



# BUNKER PERC MANUAL

For version 1.0

**BUNKER SAMPLES**  
RULE-BREAKING VIRTUAL INSTRUMENTS

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## The story

Hi, I'm Nicolaj, the founder of Bunker Samples, which was literally founded in a bunker in Copenhagen in 2018. I know that sounds strange, but it wasn't just a bunker, it was a bunker that had been converted into a recording studio, and it was my daily creative home for 2 years! It's where I came up with the concept for (and later recorded) Bunker Strings, the first Bunker Samples library late one night when I was experimenting with new ways of recording my viola for a horror film score.

The bunker itself was built at the end of WWII as a bomb shelter for the civilian population of Copenhagen. It's semi underground, and is made of 1 meter thick concrete. It consists of a small hallway and 3 dome shaped rooms. In the 1950s during the cold war it was upgraded with air filters to be able to protect against chemical warfare. There's many of these bunkers across the city, and after the cold war ended, the city started to rent them out to civilians. A friend of mine rented one, and converted it into a complete recording studio with wooden floor and great acoustic treatment, and since he wasn't using it much, he rented it out to me.

Working in the bunker wasn't always easy. There's was no daylight (obviously), no water and no toilet. You also had to keep the ventilation system running to not suffocate, as well as keeping a dehumidifier running 24/7 to protect your instruments and equipment. On the upside it was cool in the summer and very quiet and I loved that place. Even after I left Denmark I returned to the bunker every summer to record new sample libraries. I loved that place, which is why I named my business after it. But now, the bunker is no more. My friend moved and had no use for it anymore, so there will be no more Bunker Samples libraries recorded in the bunker.

I knew this was going to happen some day, so the last time I was down there (which was before Covid), I decided to keep a sonic memory of all the sounds that had been a part of my daily life for so long: the sound of the metal doors closing, the locks opening, the handles on the big blast door locking into place. So I set up a stereo pair of AKG 414's and just started slamming doors, hitting them with mallets etc...

I never intended to release these sounds as a sample library, but when I learned the bunker was no more, I suddenly remembered I had them tucked away on a hard drive, and I started editing them. That's when I realised these could actually become a useful percussion library, so I started developing a new Kontakt engine for them. The result is Bunker Perc - a sonic memory of the bunker and the final library to be recorded in it, even if that was never the intention at the time.

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## The sounds

The library consists of all the original sounds, plus a bunch of sound design sounds. There are no dynamic layers, after all it doesn't make much sense to slam a door softly, and I never intended anyone else to have these sounds - I was just making the loudest slams and bangs I could. There is a way around the lack of dynamics, which we will get to.

You also get all the samples as wav files so you can go crazy manipulating them directly in your daw. The folder of wav files is not connected to the library itself, so you can move it anywhere you want, and changing the files will not affect the library. The only thing you can't do with the wav files is to turn them into a sample library and sell it. If you want to do that, you have to make a licensing deal with me first.

All the original sounds are named after the object used to create them and include the round robin number at the end of the file name:

*"Air\_filter\_hits\_A\_rr\_2.wav"*

All the sound designed files are numbered and also include the round robin number at the end of the file name:

*"lo\_hit\_nr\_7\_rr\_3.wav"*

The library includes all the original unprocessed recordings as well as a set of what I call "organic sound design". These sounds were primarily made with just pitch shifting, EQ and lots of layering to create a set of sounds that could be real...but aren't.

The sounds and patches included:

- *Original unprocessed* - as recorded in the bunker
- *Low booms* - sound designed sonic booms that rumble and shake
- *Low hits* - sound designed low hits. Some deep stuff in here.
- *Mid hits* - sound designed mid hits. From fake taikos to snares.
- *High hits* - sound designed high hits. Great for ticking rhythms and pulses.
- *Impacts* - sound design that covers the full frequency spectrum. Best when used sparingly

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## The engine

The most important thing to understand is that **all controls (except 2) work on a per sound basis**, so you can edit, change and manipulate each sound in the library individually. This allows for endless sonic variation through pitch shifting, EQ, filters, widening and room position.

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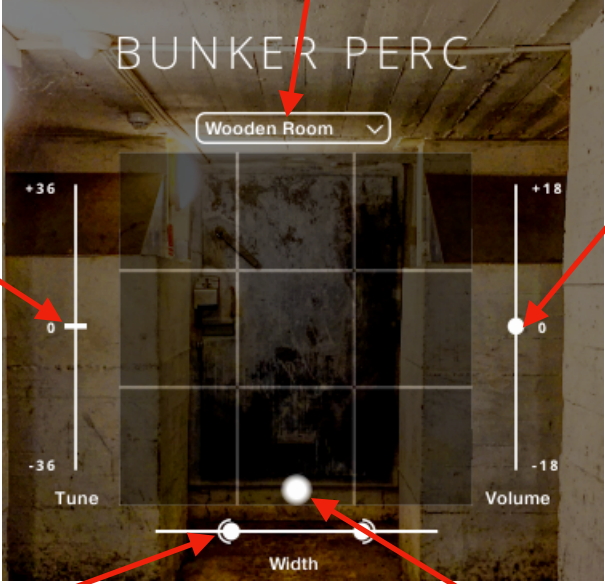
## Selecting sounds for editing

This couldn't be simpler: **to edit a sound, simply play it!** You are always editing the last played sound, and the controls will always update to show you what changes you have made to the sound.

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## The grid and basic controls

At the centre of the interface is the XY grid. This is used to position each individual sound in the room. To move a sound anywhere in the room, simply move the white puck. When you move it left-right the engine is adjusting a stereo pan effect under the hood, and when you move it up, it's adjusting a convolution reverb send while also lowering the dry level. This has the effect of moving the sound further away from you. When the puck is at the bottom of the grid, there is no reverb send at all, you are only hearing the **dry signal**. When the puck is all the way at the top, you are only hearing the **wet signal**.



The screenshot shows the 'BUNKER PERC' interface. At the top, there's a dropdown menu labeled 'Wooden Room'. Below it is a grid with a white puck in the center. To the left of the grid is a 'Tune' control with a vertical slider ranging from -36 to +36. To the right is a 'Volume' control with a vertical slider ranging from -18 to +18. At the bottom of the grid is a 'Width' control with a horizontal slider. Red arrows point from text annotations to these controls.

Select impulse response for the room you want to use for sound positioning.

Tune the last played sound up or down by up to 3 octaves. Hold shift while dragging for fine control.

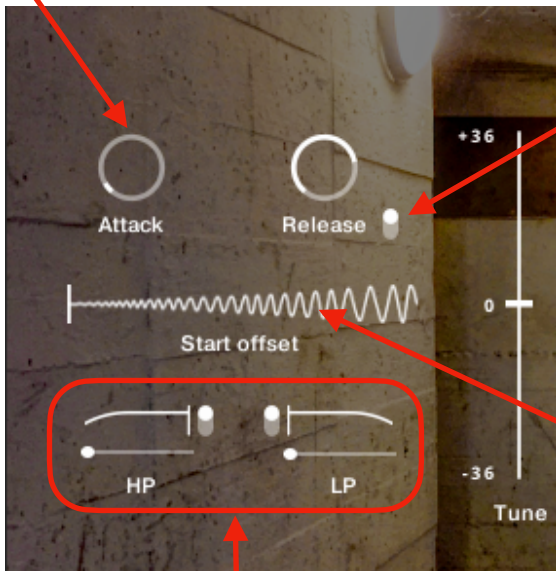
Adjust the volume of the last played sound. Volume is ALWAYS controlled by velocity (how hard you play on the keyboard), so this is more of a trim control if the changes you have made to a sound have made it too loud or soft. Hold shift while dragging for fine control.

Change the width of the last played sound. Drag left to make it narrower, and right to make it wider.

Move the white puck left and right to pan, and up and down for distance.

## The left side controls

Standard attack and release controls



Click to toggle on one-shot mode. This makes release unavailable and plays the entire sample, no matter how short you press the key. With release enabled the release phase begins the moment you release a key. As with the other controls, this is a per-sound option.

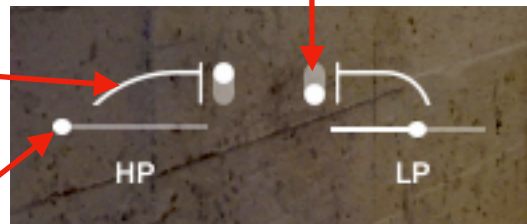


Sample start offset. This cuts into the sample by up to 50 ms. This is especially useful if you have tuned a sound down, as this can often soften the attack.

**Velocity controlled** high and low pass filters:

Click to change between two different filter slopes.

Drag left-right to adjust filter cutoff.



Drag left-right to adjust how much velocity modulates the filter cut-off.

### About the filters and simulating dynamics:

These are velocity controlled filters, meaning the filter opens or closes depending on how hard you hit the key. This can be used to simulate how real drums sound, which gets brighter when struck harder: Simply close the **LP filter** all the way down, and set the velocity control to 100%. Now when you play soft the filter is more closed, creating a softer muted sound. When you play harder the filter opens up, letting more high frequencies through.

You can create the opposite effect with the **HP filter**. Set velocity control to 100% and close the filter (drag it right). Now when you play soft you hear only high frequencies, but when you play harder the filter opens up letting more low frequencies through. This is especially useful on high pitches sounds such as those found in the *high hits* patch.

## The right side controls

Per sound 3-band EQ.

Reset all EQ settings to default (for this sound). This effectively also turns the EQ off.

Add punch to this sound. Under the hood this adjusts a transient control, and once you go past 50% it also starts to compress the tail, making the sound extremely short and punchy.

Drag up-down to change the bandwidth ("Q") for this band.

Frequency control for this band.

Drag up down to adjust gain for this band. CMD- or CTRL-click to set to 0, and thereby turning this band off.



Add tube saturation and compression. Please note **this is a global control - it affects output.** It can easily compromise clarity on a busy signal, but maybe that's what you want.

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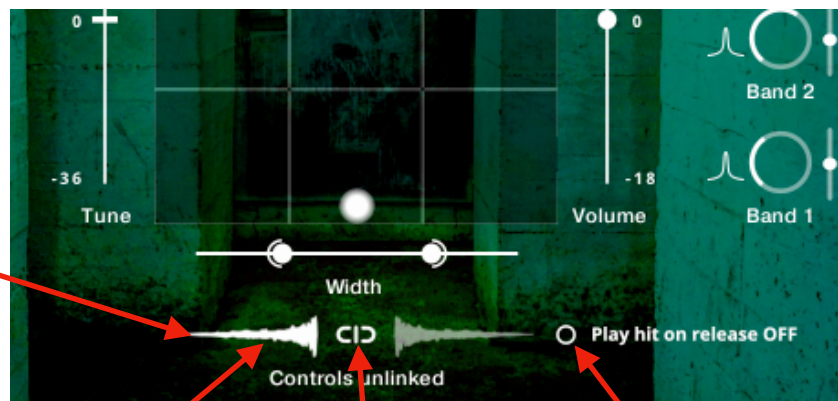
## The REVERSE engine

All patches in Bunker Perc comes in two variants; normal hits and the same sounds mapped in the reverse engine. This allows you to quickly play a reverse percussive sound and (if you want) the corresponding hit when you release the key. It also lets you manipulate the reverse and the hit together or separately. Since the hit is played on release, getting the hit lined up with the grid in your DAW, is as simple as lining up **the end of the midi note** with the bar/beat you want it to land on, then adjust the length of the midi note until the reverse flows naturally into the hit.

Most of the controls are the same as the standard patches, with a few exceptions:

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### Reverse specific controls



Click to edit the reverse sound. This makes the entire GUI green as a visual reminder that you are in edit-reverse mode.

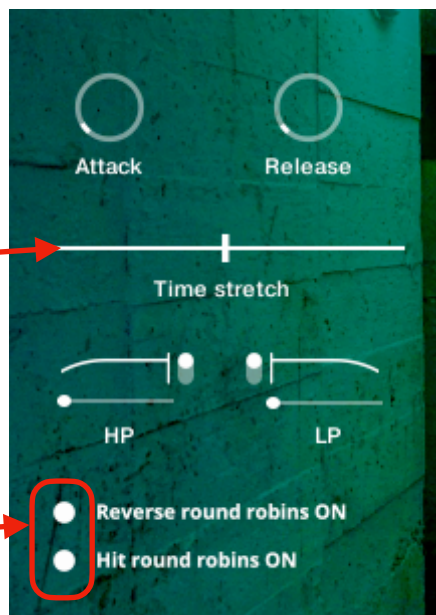
Click to link or un-link the reverse and hit controls. When linked, whether you are in edit-reverse or hit mode, moving a control will change the corresponding control by the same amount, for example tuning the reverse and the hit up or down by the same amount.

When unlinked you have complete individual control over both reverse and hit, including room placement, width etc...

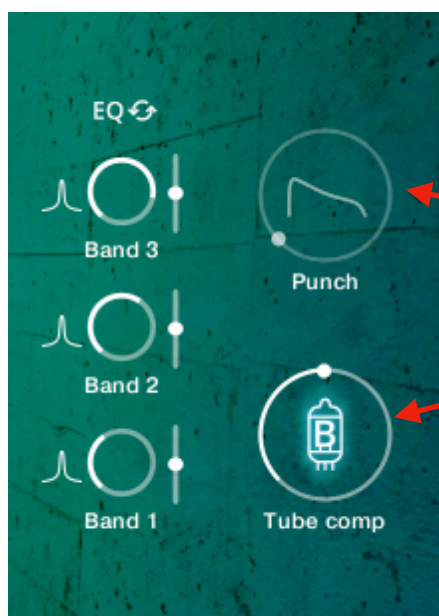
Click to edit the hit controls. The GUI turns the familiar brown colour as a visual reminder that you are editing the hit, not the reverse.

Click to toggle "hit on release" on or off. When off, only the reverse sound is played. This is a per sound control.

In reverse mode the start offset is replaced by a time stretch control. Drag left to make the reverse longer, right to make it shorter. This uses Kontakt's time machine pro, but will produce artefacts at extreme settings.



Round robins are enabled in the reverse engine by default, but you can disable them for either the reverse or hit, or indeed both, if you want the sound to be exactly the same every time. You can see the last played round robin in the most bottom left corner of Kontakt. Once you disable round robins, the last played round robin will be played every time you play that sound.



The Punch control is not available for the reverse sounds, for obvious reasons.

The tube compressor glows a lovely green in reverse mode, but it is **still a global control**, affecting both the reverse and the hit sounds.



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## The reset controls

We have already talked about the EQ reset controls, but there are two more reset buttons in the bottom left corner to speed up your workflow.



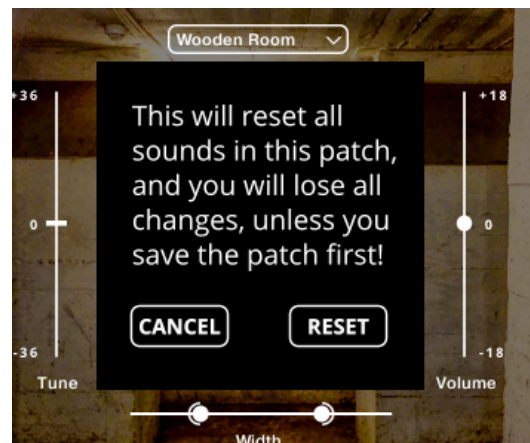
Click to reset the last played sound. This resets all parameters to their default value, including the EQ, and moves the sound to the front centre of the placement grid. The only thing not affected is the Tube comp since it's a global control.

**Please note in the reverse engine, this works together with the link button:**

When reverse and hit controls are **linked**, both are reset when you click the reset sound button.

When the controls are **unlinked**, only the controls you are currently editing (either reverse or hit), is reset - and of course for the last played sounds only.

Click to reset the entire patch! This will reset all controls to default, move all sounds front and centre etc...you will also lose all changes you have made, unless you save your work first. Therefore you get a warning:



If you click reset, it will take a couple of seconds to do so, so be patient.