

USER MANUAL

_DELAY BRIGADE

ARTURIA

_The sound explorers

Special Thanks

DIRECTION

Frédéric Brun Kevin Molcard

DEVELOPMENT

Samuel Limier (lead)	Kevin Arcas	Loris De Marco	Christophe Luong
Stefano D'Angelo	Yann Burrer	Pascal Douillard	Pierre Mazurier
Simon Conan	Hugo Caracalla	Geoffrey Gormond	Mathieu Nocenti
Alexandre Adam	Corentin Comte	Rasmus Kürstein	Marie Pauli
Stéphane Albanese	Raynald Dantigny	Pierre-Lin Laneyrie	Patrick Perea
Marc Antigny	Mauro De Bari	Marius Lasfargue	Fanny Roche
Baptiste Aubry	Alessandro De Cecco	Cyril Lépinette	

DESIGN

Antoine Petroff Shaun Elwood Morgan Perrier

SOUND DESIGN

Jean-Michel Blanchet

TESTING

Arnaud Barbier (lead)	Adam Chrustowski	Aurélien Mortha	Enrique Vela
Thomas Barbier	Bastien Hervieux	Roger Schumann	Julien Viannenc
Matthieu Bosshardt	Germain Marzin	Adrien Soyer	Benjamin Renard

MANUAL

Stephan Vankov (author)	Jimmy Michon	Charlotte Métais	Holger Steinbrink
Vincent Le Hen	Minoru Koike	Jose Rendon	Jack Van

TUTORIALS

Geary Yelton François Barrillon

BETA TESTING

Paul Beaudoin	Ben Eggehorn	Mat Jones	Rodrigues
David Birdwell	Jam El Mar	Luca Lefèvre	Solidtrax
Gustavo Bravetti	Ken Flux Pierce	Terry Marsden	Tetuna
Andrew Capon	Tony Flying Squirrel	Gary Morgan	Peter Tomlinson
Chuck Capsis	Andrew Henderson	Paolo Negri	Bernd Waldstädt
Jeffrey Cecil	Mat Herbert	Mateo Relief vs. MISTER X5	George Ware
Marco «Koshdukai» Correia	Neil Hester	William «Wheelemix»	Elliot Young
Raphael Cuevas	Guillaume Hernandez	Robertson	Chuck Zwicky
Dwight Davies	Jay Janssen	Fernando Manuel	

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26 avenue Jean Kuntzmann
38330 Montbonnot-Saint-Martin
FRANCE
www.arturia.com

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Thank you for purchasing Delay BRIGADE!

This manual covers the features and operation of the Arturia Delay BRIGADE plug-in.

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

Special Messages

Specifications Subject to Change:

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

IMPORTANT:

The effect, when used in combination with an amplifier, headphones or speakers, may be able to produce sound levels that could cause permanent hearing loss. DO NOT operate for long periods of time at a high level or at a level that is uncomfortable, or a level that exceeds prevailing safety standards for hearing exposure. Always follow the basic precautions listed below to avoid the possibility of serious injury or even death from electrical shock, damages, fire or other risks. If you encounter any hearing loss or ringing in the ears, consult an audiologist immediately. It is also a good idea to have your ears and hearing checked annually.

Introduction

Congratulations on your purchase of Arturia's Delay BRIGADE

We'd like to thank you for purchasing Delay BRIGADE, our recreation of a sought-after bucket brigade delay pedal.

Arturia has a passion for excellence, and Delay BRIGADE is no exception. Put the plug-in on a track or send bus, skim through the presets curated by professional sound designers, and tweak a few controls. We have created Delay BRIGADE so that it's easy to understand and use right away, yet powerful and flexible for creating a wide range of different delay effects and colors. We are confident that Delay BRIGADE will be a valuable addition to your effects plug-in collection, and that you'll have a lot of fun with it.

Be sure to visit the [Arturia](#) website for information about all of our other great hardware and software instruments. They have become indispensable, inspiring tools for musicians around the world.

Musically yours,

The Arturia team

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1. INTRODUCTION TO THE DELAY BRIGADE

Thank you for purchasing our virtual delay effect, the Delay BRIGADE. Delay BRIGADE is modelled after an iconic and highly sought-after bucket brigade delay pedal from the 1970s. This unit was one of the first to offer warm, tape-like echo in a small pedal form.

Arturia's Delay BRIGADE builds on this legacy by providing you with a realistic recreation of the original hardware, while adding new features that modern producers and musicians will appreciate. We are confident that Delay BRIGADE will give you many hours of playing and producing pleasure.

1.1. History of the original hardware brand

The first iteration of the hardware was originally released in 1976 and was one of the first solid-state pedal echo devices. Previously, echoes could only be achieved with bulky tape-echo machines. While these machines sounded great, they were often unstable and difficult to maintain. Advancements in integrated circuit chip design and the arrival of this delay pedal heralded a new era of small, portable analog echo devices that still retained a warm sound character similar to earlier tape-echo devices. Unlike their magnetic tape-echo counterparts which generally produced delays of longer durations, the circuits inside the pedal, also known as bucket brigade devices (BBD) were also capable of producing much shorter delays to achieve chorus and flanging effects.

The small form factor, characteristically warm sound and the ability to produce various types of delay effects made the pedal a dream come true for guitarists all over the world. It has been used heavily by some of the biggest rock artists, such as U2, Radiohead and Arctic Monkeys. While the original design evolved significantly throughout the following decades, the pedal brand still continues to be one of the most sought-after delay pedals in the world.

1.2. What is BBD?

BBD stands for bucket brigade device. The name comes from the world of firefighting, where firefighters would pass buckets of water from one person to another to extinguish a fire. This was called a bucket brigade. Similarly, a BBD is a type of circuit that passes an analog signal through a series of capacitors to achieve delayed echoes. Each capacitor can be thought of as a "bucket". Once it fills up, signal passes to the next capacitor. This introduces a delay to the original signal. The delay time can be changed by varying the speed at which capacitors fill up. As signal is passed from one capacitor "bucket" to the next, the original signal gradually degrades, resulting in noise and distortion. Manufacturers had to account for this by filtering the signal heavily on the way into the delay circuit, and on the way out. This gave these types of delay circuits a characteristically warm, dark sound that would blend well behind the original signal.

1.3. The deluxe model

Perhaps the most famous and beloved iteration of the pedal brand was the deluxe model released in 1980. This unit packed all of the great analog bucket brigade delay sound of the earlier models into a highly flexible and versatile package.

The unit featured a BBD Panasonic MN3005 chip, lauded for its warm sound and low noise. On the rear panel, there were separate outputs for the direct and echo signals. This allowed users to route the signal to different amps to create a special effect between the echoes and direct sound. On the front panel, the deluxe version featured the same controls as previous versions - Blend for controlling the mix of direct and delayed signals, Feedback for controlling how much of the delayed signal is fed back into the BBD circuit, and Delay for specifying the interval between the delays. Two notable and important additions were the Level control which allowed the user to adjust the preamp level, and the dedicated Chorus-Vibrato knob for controlling the amount of Chorus or Vibrato (selectable via a switch on the rear panel) that would be applied to the delayed signal.

While on first look this feature set may seem limited by today's standards, the the deluxe model was capable of producing lush and warm delay effects and is the most sought-after version of the lineage.

1.4. What does Delay BRIGADE add to the original?

While modern versions of the hardware pedal can still be purchased today, the iconic and collectible deluxe version is extremely rare to find. And even if you're lucky enough to own one, incorporating it into a modern workflow can present its own challenges. At Arturia we pride ourselves on offering the best of both worlds - the uncompromising quality and character of hardware devices, delivered in a convenient software package that is adapted to a modern workflow. Arturia's Delay BRIGADE is a faithful recreation of the original hardware, capturing all of its nuances and sonic character with utmost detail. In addition to this, we have expanded on the original design with new features and capability not found on the original model, including:

- Input EQ for shaping the input signal before processing
- 3 different Delay Types - M/S, L/R, ping-pong
- Processes audio in stereo, instead of mono
- Adjustable BBD size that allows longer delay times
- Run multiple instances with different settings
- Automate effect settings from your DAW
- LFO for automated modulation of effect parameters
- Envelope Follower for modulating effect parameters via amplitude of incoming signal
- Easy storage and recall of effect settings

2. ACTIVATION AND FIRST START

The Arturia Delay BRIGADE plug-in works on computers equipped with Windows 7 or later and macOS 10.10 or later. You can use Delay BRIGADE as an Audio Unit, AAX, VST2 or VST3 plug-in (64-bit only).



2.1. Activate the Delay BRIGADE license

Once the software has been installed, the next step should be to activate your license, so that you can use it without limitations.

This is a simple process that involves a different software program: the Arturia Software Center.

2.2. The Arturia Software Center [ASC]

If you have not already installed the ASC, go to this web page: [Arturia Downloads & Manuals](#). Look for the Arturia Software Center at the top of the page, and then download the version of the installer that you need for your system (macOS or Windows). Follow the installation instructions and then:

- Launch the Arturia Software Center (ASC)
- Log into your Arturia account
- Scroll down to the My Products section of the ASC
- Click the Activate button

That's all there is to it!

3. OVERVIEW

3.1. Working with plug-ins

Delay BRIGADE comes in VST2, VST3, AU and AAX plug-in formats for use in all major digital audio workstations (DAW) including Live, Logic, Cubase, Pro Tools and others. Unlike a hardware delay pedal, you can load as many instances of Delay BRIGADE as you find useful. Delay BRIGADE has two other big advantages over hardware:

- You can automate many of Delay BRIGADE parameters using your DAW's automation system.
- Your settings and current plug-in state will become recorded in your project, and you can pick up exactly where you left off the next time you open it.

3.2. Channel Configuration (Mono/Stereo)

The plug-in can be used on Mono or Stereo channels. The Mono configuration is automatically loaded when you use the plug-in with mono tracks, while using the plug-in with stereo tracks will automatically load the Stereo configuration.

The available controls will change depending on which configuration is used. For example, the Mono configuration will only display a single delay time control, rather than individual left and right channel controls.

This manual covers the full set of features that are available in the Stereo configuration. Controls that are unavailable in mono mode will be noted.

4. USER INTERFACE

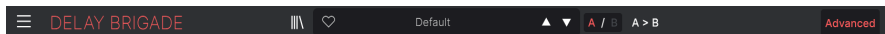
Delay BRIGADE offers a simple, intuitive user interface. The interface is split up into 4 main sections:



1. **Upper Toolbar** contains various plug-in settings and the preset browser.
2. **Main Control Panel** contains the main effect controls. These controls are covered in the [Main Control Panel \[p.12\]](#) section of this manual.
3. **Advanced Control Panel** contains advanced effect controls. These controls are covered in the [Advanced Control Panel \[p.15\]](#) section of this manual.
4. **Lower Toolbar** contains additional plug-in utilities, like bypass switch and CPU meter.

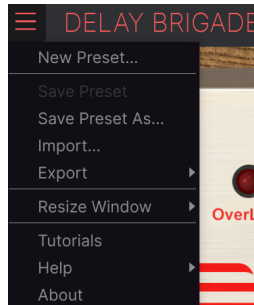
4.1. The Upper Toolbar

The upper toolbar, which is common to all current Arturia plug-ins, gives access to many important functions.



4.1.1. Plug-in Options

Clicking the Delay BRIGADE logo located on the left will display a menu containing various plug-in settings and options.



4.1.1.1. Save Preset

This option will overwrite the active preset with any changes you have made, so if you also want to keep the source preset, use the Save Preset As option instead. See the next section for information about this.

4.1.1.2. Save Preset As...

If you select this option, you are presented with a window where you can enter information about the preset. In addition to naming it, you can enter the Author name and select a Type. You can even create your own Type, by entering custom names in the respective place. This information can be read by the preset browser and is useful for searching the preset later.

A screenshot of the 'Save As' dialog box in the Delay BRIGADE application. The dialog has a dark background and contains four input fields: 'NAME' with the value 'Huwel Dream', 'AUTHOR' with the value 'DIJIMIX', 'BANK' with a dropdown menu showing 'User', and 'TYPE' with a dropdown menu. At the bottom right, there are two buttons: 'Cancel' and 'Save'.

4.1.1.3. Import...

This command lets you import a preset file, which can be either a single preset or an entire bank of presets. Both types are stored in .mebx format.

After selecting this option the default path to these files will appear in the window, but you can navigate to whichever folder you are using to store presets.

4.1.1.4. Export Menu

You can export presets in two ways: as a single preset or as a bank.

- **Export Preset:** Exporting a single preset is handy when you want to share a preset with someone else. The default path to these files will appear in the "save" window, but you can create a folder at another location. The saved preset can be reloaded with the Import menu option.
- **Export Bank:** This option can be used to export an entire bank of sounds from the instrument, which is useful for backing up or sharing presets.

4.1.1.5. Resize Window options

The plug-in window can be resized from 60% to 200% of its original size. 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 the size to get a better view of the controls.

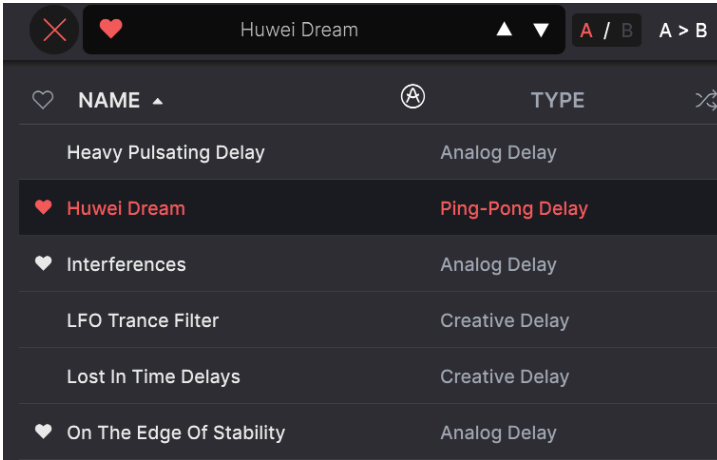


Window resizing can also be controlled via keyboard shortcuts. On Windows, press Ctrl +/- to zoom in and out. On Mac, press Cmd +/- to zoom in and out.

4.1.2. Preset Library



Presets can be selected in several different ways. First, there is the Preset Library button. Clicking this button will display all of the included factory presets, as well as any user presets you have saved. The currently selected preset will be highlighted.



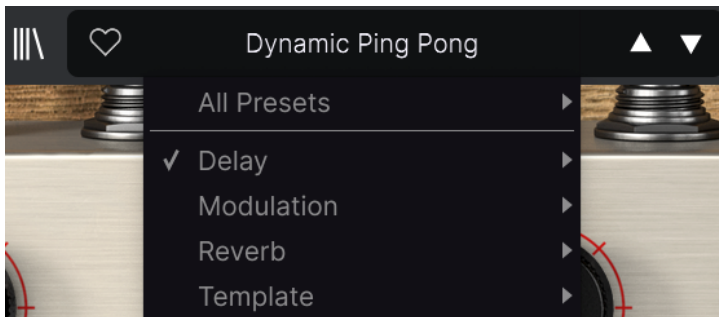
- Click a preset in the menu to load it.
- To mark a preset as a "favorite" click the heart icon next to it.

Along the top of the Preset Library are several sorting and filtering options. These allow you to change how the presets are organized in the browser menu.

- Click the first column to sort presets by Name or Featured. Featured are presets curated by the Arturia sound design team to showcase the different sonic capabilities of the effect.
- Click the second column to sort presets by Type or Designer.
- Click the heart icon to sort the preset list, such that it displays any presets you have marked as "favorite" at the top of the list.

i The order of the Preset Library also affects the order of the Preset Quick Load menu. You can use the Library to filter for specific types of presets, then use the Preset Quick Load menu (or the left and right arrows) to quickly navigate among them without opening the Preset Library.

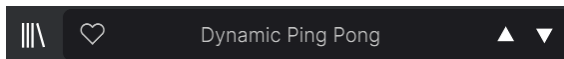
4.1.3. Preset Quick Load



In addition to the full Preset Library, you can use the Preset Quick Load menu to quickly access presets. Any filtering and sorting options applied in the Preset Library will also be reflected in the Quick Load menu. For example, if you have enabled "favorite" sorting in the Preset Library, any presets marked as favorite will appear at the top of the Quick Load list.

The Preset Quick Load menu also includes the option to delete the currently selected preset. Click **Delete Current**, located at the bottom of the list, to remove the preset from the Library.

4.1.4. Preset Navigation [Previous/Next]



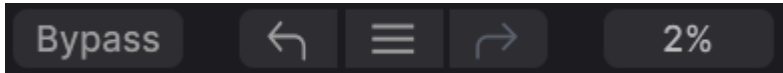
Lastly, you can also navigate through presets using the left and right arrows directly to the right of the Preset Quick Load menu. These arrows will navigate to the next or previous preset in the list. Again, the order of presets will be determined by any filtering and sorting options applied in the Preset Library.

4.1.5. View Advanced Control Panel



Clicking the Advanced button, located on the right of the upper toolbar, will expand the plug-in window to show the advanced effect controls. These controls are covered in detail in [Advanced Control Panel \[p.15\]](#) section of this manual.

4.2. The Lower Toolbar



On the bottom of the GUI, the Lower Toolbar contains the following:

Panic button will stop all audio from Delay BRIGADE. For example, this can be useful to stop any sustaining feedback when using high Feedback settings.

Bypass switch enables and disables Delay BRIGADE.

CPU Meter displays how much of your computer's CPU is being used by the plug-in.

5. CONTROLS

This section covers the main effect controls. Whether or not you've used the original hardware, you will find the controls intuitive and easy to grasp.

The controls are located in two sections of the user interface - the Main Control Panel, and the Advanced Control Panel.

The Main Control Panel is visible by default. The Advanced Control Panel can be accessed by clicking the double arrows pointing down in the upper right corner of the interface.

Let's go over each control in detail.



For greater resolution when editing controls with the mouse, use Ctrl+Drag (Windows) or Cmd+Drag (Mac). Alternatively, you can use RightClick+Drag.



Double-click a control to reset it to its default setting.

5.1. Main Control Panel



Input Level adjusts the volume of the input signal. At high values, the preamp will introduce saturation to the input signal.

Left/Right Delay changes the interval between delays. Delay rate for each channel can be set independently, or linked together.



When using the Mono configuration of the plug-in, only a single delay control will be available.

Link button turns linking on and off. When linked, changing the repeat rate with the Left rate knob will also set Right rate to the same value and vice versa.



Link button is only available when using the Stereo configuration of the plug-in.

Sync button locks the delay rates to your host's tempo for tempo-synced delays. When sync is tuned on, the delay rate controls will display values in beat intervals.

BBD Size is a two position switch that specifies the length of the BBD delay buffer. This setting changes the delay range of the Delay Time knobs. In the off position, the delay will range between 40-400ms as in the original deluxe model. In the on position, the delay will range between 100-1000ms as in newer models.

Stereo Offset lets you introduce small timing differences between the left and right channel delays to create more spatial separation. In center position there will be no offset applied. Moving the knob to the left of center will introduce a gradual delay to the left channel and vice versa. Note that the Stereo Width knob needs to be set to a positive value (above center position) to hear the stereo widening effect.



Stereo Offset is only available when using the Stereo configuration of the plug-in.

Stereo Width controls the stereo width of the processed left and right channel echoes. At minimum position, there will be no stereo separation between left and right echoes. At center position, the stereo separation will be the same as in the original input signal. To the right of center the knob will act as a stereo widener, accentuating the side (stereo) aspect of the sound. Note that stereo widening can only occur if there is a side (stereo) component in the input signal. If the input signal is mono, then no stereo widening will occur.



Stereo Width is only available when using the Stereo configuration of the plug-in.

Feedback controls the amount of delay signal that is fed back into the BBD circuit. At high settings, the delays will continue being layered on top of each other and will eventually begin to self-oscillate, creating saturated feedback and textures.



To stop any sustaining feedback, click the Panic button located on the Lower Toolbar.

Mode switch selects whether chorus or vibrato will be applied to the delayed signal.

Chorus/Vibrato Amount controls the amount of chorus or vibrato effect that will be applied to the delayed signal.

Echo Level adjusts the volume of the processed delay signal.

Delay Mode is a new feature that was not present in the original hardware. This 3-position switch controls how the input signal will be processed.

- In L/R mode, each channel is sent to an independent delay (echo) path.
- In Ping Pong mode, the processed echoes will alternate between left and right channel.
- In M/S mode, the input signal is split into its mid (mono) and side (stereo) components, and each is processed independently by the delay. While this mode is selected, the Delay L/R knobs will be labelled Delay Mid/Side. The Delay Mid knob controls the delay rate of the mid (mono) aspect of the sound and the Delay Side knob controls the delay rate of the side (stereo) aspect of the sound.



Delay Mode switch is only available when using the Stereo configuration of the plug-in.

Blend determines the ratio of delayed to non-delayed sound output from the plug-in. When turned all the way down you will only hear the input sound, as well as any saturation introduced with the Input Level preamp control. When turned all the way up, you will only hear the sound produced by the delay circuit.



When using the plug-in as a send effect, you will typically want to turn this knob all the way up, so that the plug-in is only outputting the processed delay sound and not introducing additional amplification to the original signal.

5.2. Advanced Control Panel

The following controls are accessible while the Advanced Control Panel is visible. To expand the Advanced Control Panel, click the double-arrows pointing down, located in the upper right corner of the plug-in window.



5.2.1. Input Equalizer

The Input Equalizer is a new feature that was not available on the original hardware. This lets you shape the sound before it enters the BBD circuit, allowing you to accentuate or limit which frequencies of the sound are processed by delay. The Input Equalizer features three filters - high-pass, low-pass, and peak.

i The Input Equalizer can be accessed in the Advanced Control Panel. To view the Advanced Control Panel, click the double arrows pointing down, located in the upper right corner of the interface.



Power switch enables and disables the input equalizer.

LP Freq controls the cutoff frequency of the low-pass filter. Frequencies above the cutoff will be rolled off. This can be used to remove high frequencies from the input, resulting in a warmer, more muted sound going into echo and reverb. The range is 3kHz to 20kHz. At maximum position, the low-pass filter is automatically disabled and will have no effect on the sound.

Peak Freq controls the cutoff frequency of the peak filter. The peak filter can be used to either boost or cut frequencies around the peak band.


Gain determines whether the peak filter will boost or cut frequencies at the Peak Freq. In the middle position, there will be no change to the gain of the peak band.

Q determines the width of the peak filter band. At higher values, the boost or cut will be very narrow and only affect frequencies close to the Peak Freq. At lower values, the boost or cut will be very wide and affect a broader set of frequencies.

HP Freq controls the cutoff frequency of the high-pass filter. Frequencies below the cutoff will be rolled off. This can be used to remove unwanted bass from the input, resulting in a brighter sound going into the delay circuit. The range is 20Hz to 1.2kHz. At minimum position, the low-pass filter is disabled and will have no effect on the sound.

5.2.2. Envelope Follower

The Envelope Follower is a new feature that is not present in the original hardware. The Envelope Follower works by tracking the amplitude of the input signal and using this amplitude shape to modulate an effect parameter. This can be a very effective tool for creating complex rhythmic effects that evolve according to the dynamic of the input signal. For example, you can map the envelope follower to the echo volume, so that it increases and decreases along with the amplitude of the input, or you could reverse the relationship such that echo only swells in when the input signal begins to attenuate.

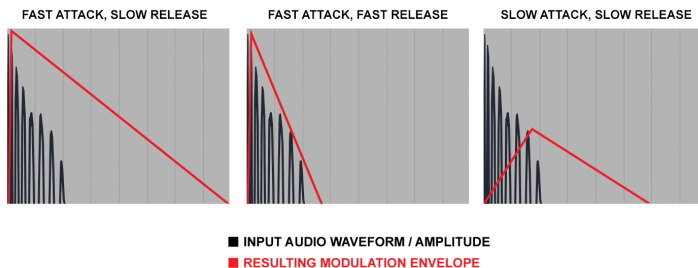
 Envelope Follower settings can be accessed in the Advanced Control Panel. To view the Advanced Control Panel, click the double arrows pointing down, located in the upper right corner of the interface.



In Gain determines the loudness of the input fed into the envelope follower module. This is an important control in dialing in how the resulting modulation works. For example, if the input signal is too quiet you may need to boost the In Gain so that the envelope follower can measure a louder signal.

Attack specifies how quickly the modulation will respond to amplitude increases in the input signal.

Release specifies how quickly the modulation will respond to amplitude decreases in the input signal.



Example of various attack and release settings for the Envelope Follower and the resulting modulation that will be applied to target parameter.

Destination menu selects the effect parameter that will be modulated by the Envelope Follower. Most effect parameters can be modulated.

Amount determines the amount of modulation that will be applied to the target effect parameter. When set to center position, there will be no modulation of the target parameter. Moving the knob to the left of center will gradually apply negative modulation, while moving the knob to the right of center will gradually apply positive modulation of the target parameter's current setting.

i Envelope Follower modulation is unipolar, so the target effect parameter will be modulated only in a positive or negative direction (not both) from its current setting, depending on the setting of the Amount knob.

5.2.3. LFO

LFO stands for Low Frequency Oscillator. This is another new feature that was not present in the original hardware, but is now offered in Delay BRIGADE. Unlike a typical synthesizer oscillator, an LFO does not produce any sound but is used to modulate other software parameters to create a sense of movement and evolution to the effect.

LFOs can be used in extreme ways, like the dubstep wobble where a tempo-synchronized LFO is often used to control a filter cutoff, but can also be used in more subtle ways to add gentle modulation and movement.

i LFO settings can be accessed in the Advanced Control Panel. To view the Advanced Control Panel, click the double arrows pointing down, located in the upper right corner of the interface.



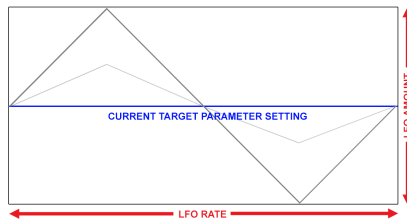
Shape changes the shape of the LFO, which determines how the target parameter will be modulated. There are 6 available shapes - Sine, Saw, Ramp, Triangle, Square, and Sample & Hold. While the first 5 shapes offer a predictable modulation curve, the Sample & Hold option can be thought of as a random generator. Each time the LFO cycle completes, as specified by the LFO Rate knob, a new random value is generated. This is very useful when you want to add non-repetitive modulation to the target parameter.

Rate determines the speed at which the modulation LFO shape is “scanned”. Low values result in slower modulation, while high values will result in faster modulation of the target parameter. Rate can be synced to your host’s tempo by enabling the Sync switch.

Sync synchronizes the LFO Rate to your host’s tempo. This can be useful if you want to create beat-synced effects modulations. While sync is on, the Rate control will display values in beat intervals. While sync is off, Rate will display values in milliseconds.

Amount determines the amount of modulation that will be applied to the target effect parameter. With low values, the target parameter will be modulated only slightly around its current setting, while high values will result in a larger modulation.

Destination menu selects the effect parameter that will be modulated by the LFO. Most effect parameters can be modulated.



i LFO modulation is bipolar, so the target effect parameter will be modulated in a positive and negative direction from its current setting.

5.3. Some Final Words

This concludes the user manual. We hope you’ll enjoy your new plug-in and the results you get when using it, as much as we enjoyed making it.

6. SOFTWARE LICENCE AGREEMENT

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