



# AUTO-TUNE PRO X

USER GUIDE

VERSION 10.0

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# Introducing Auto-Tune Pro X

## What is Auto-Tune Pro X?

For over twenty five years, Auto-Tune has been the world standard for professional pitch and time correction, as well as the tool of choice for the signature [vocal effect](#) of modern popular music.

Auto-Tune Pro X is the latest and most complete version of Auto-Tune, featuring two modes of operation: Auto Mode, optimized for low latency real-time pitch correction and effects, and Graph Mode, enabling unparalleled versatility, and detailed graphical editing of pitch and timing.

Auto-Tune Pro X is packed with new features and a brand new, streamlined interface, redesigned to maximize efficient workflow and usability for beginners and experts alike.

# Quick Start – License Activation

Before we can use Auto-Tune Pro X, we need to activate our license first using the Antares Central application. Please follow the steps below to get started:

## Step 1: Open Antares Central

After installing Auto-Tune Pro X, you'll find Antares Central in your computer's applications folder:

### MacOS

*/Applications/Antares Audio Technologies*

### Windows

*C:\Program Files\Antares Audio Technologies*

Open Antares Central, then log in or create an Antares account.

## Step 2: Activate Your License

After logging in, click on “Manage Licenses” to view your available licenses. Click “Activate” on your Auto-Tune Pro X (or Auto-Tune Unlimited) license, and wait until the process completes.

Please be patient, as the activation process may take up to 1-2 minutes.

## Step 3: Open Your DAW

Now that your license has been activated, open up your DAW of choice.

For the latest DAW Compatibility information, please visit [this page](#) on our website.

## Step 4: Insert Auto-Tune Pro X

Antares plug-in files are installed in the common VST3, AU, and AAX folders on your computer. They should be recognized by your DAW automatically, but please visit this [support article](#) if you have trouble locating the plug-in.

Below, you'll find instructions on how to insert Auto-Tune Pro X onto a track in various DAW's:

## Pro Tools

Choose an empty insert slot on one of your audio tracks, instrument tracks, or buses. Then select Auto-Tune Pro X from the pop-up menu in either the Dynamics or EQ category.

## Logic Pro

Choose an empty insert slot on one of your audio tracks, instrument tracks or buses and select Auto-Tune Pro X from the pop-up menu. You will find Auto-Tune Pro X in: *Audio Units > Antares* section (named Auto-Tune Pro).

## Ableton Live

In either Session or Arrangement View, select the track you would like to place Auto-Tune Pro X on by clicking the track name.

At the top left of Ableton's interface, click on the Plug-in Device Browser icon. From the plug-ins list, double-click Auto-Tune Pro X, or drag it onto the track.

## Cubase

Choose an empty insert slot, for example in the Mixer, and select Auto-Tune Pro X from the menu that appears.

## Studio One

Click the '+' button next to the Inserts tab of an audio track, and select 'Auto-Tune Pro X' from the drop-down menu.

## Reaper

Click the 'FX' button next to the track name of an audio track, and select 'Auto-Tune Pro X' from the EQ or Dynamics category.

## Digital Performer

In the Digital Performer Mixing Board, click an empty insert slot to open the Insert Effects list. Select Auto-Tune Pro X from the list, or use the search bar to locate it quickly.

# What's new in Auto-Tune Pro X?

## All New User Interface & Customization Options

The Auto-Tune Pro X user interface has been beautifully redesigned to bring it to the modern age. For the first time, the Auto-Tune Pro X features Light and Dark Mode variations to suit your preference.

The Advanced Controls in Auto Mode are now organized into two tabs: [Scale Controls](#) and [Vibrato Controls](#).

Click the [Advanced](#) button to reveal the additional controls. Click it again to tuck them away again. Any changes you've made to the Advanced controls will still be in effect, even when they're hidden.

Additionally, the [Quick Settings](#) and [Preferences](#) pages have been redesigned to improve their organization.

## Graph Mode Improvements

We thoughtfully redesigned the layout of Graph Mode's controls to increase the clarity of functions and make the workflow more intuitive for new and experienced users alike.

Here's a short list of improvements:

- Automatic Correction Object generation after tracking audio
- New modifier key shortcuts for zooming in/out on vertical axis, horizontal axis, or both
- New customization options for graph mode workflows
  - Ability to hide/show a waveform within Note Objects
  - Ability to hide/show Red Input Pitch Curves
  - Ability to show single or dual waveforms in the Waveform Graph
  - Ability to automatically start the plug-in in Auto mode or Graph Mode
  - Automatic zoom adjustment to present the most commonly tracked octave of notes after tracking audio
- New mouse/trackpad based zooming features in the Main Graph

- Custom naming and location options for audio folders created when making time edits
- Optional ability to always launch Auto-Tune Pro X in graph mode

## Multi-View Instance List

When you've got a ton of tracks running Auto-Tune Pro X at the same time, the new [Multi-View](#) list helps you quickly switch between them in a single window to edit multiple vocals more efficiently.

Another useful feature of Multi-View is that it automatically fetches the custom track names from the DAW host to populate the Multi-View list.

For instance, when you've made names like 'Lead Vocal', 'Doubled Vocal', 'BG Vox 1', etc. on your DAW channels, all those track names automatically show up in the Multi-View list. This gets rid of a lot of those labeling headaches and makes Auto-Tune Pro X faster and more convenient when you are working with multiple tracks.

## Apple Silicon Native Compatibility

Auto-Tune Pro X is natively compatible with Apple Silicon, which means more vocal tracks in your DAW, more instances of Auto-Tune running at the same time, and more freedom to create without worrying about your system being bogged down by CPU-hungry plug-ins. You'll work faster with less interruptions on bigger projects.

## 4K Vector Graphics

4K Vector Graphics make Auto-Tune Pro X look better than ever. The plug-In window is now resizable and stays sharp no matter how big or small it is. Click and drag the bottom right corner of the plug-in window to resize it.

## Presets

You asked, and we delivered! Auto-Tune Pro X now features a collection of artist presets and a method for saving your own custom presets.

See the [Presets](#) section for more information.

## Expanded Tooltips

If you're feeling stuck, hover over any parameter in the user interface to bring up its tooltip. This will give you a quick description of the control and offer an example use case. It's like a mini manual built right into the plug-in!

Open the [Quick Settings](#) menu (Gear Icon), to Enable/Disable tooltips.

## Machine Learning

Automatic Input Type detection uses the power of Machine Learning to help you identify the Input Type best suited for your track. And best of all, it only takes a few seconds!

See the [Input Type – Learn](#) section for more information.

## New Global Controls

We also added a few global controls to help with your workflow:

- [Undo/Redo](#) Buttons
  - These buttons were previously only found in Graph Mode. In Auto-Tune Pro X, they can be used in both Graph Mode and Auto Mode.
- [Bypass](#) Button
- [Mix Knob](#)

## What Type of Audio is Appropriate for Auto-Tune?

Auto-Tune is intended for use with a well-isolated, monophonic sound source such as a single voice, or a single instrument playing one pitch at a time. Multiple voices or instruments recorded onto the same track, or single instruments that are playing multiple pitches at the same time, cannot be accurately pitch corrected using Auto-Tune.

Noise content, or breathiness in vocal performance can sometimes also lead to tracking errors. However, this can often be remedied by adjusting the [Tracking](#) knob.

# Auto Mode Overview



Unlike Graph Mode, which is designed for more precise note-by-note pitch editing, Auto Mode is optimized for real time, low latency performance, on stage or in the studio.

You can control the parameters in real time using a MIDI controller, automate them using your DAW's automation features, or simply dial in your settings and let Auto-Tune take care of the rest.

Auto-Tune Pro X works by continuously adjusting the pitch of the incoming audio toward a target pitch. In Auto Mode, the target pitch is determined by the current scale settings. At any given moment, the target pitch will be the active scale tone that is closest to the detected input pitch.

The set of active scale tones is specified using the [Key](#) and [Scale](#) menus, and edited with the [Keyboard](#) and the [Scale Controls](#).



The [Retune Speed](#) parameter controls how fast the input pitch is tuned toward the target pitch, with faster speeds resulting in a more pronounced effect, and more moderate speeds resulting in more subtle pitch correction.

The [Flex-Tune](#) and [Humanize](#) controls allow you to further customize the tuning and vibrato of your track for even more transparent and natural sound correction.

The [Natural Vibrato](#) knob and [Vibrato Controls](#) in Advanced View allow you to subtly or dramatically alter the vibrato of your track.

The MIDI [To Notes](#) and [Learn Scale](#) functions allow you to define target pitches dynamically in real time using your MIDI controller.

You can also control many Auto Mode parameters using your MIDI controller. To assign a control to a particular MIDI CC message, see the [MIDI Control Assignments](#) section in the Preferences Window.

## Basic and Advanced Views

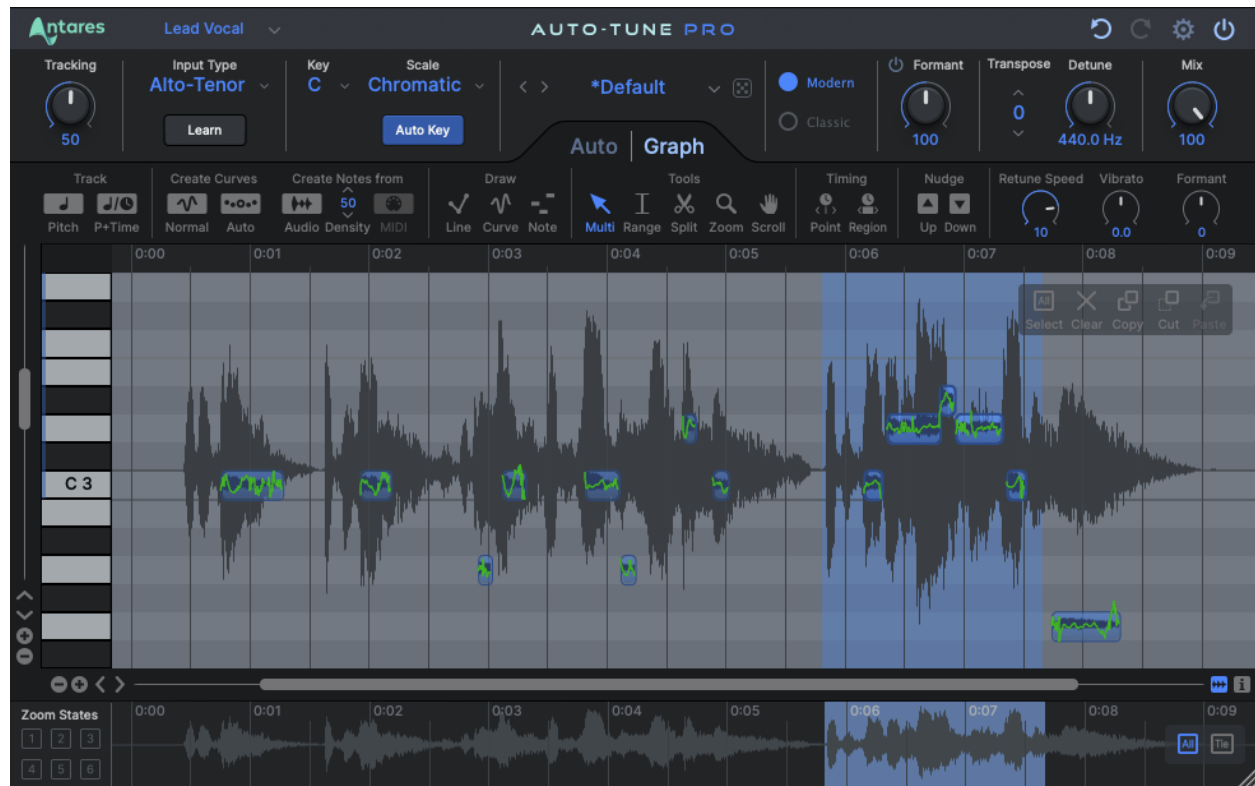


Auto Mode features two different screen views: [Basic View](#) and [Advanced View](#).

Basic view hides some of the more advanced features and shows only the more commonly used controls for quick and easy access.

Advanced View shows all of the available controls, including the [MIDI Functions](#), [Vibrato Controls](#), and the [Scale Controls](#). All of the Advanced View features remain active, even when hidden in Basic View.

# Graph Mode Overview



Graph Mode allows you to make detailed edits to the pitch and timing of your audio using a pitch graph and a variety of editing tools.

Auto-Tune Pro X works by continuously adjusting the pitch of the incoming audio toward a target pitch. In Graph Mode the target pitch is determined by [Correction Objects](#) (Lines, Curves, and Notes) that are drawn on the [Main Graph](#).

Correction Objects can be automatically generated using the [Create Notes](#), [Create Curves](#), or [Create Curves from Auto Mode](#) buttons. The [Drawing Tools](#) help you draw, move, and edit correction objects.

Additionally, each object or group of objects can be assigned its own independent Retune Speed, Vibrato adjustment, and Throat Length adjustment. See the [Per Object Controls](#) Chapter for more information.

The [Time Correction](#) tools in Graph mode allow you to non-destructively and fluidly edit the timing of a musical performance.

## Graph Mode Workflow

Below is a basic sample workflow in Graph Mode. For more detailed examples, please see the [Tutorials](#) section.

### 1. Track Pitch

Click the [Track Pitch](#) or [Track Pitch+Time](#) button, and begin playback to track your audio into Graph Mode (use Track Pitch+Time if you may wish to do any Time Correction edits). Auto-Tune will analyze the audio and display the detected pitch contour in red.

### 2. Create Correction Objects

After tracking audio, Correction Objects will be created automatically, depending on the [After Tracking](#) setting in the Graph Mode Preferences.

You can also create Correction Objects manually using the [Create Curves](#), [Create Notes](#), or [Create Curves from Auto Mode](#) function, or draw them manually using the [Curve Tool](#), [Line Tool](#), or [Note Tool](#).

### 3. Edit Correction Objects

Use the [Range Tool](#), [Multi Tool](#), and [Split Tool](#) to edit the Correction Objects you've created.

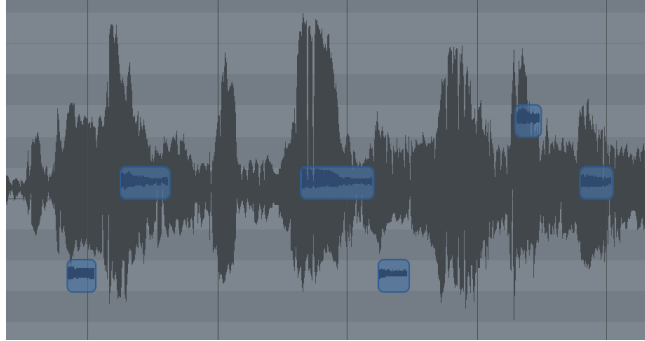
### 4. Time Editing

If you've tracked your audio using the Pitch+Time function, you can use the [Point Tool](#) or [Region Tool](#) to edit the timing of your track.

# Correction Objects

There are three types of Correction Objects in Graph Mode: Notes, Curves, and Lines.

## Notes



Unlike Curves and Lines, which are continuously variable in pitch, each Note Object represents a single target pitch that persists for the duration of the Note Object.

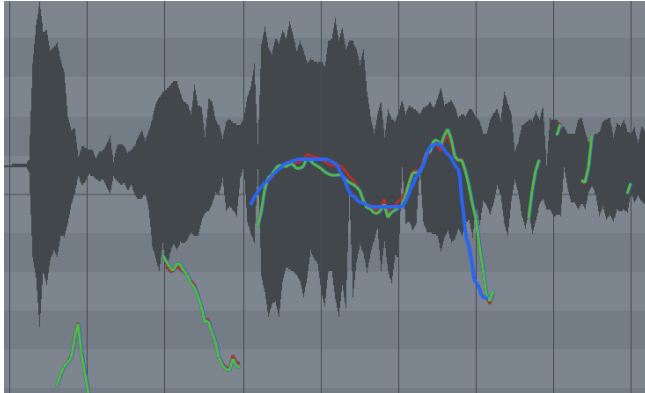
Notes can be drawn with the [Note Tool](#), or created automatically using the [Create Notes](#) function.

After being created, a Note Object can be repositioned to a different note by clicking and dragging it up or down. If the [Play Tone When Moving Note Objects](#) setting is enabled in the [Graph Mode Preferences](#), a tone will play after you let go of the mouse button to let you know which note it was repositioned to.

If the [Snap To Note](#) setting is enabled in the Graph Mode Preferences, Note Objects will snap perfectly into place as you drag them up or down. To move Note Objects freely, hold down the Shift key while dragging them.

After tracking pitch and time data, you can drag the left or right edges of a Note Object to adjust its length, thus shifting the timing of the note. For more information, see the [Point Tool](#) and [Region Tool](#) descriptions.

## Curves

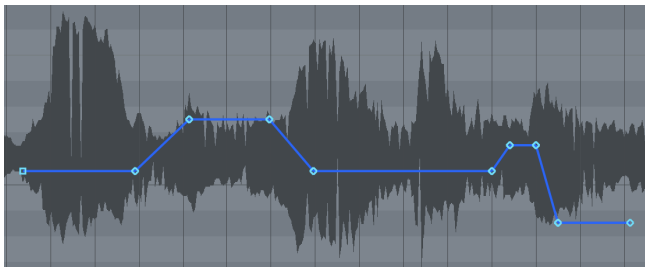


Curve objects allow you to create and edit arbitrary and continuously variable pitch contours.

They can be drawn freehand using the Curve Tool or created automatically using the [Create Curves](#) or [Create Curves from Auto Mode](#) function.

Curves are momentarily displayed in blue while being drawn to distinguish them from the red detected pitch contours and the green output pitch contours.

## Lines



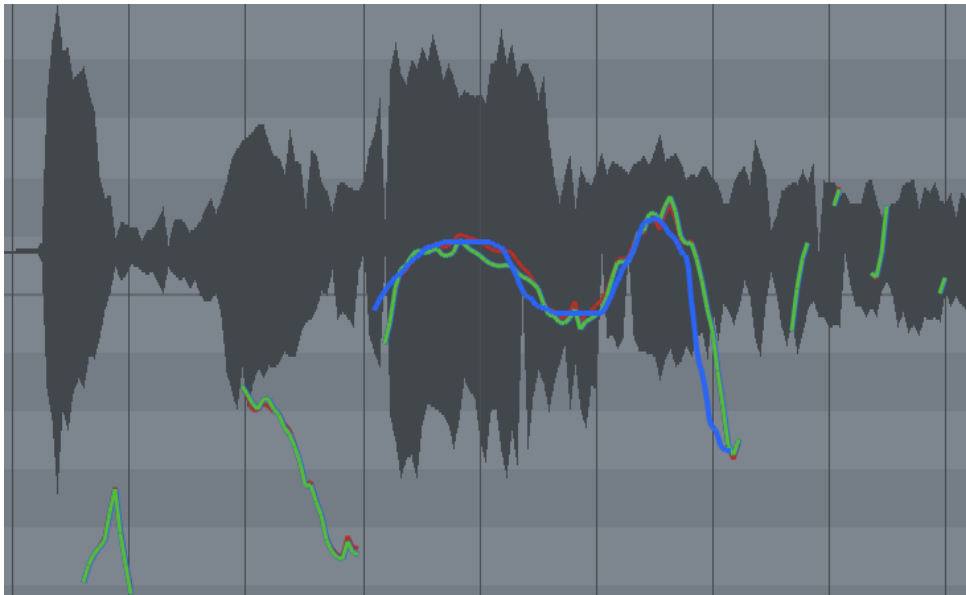
Lines are similar to Curves, except that they are made up of straight line segments.

Select the [Line Tool](#), then click anywhere on the Main Graph to create anchor points. Lines segments will be created between pairs of anchor points.

Double-click, or click in the same spot twice to end the operation with that point as the final point in the Lines object.

Like Curves, Lines are also displayed in blue.

# Pitch Contours



There are three different types of color-coded pitch contours in Graph Mode: Red, Blue, and Green.

## Red

Red contours represent the detected pitch of the audio, and appear after using the [Track Pitch](#) or [Track Pitch+Time](#) function. Since they represent the pitch of the original, unprocessed audio, they cannot be edited or moved.

## Blue

Blue contours (Curves) are a type of [Correction Object](#). They represent a continuously variable target pitch that Auto-Tune will tune the audio towards. They can be created using the [Make Curves](#) and [Create Curves from Auto Mode](#) functions, and can be drawn, moved and edited with the [Editing Tools](#).

## Green

Green contours represent the output pitch that results from applying a Correction Object to the original audio.

## Time Correction

The Time Correction tools in Auto-Tune Pro X are helpful for correcting moments where a vocalist is a little behind or ahead of the track's tempo.

We've combined an extremely high quality time-shifting algorithm with an intuitive user interface to make it quick and easy to correct timing errors or exercise your creative imagination.

In order to apply time correction, Auto-Tune must first create a copy of the audio you wish to edit. This is accomplished automatically with the [Track Pitch + Time](#) function.

Once the audio has been tracked into Graph Mode, you can use the [Point](#) and [Region](#) tools to apply time-based editing.

The [Waveform Graph](#) can display the waveforms of both the input audio and the time-corrected audio, so you can easily compare them. To do this, select [Waveform Graph Shows: Dual Waveforms](#) in the Graph Mode [Preferences](#). This setting can be saved as the default Waveform Graph view if you prefer.

## Non-Destructive Editing

Time edits in Auto-Tune Pro X are completely non-destructive because they occur on a copy of your audio, keeping the original audio intact.

You can switch off the [Enable Time Correction](#) setting at any point to return to your track's original timing. Or, to permanently delete your time edits, click the [Clear](#) button and choose 'Time Changes'.

## Time Shifting Limits

The total amount of time compression or expansion that can be applied to a range of audio is limited to a 10:1 ratio. A range of audio can be expanded up to 10 times its original length or compressed down to 1/10th of its original length. Once that limit is reached, further compression or expansion is not possible, as noted in an onscreen reminder.

## Managing Time Correction Data Files

Unlike the pitch data generated by the traditional [Track Pitch](#) function, which is always stored within the instances of Auto-Tune in your project, the audio recorded for time shifting by the [Track Pitch + Time](#) function is saved as one or more separate files elsewhere on your computer.

Before transferring a project that uses time correction from one computer to another, it is necessary to share the time edited audio files alongside the project file. If the next person who opens the project does not have the folder of time edited audio, pre-existing time edits will not be reflected in the session.

To help manage the recorded audio data required for time shifting, the [Quick Settings Menu](#) has a '[Move Data Folder](#)' setting and a '[Rename Data Folder](#)' setting. These settings let you to establish or move the location of the data files, or rename the folder where they're stored.



# Global Controls

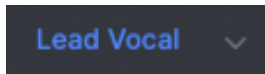
The controls covered in this chapter are common to both Auto Mode and Graph Mode.

## Antares Central



Click on the Antares Logo to open **Antares Central**, a separate application used to manage license activations.

## Multi-View List



The **Multi-View List** shows you all the instances of Auto-Tune Pro X currently running in your DAW.

Select a track name to quickly view and edit that instance of Auto-Tune within the same plug-in window. This saves you time opening and closing multiple plug-in windows.

Track names will sync from your DAW automatically in the Multi-View Instances List.

## Undo



Click the **Undo** button to reverse your most recent edit, up to 99 steps.

## Redo



Click the **Redo** button to restore the most recently undone edit.

## Settings



Click the gear icon to open the [Quick Settings Menu](#).

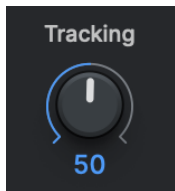
The **Quick Settings Menu** is a dropdown list of settings you may want to toggle On/Off more frequently than those listed in the Preferences.

## Bypass



Click the **Bypass** button to disable Auto-Tune Pro X in your DAW. When bypassed, the Bypass button will appear de-illuminated.

## Tracking



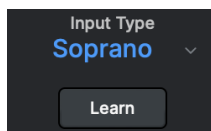
In order to accurately identify the pitch of the input, Auto-Tune Pro X requires a periodically repeating waveform, characteristic of a solo voice or solo, non-chordal instrument.

The **Tracking** control determines how much variation is allowed in the waveform for Auto-Tune Pro X to still consider it periodic.

In most cases, Tracking should be left at its default value of 50. However, please note the following:

- A noisier signal or a vocal performance that is unusually breathy may require a more 'relaxed' setting (higher Tracking value).
- If you're hearing artifacts such as clicks or pops, try setting the Tracking to a 'choosier' setting (lower Tracking value).

## Input Type



Auto-Tune Pro X offers a selection of processing algorithms optimized for different vocal ranges and types of audio. **Input Type** options include:

- *Soprano*
- *Alto/Tenor*
- *Low Male*
- *Instrument*
- *Bass Instrument*

For the most accurate pitch detection and correction, choose the Input Type that best describes your audio.

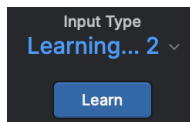


After selecting an Input Type, a blue stripe on the top edge of the [Keyboard](#) will highlight the notes contained in the selected input type.

**Note:** This function only applies to the Soprano, Alto/Tenor, and Low Male Input Types.

While playing audio, the notes on the onscreen keyboard will also light up in blue as they're played. You can use these pieces of information in conjunction to help you decide if the selected Input Type is best for your audio.

## Input Type – Learn



If you're not sure which Input Type would be best for your audio, use the **Learn** button to detect it automatically.

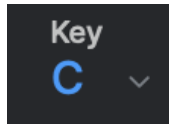
This feature uses Machine Learning to help you pick an input type that best matches the vocals on your track. For best results, play back 5 seconds of audio that best represents the typical vocal range of the track.

**Note:** The learning process begins after you start audio playback.

Follow the steps below to use the Learn function effectively:

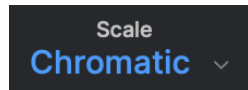
1. Find a range of audio in your track that best represents the vocal range.
2. Click the Learn Button.
3. Start Playback for 5 seconds.

## Key



The **Key** menu lets you select the key of the track you plan to process. The Key setting is used in combination with the Scale setting to determine the set of notes that the audio will be tuned to.

## Scale



The **Scale** selection is used in combination with the Key selection to define the scale of the track you plan to process.

If you're not certain of the scale or key of your track, try using the [Auto-Key](#) plug-in in your DAW, or the [Auto-Key Mobile](#) application on your mobile device.

Another option is to set the Scale parameter to Chromatic, which will cause Auto-Tune Pro X to always tune to the closest pitch in the 12-tone chromatic scale.

## Auto-Key



The **Auto-Key** button enables Auto-Tune Pro X to receive Key and Scale information from the Auto-Key desktop plug-in or mobile app.

Auto-Key is a separate plug-in (included with your Auto-Tune Pro X license or [Auto-Tune Unlimited](#) subscription) that automatically detects the key and scale of your track.

After successful detection, Auto-Key can send the key and scale information to multiple instances of Auto-Tune with a single click.

Auto-Key is also available as a free application on mobile devices to detect and send key and scale information to Auto-Tune Pro X. [Auto-Key Mobile](#) brings perfect pitch to your pocket!

*For more information about the Auto-Key desktop plug-in, see its User Guide [here](#).*

## Preset Manager

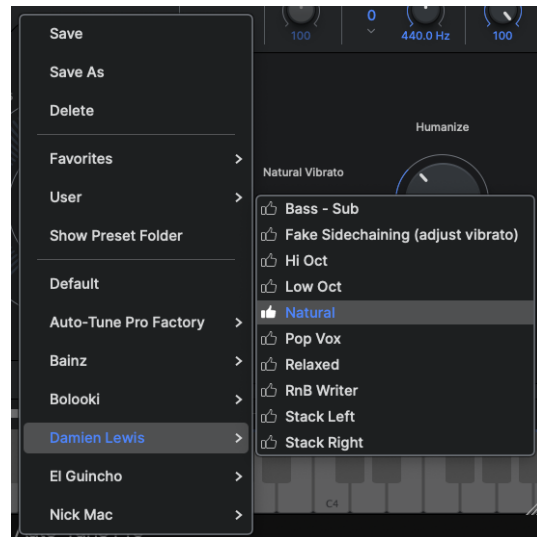


Auto-Tune Pro X features a collection of artist presets, and a method for saving your own custom presets.

Use the left and right arrow keys to load presets in order. This is helpful for testing presets sequentially without navigating to the preset dropdown menu every time.

## Preset Dropdown Menu

The preset dropdown menu lists all of the presets available in Auto-Tune Pro X, along with options to Save, Save As, or Delete presets.



Custom presets are listed in the User folder, and are located higher in the preset dropdown menu for easy access.

The Auto-Tune Pro X factory presets comprise a selection of natural sounding pitch correction.

A number of artist presets showcase the creative effects possible with Auto-Tune Pro X. They're listed alphabetically in the lower section of the dropdown menu.

## Preset Favorite Button

Click the thumbs up icon next to a preset name to add that preset to the Favorites folder.

## Random Preset Button

Click on the dice icon on the preset manager to load a random preset. This is great for finding inspiration!

## Auto/Graph Mode Switch

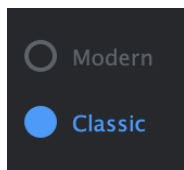


The **Auto/Graph Mode Switch** is used to toggle between Auto Mode and Graph Mode.

[Auto Mode](#) is optimized for real time, low latency performance, on stage or in the studio. You can control the parameters in real time using a MIDI controller, automate them using your DAW's automation features, or simply dial in your settings and let Auto-Tune take care of the rest.

[Graph Mode](#) allows you to make detailed pitch and time edits to individual notes and phrases using a pitch graph and a variety of editing tools.

## Modern/Classic Mode Toggle



**Classic Mode** simulates an early Auto-Tune algorithm, and results in the fan favorite “Auto-Tune 5 sound.”

As new features were added to Auto-Tune over time (such as Formant Correction, Throat Modeling, and Flex-Tune), the Auto-Tune algorithm has evolved, and its sonic qualities have undergone subtle changes, with each Auto-Tune version having its own slightly different character.

Over the years, the sound of Auto-Tune 5 has developed something of a cult following among musicians, audio engineers and producers, perhaps due in part to its use on many iconic pop recordings. Due to popular demand, the Auto-Tune 5 sound is available in Auto-Tune Pro X via Classic Mode.

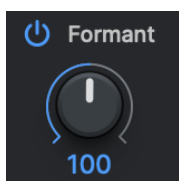
The sonic difference between Classic Mode and the modern sound of Auto-Tune Pro X is very subtle, but if you listen carefully, you may notice a slightly brighter quality on your vocals, and a more pronounced attack and transition between notes at faster Retune Speeds.

Classic Mode is available in both Auto Mode and Graph Mode.

**Note:** The following features are disabled when Classic Mode is on:

- Formant
- Throat Length
- Transpose
- Flex-Tune
- Time Editing

## Formant Correction and Throat Control



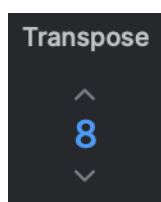
A sound's formants are the resonant frequencies that result from the physical structure of whatever is producing the sound (e.g. the human mouth and vocal tract).

When a vocal is pitch-shifted by large intervals without formant correction, not only is the fundamental pitch shifted, but the formants are shifted as well. If not corrected for, this can result in an unnatural, chipmunk-like effect.

The shape of a singer's throat is a prime contributor to their vocal character. Formant correction in Auto-Tune Pro X uses a unique throat modeling technology to modify the sound of a voice by passing it through a physical model of the human vocal tract.

When formant correction is enabled, adjust the knob to specify the length of the modeled throat.

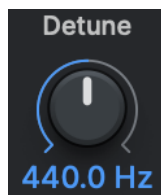
## Transpose



In addition to any pitch correction applied by either Auto or Graph Mode, the **Transpose** control lets you shift the overall pitch of your performance over a two octave range (+/- one octave), selectable in semitone increments.

In Auto Mode, this transposition is accomplished in real time. In Graph Mode, this function does not affect the [Output](#) pitch display, but provides overall transposition on top of any pitch shifting accomplished with the graph editing tools.

## Detune



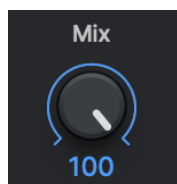
The **Detune** parameter allows you to change the pitch reference of Auto-Tune Pro X from the default A = 440Hz. This is useful when working with an instrument or track that uses a different reference frequency.

Values can be displayed in Cents or Hertz (you can specify this in the Settings Menu). The range of adjustment is -100 cents to +100 cents.

**Note:** *Detune functions differently in Auto Mode and Graph Mode:*

- *In Auto Mode, the target pitch reference is shifted by the specified amount.*
- *In Graph Mode, the Detune knob shifts the position of the horizontal pitch reference lines in the [Main Graph](#), so that any correction objects created or adjusted relative to those reference lines will reflect the Detune setting.*
  - *Detune will not automatically shift the position of correction objects that have already been created, so it's wise to make any needed adjustments to the Detune setting before creating your correction objects.*

## Mix Knob



The **Mix Knob** adjusts the balance of processed and unprocessed signals. Turn the knob to 0 to hear only the unprocessed signal. At 100, you will only hear the processed signal.

In most cases, this knob should stay at 100, but it can be used as a creative effect when adjusted to a lower value. A chorus-like effect will be present when the unprocessed and processed signals are played simultaneously.



# Basic Auto Mode Controls

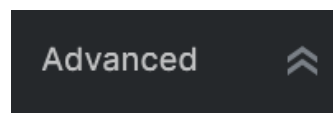


Auto Mode features two different interface views: the streamlined Basic View, which shows you only the most commonly used controls, and the more in-depth Advanced View, which includes detailed controls for the [Scale](#) and for adding [Vibrato](#).

This chapter will cover the controls that are visible in Basic view.

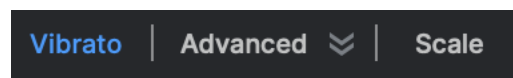
**Note:** Switching back to Basic View from Advanced View will hide the advanced controls, but will not disable them. You will still hear the results of your Advanced View settings when you return to Basic View.

## Advanced

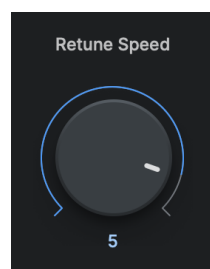


Click on the **Advanced** tab to toggle between Basic View and Advanced View.

After opening Advanced View, select whether to adjust the [Vibrato](#) or [Scale](#) controls.



## Retune Speed



**Retune Speed** controls how rapidly the pitch correction is applied to the incoming audio. (*Units are in milliseconds.*)

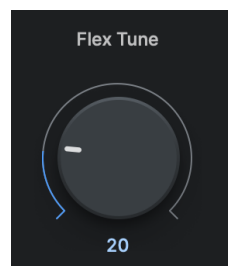
Setting the Retune Speed to 0 will cause immediate changes from one pitch to another, and will completely suppress any vibrato or deviations in pitch.

If you'd like to recreate the iconic "Auto-Tune Effect", set the Retune Speed to 0.

For more natural sounding pitch correction, set between 10 and 50.

Larger values allow more vibrato and other interpretive pitch gestures, but decrease how rapidly corrections are made.

## Flex-Tune

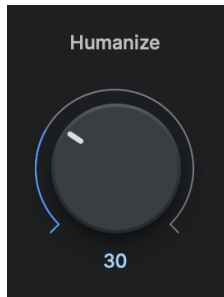


The **Flex-Tune** control allows you to preserve a singer's expressive vocal gestures, while still correcting an out of tune vocal.

When Flex-Tune is set to 0, Auto-Tune pulls every incoming note toward a target scale note. When Flex-Tune is engaged, it only applies correction as the performer approaches the target note.

As you move the control toward higher values, the correction area around the scale note gets smaller, and more expressive pitch variation is allowed through.

## Humanize



The **Humanize** function allows you to add realism to sustained notes when using fast retune speeds.

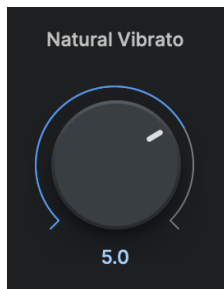
One situation that can be problematic for pitch correction is a performance that includes both short and long sustained notes. In order to get the short notes in tune, you would need to set a fast Retune Speed, but this can cause sustained notes to sound unnaturally static.

Humanize applies a slower Retune Speed *only* during the sustained portion of longer notes, making the overall performance sound both in tune and natural.

Start by setting Humanize to zero, and adjust the Retune Speed until the shortest problem notes in the performance are in tune.

If sustained notes sound unnaturally static, increase the Humanize setting until they sound more natural.

## Natural Vibrato



The **Natural Vibrato** control allows you to either increase or diminish the range of vibrato that is already present in your audio.

If you want to create *new* vibrato where it does not already exist, use the [Vibrato Controls](#) in Advanced View.

## Pitch Display and Pitch Change Meter



### Pitch Display

The Pitch Display shows you the letter name of the pitch that Auto-Tune Pro X is currently outputting.

This may be different than the pitch that it is detecting, if the detected pitch is not part of the current scale.

To see the pitch that is currently being detected in the incoming audio, look at the blue highlighted note on the keyboard.

### Pitch Change Meter

The Pitch Change Meter (which wraps around the Pitch Display) shows you how much the pitch is being changed, measured in cents. When a detected pitch is sharp, the meter lights up orange, and wraps to the left. Flat pitches turn the meter blue, and wrap to the right.

For example, if the blue indicator bar has moved to the left to -50, it indicates that the input pitch is 50 cents too sharp and Auto-Tune is lowering the pitch by 50 cents to bring the input back to the desired pitch.

### Hold

Click and hold the Freeze icon underneath the Pitch Display while Auto-Tune is processing audio to pause both the Pitch Display and the blue detected pitch indication on the keyboard for as long as you hold down the mouse button.

## The Keyboard



The **Keyboard** has three primary functions:

- Displays the currently detected pitch in real time.
- Highlights in blue to display the range of notes in the selected [Input Type](#).
- Allows you to specify the target-note behavior (On, Bypass, or Remove) for each note in specific octaves.

During playback, the detected pitch will be highlighted in blue on the Keyboard.

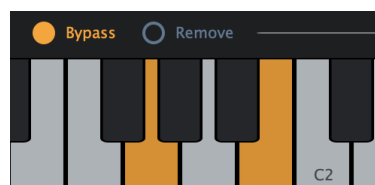
The Keyboard is only enabled when using scales that have exactly 12 notes. If you want to use the Keyboard with the Major or Minor scale, choose the Chromatic scale and then click [Set Major](#) or [Set Minor](#) (in [Scale Controls](#)).

### On



When a note on the Keyboard is **On**, the keys will appear white or black (depending on which note it is), and input pitches that are closest to that note will be tuned to it.

### Bypass

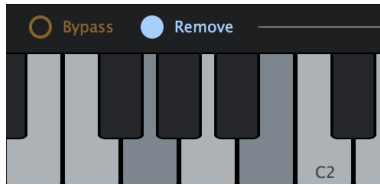


When a note on the Keyboard is set to **Bypass**, it will appear orange, and input pitches that are closest to that note will be passed through with no correction.

You might use Bypass if a performance has only one or two out-of-tune notes, and you want to only apply correction on those notes, or if it includes some expressive pitch gestures around one or more specific notes that you want to preserve with no modification.

**Note:** Command/Control Click any key on the keyboard to reset all the keys to 'On'.

## Remove



When a note on the Keyboard is set to **Remove**, it will appear grey, and any incoming pitches that are closest to that note will be tuned to the next closest scale note instead.

Remove is useful in cases where a singer might be singing a pitch that is so far from the intended note that it's actually closer to another scale note.

For example, if the intended note is an F and the performer is actually singing something closer to an E, you may want to remove E from the scale, so that the singer will be tuned to F instead.

**Note:** Command/Control Click any key on the keyboard to reset all the keys to 'On'.

## Keyboard Edit



When the **Keyboard Edit** switch is set to Remove, clicking on a key in the Keyboard will toggle it between Remove and On.

When it's set to Bypass, clicking on a key will toggle it between Bypass and On.

## Latch



When the Keyboard Mode switch is set to **Latch**, clicking a key on the Keyboard will change its state, and will retain the new state after being clicked.

When Latch is disabled, clicking on a key will change its state momentarily - only for as long as the mouse button is held down. This is useful, for example, if you want to perform a melody on the Keyboard in real time.

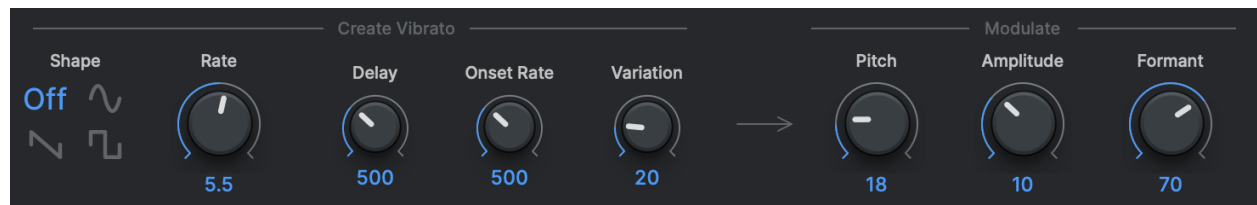
# Advanced Auto Mode Controls



Auto Mode features two different interface views: the streamlined [Basic View](#), which shows you only the most commonly used controls, and **Advanced View**, which includes all of the available controls. Advanced View is organized into two separate tabs for Vibrato Controls and Scale Controls.

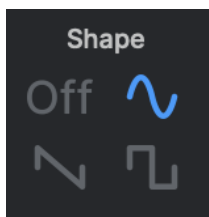
**Note:** Switching back to Basic View from Advanced View will hide the advanced controls, but will not disable them. You will still hear the results of the Advanced View settings when you return to Basic View.

# Vibrato Controls



The **Vibrato Controls** allow you to add a custom synthesized vibrato to your audio. Use them sparingly to add a touch of natural-sounding expression to a performance, or more aggressively for dramatic special effects.

## Shape



The **Shape** menu allows you to choose the shape of the pitch modulation for your vibrato.

The Vibrato Shapes include:

### Off

Select 'Off' if you don't want to create any vibrato.

### Sine Wave

A sine wave changes smoothly from minimum to maximum and back again. This is the best choice for natural-sounding vibrato.

### Square

Jumps to maximum where it spends half of the cycle and then jumps to minimum for the remaining half of the cycle.

### Sawtooth

Gradually rises from minimum to maximum and then drops instantaneously to minimum to start the cycle again.

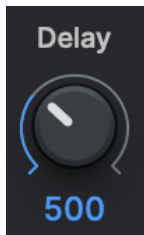


## Rate



The **Rate** control sets the speed of the vibrato in Hz.

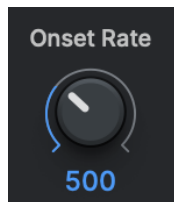
## Delay



**Delay** sets the amount of time (in milliseconds) between the beginning of a note and the onset of vibrato.

This control is useful for sustained notes where you want the beginning of the note to have no vibrato, then have the vibrato come in later.

## Onset Rate



**Onset Rate** sets the amount of time (in milliseconds) between the onset of vibrato and the point at which the vibrato reaches the full amounts set in the Pitch, Amplitude and Formant Amount settings.

## Variation



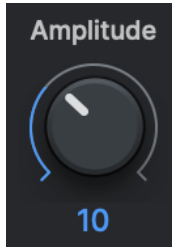
**Variation** sets the amount of random variation that will be applied to the Rate and Amount parameters on a note to note basis. This setting is useful for “humanizing” the vibrato by adding random deviations in the behavior of the vibrato.

## Pitch Amount



**Pitch Amount** sets the width of the vibrato in cents.

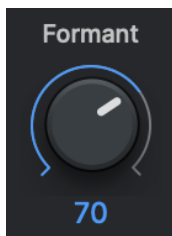
## Amplitude Amount



**Amplitude Amount** sets the amount that the loudness changes.

For the most realistic vibrato, the amount of amplitude change should be substantially less than pitch change.

## Formant Amount



**Formant Amount** sets the amount of formant variation in the vibrato.

## Scale Controls

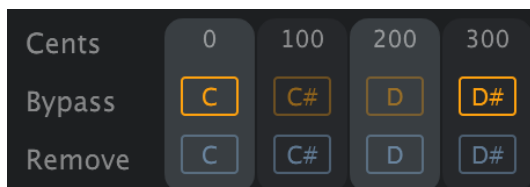


The **Scale Controls** are used to create custom scales or to modify any of the preset scales selected in the Scale menu. It shows each of the notes of the currently selected scale, along with a Bypass and Remove button for each note.

Each scale retains its own edits independent of the other scales. For example, if you select C Major in the Key and Scale menus and Remove or Bypass certain notes and then change to C Minor and make other edits, when you return to C Major your previous edits associated with C Major will be restored.

Changes made to the Scale Controls affect *all* octaves of each note in the scale, and will also be displayed on the Keyboard. Changes made on the Keyboard only affect that specific octave, and will not be reflected in the Scale Control section.

### Bypass



If a note is set to **Bypass**, input pitches that are closest to that note will be passed through with no correction.

You might use Bypass if a performance has only one or two out-of-tune notes, and you want to only apply correction on those notes, or if it includes some expressive pitch gestures around one or more specific notes that you want to preserve with no modification.

### Remove

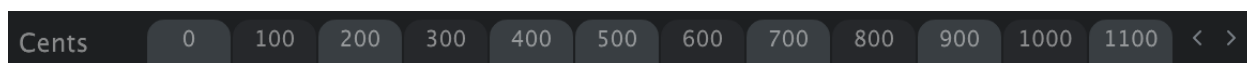


If a note is set to **Remove**, then that note is removed from the current scale, and any incoming pitches that are closest to it will be tuned to the next closest scale note instead.

Remove can be used to create your own custom scales from the built-in scales. For example, you can create a pentatonic (5-note) scale by removing a couple notes from the major scale. This is especially useful if you're going for the Auto-Tune Effect, and want to create a sharp transition between notes that are relatively far apart.

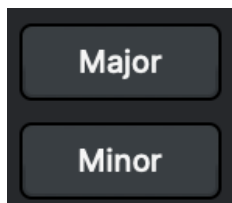
Remove is also useful in cases where a singer might be singing a pitch that is so far from the intended note that it's actually closer to another scale note. For example, if the intended note is an F and the performer is actually singing something closer to an E, you may want to remove E from the scale, so that the singer will be tuned to F instead.

## Cents



The number under each note in the **Cents** row is that note's interval, in cents, from the root note of the scale.

## Set Major/Set Minor



The **Set Major** and **Set Minor** buttons allow you to quickly generate a major or minor scale from any scale with more than 7 notes, by automatically removing the notes that don't belong to the major or (natural) minor scale.

## Set All



The **Set All** button sets all of the notes of the current scale to on, in both the Scale Controls and the Keyboard. This is a quick way to return the scale to its default setting.

## Bypass All



**Bypass All** sets all notes in the current scale to Bypass.

## Remove All



**Remove All** sets all notes in the current scale to Remove.

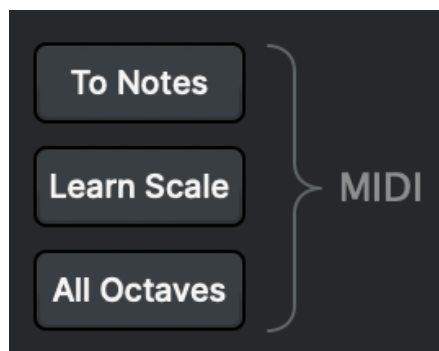
## Ignore Vibrato



The **Ignore Vibrato** function is designed to help Auto-Tune identify pitches correctly when a performance includes vibrato so wide that it approaches adjacent notes (e.g. if a singer is singing a C with a vibrato so wide that it is sometimes closer to a C#).

If you hear a rapid alternation between two notes when you want to hear a single note with a wide vibrato, try turning this setting on.

## MIDI Functions



There are two **MIDI Functions** in the Scale Controls tab for handling incoming MIDI note data: [To Notes](#) and [Learn Scale](#). You can also use a MIDI controller to adjust many Auto-Tune Pro X parameters in real time.

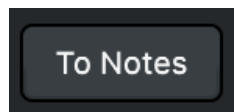
See the [MIDI Control Preferences](#) section to learn how to assign Auto-Tune Pro X parameters to your MIDI controller.

Use the **To Notes** function if you want to use MIDI to control the specific pitch that your audio is being tuned to in real time. Use the **Learn Scale** function if you want to use MIDI instead of the Scale Controls and onscreen Keyboard to define the scale that your audio will be tuned to.

In order to make use of the MIDI capabilities in Auto-Tune Pro X, you will need to route a MIDI source to Auto-Tune Pro X. This could be an external controller, such as a MIDI keyboard, or it could be a MIDI track within your host application (DAW).

The procedure for routing MIDI to an audio plug-in will vary depending on what DAW you are using, so please see your DAW's manual or help pages for more information about how to do this.

### To Notes

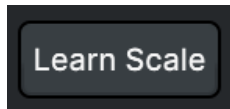


With **MIDI: To Notes**, you can perform a melody in real time on a MIDI keyboard, or play it from a MIDI track, and Auto-Tune Pro X will tune your audio to whatever MIDI notes are on at any given time.

If you're using a MIDI keyboard, this means that your audio will be tuned to the notes corresponding to whatever keys you are currently holding down.

If no MIDI notes are on at any given time, the audio will pass through without being tuned.

## Learn Scale

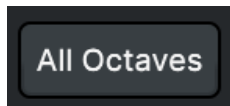


The **MIDI: Learn Scale** function allows you to play a melody or chords from a MIDI keyboard or MIDI track and have Auto-Tune construct a custom scale for you containing only those notes.

Clicking the Learn Scale button will remove all notes from the current scale. Individual notes are then turned back on based on incoming MIDI data. The new scale settings will be displayed on both the Keyboard and in the Scale Control tab.

If no MIDI note-on messages are received, the audio will pass through without being tuned.

## All Octaves



If **All Octaves** is on, any incoming MIDI notes will affect all octaves of each note. Otherwise, they will only affect the notes in the specific octaves in which they are played.

The All Octaves button applies to both the To Notes and Learn Scale functions.

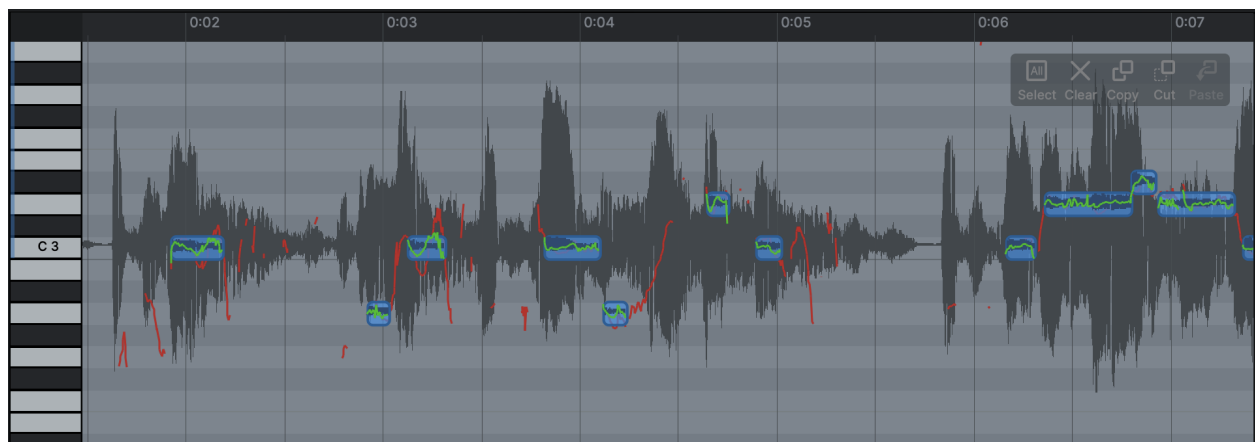
# Graph Mode Controls

While Auto Mode is great for making quick adjustments during real time performances, Graph Mode gives you the freedom to make precise pitch and time adjustments to individual notes and phrases.

A variety of tools help you tweak each and every word until they're just right. In Graph Mode, you have the option to adjust the tuning of each note separately, without relying on Auto Mode to apply a general tuning to the whole track.

## Main Graph and Waveform Graph

### Main Graph



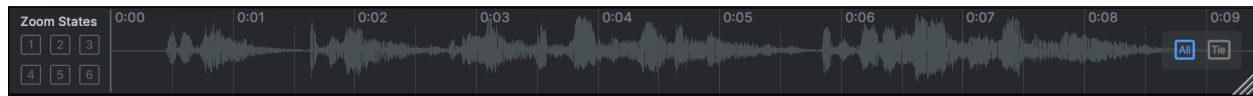
The **Main Graph** is where pitch and time editing takes place in Graph Mode. After tracking pitch or tracking pitch and time, the Main Graph will display the waveform of the audio and the detected pitch contour of the audio ([red curves](#)).

It will also display any pitch correction objects that you create, and the contour of the resulting output pitch ([green curves](#)).

The horizontal grid lines represent scale pitches. The vertical lines represent time units, which may be either minutes and seconds or bars and beats, depending on the [Time Display](#) setting.



## Waveform Graph



The **Waveform Graph** is the smaller graph below the Main Graph used to navigate and zoom in the Main Graph.

When using Time Correction, you can view the original and time edited waveforms side by side for comparison. To do this, select [Waveform Graph Shows: Dual Waveform](#) in the Graph Mode Preferences.

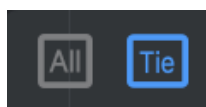
The top waveform represents tracked audio and any time edits applied to it. The bottom waveform shows the original 'source' audio, without reflecting any time edits.



The Waveform Graph can be shown and hidden by clicking the show/hide icon in the lower right corner of the Main Graph.

If you prefer to have a little more room in the Main Graph, and only open the Waveform Graph as needed, you can set the Waveform Graph to be hidden by default in the [Graph Mode Preferences](#).

## All/Tie Switch

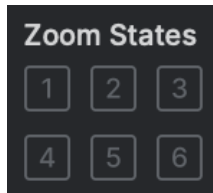


When set to **All**, the Waveform Graph will display all of the currently tracked audio.

This is useful for quickly locating and selecting various portions of audio or navigating through the duration of your track.

When set to **Tie**, the Waveform Graph position and zoom setting follow the position and zoom setting of the Main Graph.

## Zoom States

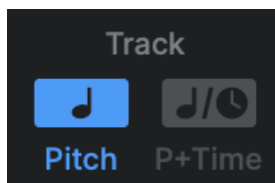


The **Zoom State** buttons allow you to quickly toggle between different levels of zoom in the [Main Graph](#).

To save the current zoom setting, hold down the Option (Mac) or Alt (Windows) key and click on one of the Zoom State buttons.

# Pitch Tracking and Correction Objects

## Track Pitch or Pitch + Time



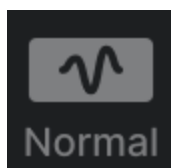
To begin editing in Graph Mode, you'll first need to track the audio into Auto-Tune Pro X so that it can be analyzed. To do that, click on the **Track Pitch** or **Track Pitch + Time** button, then begin playback.

Auto-Tune will read and analyze the pitch of the incoming audio. If you've chosen Pitch + Time, it will also create a copy of the audio, so that you can apply Time Correction edits non-destructively.

If you think you may want to make use of the [Time Correction](#) features, use Track Pitch + Time. If you know that you won't be doing any Time Correction, we recommend using Track Pitch for optimum performance and more efficient use of disk space.

After tracking audio, Correction Objects will be created automatically. You can select which type of Correction Object is created with the [After Tracking](#) preference in the Graph Mode Preferences.

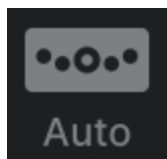
## Create Curves



Press the **Create Curves** button to create pitch correction objects known as [Curves](#) from the detected pitch contour data.

The Curve objects can then be dragged and stretched for very precise pitch correction.

## Create Curves from Auto Mode

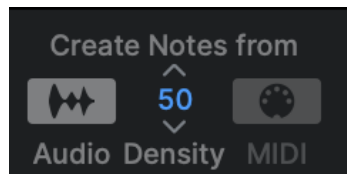


The **Create Curves from Auto Mode** function allows you to use your Auto Mode settings as a starting point for further editing in Graph Mode.

It does this by creating [Curves](#) objects that exactly match the pitch correction that would result from processing the audio with the current Auto Mode settings.

To use Create Curves from Auto Mode, switch over to Auto Mode and adjust the settings as needed. Then, switch back to Graph Mode and click the Create Curves from Auto Mode button to create the Curve objects.

## Create Notes



The **Create Notes** buttons are used to automatically create Note Objects based on tracked audio or with MIDI input.

### Create Notes From Audio

**Create Notes From Audio** generates Note Objects based on an analysis of tracked audio. Auto-Tune will analyze your audio and create Note Objects wherever a note onset is detected.

Try adjusting the [Density](#) control to make the Create Notes function more or less likely to interpret a change in pitch as a new Note Object that gets created. After Note Objects are created, they can be edited and moved using the [Editing Tools](#).

### Create Notes From MIDI

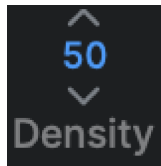
**Create Notes From MIDI** uses MIDI note data to define target pitches in Graph Mode. It will create Note Objects based on MIDI note data that has been tracked in the selected region.

To use Create Notes from MIDI:

1. Route a MIDI source to Auto-Tune Pro X. This could be a MIDI controller, or a MIDI track within your project. The procedure for routing MIDI to an audio plug-in is different in various DAWs, so consult your DAW's documentation.
2. Click the Track Pitch or Track Pitch + Time button and begin playback to track audio and MIDI data into Graph Mode. If [Show Tracked MIDI](#) is enabled in the Graph Mode Settings, the MIDI data will be drawn on the Main Graph.

3. Click Create Notes, and choose Create Notes From MIDI. Note Objects will be created according to the tracked MIDI data.

## Density



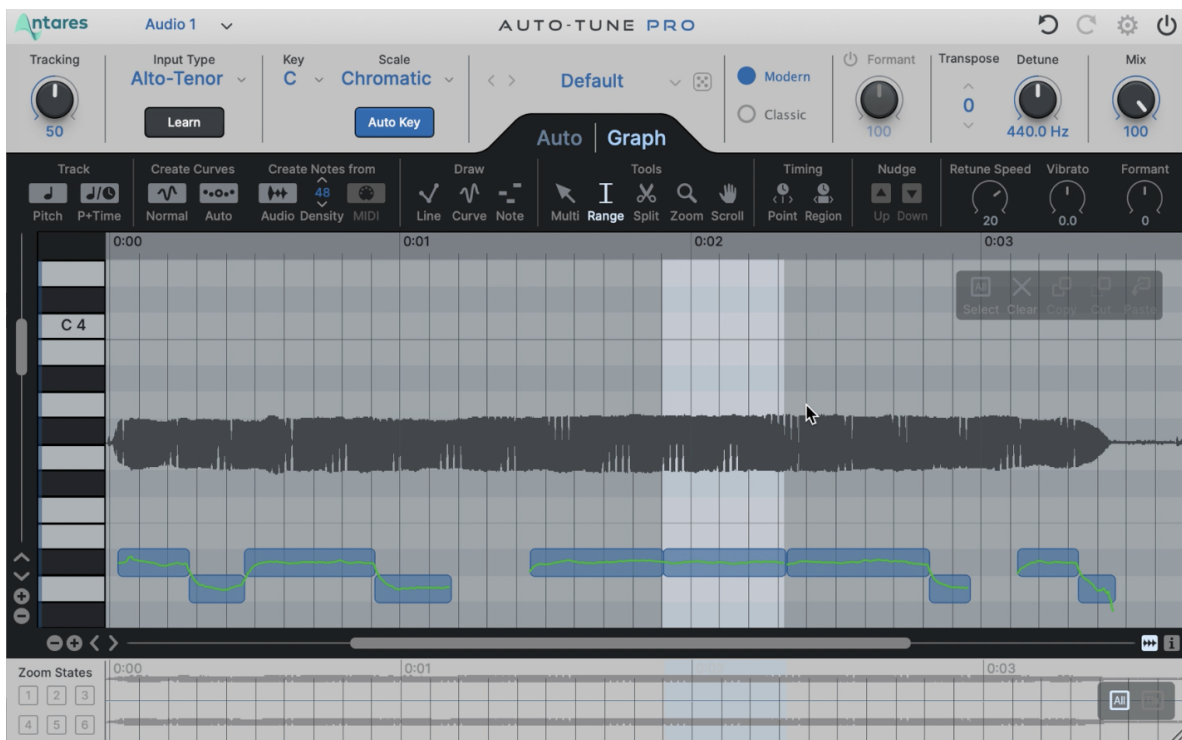
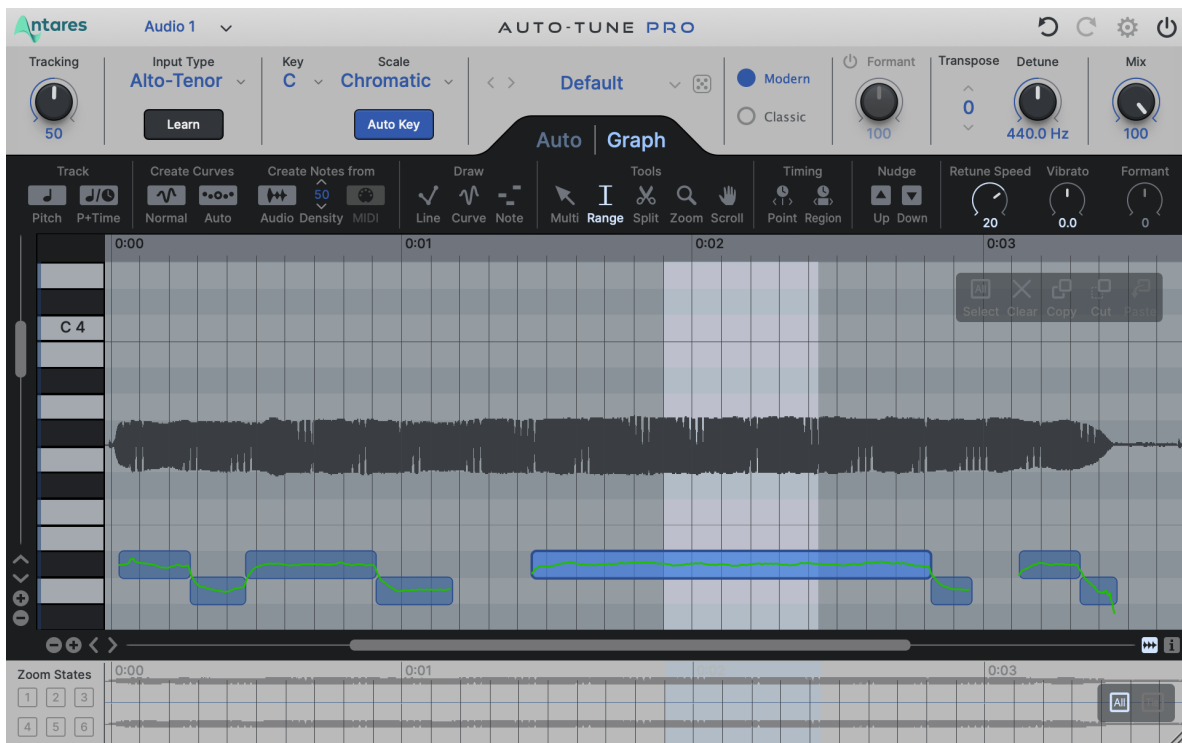
When Auto-Tune analyzes the input pitch for the purpose of creating Note Objects, it makes decisions about what constitutes a note and where the boundaries between notes are.

The **Density** control lets you customize this process to suit the material that you're working with.

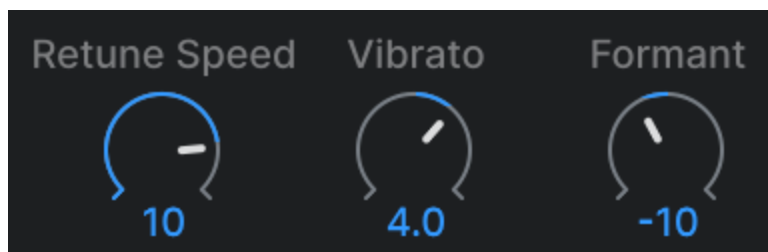
When Density is set to a higher value, Auto-Tune will be more likely to interpret changes in pitch as new note events, rather than deviations or expressive gestures within a single note.

Density is only active after tracking pitch, and applies only to the region of the graph that is currently selected.

**Note:** *If the density value is changed after selecting the mid section of a long Note Object, it will split into separate Note Objects. See below:*



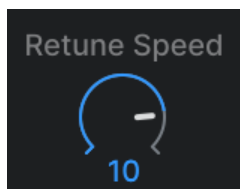
## Per Object Controls



Graph Mode features a selection of **Per Object Controls** to finetune the settings of individual notes or phrases.

The Per Object Retune Speed, Vibrato, and Formant knobs function identically to their Auto Mode counterparts, but the key difference is that their settings are only applied to the selected correction objects. These controls are helpful for giving different sections of your track their own Retune Speed, Vibrato, and/or Formant settings.

### Retune Speed



As in Auto Mode, the **Retune Speed** in Graph Mode controls how rapidly the pitch correction is applied to the incoming audio.

However, while tuning in Auto Mode, the Retune Speed parameter uses the current scale settings to determine the target pitch.

In Graph Mode, the target pitch is defined by correction objects (Curves, Lines, and Notes).

In Graph Mode, you can assign different Retune Speeds to individual correction objects, or to select a group of objects and assign them all the same Retune Speed.

Any adjustments to the Retune Speed control in Graph Mode will apply to all correction objects that are currently selected. If no objects are selected, the control is disabled.

To recreate the “[Auto-Tune Effect](#)”, set the Retune Speed to 0. A setting between 10 and 50 is typical for more natural sounding pitch correction. Larger values allow more

vibrato and other interpretive pitch gestures, but slow down how rapidly corrections are made.

## Vibrato

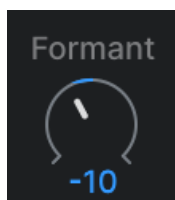


The **Vibrato** control allows you to either increase or diminish the range of vibrato that is already present in your audio.

In Graph Mode, you can apply different vibrato adjustment values to individual correction objects (Curves, Lines, and Notes).

Any changes to the Vibrato control will apply to all correction objects that are currently selected. If no objects are selected, the control is disabled.

## Formant



The shape of a singer's throat is a prime contributor to their vocal character. The formant correction in Auto-Tune Pro X utilizes a unique throat modeling technology to modify the sound of a voice by passing it through a physical model of the human vocal tract.

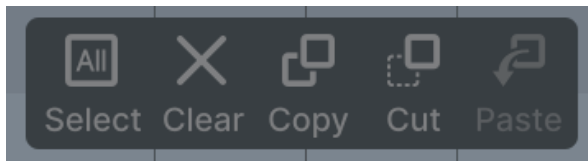
The **Formant** control lets you specify the length of the modeled throat.

The Graph Mode Formant control and the global Formant control basically do the same thing, except that Throat Length can be applied differently to individual correction objects in Graph Mode, and the Formant control is applied to all incoming audio.

Any changes to the Formant control will apply to all correction objects that are currently selected. If no objects are selected, the control is disabled.

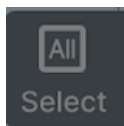


# Data Selection Tools



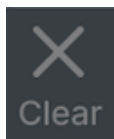
The following **Data Selection Tools** exist in a floating display on the right corner of the [Main Graph](#).

## Select All



The **Select All** button selects all Correction Objects in the Main Graph.

## Clear



Clicking the **Clear** button opens a menu with the following options:

### Pitch Correction Objects

This option deletes all existing pitch correction objects (Curves, Lines and Notes). It does not delete detected pitch information or time correction edits.

### Time Changes

This option deletes all time correction edits. It does not delete detected pitch information or pitch correction objects.

### Both Pitch and Time

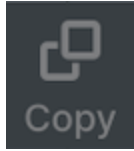
This option deletes all pitch correction objects and time correction edits. It does not delete detected pitch information.

### All Data

This option deletes all pitch correction objects, time correction edits and detected pitch information.

**Important Note:** *It is not possible to undo this action. Only use "Clear All: All Data" if you want to start over from scratch!*

## Copy



The **Copy** button copies selected objects to the clipboard.

## Cut



The **Cut** button removes any selected objects from the graph and copies them to the clipboard.

## Paste

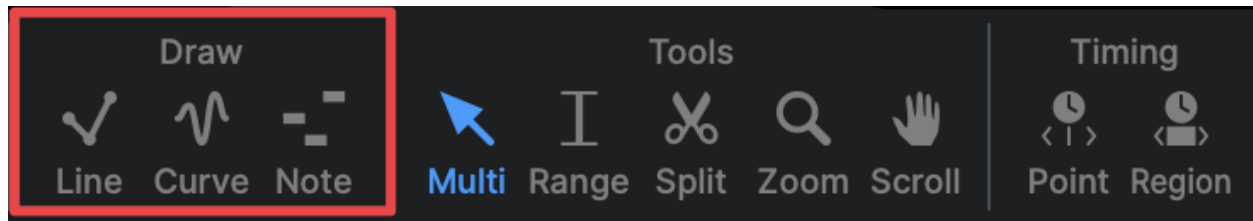


The **Paste** button can be used to paste correction objects from the clipboard to anywhere on the graph.

To paste objects from the clipboard:

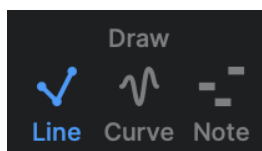
1. Navigate to the general area where you want to paste the objects.
2. Click the Paste button.
3. Press and hold the mouse button.
4. While holding down the mouse button, drag the objects to the exact location where you wish to paste them.
5. Release the mouse button to complete the paste.

# Drawing Tools



The following drawing tools are used to manually create correction objects in the [Main Graph](#). This is helpful in situations where you want more precise control over the locations, durations, and shapes of correction objects.

## Line Tool



The **Line Tool** is used to draw straight, multi-segment [Lines](#) (correction objects) on the Main Graph.

To draw a line, follow the steps below:

1. Select the Line Tool and click anywhere on the Main Graph to create the first anchor point.
2. Click again to set a second anchor point and define the first segment of your pitch contour.
3. Continue clicking and defining anchor points until your desired contour is complete.
4. End the process by double-clicking on the final anchor point or pressing Esc on your keyboard.

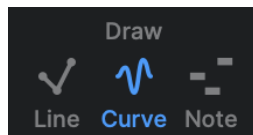
If the [Snap To Note](#) setting is *enabled* in the Graph Mode Preferences, each segment will automatically snap to the nearest scale note. Holding the Shift key on your keyboard while drawing a line temporarily toggles the state of the Snap To Note setting.

In other words, if Snap To Note mode is *disabled*, holding Shift will enable it for as long as Shift is pressed and vice versa – if Snap to Note is *enabled*, holding shift will disable it for as long as Shift is pressed.

To make a line perfectly horizontal, hold down Option (Mac) or Alt (Windows) on your keyboard while drawing.

To delete the last anchor point entered, press Delete (Mac) or Backspace (Windows) on your keyboard. You can delete anchor points repeatedly back to the first anchor point.

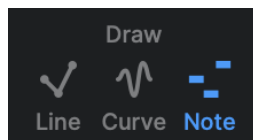
## Curve Tool



The **Curve Tool** is used to draw [Curves](#) (correction objects) on the Main Graph. To draw a curve, select the Curve Tool, then click and drag anywhere on the Main Graph.

The [Snap To Note](#) setting does not affect the Curve Tool.

## Note Tool

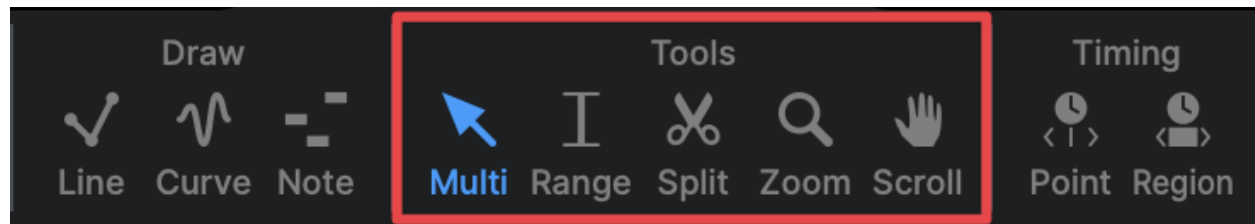


The **Note Tool** is used to draw [Notes](#). Once you've created a Note, you can drag it up or down using the Multi Tool.

New Notes are always drawn exactly on the scale note graph lines or lanes, regardless of the [Snap To Note](#) setting.

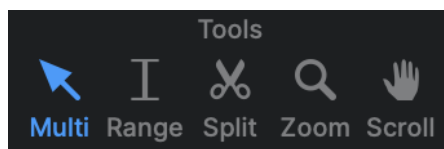
If you want to create a note that is offset from a [Pitch Lane or Line](#), first draw a note on the nearest lane or line, ensure that Snap To Note is *Off*, and use the Multi Tool to move the Note to the desired pitch.

## Editing Tools



The Editing Tools help you interact with existing correction objects and navigate the [Main Graph](#). These tools are your bread and butter as you execute various tasks in Graph Mode.

### Multi Tool



The **Multi Tool** is a smart, multi-function tool that is used to move and edit existing correction objects (Lines, Curves, or Notes). It serves a variety of purposes for different types of objects.

#### Line and Curve Objects:

- Click on a [Line](#) or [Curve](#) to select it.
- Click on the anchor point to select just the anchor point.
- Click and drag a Line or Curve to move it up or down.
- Click and drag an anchor point to move just the anchor point.
- Double-click anywhere on a line to create a new anchor point. Double-click on an existing anchor point to delete it.

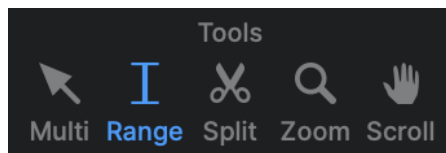
#### Note Objects:

- Click on a [Note](#) to select it.
- Click and drag near the center of a Note Object to move it up or down.
  - When moving Note Objects with the Multi Tool while [Snap to Note](#) is enabled, the Note Objects will snap to the nearest scale tone.

- Holding down the Shift key on your keyboard while editing will temporarily toggle the state of Snap to Note to its other state.
- Click and drag near the ends to extend or shorten it horizontally.

If [Play Pitch When Moving Notes](#) is turned on in the Quick Settings Menu, you'll hear a reference pitch play when you drag Note Objects up or down.

## Range Tool



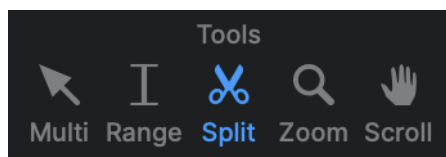
Drag the **Range Tool** in the [Main Graph](#) to select an area of the graph and any correction objects that are in that area.

Double-click with the Range tool in either the Main Graph or [Waveform Graph](#) to highlight the range of all currently tracked audio.

With the [All/Tie](#) switch next to the Waveform Graph set to All, use the Range tool to navigate from one location to another in the Main Graph.

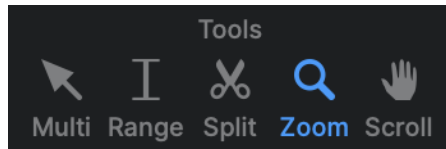
With the All/Tie switch next to the Waveform Graph set to Tie, use the Range tool to zoom in the Main Graph. Simply click and drag over the area you want to zoom in to.

## Split Tool



Click on a correction object (Note, Line or Curve) with the **Split Tool** to break the object into two separate objects.

## Zoom Tool



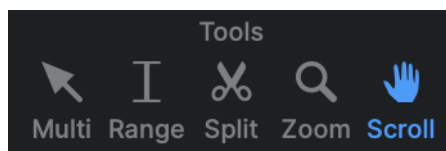
With the **Zoom tool**, click anywhere in the [Main Graph](#) to zoom in by one step, or hold down Option or Alt while clicking to zoom out one step.

You can also click and drag with the Zoom Tool to select a specific area to zoom in to.

**Note:** Even if you don't have the Zoom Tool selected, you can still zoom in and out on the Main Graph with the following modifier key + scrolling techniques:

- Press and hold the Option/Alt key while scrolling up or down with your mouse wheel or trackpad to zoom vertically.
- Press and hold the Command/Control key while scrolling up or down with your mouse wheel or trackpad to zoom horizontally.
- Press and hold both modifier keys at the same time to zoom vertically and horizontally at the same time.
- On Mac trackpads, use the "pinch to zoom" function to zoom in and out.

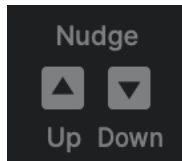
## Scroll Tool



Drag the **Scroll Tool** in any direction on the [Main Graph](#) to move the area that is displayed.

If you move any selected tool into the left-hand "key" area, it will temporarily change to the Scroll tool, allowing you to quickly scroll the graph up or down.

## Nudge

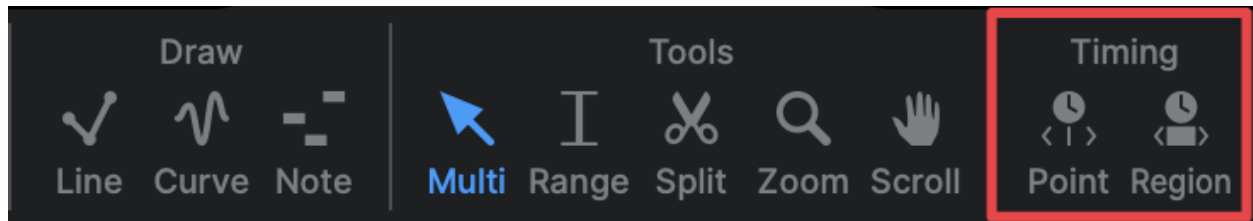


The **Nudge** buttons allow you to move all currently selected correction objects up or down in precise one-cent increments.

This tool is useful for making micro-adjustments to fine tune a Note Object. This control can be mapped to a number key on your keyboard in the [Key Bindings](#) Preferences Menu for easy access.



## Time Correction Tools

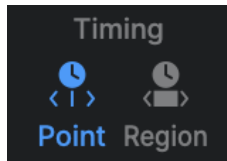


In order to use the Time Correction Tools, you must first track some audio into Graph Mode using the [Track Pitch + Time](#) function.

The Point and Region tools are only active where audio has been tracked using Pitch + Time.

For more information on Time Correction, see the [Time Correction Overview](#) and the [Tutorials](#) section.

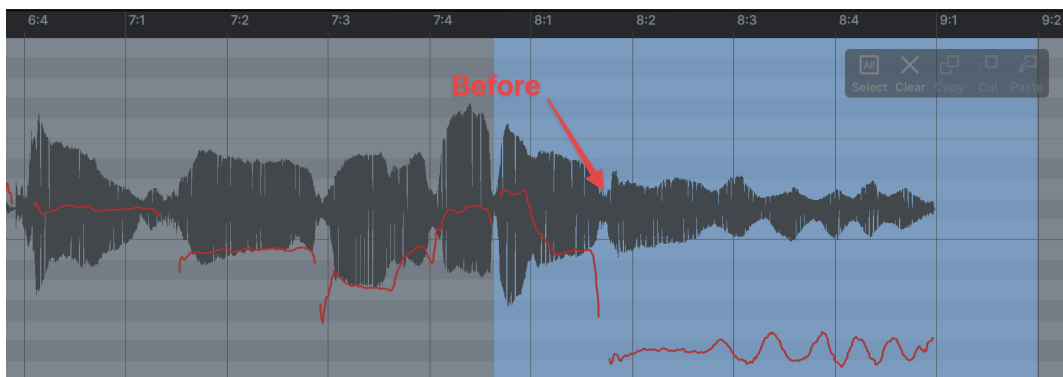
## Point Tool



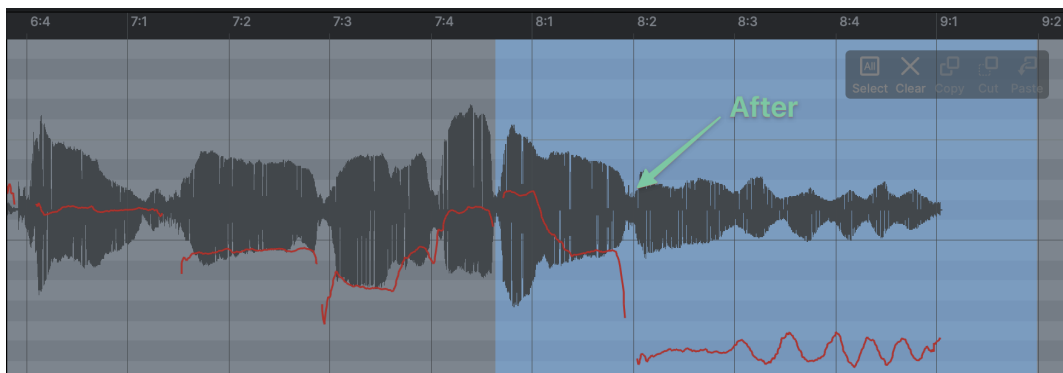
The **Point** Tool allows you to select a range of audio and then move a point within that range forward or backward in time, compressing and expanding the audio around it.

Using the Move Point Tool is a two step process:

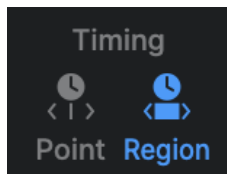
1. Click and drag to select the audio range you wish to operate on. This will highlight the area in blue.



2. Click and drag anywhere within the selected region to move a point forward or backward in time.



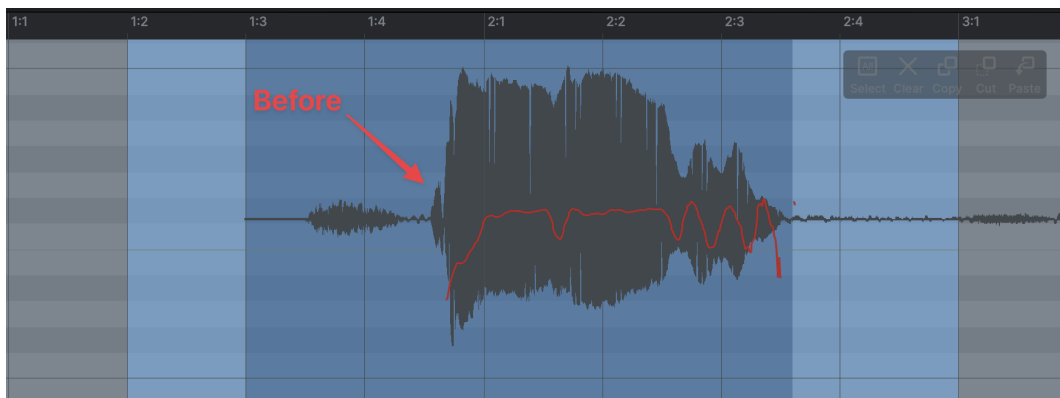
## Region Tool



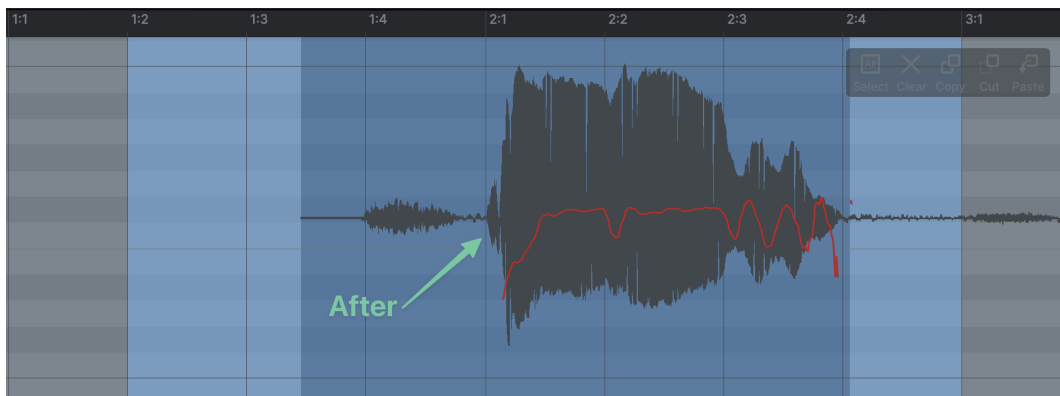
The **Region** Tool allows you to select a range of audio, then move a region within that range forward or backward in time, compressing and expanding the audio around it, but leaving the internal timing of the moved region unchanged.

Follow the steps below to use the Region Tool:

1. Click and drag to select the audio range you wish to operate on. This will highlight the region in light blue.
2. Click and drag to select the specific region within that range that you wish to move. This will highlight the region in dark blue.



3. Click and drag anywhere within the dark blue area to move the region in time.



# Info Bar

Clock 2.577    Cursor 3.231    Detected C3 -42    Object C3    Output C3 +39

The **Info Bar** gives you realtime information about the correction objects in the Main Graph, depending on where the playhead and cursor are located at any given time.

The **Detected**, **Object**, and **Output** readouts display pitch data wherever the cursor is on the Main Graph. Use these readouts in tandem to compare incoming pitch data, the amount of pitch correction, and the output pitch.



Click on the Info Icon above the [Waveform Graph](#) to toggle the Info Bar On/Off.

## Clock

Clock 6.199

During playback, the **Clock Display** shows the current time position in Minutes:Seconds, or Bars|Beats, depending on the [Time Display](#) setting.

## Cursor

Cursor 3.231

The **Cursor Display** shows the current time position of the cursor in the Main Graph.

This is useful for making precise, time-based edits.

## Detected

Detected C3 -42

The **Detected Display** shows the detected pitch ([red curve](#)) at the current cursor position in the Main Graph. The readout includes:

- The letter name of the pitch
- The octave number
- The offset in cents

## Object

### Object C3

The **Object Pitch Display** shows the target pitch of the [Correction Object](#) (Curve, Line, or Note) at the current cursor position. The readout includes:

- The letter name of the pitch
- The octave number
- The offset in cents

## Output

### Output C3 +39

The **Output Display** shows the output pitch ([green curve](#)) at the current cursor position in the Main Graph. The readout includes:

- The letter name of the pitch
- The octave number
- The offset in cents

## Legend



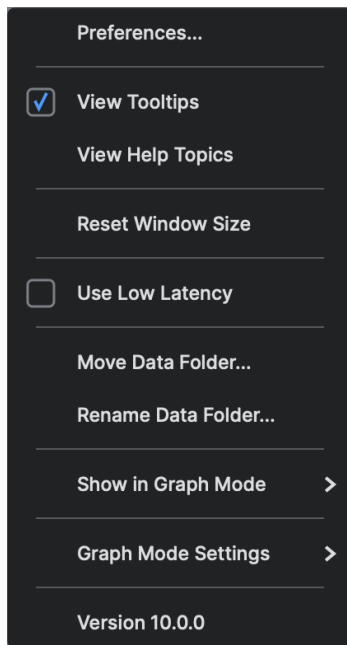
A color coded legend lives on the far right end of the Info Bar to remind you what each pitch curve color represents.

# Quick Settings and Preferences

The Quick Settings Menu and Preferences Window allow you to customize the behavior and appearance of Auto-Tune Pro X in a variety of ways. The Preferences Window is accessed via the Quick Settings Menu.

To quickly change a setting just for the one instance of Auto-Tune Pro X, change it in the Quick Settings Menu. To change the default setting of that item, change it in the Preferences Window, then click 'Save As Default'.

## Quick Settings



When you click on the Gear Icon, you'll be brought to the **Quick Settings** Menu.

This dropdown menu contains a collection of settings that you may want to edit more frequently than the ones contained in the Preferences Window.

### Preferences...

Open the [Preferences](#) Window.

### View Tooltips

Click to enable **Tooltips**.

When this setting is enabled, hover over any parameter in the user interface to read a short description of the control and an example use case.

### View Help Topics

Click to open the Auto-Tune Pro X [Help Page](#) in your web browser. This article contains tutorial videos, answers frequently asked questions, and will direct you to other relevant articles in the Antares Knowledge Base.

## Reset Window Size

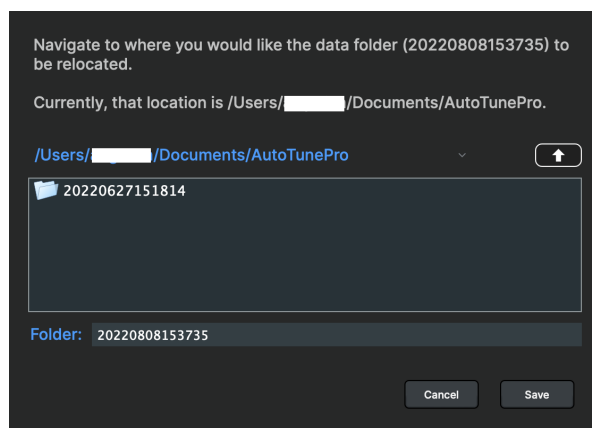
The Auto-Tune Pro X plug-in window is completely resizable, and stays sharp at any size. Click and drag the plug-in window to resize it to your liking.

Use this setting to reset the window size back to its default size.

## Use Low Latency

If you plan to use Auto-Tune Pro X in a live performance or monitor through it in real time while recording, turn on **Use Low Latency** to minimize processing delay.

## Move Data Folder

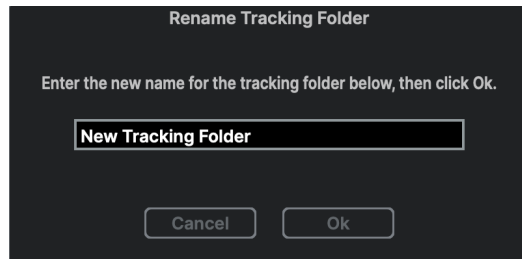


To enable non-destructive time correction editing, Auto-Tune Pro X creates a copy of any audio that you track into graph mode using the [Track Pitch+Time](#) function.

Unlike the pitch data generated by the traditional Track Pitch function, which is always stored with the instances of Auto-Tune in your session, the audio recorded for time shifting by the Track Pitch + Time function is saved as one or more separate files elsewhere on your computer.

To help manage the recorded audio data required for time shifting, the **Move Data Folder** setting opens a dialog box that allows you to establish or move the location of the data files.

## Rename Data Folder



The **Rename Data Folder** setting serves a similar purpose to the Move Data Folder setting.

It opens a dialog box that allows you to rename the folder where the audio recorded for time shifting by the Track Pitch + Time function is stored.

## Show in Graph Mode



The **Show in Graph Mode** sub-menu contains 4 items that can be shown or hidden while working in Graph Mode.

### Waveform in Main Graph

Turn this setting on to display the waveform of any tracked audio in the [Main Graph](#), in addition to pitch [curves](#) and pitch [correction objects](#).

### Waveform Graph

When this is checked, the [Waveform Graph](#) will be visible in Graph Mode when opening new instances of Auto-Tune Pro X.

The Waveform Graph can also be shown and hidden by clicking the Waveform Graph icon in the lower right corner of the Main Graph. If you prefer to have a little more room in the [Main Graph](#), and only reference the Waveform Graph occasionally, you may want to uncheck this setting.

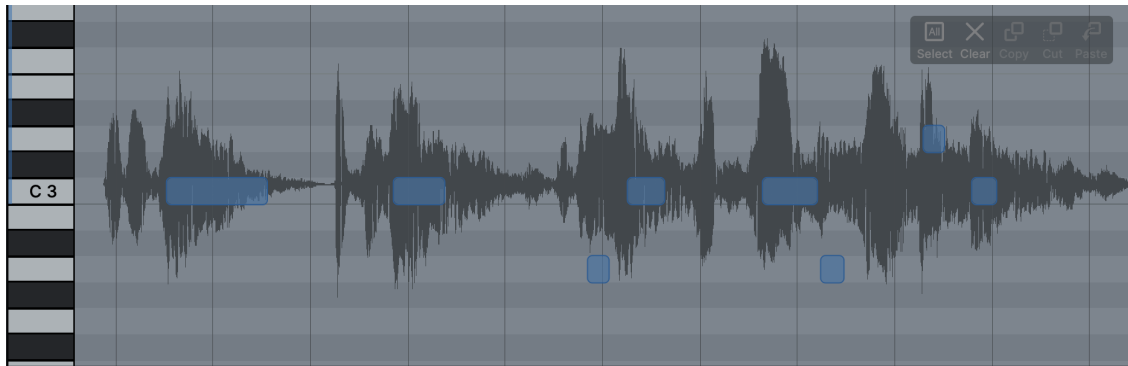
### Tracked MIDI

Auto-Tune Pro X allows you to record MIDI input in Graph Mode and use the recorded MIDI notes to create Note correction objects. When **Show Tracked MIDI** is on, any recorded MIDI data will be displayed in the Main Graph.



## Pitch Lanes

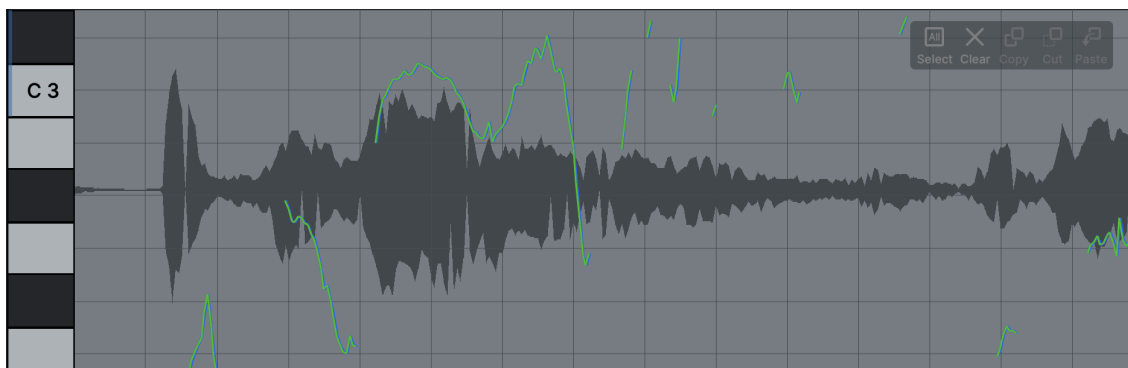
The [Main Graph](#) default mode displays lanes that extend from the left-hand “keys” and are tinted to differentiate the sharps and/or flats. Note objects will snap neatly into these lanes when they are created or adjusted with the [Multi Tool](#).



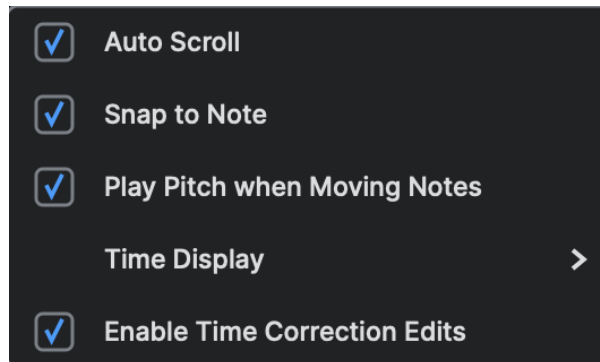
**Note:** *Show Pitch Lanes is only available for Chromatic, Major, and Minor scales.*

When Show **Pitch Lanes** is turned off, horizontal **Pitch Lines** are displayed instead.

Pitch Lines represent the center of each pitch on the keyboard, and are useful while working with Lines and Curves. For example, if you’re adjusting a green output pitch curve, you can use the pitch lines to ensure that it lines up with the center of the note’s pitch.



## Graph Mode Settings



The **Graph Mode Settings** sub-menu gives you quick access to a selection of controls that you may want to edit more often than those listed in the Preferences Menu.

The options listed in this menu affect how various Graph Mode functions operate.

### Auto Scroll

When **Auto Scroll** is on, the [Main Graph](#) in Graph Mode will automatically scroll during playback to match the playback position of the host application.

You can choose between [Continuous](#) scrolling and [Page-by-Page](#) scrolling in the Graph Mode Preferences.

### Snap to Note

The Snap to Note setting allows you to perfectly align [Correction Objects](#) to the pitch grid defined by the current scale setting in Graph Mode.

When moving [Note](#) Objects with the [Multi Tool](#) while Snap to Note is on, they will snap to the nearest scale tone. When using the [Line Tool](#) while Snap to Note is on, any new line segments that you draw will snap to the closest scale note.

Holding down the Shift key on your keyboard while editing will temporarily toggle the state of Snap to Note to its other state.

For example:

- If Snap to Note is *on*, you can hold down Shift to move a Note Object freely between scale notes.
- If Snap to Note is *off*, you can hold down Shift while moving a Note Object to make it snap to the closest scale note.

### Play Pitch when Moving Notes

When this setting is on, clicking and holding on a Note Object will result in a tone sounding at the current pitch of the Note Object. When you drag the Note Object up or down, you'll hear the tone change to match the position of the Note.

This is useful for hearing when you've reached the target pitch without having to start playback.

### Time Display

When **Time Ruler Display** is set to Minutes/Seconds it will display the absolute time in hours, minutes, seconds, and fractions of seconds from the beginning of the timeline.

When set to Bars|Beats, the Time Ruler will display time using bars and beats (as defined by your DAW's tempo).

### Enable Time Correction Edits

The **Enable Time Correction Edits** setting enables or disables the [Time Correction](#) features. Unchecking this setting will not delete any time correction edits that you have made- it will only temporarily disable them.

This is useful if you want to compare the timing of the original audio to the time corrected version, without disrupting any pitch correction edits that you may have made.

## Version Number

This section will let you know which version of Auto-Tune Pro X you're currently using. You can always find and download the latest version of Auto-Tune Pro X by visiting [this page](#) on the Antares website.

## Preferences Window: Introduction

The **Preferences Window** is where you can customize Auto-Tune Pro X to your unique workflow. All of the preferences are organized into tabs at the top of the Preferences Window to help you find what you're looking for:

- [General Preferences](#)
- [Graph Mode Preferences](#)
- [Key Binding Preferences](#)
- [MIDI Control Preferences](#)

To save your preferences as default for all instances of Auto-Tune Pro X, turn on **Save as Default**, then click 'Save'.

If you want to make a temporary change to the preferences just for this instance (without overwriting your default preferences) uncheck the Save as Default option before clicking 'Save'.

# General Preferences

General | Graph Mode | Key Bindings | MIDI Control

Opens Showing: ☒ Auto ☐ Graph

Appearance: Dark ▾

Auto Key Detection: ☒

Knob Control: ☒ Circular ☐ Linear

Detune Display: ☒ Hertz ☐ Cents

Pitch Reference: ☒ Left ☐ Right

Use OpenGL Graphics: ☐

☒ Save as Default Cancel Save

The **General Preferences** allow you to customize your overall experience with Auto-Tune Pro X. You can change the appearance of the GUI, and choose your preferred mode to open to automatically, among other options.

## Opens Showing

This preference controls the opening behavior for new instances of Auto-Tune Pro X.

When 'Auto' is selected, Auto-Tune Pro X will open in Auto Mode. Similarly, when 'Graph' is selected, the plug-in will open in Graph Mode.

## Appearance

**Appearance** determines the theme of the Auto-Tune Pro X GUI. Options include:

- Light
- Dark
- System

If 'System' is selected, Auto-Tune Pro X will follow the Appearance settings of your Mac or PC.

## Auto-Key Detection

This setting enables Auto-Tune Pro X to receive key and scale information from [Auto-Key](#).

Auto-Key is a separate plug-in included with Auto-Tune Pro X perpetual licenses and [Auto-Tune Unlimited](#) subscriptions.

Auto-Key is also available as a free application on mobile devices to detect and send key and scale information to Auto-Tune Pro X. [Auto-Key Mobile](#) brings perfect pitch to your pocket!

## Knob Control

The **Knob Control** preference lets you choose how you interact with knobs to make adjustments.

- Circular: Click and drag clockwise or counterclockwise to adjust the knob in the respective direction
- Linear: Click and drag up or to the right to turn it clockwise, down or left to turn it counterclockwise

## Detune Display

The [Detune](#) function is used to tune to a reference frequency other than the standard A = 440Hz. The **Detune Display** preference lets you choose whether the offset is displayed in cents or Hz.

This is useful when working with an instrument or track that uses a different reference pitch.

## Pitch Reference

Auto-Tune Pro X can apply pitch correction to stereo tracks while maintaining phase coherence between the two channels. The **Pitch Reference** setting lets you choose which of the stereo tracks will be used to analyze the pitch.

If one channel is cleaner or better isolated than the other, select that channel as the pitch reference.

When using Auto-Tune Pro X on a stereo track, both channels should feature the same source material (e.g. a single vocal performance, recorded in stereo using two microphones).

## Use OpenGL Graphics

Auto-Tune Pro X uses **OpenGL** for improved graphics on computers with compatible graphics card hardware.

To improve performance, OpenGL is disabled by default on Mac. On Windows, OpenGL is enabled by default.

OpenGL can be toggled On/Off on either platform at any time.

# Graph Mode Preferences

General      Graph Mode      Key Bindings      MIDI Control

After Tracking: Make Note Objects ▼

Play Tone When Moving Note Objects: ☒

Time Ruler Displays: ☒ Minutes / Seconds ☐ Bars / Beats

Show Waveform in Main Graph: ☒

Show Waveform in Note Objects: ☒

Show Waveform Graph: ☒

Waveform Graph Shows: ☒ Single Waveform ☐ Dual Waveforms

Show Input Pitch Curves: ☐

Show Output Pitch Curves: ☒

Display Vertical Line at Cursor Position: ☐

☒ Save as Default      Cancel      Save

The **Graph Mode Preferences** help you customize your experience while working in Graph Mode. You can toggle waveform and pitch information on/off, choose the type of correction object to create after tracking, and much more.

## After Tracking

The **After Tracking** preference lets you choose which type of correction object is automatically created after tracking audio. Options include:

- *Make Note Objects*
- *Make Curves*
- *Import Settings from Auto Mode*
- *Do Nothing*



## Play Tone When Moving Note Objects

When this setting is on, clicking and holding on a [Note](#) Object will result in a tone sounding at the current pitch of the Note Object. When you drag the Note Object up or down you'll hear the tone change to match the position of the Note.

## Time Ruler Displays

When the **Time Ruler Display** is set to Minutes/Seconds it will display the absolute time in hours, minutes, seconds, and fractions of seconds from the beginning of the timeline.

When set to Bars|Beats, the Time Ruler will display time using bars and beats (as defined by your host's tempo).

## Show Waveform in Main Graph

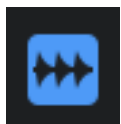
Turn this setting on to display the waveform of any tracked audio in the [Main Graph](#), in addition to pitch [curves](#) and pitch [correction objects](#).

## Show Waveform in Note Objects

Turn this setting on to display a waveform of tracked audio within Note Objects. This setting is useful for keeping track of where Note Objects exist in the Main Graph relative to the source audio's waveform.

## Show Waveform Graph

When this is checked and saved as default, the [Waveform Graph](#) will be visible in Graph Mode when opening new instances of Auto-Tune Pro X.



The Waveform Graph can also be shown and hidden by clicking the Waveform Graph icon in the lower right corner of the [Main Graph](#).

If you prefer to have a little more room in the Main Graph, and only reference the Waveform Graph occasionally, you may want to uncheck this.

## Waveform Graph Shows

This setting affects the waveform displayed in the [Waveform Graph](#). You can choose to display a single waveform or a dual waveform.

If you select **Single Waveform**, the waveform displayed will reflect tracked audio, as well as any time edits applied to it.

Select **Dual Waveform** to display two adjacent waveforms in the Waveform Graph. The top waveform represents tracked audio and any time edits applied to it. The bottom waveform shows the original 'source' tracked audio, without reflecting any time edits.

The Dual Waveform option is helpful for comparing the original and time-edited audio side by side.



## Show Input Pitch Curves

Turn this setting on to display the [Red Input Pitch Curves](#) in Graph Mode. When disabled, only the various [Correction Objects](#) (Line, Curve or Note) will be visible.

## Show Output Pitch Curves

Turn this setting on to show the [Green Output Pitch Curves](#) in Graph Mode. When disabled, only the various [Correction Objects](#) (Line, Curve or Note) will be visible.

## Display Vertical Line at Cursor Position

Turn this setting on to show a vertical line in the [Main Graph](#) to indicate the position of the cursor.

## Scroll Graph

When [Auto Scroll](#) is on and set to **Continuous** Scrolling, the [Main Graph](#) in Graph Mode will continuously follow the playback position of the host application.

With **Page-by-Page** scrolling, the display remains stationary until the play position reaches the right-hand edge of the window, at which time the display jumps to the next screen of data.

When Auto Scroll is off, the [Main Graph](#) display will remain where you leave it, and will not scroll automatically.

## Use Custom Cursors For Editing Tools

Turn this setting on to display different cursor shapes in the Main Graph to help you select ranges and grab and drag objects (e.g., the object cursor, the anchor point cursor, etc.).

**Note:** Some host applications mistakenly think that they own the cursor when it is in a plug-in window. This may cause the cursor to flash as the host and Auto-Tune Pro X alternately try to set the cursor shape. If this is bothersome, turn off Custom Cursors.

## Disable Cursors While Playing

Check this box to disable the custom cursors in Graph Mode only when the transport is running.

## Default Retune Speed For

Sets the default [Retune Speed](#) that will be assigned to [Correction Objects](#) (lines, curves , and Note Objects) when they are first created.

You can also change the Retune Speed of any correction objects in Graph Mode by selecting the object or objects and adjusting the Retune Speed control.

## Key Binding Preferences

General

Graph Mode


Key Bindings

MIDI Control

Use the drop-down menus to map Auto-Tune Pro functions to the 0-9 keys at the top of your keyboard.

When working in graph mode, press the assigned key to execute the assigned function.

1:	Tool: Draw Lines	6:	Tool: Split
2:	Tool: Draw Curves	7:	Tool: Zoom
3:	Tool: Draw Notes	8:	Tool: Hand Scroll
4:	Tool: Multi	9:	Tool: Move Point
5:	Tool: Range	0:	Tool: Move Region

 Save as Default

Cancel

Save

The Key Binding Preferences allow you to assign your most commonly used Graph Mode tools and controls to the row of number keys at the top of your keyboard. Click on the dropdown menu for each key to reveal several dozen functions to choose from.

The default key bindings on keys 1-0 correspond to the editing tools in Graph Mode, in the same order they appear on the toolbar.

# MIDI Control Preferences

General

Graph Mode

Key Bindings

MIDI Control

MIDI Input Channel

Omni

MIDI Control Assignments

Retune Speed:	0	⬆️⬆️	Vibrato Shape:	0	⬆️⬆️
Key:	0	⬆️⬆️	Vibrato Rate:	0	⬆️⬆️
Scale:	0	⬆️⬆️	Variation:	0	⬆️⬆️
Throat Length:	0	⬆️⬆️	Onset Delay:	0	⬆️⬆️
Flex-Tune:	0	⬆️⬆️	Onset Rate:	0	⬆️⬆️
Humanize:	0	⬆️⬆️	Pitch Amount:	0	⬆️⬆️
Natural Vibrato:	0	⬆️⬆️	Amplitude Amount:	0	⬆️⬆️
Target Notes via MIDI:	0	⬆️⬆️	Formant Amount:	0	⬆️⬆️

Save as Default

Cancel

Save

## MIDI Input Channel

Select the MIDI Channel to receive MIDI Continuous Controller messages.

## MIDI Control Assignments

Many parameters in Auto-Tune Pro X can be controlled in real time with any hardware or software MIDI controller that sends MIDI CC (continuous controller) messages.

To pair a parameter with one of the controls on your MIDI device, enter the MIDI CC value that your MIDI controller sends from that control. Check your MIDI controller's documentation for information about what MIDI CC value is sent by each control.

You will also need to route the MIDI to Auto-Tune Pro X within your host application (DAW). The procedure for routing MIDI to an audio plug-in will vary depending on what DAW you are using, so please see your DAW's manual or help pages for more information about how to do this.

# Tutorials

The following tutorials will help you master a variety of features and workflows in Auto-Tune Pro X. Before diving into the tutorials, please visit the [Installers Page](#) on our website to download the Auto-Tune Pro X Tutorial Files.

Alternatively, use the direct download link [here](#).

## The Auto-Tune Effect

In addition to being the worldwide standard in professional pitch correction, Auto-Tune is the tool of choice for one of the signature vocal sounds of popular music: the **Auto-Tune Effect**.

First heard on Cher's 1998 hit song "[Believe](#)," variations of the Auto-Tune Effect have appeared in songs from a huge variety of artists. Since there seems to be a lot of mythology about how it's accomplished, we thought we'd provide the official Antares version here.

### What is it?

The Auto-Tune Effect is what is technically known as "pitch quantization." Instead of allowing all of the small variations in pitch and the gradual transitions between notes that are a normal part of singing, the Auto-Tune Effect limits each note to its exact target pitch, stripping out any variation, and forcing instantaneous transitions between notes.

### How To Recreate It

There are three key elements to producing the Auto-Tune Effect in Auto-Tune Pro X:

1. Set [Flex-Tune](#) to 0.
2. Set [Retune Speed](#) to 0.
3. Pick the [Key](#) and [Scale](#) of your track.

That's all you need to recreate the Auto-Tune Effect, but there are some possible variations in approach, depending on whether you want to use [Auto Mode](#) or [Graph Mode](#). See below for more details:

## Auto Mode

1. Set [Flex-Tune](#) and [Retune Speed](#) to 0.
2. Select the [Key](#) and [Scale](#) of your track.
3. Play your track. If you like the result, you're done!
4. If you're not happy with the result, try making one or more of the following adjustments:
  - Edit the scale notes using the [Keyboard](#) or [Scale Controls](#). Adding or removing scale notes can give you distinctly different effects. Removing some notes can be especially effective for a more dramatic effect on note transitions.
  - Try a different key and/or scale.
  - Try a Retune Speed of 2, 3 or a bit slower. This will allow slight pitch variations and more gradual note transitions, but may result in the right effect for a particular performance.
  - Try turning on [Classic Mode](#), for a subtle variation of the Auto-Tune Effect.
  - Don't forget your host application's bypass and automation functions. Limiting the Auto-Tune Effect just to specific phrases can provide sonic contrast in your song.

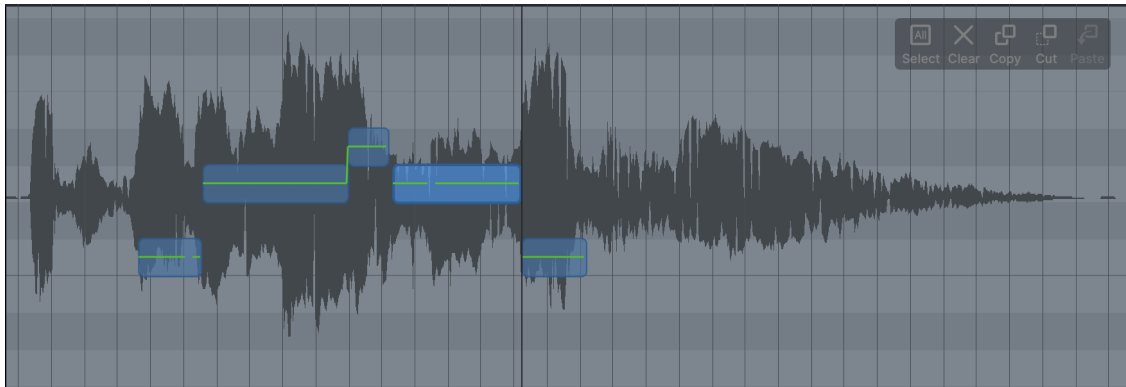
## Graph Mode

[Note](#) Objects in Graph Mode will give you more detailed control over the Auto-Tune Effect.

1. We want to start by quantizing all of our Note Objects. Open the Graph Mode Preferences Window, and set the default Retune Speed on Note Objects to 0.



- a. Alternatively, you can select existing Note Objects with the Range Tool, and manually change their Retune Speed to 0.
2. Click the [Track Pitch](#) button and begin playback to track your audio into Graph Mode.
3. Click the [Create Notes](#) button.
  - a. If necessary, adjust the [Density](#) control to get as accurate a representation of the desired target notes as possible.
4. Make sure that all of the Note Objects in the range where you want the effect line up with each other (this will ensure that all of the note transitions are instantaneous).
  - a. If the Note Objects don't line up, either use the [Multi Tool](#) to extend existing Note boundaries so that they do, or use the [Note Tool](#) to draw new notes to fill in any gaps.
  - b. The [Display Vertical Line at Cursor Position](#) preference is helpful in ensuring there aren't any gaps between Note Objects.



5. Play your track. If you like the result, you're done!
  - a. If you're not happy with the result, experiment with changing the pitch or length of individual notes. The beauty of Note Objects is that you can literally sculpt any melodic contour to get exactly the effect you desire.

# Auto Mode Basics

This tutorial will guide you through the basic Auto Mode functions using the “A2- A3-A2 sweep,” tutorial file.

This is a simple synthesized waveform sweeping slowly from A2 up to A3 and back to A2. While it is unlikely that you’d ever need to process such an input with Auto-Tune Pro X, it provides a very clear example of how the main Auto Mode controls work.

## To Begin

1. Load or import “A2-A3-A2 sweep” into a track of your DAW. Play the track to hear the unprocessed audio.
2. Open Auto-Tune Pro X as an insert effect on that track.

## Scale and Key Settings

3. Set the [Key](#) to “A” and the [Scale](#) to “Major.”
4. Set [Retune Speed](#) to 0.
5. Set [Flex-Tune](#) to 0.
6. Set “A2-A3-A2 sweep” to loop continuously in your DAW and start playback.

What you will hear is an A major scale. This is because Auto-Tune is continuously comparing the input pitch to the notes of the A major scale and instantly correcting the output pitch to the nearest of the scale tones.

## Remove Notes

1. Open [Advanced View](#).
2. In the [Scale Controls](#) tab, click the [Remove](#) buttons under the notes D, F#, G# and B.



3. Play "A2-A3-A2 sweep" again.

You will now hear an arpeggiated A Major triad because you have removed all the other notes from the scale.

## Bypass Notes

1. In the [Scale Controls](#) tab, [Bypass](#) the note E.
2. Play "A2-A3-A2 sweep" again.

You'll now hear the effect of bypassing the E. When the input pitch approaches E, Auto-Tune passes the input through uncorrected.

## Retune Speed

1. Set the [Retune Speed](#) to 0.
2. Play "A2-A3-A2 sweep."
3. Set the Retune Speed to 30.
4. Play "A2-A3-A2 sweep" again. Compare the 30 setting to the 0 setting.
5. Experiment with other Retune Speed settings.

The setting of 0 (milliseconds) is fast, and Auto-Tune Pro X makes instantaneous pitch changes. The setting of 30 is slower, which means the pitch changes will be more gradual.

In short, Retune Speed determines how rapidly pitch correction is applied to the incoming pitch.

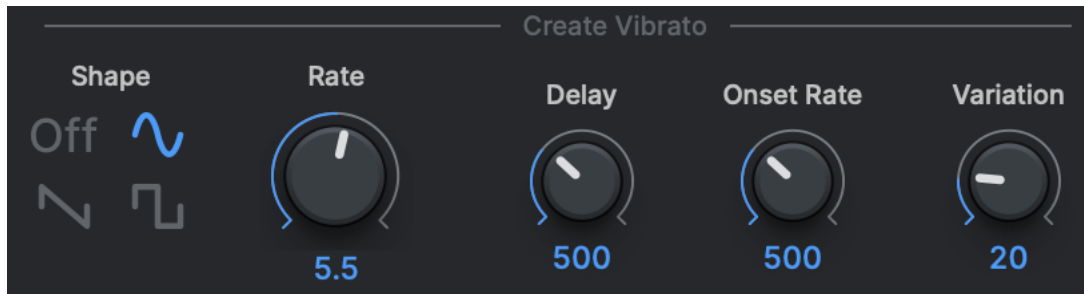
## Detune

1. Set the [Retune Speed](#) to 0.
2. In the [Scale Controls](#) tab, click the [Remove](#) buttons below all the notes except F#.
3. Play “A2-A3-A2 sweep” again. As the sound is playing, move the [Detune](#) knob.

The output pitch will be locked to F#, but you’ll hear the output pitch change with the Detune knob movement. This is because the Detune knob is changing the pitch standard of the scale.

## Create Vibrato

1. In the [Vibrato Controls](#) tab, Select Sine Wave from the [Shape](#) menu in the [Create Vibrato](#) section.
2. Play “A2-A3-A2 sweep” again.
3. Experiment with the other Create Vibrato controls to hear their effects.



# Flex-Tune

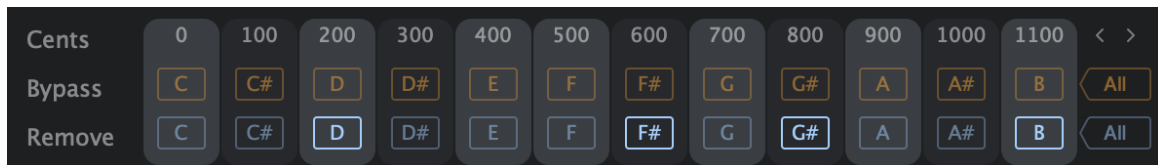
This tutorial will guide you through the use of [Flex-Tune](#) using the “A2-A3-A2 sweep” tutorial file.

## To begin

1. Load or import “A2-A3-A2 sweep” into a track of your DAW.
2. Set up Auto-Tune Pro X to be an insert effect on that track.
3. Set the [Key](#) to A and the [Scale](#) to Major.
4. Set the [Retune Speed](#) to 0.

## No Flex-Tune

1. Set [Flex-Tune](#) to 0.
2. In the [Scale Controls](#) tab, click the [Remove](#) buttons next to the notes D, F#, G#, and B.



3. Play “A2-A3-A2 sweep.”

You’ll hear an arpeggiated A Major triad because you have removed all the other notes from the scale.

## Some Flex-Tune

1. Set [Flex-Tune](#) of 10.
2. Play “A2-A3-A2 sweep” again.

With a lower Flex-Tune setting such as 10, the correction range around each scale note is still quite wide. You will hear each note of the A Major triad instantly tuned as the sweep enters the correction range, but as the sweep moves out of the correction range, you will hear it transition to the next note without correction.

## More Flex-Tune

1. Set Flex-Tune to 55.
2. Play “A2-A3-A2 sweep” again.

At higher Flex-Tune settings, the correction range around each scale note becomes more narrow. Consequently, each scale note will be tuned to only briefly as the sweep passes through the narrow correction range and will transition to the next note without correction as it leaves the correction range.

# Ignore Vibrato

This tutorial will demonstrate the [Ignore Vibrato](#) function. This feature helps Auto-Tune identify pitches correctly when a performance includes vibrato so wide that it approaches adjacent notes.

## Auto Mode

1. Load “wide\_vibrato” into a track of your DAW.
  - a. This is a recording of a male voice singing a sustained G with a wide vibrato.
2. Play the track to hear the unprocessed audio. In addition to the vibrato, you’ll notice that the singer drifts alternately sharp and flat.
3. Set up Auto-Tune Pro X to be an insert effect on that track.
4. Set the [Key](#) to C and the [Scale](#) to Chromatic.
5. Set the [Input Type](#) to *Low Male*.
6. Set [Retune Speed](#) to 24.
7. Set “wide\_vibrato” to loop continuously in the host application and begin playback. Watch the blue detected pitch indication on the [Keyboard](#), and listen to the result. As you will hear, whenever Auto-Tune thinks G# or F# is the target pitch, it will move the input closer to those notes, instead of toward G.
8. Open [Advanced View](#) to show the [Scale Controls](#), then click [Ignore Vibrato](#) to turn it on. With Ignores Vibrato engaged, Auto-Tune recognizes the pitch deviations as vibrato and continues to use G as the target pitch.



## Graph Mode (with Create Curves from Auto Mode)

1. Still using “wide\_vibrato,” set up the parameters in Auto Mode as described in Steps 1-5 above.
2. Still in Auto Mode, set [Retune Speed](#) to 0.
3. In the [Scale Controls](#) tab, make sure Ignores Vibrato is *Off*.
4. Set Auto-Tune Pro X to Graph Mode.
5. Click the [Track Pitch](#) button and begin playback to track the audio into Graph Mode.
  - a. If the [Show Input Pitch Curves](#) preference is enabled, a red curve representing the detected pitch contour of the audio will be drawn on the Main Graph.
6. Stop playback, and click the [Create Curves from Auto Mode](#) button.
  - a. A blue curve will appear, which represents the pitch correction that results from processing the audio with the current Auto Mode settings.
  - b. Note all the instances where G# or F# are identified as the target pitch.
7. Switch back to Auto Mode.
8. In the [Scale Controls](#), set [Ignore Vibrato](#) to *On*.
9. Return to Graph Mode.
10. Click the Create Curves from Auto Mode button.
11. Notice that the blue curve is now a straight line on G, indicating that Auto-Tune Pro X has correctly identified the pitch deviations as vibrato and has not chosen F# or G# as the target pitch.

# Natural Vibrato Function

This tutorial will demonstrate the [Natural Vibrato](#) function using the “wide\_vibrato” tutorial file. The Natural Vibrato function allows you to increase or diminish the range of vibrato that is already present in your audio.

1. Load or import “wide\_vibrato” into a track of your DAW.
  - a. This is a recording of a male voice singing a sustained G with a wide vibrato. Play the track to hear the unprocessed audio.
2. Open Auto-Tune Pro X as an insert effect on that track.
3. In Auto Mode, Set the [Key](#) to C and the [Scale](#) to Chromatic.
4. Set the [Input Type](#) to *Low Male*.
5. Set [Retune Speed](#) to 24.
6. Set “wide\_vibrato” to loop continuously and begin playback.
7. Set Natural Vibrato to 12 and note the effect on the vibrato. Set Natural Vibrato to -12 and note the effect on the vibrato.
8. In the [Scale Controls](#) tab, set all Scale notes to [Bypass](#) to disable any pitch correction. Again, adjust the Natural Vibrato control and note that it’s still active even when pitch correction is not being applied.

# Transpose and Formant Control

This tutorial will demonstrate the pitch shifting, formant correction, and throat modeling capabilities in Auto-Tune Pro X. We will use the “hidin\_vocal.wav” and “hidin\_accomp.wav” tutorial files.

1. Load the audio files onto two tracks in your DAW.
2. Open Auto-Tune Pro X as an insert effect on the track with the “hidin\_vocal” audio file.
3. In Auto Mode, Select Ab minor as the [Key](#) and [Scale](#), and *Alto/Tenor* as the Input Type.
4. Set the [Retune Speed](#) to 20.
5. Play the audio file.
6. Set the [Transpose](#) control to 7 (a perfect fifth up).
  - a. Check to be sure that [Formant](#) is *Off*.
7. Play the audio file and listen to the quality of the voice. Since the formants are being shifted with the pitch, you will hear the familiar “chipmunk” effect.
8. Click the Formant button to turn on formant correction.
9. Play the audio file again and note the difference.
10. Play the audio file again while adjusting the [Throat Length](#) control to hear the effect of changing the modeled vocal tract.
11. Repeat steps 5 through 9 with different settings of the Transpose control.

# Graph Mode Basics

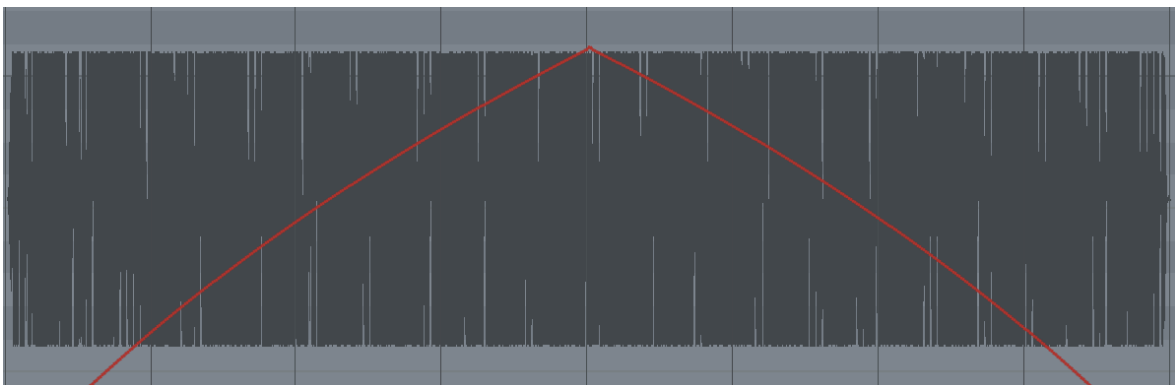
This tutorial will introduce you to the basic Graph Mode functions, using the “A2-A3-A2 sweep” tutorial file.

## Track Pitch

1. Load or import “A2-A3-A2 sweep” into a track of your DAW. Play the track to hear the unprocessed audio.
2. Open Auto-Tune Pro X as an insert effect on that track.
3. Switch to Graph Mode.
4. Set the [Key](#) to A and the [Scale](#) to Major.
5. Click the [Track Pitch](#) button and begin playback to track the audio into Graph Mode.
  - a. If the [Show Input Pitch Curves](#) preference is enabled, a red curve representing the detected pitch contour of the audio will be drawn on the Main Graph.
6. Stop playback.

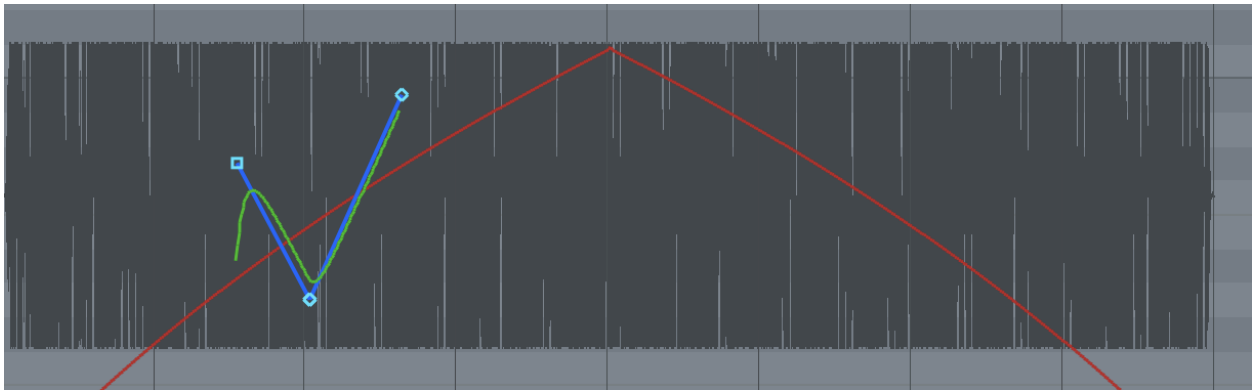
## Zoom Tool

1. Select the [Zoom Tool](#) and left click around the [red curve](#) to zoom into it.
2. Hold down the Option or Alt key on your keyboard and click on the graph with the Zoom Tool to zoom out one step.
3. Release the Option/Alt key and click on the graph with the Zoom Tool to zoom back in one step.



## Line Tool

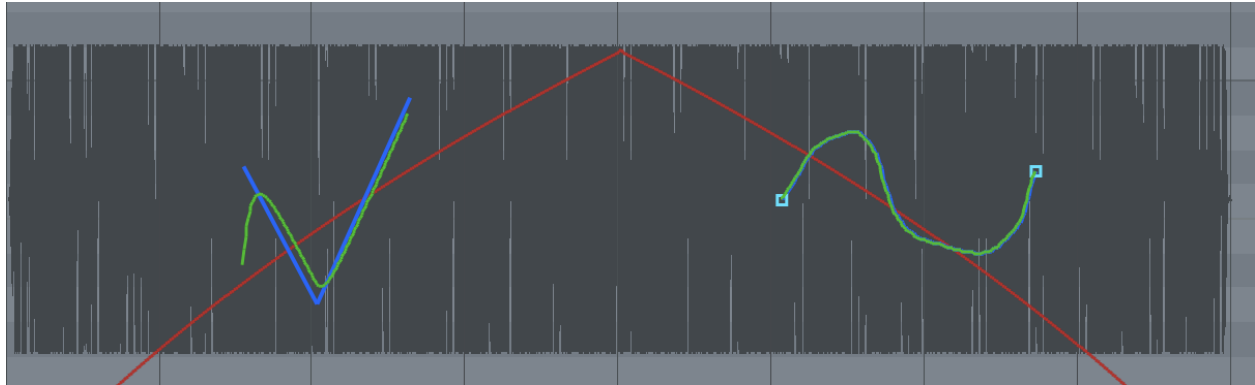
1. Select the [Line Tool](#) and draw a line similar to the one pictured below (in blue).
  - a. By clicking multiple anchor points on the graph, line segments joining the points will be drawn.
  - b. To erase the last point entered, press Delete on your keyboard.
  - c. When done, double-click the last point or press Esc on your keyboard.
  - d. A green output pitch curve will appear, reflecting the output pitch that results from the default Retune Speed as applied to the Line object.



2. With the Line still selected, set the [Retune Speed](#) to 0 and observe the green output curve. Play back the sound to hear the effect.
3. Experiment with other Retune Speed settings, and note the effect on the green output curve. Play the track again to hear the result of applying different retune speeds to a Line object.

## Curve Tool

1. Select the [Curve Tool](#) and create a curve similar to the one shown below.
  - a. Click and hold the mouse button and drag to draw the curve.
  - b. When done, release the mouse button.



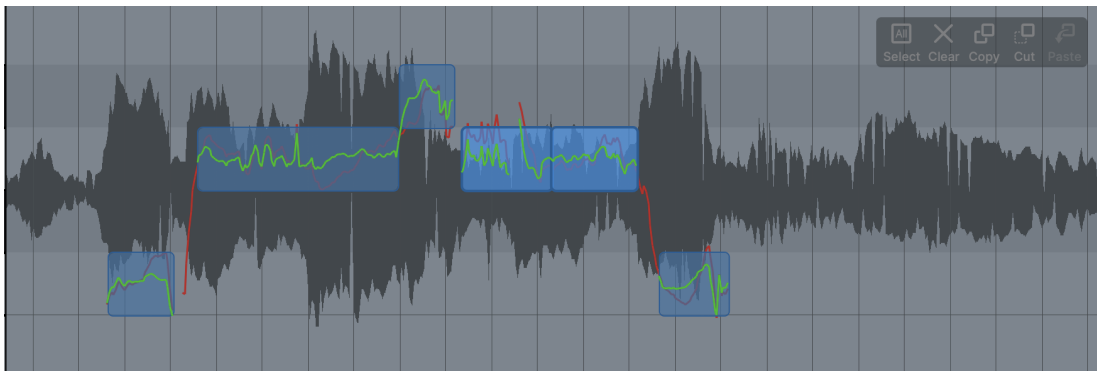
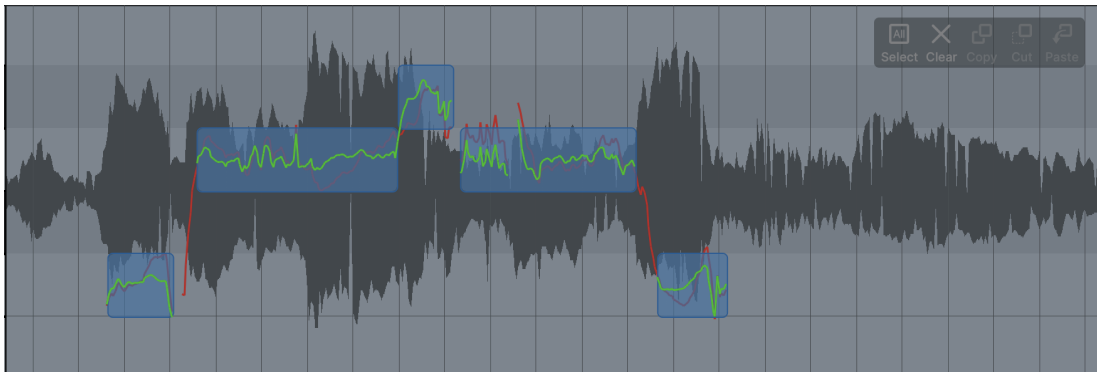
2. Play back the sound to hear the effect.
3. Vary the Retune Speed between 0 and 400 and note the effect on both the green output curve and the audio.

## Multi Tool

1. Select the [Multi Tool](#).
2. Click and drag the Multi Tool across the Main Graph to select objects.
3. Move the cursor over curves and anchor points.
  - a. Practice selecting entire curves and individual anchor points.
4. Use the Multi Tool to drag selected curves and individual anchor points up and down.
5. Double-click anywhere on a [Line](#) object to create a new anchor point.
6. Use the Multi Tool to drag the new point to a new position.
7. Still using the Multi Tool, double-click on the new anchor point you created to delete it and return the line to its initial state.

## Split Tool

1. Select the [Split Tool](#) and click on an existing line, curve, or Note Object to break it in two at that point.
  - a. A stacked pair of anchor points will be created at the point you click
2. Select the [Multi Tool](#), and use it to drag each of the new endpoints to a new position.



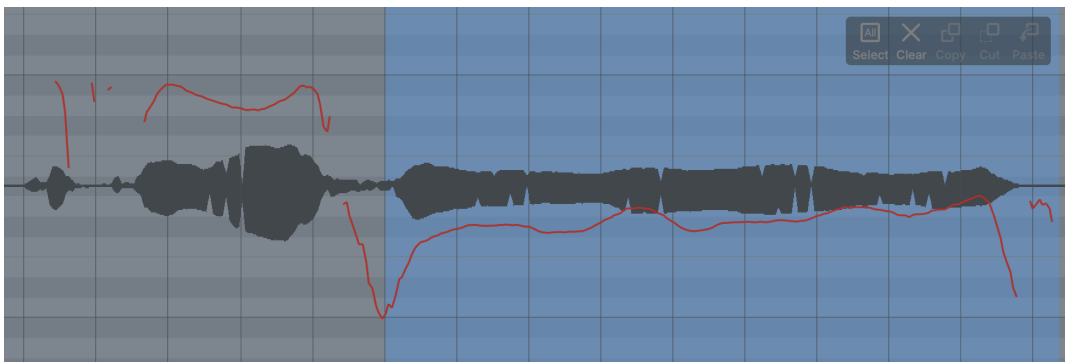
# Create Curves and the Line Tool

This tutorial will demonstrate two approaches to creating [Correction Objects](#) in Graph Mode: the [Create Curves](#) function and the [Line Tool](#).

## Create Curves

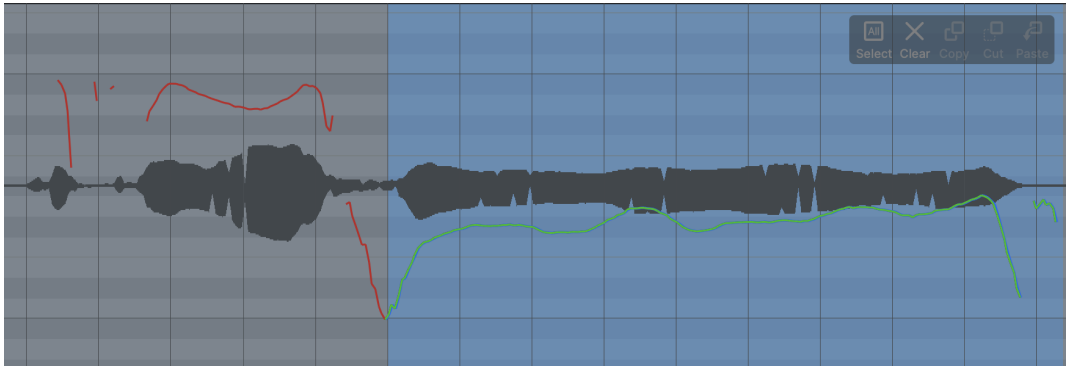
The Create Curves function creates new [Curve](#) objects from the detected pitch contour data. The Curve objects can then be dragged and stretched for very precise pitch correction.

1. Load or import the “Crowd All” tutorial file into a track of your DAW.
2. Open Auto-Tune Pro X as an insert effect on that track and switch to Graph Mode.
3. Press the [Track Pitch](#) button and begin playback to track the audio into Graph Mode.
4. Select the [Zoom Tool](#) and zoom into the red curve for the last word, “together.”
5. Click and drag with the [Range Tool](#) to select the “-gether” part of the word “together.”

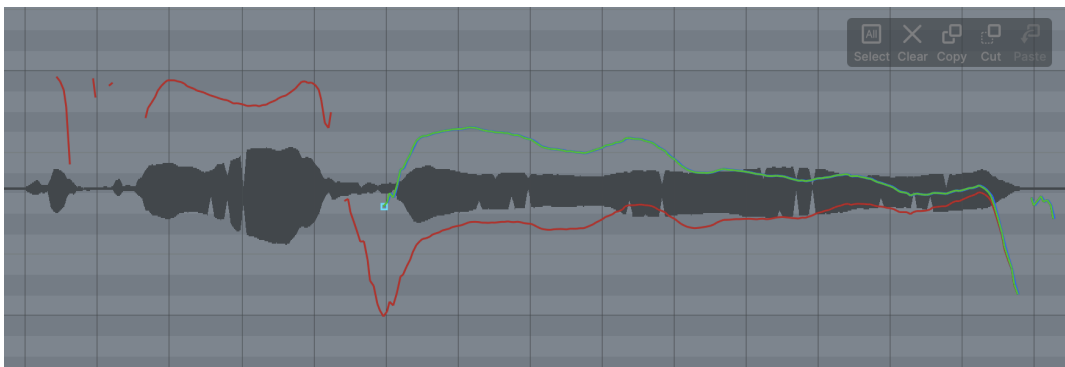


6. Click the [Create Curves](#) Normal button. Auto-Tune Pro X will create a new blue curve object from the existing pitch data as well as a green output curve that reflects the default Curve Retune Speed.
  - a. **Note:** The new curves may be difficult to see at first because they may exactly overlay the red curve.

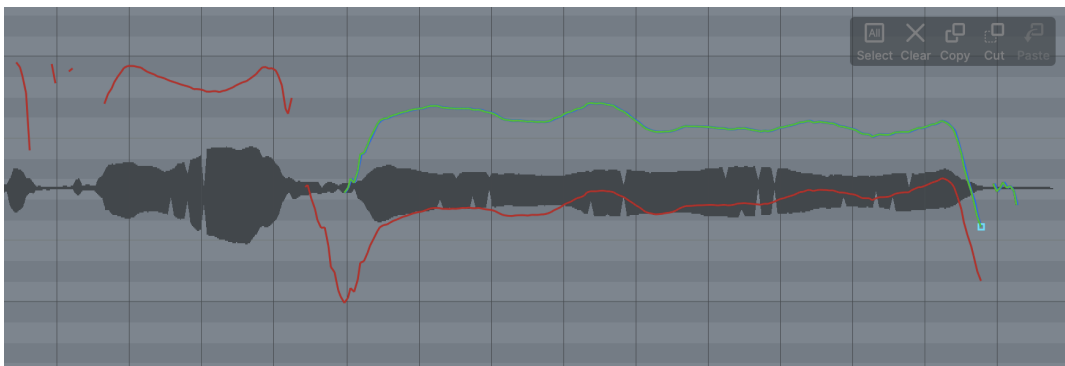




7. Click on the background of the Main Graph with the [Range Tool](#) to deselect the Curve object.
8. Select the [Multi Tool](#) and click precisely on the left end of the long curve to select only the left anchor point. Drag the anchor point straight up, stretching the curve so it is centered around the D3 graph line.



9. Drag the Multi Tool across the last curve to select it. Then move the Multi Tool over the body of a correction curve so that the cursor changes to the horizontal bar. Click and drag the curve so that it's centered on the C3 graph line.

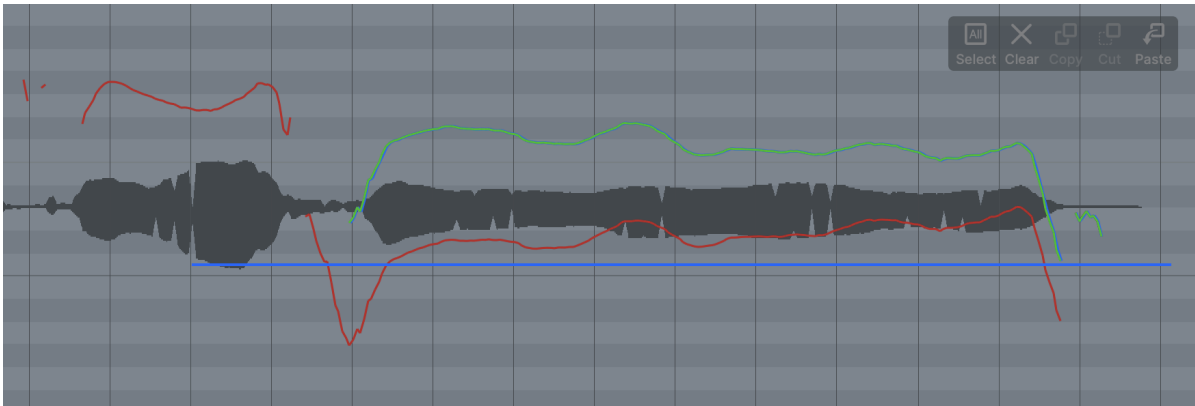


10. Play back the track and listen to the result.

## Line Tool

Here is an alternative approach to the same pitch problem using the [Line Tool](#).

1. Click “Select All”, then click “Cut” to delete the curves you created in the steps above.
2. Make sure [Snap To Note](#) is on in the Quick Settings Menu, and use the Line Tool to draw a horizontal line at C3 as shown below.

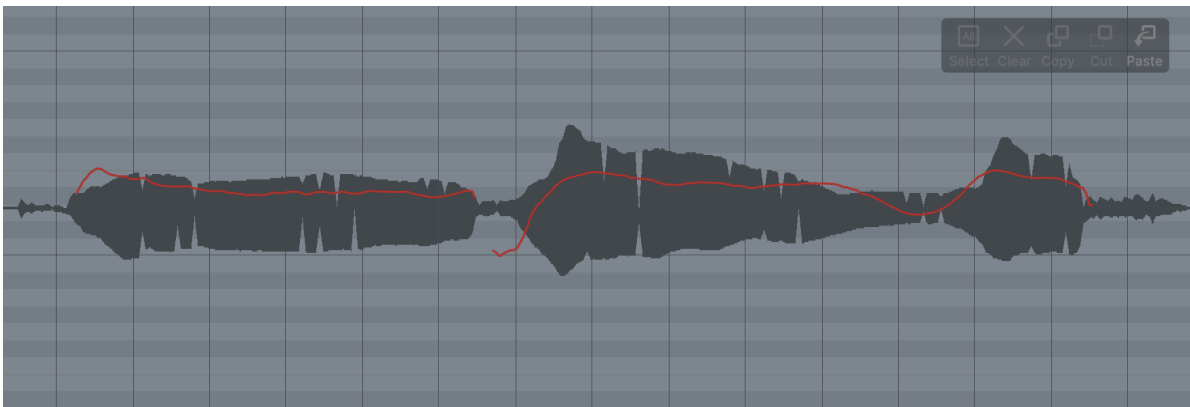


3. Set the [Retune Speed](#) to 20 and play back the sound. Experiment with other Retune Speeds to see their effect on the green correction curve and to hear their effects.

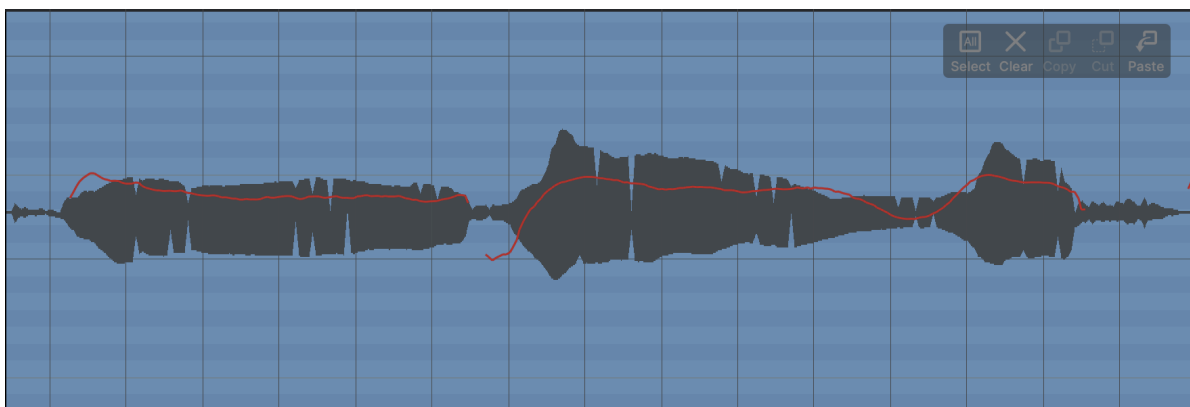
## Create Curves from Auto Mode

The [Create Curves from Auto Mode](#) function lets you display pitch corrections that would result from specific Auto Mode settings, and edit them in Graph Mode.

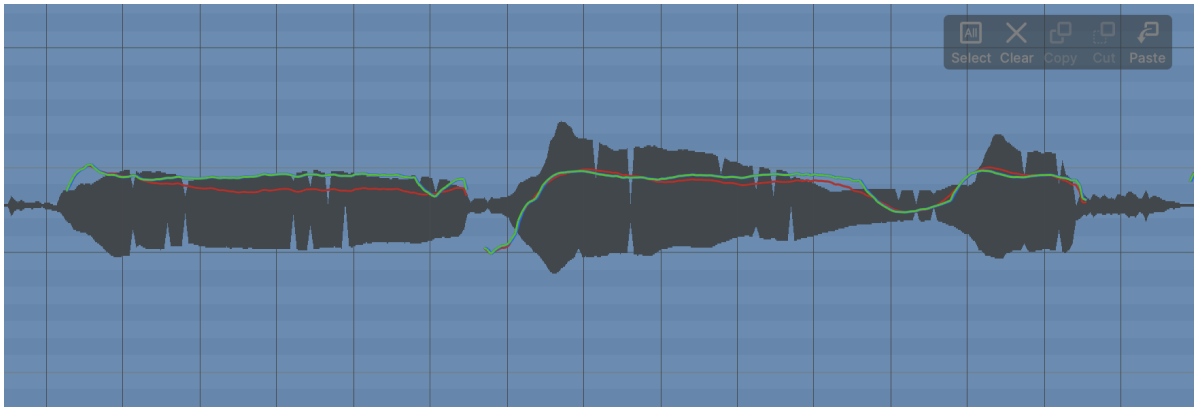
1. Load or import the “Crowd All” tutorial file into a track of your DAW.
2. In Auto Mode, set the [Key](#) and [Scale](#) to C Major, and the [Retune Speed](#) to 20.
3. Switch to Graph Mode.
4. Press the [Track Pitch](#) button and begin playback to track the audio into Graph Mode.
5. Select the [Zoom Tool](#) and zoom to the red curve for the words “crowd all rushed”.



6. Use the [Range Tool](#) to drag a selection in the [Main Graph](#) or [Waveform Graph](#) as shown:

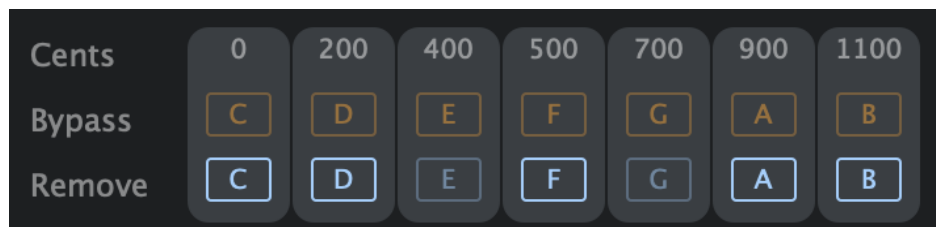


- Click the [Create Curves from Auto Mode](#) button to create a new blue [Curve](#) object from the existing pitch data as well as a green output curve.

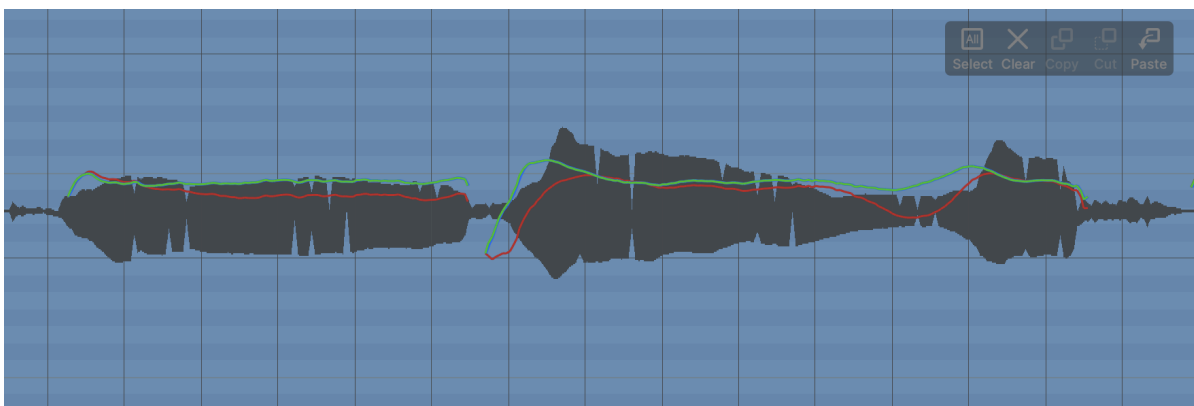


Assuming that this entire phrase should be centered around E3, there are several problem spots where the pitch is being incorrectly adjusted towards neighboring tones.

- Switch to Auto Mode, and open [Advanced View](#). In the [Scale Controls](#) tab, click the Remove buttons next to C, D, F, A, and B.



- Return to the Graph Mode.
- Press the Create Curves from Auto Mode button to create new blue and green curves from the existing pitch data.



Note how the pitch errors from the previous curve have been removed. Also, note the raised pitches indicated above.

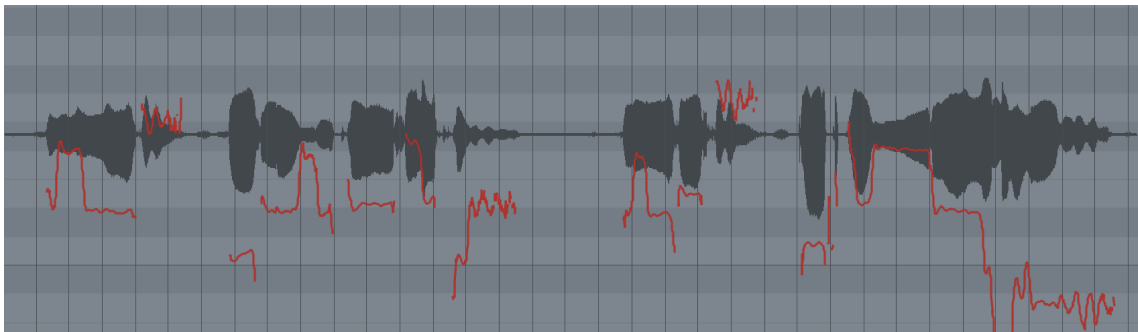
This occurs because the Auto Mode Retune slider value of 20 is slow compared to the rapidly increasing pitch that is occurring at that point in time. But even with the raised pitches, the average output pitch is centered on E3 and the phrase sounds in tune.

## Create Notes

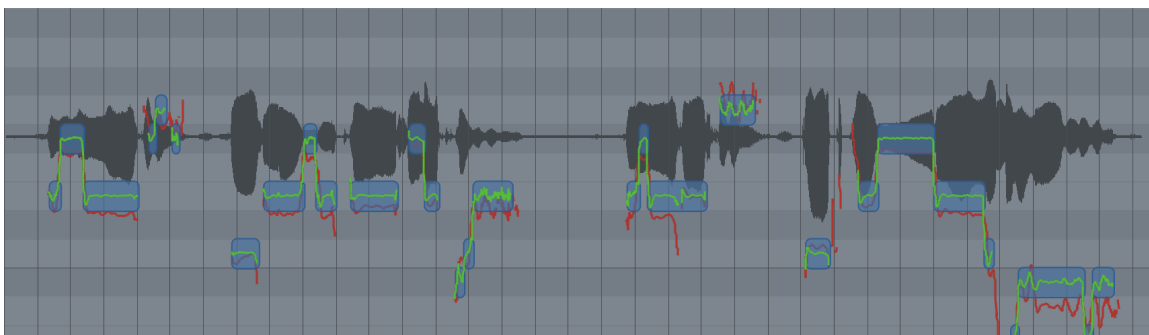
This tutorial will help you become familiar with the [Create Notes](#) function and how [Note Objects](#) are used for pitch correction and selective pitch shifting.

For this tutorial, we will use the “dont\_give\_up\_vocal.wav” and “dont\_give\_up\_accomp.wav” tutorial files.

1. Load or import the audio files onto two tracks in your DAW.
2. Open Auto-Tune Pro X as an insert effect on the vocal track and switch to Graph Mode.
3. Select D Major as the [Key](#) and [Scale](#), and *Soprano* as the [Input Type](#).
4. Press the [Track Pitch](#) button.
5. Play the project and track the first 17 seconds of the track (until right after the word “remain”), then stop playback.



6. Click the [Create Notes from Audio](#) button.

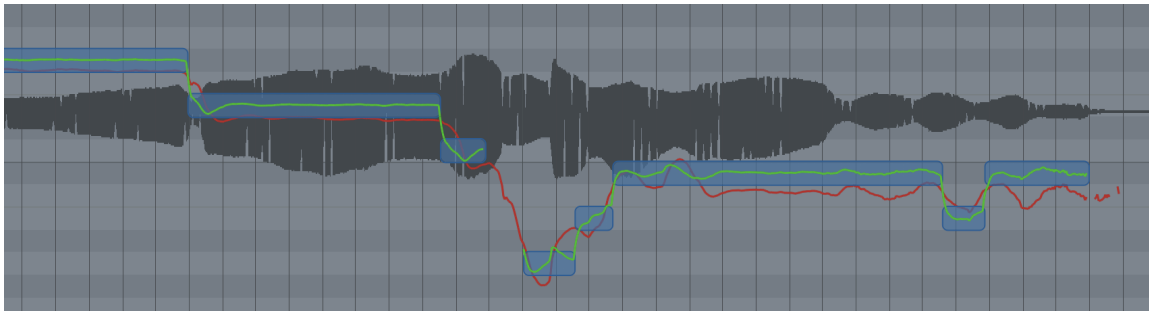


7. Start playback.

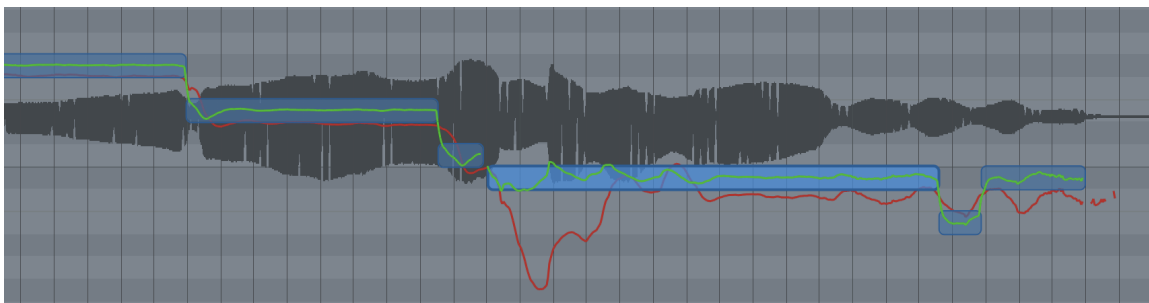
- a. Note that the default settings for [Density](#) and Retune Speed do a good job of correcting the pitch for most of the phrase. However, the final syllable of “remains” goes so flat that some additional adjustment is necessary.

The first thing we need to do is correct the dip in pitch before the final C#3. We could do this by selecting each of the two low Note Objects (A2 and B2) and individually moving them up to C#3, but it's easier to just expand the existing C#3 object.

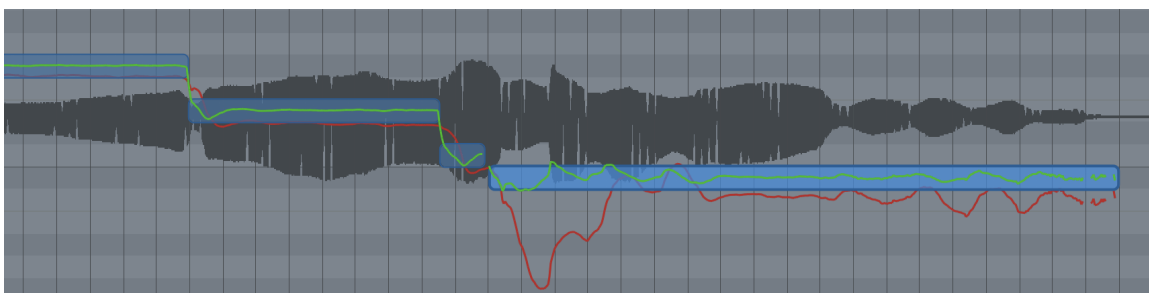
8. With the [Zoom Tool](#), zoom into the word “remains.”



9. Select the [Multi Tool](#) and move the cursor over the left end of the long C# note, then drag the left end of the note to extend it until it lines up against the end of the previous D3 Note Object.



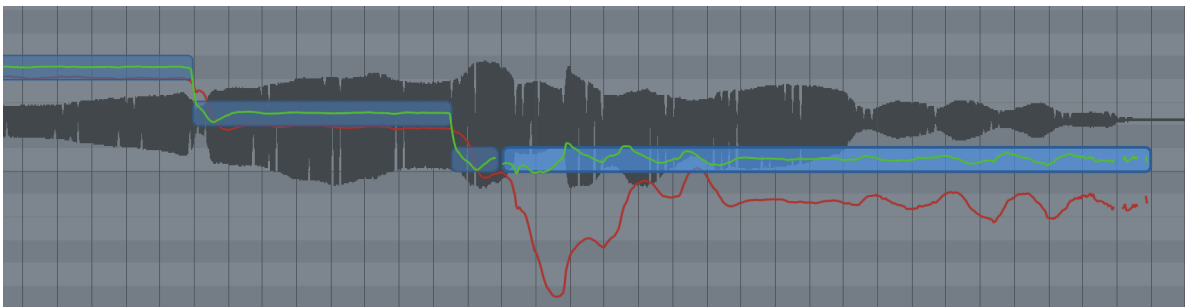
10. Since there's also a large dip in pitch towards the very end of the word, move the cursor over the right end of the long C#3 note and drag it to the right until it extends to the end of the phrase.



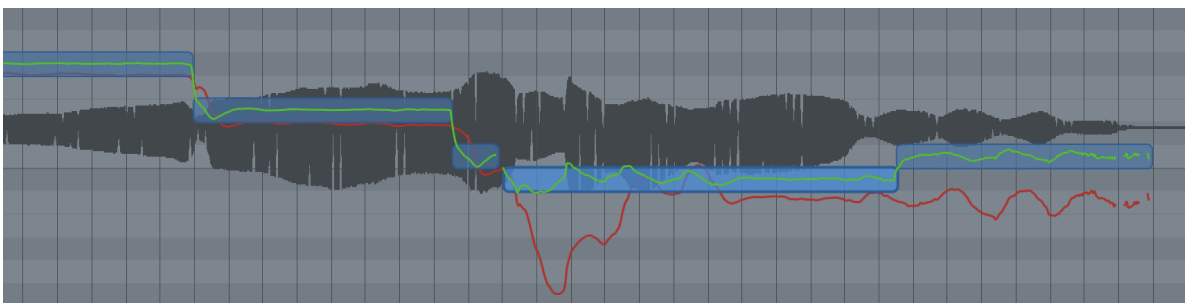
11. Still with the Multi Tool selected, click on the final C#3 to select it. Now adjust the [Retune Speed](#) for the desired correction (start with a value of 10 or so).
  - a. Note that with a long held note like this, too fast a Retune Speed can sound unnatural. The trick is to select a speed that pulls the attack in tune, while still allowing enough of the singer's original natural variation.

We'll continue with an example of selective pitch shifting.

1. Ensure that [Formant](#) is on.
2. With the [Multi Tool](#) selected, move the cursor over the middle of the C#3 note and drag it up one semitone to D3.
  - a. Play the file and listen to the melodic change.



3. For a melodic variation, select the [Split Tool](#) and click on the now D3 note at the 16.052 second point to cut it into two notes.
  - a. **Note:** Turn on the [Info Bar](#), and use the [Cursor](#) section to help you find this location.
4. Select the Multi Tool again and drag the left half of the note back down to C#3.



5. Play the file and listen to the result.

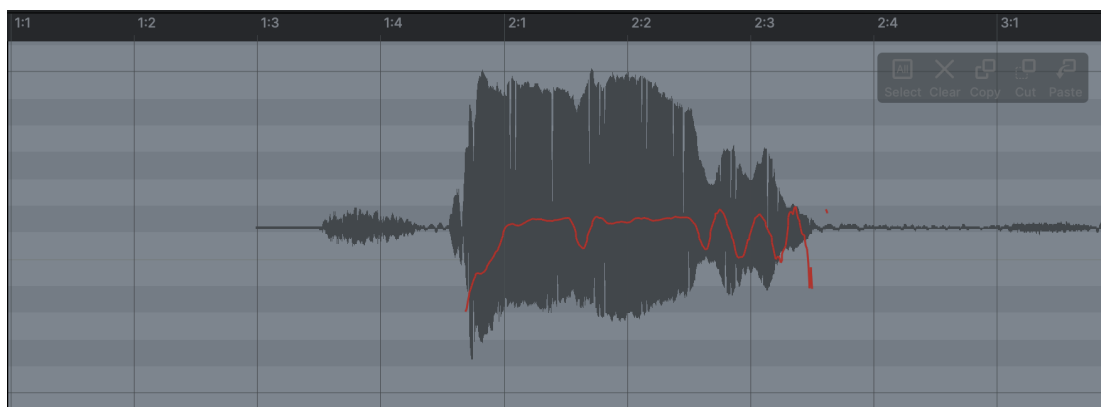


# Time Correction

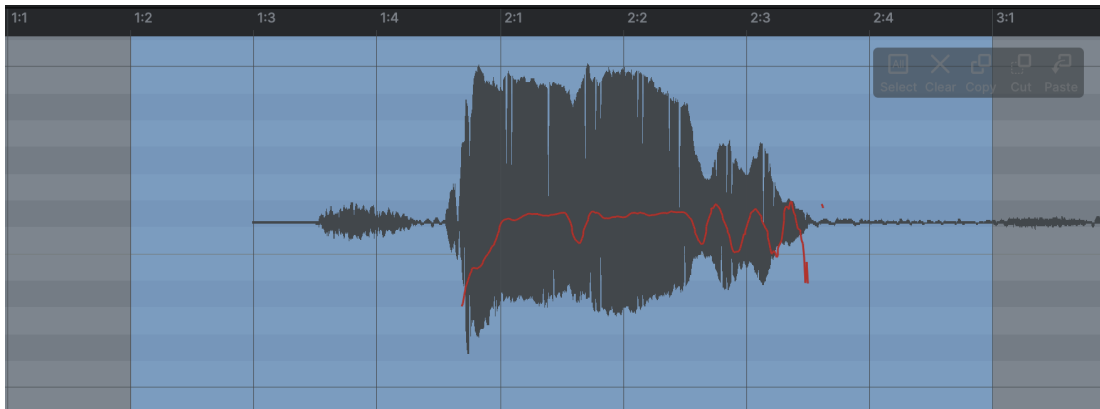
In this tutorial we'll use the [Point Tool](#) and [Region Tool](#) to correct timing errors in a lead vocal track. You can use the bars and beats scale as a reference for correction, and we've also included a harmony track with proper timing so that you can try correcting by ear.

## The Region Tool

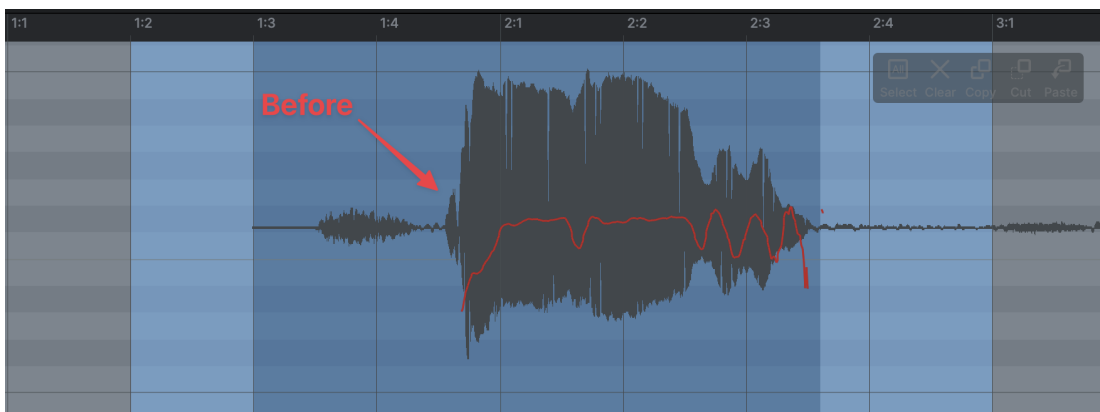
1. Load or import the audio files "Time\_vocal" and "Time\_accomp" into two separate tracks in your DAW, and set the tempo to 110 BPM. Listen to the tracks to become familiar with them.
2. Open Auto-Tune Pro X as an insert effect on the "Time\_vocal" track and select Alto/Tenor as the [Input Type](#).
3. Switch to Graph Mode, then go to Settings and set the [Time Display](#) to Bars|Beats.
4. Press the [Track Pitch + Time](#) button and begin playback to track the audio.
5. Adjust the zoom and scroll controls to focus on the first two bars (there is one bar of silence at the beginning of the tracks).
  - a. Note that the vocalist comes in early with the first word, "Time." Since this word is isolated (i.e., there's silence after it), we'll use the Move Region Tool to move it into its proper place.



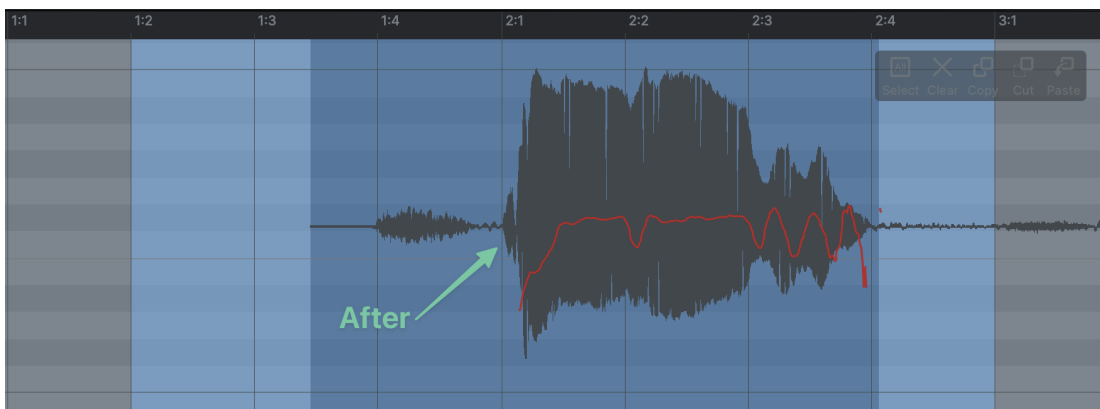
6. Use the [Region Tool](#) to select the initial range from the beginning of the third beat of the first measure to the end of the second measure.
  - a. **Note:** *The precise boundaries of this selection are not critical, as long as there are a few beats of silence before and after the note to be moved.*



7. Use the Region tool to select the region to be moved.
  - a. Select the region from the beginning of the breath before the note (at time position 1:3.9) to the end of the note's decay (at time position 2:3.62).



8. Still using the Region tool, click and hold anywhere in the region selected in Step 7 and move the region to the right until the beginning of the note's main attack (the part after the initial breath) is lined up exactly on the first beat of measure 2.

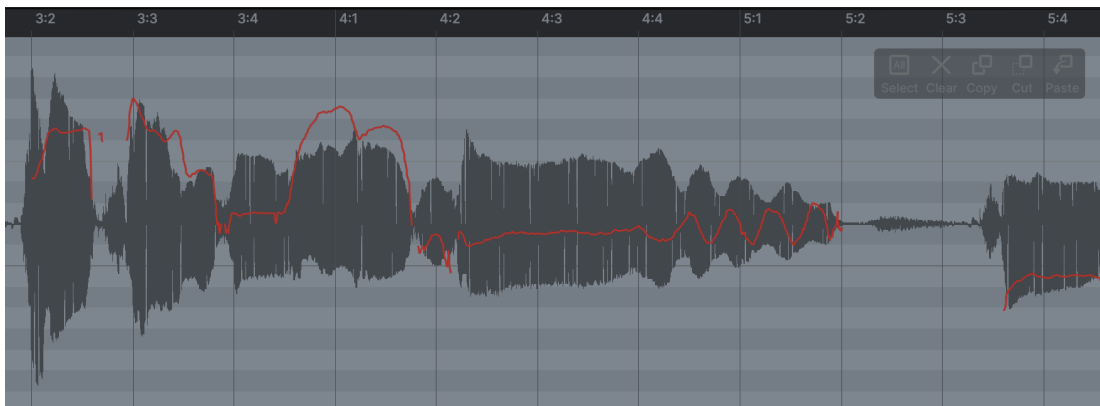


Play back your track and note that the two vocal parts are now perfectly in sync. You can also disable and re-enable Time Correction in the Quick Settings menu to compare the original and time-edited versions.

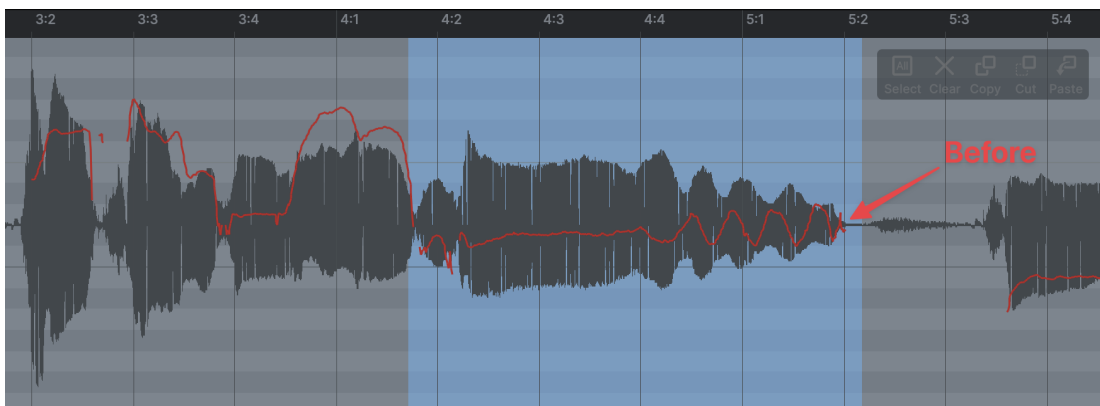
## The Point Tool: Adjusting an Ending

Moving on in the track, we'll use the [Point Tool](#) to correct a phrase that starts at the right point but ends late.

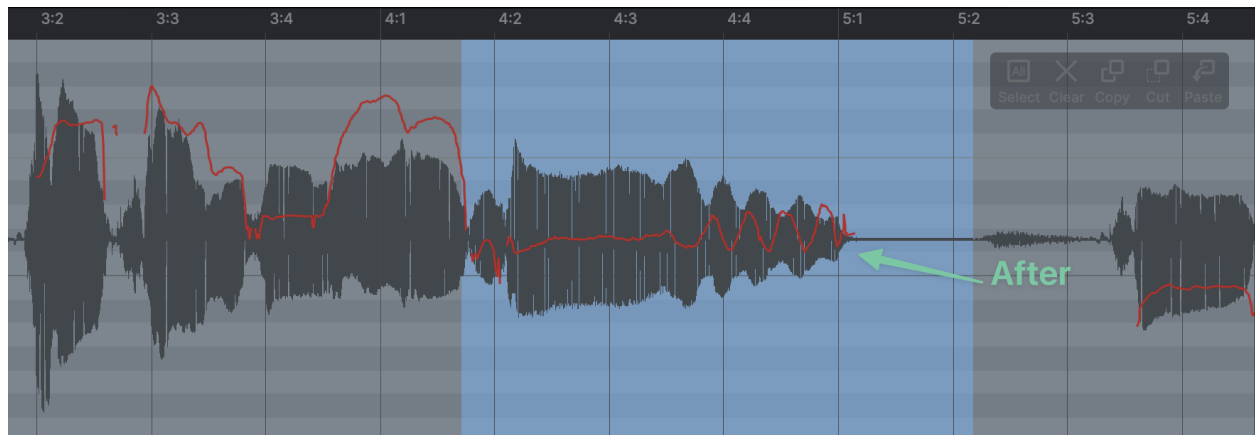
1. Adjust the zoom and scroll controls to focus on bars 3 through 5. Play the track and note that the end of the second phrase (the end of the word "illusion"), is sustained too long.



2. Use the Point Tool to select the range from the beginning of the last syllable of "illusion" (at time position 4:1.80) to the beginning of the breath before the following note (at time position 5:2.23).



3. Use the Point Tool to select the point to be moved.
  - a. In this case we want to move the very end of the phrase while leaving the beginning in place. Place the cursor over the very end of the note (at time position 5:2.10).
  - b. Click and drag to move the end point back to the beginning of measure 5.

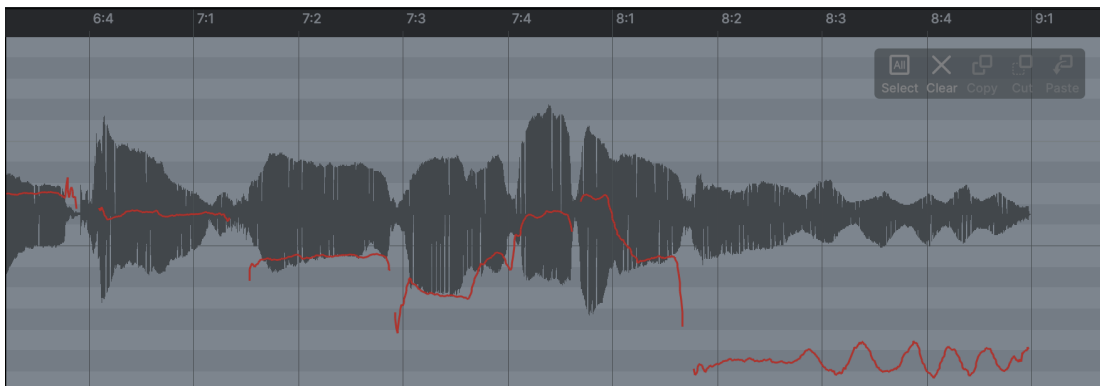


Play back the track and note that once again the two vocal parts are now perfectly in sync.

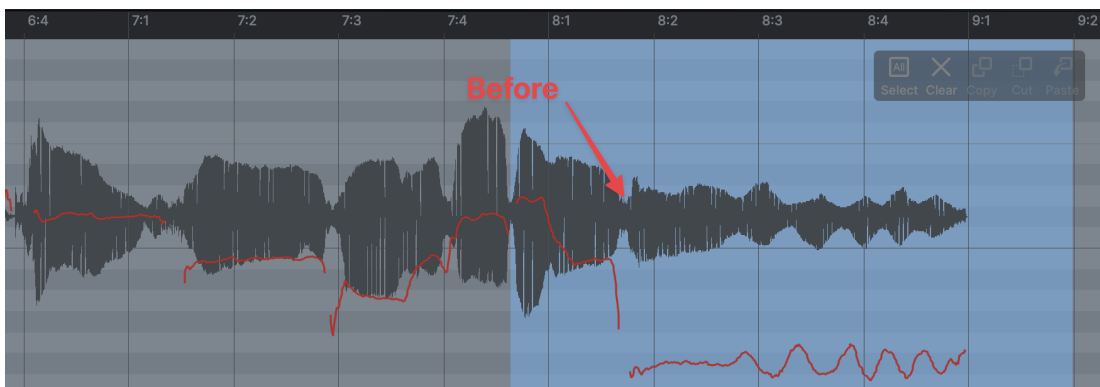
## The Point Tool: Adjusting an Internal Syllable

For our final example, we'll use the [Point Tool](#) to correct a syllable in the middle of a word.

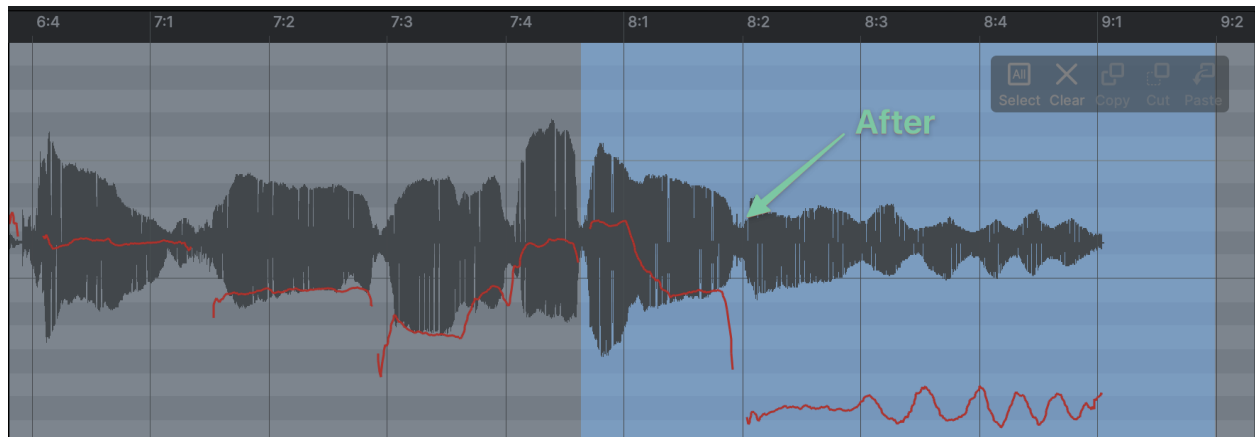
1. Adjust the zoom and scroll controls to focus on bars 7 through 9. Play the track and note that the start of the last syllable in the final word of the track ("delusion"), starts slightly too early.



2. Use the Point Tool to select the range from the beginning of the word "delusion" (at time position 7:4.63) to a beat past the end of the track (at time position 9:2.0)



3. In this case we want to move the start of the syllable while leaving the beginning and end of the selected word in place.
  - a. Place the cursor over the beginning of the last syllable (at time position 8:1.73).
  - b. Click and drag to move the end point to the right to time position 8:2.0.

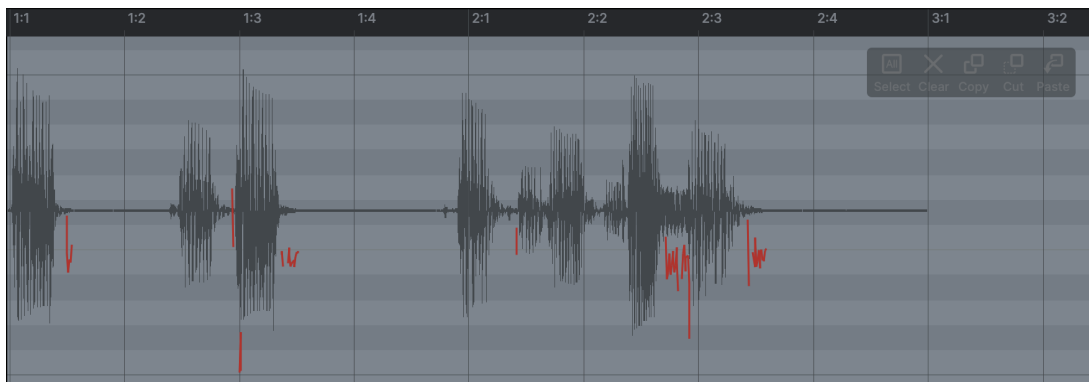


Play back your track and note that once again the two vocal parts are now in sync. You can also disable and re-enable Time Correction in the Quick Settings menu to compare the original and time-edited versions.

## Creative Time Editing

In this tutorial we'll use the [Region Tool](#) for a creative, rather than corrective, purpose.

1. Load or import the audio file "Bass\_riff" into a track of your DAW, and set the tempo to 110 BPM.
  - a. Listen to the track to become familiar with it.
  - b. We're going to use the Region Tool to move the second note of the pattern and change the feel of the bass line.
2. Open Auto-Tune Pro X as an insert effect on the track and select *Bass Instrument* as the [Input Type](#).
3. Switch to Graph Mode, then go to the Quick Settings menu to set the [Time Display](#) to Bars|Beats.
4. Press the [Track Pitch + Time](#) button and begin playback to track the audio into Graph Mode.



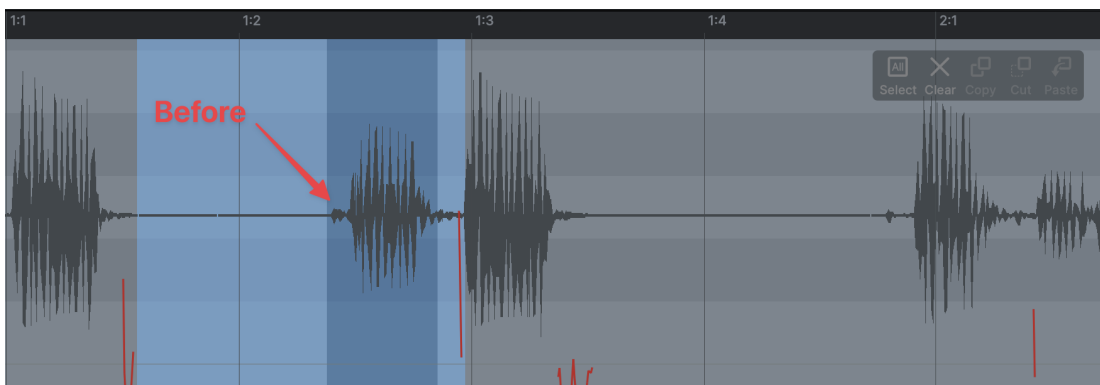
5. Adjust the zoom and scroll controls to focus on the first measure of the bass line.
  - a. Our goal will be to move the second note, so that instead of being a pickup note to the third beat, it falls squarely on the second beat, creating a different feel to the line.



6. Use the Region tool to select the initial range from the end of the first note's decay to the end of the second note's decay.



7. Use the Region tool to select the region from the beginning of the second note to a bit before the end of its decay.
  - a. The reason that we don't select the entire note is that when we move it forward in the next step, we want to leave a bit of it for Auto-Tune to stretch into a natural decay leading into the note on the third beat.





8. Still using the Region tool, click and hold anywhere in the region selected in Step 7, and move the region to the left until the beginning of the note is lined up exactly on beat 2.



Play back your track and note the new feel. Also note how the Auto-Tune Pro X time shifting algorithm has turned the small bit of audio at the end of the moved note into a natural sounding decay leading into the following C.