ELASTIQUE PITCH V2
Realtime Pitch-Shifting

USER MANUAL
Version 2.2.3 / September 2023

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1 Introduction

ELASTIQUE PITCH is the realtime pitch-shifting plugin based on zplane élastiquePro v3 pitch-shifting technology: This algorithm is enjoyed by millions of users worldwide and is also integrated into many popular DAWs and audio tools to ensure highest quality program-independent pitch-shifting.

The **ELASTIQUE PITCH** interface has been designed for quick and intuitive parameter access with maximum control. This makes the plugin an ideal pitch-shifting solution for film & video conversion applications, sound design and for adjusting pitch ranges in recording situations.

> **NOTE:** Version 2.2.3 (and later) features an improved [Delay Time parameter](#) that now continuously syncs to the host. So automation data created with earlier versions will have to be redone. Automation for other parameters is not affected by this change.

1.1 Key Features

- **Multi-channel**: support for synchronous pitching of up to 8 audio channels.
- **Realtime**: no offline pre-analysis required.
- **Program-independence**: high pitch-shifting quality for all audio types (speech, monophonic instruments, complete mixes, etc.).
- **Phase-coherence**: absolute phase stability between all input channels.
- **MIDI input**: for realtime pitch control.
- **Formant-shifting**: shift formants independently from pitch.
- **Factory presets**: for typical film pull-ups/pull-downs.
- **Delay effect**: for exclusive pitch- or formant-shifted repeats.
- **Freeze**: for infinitely stretching audio.

1.2 ELASTIQUE PITCH Overview

At the heart of the **ELASTIQUE PITCH** interface is a large X/Y control for simultaneous editing of Pitch and Timbre. The option to also control these two parameters independently, makes **ELASTIQUE PITCH** even more powerful.

Advanced View provides additional controls for fine-tuning the algorithm's performance, as well as enabling creative Delay and Freeze effects.

At the top of the window is a menu with factory presets, and in the lower-right corner are buttons for accessing Settings/Activation and Help.
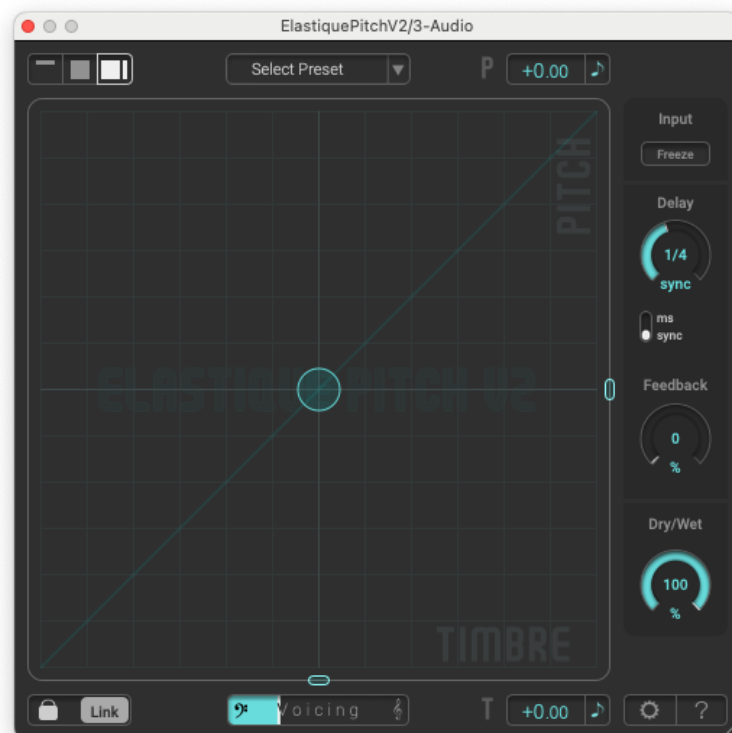
Figure 1: **ELASTIQUE PITCH** Interface

1.3 Naming Conventions

In this documentation, the names of on-screen buttons, sliders, and indicators will be written in bold font between brackets, such as **[FREEZE]** and **[VOICING]**.

Selectable menu options will be written in bold font between quotes, such as **"Stereo"** and **"mono"**.

References to numbered pointers in images will be written in bold font between parenthesis, such as **(1)** and **(2)**.

2 Registration, Installation & Activation

ELASTIQUE PITCH is protected by both, a *serial number* and a corresponding *unlock key*. The serial number will be sent to you by e-mail upon purchasing the product. You will receive your unlock key by registering **ELASTIQUE PITCH** at the zplane website. Once you have received the unlock key, you will be able to activate the plugin.

2.1 Registering Your Product

In order to receive your unlock key, please log in to your account at the zplane website —or create a new account, if you don't have one already. Then follow these steps:

1. Click the **[REGISTER]** button in the menu bar:
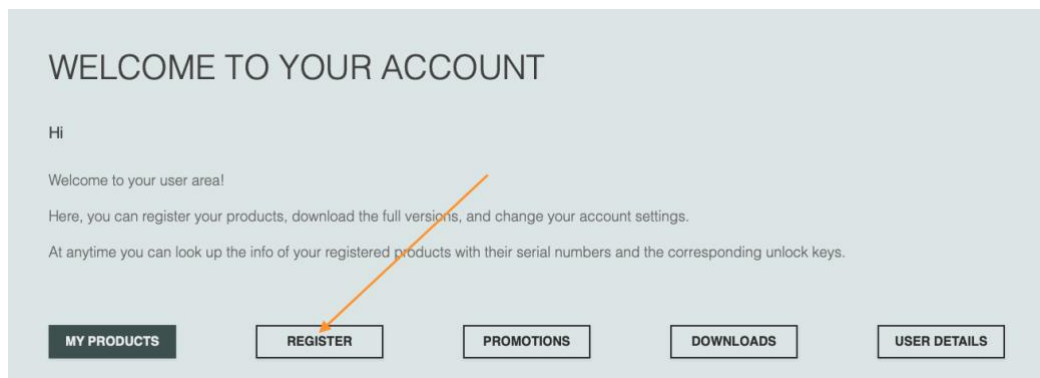
Figure 2: The Account page

2. Next, paste your **ELASTIQUE PITCH** serial number into the data entry field **(1)**, and click the **[REGISTER]** button **(2)** on the right:

Figure 3: The Product Registration page

3. Now your **ELASTIQUE PITCH** unlock key will be shown.

> **NOTE:** You can recall any of your serial numbers and unlock keys at any time by logging in to your account and clicking the **[MY PRODUCTS]** button in the menu. This will display the serial numbers and unlock keys for all the zplane products you have registered in your account.

2.2 Installation

After registering your **ELASTIQUE PITCH** serial number, the installers will be available in both the "My Products" and "Download" sections of your personal account. Below you'll find a step-by-step description of the installation procedure for your specific operating system:

2.2.1 Windows

- Download the **ELASTIQUE PITCH** Windows Installer application (.exe).
- Double-click on the file to launch the Installer.
- Click **[Next]** in the installer window.
- Read the End User License Agreement and, if you agree, click **[Next]**, otherwise, click **[CANCEL]** to abort installation.
- Follow the instructions of the installer to complete the installation—you can choose if you want to install all plugin variants or only particular ones during the installation process.

2.2.2 macOS

- Download the **ELASTIQUE PITCH** macOS Installer disk image (.dmg).
- Double-click on the downloaded .dmg to mount it, then double-click the installer file (.pkg) contained within.
- Click **[Continue]** in the installer window.
- Read the End User License Agreement and, if you agree, click **[Next]**, otherwise click **[CANCEL]** to abort installation.
- Follow the instructions of the installer to complete the installation—you can choose if you want to install all plugin variants or only particular ones during the installation process.
- When installation is complete, unmount the disk image by right-clicking on it and clicking **"Eject"** from the context menu.

2.3 Activating Your Product

First, you need to activate **ELASTIQUE PITCH** from inside the software. Load the plugin within any compatible host program and follow these steps:

1. Open the **ELASTIQUE PITCH** user interface—most hosts will automatically show the plugin interface as soon as the plugin is loaded. Access the Activation Screen by clicking the sprocket wheel **[⚙]** button **(1)** in the lower-right corner of the window:

Figure 4: Main Window with [⚙] button

2. Paste your Serial Number **(1)** and Unlock Key **(2)** into the spaces provided, then click the **[SAVE]** button **(3)**:

Figure 5: Serial Number and Unlock Key entry areas

3. **ELASTIQUE PITCH** will then be activated and display your registered serial number.

4. After successful activation of **ELASTIQUE PITCH**, you can close the Activation screen. This returns you to the main window.

3 The ELASTIQUE PITCH Interface

The ELASTIQUE PITCH interface has been designed to let you choose the amount of detail and controls visible at once. Make sure to select "Advanced View" for the following (see the next section about selecting Views). This is the only View that presents all available controls and offers access to registration and help.

3.1 View Selectors (Advanced, Normal, Simple)

In the top-left corner, you will find View Selectors. They switch the plugin window's size. Three different views are available:

Figure 6: The View Selectors in Advanced View

(3) **Advanced View:** Selected by default when you start ELASTIQUE PITCH for the first time.

(2) **Normal View:** Normal View hides the settings related to the Delay effect and focuses entirely on the Pitch & Timbre Field.

(1) **Simple View:** The most compact view, only offering numerical data entry fields for the pitch-related parameters:
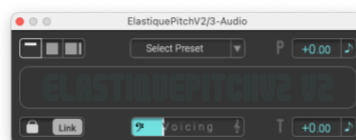
Figure 7: Simple View

3.2 Presets Menu

ELASTIQUE PITCH comes with built-in factory presets. They showcase some of the creative possibilities, including the delay feature and voice altering capabilities.

You'll also find a list of **special conversion presets** for applications that require specific pitch conversions (e.g., when the original material has been played back too fast or too slow during the conversion process between different frame rates). The included presets cover a typical set of such conversion settings.

Load a preset by clicking into the "Select Preset" field at the top of the **ELASTIQUE PITCH** interface. This opens a dropdown menu, letting you choose a preset with the mouse:

Figure 8: Presets Menu

> **NOTE: ELASTIQUE PITCH** factory presets cannot be selected directly from inside a DAW's preset management. If you'd like to make a preset selectable from inside your DAW, please load it into the plugin first and then save a copy inside the DAW's plugin preset manager. Please check your DAW's documentation for details on how to save presets.

3.3 Pitch & Timbre Field
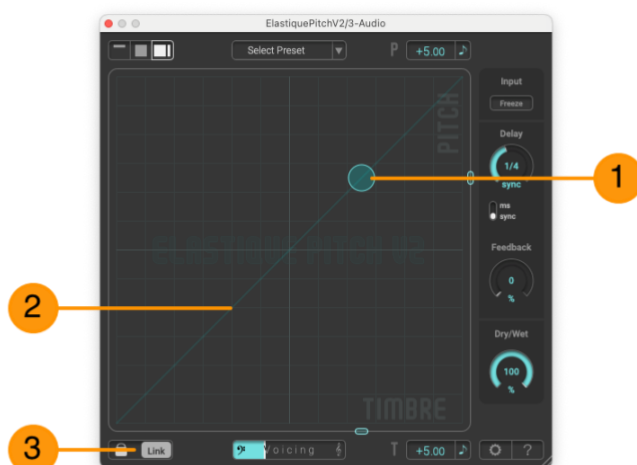
Figure 9: The Pitch & Timbre Field

Click and move the Handle **(1)** to control Pitch and Timbre (formant shift) at the same time. By default, the Handle's movement will be restricted along a 45˚ angle **(2)**—this behavior can be disabled by turning off the **[Link]** switch **(3)** at which point Pitch and Timbre can be adjusted independently.

3.3.1 Pitch Slider and Display

Along the right border of the Pitch & Timbre Field is the **[PITCH]** slider **(1)**. Drag it up or down to change the pitch shift being applied to the signal.

Above the **[PITCH]** slider is the **[P]** numerical pitch shift display **(2)**. Toggle between pitch factor in percent **[%]** and the pitch alteration in semitones **[♪]** by clicking the Display Units button **(3)**.
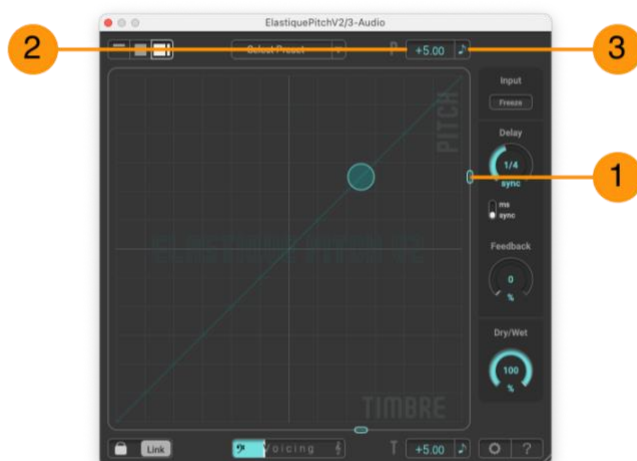
Figure 10: Pitch Slider and Display

NOTE: The Pitch Factor can also be controlled by MIDI note input or the MIDI pitch wheel controller.

3.3.2 Timbre Slider and Display

The **[TIMBRE]** slider **(1) is** below the Pitch & Timbre Field. Moving this slider left or right will change a signal's timbre by shifting its formants. This changes its tonal quality without affecting the pitch: Moving **[TIMBRE]** towards the right shifts the formants upwards (creating a "Mickey Mouse" effect on voices) and moving it towards the left shifts them downwards (making voices sound like "Darth Vader").
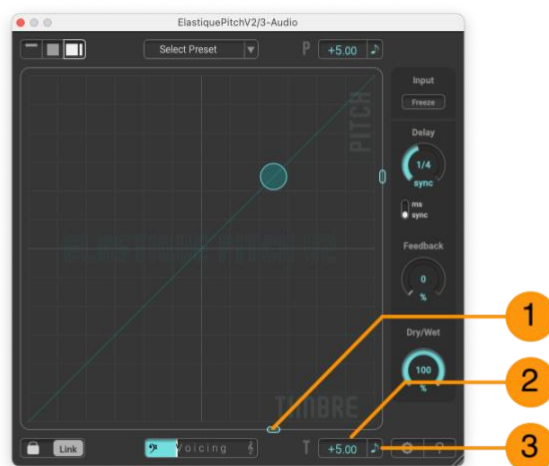
Figure 11: Timbre Slider and Display

Below the slider is the **[T]** numerical Timbre shift display **(2)**. Clicking the Display Units button **(3)** toggles between Timbre factor in percent **[%]** and Timbre alteration in semitones **[♪]**.

3.4 Voicing Slider

To ensure best timbre-shifting quality for different types of input signals, adjust the dominant frequency region of the input signal with the **[Voicing]** slider **(1)**:

Figure 12: Voicing Slider

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The default position of the slider should work for most audio. However, you can try if there is a beneficial effect on the timbre-shifting quality by moving the slider to the left for audio with low dominant frequency and moving it to the right when the dominant frequency is high.

> **NOTE:** The **[Voicing]** setting has no impact on the pitch-shifting quality—it only affects the quality of the formant-shifting.

3.5 Link Switch

When the **[Link]** switch **(1)** is activated, **ELASTIQUE PITCH** maintains a fixed relationship between pitch and timbre. For example, as you increase pitch, the formants will shift upwards accordingly—resulting in a "natural" behavior that sounds like playing vinyl or tape faster than normal. If used on a voice, its pitch will rise and the voices's *tone* will start to sound like "Mickey Mouse".
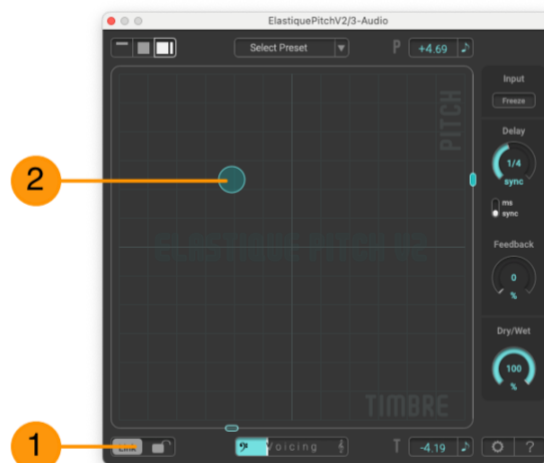
Figure 13: Disabling and enabling the Link Switch

If you turn the **[Link]** switch **(1)** off as shown in the image above, you can shift Pitch (up/down) and Timbre (left/right) independently with the Handle **(2)** and the diagonal line in the Pitch & Timbre Field disappears. Now you can move Pitch up while leaving its timbre unchanged, avoiding the "Mickey Mouse" effect. Similarly, you can make a voice "deeper" by moving Timbre down without affecting its pitch. You can also try a combination of both until you're satisfied with the result.

If you re-enable the **[Link]** switch **(1)** after making independent changes of Pitch and Timbre, the diagonal line **(2)** re-appears in the Pitch & Timbre Field, ensuring your set relation between pitch and timbre is preserved as you make changes:

Figure 14: Re-enabling the Link Switch

NOTE: When automating Pitch and Timbre independently via the host, make sure the **[Link]** switch is disabled. Otherwise, Timbre will be linked to Pitch.

3.6 Delay Effect

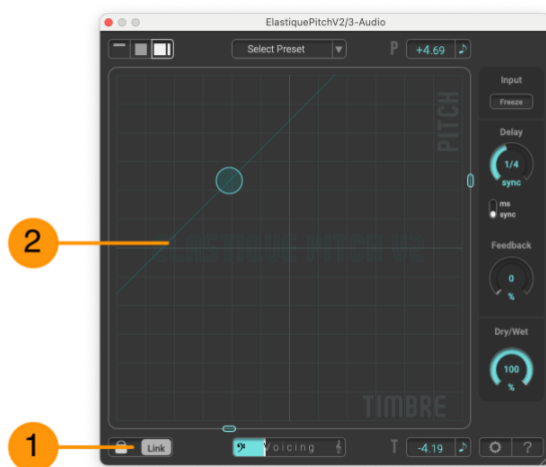**ELASTIQUE PITCH** includes a special Delay Effect, creating an adjustable time-delayed copy of the audio that can be fed back to the input for repetitive "echo" effects. As you can see in the following signal flow diagram, **ELASTIQUE PITCH** adds a special twist by inserting the élastiquePRO algorithm in the delay's feedback signal path:
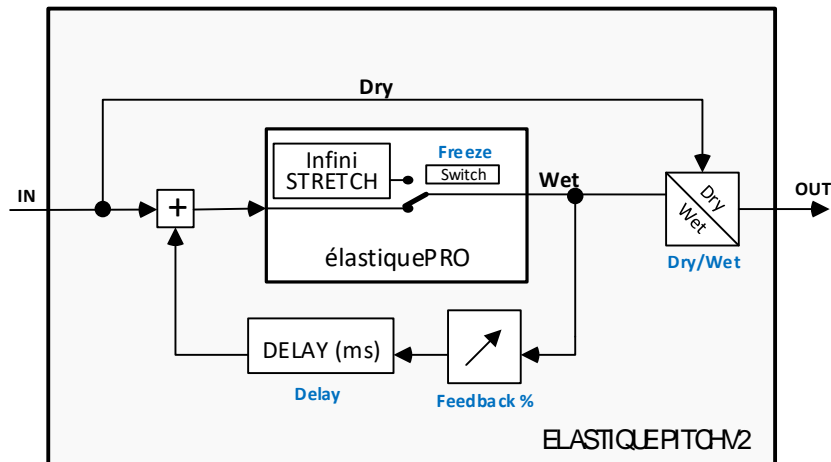
Figure 15: Signal flow diagram

This means, that each repetition of the audio going through the feedback loop can have further pitch- and/or timbre-shifts applied to it, creating a delay effect with steady delay time but repetitions with escalating or deescalating pitch. The controls for the Delay Effect are as follows:

Figure 16: Delay Effect controls

3.6.1 Delay Dial

The delay time is adjusted with the **[Delay]** dial **(1)**. Larger values (clockwise) result in longer delay intervals. The delay time ranges from 163ms – 2000 ms.

> **NOTE:** The "ticking" noise while adjusting delay time is due to the way the delay works. So keep that in mind when automating delay time.

3.6.2 Delay Sync Switch

Use the Delay Sync Switch **(2)** to switch the delay time display between milliseconds (**"ms"**) and musical values (**"sync"**).

When **"sync"** is selected, the delay time is displayed and can be set in a variety of beat divisions from "1/16." up to "1 bar". As the delay time is now synced, it will follow host tempo changes automatically.

3.6.3 Feedback Dial

The amount of feedback can also be controlled with the **[Feedback]** dial **(3)** and is set as a percentage of the wet output.
"0%" means "no feedback", so no delay will be audible—you will only hear the shifted sound. At **"100%"**, the output is completely fed back and added to the input signal resulting in a signal that can potentially repeat indefinitely.

For most applications, a setting somewhere near the middle will be most useful. Of course, feel free to experiment with the feedback setting. For precision control of this effect, it can also be beneficial to automate the setting to change over the course of your song.

3.7 Dry/Wet Dial

The **[Dry/Wet]** dial **(1)** adjusts the balance between the direct signal being fed into ELASTIQUE PITCH and the output generated by the algorithm. When set to **"0%"**, only the original, un-shifted signal will be heard without any delay/repeats. Conversely, a setting of **"100%"** will allow only the shifted and delayed signals to be heard without any of the original signal present.

Figure 17: Dry/Wet Dial

In most cases, you'll want to leave the **[Dry/Wet]** dial at the default **"100%"** position, so you only hear the processed output. However, setting this dial to an

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in-between value can result in some interesting effects like parallel harmonies (for example, shifting the pitch down 4 semitones while using a **"50%"** Dry/Wet balance).

3.8 Freeze Button

When the **[Freeze]** button **(1)** is activated, the élastiquePRO algorithm's *infiniStretch*-feature is enabled, and the signal that is currently in élastiquePRO's input buffer is "stretched" or continued infinitely.

Figure 18: Freeze Button

NOTE: The feedback path of the Delay effect is disconnected while **[Freeze]** is on, which means changing **[Feedback]** and **[Delay]** settings won't have any effect on the sound.

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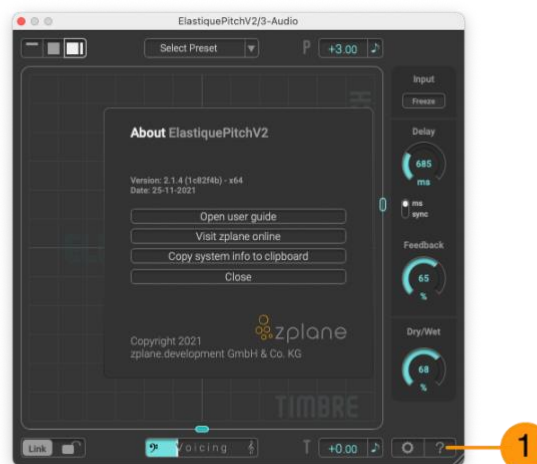
3.10.1   Open User Guide

Clicking the **[Open user guide]** button on the Help Screen opens this User Manual. The User Manual is in PDF format, so it will be loaded into your default PDF reader upon clicking this button.

3.10.2   Visit zplane Online

Clicking the **[Visit zplane online]** button on the Help Screen will launch your default web browser and open zplane.de. On the site, you can learn about all available zplane products as well as access your Account and your registered zplane products. You can also access the product support section, report a bug, or submit suggestions for future improvements.

3.10.3   Copy System Info to Clipboard

Clicking the **[Copy system info to clipboard]** is a handy feature if you need to submit a support request to zplane: After clicking this button, you can simply paste a set of relevant system information into your support request (using CTRL+V on Windows or CMD+V on macOS) without having to look it up manually. This will make it easier for us to better diagnose reported issues!

4 Using ELASTIQUE PITCH

4.1 Loading ELASTIQUE PITCH

Select **ELASTIQUE PITCH** as an *insert effect* on the track you wish to process. The exact method for doing this, may vary depending on the host used—please consult your host software's documentation on how to load plugins as inserts on tracks.

You can load **ELASTIQUE PITCH** on multiple tracks in your project and even apply it to the Master track if you wish—each loaded instance works independently, with its own unique shifting settings.

4.2 Controlling ELASTIQUE PITCH with MIDI

In your DAW, route the MIDI input from a keyboard or controller to **ELASTIQUE PITCH** and play using the following options:

- The pitch factor is controlled by playing MIDI notes where MIDI Note 60 (C3) corresponds to the original tuning (a shift of +0.00♪). Playing MIDI notes in the octave below C3 will shift down by the matching number of semitones, while MIDI notes in the octave above C3 will shift up in the same fashion.

- You can also use the Pitch Wheel on your MIDI controller to smoothly change the pitch factor in a range of ±2 semitones in addition to the MIDI notes being played.

NOTE: When the **[Link] switch** is off, only the pitch factor will be controlled via MIDI—the timbre will remain fixed at its current position. Turning the **[Link]** switch on will cause the timbre to shift with the pitch.

4.2.1 Setting up MIDI Control in Ableton Live

The process for controlling **ELASTIQUE PITCH** with a MIDI keyboard in Ableton Live requires the following steps:

1. Load **ELASTIQUE PITCH** onto the Track you want to process—this can be an Audio Track or a MIDI Track loaded with a software instrument

2. Create a MIDI Track—this track will be used to capture MIDI notes from your keyboard controller and route them to **ELASTIQUE PITCH** on the other Track.

3. Specify the MIDI Input to use—this is "All Inputs" by default but can be changed to a specific MIDI Device/Port and MIDI Channel if desired.

4. Route the output of the MIDI Track to **ELASTIQUE PITCH** — **ELASTIQUE PITCH** is an audio effect rather than a MIDI effect, so **ELASTIQUE PITCH** will be either on an Audio Track or on a MIDI Track where an instrument plugin has been loaded.

5. Enable MIDI input monitoring on the MIDI Track—this allows live input to go through the track and out to **ELASTIQUE PITCH**.

Below is a screenshot showing a MIDI Track and adjacent Audio Track set up such that the MIDI is routed to **ELASTIQUE PITCH**:

Figure 21: MIDI Control of **ELASTIQUE PITCH** in Ableton Live

4.2.2 Setting up MIDI Control in Logic Pro

Setting up **ELASTIQUE PITCH** to be controllable with a MIDI Keyboard in Logic Pro is somewhat unusual due to how Logic Pro Handles MIDI. If you wish to control **ELASTIQUE PITCH** via a MIDI keyboard, you will *not* load **ELASTIQUE PITCH** as an insert on the track you want to process. Instead, you will create a new MIDI track and load **ELASTIQUE PITCH** into it as a "MIDI-Controlled AU effect". You will then choose the audio track you want to process as the "side-chain" input to **ELASTIQUE PITCH**. Because **ELASTIQUE PITCH** is intended to replace the audio being processed, you will need to mute the original audio track so that you don't hear it (resulting it in being extremely loud). Below is an example of **ELASTIQUE PITCH** set up as a MIDI-controlled AU effect on Track 2 using Track 1 as the side-chain audio source:
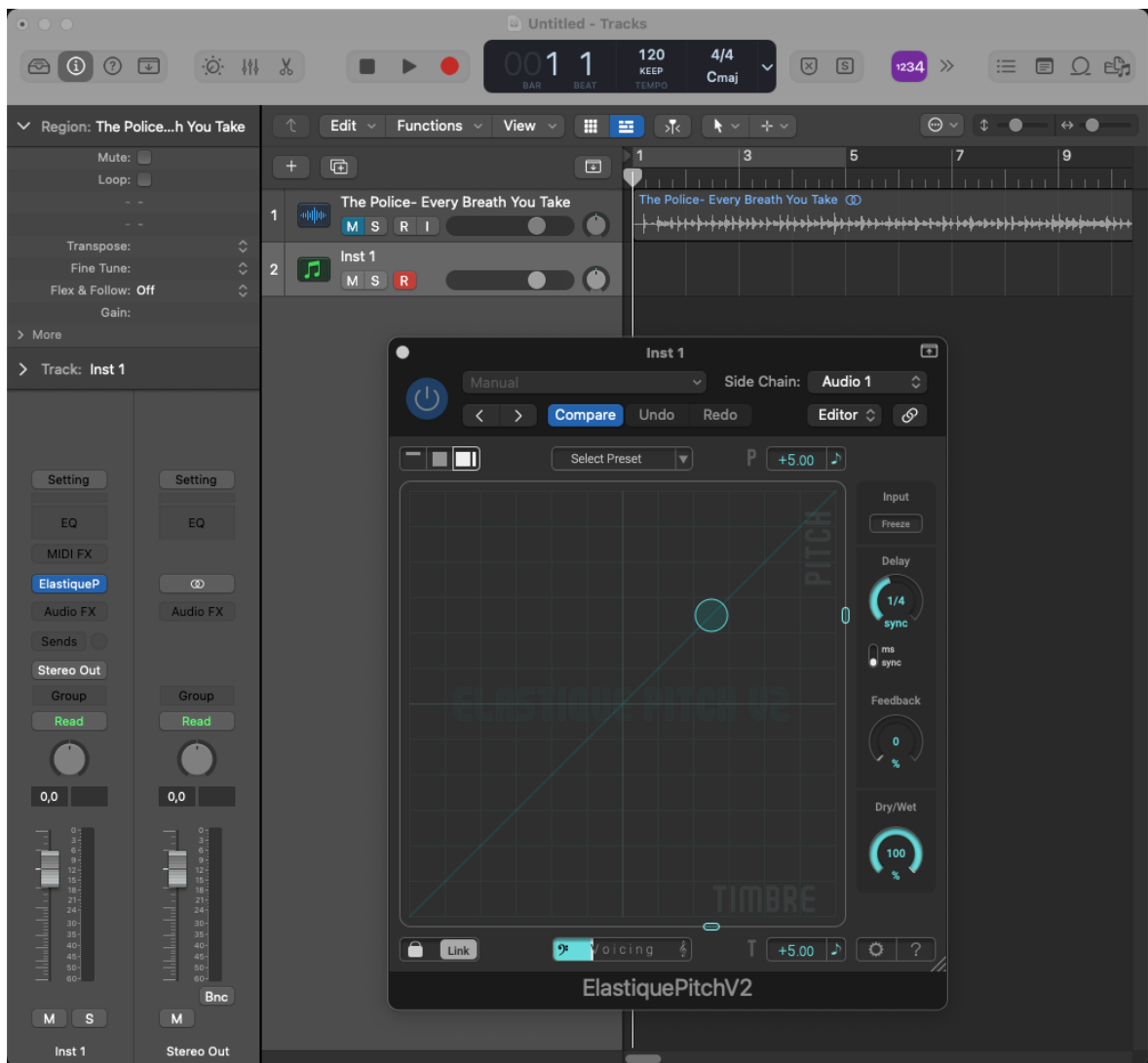

Figure 22: MIDI Control of ELASTIQUE PITCH in Logic Pro

> **NOTE:** Logic Pro does not compensate any plugin delay on plugins loaded as MIDI-controlled effects. This results in **ELASTIQUE PITCH**'s output to sound late. Solve this by shifting the original track earlier to manually compensate for this delay.

4.2.3 Setting up MIDI Control in Reaper

Unlike many DAWs, Reaper does not use different track types like "audio tracks" and "MIDI tracks"; the track's behavior is dictated by the content it contains, be it audio or MIDI. Therefore, to control **ELASTIQUE PITCH** with a MIDI Input, you create a new track and enable its Record button—this will expose a set of controls to choose the input for the track. You can select your MIDI keyboard as the input to the track, and then add a "send" object on the track which sends the MIDI over to another track containing **ELASTIQUE PITCH**. Below is an image of Track 2 set up to receive MIDI input with a send to Track 1 containing **ELASTIQUE PITCH**:
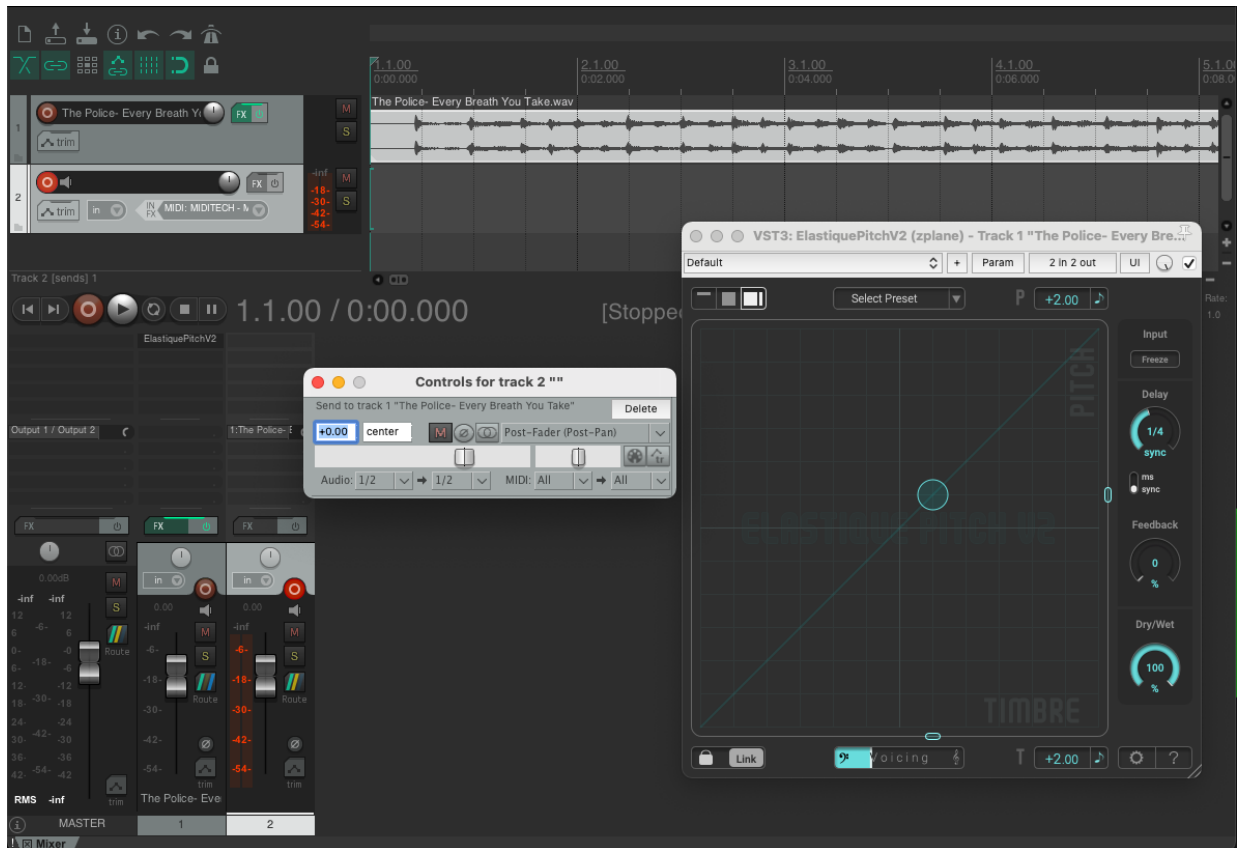

Figure 23: MIDI Control of **ELASTIQUE PITCH** in Reaper

4.2.4 Setting up MIDI Control in Studio One

To control **ELASTIQUE PITCH** with a MIDI keyboard in Studio One, load **ELASTIQUE PITCH** onto the track you want to process and then create a new MIDI track. When setting up the MIDI track, you set the output to an "Existing Instrument" and select **ELASTIQUE PITCH** from the list. The final setup should look similar to this:
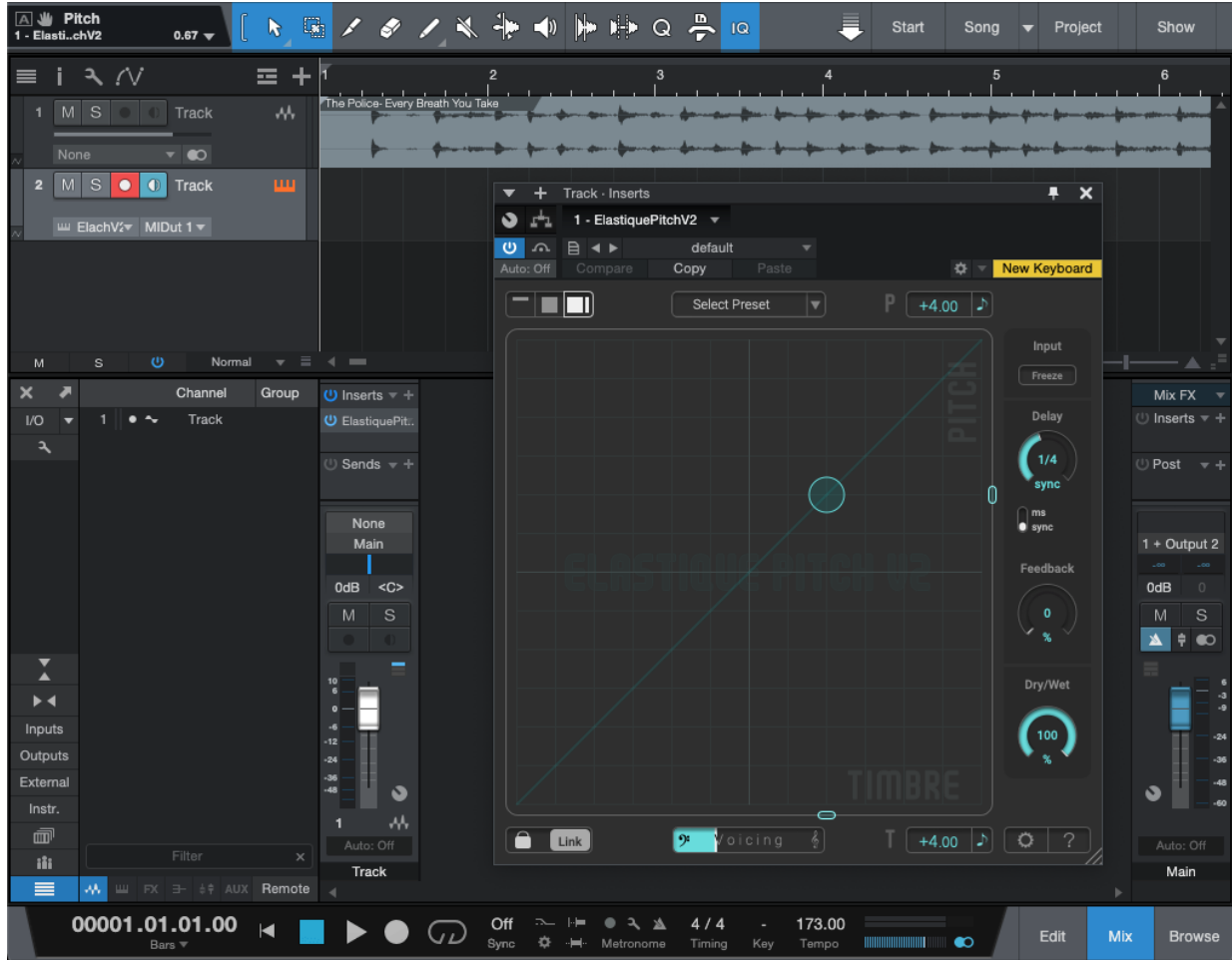

Figure 24: MIDI Control of ELASTIQUE PITCH in Studio One

4.2.5 Setting up MIDI Control in Pro Tools

In order to send MIDI to **ELASTIQUE PITCH** in Pro Tools, set up a new MIDI track. In its I/O settings, choose your MIDI keyboard as the input. For the output, select the **ELASTIQUE PITCH** instance on the track being analyzed. Click the Record button on the MIDI Track to enable monitoring of the MIDI input, and you can then control **ELASTIQUE PITCH** from your MIDI keyboard. The setup should look something like this:
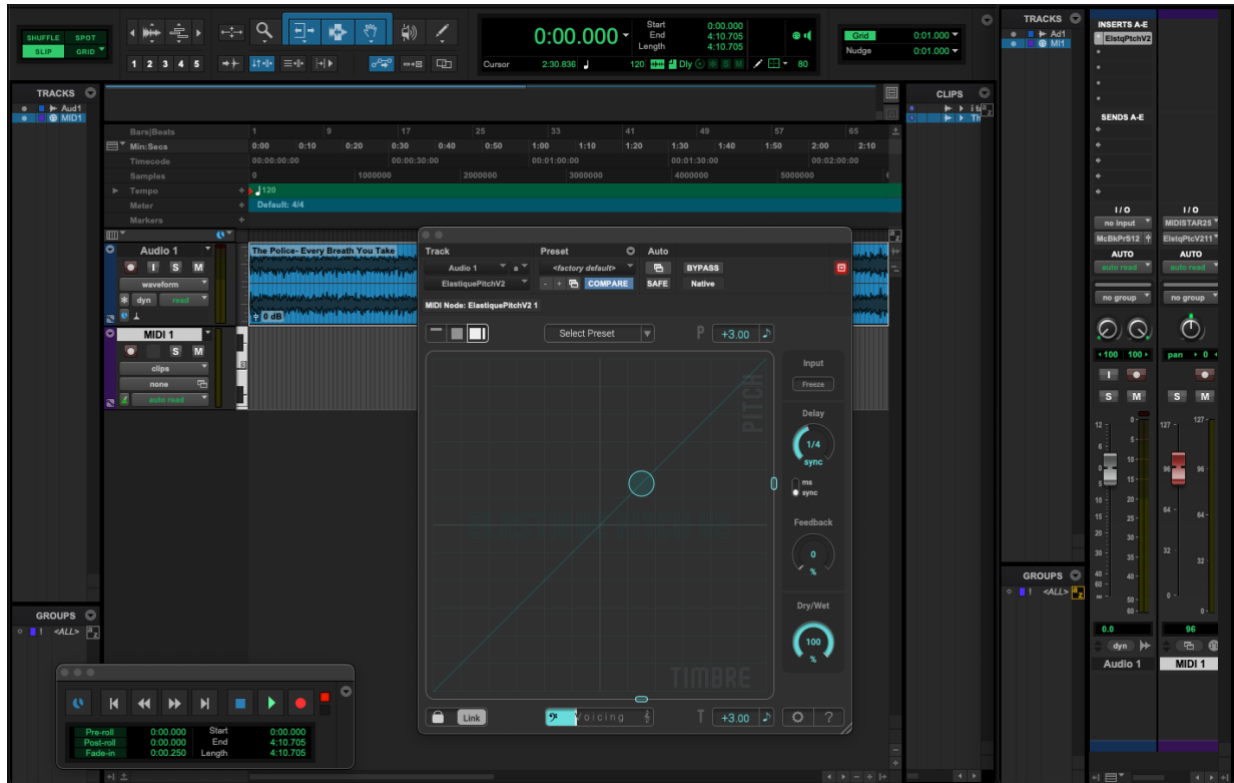

Figure 25: MIDI Control of ELASTIQUE PITCH in Pro Tools

4.2.6 DAWs Without Necessary MIDI Routing

Unfortunately, not all DAWs include the necessary features or architectures to route incoming MIDI data to **ELASTIQUE PITCH**. While **ELASTIQUE PITCH** can be used to process audio in these DAWs, you won't be able to take advantage of MIDI control features. The DAWs we have tested which lack the necessary support are:

- Apple GarageBand—While GarageBand is similar and related to Logic Pro, GarageBand lacks "MIDI-Controlled AU Effects" which is necessary for playing the **ELASTIQUE PITCH** keyboard with MIDI input

- FL Studio—While it is possible to place **ELASTIQUE PITCH** on a track and enable MIDI Input, controlling **ELASTIQUE PITCH** with MIDI also triggers the content on the track making it difficult to do accurate and discrete control

4.3 Resetting Controls

Double-click on a control, inside the 2D-field, or on a slider Handle to reset its value to default.

4.4 Standard Timbre Settings

4.4.1 No Formant Preservation

Activate the **[Link] switch** when both pitch and timbre have the same value, e.g. 100% (default position). Pitch and timbre factors will now equal each other as either are changed.

4.4.2 Formant Preservation

Deactivate the **[Link] switch** and reset the Timbre factor to 100.00% / ±0.00♪. The formants will now be preserved at their original positions as the pitch is changed independently.

4.4.3 Formant Shifting

Activate the **[Link] switch** when both pitch and timbre do not have the same value. Formants will now be shifted by a constant amount as the pitch is changed.

4.5 Pitch Shift in Semitones

If necessary, first click on the Percent Unit **[%]** in the **[P] display** to switch the display to semitones **[♪]**. The number before the decimal represents the amount of shift in semitones while the numbers to the right of the decimal represent the pitch-shift in cents (fractions of a semitone). Hold SHIFT while moving the **[PITCH] slider** or the Handle in the Pitch & Timbre Field to snap the shift factor to semitones.

4.6 Audio Processing Order

For the best sound quality, you should apply pitch- and formant-shifting effects like **ELASTIQUE PITCH** before doing any further audio processing on a track. This is especially true for dynamic processing tools like limiters as the signal may not remain limited after the pitch-shifting process.

5 Technical Specifications

Operating Systems	• macOS 11 and higher • Windows 10 & 11
CPU Architecture	• Windows: Intel 32-bit & 64-bit • Mac: Intel & M1 64-bit
Audio Formats	• 1-8 channels (I/O) • 32kHz - 192kHz sample rate
Plugin Formats	• VST2 • VST3 • AU (macOS only) • AAX
Plugin Latency	• 150 ms @ 48kHz

6 Feedback & Support

Our website products.zplane.de always provides the latest information and news about our products. Any issues you encounter may either be addressed in the FAQ section of the appropriate product or reported directly to us via post or email. Before contacting us directly, please ensure you are using the latest version of the product. Please also make sure that your issue is not covered in the manual, the forum, the FAQ or elsewhere on our website.

If you cannot find answers using the methods above and need to contact us directly, please provide the following details to enable us to help you as fast as possible:

- Your registration information (such as the name of your User Account or your login e-mail)

- Your system specifications (hardware, operating system, host software)

- The exact version number of the plugin (see the "About" box by clicking on Help **[?]** button located at the lower-right of the ELASTIQUE PITCH interface)

- Include a detailed description of your problem with a step-by-step description of what led up to it so we can try to reproduce the issue

Please use the following contact methods:

✎ :   zplane.development GmbH & Co. KG
       Grunewaldstr. 83
       D-10823 Berlin
       Germany

🌐 :   products.zplane.de/support

@ :   support@zplane.de