



# B-5 Organ V3 User Guide

# Welcome to Acousticsamples

Thank you for using the B-5 Organ V3 library. We hope you enjoy playing the instrument and wish it supports your musical ideas or even better: inspire new ones.

In this User Guide we will provide you with an overview of how to use the B-5 Organ V3 library.

If you have any questions, feel free to email us at:  
**[samples@acousticsamples.com](mailto:samples@acousticsamples.com)**

or use the contact form on our website  
**[www.acousticsamples.net](http://www.acousticsamples.net)**

The B-5 Organ V3 library, produced by  
**Acousticsamples**



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# Requirements and Installation

## Step 1 - Authorize your library

The first thing to do is make sure you have an iLok ID and that it is the correct one. If you never used iLok, just go to the [ilok.com website](http://ilok.com) and create a free account.

You will be asked to enter a user ID, this is what you will need to enter later on the authorization page. This will also be the ID you will need to get connected to the iLok license manager.

On the [download/serials](#) page, you can find the serial number associated with your library, it should look like this: PROASXX-XXXXXXX.

You can click on the authorize button or copy it and go to this page: <http://acousticsamples.net/index.php?route=account/authorizellok> you can find the link in the top menu under account as well as on the "my account" page. Of course you need to be logged in to view this page.

Now enter the serial number in the serial number box (it will be filled already if you used the authorize button) as well as your iLok id. The iLok id is the username you use to log into your iLok account, don't confuse it with the number written on the key.

Then simply hit the authorize button and wait a little. At the end of this process, you will see a message telling you if the authorization was successful. You will also get a confirmation email.

Sometimes the iLok servers will not respond and you will get a blank page, in this case, please contact us and we will proceed to the authorization for you manually.

## Step 2 - Download and extract your libraries

Registering your serial number will generate your download links, they will be create and available on [the downloads/serials page](#).

The files are delivered in RAR format and sometimes these files are split (for the large libraries).

You need to use winrar on windows or UnrarX on mac ([www.unrarx.com](http://www.unrarx.com) or directly [here](#)) to extract them, other softwares will probably not extract the files properly, we use the recovery functions of Rar (to avoid download corruption) and these two softwares are are the only ones to handle it properly. If there are multiple parts (part01.rar, part02.rar), you need to put them all in the same folder before extracting. If the extraction gives you errors, then your download did not complete or got corrupted, you need to download it again.

## Step 3 - Download and install UVI Workstation

Download and install the UVI workstation (our free sample player) from here: <http://www.acousticsamples.net/uviworkstation>.

Make sure you download the right version for your system, if you are on windows 64, but use a daw that only allows for 32bits plugins, you need to install the 32bits version of UVI Workstation.

Follow the step 4 to learn how to load a library into UVI Workstation.

## Step 4 - Transfer the license to your iLok key/computer

The [license manager](#) is installed with UVI Workstation, so you just need to launch it from you applications.

Now make sure that your iLok key is plugged into your computer if you want to use it or just ignore this if you want to use the computer based authorization.

Click on Sign in and enter your iLok information, you will see the list of available licenses and your computer and iLok keys on the left panel.

Now all you need to do is just drag and drop the license to your iLok key or your computer to authorize one or the other.

## Step 5 - Load your library and start playing

Now just open UVI Workstation in Standalone or one of the plugin formats in your sequencer. There are two ways of loading the library.

- You can open the browser and navigate to the ufs file manually.
- You can place the UFS in the default UVI folder: [Startup disk]:Library:Application Support:UVISoundBanks (on Mac) and C:\Program Files\UVISoundBanks (on Windows). You can also drop a shortcut to this file in this location, provided it has the same name.
- The best practice is to have all of your UFS in a folder and let UVI workstation index it. Simply go into the preferences/soundbanks and then add your UFS folder. If the authorization has been done, it will mount the UFS automatically (if automount is selected) or index it in the search (if index is selected). The recursive is for subfolders, but too many subfolders can lead to a long indexation/mounting time.

After this, when you start UVI Workstation, you will see the UFS under soundbanks, select it and just double click on the m5p file, it will load the library and you will be able to start playing.

# The B5 Organ V3

Based on real tonewheel samples and fully modeled: from the tonewheel pickups and the AO-28 amp to the resistive wires, to the drawbars and key contacts... Everything has been carefully measured on different models and adjusted to match real organs.

The true sound of an organ with the flexibility of synthesis.

## A Hybrid Approach

Hammond organs are complex beasts, full of wires and mechanical parts. Until now, the best renditions (short of a real organ) were made using pure synthesis, mainly because the organ works using a set of 91 frequencies that are connected via contactors under each key and whose volume is controlled by the drawbars. Sample-based libraries consist of stacking drawbar samples at the same time - this works, but causes a major problem: sometimes you play the same frequency twice and because of phase cancellation, you never get the same sound twice when you press the same keys. We created a way using the 91 frequencies synthesis approach - but with real samples - offering the opportunity to enjoy the best of both worlds: a real recorded organ tone plus the real mechanical behavior, but with the added benefits of functioning drawbar controls and synthesis tweakability.

B-5 V3 vs real Organ and real Leslie 122 comparison



## Sample based synthesis

There are elements of the Organ sound that can't easily be faked: tonewheels, keyclicks, vibrato scanner... so we simply sampled them.

We then meticulously reproduced the whole signal chain; tonewheel pickups, resistance wires, AO-28 frequency response, drawbars, swell pedal, percussion circuit, as well as all of the controls available on a real organ. Even the small wiring and electrical peculiarities have been reproduced, such as foldback, internal noise, leakage and even more complex features such as tone control, loudness robbing, voltage stealing etc.

There are many features found in the main interface:

### - The Drawbars

The upper and lower manuals each have a set of **9 drawbars** and the bass has 2 drawbars (Version 1 had 3 drawbars, but we revised our model to more accurately mimic the real frequency combination of the pedalboards). The volume curve of each drawbar has also been carefully measured and reproduced. As our system is based on virtual tone generators, the drawbars can be moved in real time.

Set 1 and Set 2 function the same way as the A# and B keys on a real organ, Set 1 is the A# key, and Set 2 is the B (black key) - this is the only preset that contains the percussions.

### - The Percussions

Just like on a real organ, the **percussion** system works for the upper manual only and will disable one drawbar from it. By default, this is set as the 9th drawbar, but a different drawbar (or even all drawbars) can be selected from the advanced preferences. Remember that in order to hear the percussions, the second set of drawbars must be enabled (B preset key).

More information about the percussion system can be found in the percussion section further down this page.

#### - The Scanner Vibrato

The original **scanner vibrato** is not a simple vibrato, tremolo or flanger effect; it is modeled by using a delay line.

The vibrato created by Mr Hammond relies on a rotating delay to create the vibrato (**V-1, V-2, V-3**) to which the initial signal is added in order to create the chorus effect (**C-1, C-2, C-3**).

Instead of trying to recreate this, we sampled each of the 6 different settings and aligned them to make sure they always stay in phase.

Just like on the real instrument, you can activate the vibrato for the upper and lower manuals independently.

#### - Volume control

We measured and replicated the evolution of the **swell pedal**, the **percussion volume** and the "**normal**" and "**soft**" volumes.

We also added a general **volume** button in case the sound becomes too loud and over-saturates.

#### - Presets

A drawbar preset for each manual can be selected, and these are browsed through by clicking the **prev** or **next** button whilst playing. The list of presets can be edited in the preferences.

At the bottom of the interface are the general presets, one of these can be chosen from the list, and these can also be loaded, saved, and exported.

#### - Rotating speaker speed

Regular rotary speakers have a slow and a fast rotation speed (respectively called **Chorale** and **Tremolo**), it is common to add a **brake** position as well.

This function is accessible from the interface or by simply using the mod wheel.

#### - The FX

We added a **tube distortion** to imitate the behavior of the rotary speaker when you increase the input volume.

We also added a **reverb** knob based on a spring, plate or real room reverb. On the front panel, the only reverb setting that can be controlled is the amount used, but in the FX panel, the time, type, and pre/post can be controlled.

#### - The Tone control

This is an addition of the V3, this is present on real organs and controls the response of the AO-28 amp. It's a sort of brightness control but isn't simply a filter; it increases the volume the higher tones generate or decreases it before it goes into the whole divide-down system of drawbars.

#### - the Tonewheels model

This is another addition of the V3 - the model of the tonewheel can be chosen from 4 different models that we sampled: a B3 from 1986, a C3 from 1960, another C3 from 1969 and an A100 from 1965. They all have varying tones and crosstalk amounts.

#### - The Voicing models

This is the most advanced feature of the default panel, and it gives a choice of hundreds of voicing models measured by Kon Zissis, a Hammond enthusiast who has serviced and measured a vast amount of Hammond organs over the years. This feature gives access to different B3, C3 and A100 in different conditions, both with wax capacitors and with brand new capacitors (and also after full voicing adjustment), and it also gives access to a number of other models, including A, A2, V, B, B2, C2, BA, BC CV, RT3 and a few others. The voicings can be edited further by clicking on the small arrow next to the menu.

### Advanced preferences

In the Prefs panel, there are a few very advanced but extremely useful features that help increase the realism of the sound:

- Hammonds are electric, and the amount of volume each tonewheel puts out is limited. When you play two notes that use the same tone, the volume is not simply doubled, the "*loudness robbing*" is an effect inherent to the Hammond circuit which reduces the volume of a specific tonewheel depending on the number of notes accessing that same tonewheel.
- For similar reasons, the "*voltage stealing*" is another effect that also reduces the overall volume based on the number of notes played, but this time it applies to the whole organ, not just the tonewheels. The reduction amount varies depending on which notes are played, which drawbars are used, etc.
- Every Hammond organ produces a background noise, most people try to remove it, but it's still a signature of the hammond organs, so naturally we made sure the amount of noise can be controlled to taste.
- The *crosstalk* is essentially the frequencies of the nearby tonewheels that leak into the pickups, plus the quality and age of the small filter after the pickup. The amount of crosstalk can be controlled here; on the lowest levels it can be made to sound like a pure sine.
- The *keyclick* is also a very recognizable feature that Mr Hammond did not want. Depending on the age of the organ and its restoration state, that click will be darker or brighter, and this can be controlled here.
- Since standard organs only have 91 possible frequencies, there were not enough frequencies on the last drawbar to cover the whole range of the keyboard. Mr Hammond had decided against adding anything else, but this meant that the tone was abruptly changing at those points. So he introduced the *foldback*, which repeats the same frequencies of the octave below, giving a feeling of continuity. The B3s and similar use a standard foldback, the older A and BC models use a slightly different version and the spinets don't use any at all. Any of these three options can be chosen to match the voicing and tapering values set in the voicing panel.





## Rotary Speaker Simulation

Version 3 is an entirely new Leslie simulation, much more detailed and true to the 122A recordings.

You can choose between a few different Leslie models for each rotor: a 122, a 147, a 3300 and a few other variations.

It is also completely adjustable: microphone positions, angles, distance, and volume, pan, speeds and acceleration times can be modified independantly for each rotor.

We added three new features: driver distortion, microphone bleed and room simulation and combined with our V3 model, they make for an ultra realistic Leslie sound.

The rotary speaker has a strange story, Mr hammond did not like the "Leslie" speaker, and never accepted to sell an organ with it even though almost every organ today is paired to one. Instead the organs were sold with a "Hammond Tone cabinet". Mr Leslie never gave up and always made models that would be compatible with every new organ, while Mr Hammond made sure that every new organ would change its connectivity.

The rotary speaker consists of two different rotating systems, each of which receives a filtered signal from a 800Hz crossover circuit.

The **Horn** (at the top), receives every frequency above 800Hz and is made of a small speaker directed to a double rotating horn (one of which is actually here only for mass compensation to stabilise the system when rotating). That rotation creates three big effects, a volume change, a filter change and a doppler effect that will modulate the pitch.

The **Drum** (at the bottom) is similar as it also rotates, but at a slightly different speed and gets the frequencies below 800Hz. To still have an effect at lower frequencies, it is bigger.

We made the most detailed measurements of these effects and created the best simulation available today.

The combination of both these rotators and the wooden box they are into give the rotating speaker this very typical sound that will vary with the rotation speed.

You can customise almost everything on this model in the speaker panel.

- The overall volume of the Leslie, as well as the DI signal or a guitar cab simulation can be adjusted. If for example you want to use another Leslie simulation, you can completely bypass it by setting the Rotary Vol to 0 and use the **DI** sound instead, since version 3 you can also pan the DI and play it along the leslie signal. On top of the Leslie and DI, you can add a guitar amp and cabinet, you get a choice between a few amps (Twin, Bassman, Deluxe, etc...) and you can tweak its volume and pan as well as the input gain and a 3 band EQ. To access the latter, you just need to click on the small icon next to the amp choice).

- The main purpose of the Speaker panel is to adjust the Leslie parameters. First of all, all of the parameters are adjustable independantly for the horn and the drum.

So on each rotor, you can control the following:

- The input volume: controls the volume input of each speaker (this does not exist on 12 Leslies, but it's there on the 3300).
- The microphone bleed: controls the amount drum sound going into the horn microphones and vice versa.
- The pan: controls the right left pan of each rotor.
- The Driver Distortion: We realized while measuring the horn and drum without the Leslie amp that there was some inherent distortion to the speakers themselves, so you can control how much of this effect you want.
- A 3 band EQ: controls the frequency response of each rotor.
- Slow and fast speeds: controls the speeds of each rotor when in chorale or tremolo.
- Accel and Decel times: controls how long it takes for each rotor to reach the fast speed when you switch the leslie to fast and the same thing when it slows down.
- The Speed random: adds a little variation to the speeds, and if you set for example the horn and drum at the same exact speed, you will still get variations instead of something very static.
- The Memphis: this is a feature that was asked by customers a lot, it allows to simply disconnect the corresponding motor which will stop it from spinning, the memphis mod is usually used on the bass rotor.
- The Brake position: controls the position of the rotor when you hit the brake button on the main interface. By default and just anything that rotates and is stopped, it will stop to a random natural position that depends on when it was stopped and the time needed to do so. We added the possibility to use a fixed position to always have the same position when the rotator stops.
- Deflector on/off: it's only available on the horn, we created two models, one with the deflector on and one with the deflector off and you can choose between the two options. When you remove the deflector, you will immediately hear that the amplitude modulation is very much accentuated, but it will also feel less "airy".
- Drum Panel: it's only available for the drum and controls if you want the leslie with or without the wooden back panel between the drum and the microphones.
- The mic position: There are 3 different choices corresponding to the most common ways of recording a leslie, so from the back of the leslie, the side or the front. We also added two variations that consist of

being on axis, so with the microphones set symmetrically relative to the rotors, or off axis where the microphones are set symmetrically relative to the box (and since the rotors are not centered in the box, they end up being asymmetrical relative to the rotors).

- The microphone angle: for each position, you have access to a list of microphone angles, from 0 to 180°, they basically set how wide the microphone pair is set. When set at 0, the signal is mono.
- The microphone distance: You can set the microphones at 4 different distances from 5cm (2') to 90cm (36').
- The enhance AM: controls an extra amount of amplitude modulation if you feel like you want more of it.

- There are many models on the market, and they mainly differ by their dimensions, horn size and position, but they can also use different driver or speaker models. We sampled 3 different ones, a Leslie 122, a 3300 and a 147, each one with the same set of microphone placements. The all sound slightly different. We also added some common speaker "voicings", for example the L122A V2 will sound close to the B5 Organ Version 2.

- Some users might prefer the version 2 of our model, so we gave the possibility to use it again using the small top right menus that say V3/V2.

- You can adjust the leslie mechanical noise by changing the **Acous Vol** next to the Rotary volume.

- We recorded and measured the Leslie in a very dry environment, so to give it a little more life and ambience, you can enable the Room Simulation.



## Hundreds of models

All of the tonewheel organs sound different, each of them has a particular voicing, and that's mostly due to the distance between the tonewheels and pickups but also to the aging of the capacitors.

With the help of Kon Zissis, who has been servicing and measuring organs for many years, we were able to incorporate 150 unique organ voicings from many different models (A, AV, B, B2, C2, BA, BC, CV, B3, C3, A100, RT3 and a few others).

We also sampled 4 iconic models (1968 B-3, 1960

C-3, 1969 C-3 and 1965 A-100) whose different tonewheel sounds you can switch between.

The combination of tweaking of the voicings with manual tapering options allows you to shape virtually any organ model and sound possible.

On the main panel, you have access to a list of voicing models as well as tonewheel models.

The tonewheel models are actual recordings of real tonewheels. To make it as realistic as possible and avoid any loop, these samples are 10 seconds long and looped only after those 10 seconds have been played. It is then very unlikely that you hear that loop, but you still get the live character of real tonewheels. Depending on the model, you will get more or less crosstalk and the key click will be slightly different.

Here are the four different models that we sampled:

- A B3 from 1968
- A C3 from 1960
- A C3 from 1969
- An A100 from 1965

Three of these Organs (both C3s and the A-100) are the property of Mr Pietro Roncarolo from Italy, he made the recordings for it and also helped a great deal in recording different aspects and effects of his organs to help us create our model.

The voicing models on the other hand are what make a Hammond sound like a hammond. This is what technicians spend hours doing when they adjust an organ. They change the capacitors that are too old and out of specs and adjust the pickups to make the organ sound as they want.

Kon Zisis, a very cool hammond enthusiast that serviced hammonds for years, has been measuring the tonewheel output volume of the many organs he had in his hands and helped the Hammond community fix their own organs. He nicely agreed that we use his measurements and include them in the B5 Organ V3. For us, this meant reproducing the whole signal chain which we did not do in the V2, and after some help from him and many hours of work, we were able to carefully reproduce every aspect of the signal chain, from the AO-28 to the resistive wires and the drawbars and were finally able to use Kon's data.

This give you a list of 150 tonewheel measurements from many different models. If you click on the moicing model icon, you get acces to a panel that shows all 91 tonewheel volumes. As you go through the list, you will see that table change and you can also make changes manually.

As you go through the list, you will see models that say "wax capacitors". These models were measured before the capacitor replacement which take a lot of time to do. Usually there is also the same model "recapped", meaning that they were measured again after the capacitor changes. And finally the models that are "recapped and recalibrated" have new capacitors and have ben adjusted to what is considered the orginal hammond specs (for the corresponding models).

Once you're happy with a voicing, you can click on the three horizontal lines and save your voicing and then reload it later.

We also added the option to enable or disable the manual tapering. On the B3, C3 and A100 (RT3 as well) Mr Hammond added groups of wires called the resistive wires that allow for a volume reduction that depends on

the range and on the drawbar. The manual tapering did not exist in older models like the A, B, BC, etc, so to be able to take advantage of these models, we give you a way to not use it, or even to use a Hybrid one.

The hybrid model is a mod that is often applied on older models like the A, B, A2, B2, etc and that consist of a different set of resistive wires that will not reduce the highs and lows as much, but still remove a little of the harshness.



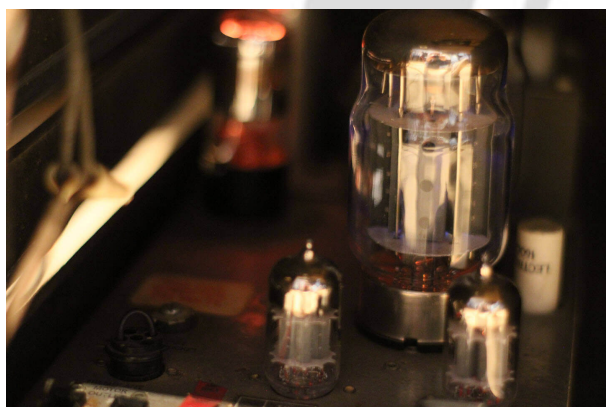
## FX Panel

On top of our Leslie tube saturation, we added a panel of 7 FX.

It includes chorus, phaser, delay, overdrive, fuzz, wah (which can also be an auto-wah) and reverb (spring, plate and real room variations).

These FX are pre-Leslie, except for the reverb, which can be pre or post.

Now you can truly recreate the sound of any organ or song, including progressive rock!



## Tube saturation

The tube saturation on a Leslie 122 is very different from what you hear from other tube amps.

We completely redesigned it in version 3 to match real recordings even more accurately.



## Advanced Percussion System

The percussion on an organ is not just an addition of samples, it is a general volume decay envelope triggered by the first note you play, which is not restarted until you release all the keys.

We recreated it so meticulously that you can hear a percussion sound when you turn it on or change from second to third! You can even customize the time, volume and frequency to make it sound like "paradise".

It is also completely tweakable: you can edit the volume for the normal and soft settings (as well as decay times), decide on which harmonic is played and even control the recharge time.

The percussion system was introduced in the B-3 and C-3 organs to add the percussive instruments to the list of instruments that the organs were supposed to replace.

As simple as it sounds like, it is not a simple sample addition, here is what it does and that we carefully reproduced:

- The percussion is a general volume decay envelope applied to an harmonic that is triggered at the first key you press and that is restarted only when all notes are released.
- The percussion circuit does not go through the scanner vibrato, its pitch stays unaltered (at least before going through the speaker).
- It is only available on the upper manual.
- It steals a drawbar from the upper manual, by default the 9th, but we made it so that you can choose which one it steals or even avoid it to steal anything.
- It has two **volume** positions, "**soft**" and "**normal**", the normal is louder, but also dims the volume of the drawbars. This effect can be turned off in the advanced preferences and each volume can be defined as well.
- You can choose whether you want to use the **second** or **third** harmonic for it, and you can also use any harmonic for each position in the advanced preferences.
- You can also choose the decay of that envelope (**slow** or **fast**) and these values can be changed in the advanced preferences as well.

The percussion will not work if you don't use the second set of drawbars on the upper manual (or use the B preset key) just like on a real organ.

In the Prefs panel, you can control that percussion system, here is what you have access to:

- You can control the "normal" and "soft" settings respective volumes. There aren't two organs with the same volume for these.
- The decay for "slow" and "fast" can also be changed, in reality, this is controlled by a knob inside the organ called percussion cutoff.
- The percussion system steals the harmonics from an existing tone, for the "second", it's the drawbar n°4 and for the "third", it's the 5th drawbar. You can change that if you want to mimic what's possible on some spinets for example.
- On real organs, selecting the normal position will increase the volume of the percussion but also decrease the volume of the tones. This is called the volume drop and you can disable it if you want, this is a known mod on real organs.
- The percussion system relies on capacitors and they need a certain time to recharge once all keys have been released, this for example makes very fast repeated passages sound different with the percussion volume reduced a bit as it did not have enough time to recharge between each note.
- We added two other mods, the "paradise" button that will prevent the percussion from decaying, or the "always on" that will play a percussion sound everytime you press a note.



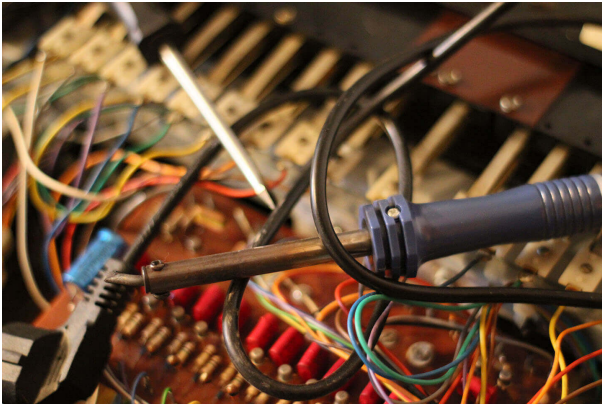
## Real Key Contact Modeling

There are 9 electric contacts under each key, and each of them produces a small click, but they don't all happen at the same time. Also, the intensity and timbre of each click depends on the phase of the tonewheel signal when the circuit is closed.

Mr. Hammond hated them, but it wouldn't be a Tonewheel organ without them.

We completely recreated this for version 3. The progressive 9 contacts are now simulated with velocity, and the variation of timbre and volume is now based on the current phase of the tonegenerators.

You can also control their overall volume and timbre.



## Organ Modifications

Every organ player likes to tweak their instrument, so all the modification that organists can do are available.

- Paradise button
- Percussion always on
- Percussion volume decrease
- String Bass
- Foldback removal

And many other mods... but without having to solder or unscrew the whole thing.

There are many available organ modifications and they are not always done the same way, but we find out which were the most common ones and included them.

- In the preference panel, you can also modify the **Drawbar Volumes** which would mean changing the resistance wires for every drawbar connector.
- The **String Bass** is an organ add on that makes the pedal tones decay longer and steal the previous note to make it easy to play legato notes with your feet. Its decay can be changed.
- Many organ players don't use the pedals and prefer to use the lower manual instead, the problem is that Mr Hammond used the "**foldback**" to limit the number of tones to 91 and also assign the very low and more complex tones only to the pedals. A common mod is to rewire these to the lower manual two lower octaves. We give the possibility to do this on both manuals.
- When the percussion is on "**normal**", the whole volume of the organ decreases while the percussion gets louder. The "**Percussion volume drop**" mod avoids this volume loss.
- As mentioned in the percussion section, you can control every aspect of the percussion system, the **volume**, **decay** and the **harmonic** used for each switch position.
- A less known effect is the percussion **recharge time**, which represents how much time the percussion general ramp needs to go back to its maximum value, as an example, if you play very quickly the same note, the volume of the percussion will be lowered as you play faster, if the time between two repetitions is above the recharge time, it will play at full volume, otherwise it will play at a fraction of it.
- The percussion system "**steals**" a drawbar, you can change which one gets stolen or even if it gets



stolen at all.

- Jimmy Smith used a broken organ on a few records, the percussion system did not work properly and the percussion never decayed, this mod is called "adding a **Paradise button**".



## All Three Keyboards

On a real organ there are 3 keyboards, two of which are almost identical except for the Percussion system, plus the Bass pedals.

You can choose to use 3 different MIDI channels, one for each keyboard, or you can use Split to have all three on one keyboard.

In version 3, we decided to extend the capabilities of the Bass pedal manual.

On a real organ, the Bass pedals drawbars are a fixed combination of 8 frequencies, but in the V3, we give you access to that mix and the first 12 tonewheels that produce complex tones can also be filtered out to be closer to a sine wave.

We also extended the range of the Bass manual to 32 notes to match the RT3 model.

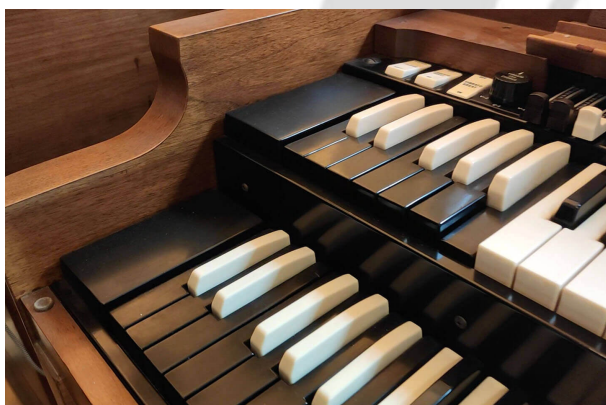
If you don't have pedals on your controller, you can also remove the bass foldback for the Upper and Lower manuals to access deep bass without them.

You can also enable the stringbass mod with control over the sustain.

As explained on the MIDI panel tab below, you can use all 3 keyboards present on a real hammond by using 3 MIDI channels or using a split.

The Upper and Lower manuals have been covered in depth, but an important part of Hammonds is often overlooked and it's the pedals. The pedals only have 2 drawbars, but each of them is actually a premix of tones and that pre mix, like anything on a hammond, varies greatly from organ to organ. Also a few different mods to access the low tones are quite common so we created a section dedicated to that in the preferences, here is what you can control from it:

- The string bass, its a feature that exists only in an add on, but that is used quite often, the pedal notes will not stop as soon as they are released, but will follow a sustain time. That system is also mono, meaning that every new note will stop the previous one, this is often used for bass walkings.
- The Bass on lower or upper manual first octave will allow the usage of the first 11 bass tonewheels on the upper or lower manual, this is useful for players that don't have pedals or that just play the bass with their left hand.
- You can control the overall volume of the bass pedals.
- The first 11 bass tonewheels are not as close to a pure sine as the rest of the tonewheels, they are called complex tonewheels and they already produce a mix of frequencies. Organ players often pfer a sine sound and will add a capacitor to filter them. You can now do that in the B5 as well.
- As mentioned above, the pedal drawbars consist of a pre mix of tones, in the V3, we added to possibility to modify it to your liking, if you click on the small icon in the "bass manual settings" you will see two tabs representing the amount of each tone used for each drawbar.



## Presets

In the version 3, we completely reworked the preset system.

They are now global and will save everthing, but you still have access to around 200 drawbar presets that you can load, save, delete or assign to the preset keys (upper and lower), and these include the most used Jazz, Gospel and classical presets.

The preset keys (Bleck Keys to the left of the range) can also be customised and will allow you to easily change drawbar settings while playing.

On the front interface, you can select any of the 200 drawbar settings for each manual and move to the previous and next one by clicking on a button.

There is much more you can do here with these presets, if you click on the presets button, the preset panel will appear, and here you can choose your current drawbar setting, give it a name and add it to the preset list to be able to use it live.

You can even create your own preset list by removing or adding items or export and reload lists created by you or other users.

There are also general presets that include every setting of the library that you can save and load without reloading the whole library, we included a selection of presets to get a good starting point and shape the sound in seconds.

To play with your settings live, you can go in the advanced preferences and assign a preset to each of the 12 key selectors just like on a real organ, the only difference is that you choose the settings here and don't have to rewire everything each time you want to change them.



## MIDI assignment and controllers

Every element of the interface can be assigned to any MIDI CC and Channel easily using our assignment panel or our MIDI Learn function.

To make things even easier, we included a few mapping presets for the most common organ clone controllers, this includes, the XK and SK series, all Nord keyboards, the Crumar, the HX3, the B4D and some others.

We even included most tweaks required by some

controllers like the inversion of the drawbar movement or the toggle for the leslie speed.

The volume pedal is a crucial element when playing the organ and you have the possibility to adjust the curve and range of the volume and filter affected by the pedal.

In the MIDI panel, you have access to a few things, the first one being a list of all the elements of the interface and their respective MIDI CCs. For each element, you can choose the MIDI CC number, the MIDI Channel as well as invert it or toggle it if it is a switch and you want a button to toggle between the two states.

Here is for example how to set the MIDI CC 32 to the drawbar 5 of the upper manual:

In the MIDI panel, you locate the element you want to control, in our case, the "Upper manual drawbar 5" then you simply click on the "learn" button next to it and then move the physical controller of your choice, it will automatically map the CC and the channel. You can also set this manually if you want.

There is also a default feature in UVI that allows to right click on an element on the interface and learn a MIDI CC, but just remember that you can't use both features at the same time, by default, the drawbars are tied to a CC, so if you want to use your own CCs, you need to set the CC value in the assignment panel to -1 to avoid conflict.

In this panel you can also control if you want to use different MIDI Channels to play each manual (upper, lower and pedals) or if you want to split your keyboard. To do that, just select the mode you want to use and change the split points and the transpose value for each manual accordingly.

In the MISC section, there are a few other MIDI related things that you can control.

- The global tuning of the organ in cents, you can turn it down or up a semitone.
- The swell pedal minimum volume can be adjusted, this controls the overall volume of the organ when the swell pedal is at its minimum.
- You can also adjust the "swell pedal volume curve" to control how quickly it goes to the maximum volume.
- Some people requested to be able to sustain the tones using the sustain pedal, this does not exist in a hammond, bt you can enable it here.
- The "velocity to contact speed" controls how quickly all contacts under each key are closed. This is not

exactly how an organ works, but basically the harder you play, the faster the contacts are closed.

- Some keyboards only have a pitch bend wheel and controlling teh Leslie speed for example can be useful, so we added the option to use the pitch bend as the CC 127. You can then simply set any elment to CC 127 in the list and use it.

# Features

UVI Workstation v3.0.15 (delivered with every purchase) or Falcon 2.1.1 is required for the library to function properly.

900Mb compressed in lossless flac format, around 1800 samples for each tonewheel model.

Version 3 changelog:

- Interface redesign, upon user request, the switches are now arranged like on a real B3.
- New preset system. Saving a preset is now global and will save everything, including the voicing and the tonewheel model.
- Separation of the "brake" and Leslie speed features, they can now be controlled separately.
- To add variety, the voicing is now separate from the tonewheel models.
- In collaboration with Kon Zissis, we incorporated a new electrical chain model and were able to add about 150 Voicing models (A, BC, A100, B3, C3, RT3) that he measured over the years from various models and using different capacitors, old and new and different voicings, following the different Hammond technicians regulation.
- These voicings can be changed manually using a large table.
- To go with these voicings, we offer the choice to add/remove manual tapering or even to use a hybrid manual tapering that will get older models like the A to have both bass and treble (will explain that in detail).
- New "TONE CONTROL" knob that simulates the tone control potentiometer present inside the real Hammonds that allow to control the overall brightness of the organ, it's not a simple filter, it's a voicing element that acts on the 91 tonewheels before the whole drawbar system.
- New FX panel with Chorus, Phaser, Delay, Wah (and auto Wah), overdrive and fuzz that come between the tone generation and the Leslie Amp. You can also choose between a spring reverb, a plate or a real room and you can put it pre or post Leslie.
- The tube distortion has been completely changed to match the AO-28 amp distortion.
- Entirely new Leslie simulation, much more detailed and true to the 122A recordings. You can now mix (volume and pan) the Leslie signal with the DI and also an additional guitar cab. You also have control over the crossover filter to simulate the aging of the capacitors.
- Addition of the "room simulation" that allows you to put the Leslie in a less Dry environment.

This update also includes the following new features that are available independently for each speaker (ie, Horn and Drum):

- Speaker distortion
- Pan
- The acceleration and deceleration curves have been reworked and you can also add some speed variations to

replicate the imperfections of the Leslie motor.

- Microphone position around the Leslie
- Microphone angle (from mono to very wide stereo)
- Microphone distance, from 2' to 36' (5cm to 90cm)
- Microphone bleed
- Memphis option (one of the speaker's rotation is just stopped while the other one is still functional)
- Fixed or natural brake position.
- An amplitude modulation enhancer for a stronger wobbling effect.
- The deflector can be removed from the Horn and the Back panel can be removed from the Drum.
  
- New MIDI panel with control over the inversion, the toggle, MIDI C and MIDI Channel for each element.
- MIDI learn function for each element, all you have to do is click next to the control name and move a MIDI controller.
- You can now save and reload your MIDI Mapping.
- You can now use the Pitch Ben as a MIDI CC (CC127) to control whatever you want.
- Improved vibrato and chorus thanks to a new phase lock model.
- Pedal drawbars CPU efficiency improved.
- Pedal keyclick fixed to match the real ones.
- Pedal range extended to 32 notes to match the RT3 model range.
- CPU load reduced on the swell pedal.
- Control over the pedal harmonic mix
- Added mod for sine sound on the 11 first complex tonewheels
- Added MOD to have the percussion playing all the time with no volume drop.
- Added control over the crosstalk (leakage)
- Added control over the Keyclick Brightness.
- The click volume is now smooth and can be changed in real time.
- The acoustic sound of the pedals is now from real pedals and not manual keys anymore.
- Added the ability to disable the foldback.

- Click sound improved with much accurate volume and tone variation.
- Better control over the drawbar preset list which can now be organized, modified, saved, loaded and reset.
- Addition of a panic button that will stop all running Tone generators.
- Better control over the black keys presets, they can now be deactivated for users that accidentally triggered them while playing.
- Extended the pedal range to 32 notes to account for the RT3 pedal range



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