Cali76

• FET COMPRESSOR •

OWNER'S MANUAL

Version 1.0

ORIGIN EFFECTS

www.origineffects.com

PLEASE READ ALL INSTRUCTIONS, PAY ATTENTION TO SAFETY WARNINGS.

IMPORTANT:

This product is designed to be powered from a 9VDC, >200mA power supply with 2.1mm centre-negative barrel connector.

Contents

Introducing the CALI76 FET Compressor:

The Cali76 FET Compressor is a studio-grade compressor pedal inspired by the world-famous Urei® 1176® studio compressor. The 1176® has been heard all over the best studio recordings ever since its release in the late 1960s, and the Cali76 FET Compressor makes these industry-standard tones available to the modern guitarist using all-analogue circuitry.

With a full complement of studio-style controls and the ability dial in parallel compression, the Cali76 FET Compressor does it all, from transparent transient control to flat-out limiting and monster sustain. A 10-LED bar graph meter allows accurate monitoring of gain reduction and the 9VDC input voltage is increased internally, resulting in exceptional clarity and enough headroom for use with line level signals.

Origin Effects has a strong reputation among guitarists and bassists, with years of experience making the best compressor pedals available. The Cali76 FET Compressor is the latest in this lineage, incorporating a number of refinements, including tweaks to the dynamic response that bring it closer to the now collectible “large-format” Cali76 pedals that put Origin Effects on the map.

Key Features:

- All-analogue signal path
- Ultra-fast FET compression
- 1176®-inspired circuitry
- Dedicated Attack, Release and Ratio controls
- Dry Blend control for parallel compression
- 10-LED bar graph gain reduction meter
- Voltage increased internally to 24V for high headroom
- Optimised for guitar, compatable with line-level signals
- Improved dynamic response matches “large format” Cali76
- High-quality buffered bypass
- Premium components throughout
- Designed and built in England

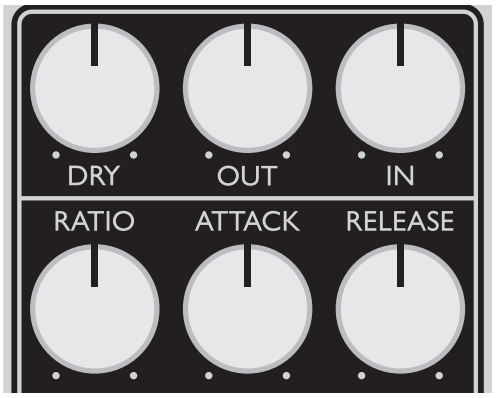
Connecting the CALI76 FET Compressor:

9VDC: Connect a 9VDC 2.1mm centre-negative mains power adaptor (minimum 200mA). Voltage is increased internally for additional headroom.

INSTR: Connect to your guitar or other instrument.

AMP: Connect to your amplifier or other effects pedals.

Controls:



IN: This control sets the signal level into the compression circuit, with higher levels resulting in more compression. Like an 1176®, The Cali76 FET Compressor has a fixed threshold (the level above which compression is applied). Increasing the IN control pushes more of your signal over that threshold, meaning that a greater portion of the signal is compressed. Increasing the IN control will also make the signal louder, so this should be balanced with the OUT control.

OUT: This control determines the level of the compressed signal present at the pedal's output. This control will need to be increased when using lower settings on the IN knob and vice versa. For most predictable results, compare your compressed signal to the bypass tone and adjust the OUT knob so that the levels match – or turn it up to boost your amp!

DRY: This control varies the amount of dry, uncompressed signal present at the pedal's output, mixing the dry signal in parallel with the compressed signal. Parallel compression is a popular studio technique, which can be achieved on your pedalboard using the DRY control. Adding some uncompressed signal in parallel can restore some natural dynamics and clarity to heavily compressed sounds. Unity gain can be found at approximately 2 o'clock on the DRY knob, while turning this control fully clockwise will boost the signal by 9dB.

Controls (continued):

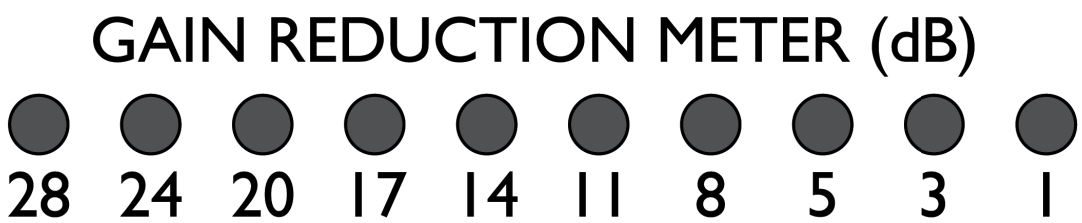
NOTE: The DRY control and OUT control are separate level controls, so you will need to decrease the OUT control as you increase the DRY control to maintain the same overall volume.

RATIO: This control adjusts the ratio of the compression. In other words, how much gain reduction is applied to signals that exceed the fixed threshold of the compressor. This control ranges from a ratio of 4:1 all the way to 20:1. Generally, higher ratios are used when less of the signal is exceeding the threshold (lower settings on the IN control). Setting the RATIO high and the IN control low will mean just the peaks of the signal are clamped down quite severely. High IN settings with lower ratios result in a gentle fattening of the whole signal.

ATTACK: This control sets how quickly the compressor starts acting after the signal exceeds the threshold. With a guitar signal, the first part of the note is the loudest part, so the signal will exceed the threshold almost instantaneously. A longer attack time allows the initial pick attack through before the rest of the signal is compressed, creating an exaggerated percussive effect. Fast attack times will reduce pick attack and create very smooth, even dynamics. The ATTACK control's fastest setting is fully clockwise. Attack times range from 0.2 ms to 4.8 ms.

RELEASE: This control sets how quickly the compressor stops acting after the signal begins to drop in level. Longer release times will result in increased sustain, as the tail of the note continues to be compressed. Shorter release times will allow the compressor to recover between notes, giving a more lively and natural dynamic response. The RELEASE control's fastest setting is fully clockwise. Release times range from 69.5 ms to 398 ms.

Metering: The Cali76 FET Compressor is equipped with a 10-LED bar graph gain reduction meter, giving an accurate visual indication of what the compression circuit is doing. Once the signal exceeds the fixed threshold, the LEDs will begin to illuminate. Marked according to dB of gain reduction, the gain reduction meter shows not only how severely the signal peaks are being compressed, but also how fast the compressor is acting.



ON / OFF Operation:

Bypass Switch: This switch toggles the pedal on and off. The Cali76 FET Compressor uses buffered bypass and electronic switching for low-noise operation. When powered up, the pedal will automatically default to being switched on. This is so that it can easily be used with switching systems and rack systems, where pedals need to be left active and may be inaccessible.

NOTE: It is good practice to always turn on your pedalboard first, before turning your amp on or connecting any DI outputs, as some pedals can produce a "pop" noise when powered on.

Compressors & Noise:

It is important to take care when dialling in your compressor to guarantee the best noise performance. Because compressors increase the level of quiet signals relative to peak level, they will increase any background noise from devices placed before them, such as overdrive or distortion pedals. For this reason, most players tend to place their compressor near the beginning of the chain, with drive pedals placed afterwards so that any background noise is not exaggerated by the compressor.

Compressors will also increase the level of hum picked up by single coil pickups. This can be reduced by using more subtle compression settings.

Signal Chain Tips:

Minimising noise is one important reason to use a compressor near the start of your signal chain, so that it does not amplify noise from other pedals. Another reason to use a compressor near the start of your chain is so that it can easily respond to the natural dynamics of your instrument. Running your compressor first in the chain means that it can work with the raw signal from your guitar, shaping the dynamics exactly as you want before passing this signal on to other pedals.

This is more difficult if using a compressor after overdrive or distortion, as these effects have their own effect on dynamics which prevents the compressor from shaping transients and sustain. A funk or country player would place their compressor first, as clean tones are the priority, and the compression effect needs to be obvious. This placement is also useful when adding unnatural sustain without needing extra overdrive, as is popular for slide guitar tones.

However, some players like to use compression after overdrive or distortion. This signal chain order allows the guitar to interact naturally with the overdrive effect. The player is then able to clean up their tone from the guitar volume knob, while the compressor keeps the overall volume constant. This placement is more likely to be favoured by rock and blues players, who favour edge-of-breakup and overdriven tones with less obvious compression. Using a compressor near the end of the chain can also add a studio-style gloss to your tone, helping it to sit well in the mix.

To keep noise to a minimum and to preserve some of the natural dynamics of the instrument, more subtle compression settings are best when using the compressor after overdrive or distortion.

NOTE: The Cali76 FET Compressor uses buffered bypass to achieve consistent tone and low-noise operation. Any pedals that do not work well after a buffer should be placed before the Cali76, such as some vintage Fuzz and Wah pedals.

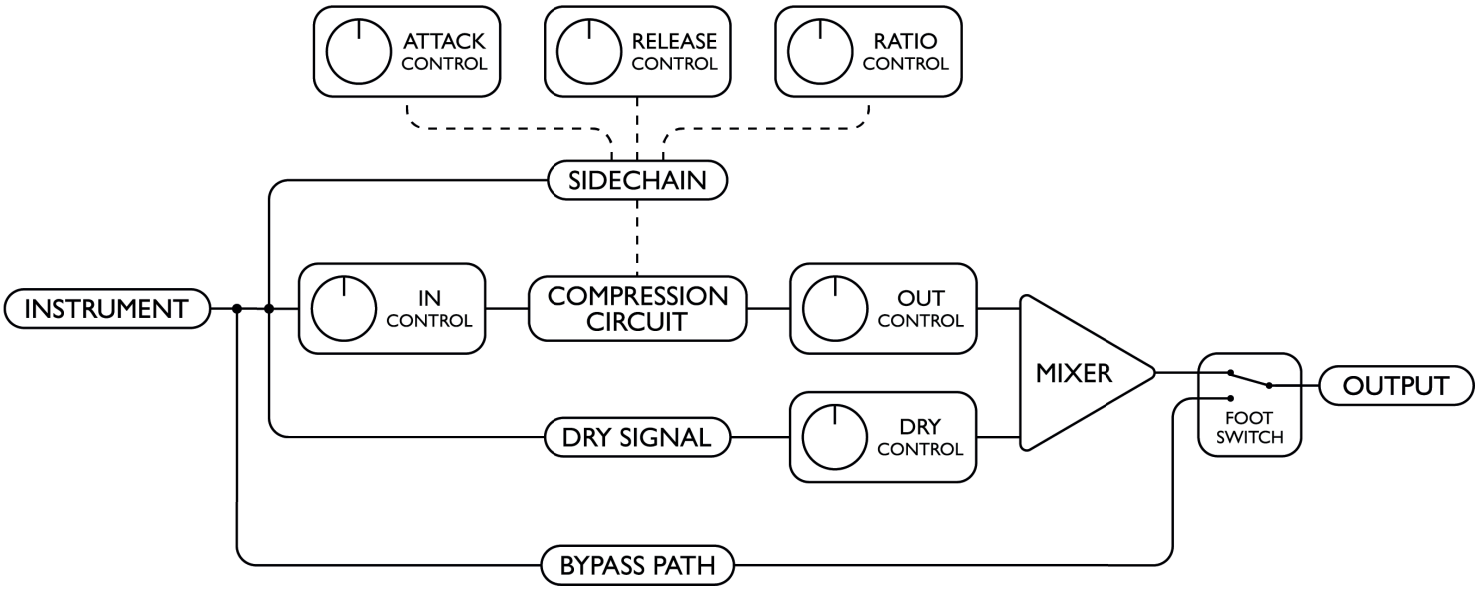
Line Level Signals:

The Cali76 FET Compressor can also be used with line level signals. The 9V input voltage is increased internally to 24V, resulting in impressive headroom. This means that the Cali76 FET Compressor can be used with keyboards, drum machines and as studio outboard. It can be connected in the insert of a mixing console or used for re-amping tracks in the studio.

Although the pedal has plenty of headroom for dealing with higher signal levels, the circuitry is still primarily designed for use with guitar signals, so it may be necessary to lower the IN control to accommodate line level signals and avoid excessive compression. This will ensure that the right amount of signal is exceeding the fixed threshold, and this can be monitored using the 10-LED gain reduction meter.

Routing Diagram:

The diagram below shows the signal routing within the Cali76 FET Compressor.



Sample Settings

DYNAMIC CONTROL
A fast attack time allows the compressor to catch transients early on. A slow release stops the compressor from pumping. These settings sound natural and balance playing dynamics.

PERCUSSIVE & LIVELY
Using a slower attack time allows the compressor to accentuate the start of any note. A fast release allows the compressor to recover between notes so that phrases sound more percussive.

BIG PARALLEL
Parallel compression is a popular studio-derived technique that blends dry signal in parallel with a heavily compressed tone. Enhance pick attack and natural dynamics by balancing the OUT and DRY controls, while retaining the presence and character of super-squashed FET compression.

TRANSIENT SHAPING
This subtle setting gently evens out the dynamics of your signal, without sounding too obvious or altering playing feel. A high IN setting and a low RATIO, combine with a moderate ATTACK time, make sure that your guitar sits just right in the mix. Great for clean rhythm tones!

Appendix A: Physical Specification

Measurement	Unboxed	Boxed
Weight	553g (19.5oz)	661g (23.3oz)
Length	124mm (4.8”)	135mm (5.3”)
Depth	64mm (2.5”)	90mm (3.5”)
Height	58mm (2.3”)	85mm (3.3”)

Appendix B: Performance Specification

Measurement	Value
Input impedance	1M Ω
Output impedance	1k Ω
Current draw	200mA
Power supply requirements	9VDC 2.1mm centre negative connector

Appendix C: Connector Pin Out

Instrument & Amplifier 1/4” TS Sockets:

Pin	Description
Tip	Signal
Sleeve	Ground

Appendix D: Safety Notices

General Safety

Keep these instructions and heed all warnings. Do not use this apparatus near water. Clean only with a dry cloth. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat. Refer all servicing to qualified service personnel.

When using an external power supply, use only attachments/accessories specified by Origin Effects. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus. Do not defeat the safety purpose of the polarised or grounding-type plug. A polarised plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet. Unplug this apparatus during lightning storms or when unused for long periods of time.

CAUTION! No user-servicable parts inside. In the event of damage to the unit, service or repair must be done by qualified service personnel only.

CE

This Product is CE compliant.

The crossed out wheely bin symbol indicates this product is classified as Waste Electrical and Electronic Equipment (WEEE) in the European Union and should not be discarded with household waste. Other territories may vary. Contact your local authority or Origin Effects for more information.

RoHS

This product conforms to the European Union's directive 2011/EU on Restrictions of Hazardous Substances (RoHS).

WARNING: This product can expose you to chemicals including nickel, which is known to the State of California to cause cancer. For more information, go to **www.P65Warnings.ca.gov**

Appendix E: Warranty

This product is covered by a 2-year manufacturer's warranty from the date of purchase. This applies only to original purchasers who have bought their product from an authorised Origin Effects dealer or directly from Origin Effects.

All returns or servicing should be arranged through the original dealer. Proof of original ownership may be required in the form of a purchase receipt.

For full warranty details visit www.origineffects.com/warranty.