

ELASTIQUE PITCH



ELASTIQUE PITCH V2

Realtime Pitch-Shifting

User Manual

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1 Introduction

ELASTIQUE PITCH is the real time pitch-shifting plug-in created by zplane.development which uses the zplane élastiquePro v3 pitch-shifting technology. This pitch-shifting algorithm is enjoyed by millions of end users around the world and is also integrated into many popular audio workstations and tools to ensure the highest program-independent pitch-shifting quality.

The plug-in interface has been designed to allow quick and intuitive interaction with all parameters for maximum control. This makes **ELASTIQUE PITCH** the optimal pitch-shifting plugin for film and video conversion applications, for sound design, and for adjusting pitch ranges in recording and rehearsal sessions.

1.1 Key Features

- **Multi-channel:** support for synchronous pitching of up to 8 audio channels
- **Real-time:** 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 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

The **ELASTIQUE PITCH** interface is dominated by an X/Y Pitch & Timbre Field for simultaneous control of pitch and timbre—the possibility of controlling these two parameters independently is one aspect that makes **ELASTIQUE PITCH** so powerful.

Surrounding the Pitch & Timbre Field are additional buttons and dials for fine-tuning the performance of the pitch-shifting algorithm as well as employing some interesting Delay and Freeze effects.

At the top of the window is also a menu for managing various preset settings, and in the lower-right corner are buttons for accessing Settings/Activation and Help materials.

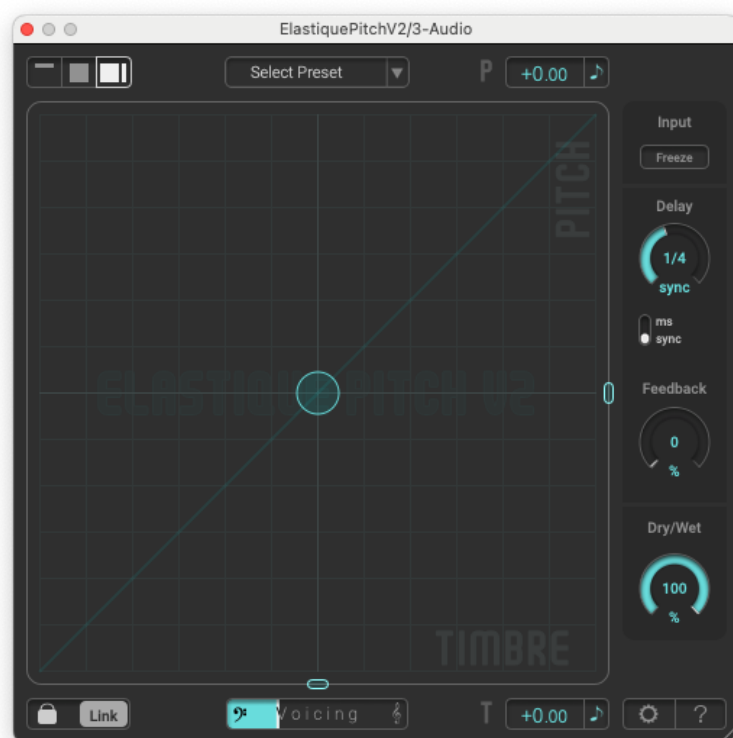


Figure 1: **ELASTIQUE PITCH** Interface

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 **ELASTIQUE PITCH**. 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 **ELASTIQUE PITCH**.

2.1 Registering Your Product

In order to receive your unlock key, please [log in to your account at the zplane website](#)—please [create a new account](#) there if you don't have one already. After logging in:

1. Click the **[REGISTER]** button in the menu bar:

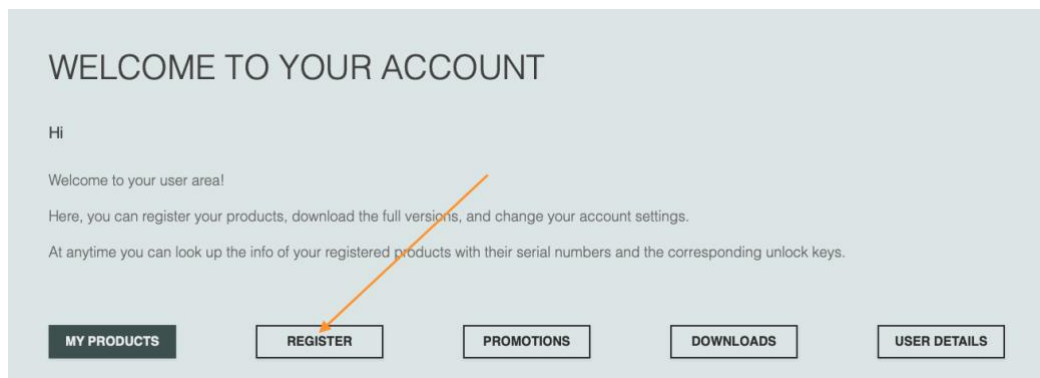


Figure 2: The Account page

2. In the area provided **(1)**, paste in your **ELASTIQUE PITCH** serial number and click the **[REGISTER]** button **(2)** to the right:

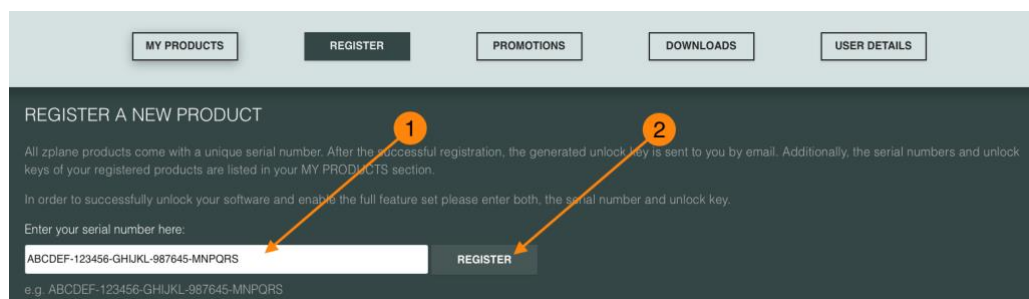


Figure 3: The Product Registration page

3. Your **ELASTIQUE PITCH** unlock key will then be shown.

Note: You can recall any of your serial numbers and unlock keys anytime in the future 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. Find below 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 which variants of the plug-in you wish to install and which to omit 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 installation—you can choose which variants of the plug-in you wish to install and which to omit during the installation process
- When installation is complete, you can unmount the disk image by right-clicking on it and clicking **“Eject”** from the context menu

2.3 Activating Your Product

Activation of **ELASTIQUE PITCH** is done within the **ELASTIQUE PITCH** plug-in itself. You must therefore first load **ELASTIQUE PITCH** as a plug-in within any host program you have. Once you've loaded **ELASTIQUE PITCH**:

1. Open the **ELASTIQUE PITCH** interface so you can see the plug-in—most hosts will automatically show the plug-in interface as soon as the plug-in is loaded. Access the Activation Screen by clicking the **[⚙️]** 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)**:

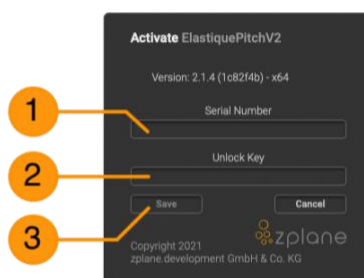


Figure 5: Serial Number and Unlock Key entry areas

3. **ELASTIQUE PITCH** will then be activated and will show your registered serial number.
4. After successful activation of **ELASTIQUE PITCH**, you can close the Activation screen and you will return to the main window.

3 The ELASTIQUE PITCH Interface

The **ELASTIQUE PITCH** interface has been designed to be flexible, thus allowing you to choose the amount of details and controls you want to see at once. In the following sections, the various controls and displays of **ELASTIQUE PITCH** will be described, but some of them may not be visible depending on the View you are using—see the next section about selecting Views.

3.1 View Selectors

In the top-left corner, you will find the View Selectors. There are three different views which will be compared in the following sections. From left to right, they are Simple View **(1)**, Normal View **(2)**, and Advanced View **(3)**.

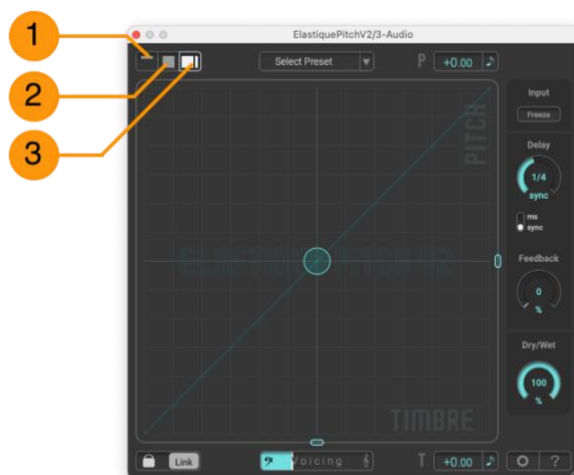


Figure 6: The View Selectors

NOTE: For the duration of this manual, we will use the Advanced View as we describe the functions of **ELASTIQUE PITCH** since the Normal and Simple Views are just reduced arrangements of controls that exist in the Advanced View.

3.1.1 Advanced View

When you start **ELASTIQUE PITCH** for the first time, the Advanced View in order to give you a complete view of all available controls. Please keep in mind that access to registration and help is only available in Advanced View.



Figure 7: Advanced View

3.1.2 Normal View

The Normal View removes the extraneous settings (those related to the [Delay effect](#)) and focuses entirely on the [Pitch & Timbre Field](#) which is the primary function of **ELASTIQUE PITCH**.

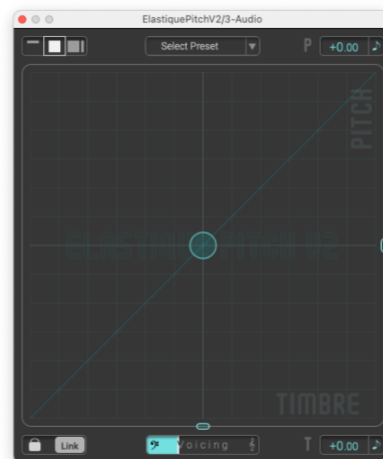


Figure 8: Normal View

3.1.3 Simple View

The smallest view possible for **ELASTIQUE PITCH**, the Simple View removes the graphical Pitch & Timbre Field and, instead, only presents these parameters as numbers which can be edited.

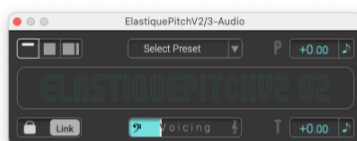


Figure 9: Simple View

3.2 Presets Menu

There are applications that require a specific conversion of pitch, such as when the original material has been played back too fast or too slow during the conversion process between different frame rates. The factory presets cover a typical set of such conversion settings.

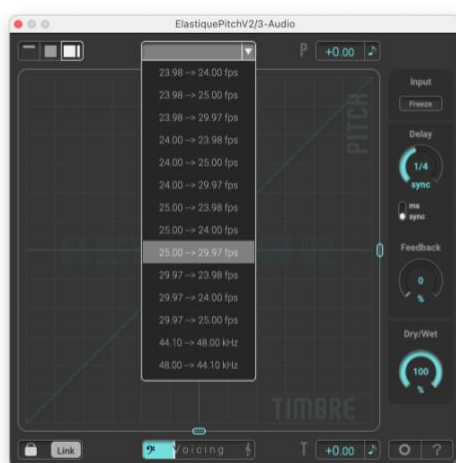


Figure 10: Presets Menu

3.3 Pitch & Timbre Field

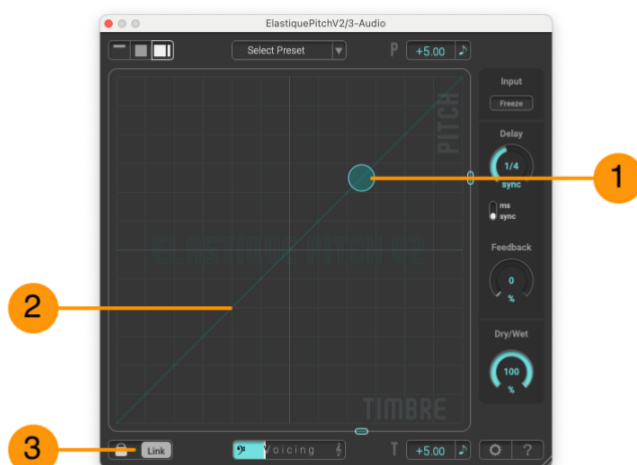


Figure 11: The Pitch & Timbre Field

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 the pitch and timbre can be adjusted with complete freedom.

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]** display **(2)** showing the numerical value of the pitch shift. Clicking the Display Units button **(3)** toggles the display between the pitch factor in percent **[%]** and the pitch alteration in semitones **[♯]**.



Figure 12: 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

Along the bottom of the Pitch & Timbre Field is the **[TIMBRE]** slider (1). Moving this slider left or right changes the timbre of the signal—that is, it changes the formants of the signal which changes its tonal quality without changing the pitch. Moving towards the right shifts the timbre upwards (creating a “Mickey Mouse” effect on a voice) and moving towards the left shifts the timbre downwards (creating a deep “Darth Vader” effect on a voice).



Figure 13: Timbre Slider and Display

Below the slider is the **[T]** display (2) showing the current timbre shift. Clicking the Display Units button (3) toggles between displaying the timbre factor in percent [%] and the 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):

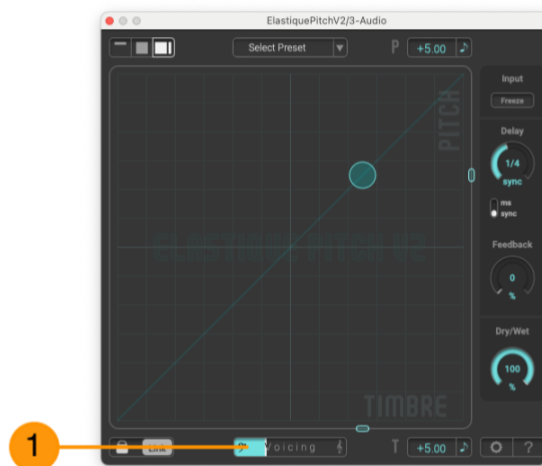


Figure 14: Voicing Slider

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

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

3.5 Link Switch

When the **[Link]** switch (1) is activated, **ELASTIQUE PITCH** will maintain a fixed relationship between pitch and timbre. For example, as you increase the pitch, the formants will also shift upwards—the net effect of this is a natural behavior that resembles playing a vinyl record or analog tape faster than normal. If used on a voice, for example, the voice’s pitch will rise and the *tone* of the voice will start to sound like “Mickey Mouse.”

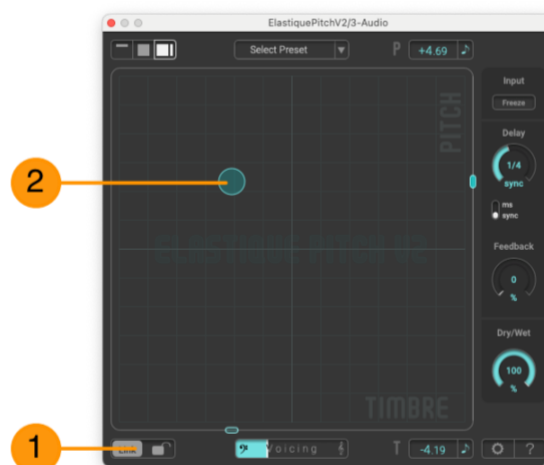


Figure 15: Disabling the Link Switch

However, if you turn the **[Link]** switch (1) off as shown in the image, above, the link between pitch and timbre will not be preserved (the diagonal path on in the [Pitch & Timbre Field](#) disappears) thus giving you complete freedom to shift the pitch and timbre as you wish with the handle (2). You can then pitch the signal up by increasing the pitch-shift while leaving the timbre unchanged to avoid the “Mickey Mouse” effect. Similarly, you can make a voice deeper by turning down the timbre while not changing its pitch. You can also do combination of both until you’re satisfied with the sound.

If you re-enable the **[Link]** switch **(1)** after making independent changes of the pitch and timbre, the diagonal path **(2)** will re-appear on in the [Pitch & Timbre Field](#) showing that the current relationship between pitch and timbre will be preserved as you make changes:

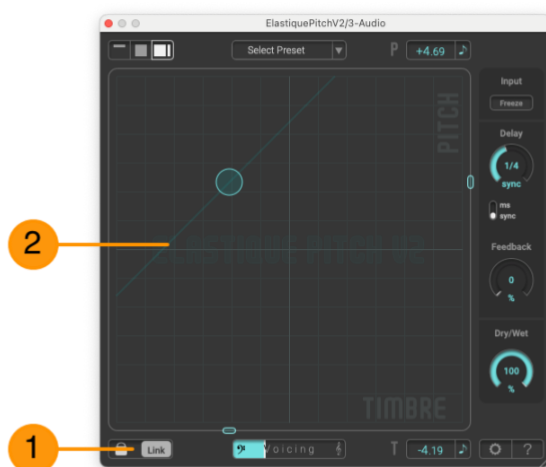


Figure 16: Re-enabling the Link Switch

NOTE: When automating both Pitch and Timbre via the host, the **[Link]** switch will be automatically disabled.

3.6 Delay Effect

ELASTIQUE PITCH includes a special Delay Effect which works like a normal delay—a time-delayed copy of the audio can be fed back to the input causing a repetitive “echo” whose timing/rhythm can be adjusted

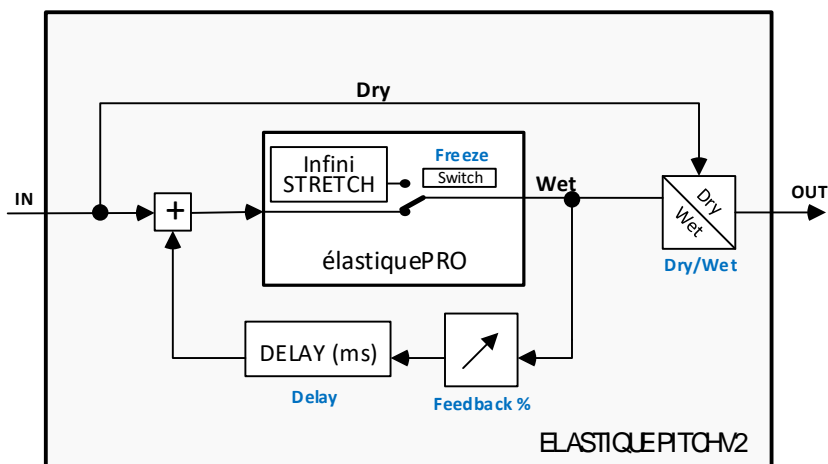


Figure 17: Signal flow diagram

However, as can be seen in the signal flow diagram, above, **ELASTIQUE PITCH** adds a special twist to the standard delay by including the *élastiquePRO* algorithm in the feedback signal path. This means that each repetition of the audio that flows through the feedback loop can have further pitch- and/or timbre-shifts applied to it. The result of this can sound like a delay whose rate is being turned up or down, causing a pitch change in the repeated signals, but *without* changing the timing of the repeats.

The controls for the Delay Effect are as follows:



Figure 18: Delay Effect controls

3.6.1 Delay Dial

The duration of the delay is adjusted with the **[Delay]** dial (1). Larger values (clockwise) result in longer delay intervals.

3.6.2 Delay Sync Switch

The delay time set with the **[Delay]** dial (1) can be specified either in milliseconds by moving the Delay Sync Switch (2) to the “ms” position or synced to the host’s tempo by switching it to the “sync” position.

When in the “sync” position, the **[Delay]** dial will show musical values and the internal delay time will automatically adjust itself accordingly even if the host’s tempo is changed.

3.6.3 Feedback Dial

The amount of feedback can also be controlled with the **[Feedback]** dial (3) set as a percentage of the wet output. “0%” means “no feedback” so no delay will be heard at all—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.

More often than not, a setting somewhere near the middle will be the most useful. Of course, feel free to experiment with the feedback setting—it can also be beneficial to automate the value to change over the course of your song for precision control of the effect.

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 19: Dry/Wet Dial

In most cases, you'll want to leave the **[Dry/Wet]** dial at the default **"100%"** position so you only hear what **ELASTIQUE PITCH** is doing to the signal. However, setting this dial to an 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 *infiniStretch*-feature of the *élastiquePRO* algorithm is enabled. The signal that is currently in the *élastiquePRO* input buffer is "stretched" or continued infinitely.



Figure 20: Freeze Button

NOTE: The feedback path of the [Delay effect](#) is disconnected while **[Freeze]** is on, which means all changes of [\[Feedback\]](#) and [\[Delay\]](#) won't have any effect on the sound.

3.9 Settings Page

The Settings Page is opened via the **[⚙️]** button **(1)** in the lower-right corner of the [Advanced View](#). It provides access to the [activation mechanism](#) or, if **ELASTIQUE PITCH** is already activated, the serial number. It also shows the version of **ELASTIQUE PITCH** you are using.



Figure 21: The Settings Page

3.10 Help Page

By clicking the **[?]** button **(1)** in the lower-right corner of the **ELASTIQUE PITCH** [Advanced View](#), you will gain access to the Help Page which provides a handful of useful information.

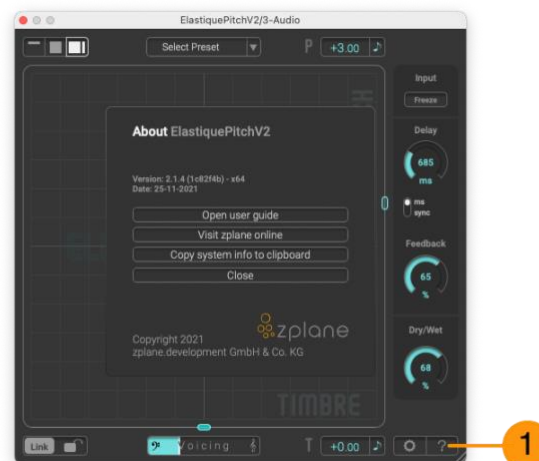


Figure 22: The Help Page

3.10.1 Open User Guide

Clicking the **[Open user guide]** button on the Help Screen will open this **ELASTIQUE PITCH** 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 automatically point it to the zplane.de website. On the site, you can learn about the various zplane products available for purchase as well as access your Account and all your registered zplane products. You can also access the Support section on the site if you need to request product support, report a bug, or have suggestions for future improvements.

3.10.3 Copy System Info to Clipboard

Clicking the **[Copy system info to clipboard]** is a handy feature to use if you need to submit a support request to zplane. After clicking this button, you can simply use CTRL+V (Windows) or CMD+V (macOS) to paste a set of relevant system information into your support request which will help zplane better diagnose the problem you're reporting.

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 will differ between hosts—please consult your host's documentation on how to load plug-ins 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 instance you load will be independent from the others allowing you to set unique shifting parameters for each one.

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 by MIDI—the timbre will remain fixed at its current position. Turning the **[Link]** switch on will cause the timbre to also shift as the pitch is shifted.

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 plug-in 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 23: 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:

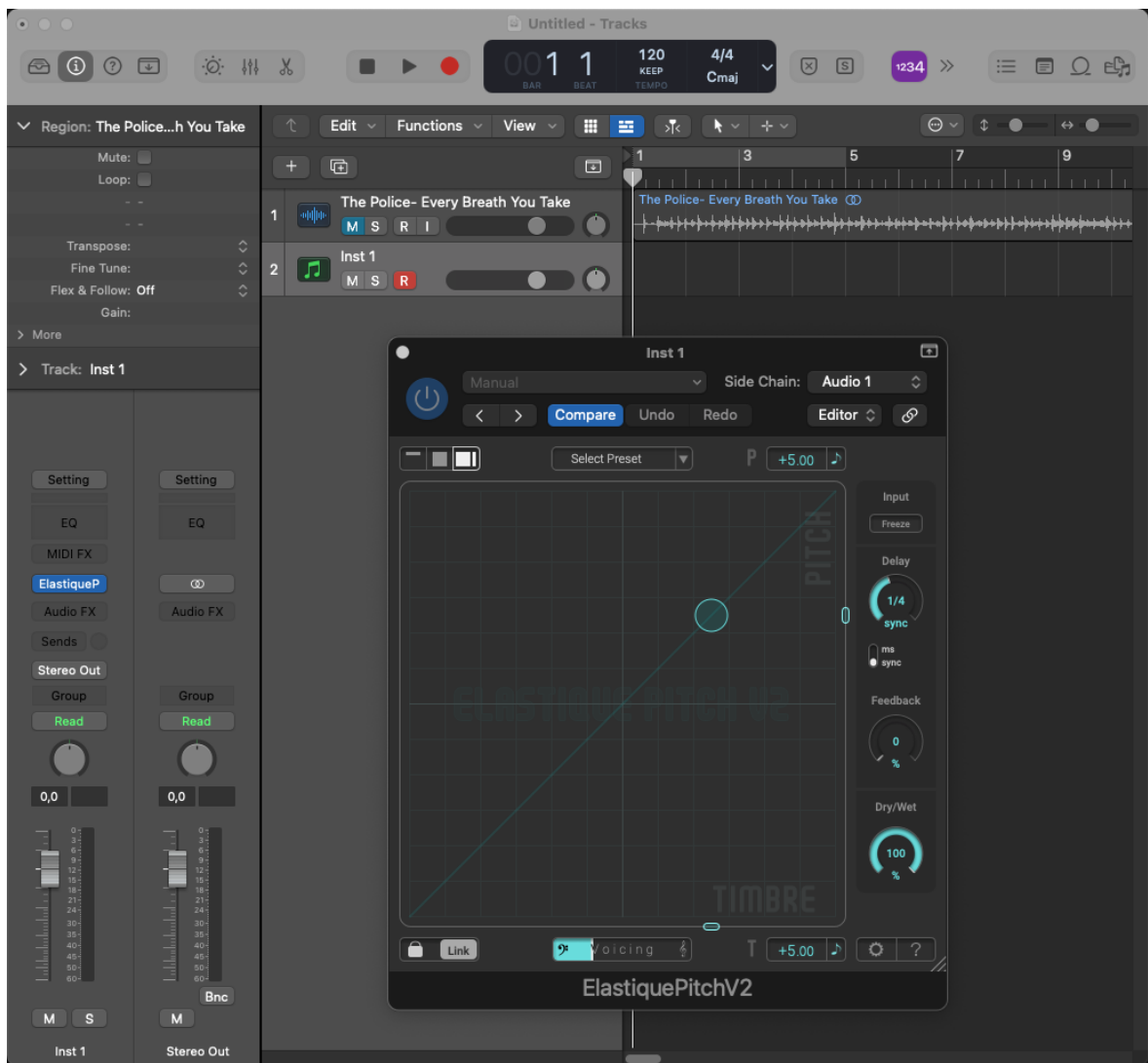


Figure 24: MIDI Control of **ELASTIQUE PITCH** in Logic Pro

NOTE: Logic Pro does not perform any plug-in delay compensation on plug-ins loaded as MIDI-controlled effects. Therefore, the output from **ELASTIQUE PITCH** will sound late. To solve this, shift the original track earlier to compensate the timing.

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**:

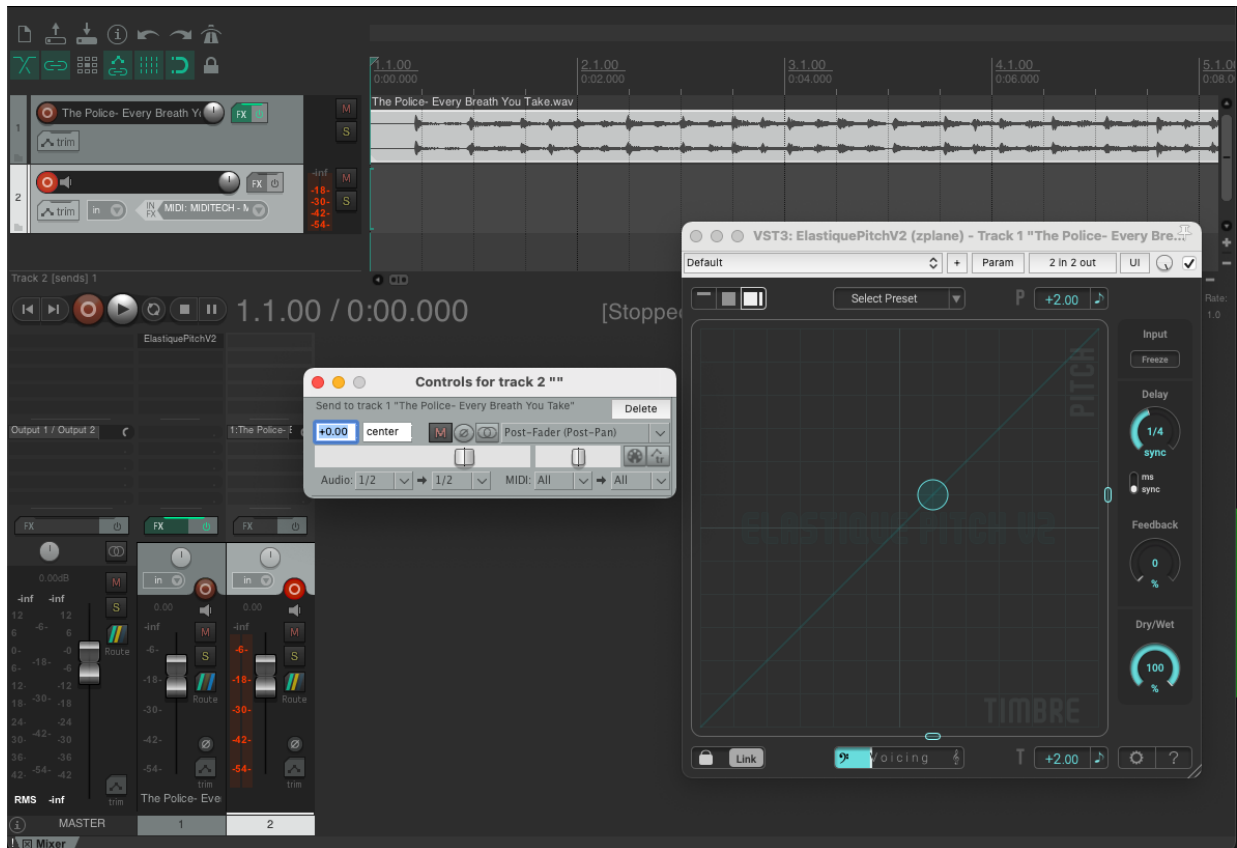


Figure 25: MIDI Control of ELASTIQUE PITCH in Reaper

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:

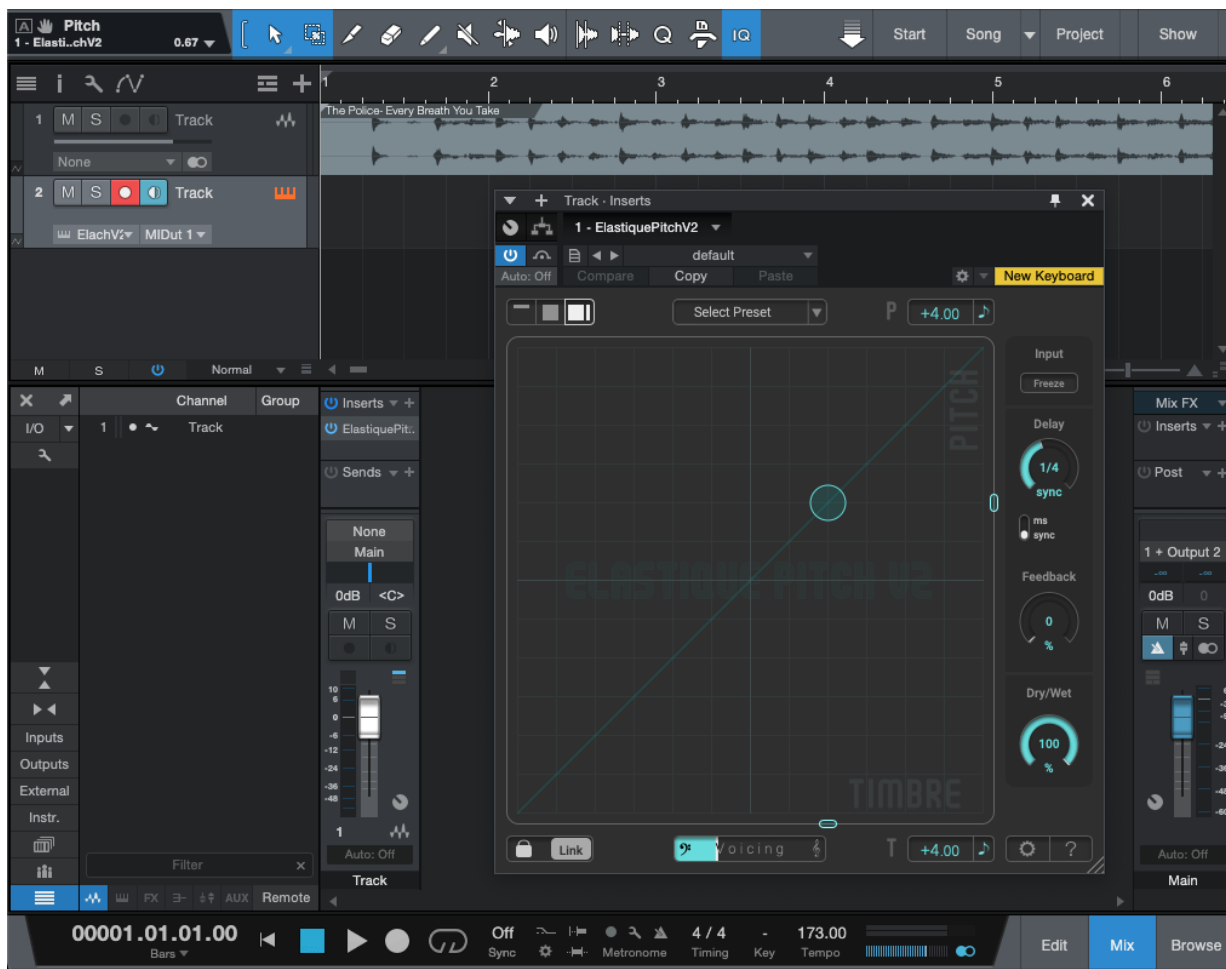


Figure 26: MIDI Control of ELASTIQUE PITCH in Studio One

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:

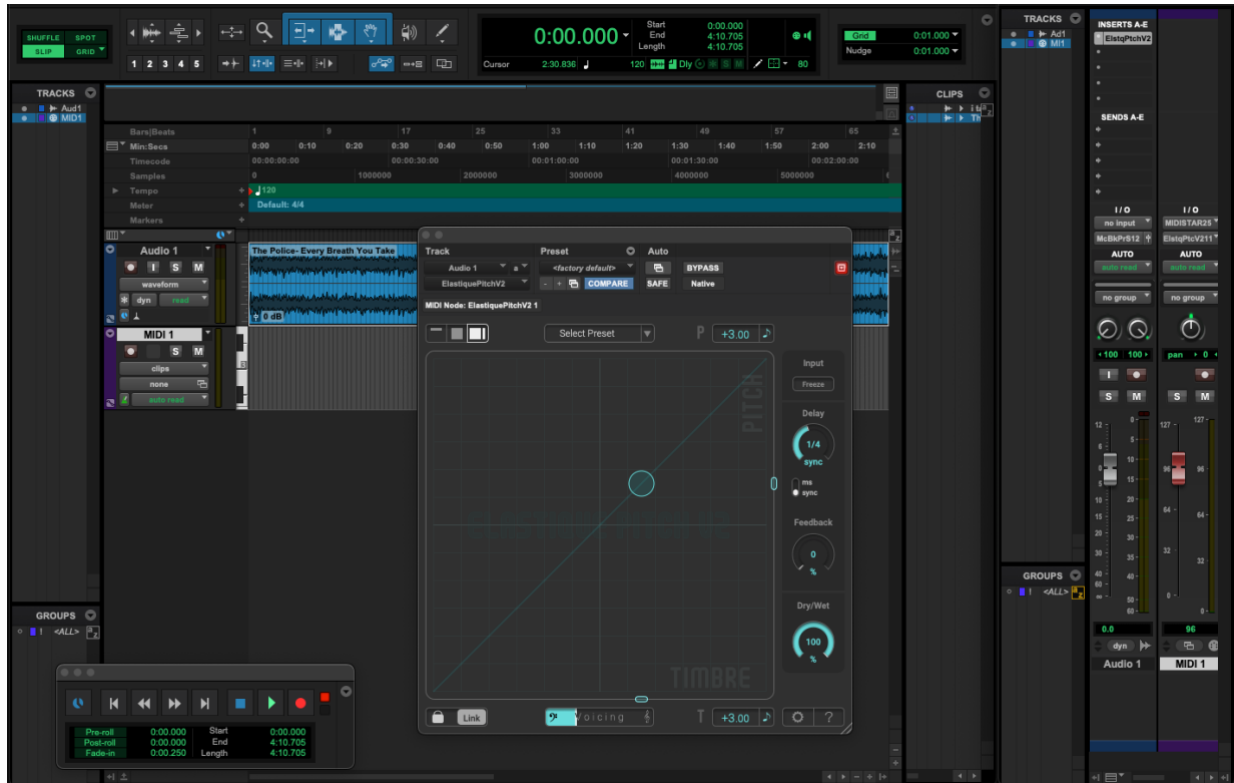


Figure 27: MIDI Control of **ELASTIQUE PITCH** in Pro Tools

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	<ul style="list-style-type: none"> • macOS 10.14 and higher • Windows 10 & 11
CPU Architecture	<ul style="list-style-type: none"> • Windows: Intel 32-bit & 64-bit • Mac: Intel & M1 64-bit
Audio Formats	<ul style="list-style-type: none"> • 1-8 channels (I/O) • 32kHz - 192kHz sample rate
Plug-in Formats	<ul style="list-style-type: none"> • VST2 • VST3 • AU (macOS only) • AAX
Plug-in Latency	<ul style="list-style-type: none"> • 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:

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 D-10823 Berlin
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