USER MANUAL

B-3 V

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Direction

Frédéric Brun
Kévin Molcard

Development

Baptiste Aubry
Stefano D'Angelo
Corentin Comte
Baptiste Le Goff
Pierre-Lin Laneyrie
Valentin Lepetit
Samuel Limier
Germain Marzin,
Mathieu Nocenti
Pierre Pfister
Benjamin Renard

Design

Glen Darcey
Shaun Ellwood
Morgan Perrier
Sébastien Rochard
Greg Vezon

Sound Design

Christian Laffitte
Paolo Apollo Negri
Nori Ubukata

Manual

Hollin Jones
Tomoya Fukuchi
Léonard Sauget
Jason Valax

Special Thanks

Chuck Capsis
Thierry Chatelain
Koshdukai
Theo Niessink
George Ware

11, chemin de la Dhuy
38240 Meylan
FRANCE
http://www.arturia.com

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1 INTRODUCTION

Congratulations on purchasing our virtual organ, B-3 V. We are confident that it will give you many hours of playing and producing pleasure.

B-3 V is the newest addition to our extensive family of instruments that recreate hard-to-find classic keyboards and synths. In addition to bringing the authentic and instantly recognisable sound of the tonewheel organ to your studio, we have added some 21st century features that were never available in the original!

The instrument upon which this virtual model is based was a staple of popular music from its creation in the 1930s and remains popular today for its unique character. Since finding and maintaining a real tonewheel organ is both difficult and costly, we're confident B-3 V will bring you all of the benefits with none of the hassle!

1.1 What is B-3 V?

B-3 V is a recreation of a classic tonewheel organ and rotary speaker, though it adds a number of additional features that were never available on the original instrument.

The original instrument works by having 91 tonewheels, each rotating near an electromagnetic pickup. Each key is connected to a fixed set of tonewheel outputs and the drawbar settings control how these are mixed together before being sent to the preamplifier.

The tube preamp shapes the sound a little bit further (filtering and distortion), also factoring in the position of the expression pedal which acts not only as a volume control but affects the frequency response of the preamp as well, and finally the output of the preamp is connected to the speaker.

The speaker being simulated is a rotary model. It contains a power amplifier that drives a rotating horn and a stationary woofer firing into a rotating drum reflector. The speaker actually determines many interesting spatial and frequency shifting effects in addition to the sound shaping effects of common loudspeakers.

1.2 History of the original instrument

The tonewheel organ was first released in the 1930s and various models were produced over the following 40 years. The different models generated sound by creating an electric current by rotating a metal tonewheel near an electromagnetic pickup, then amplifying that signal.

Originally aimed at churches as a more compact and affordable alternative to conventional pipe organs, the original organs found favour first with gospel

musicians in churches and fairly quickly after that, with jazz musicians who loved their unique sound. This was thanks to features like the organ's drawbars and various tone controls as well as the rotating speaker that sounded like nothing else around.

It would go on to play a central role in the rock music of the 1970s and even in pop, all the while remaining a staple instrument of jazz, blues and gospel. The fact that a lot of clubs would buy one and leave it "in residence" on the stage meant that they got used more frequently than if musicians had to bring their own keyboards. Smaller than a piano, the versatility of the organ's sound meant it could fit in with many different kinds of performances.

1.2.1 Notable users

Jimmy Smith	Joey DeFrancesco
John Medeski	Rick Wakeman
"Brother" Jack McDuff	Tyrone Downie (with the Wailers)
Keith Emerson	James Taylor
Booker T Jones	Cory Henry
Procol Harum	Rhoda Scott
Steve Winwood	Jon Lord
Gregg Allman	George Duke

1.3 What does B-3 V add to the original?

A real tonewheel organ and rotary speaker are not only physically very large and difficult to move around but also expensive to locate, purchase and maintain. So software is the ideal way to get the sound without all the hassle. In addition to recreating the original tonewheels complete with the imperfections that made them sound so unique, B-3 V adds a number of new features.

- MIDI control of many parameters
- Five insert effect slots
- A reverb unit
- A Drawbar modulator section
- Advanced control over the rotary speaker behaviour and speed
- Attack and release controls for upper and lower manuals
- Control over key click volume and background noise
- Drawbar and tonewheel leakage controls

2 ACTIVATION AND FIRST START

2.1 Register and Activate

B-3 V works on computers equipped with Windows 7 or later and Mac OS X 10.8 or later. You can use the stand-alone version or use B-3 V as an Audio Units, AAX, VST2 or VST3 instrument.

Once B-3 V has been installed, the next step is to register the software.

The registration process will require you to enter the serial number and the unlock code you received with the product.

In order to proceed, go to this web page and follow the instructions:

http://www.arturia.com/register

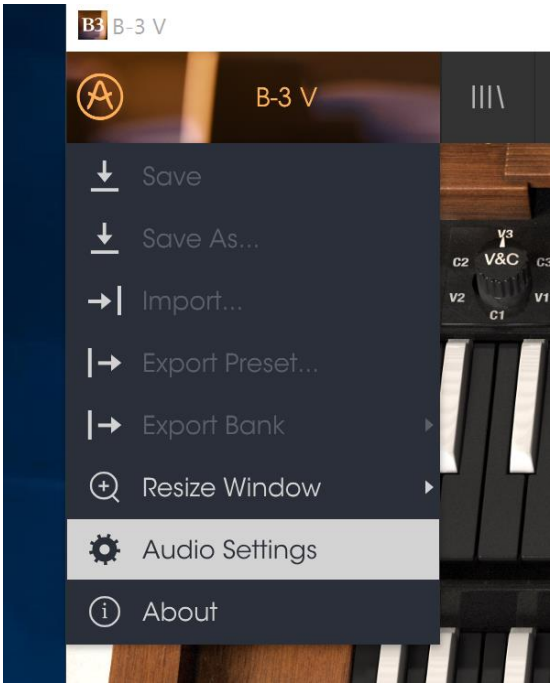
Note: If you don't have an Arturia account yet, you will need to create one. The process is quick, but it does require that you can access your email address during the registration process.

Once you have acquired an Arturia account you will be able to register the product.

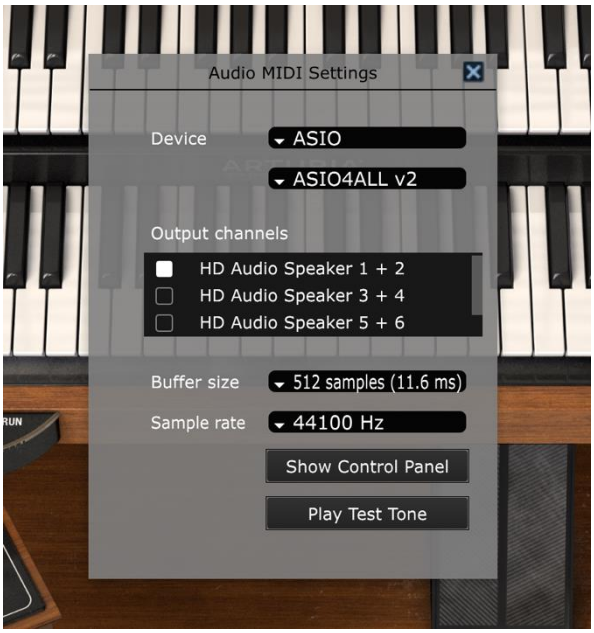
2.2 Initial setup

2.2.1 Audio and MIDI settings: Windows

At the top left of the B-3 V application is a pull-down menu. It contains various setup options. Initially you will need to go to the menu and choose the Audio Settings option to get sound and MIDI flowing in and out.



You will then see the Audio MIDI settings window. This works in the same way on both Windows and Mac OS X, although the names of the devices available to you will depend on the hardware that you are using.



The Audio MIDI Settings on Windows

Starting from the top you have the following options

- Device lets you choose which audio driver you want to use to route sound out of the instrument. This might be your computer's own driver like Windows Audio, or an ASIO driver. The name of your hardware interface may appear in this field.

- Output Channels lets you select which of the available outputs will be used to route audio out. If you only have two outputs, only two will appear as options. 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. A smaller buffer means lower latency between pressing a key and hearing the note. A larger buffer means a lower CPU load as the computer has more time to think, but can result in higher latency. Find the optimum buffer size for your system. A fast, modern computer should easily be able to operate at 256 or 128 sample buffer size without creating pops or clicks in the sound. If you are getting clicks, try raising the buffer a little. The latency is displayed on the right hand side of this menu.

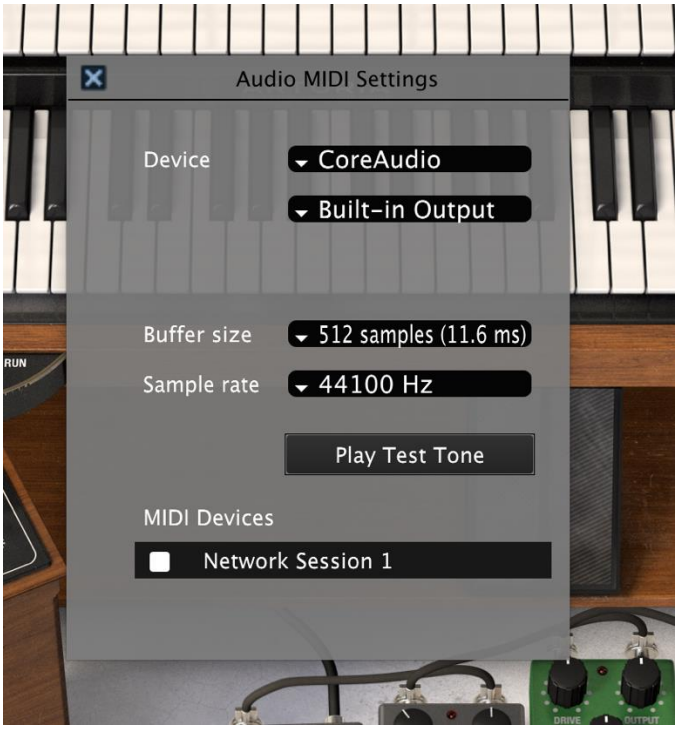
- The Sample Rate menu lets you set the sample rate at which audio is sent out of the instrument. The options here will depend on the capability of your audio interface hardware though even most computers' own hardware can operate at up to 48kHz which is perfectly fine. Higher sample rates use more CPU power so unless you have a good reason to go up to 96kHz, then 44.1 or 48 are usually fine. The Show Control Panel button here will jump to the system control panel for whatever audio device is selected.

- Play Test Tone helps you to troubleshoot audio issues by checking that sound can be heard through the correct device.

- Your connected MIDI devices will appear in the MIDI Devices area when they are available. Click the check box to accept MIDI from the device you want to use to trigger the instrument. In standalone mode, B-3 V listens for all MIDI channels so there's no need to specify a channel. You can specify more than one MIDI device at once.

2.2.2 Audio and MIDI settings: Mac OS X

The process is very similar to setting up for Windows and the menu is accessed in the same way. The difference here is that OS X uses CoreAudio to handle audio routing and within that, your audio device will be available in the second dropdown menu. Apart from that, the options work the same way as described above in the Windows section.



The Mac OS X Audio MIDI Settings window

2.2.3 Using B-3 V in plug-in mode

B-3 V comes in VST, AU and AAX plug-in formats for use in all major DAW software like Cubase, Logic, Pro Tools and so on. You can load it as a plug-in instrument and its interface and settings work in the same way as in standalone mode, with a couple of differences.

- The instrument will now sync to your DAW's host tempo, where tempo is a factor like in the tremolo and repeat controls, if you activate the Sync buttons on the organ.
- You can automate numerous parameters using your DAW's automation system.
- You can use more than one instance of B-3 V in a DAW project. In standalone mode you can only use one at once.
- You can route B-3 V's audio outputs more creatively inside your DAW using the DAW's own audio routing system.

3 USER INTERFACE

B-3 V has many great features, and in this chapter we'll make sure you know what each one does. We think you'll be amazed at how quickly B-3 V provides you with sounds that are inspiring and perfect for all sorts of projects.

It's also really easy to work with: just a few tweaks here and there and suddenly you're in a new world of sound. That will always be the main focus of every Arturia product: unleashing your creativity while remaining easy to use.

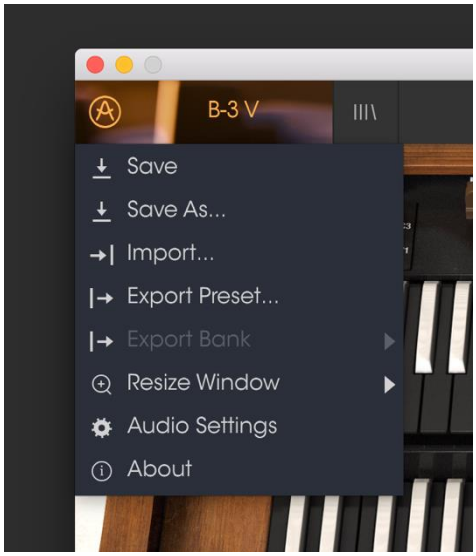
3.1 The virtual keyboard

B-3 V has two keyboards, one upper and one lower just like an original tonewheel organ. These correspond to the left hand (upper) and right hand (lower) sets of drawbars located above the keyboard.

The first octave of each keyboard (the notes with their colours reversed) does not actually generate sound but rather acts as a preset selector for a fixed set of presets, like in a real organ. Pressing one of these notes will call up a specific drawbar configuration but will not change any of the other settings on the organ. These presets are fixed though you can of course make edits to the drawbars and then save a new preset in the B-3 V's own preset browser.

3.2 Toolbar

The toolbar that runs along the top edge of the instrument both in standalone and plug-in mode provides access to many useful features. Let's look at them in detail. The first seven of these options can be found by clicking on the B-3 V section at the very top left hand corner of the instrument window.



3.2.1 Save preset

The first option lets you save a preset. If you select this you are presented with a window where you can enter information about the preset. As well as naming it you can enter the author name, select a bank and type and select some tags that describe the sound. This information can be read by the preset browser and is useful for searching presets later. You can also enter freeform text comments in the Comments field which is handy for providing a more detailed description.

3.2.2 Save preset as

This works in the same way as the Save command, but lets you save a copy of the preset instead of saving over the original. It's useful for creating variations on patches but still keeping individual copies of each one.

3.2.3 Import preset

This command lets you import a preset file. Presets are stored in the .b3x format.

3.2.4 Export preset

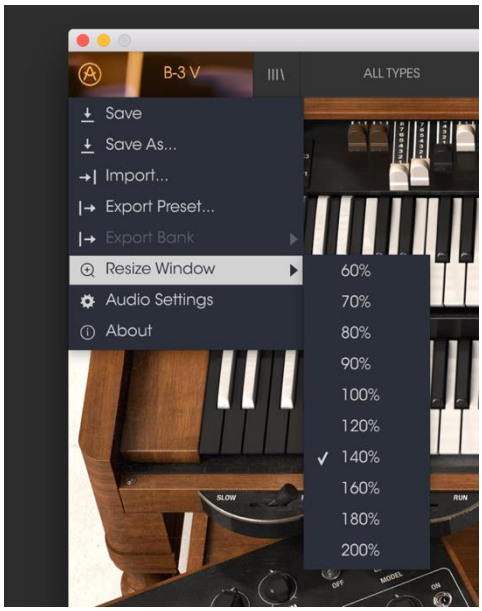
You can export any preset as a file using this command.

3.2.5 Export bank

This option can be used to export the entire bank of sounds from the instrument which is useful for backing up or sharing presets.

3.2.6 Resize window options

B-3 V's window can be resized from 60% to 200% of its original size without any visual artefacting. On a smaller screen such as a laptop you might want to reduce the interface size so it doesn't dominate the display. On a larger screen or a second monitor you can increase its size to get a better view of the controls. The controls all work the same at any zoom level but the smaller ones can be harder to see if you have shrunk the window down.



3.2.7 Audio settings

Here you manage the way the instrument transmits sound and receives MIDI. See section 2.2 of the manual for full details on this.

3.2.8 Preset browsing quick look

The Preset browser is invoked by clicking on the browser button which contains four vertical lines. See section 3.3 of the manual for full details on this. The All Types, name field and left / right arrows in the toolbar all deal with preset selection.

3.2.9 Voice Modulator and Advanced section.

This button opens the Voice Modulator and Advanced sections. See section 3.5 for more on this.

3.2.10 MIDI learn assignment

The MIDI plug icon at the right hand end of the toolbar places the instrument into MIDI learn mode. Parameters that can be assigned to MIDI controls will be

shown in purple and the idea is that you map physical MIDI dials, faders or pedals from your hardware units like Beatstep or Keystep to specific destinations inside the instrument. A typical example might be to map a real expression pedal to the virtual swell pedal, or buttons on a controller to the tone select switches so you can change the sound from your hardware keyboard.

B-3 V in MIDI learn mode

If you click on a purple area you'll put that control into learning mode. Move a physical dial or fader and the target goes red to show that a link has been made between the hardware control and the software parameter. There's a popup window that displays which two things are being linked and a button to unassign the two from each other.

There's also a minimum and maximum value slider that you can use to restrict the parameter change range to something other than 0%-100%. For example you might want the amp's master volume to be controllable via hardware from 30% to 90%. If you made this setting (Min set to 0.30 and Max set to 0.90), your physical dial would not alter the volume any lower than 30% or any higher than 90% no matter how far you turned it. This is very useful for making sure you can't accidentally make the sound too quiet or too loud when performing.

The MIDI Control Setup window

In the case of switches which only have two positions (up or down) you can still use minimum and maximum values in the MIDI learn popup window, but in these cases the behaviour is a little different.

It's about what values the controller sends and whether those are high or low enough to trigger the state change in a switch - which is always 0.5 or in the case of the three stage switch, 33.3/33.3/33.3 (or near enough). You can set the minimum and maximum values of the hardware MIDI control but whether it affects the software parameter depends on whether it crosses the threshold required to make the change.

Let's take an example. We want to control a 2-position switch with a hardware fader. The fader value goes from 0.0 to 1.0 and the switch state will always change when 0.5 is crossed.

The min value in the MIDI learn window corresponds with the value that will be sent (from the controller to the engine) when the fader is at its min position (same goes for the max value).

To explain this, you can try these 5 use cases:

- Set min value to 0.0 and max value to 0.49 => the switch cannot be switched on because the 0.5 value can never be crossed
- Set min value to 0.51 and max value to 1.0 => the switch cannot be switched off because the 0.5 value can never be crossed
- Set min value to 0.0 and max value to 1.0 => the switch state changes when the fader crosses its central position
- Set min value to 0.49 and max value to 1.0 => the switch state changes when the fader is very low
- Set min value to 0.0 and max value to 0.51 => the switch state changes when the fader is very high

The same goes for the three-stage switches, where instead of 0.5 being the state change value, it is divided into three thirds.

In the case of drawbars which have nine different positions the same rule applies but instead of splitting the controller range into two or three it is split into nine.

The final option in this window is a button labelled "Is relative". If you switch this on for any MIDI assignment, the movement you make with the physical control (such as a knob) will pick up the software parameter at its current setting and change if from there rather than being an "absolute" control and snapping it back to zero as soon as you start to move it. This can be a good idea when assigning controls to things like volume or effect pedal controls, since you won't usually want them to jump massively out of their current setting as soon as you start to modify them.

3.2.10.1 Reserved MIDI CC numbers

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

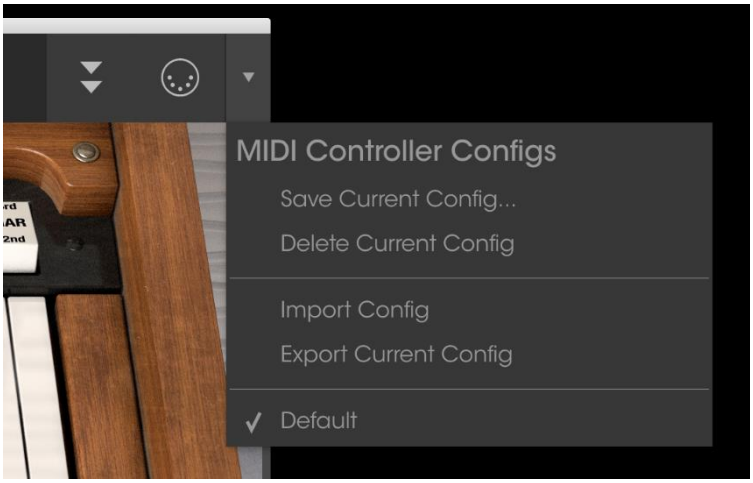
- Ctrl All Notes Off (CC #123)

All other MIDI CC numbers may be used to control any assignable parameter in B-3 V.

3.2.11 MIDI controller configuration

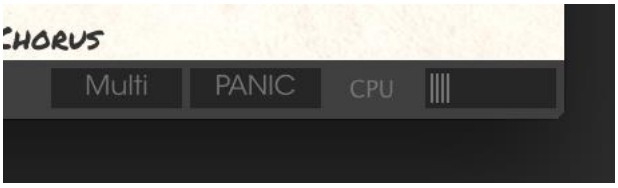
There's a small arrow at the far right hand side of the toolbar that deals with MIDI controller configurations. This allows you to manage different sets of MIDI maps that you may have set up for controlling the instrument's parameters from MIDI hardware. You can copy the current MIDI assignment setup or delete it, import a configuration file or export the currently active one. This can be used to quickly set up different hardware MIDI keyboards or controllers with B-

3 V without having to build all the assignments from scratch each time you swap hardware.

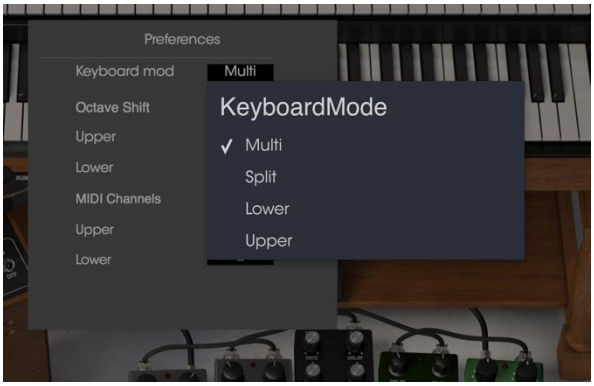


3.2.12 The lower toolbar

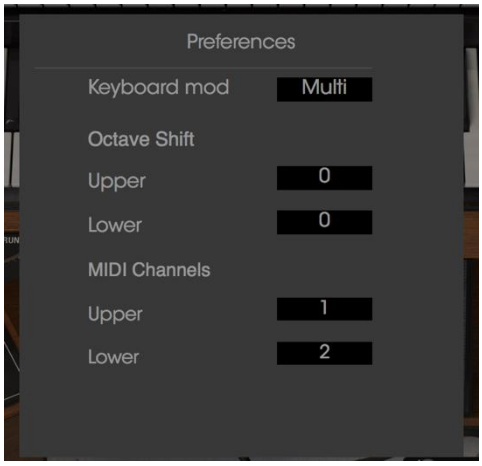
At the right hand side of the lower toolbar are three small items. The Panic button can be pressed to reset all MIDI signal in the event of stuck notes, and stop sounds being generated. The CPU meter is used to monitor how much of your computer's CPU is being used by the instrument. The Keyboard preferences button opens a new window.



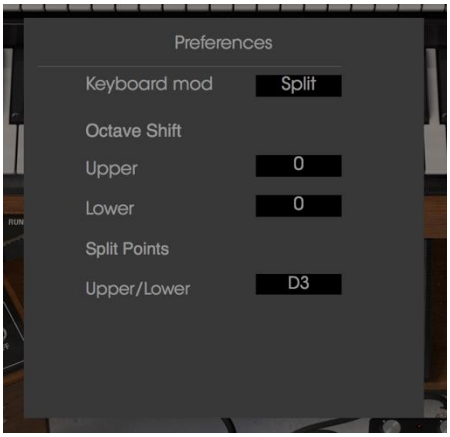
3.2.13 The Keyboard Preferences window



Since B-3 V has two keyboards which generate different tones, we have provided a way to choose how your MIDI keyboard will control the instrument. It provides the flexibility to play both manuals with one keyboard or to use two MIDI keyboards. Here's how it works.



In Multi mode, you can assign MIDI channels to each manual. A typical example might be to connect one MIDI keyboard to the upper manual on MIDI channel 1, and a second one to the lower manual on channel 2, giving you the full range of notes at your fingertips. Or you could split your controller into two zones, assign each one a MIDI channel and achieve a similar result. You can also change the octave of either manual up or down here, which is useful for things like assigning a smaller MIDI keyboard to control a bass part.

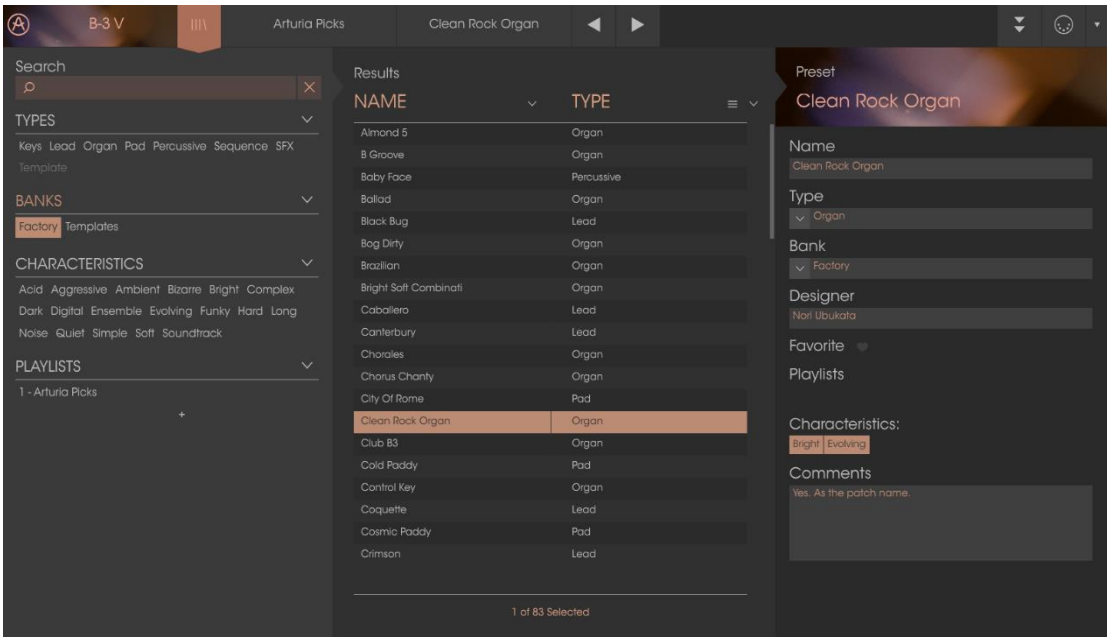


Split mode also allows octave shifting but here you have a single MIDI channel from one MIDI keyboard coming in, and you define which note on that keyboard is the split point at which the MIDI keyboard changes from controlling one manual to controlling the other.

The Lower and Upper options also allow octave shifting but these modes simply assign your whole MIDI keyboard to play either the lower or upper manuals.

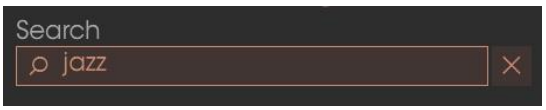
3.3 The Preset Browser

The preset browser is how you search, load and manage sounds in B-3 V. It has a couple of different views but they all access the same banks of presets. Click on the browser button (three lines and a slanted line) to access the search view.



3.3.1 Searching presets

The Search screen has a number of sections. By clicking on the Search field at the top left you can quickly enter any search term to filter the preset list by patch name. The Results column is updated to show the results of your search. Press the X button in the search field to clear the search.

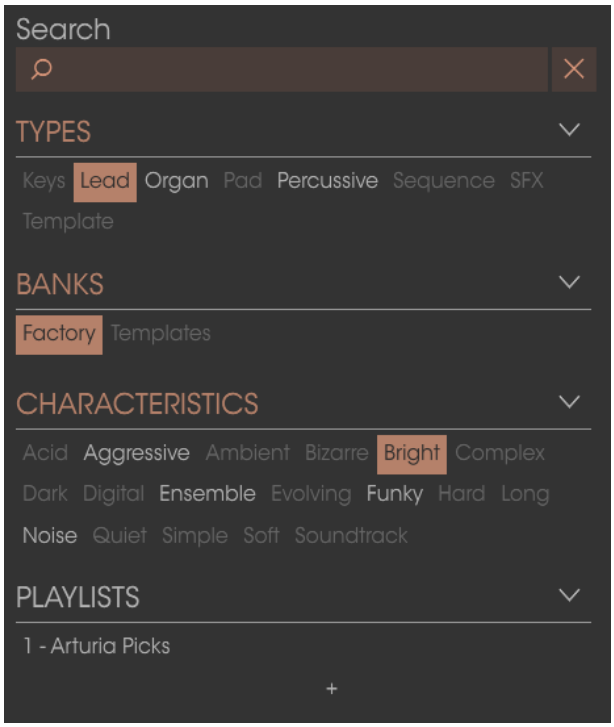


3.3.2 Filtering using tags

You can also search using different tags. So for example by clicking on the Lead and Organ options in the Types field you can show only presets that match those tags. The tag fields can be shown or hidden by using the small down arrow buttons in their title fields. Results columns can be sorted by clicking the same arrow button in their own section.

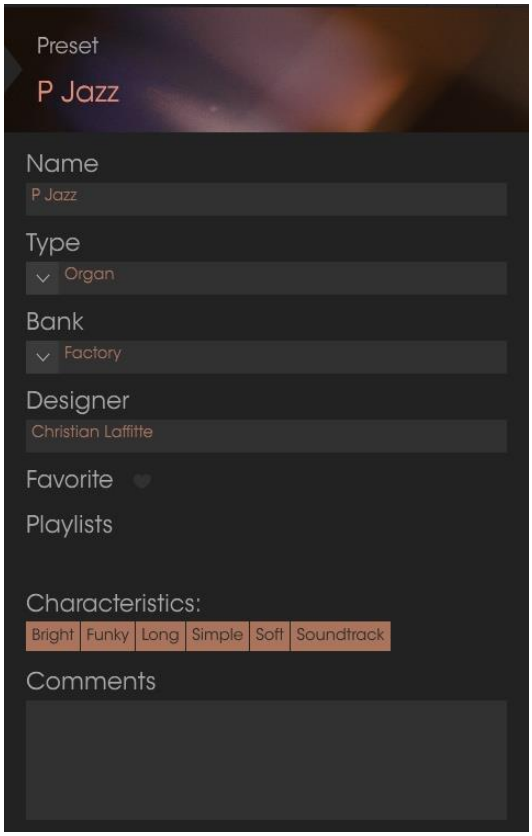
You can use multiple search fields to perform narrower searches. So by entering a text search and also specifying type, bank and characteristics options you could see only the presets that match those exact criteria. Deselect any tag in any area to remove that criteria and widen the search without having to go back and start again. Using "Ctrl + click" (Windows) or "Cmd + click" (Mac) will allow you to select multiple elements in the same area.

The second Results column can be switched to show Type, Sound Designer, Favorite or Bank tags depending on how you like to search. Click on its options menu button just next to its sort arrow.



3.3.3 The preset Info section

The Preset Info column on the right of the search field shows you information about any preset. If you want to make changes to a factory preset such as changing its name, adding comments or tags, you have to re-save it as a user preset using the Save As command in the main menu. When you have done this, the Info section will gain Edit and Delete buttons that you can use to change the information stored inside the preset. Factory presets can't be overwritten.

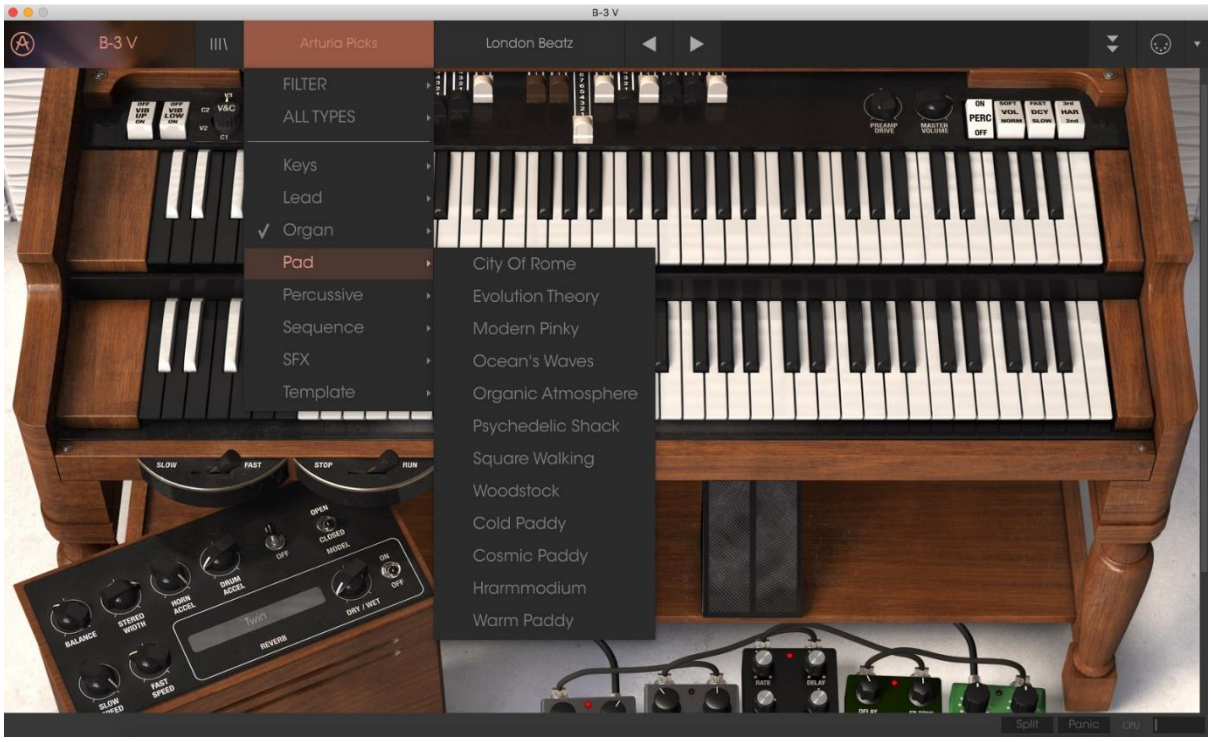


3.3.4 The second preset view

The menu next to the Search menu shows you a different view. The first option in this menu is called Filter and will hold a record of whatever you have currently searched for in the Search field. So if you searched for Jazz in the main search area, those results will appear here.

Selecting the All Types option in this column on the other hand will provide a list of all patches. The Categories shown beneath group sounds based on their Type like keys, pads, bass and so on.

Clicking on the name field in the centre of the toolbar will show you a list of all available presets and will also change based on what you have entered in the Search field. So again if you have searched for "jazz", this shortcut menu will only show you patches that match that tag. The left and right arrows in the toolbar cycle up and down through the preset list: either the full list, or the filtered list if you have entered a search term.



3.3.5 Playlists

In the lower left corner of the Preset Browser window is a feature titled Playlists. This is used 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.

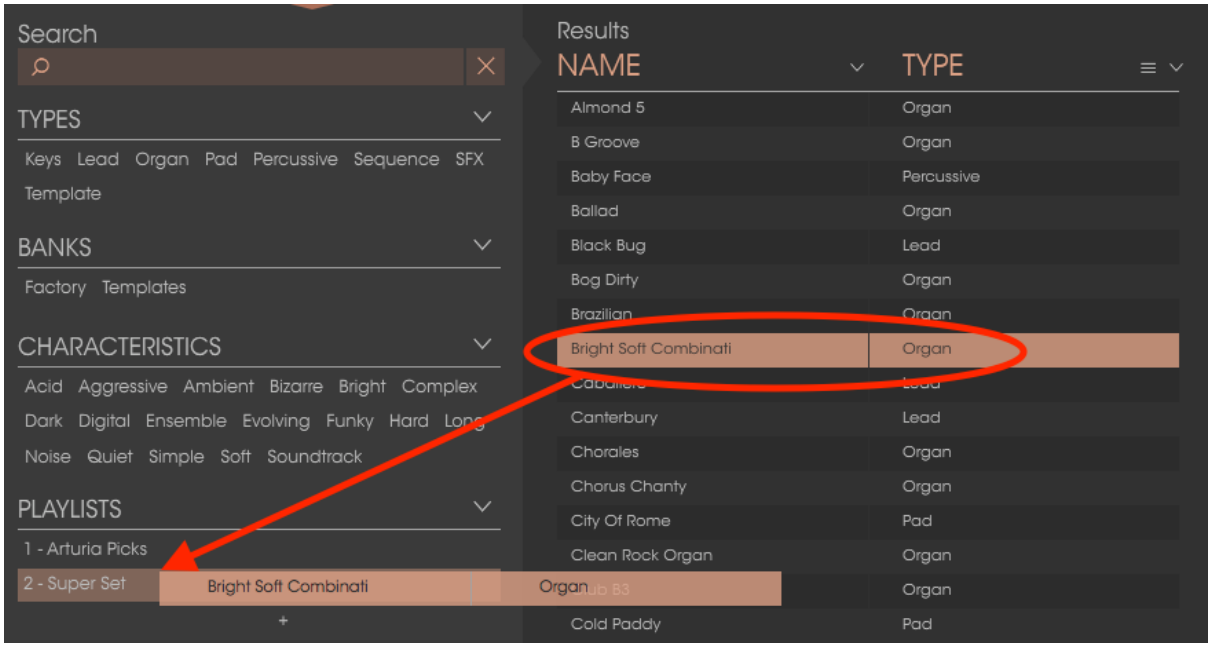
3.3.5.1 Add a playlist

To create a playlist, click the plus sign at the bottom:

Give the playlist a name and it will appear in the Playlists menu. You can rename the playlist at any time; just click the pencil icon at the end of its row.

3.3.5.2 Add a preset

You can use all of the options in the Search window to locate the presets you want to have in your playlist. Once you have found the right preset, click and drag it onto the playlist name.

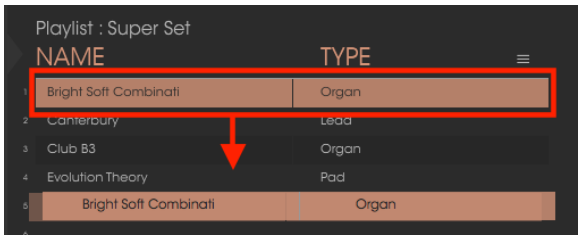


Click and drag from the Search Results list onto one of the playlists

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

3.3.5.3 Re-order the presets

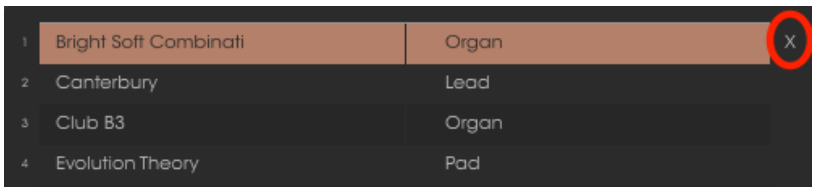
Presets may be reorganized within a playlist. For example, to move a preset from slot 2 to slot 4, drag and drop the preset to the desired location.



This will move the preset into the new location.

3.3.5.4 Remove a preset

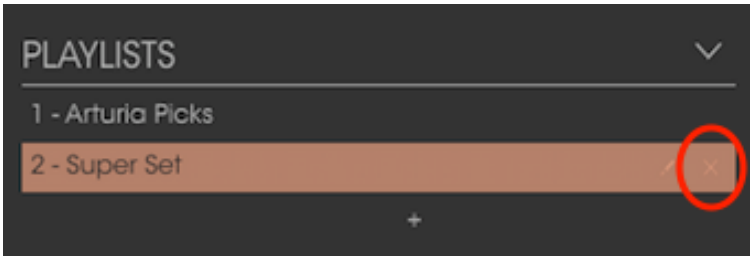
To delete a preset from a playlist, click the x at the end of the preset row.



Click the X to remove a preset from a playlist

3.3.5.5 *Delete a playlist*

To delete a playlist, click the x at the end of the playlist row.



Click the X to delete a playlist

3.4 Front panel

3.4.1 The vibrato switches

These switches let you toggle vibrato on or off independently for the upper and lower manuals.

3.4.2 The Vibrato and Chorus mode knob

This knob lets you select between three different chorus and three different vibrato types that will be applied to the manuals when their vibrato switches are activated. They essentially represent three different depths for each kind of effect. So C1 is a light chorus and C3 is more intense. Similarly, V1 is light vibrato and V3 is deeper. The three settings could be thought of as Small, Wide and Full.

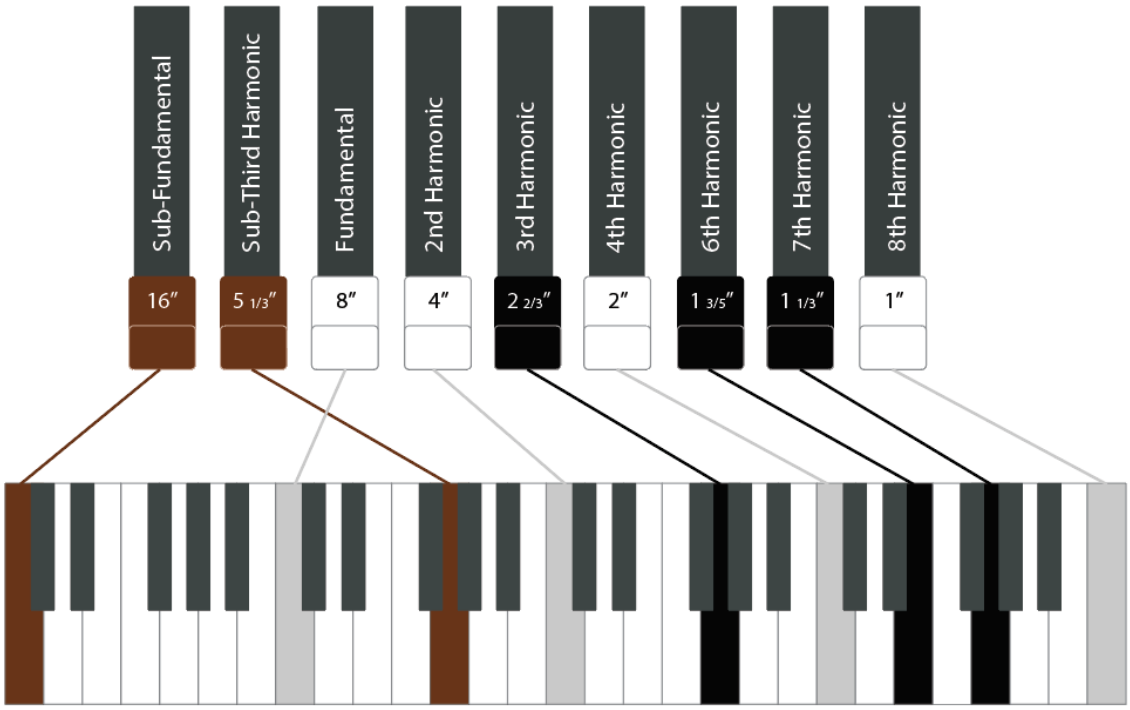
3.4.3 The Drawbars

The upper and lower manual drawbars

Every sound or note is made up of a fundamental and harmonics. The fundamental can be considered as the "root" of the sound and harmonics are higher frequencies you can hear, which add some shape to the sound.

The drawbars let you shape your organ sound by mixing the fundamental and harmonics.

B-3 V has nine drawbars for each manual (upper and lower) for a total of 18. Pulling a drawbar out will increase the volume of that tonewheel in steps starting at zero (no sound) all the way to 8 (full volume). Each set of nine drawbars is organised chromatically, meaning the bars on the left control lower tones and the ones on the right are much higher.



The drawbar fundamentals and harmonics

Think of the leftmost two (brown) drawbars as "sub" tones, the middle four as "foundation" tones in the midrange, and the three to the furthest right as "brilliance", controlling higher frequencies.

Due to the fact that each drawbar has nine positions there are literally millions of possible combinations of settings and sounds and this is what makes tonewheel organs so flexible, capable of everything from subtle, minimal tones to very complex, rich and powerful sounds.

Part of the skill of being an organ player is in mastering the drawbars, manipulating them in real time to change the sound dynamically during a performance. This is something you will see a good organ player doing very frequently as they play their instrument. For a software organ it can be helpful to map MIDI hardware controls to the drawbars to give you a similar kind of control.

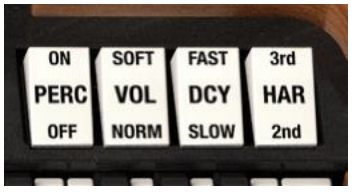
3.4.4 Preamp Drive

This control can be used to set the amount of drive applied to the preamp. Increasing the amount will add a slightly overdriven effect to the sound, introducing some bite and grit which can be desirable for certain kinds of music.

3.4.5 Master Volume

This controls the master volume output of the organ.

3.4.6 The Percussion section

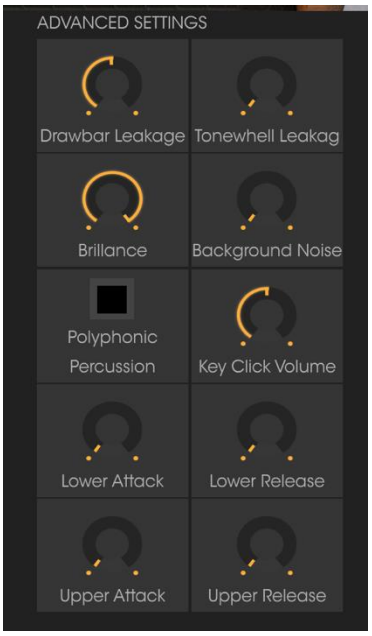


This section has four switches.

- Perc On/Off - Enables or disables the Upper Manual percussion

- Vol Soft/Norm - Sets the volume of the Percussion tone.
- Decay Fast/Slow - When set to Slow, the Percussion tone will decay slowly. Set to Fast, it will decay rapidly.
- Percussion Harmonic Selector - This sets the pitch of the Percussion sound. Second means the pitch is up one octave above the Fundamental Drawbar. Third means the pitch is up an octave and a fifth above the Fundamental Drawbar.

3.5 The Advanced Section



This section allows you to make further changes to the way sound is generated. It has the following elements.

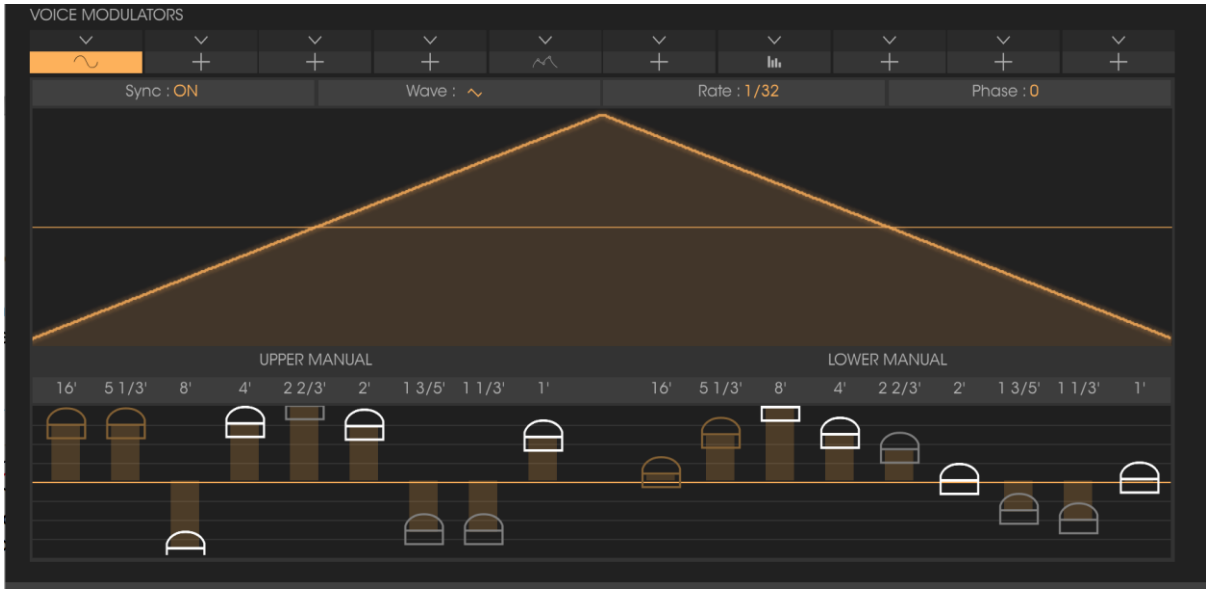
- Drawbar Leakage lets you manually control the amount of each drawbar that leaks into the ones either side of it. Set to zero, there is no leakage.
- Tonewheel leakage controls the amount of signal that is allowed to leak from each tonewheel. The more leakage you allow, the more imprecise the sound because the tonewheels will all start to interfere with each other. However allowing some leakage can help to give a more authentic sound.
- Brilliance controls the amount of boost applied to the middle and upper frequencies.
- Background Noise can be added for a more deliberately imperfect sound.
- Polyphonic Percussion can be switched on or off

- Key Click Volume can be turned up or down, altering the organ's sound to make it more or less percussive when notes are hit.
- Lower and Upper Attack and Release can be used to change the speed at which a note comes in once pressed and how long it takes to fade out when released, on each respective manual. For regular organ sounds these would all be set very low, but if you raise them you can get more synth-like sounds.

3.6 The Voice Modulator Section

3.6.1 What this section does

The organ sound can be quite static if the player does not interact with it much. A true tonewheel organ player will move the drawbars a lot while playing, to add evolution to the sound. We decided to pursue that idea by letting the user automate the movement of drawbars using envelopes, LFOs and step sequencers. This opens a lot of possibilities for sound design. It can be used to create sharp attacks with lots of harmonics that turn into a softer sound. It can also be used to create atmospheric, evolving sounds. The harmonic relationship between drawbars means that the sound will always feel natural, even when the drawbars are heavily modulated.

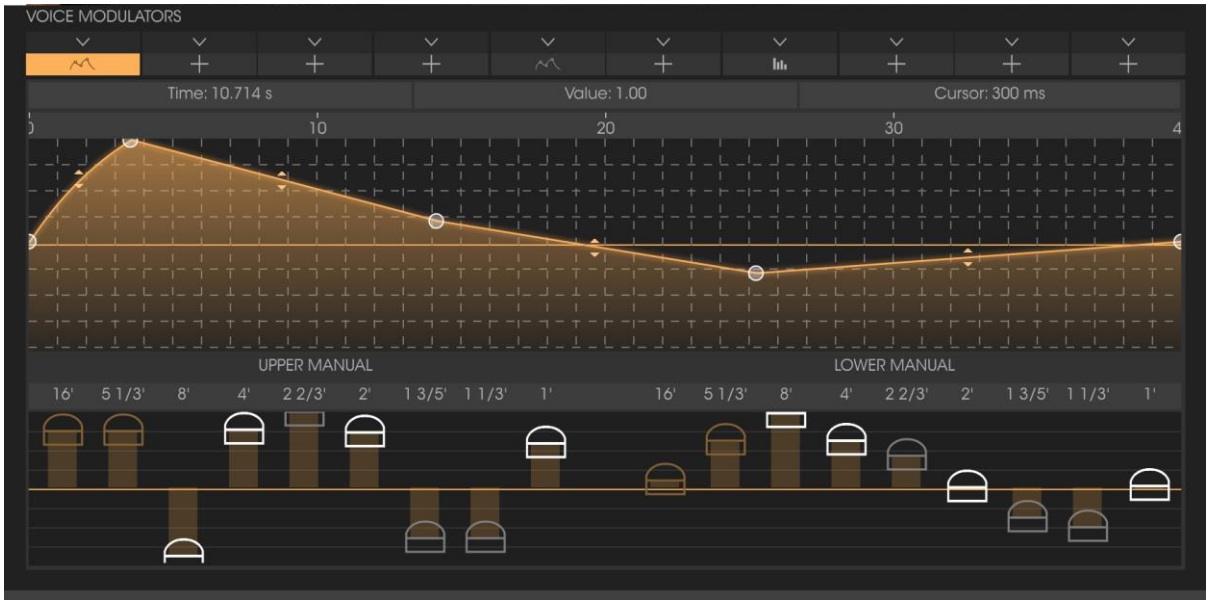


The Drawbar Modulator lets the user change the value of the drawbars over time. It uses a number of mono modulators (not one for each voice, but paraphonic), multi-point envelopes, LFOs and step sequencers. There are ten modulator slots and the user can select which type they want for each of the modulators (envelope, LFO or sequencer). Then they can edit the modulator shape, and finally set bipolar modulation amounts for the drawbars of the two manuals. A double click on one of the drawbars clears the selection.

You can use up to 10 modulators at the same time and mix and match types and settings by using the mod select dropdown menus in this section. Click on a section and then choose a modulator type.

3.6.2 Envelope modulator

This lets you set your own envelope shape over time by adding and manipulating values.



The Envelope modulator

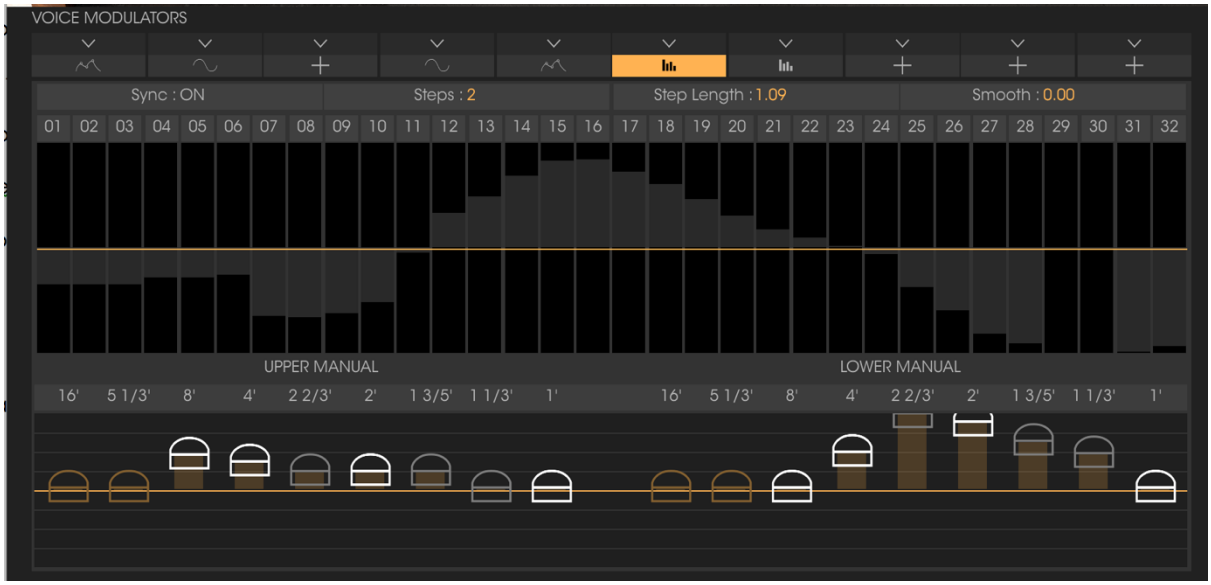
You can set up to 16 points in the Envelope window and modify the curve between any two points. Click on a point to drag it horizontally or vertically and click on the arrow icons to alter the curves. You can navigate the time axis and zoom in or out by clicking with the mouse, holding and dragging up or down on the time bar above the envelope area.

3.6.3 LFO

The LFO modulator

The LFO modulator type has settings for sync, waveshape, rate and phase. You can set the waveform, start phase, and rate of the LFO and the rate can be quantized or unquantized. You can choose between Sine, Triangle, Saw, Ramp and Square waveforms.

3.6.4 Step Sequencer



The Step Sequencer

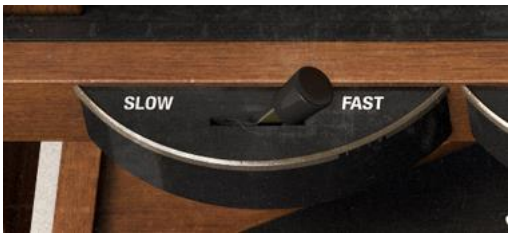
You can set the number of steps from 2 to 32 and the rate can be quantized or unquantized.

3.6.5 Assigning modulation amount to drawbars

The position of the drawbar in the main organ interface has no influence on these modulations. You can reset a modulation amount by double clicking on the slider.

3.7 The Rotary Speaker

3.7.1 The Slow / Fast Lever



This lever controls whether the rotary speaker runs at slow or fast speeds. More precise settings can be made on the speaker module itself.

3.7.2 The Stop / Run Lever

This lever controls whether the rotary speaker is moving or not. In the Stop position, it doesn't add any rotation effect to the sound. In Run mode, it introduces movement based on the position of the Slow / Fast lever and the settings on the speaker itself. If your switch is set to Run while playing, you hear that rotary effect. If you move the lever to the "stop" position, it will act as a brake: the rotary effect will slow down until it stops

3.7.3 Slow and Fast speed control

On the speaker module you will find additional controls. The Speed knobs let you set what speeds will be used when the Slow or Fast lever positions (see 3.7.1) are selected. The Slow knob can be set anywhere from 0.100Hz to 2Hz. The Fast knob runs from 2Hz at its minimum setting up to 8Hz.

3.7.4 The Horn and Stereo controls

Rotary speakers have two elements: a large drum that deals with lower pitched sounds, and a smaller horn that handles higher tones. The two of these rotate separately which is what gives the sound such unique character. Here there are four controls.

- Balance lets you set the mixture between the horn and drum sounds for a more muted or a brighter effect.
- Stereo Width controls the amount of stereo spacing between the two elements. Turned hard left, the sound is more mono and to the right it becomes wider.
- Horn Accel and Drum Accel set the speed of the acceleration that takes place when you flip the Slow / Fast lever. There's a short period when you flip the lever that the sound transitions in speed. The change is not instantaneous. Varying this speed lets you be more creative with your playing, and it's an effect used by all good organ players. Like other controls on B-3 V it can be helpful to assign these to MIDI for better hands-on tweaking.

3.7.5 Speaker on / off

You can deactivate the speaker to just hear the output of the organ plus any of the effects you have activated.

3.7.6 Model select switch

Here you can switch between open and closed models. Each option gives a significantly different kind of sound.

3.7.7 The Reverb section

The area contained within the white border is the reverb section. You can switch it on or off, control the dry / wet level and also click on the reverb name to select from one of the other included reverb types.

3.8 The effects

3.8.1 How this section works

There are five insert effect slots and each one must contain an effects unit, even if it is switched off. You can change the order of the effects units by

clicking on the name below a pedal and choosing a different effect. If you do this, its position will be swapped with the one it is replacing.

3.8.2 The flanger

Flanging works by mixing two identical signals together, one signal delayed by a small and gradually changing period. This produces a swept comb filter effect. Here, the controls are:

- Flanger Rate
- Delay amount
- Effect Depth
- Resonance

3.8.3 The phaser

Phasing is the psychedelic sweeping effect that was popular in the 1960s and 70s and adds a sense of movement and swirling to the sound. It works particularly well on organ sounds. The controls are :

- Modulation Rate
- Feedback amount
- Phaser depth
- Stereo spread

3.8.4 Chorus pedal

Chorus works by adding a second voice to the signal and in the process making it harmonically richer and adding a sense of movement. The controls are:

- A three-position chorus type switch
- Stereo Chorus Rate
- Stereo Width

- Rate
- Delay amount
- Chorus Amount
- Dry / Wet Mix

3.8.5 Analog delay pedal

Delay is a great effect to use on organs as it can really increase the sense of depth and space without becoming "splashy" and adding to much air and high end like reverbs sometimes do. The controls are :

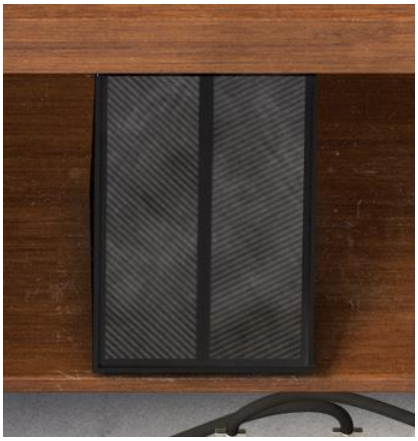
- Delay Rate
- Delay Feedback Tone
- Feedback Amount
- Dry / Wet Mix
- LFO Rate
- LFO Depth

3.8.6 Overdrive pedal

Overdrive is great for adding drive, crunch and grit to organ sounds. The controls are:

- Drive Amount
- Output Level
- Drive Tone

3.8.7 The swell pedal



The swell pedal is situated pre-amplifier and connects directly to the organ. Assigning a MIDI hardware pedal to the swell pedal is a good way to get more creative control over your performance.

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