



VOICETONE™ correct

PRODUCT MANUAL

ENGLISH VERSION



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Introduction

Welcome to VoiceTone Correct

We at TC-Helicon believe that VoiceTone Correct will finally make you truly satisfied with your live vocal sound. More than any other musicians, vocalists are understandably not happy with their live sound. The reason is typically obvious - the singer has no control of the sound system and most often there is no sound engineer to help. Correct to the rescue! Correct listens to your voice and adjusts your tone and dynamics automatically to produce studio quality vocal tone that you and your audience will appreciate. In addition, the pitch correction effect is like a metronome for pitch. It lets you know when you're out of tune and you naturally decide to correct yourself, or not.

An incredible amount of live sound research was undertaken for VoiceTone Correct and that means you can trust it as a capable and reliable sound engineer. In terms of audio quality (noise floor, harmonic distortion, and frequency response), Correct surpasses anything that has come before it, and unarguably exceeds even

the most stringent "audiophile" requirements.

Many audience members, band members and sound engineers may be surprised to see a singer taking control over their sound. We think it's about time!

Features:

Pitch Correction:

- o Auto-chromatic pitch correction acts as a guide for you to improve your pitch
- o Accurate input pitch and correction display
- o Correction can go to monitors, mains or both

Live Engineer effects (LE effects)

- o Adjustable Adaptive Compression
- o Multiband Adaptive Shape EQ dynamically sweetens raw mic sound
- o Sibilance-smoothing de-ess algorithm
- o Add rich lows on deep voices with the Warmth button
- o XLR mic level I/O
- o Clean, studio quality mic preamp with phantom power

About TC-Helicon

At TC-Helicon we truly believe that the voice is the world's most beautiful instrument. We don't mean to degrade other beautiful instruments, but the singing voice is the anthropological source for all things melodic. In the words of the founders of TC-Helicon,

"Everything we do is dedicated to this instrument (the singing voice). We envision a world where those who work with the voice in live and recording situations can bring out the very best from any performance, and where the possibilities of vocal craft are endless."

Our mission was galvanized by a simple question:

"Isn't it time that someone finally provided dedicated tools and solutions for voice?"

So what does this all mean to singers? It means that you should know there is a dedicated group of engineers, researchers and product specialist based in Victoria, BC,

Canada that spend every waking moment of their working lives listening, talking, singing, and interacting with singers and those who have passion for the singing voice. All this knowledge and experience is used to design products respecting and empowering the modern vocalist. Our products focus on removing barriers and inspiring creativity in performance. That's why our products range from near-field personal vocal monitors to floor-based vocal multi-effects pedals.

Enjoy.

The TC-Helicon Team
a TC Group company

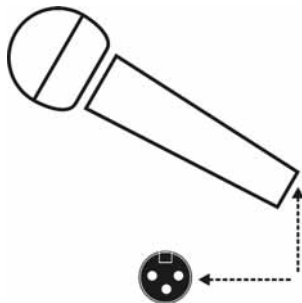
Quick Start

Step 1:

Connect your microphone to a mic cable

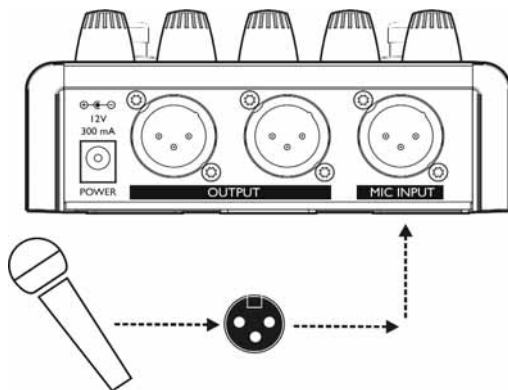
NOTE:

Make sure Correct is not powered.



Step 2:

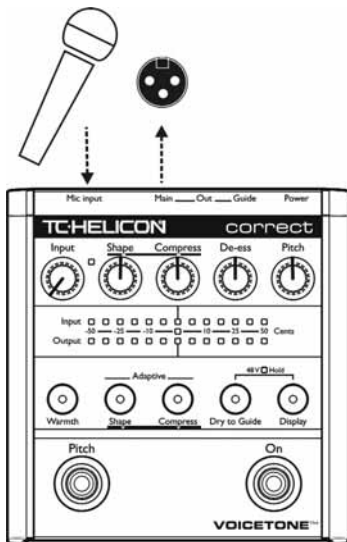
Connect the mic cable to the Mic Input on Correct.



Quick Start

Step 3:

Connect a mic cable to the Main Output of Correct.

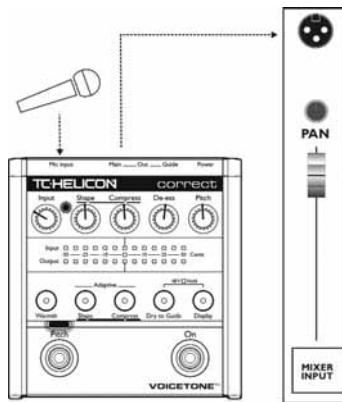


Step 4:

Connect the mic cable from Correct to a mic input on your sound system.

NOTE:

At this point it would be best to turn the gain and/or volume on your sound system's mic input to off.



Quick Start

Step 5:

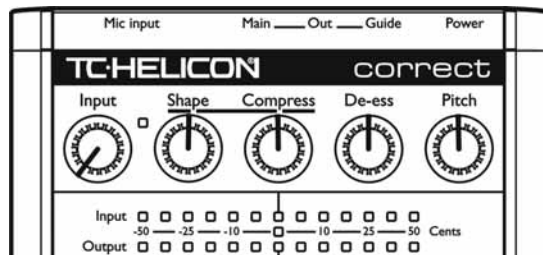
Set all EQ and/or compression on your sound system mic channel to off, or unity (middle position - no boost or cut).

NOTE:

Correct is going to supply the EQ and compression for your voice automatically. After it has been turned on for your voice, a live sound engineer can decide if they want to do any further processing. But know that for the vast majority of the time, there is no need for extra EQ or compression.

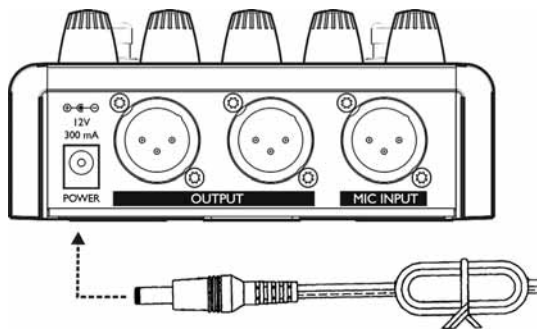
Step 6:

Turn the Input Knob fully left and set the last four knobs on Correct to their default position as indicated.



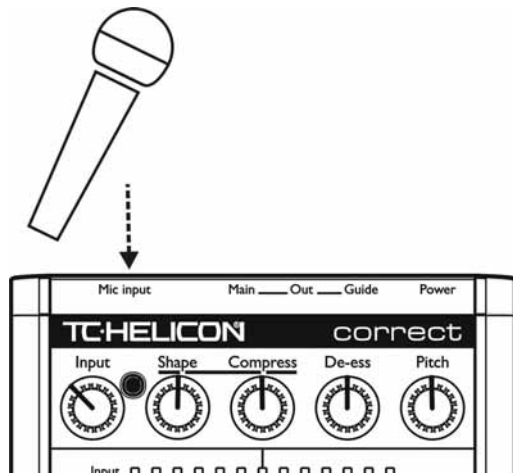
Step 7:

Connect Correct's power adapter to main power and to the Power Input on Correct.



Step 8:

While singing through your microphone, turn the Input Knob to the right until the Input Light turns *green*, sometimes *orange* on louder parts, but never *red*.



Quick Start

Step 9:

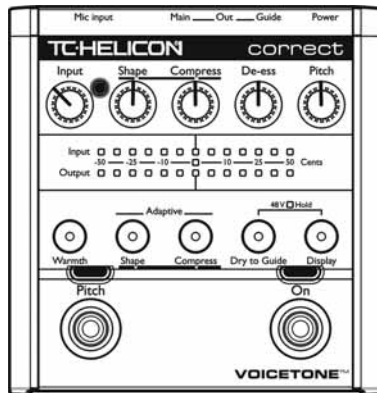
Raise the gain and/or volume on your sound system mic input channel and master volume until you hear a good level from your vocals.



Step 10:

You're ready to hear Correct on your voice.

- Turn the Live Engineer effects *on* or *off* with the Right Footswitch
- Turn the pitch correction effect *on* or *off* with the Left Footswitch



Step 11:

Here are some quick tips on understanding what Correct will do for your live vocal sound.

Live Engineer (LE effects): *On*

Regardless of your microphone, mic technique or whether you are a Bass or Soprano, the LE effects will optimize the balance of low and high frequencies and smooth the loud and soft parts of your singing to make you sound your best. Your sound will be clear and defined and will fit well into your mix.

Pitch Correction effect: *On*

Singing with the pitch correction effect can ensure that your vocal is on pitch. You'll hear the pitch corrected version of your voice that will act as a reference so you can self adjust your pitch to be right on key.

Using Two VoiceTone Pedals

You can use two VoiceTone pedals in series. For example, a great combination is to have VoiceTone Correct feeding a VoiceTone Create pedal. Generally, Correct should be the first device in the chain.

Step 1:

Follow the Quick Start guide for both VoiceTone Pedals.

Step 2:

Instead of connecting your first VoiceTone pedal to the PA, connect its mono output to the mic input on Create.

Step 3:

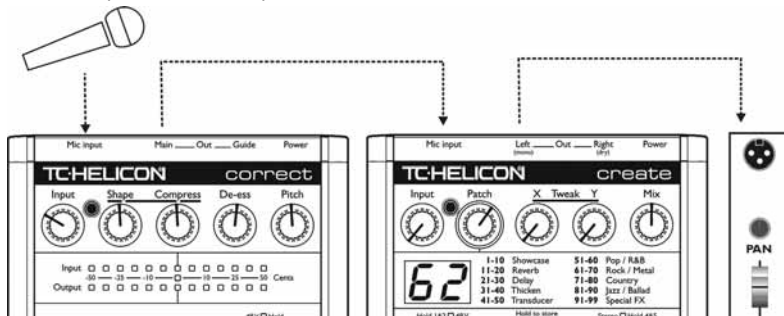
Connect the second VoiceTone pedal, in this case Create to the PA.

Step 4:

Set VoiceTone Create's Input Knob fully left.

Step 5:

Use the first pedal's Input Knob to set the microphone gain.



Front & Back Panel Descriptions

1. Guide Output

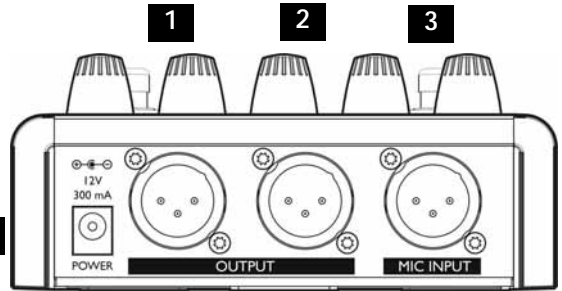
Alternate output with full time pitch correction when it's only desired in stage monitors. Diagram below shows possible routings

2. Main Output

Typical output for use with sound system. Diagram below shows possible routings.

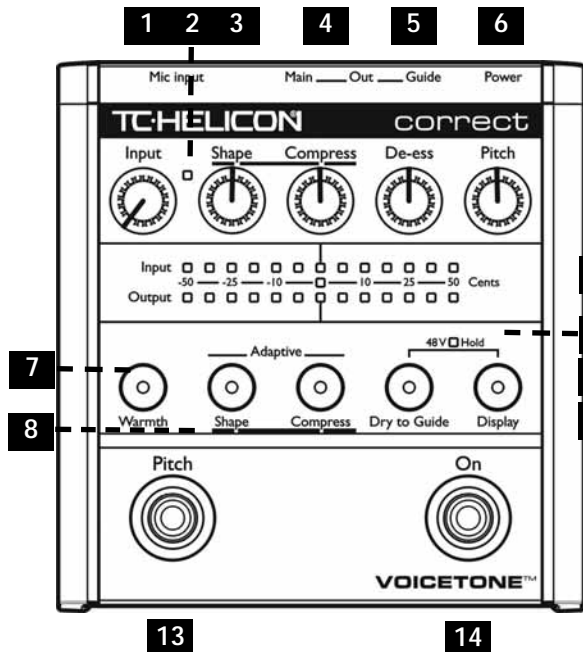
3. Mic Input

Microphone connection



PITCH ENABLED	LE EFFECTS ENABLED	MAIN OUTPUT	GUIDE OUTPUT
No	No	Dry	Pitch
Yes	No	Dry	Pitch
Yes	Yes	LE Effects + Pitch	LE Effects + Pitch
No	Yes	LE Effects	LE Effects + Pitch

Front & Back Panel Descriptions



1. Input Knob

Controls the microphone pre-amplifier gain. Correct can accept dynamic or condenser microphones.

2. Input Light

Indicates the input level of the microphone. Flashing *green*, sometimes *orange* is good. Flashing *red* is clipping, which is not good.

3. Shape Knob

Controls the amount of Shape EQ on the voice. 12 o'clock is the *default* position, full left is *off*.

4. Compress Knob

Controls the amount of compression on the voice. 12 o'clock is the *default* position, full left is *off*.

5. De-ess Knob

Controls the amount of de-essing on the voice. 12 o'clock is the *default* position, full left is *off*.

Front & Back Panel Descriptions

6. Pitch Knob

Controls the amount of pitch correction effect on the voice. 12 o'clock is *default* position, full left is *off*.

7. Warmth Button

Enables the Warmth EQ.

8. Adaptive Shape & Compress Buttons

Switch the Shape and Compress effects between *adaptive* and *manual*.

9. Pitch Display

Displays your relative intonation. The top bar shows your input pitch, the bottom bar shows your corrected pitch.

10. Phantom Power Light

Indicates status of +48V phantom power.

11. Dry to Guide Button

When enabled, the Guide Output will feature your pitch corrected voice in parallel with your natural voice. This can make it easier to hear the pitch correction effect in high level situations.

12. Display Button

Turns the Pitch Display *on/off*

13. Left Footswitch

Turns the pitch correction effect *on/off*.

14. Right Footswitch

Turns all effects off in the Main Output of Correct (LE Effects and pitch correction).

Setup Configurations

Phantom Power

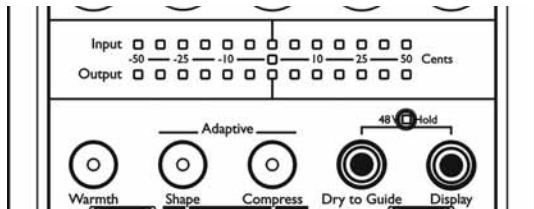
Before using any setup configuration, determine the type of microphone you are using:

Dynamic microphone: phantom power *off*.

Condenser microphone: phantom power *on*.

Enabling Phantom Power:

1. Confirm that your sound system master level is off.
2. Connect Correct's power adapter to main power and to the Power Input on Correct.
3. Press and hold Dry to Guide Button and Display Button simultaneously until the Phantom Power Light comes on. To turn phantom power off, repeat this step.



NOTE:

Set your sound system level to off when you are turning phantom power on/off as it can create a "pop" sound in your speakers.

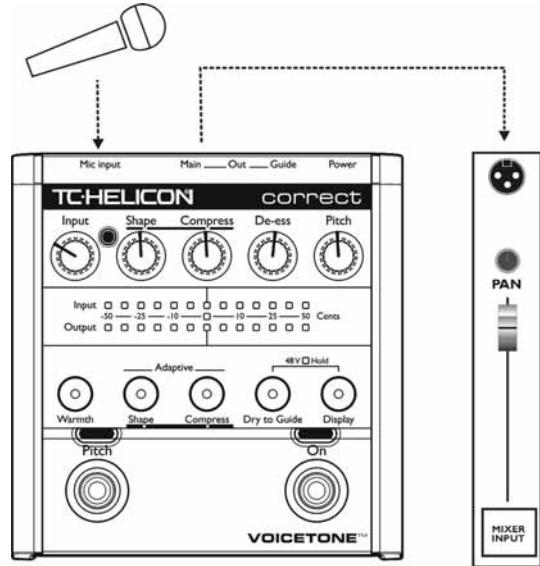
Setup Configurations

Standard Setup

The standard setup for VoiceTone Correct couldn't be easier - put Correct between your microphone and your mic input on your sound system. In this configuration only Main Output is used.

Connecting and Enabling for Standard Setup:

1. Connect your microphone to Correct's Mic Input.
2. Connect to your sound system as in diagram on this page. Main Output to mic input channel on your sound system.
3. Connect Correct's power adapter to main power and to the Power Input on Correct.



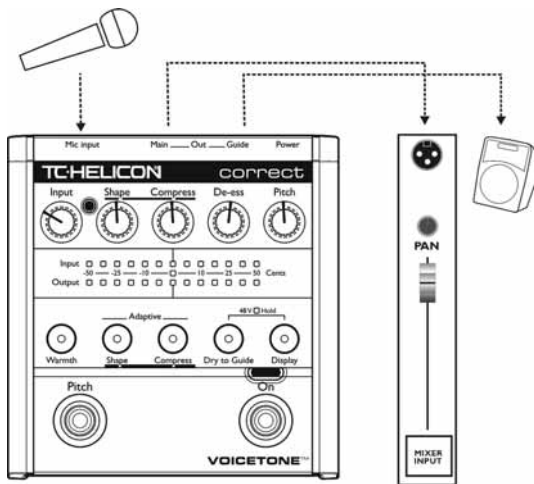
Setup Configurations

Main / Monitor Setup

While Correct's pitch correction is so transparent that your audience may never know you're using it, we suspect there'll always be purists who'd rather the audience hear only their raw and naked voice. Using the Guide Output, you can route your pitch corrected voice to your monitor mix, while your audience hears no correction effect from the Main Output.

Connecting and Enabling for Main/Monitor Setup:

1. Connect your microphone to Correct's Mic Input.
2. Connect to your sound system as in diagram: Main Output to your front-of-house sound system's mic input, and the Guide Output to your personal voice monitor, or monitor mix channel.
3. Connect Correct's power adapter to main power and to the Power Input on Correct.



Sound Engineer Setup

If you are in a situation where a live sound engineer mixes your vocal sound, there are some details you should provide to them when working with VoiceTone Correct:

1. Correct can supply phantom power if needed.
2. Sending external phantom power to Correct will not harm the pedal, but will produce a pop sound when power is turned on/off.
3. The Main Output is for front-of-house, the Guide Output is for monitors only if the singer wants to hear the pitch correction effect separately in the monitors.
4. Set your sound console's EQ, and any outboard dynamic processing gear to unity or bypass. Correct's Adaptive Shape EQ and compress features adapt to vocals over a short time. Correct is designed with the

assumption that the overall sound system has a flat response with no dynamics processing.

In the vast majority of cases, it won't be necessary to add any more EQ or compression. If extra processing is desired, only add additional EQ or compression after Correct has been running for thirty seconds, giving it enough time to dynamically adjust to the singer's voice.

Setup Configurations

Advanced Settings: Tuning Reference

If you know that the instruments you are singing with are not tuned to A440, or you hear that your corrected voice doesn't sound in tune, then you need to change Correct's tuning reference.

1. Press and hold the Warmth, Shape, and Compress Buttons simultaneously as you plug the power adapter into Correct. The Pitch On Light flashes to indicate you are ready to change the tuning reference.
2. Plug your mic into the Mic Input and set the level as in Step 8 of the Quick Start section.
3. Place the microphone near an instrument you know to be in tune (piano, guitar, bass, etc.), and play any monophonic pitch.
4. On the pitch display you'll see how far the instrument is out of tune from A440 on the top bar. As the note is held, the bottom bar will show the tuning reference

change to correct it. When the two bars match, press the Left Footswitch. Correct will enter regular mode with the new tuning reference.

NOTE:

The tuning reference is reset to A440 the next time power is removed from Correct.

Setup Configurations

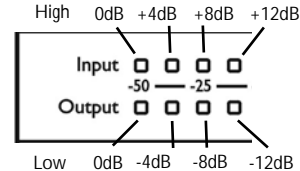
Advanced Settings: Manual Shape

The Shape EQ can either run in adaptive or manual mode. Adaptive mode will function the vast majority of the time to provide just the right amount of EQ for your voice. Manual mode can be useful for applying specialized EQ curves.

When the Shape Knob is turned fully left, there will be no boost or cut. When it's turned fully right, there will be a fixed amount of High Boost and Low Cut. The maximum amount of High Boost and Low Cut can be changed by following the steps below.

1. Press the Adaptive Shape Button to exit adaptive mode (the Shape Button's light should be off).
2. Set the Shape Knob to 12 o'clock.
3. Press and Hold the Warmth and Adaptive Shape buttons simultaneously for 2 seconds.

For the next 10 seconds, the pitch display meter will change to indicate manual EQ settings. Only the left-most four dots of the input and output display lines are used. The Input line indicates High Boost while the Output line indicates Low Cut.



4. To change the High Boost or Low Cut, first make sure you are viewing the manual settings using step 3. Press the Warmth Button to cycle through High Boost settings and the Shape Button to cycle through Low Cut settings. You'll see the High Boost dot or Low Cut dot moving from left to right as you press the respective button.

5. You can return to pitch view immediately by pressing and holding the Warmth and Adaptive Shape Buttons for 2 seconds. Alternatively, if you make no changes for 10 seconds, Correct will return to manual shape mode.

Using & Understanding the Effects

With all knobs set to 12 o'clock, Correct sounds great in almost every situation. We've gone through a lot of effort to see that it does.

The following sections in the manual will allow you to get the best from Correct, as well as learn more about what it takes to get a good vocal sound.

Using the Effects:

Use these sections to try out each effect in Correct to hear the different qualities they give to your live vocal performance. Connect Correct to your mic and the mixer and set the input level as described in the Quick Start section of the manual.

Understanding the Effects:

These sections discuss the major issues that can compromise live vocal sound, what traditional steps are taken to try to resolve the issues, and how Correct solves the issues with its researched algorithms.

Using the Effects: Adaptive EQ

Adaptive Shape EQ

Set up the product as follows:

Shape Control: *12 o'clock*

Compress Control: *off*

De-Ess: *off*

Pitch: *off*

Warmth Button: *off*

Adaptive Shape Button: *on*

Adaptive Compress Button: *on*

Now try singing a song into Correct. The Adaptive Shape EQ takes approximately 30 seconds to completely adapt to your voice. While you're singing press the Right Footswitch to turn the LE effects *on* and *off*.

What you'll hear

In most cases, depending on the microphone used and the timbre of your voice, the effect will make your voice slightly brighter and less boomy. If you are using a good

mic, have really good mic technique, and have an extremely well balanced timbre in your voice, you'll barely perceive any change to the sound at all. For the rest of us, you should hear a significant improvement in both intelligibility and quality.

In Adaptive mode, turning the control down from center will reduce the amount of Adaptive Shape EQ applied. Turning past centre will intelligently add high frequencies to make your voice sizzle with added presence, without making it sound tinny.

Warmth Button

While you're singing into Correct, try pressing the Warmth Button. Since PA systems can vary in the amount of low end they produce, this control adds some additional low end when you need it.

Manual Shape

Press the Adaptive Shape Button to disable the adaptive nature of the EQ. See Advance Settings: Manual Shape section for using this mode.

Using the Effects: Adaptive Compression

Adaptive Compression

Set up the product as follows:

Shape Control: *12 o'clock*

Compress Control: *12 o'clock*

De-Ess: *off*

Pitch: *off*

Warmth Button: *off*

Adaptive Shape Button: *on*

Adaptive Compress Button: *on*

Sing while turning the LE effects on and off.

What you'll hear

Adaptive Compression is a tricky effect to perceive, but will significantly help your voice stay balanced in a mix. It smoothes your dynamics by increasing low levels and decreasing the high levels of your voice. The more compression you apply by turning the knob right of centre, the smoother your voice will become. Without compression it's like singing directly into someone's ear.

If you're having trouble hearing the effect, try singing with an extreme dynamic range (very loud than suddenly very soft) with the compress knob set at full. Try toggling between LE effects *on* and *off* with the Right Footswitch.

You should be able to hear what it's doing now. Leaving the Compress control at 12 o'clock should give optimal results in most applications. Turning the Compress Knob down from center will reduce the effect.

Manual Compress

Press the Adaptive Compress Button to turn the adaptive nature of the compressor *off*. While set to manual, the compressor works like a soft knee compressor. To get the right sound you may need to adjust your input level and the Compress Knob.

Using the Effects: De-ess

De-ess

Set up the product as follows:

Shape Control: *12 o'clock*

Compress Control: *12 o'clock*

De-Ess: *12 o'clock*

Pitch: *off*

Warmth Button: *off*

Adaptive Shape Button: *on*

Adaptive Compress Button: *on*

Knob to add more sizzle to your voice with out making the ess sounds excessively loud.

Sing or say words with lots of S's like "necessary" or "sustenance" while turning the LE effects *on* and *off*.

What you'll hear

At the center position you may or may not notice the esses being reduced in level. With the LE effects on, sing an ESSSSS sound and try turning the De-ess control to maximum. Now you'll hear the effect. The center position results in a good balance of sibilance. With the control at the center position you can turn up the Shape

Using the Effects: Pitch Correction

Pitch Correction

Set up the product as follows:

Pitch: *12 o'clock*

Display Button: *on*

LE effect: *on*

Sing and toggle the Right Footswitch to turn pitch correction *on* and *off*.

What you'll hear

At this setting, Correct is optimized to produce transparent sounding pitch correction as well as create a comfortable pitch guide for you to sing with. The top bar of the Pitch Display shows how far your input pitch strays from its closest chromatic reference, while the lower bar shows how much Correct is pulling your pitch back in-tune. Try exaggerating the effect by turning the Pitch Knob fully right. This position is only useful as a special effect and to demonstrate what pitch correction can do. For natural pitch correction that's comfortable

to sing with, keep the control between 10 and 2 o'clock. When singing along with your corrected pitch, try to sing the pitch that you hear. This will result in you self-correcting your pitch.

Dry to Guide

Press the Dry to Guide Button to hear your uncorrected voice mixed with your pitch corrected voice in the Guide Output. This can make it easier to hear the pitch correction effect, especially in louder situations.

Display

Press the Display Button to enable and disable the Pitch Display. In rehearsal, coaching, or teaching, watching the Pitch Display can provide valuable feedback. The top bar shows your intonation. If the centre bar is lit, you are singing exactly in tune. If the meter goes right or left of centre, you are singing up to 50 cents sharp or flat of the the closest chromatic pitch. The bottom bar shows how much your voice is being corrected. If the display is distracting in live performance you can disable it.

Understanding Live Engineer Effects

What's the problem?

1. Dynamics

Vocals in music define the melody and the message in a song. In professional studio recordings, vocals are always clearly heard in the mix. In live situations, especially with full bands, the vocals often get lost.

The human voice is very dynamic, meaning there can be a very significant difference in volume between the loudest and softest a person can sing. It's typical for a singer's volume to vary by about 10dB. In terms of sound energy, this means a person's loud singing can be ten times louder than their soft signing. To get a good mix where the vocal never gets lost during low levels, it would be necessary to mix it such that the quietest parts of the vocal are heard. If this was done, the loud parts of the vocals would be excessively loud. As a result, without dynamics processing, vocals in live sound often "bounce" in and out of the mix.

2. EQ

If not treated properly, live vocals often sound:

- Muddy or woofy
- Tinny
- Lacking sizzle, presence or air.

These conditions have many contributing factors, including the singer's voice. Some singers have lots of bass in their voices (adds to muddiness) and some have lots of energy in the upper-mids (adds to tinniness). Muddiness also occurs as a result of the proximity effect of cardioid pattern microphones. This occurs when the microphone is positioned close to the sound source. The proximity effect can add as much as 12dB to the low end of a vocal sound. Another reason for muddiness is the fact that frequencies are less directional as they get lower. Low frequencies go everywhere while high frequencies just go where the speakers are pointed. This leads to far too much bass bouncing around the room.

Understanding Live Engineer Effects

The best we can do to optimize clarity and intelligibility while reducing muddiness is to intelligently limit low frequencies without making them sound thin.

A vocal running into a PA without EQ usually sounds quite dull. A sound engineer will often add high end to give sizzle to the vocal using a two or three band EQ. When you add a bit of high end with this type of EQ, instead of adding sizzle it actually adds "tin". With these types of EQs you need to really crank the high end before sizzle boost kicks in. Unfortunately this makes the overall vocal sound much too bright.

To get more sizzle on a voice, people often turn the high EQ past 3 o'clock, and then to compensate for the excessive brightness, they then turn up the bass. This will make the vocal sound somewhat spectrally balanced, but unnatural and lacking detail. As well, turning up the bass like this increases the low frequency energy of the vocals and makes them sound extremely muddy everywhere except directly in line with the PA speakers.

3. Excessive Sibilance

This is only a problem with some singers. It is when "ess", "ch", "sh" and "t" sounds are too loud compared with the overall vocal sound. With some singers this sibilance can seem to almost rip your head off. This natural sound of the singer coupled with the super bright breathy EQ of a lot of today's pop music makes the problem even more pronounced.

Understanding Live Engineer Effects

Current ways of solving the problems

1. Dynamics

Fixing the problem of a vocal bouncing in and out of a mix is usually done with something called compression. Compression reduces the dynamic range of the audio being processed. To make a compressor work optimally, you need to match its operating range to the dynamic range of the signal it's processing. In a musical performance you usually have varying dynamics. You'll have loud parts and quiet parts in the performance. If the compressor is set up to work with the loud part of a vocal performance, it won't do anything to the quiet parts. If it's set to work on the quiet parts, it will do way too much on the loud parts, usually making the vocals too quiet. For this reason, the only way to make compression work well is if you have an experienced live sound engineer monitoring the vocals at all times and constantly adjusting the settings.

2. EQ

Previously, the only real way to fix EQ problems on vocals is to have either out-board graphic or parametric EQs, or a high end mixing console with multi-band parametric EQ, and a good engineer who really knows how to use it. It's simply not possible to do an optimal job of EQ with just a standard mixing console, regardless of how good the sound engineer is.

3. Sibilance

The best way to reduce unwanted sibilance is to buy an adaptive de-esser. If you just get a regular De-esser, you'll need a sound engineer to go along with it to make sure it doesn't make you sound unnatural on loud passages.

Understanding Live Engineer Effects

How Correct Solves the problems

1. Dynamics

Correct features a new kind of compression; Adaptive Compression (Dynamic Smoothing™). This processing does exactly what the name implies. It has been designed to work optimally with a single voice input. Over the course of a phrase, Adaptive Compression will reduce your voice's variance in levels. Whether your performance is loud or soft, Correct will work to make your vocals sit well in the mix and not bounce in and out. On Correct all you need to do is set the Compress Knob at its center position and make sure the Adaptive Compress light is lit.

2. EQ

To solve this problem, Correct employs an Adaptive Shape EQ that analyzes the input vocal and applies an optimal digital EQ. To develop this technology, countless pristine studio vocal recordings were analyzed. From these analyses an algorithm was developed to

characterize the input vocal and apply the appropriate EQ to approximately match the studio recordings. With Correct, a male vocalist with a deep voice and a very close mic technique will get the EQ needed, while a female vocalist with a high voice, and farther mic technique would get very different EQ, but again, exactly as needed. The beauty of this is that you can plug in your mic, tell the sound engineer to set your EQ to flat, and just perform. The resulting EQ will probably be better than anything you've ever had. Simply set the Shape Knob to 12 o'clock, and make sure the Adaptive Shape light is lit.

3. Sibilance

We've put an adaptive De-esser in Correct that separately looks at the level of the overall voice and makes sure the level of sibilance isn't too high. If it is, our adaptive de-esser will reduce the sibilance level. Setting the De-ess Knob to 12 o'clock will ensure that your sibilance is in check.

Understanding Pitch Correction

Getting comfortable with correction

No one likes the idea of needing pitch correction. Everyone would much rather just sing in-tune. Correct helps you do this. The reality is that no one ever sings perfectly on pitch. This is not really a problem since it isn't necessary to be perfectly in pitch to have a good sounding vocal. In fact, natural pitch variances help make singers who they are. Sounding like a robot is not the goal. The goal is to sing in-tune at the end of a long set, when you're tired, or just having a bad day. The goal is to constantly improve your singing.

VoiceTone Correct can help.

The reasons for singing out of pitch are both a function of physiology and psychology. A person's ability to hit a desired pitch is affected by the way they hear the music around them, coupled with their physical ability to reproduce the pitch they want to sing. Pitch correction most often occurs in the recording studio where the pitch is corrected after a vocal is recorded.

When pitch correction is used live, the sound engineer usually applies the correction to the mains and not the monitors. In both cases, the artist doesn't hear the corrected signal while they are singing. We've designed Correct to be used differently. With Correct the singer hears the corrected signal while they are singing. It becomes a guide track. It's like being in a vocal duo and singing unison with someone who sings in perfect pitch.

What happens is that the singer automatically self-corrects their own voice to match Correct's pitch corrected output. Sometimes, when pitch correction is only applied at the mains, and a singer is singing flat, he or she will keep singing flat. When using the Guide Output on Correct, the singer immediately hears as they stray out of tune, and can immediately compensate.

Even great singers, if they are not feeling well, or have over-worked their voices, sometimes sing out of pitch. A common tendency when this happens is for the singer to tense up, which creates even more vocal strain. Using Correct tends to relax people in these situations. Good

Understand Pitch Correction

singers will often use Correct when they are having trouble.

When pitch correction is only applied in the mains, what often happens is that if the singer goes really off pitch, the pitch corrector corrects to the wrong pitch. This means that the pitch is actually more out than if it hadn't been corrected in the first place. This is what has given pitch correction a deservedly bad name for use in live performance. By monitoring the Guide Output with Correct, these problems completely disappear.

After using our pitch correction live for a while, some users who admittedly had pitch problems reported that their pitch had improved, even without using pitch correction.

FAQ & Troubleshooting:

1. I'm not getting any sound out of Correct

- a. Confirm the power adapter is properly connected by pressing the Right Footswitch *on/off*, and confirming the Correct On Light goes *on/off*.
- b. Confirm your microphone is connected properly by talking through the microphone and looking for the Input Light to light *green* or *orange*. If the Input Light is going on, check your connections and settings on your sound system. If you have a condenser microphone, ensure phantom power is enabled.

2. I'm not hearing any effect from Correct, just my dry voice

- a. If you're using the Main Output, press the Right Footswitch until the On Light activates. If there is still no effect, ensure the Shape, Compress, and De-ess knobs are at 12 o'clock. If you still hear no effect, try applying

more of each effect by turning the Shape, Compress and De-ess Knobs further to the right.

- b. If you're using the the Guide Output check to make sure the Pitch Knob is at 12 o'clock. If you still hear no effect, your voice may be close enough in-tune that pitch correction at the 12 o'clock setting has little effect. Try turning the Pitch Knob further to the right to hear more aggressive pitch correction.

3. I can't turn pitch correction off.

- a. Check if you are using the Guide Output. If so, the only way to turn the pitch correction off is by turning the Pitch Knob fully left.

- b. If you are using the Main Output turn pitch correction *off* by toggling the Left Footswitch. Alternatively, you can also turn the Pitch Knob fully left. However, this will also turn the pitch correction off in the Guide Output.

FAQ & Troubleshooting

4. My corrected voice sounds out of tune
 - a. It's possible that the tuning reference of the instruments you are singing with are not tuned to the default setting of A440. Please see the Setup Configuration, Advance Settings: Tuning Reference section to change the tuning reference.

Specifications

Analog Inputs

- ◆ Connectors Balanced XLR, Input Impedance 1kOhm
- ◆ Mic Input Sensitivity @ 0dBFS -44dBu to +2dBu
- ◆ Mic Input Sensitivity @ 12dB headroom -56dBu to -10dBu
- ◆ EIN -128dBu @ max. mic amp gain, $R_g = 150 \text{ Ohm}$

Analog Outputs

- ◆ Connectors Balanced XLR
- ◆ Output Impedance 40 Ohm
- ◆ Output Level @ 0dBFS +2dBu

Input to Output Analog Audio Performance

- ◆ Dynamic Range, Mic. @ Min gain >108dB, 20 Hz - 20kHz *A-weighted
- ◆ Dynamic Range, Mic. @ -18dBu sensitivity > 104dB, 20hz - 20kHz*
- ◆ THD+ Noise, Mic. @ Min gain <-90dB
- ◆ Frequency Response, max gain -1.5dB @ 40 Hz, +0/-0.3 dB (200Hz to 20 kHz)

Conversion Characteristics

- ◆ Sample Rate 48 kHz, Converter AKM AK4620B
- ◆ AD / DA Conversion 24 bit, 128x oversampling bitstream

EMC & Safety

- ◆ Complies with EN 55103-1 and EN 55103-2 FCC part 15, Class B, CISPR 22, Class B
- ◆ Certified to IEC 65, EN 60065, UL6500 and CSA E60065 CSA FILE #LR108093

Environment

- ◆ Operating Temperature 32° F to 122° F (0° C to 50° C)
- ◆ Storage Temperature -22° F to 167° F (-30° C to 70° C)
- ◆ Humidity Max. 90 % non-condensing

Supplementary

- ◆ Dimensions 130mm x 132mm x 41mm (5" x 5.25" x 1.5")
- Weight 1.5 lb. (0.72 kg)
- Warranty Parts and labor 1 year