add a breakpoint, represented by a small circle. You can then drag the point and the curve segments between it and its nearest neighbors will change accordingly. Right- or control-click on a point to remove it. The first and last breakpoints cannot be removed. (Note that unlike the Modulators, there are no grab handles between the breakpoints.)

6.3.4. Tutorials



In this tab, which can also be opened by selecting **Tutorials** from the Wurli V3 main menu [p.49], you can click on titles for the individual chapters, which in turn will take you through different areas of Wurli V3 in steps. The parts of the panel to focus on are highlighted as you go.

> ! 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.



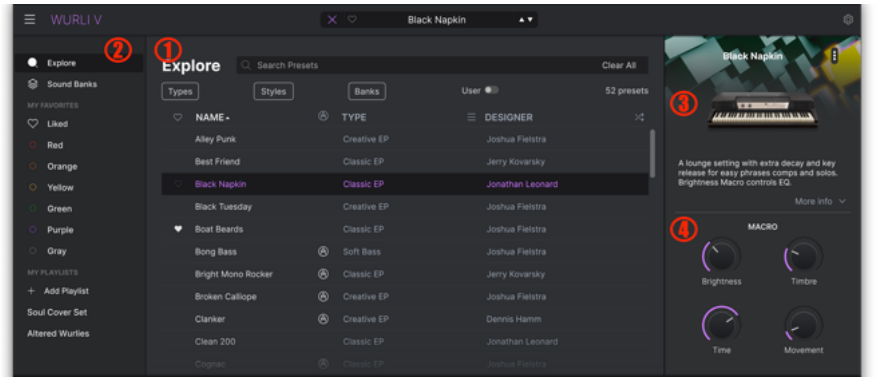
Warning pop-up when launching a tutorial

7. THE PRESET BROWSER

The Preset Browser is where you search, load, and manage sounds in Wurli V3. It can display different views but they all access the same Presets and subgroups of Presets.

To access the browser, click the browser button (the icon looks like books on a library shelf). To close the browser, click the **X** that appears in its place.

The browser has four main areas:

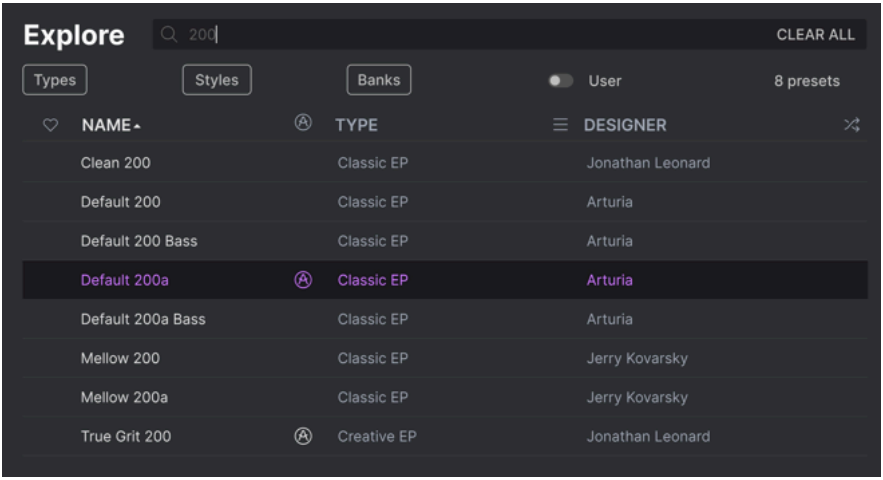


Number	Area	Description
1.	Search and Results [p.65]	Search Presets with text strings, and by tags for Type and Style.
2.	Sidebar [p.70]	Manage Banks, Favorites, and Playlists.
3.	Preset Info [p.72]	Summary of Bank and Tags, Designer name, and description info for current Preset.
4.	Macro Knobs [p.76]	Large size duplicates of Macro knobs in Lower Toolbar and the Macros tab.

7.1. Search and Results

Click on the Search field at the top and enter any search term. The browser will filter your search in two ways: First, by matching letters in the Preset name. Then, if your search term is close to that of a Type or Style [p.66] it will include results fitting those tags as well.

The Results list beneath shows all Presets that fit your search. Click the X icon at right to clear your search terms.

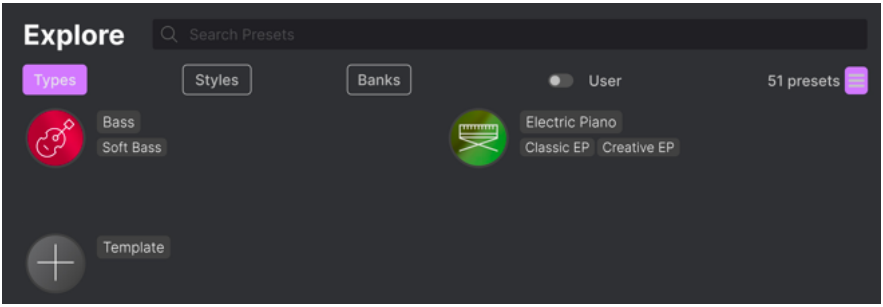


7.2. Using Tags as a Filter

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. Our extensive range of MIDI controller keyboards also allows you to browse sounds directly from the MIDI keyboard.

7.2.1. Types

Types are categories of instruments. You might see bass, leads, strings, pads, organs, and more across other Arturia V Collection instruments. In Wurli V3, the main Type is Electric Piano, with Classic EP and Creative EP subtypes – the latter contains sound design-oriented Presets that do not necessarily sound like a classic Wurly. Then there's a Bass Type (inspired by keyboardists who play left-hand bass) and a Template type for designing your own Presets. With a clear search bar, click the **Types** button to bring up this list. Notice that each Type may also include subtypes.



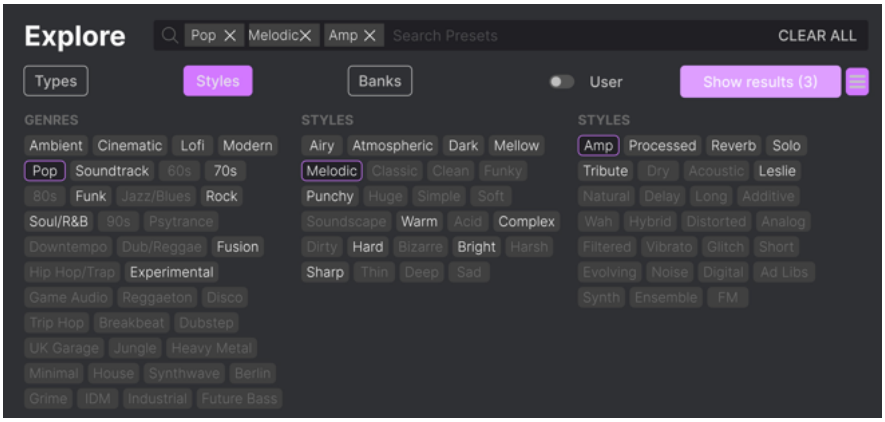
Click any one of them, and the results will show only Presets that match that tag. You can also select multiple Types using Cmd-click (macOS) or Ctrl-click (Windows). For example, if you aren't sure whether the Preset you're looking for was tagged with the subtype "Classic EP" or "Creative EP", select both to broaden the search.

Results columns can be sorted and reverse-ordered by clicking the arrow buttons to the right of their titles (Name, Type, Designer).

7.2.2. Styles

Styles refine your search according to further musical attributes. Accessed by the **Styles** button, this area has three further subdivisions:

- *Genres*: Identifiable musical genres such as decades, Trance, Techno, Synthwave, Disco, etc.
- *Styles*: General "vibe" such as Atmospheric, Dirty, Clean, Complex, Mellow, etc.
- *Characteristics*: Sonic attributes such as Analog, Evolving, Distorted, Dry, Rise, etc.



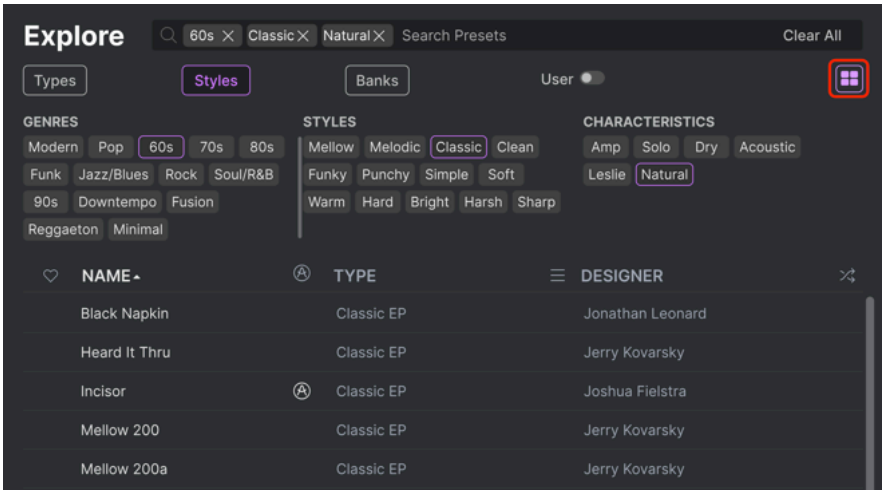
Click on any tag to select it. Click again (or right-click) on any selected tag to de-select it. Notice that when you select a tag, several other tags usually disappear. This is because the browser is narrowing your search by a process of elimination. De-select any tag to remove that criterion and widen the search without having to start all over again.

7.2.3. Banks

Next to the **Types** and **Styles** buttons is the **Banks** button, which lets you do your search (using all the methods above) within the factory bank or user banks.

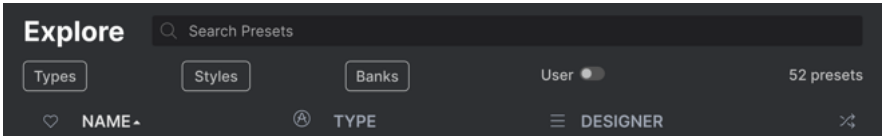
7.3. Search Results window

Click the **Show Results** button if you cannot already see your list of results. Click the sort arrow to reverse the alphabetical order of any column. You can also click the "hamburger" (three lines) icon on the right, as shown in the picture below. The icon will change to four panes, and you will be able to see the Presets that fit your selected tags, as well as other tags that apply to them, like so:



Search results displayed beneath Style tags

7.3.1. Sorting the Preset Order



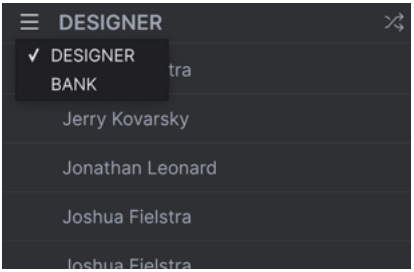
Click the **NAME** header in first column of the Results list to sort Presets in ascending or descending alphabetical order.

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

Click the **Arturia logo** to the left of **TYPE** to bring factory-featured Presets to the top of the list. These will appear just under any Presets you have liked [p.69].

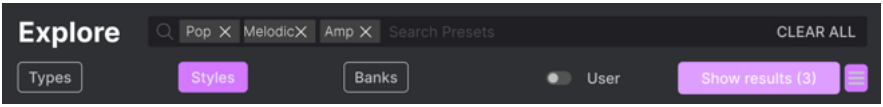
Click the **User** toggle switch to restrict your search to Presets in user banks.

The third column has two header options: **DESIGNER** and **BANK**. Click the icon with three lines to choose between the two. Then click either header name as with the other two columns to switch the alphabetical order.



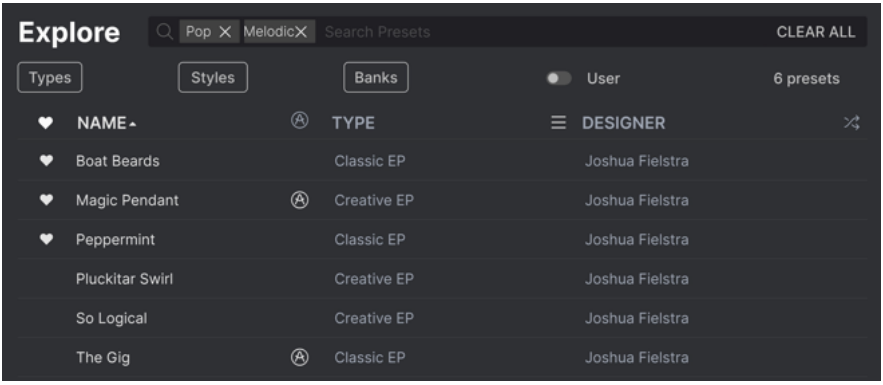
7.3.2. Clearing Tags

Just above the Types, Styles, and Banks buttons, you will see labels for all the active tags in a search. Click the X next to any one to remove it (and thus broaden the results). Click **CLEAR ALL** to remove all tags.



7.3.3. Liking Presets

As you explore and create Presets you can mark them as Liked by clicking the **heart** that appears to the left when you hover the mouse over a preset name. Later, click on the heart icon at the top to put all of your favorites at the top of the Results list.



7.3.3.1. Shuffle Presets

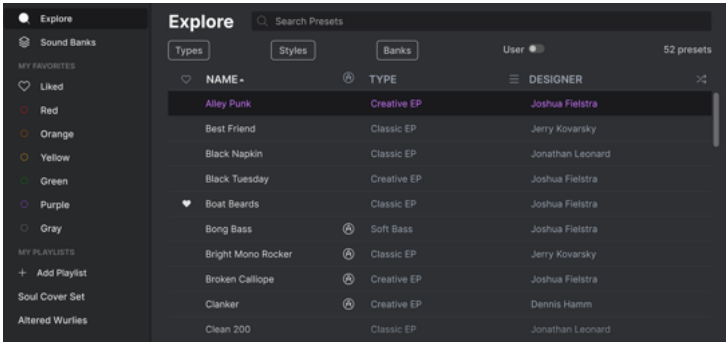
Clicking the "crossed arrows" button randomly reorders the Presets. This can be useful for finding something you like when your search results are a long list that takes time to scroll through – it might bring a killer Preset to the top. Shuffle mode is a toggle, so clicking it again will restore your search results to however they were previously sorted (by name, type, etc.).

Use as many of the sorting and filtering features as you need and you will find the exact sound you want every time.

7.4. Sidebar

The leftmost section of the Preset Browser determines what is displayed in the Search and Results [p.65] section.

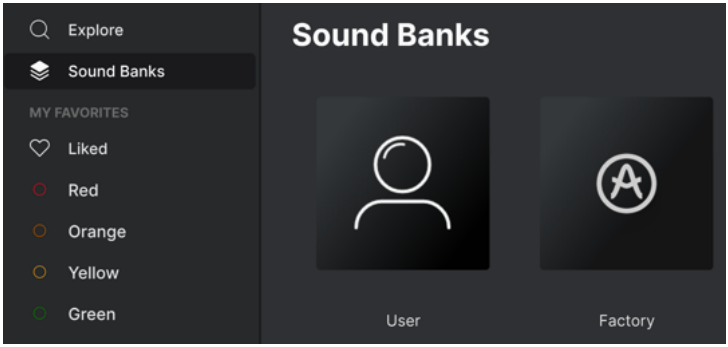
The topmost option is **Explore**:



The **Explore** section is the default, letting you search the current bank of Presets loaded into Wurli V3 as we did in the previous section.

7.4.1. Sound Banks

Clicking **Sound Banks** brings up a window with all of the currently available Sound Banks, starting with the Factory bank. User banks appear next to it, and can be deleted, renamed, or exported by right-clicking them. You can also add a user image in PNG format to further personalize your user banks.

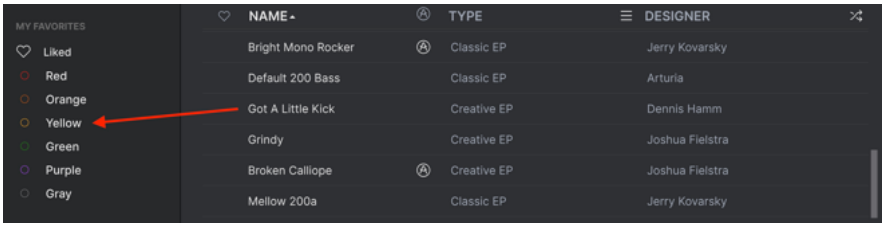


7.4.2. My Favorites

The middle part of the Sidebar has a menu called **My Favorites**, which allows you to color-code certain groups of Presets for easy access. It also includes the **Liked** group, so you can quickly find Presets you've marked with the heart icon.

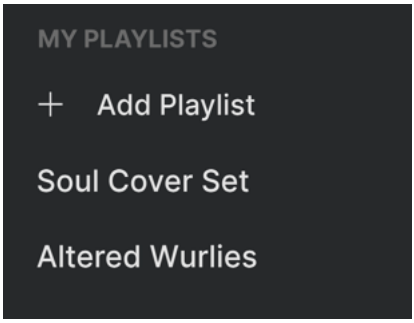
To decide which colors you'd like to display, hover over **My Favorites** and click **Edit**. Then use the toggle switches to select which colors you'd like to see or hide, and then click **Done**.

Please note that you can also rename these favorites as desired. Just right-click on the color name in the sidebar and enter a new name.



To add Presets to a particular set of Favorites, simply drag-and-drop them over the appropriate color, or right-click the Preset name and select the color. Then click on the color itself to display your grouping.

7.4.3. My Playlists

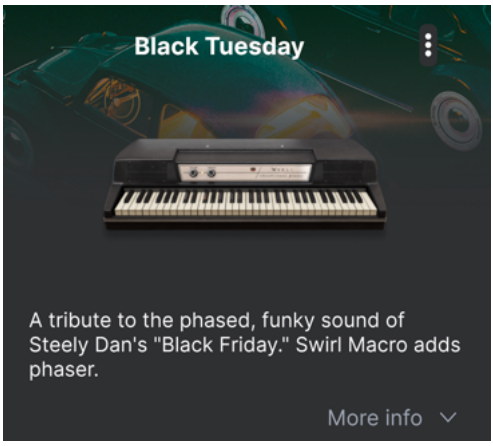


The bottom part of the sidebar displays any Playlists you have created or imported. Playlists are a very powerful management tool for set lists for gigs. Learn more about them in the Playlists section [p.76] below.

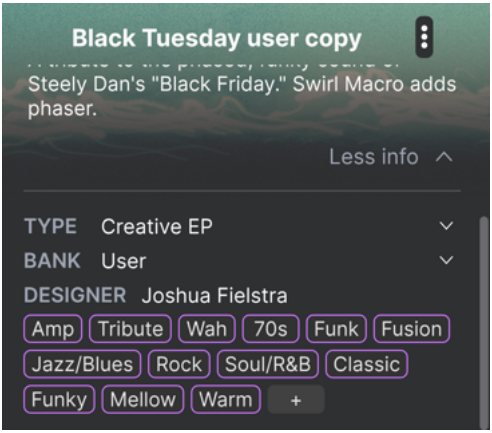
> ! If you don't see anything here, it is because you haven't created any Playlists yet. Head to the Playlists [p.76] section at the end of this chapter to find out how.

7.5. Preset Info Section

The right side of the browser window gives a brief description of each Preset.



For user Presets (not factory Presets) you can edit this description by simply clicking in it and typing. Then, click "More info" at the bottom right of this screen to open up an area you can scroll down to:

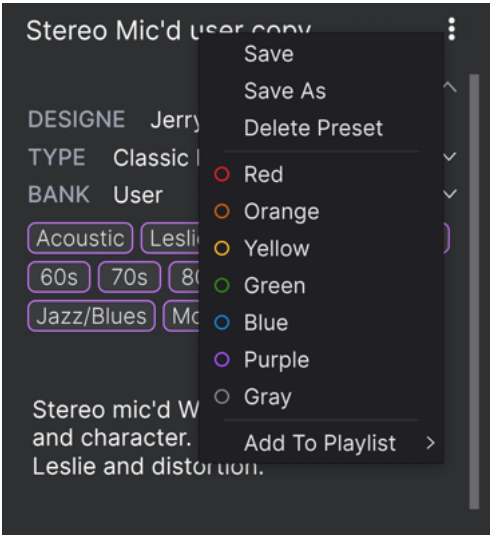


Here, you can change the Type and Bank via pull-down menus, enter a Designer name, and click the + sign to add or delete Styles. When you click this icon, the results area is occupied by an edit list in which you can select and deselect Styles, Genres, and Characteristics:

Notice that each group has its own + icon at the end. Clicking this lets you create your own Styles, Genres, or Characteristics. Click the **X** at upper right when finished editing.

Type and Style changes you make here are reflected in searches. For example, if you remove the "Acoustic" Style tag and then save that Preset, it will not show up in future searches for Acoustic sounds. Again, all of this is possible only with user Presets, not factory ones.

Clicking on the three-dots icon at the top right pops up a management menu for the Preset.

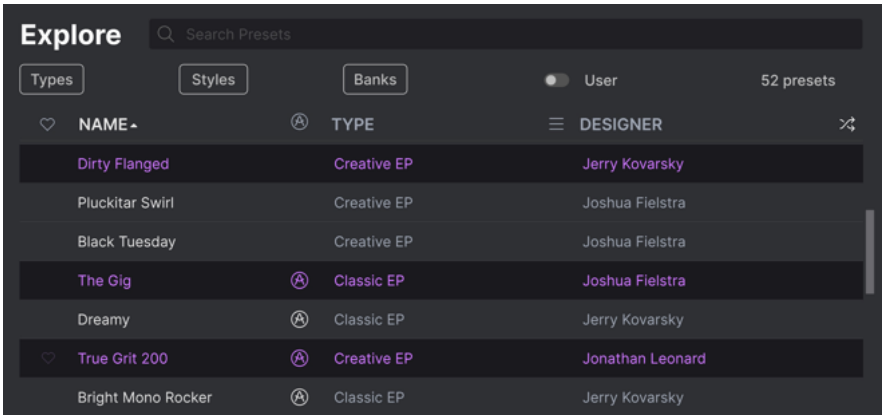


Options include *Save*, *Save As*, *Delete Preset*, and *Add to Playlist*, complete with an option to create a new Playlist [p.76]. (You cannot overwrite or delete factory Presets, so the Save and Delete options appear for user Presets only.)

The dots with color icons allow you to add the Preset to a particular group of Favorites, which is described above.

7.5.1. Editing info for multiple presets

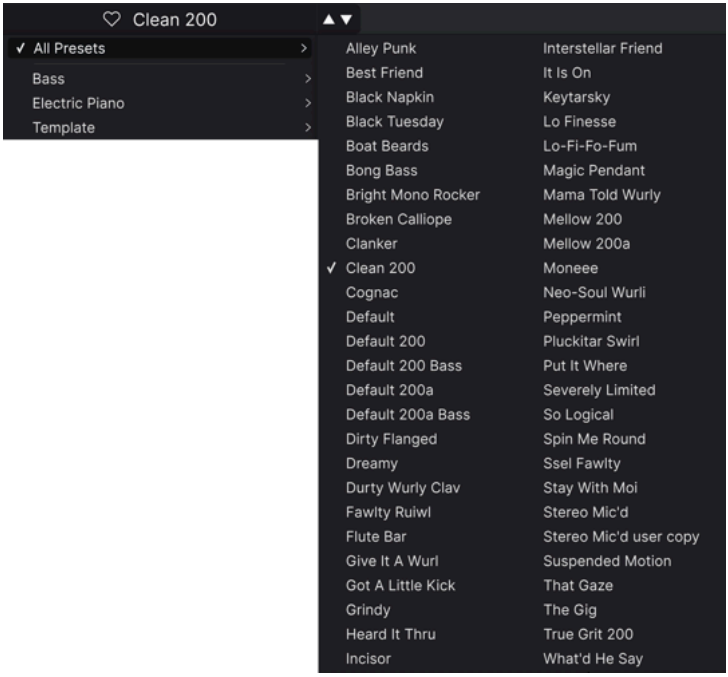
If you'd like to move several Presets to a different bank while preparing for a performance, or enter a single comment for several Presets at the same time, it's easy to do. Simply hold command (macOS) or ctrl (Windows) and click the names of the Presets you want to change in the Results list. Then enter the comments, change the Bank or Type, etc., and save the Preset.



♪ If you want to alter the information for a Factory Preset you must first use the *Save As* command to re-save it as a User Preset.

7.6. Preset selection: other methods

Click on the Preset name in the center of the Upper Toolbar to bring up a drop-down menu. The first option in this menu is *All*, and it brings up a submenu of literally every Preset in the current bank, in alphabetical order.



Below this are options that correspond to the Type tags. Each of these brings up a submenu of all Presets of its Type.

If you have an active search by Type and/or Style, the up/down arrows to the right of the Preset name will step through only the results that conform to your search.

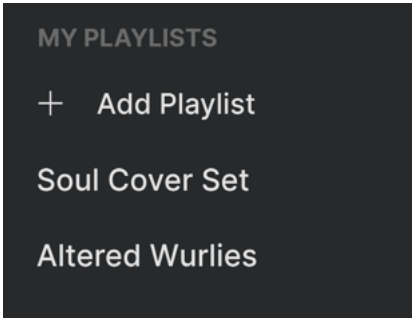
However, *All Presets* in the drop-down menu always ignores those criteria. Likewise for the Type choices below the line – they always include all Presets within that Type.

7.7. Macro Knobs

These are simply larger duplicates of the Macro knobs in the Lower Toolbar and on the Macros tab. Move one, and its counterparts in Side Panel and Lower Toolbar move with it.

Assigning parameters to Macros is covered in the Macro Tab [p.62] section of Chapter 6.

7.8. Playlists



Playlists offer a powerful way to collect Presets into different groups for different purposes, such as a set list for a particular performance or a batch of Presets related to a particular studio project. Within a Playlist, Presets can be reordered and grouped into Songs, a handy addition to a set list.

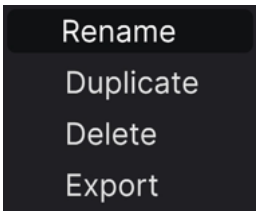
The subheading *My Playlists* appears under **My Favorites** in the Sidebar. When you first start using Wurli V3, you'll have no Playlists yet – but it's very easy to create one!

7.8.1. Create your first Playlist

To get started, click **Add Playlist**. The following pop-up will appear, prompting you to name your Playlist.

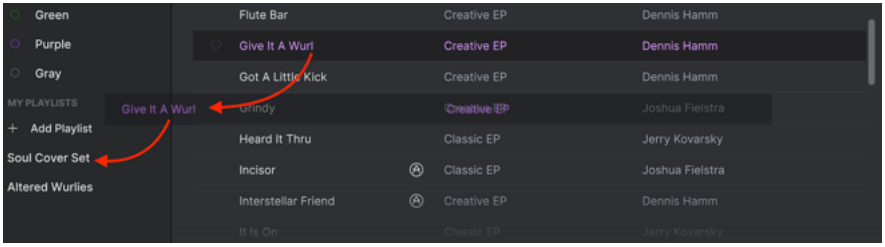
Once you've entered a name, that Playlist will now appear in the **My Playlists** section of the sidebar. You can create as many Playlists as you like.

Right-clicking on a Playlist name will pop up a set of options – you can *Rename*, *Duplicate*, *Delete*, or *Export* the Playlist to your computer, as a file with the ".aplst" extension.



7.8.2. Add a Preset

You can use all of the options in the Explore window to locate Presets for your Playlist. When you find a desired Preset, click-drag it onto the Playlist name.

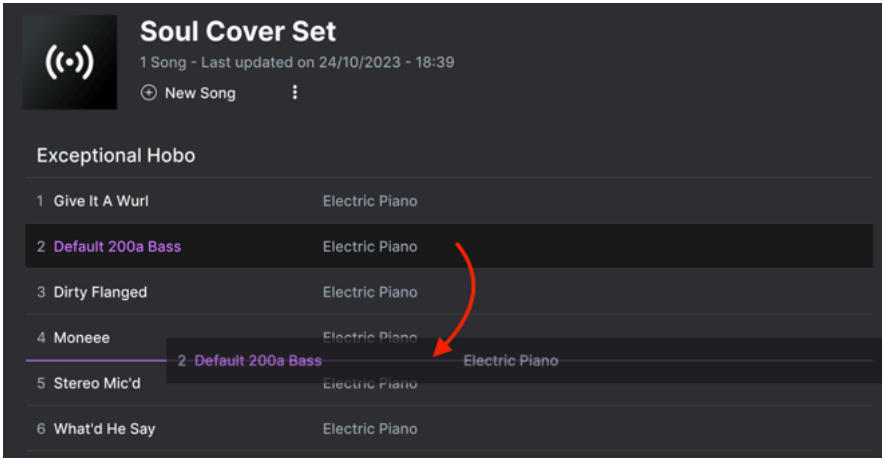


Dragging a preset to a Playlist

To view the contents of a Playlist, click on the Playlist name.

7.8.3. Re-order the Presets

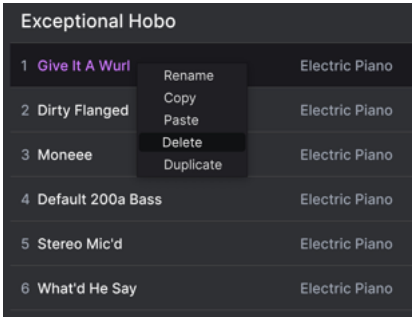
Presets may be reorganized within a Playlist. For example, to move a Preset from slot 3 to slot 4, drag and drop the Preset to the desired location.



This will move other Presets up in the list to accommodate the new location of the Preset you just moved. A bright purple line will briefly appear at the "insert point."

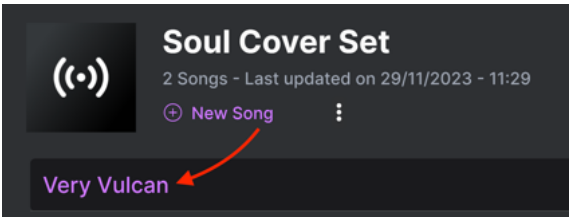
7.8.4. Remove a Preset

To delete a Preset from a playlist, select the Playlist, then right-click on the Presets name in the Results Pane to bring up a pop-up menu. This will only delete the Preset *from the Playlist*, not delete the Preset from the Wurli V3 browser!



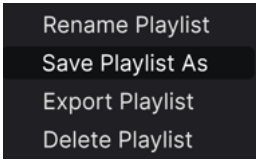
This menu also includes **Rename**, **Copy**, **Paste**, and **Duplicate** options. More management options are described below.

7.8.5. Song and Playlist Management



Any Playlist can be further divided into Songs, which is ideal for managing set lists for a live show. The **New Song** button creates a new Song at the bottom of the Playlist. You can name it, then click and drag it to position it in the Playlist and add Presets to it in the desired order. You can have multiple songs in each Playlist, and when dragging a song by its title, it brings all its Playlists with it – in order!

To access other Playlist management options, click on the three-dots icon next to the **New Song** button. This brings up a pull-down menu:



- **Rename Playlist**: Renames the current Playlist without making a copy.
- **Save Playlist As**: Creates a duplicate of the playlist with "Copy" appended to the name. You can change the name before saving.
- **Export Playlist**: Exports your Playlist to a location on your computer, with the filename extension "aplst."
- **Delete Playlist**: Deletes the current Playlist but does *not* delete any of the Presets in it.

That's all there is to the Preset Browser! We hope you will enjoy many hours exploring the factory Presets and creating your own.

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