

# Vapor User's Guide

Audio Damage, Inc.

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## Introduction

Thank you for purchasing Vapor, Audio Damage's diffusion chorus plug-in. Vapor is a sort of hybrid effect, a relative of both chorus and reverb. Vapor adds high-end shine and animation to synthesizers, strings, and guitar, giving them more presence in your mix. Vapor can also smear out and soften audio, making instruments sound distant and less distinct.

At Vapor's core is a network of *diffusers*, delay-based filters that soften and smear audio passing through them. Each diffuser is modulated by a low-frequency oscillator (LFO). This modulation prevents the filters from resonating at any specific frequency but can also be used to create unusual tremolo-like effects.

Vapor is provided as both a VST and an AudioUnit plug-in for Windows and MacOS X. The MacOS X version is a Universal Binary, compatible with both Intel- and Motorola-based Macs.

## System Requirements

To use Vapor, you'll need a Steinberg VST-compatible host application which conforms to the VST 2.0 specifications, and a computer capable of running it. For the AudioUnit version of Vapor, you'll need an application capable of hosting AudioUnit plug-ins, and a computer capable of running it. The following specifications represent minimum requirements.

For use with Microsoft Windows:

- Windows XP or Vista
- 512 MB RAM
- Pentium III 600 MHz CPU
- High Color S-VGA Display

For use with Apple Macintosh:

- Mac OS X version 10.3.9 or newer
- 512 MB RAM
- Motorola G4/G5 or Intel CPU
- Display capable of "thousands of colors"

# Installation

Double-click the Vapor Installer icon and follow the instructions. During the installation process the installer will ask you to enter your registration code. Your registration code uniquely identifies your purchase, and you will need it if you need to reinstall your plug-in (for example, after upgrading to a new computer). Keep a copy of the code in a safe location and please don't share it with your friends. We're delighted if you like our products so much that you want to share them, but please ask your friends to buy their own copy so that we can keep making new products.

To un-install from OS X, simply delete the plug-in from your VST folder, which is usually located at `/Library/Audio/Plug-Ins/VST/`, and your AudioUnits folder, which is located at `/Library/Audio/Plug-Ins/Components/`. To un-install from Windows, simply delete the plug-in from your VST folder, which is usually located at `C:\Program Files\Steinberg\VstPlugins`.

## Operation

Vapor is primarily intended for creating stereo effects, and as such should be used in a stereo context (i.e., inserted on a stereo channel) in your host DAW software. It can “stereo-ize” a mono input signal and enhance a stereo input signal. If you use a stereo input, the left and right channel separation is preserved in the output signal (assuming that some amount of the unprocessed signal is present in the output; see the description of the **MIX** knob below). You can also use Vapor in a single-output mono context but its overall effect will be less dramatic. Vapor can be used either as an insert effect or a send/return effect; in the latter case rotate the **MIX** knob fully clockwise so that none of the dry signal is added in the return signal.

Here is a screenshot of Vapor, followed by detailed descriptions of its controls. Vapor's effect upon audio can vary widely depending upon both its controls and the audio itself, so let your ear be your guide as you experiment.



### 1. Rate

The **RATE** knob sets the speed with which the delays within Vapor are modulated (changed) by low-frequency oscillators (LFOs). As you rotate this knob clockwise the modulation rate increases. At low rates—within the first half of the knob’s rotation—the modulation is usually not noticeable in itself and serves to prevent the

diffusion network from resonating and ringing. At higher settings, particularly if the **DEPTH** knob is also turned up above 50%, Vapor can create unusual modulation effects.

The **RATE** control has a range of 0.01 to 5Hz. Note that if the **DEPTH** knob (described next) is set to zero, you won't hear any change in the output when you rotate the **RATE** knob.

## ***2. Depth***

The **DEPTH** knob determines how much the delays within Vapor are modulated. If this knob is rotated fully counter-clockwise, the delays are not modulated at all and Vapor creates an unchanging effect that can be prone to a metallic ringing timbre. (Listen to the preset named "Move The Time" for an example of this effect.) As you rotate this knob clockwise—even slightly—the LFOs vary the lengths of the delays in the diffusers, removing the ringing and imparting Vapor's characteristic smearing effect. The further you rotate this knob the more the delays are changed. You will often find that the **DEPTH**, **RATE**, and **DELAY TIME** knobs all need to be adjusted together since their individual influences over Vapor's sound are interdependent to some extent. For instance, you may find that decreasing the **RATE** when you increase the **DEPTH** produces a better sound.

## ***3. Delay Time***

The **DELAY TIME** knob sets the lengths of the delays used within Vapor's diffusers. Turning the knob clockwise increases the delay times and generally makes the effect sound thicker or more smeared-out. If both the Delay time and Diffusion knobs are turned to a fairly high value, Vapor's output will sound somewhat like a reverb processor.

The delay knob interacts with the **DEPTH** knob in the sense that at longer delay times the modulation LFOs change the delays over longer time intervals. In other words, the effect of the LFO modulation will be more audibly apparent at higher settings of the **DELAY TIME** knob.

## ***4. Diffusion***

The **DIFFUSION** knob controls how much Vapor softens or smears the audio passing through it. If this knob is rotated fully counter-clockwise, the diffusers act essentially like short delays and Vapor will produce an effect similar to a simple chorus processor. Rotating the knob clockwise increases the amount that Vapor smears the audio. At high settings of the **DIFFUSION** knob, Vapor's effect becomes somewhat like reverberation.

## **5. Mix**

The **MIX** knob controls the relative amounts of the original, unprocessed (dry) signal and the processed (wet) signal in Vapor's output. Use this knob to control the overall amount of the chorusing effect. When the knob is rotated fully counter-clockwise, you'll hear only the original signal. As you rotate the knob clockwise, the amount of wet signal increases and the amount of dry signal decreases. At the center "12 o'clock" position, there is an equal amount of wet and dry signal in the output. If you rotate the knob fully clockwise, you'll hear only the processed signal. The best setting for this knob will vary widely depending on your source material, the overall sound character you're trying to achieve, and the settings of the other knobs, so try everything from just a touch to 100% wet.

## **6. Lo-Cut**

The lo-cut button, when depressed, places a high-pass filter between Vapor's input and its diffusion network. This filter removes low frequencies from the signal which can make the processed signal sound bass-heavy or muddy. Turn on the lo-cut button if you find that Vapor's output is occupying too much of the low-frequency end of your mix. Click the button to toggle it between on and off.

## MIDI Controllers

The VST version of Vapor responds to MIDI continuous controller messages. You can use hardware MIDI controllers, such as MIDI slider boxes or the knobs found on some MIDI keyboards, to adjust Vapor's parameters.

Vapor has a simple "MIDI Learn" mode for assigning its controls to MIDI controllers. To assign a control to a MIDI controller:

- First, hold down the SHIFT and CTRL keys on your PC's keyboard, or SHIFT and CMD keys if you're using a Mac, and click once on the control. A white box will be drawn around the control to indicate that it is ready to learn which MIDI controller it will be assigned to.
- Next, move the MIDI controller to send a continuous controller message—turn the knob, press the button, move the slider, whatever is appropriate.
- The white square will disappear. Now the control will move when you manipulate the MIDI controller.

Vapor waits until it has received two consecutive continuous controller messages with the same controller number before it makes an assignment. This filters out extraneous data sent by some MIDI controllers. If you are assigning a button or switch on a MIDI controller, you may have to press or move the switch twice before Vapor recognizes the controller and assigns it to the desired control.

To assign a different MIDI controller to a control, repeat the same procedure using a different controller.

To cancel MIDI Learn mode without assigning a controller, hold down the SHIFT and CTRL keys (SHIFT and CMD keys on a Mac) and click in any empty area in Vapor's window (i.e., don't click on another control). The white box will disappear.

To remove a MIDI controller assignment from a control, SHIFT and CTRL keys, (SHIFT and CMD keys on a Mac) click on the control once so that the white box appears, then click again on the same control.

Vapor's MIDI controller assignments apply to all presets and instances of Vapor, in all host applications that you use. The MIDI assignments are stored in a special file on your hard drive. The contents of this file are read when Vapor is loaded by your host. If you have two or more instances of Vapor in use at once, any MIDI assignments you make will not be propagated to the other instances until the next time that your host loads the plug-ins.

The AudioUnit version does not provide the same MIDI assignment features as the VST version. Almost all AudioUnit hosts provide their own mechanism for assigning MIDI controllers to parameters, so it would be redundant for us to implement MIDI controller assignments in the plug-in itself. Consult the documentation for your AudioUnit host to learn how to use its MIDI features.

## **Automation**

All of Vapor's parameters can be automated using your host's automation features. Consult your host's documentation for information on how to use these features.

## **And Finally...**

Thanks again for purchasing Vapor. We make every effort to ensure your satisfaction with our products, and want you to be happy with your purchase. Please write [support@audiodamage.com](mailto:support@audiodamage.com) if you have any questions or comments.