



whoosh 1.0 | owners manual

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System Requirements:

Mac or PC running the full version of Native Instruments Reaktor 5.8 and up.

Credits:

Product Idea: Tilman Hahn

Product Design: Tilman Hahn & Dietrich Pank

Product built by: Dietrich Pank

Gui Design: Benjamin Diez

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SOUND EFFECT INSTRUMENTS

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1 Introduction & Signal Flow

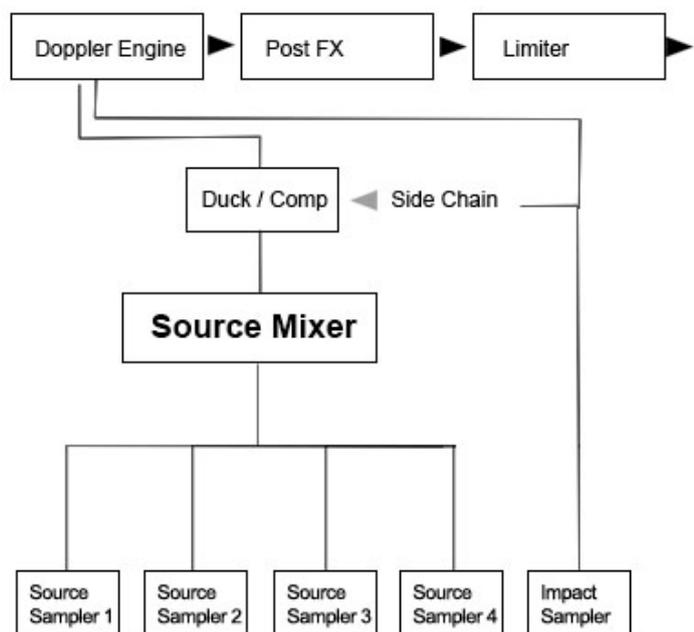
1.1 What is Whoosh?

WHOOSH is a sample based instrument designed to produce complex and unique whoosh and pass by sound effects. It enables you to precisely design the sound event of an object that passes by the listeners perspective. Different sound sources coming from individual sample playback engines are mixed into each other. This blend of sound sources is then processed by the doppler effect engine and additional post effects.

Whoosh comes with an extensive onboard library licensed from leading field recordists and covers all kind of categories from wind to fire, metal, water, engine and explosion effects. These „organic“ field recordings combined with the powerful sound effects engine of **WHOOSH** enable you to design a vast variety of impressive and beautiful sounding whoosh and pass by sound effects. The results reach from whistling wind to air ripping engine or completely over the top granular sci-fi effect whooshes.

1.2 Signal Flow

WHOOSH has two main audio signal paths: 1.) The whoosh signal path, which is a mix of the four source samplers. 2.) The impact signal path coming from the impact sampler engine. The signals from the four source samplers go to the source mixer where the levels of the four channels are blended into each other. This blended sound mix from the source mixer is passed through a side chain ducking compressor and then routed to the doppler engine. The impact sampler path goes directly to the doppler engine and does not pass through the source mixer. The signal of the impact sampler also provides the key signal for the side chain input of the ducking compressor which is inserted between source mixer and doppler engine. The side chain compressor makes it possible to duck the the whoosh signal in volume. This results in short volume dip of the whoosh signal and allows the impacts to cut through - if desired. The source mixer and impact sampler signals are finally both processed by the doppler engine. After being processed by the doppler effect engine the signal goes through the following post effects: Mod Delay → Tremolo → Equalizer → Drive → Compressor → Brick Wall Limiter.



2 The Different Sections

2.1 The Source Sampler



There are four source samplers each sharing the same functionality. The source samplers provide the raw sounds which are blended into each other by the source mixer. The source players each provide 13 SFX categories containing 128 samples in total. The source players each offer a master volume accompanied by a high & low - cut filter.

The samplers operate in two different playback modes: loop and grain. In both modes the user can select a playback range to define the start and end point of the looped sample range. Both modes offer the ability to change the playback direction via three different modes: forward, alternate and backward. When „loop“ playback mode is selected there is no connection to the master duration of the instrument and the sample is just constantly looped. In granular playback mode it is possible to synchronize the playback duration of the loop to the master instrument duration.



If sync is selected and set to 1, the selected sample loop range is synchronized to the master duration. The sync value can also be set to double triple or four times the speed. If HZ mode is selected, the grain playback operates in free run. This is useful if you want to have more unpredictable results or realize really slow or fast movements of the grain playback head. In loop and grain playback mode it is possible to control pitch and panorama. In grain mode there are a couple of more options. Here it is possible to control the grain density (Number of grains at a time) and the grain size. Further more it is possible to modulate the parameters grain size, position, pitch and pan with a jitter modulator.



2.2 The Impact Sampler



The impact sampler is divided into four individual impact players each sharing the same functionality. The players offer ten different categories of impact samples. Each category has four banks: A, B, C and D. If you for example select the impact effects category „Doors“ you can selected between four different „Door“ impact effects. Doors A, - B, - C, and D. The preset popup menu at the left allows to quickly select different preconfigured impact sample selections.

The impact samplers offer a round robin playback by default. Each bank consists of three variations of the same sound effect. After each pass the engine randomly selects one of the three sample variations. This way a series of impact does not sound exactly the same. It is possible to switch On/Off the round robin playback behavior with the random button. If random is switched off you can step through the individual samples by pressing the sample number buttons.



The three big encoders at the top of the impact panel allow to adjust the position, pitch, and amplitude of all 4 impact players at once. Through the quadratic little spinner buttons under the encoders it is possible to select a random modulation amount for each of the three parameters. If the position parameter is modulated by an amount of randomness the playback position of the four impacts is randomized after each pass. It is important to understand that the big encoders affect all four impact samplers equally but the random modulation produces four individual random values for each sampler to produce more interesting variations for each impact event. The selected range of randomness however is equal for all four impact players. It is also possible to change the position of the impacts individually. This can be done directly in the master waveform display.

Notice when you are repositioning the individual impacts manually the align knob becomes active. The align knob allows to realign all four impacts with one click. Repositioning the individual impact positions is only possible when you are in the impact edit mode.



2.3 The Mixer



The mixer gives you the possibility to change the category and sound selection for each sampler in one panel. Basic parameters like volume and the high & low cut filters are also provided.

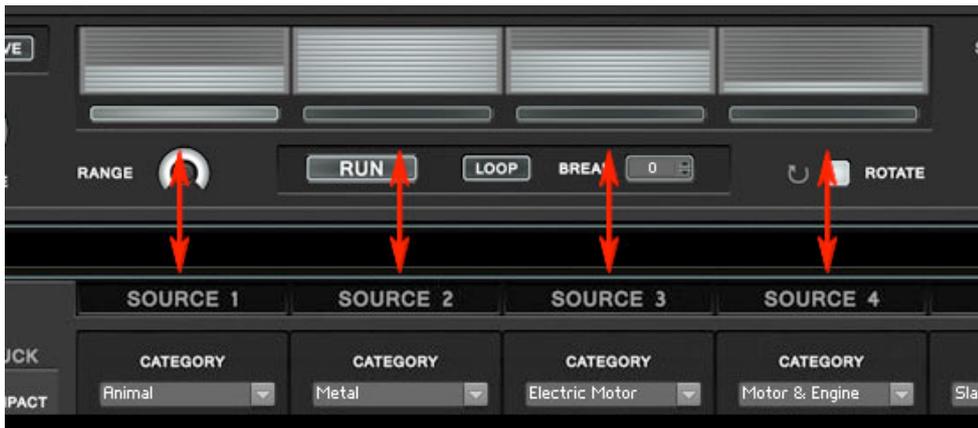


On the left side of the mixer section it is possible to cross fade between the source (whoosh)- and the impact- signal. In the impact routing section it is possible to change the impacts audio path, so that the impacts bypass the doppler engine. This is helpful if you want to just record the impacts clean and without any doppler effect or for designing incoming sound effects. An incoming explosion for example, where a whoosh is followed by a prominent impact explosion effect. So to hear the impacts clear as if you solo the impact sampler. If you enable the direct routing mode a second knob appears where you can decide if you want the impacts to be effected by the master volume fade or not.



The encoder labeled duck enables you to select how much the whoosh signal should be ducked by the impact signal. To the right of the encoder is a meter where you can see the amount of ducking. If you want to tweak the ducking settings in detail you can do this on the sub menu „duck“. Here you have control about the attack and decay time. You can engage a high pass filter for the side chain signal and a pre delay (Look Ahead). On the bottom on the panel you can control the master fade. Adjusting the master fade is also possible in the main scope view display.

2.4 The Source Mixer



The source mixer works like an automated crossfade mixer with four channels. The four volume meters correspond to the four source players underneath. The source mixer operates in two modes: Wave and random.



Wave Mode

In wave mode the whole source mixer operates synced to the master duration of the instrument. This means during each doppler pass the source mixer blends through all the outputs of the four source players. The volume modulation is shaped like a wave and is represented through the four wide LED style meters which correspond to the underlying source samplers. By selecting one of the four wide buttons under the meters one can select from which source sampler position the wave modulation should start. If rotate mode is enabled the start point of the wave mixer will rotate to the next right position after each pass. 1,2,3,4, → 2,3,4,1 → 3,4,1,2 → 4,1,2,3 e.t.c

Range: Narrows or widens the wave modulation range. With the range fully engaged the wave modulation starts with all levels at zero. When range is lowered the modulation range is narrowed and the volume modulation does not start from zero anymore.

Mix Shape: Controls the overall shape of the wave modulation. The higher the wave shape the stronger the wave modulation is taking place at the center (peak) position or the narrower the wave. The lower the wave shape parameter the wider the wave modulation.

Latitude: (Inertia) of the wave modulation. The higher the latitude the more inert the modulation behaves. The lower the latitude the more direct the modulation.



Random Mode:

In random mode the four volume levels are modulated randomly and the source mixer is not synced to the master duration / doppler path.

Speed: Controls the tempo of the random modulation.

Contrast: Controls the rate at which the random values do tend to more extreme positions. With a higher contrast the levels fluctuate more often between full and zero level.

Smooth: Smooths the random modulation. The modulation behaves more even.

Normal: Stands for normalize and causes a equalized randomization of all four channels. With normal activated the overall sum of the four levels is equaled.

At the bottom of the source mixer panel you find the master playback section:

Run: Starts the instrument.

Loop / Single: Selects between loop and one shot playback.

Break: Inserts a break time in ms between each doppler pass.

2.5 The Scope Display:



In the scope display it is possible to control the master fade. The master fade is an overall volume fade imposed on the whole doppler event. This ensures a smooth start and end modulation. The master fade becomes especially useful when the source mixer is operating in random mode, where the audio can be unpredictable.

3.1 Master Duration



The master duration defines the length of the whoosh sound effect. When changing the duration all the synchronized parameters follow. (Effect LFO's and granular playback position).

3.2 The Doppler



The doppler engine simulates a range of natural dampening and doppler effects which occur when sound sources are passing by the listener.

Speed: The speed of the object that passes by.

Distance: The distance of the listener to the object.

Link: Links the distance control to the speed control. With link enabled the sound changes more evenly when changing the speed.

Path: Path the object travels in meters.

Amount: With the pitch and amp controls it is possible to increase or decrease the amount of pitch and amplitude modulation of the doppler effect.

Damp: There are three different damping modes: Peak A and Peak B both simulate dampening effects as they occur in nature. The signal is more muffled in the distance and the high Frequencies increase when the object approaches. The Up/Down mode is more like a high cut filter that opens up or closes when the object approaches and remains at the up or down position when the Object disappears.

Pan: Controls the amount of „Left to Right“ Panning.

3.3 Mod Delay



Mod Delay offers control over mix, feedback, left and right channel delay time. All the four parameters can be modulated by selecting one of the two LFO's. Which LFO can be selected in the number fields under the encoders. Add the desired modulation amount through click and drag in the little arrow spinner knobs. Special about the mod delay is that the delay time only goes up to 80 ms which is perfect for creating flanging, chorus and metallic delay effects.

3.4 Tremolo



Tremolo offers control over speed and mix. Both controls can be modulated via the two LFO's in the same way as the mod delay. It is also possible to choose between three different tremolo shapes.

3.5 Equalize



Equalize is a basic high and low shelf equalizer. You can select a specific low or high frequency value and increase or decrease it's gain.

3.6 Drive



You can select between drive and saturation mode. The big encoder allows you to dial in the drive effect. There is also some additional filtering offered. The additional drive effect may lead to an increased volume of the lower frequencies. The low cut filter could help balancing here. There is also a HiFi filter offered which lowers the mid range frequencies.

3.7 Compress



Compress is a basic compressor and offers control for compression, threshold, ratio, attack and release time.

3.8 Master Volume & Limiter



Controls the master output volume of the instrument. At the end of it's signal chain is a brick wall limiter indicated through the gain reduction meter. The limiter can operate in three different modes: Slow, Firm and Crisp. Crisp has an ultra short attack time and may lead to some additional digital distortion. This can be desired to get some extra crunchiness.

4.0 Midi & Host Sync:



In the current version it is possible to right click on any parameter to enable MIDI & OSC learn. We are working on a more improved MIDI functionality for the next free update.



In the default mode WHOOSH starts and stops with the master clock start/stop of the HOST. You can change this in the Ensembles B View. Right click in the instruments upper frame to switch to B View.



Tutorials:

We also offer a couple of tutorials on our Vimeo channel. Combined with this manual you should be able to master making unique and powerful whoosh and pass by effects.

The Whoosh Walk Through:

<https://vimeo.com/79340747>

Sample Import Work Around Part 1

<https://vimeo.com/80088764>

Sample Import Work Around Part 2

<https://vimeo.com/80089595>