Cali76

• FET COMPRESSOR •

OWNER'S MANUAL

Version 2.2

ORIGIN EFFECTS

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Safety Notices:

General Information:

This document contains important information for the safe operation of the product. Read and follow the safety instructions and all other guidance. Our products and documentation are subject to a process of continuous development. They are therefore subject to change. Please refer to the latest version of the documentation, which is available on our website https://origineffects.com/manuals/

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, stoves or other apparatus (including amplifiers) that produce heat. Refer all servicing to qualified service personnel.

NOTICE!
Damage may be caused to the device should it be tampered with!
No user-serviceable parts inside. In the event of damage to the unit, service or repair must be done by qualified service personnel only.

Symbols and signal words:

In this section you will find an overview of the meaning of symbols and signal words that are used in this document.

Signal Word	Meaning
DANGER!	This combination of symbol and signal word indicates a dangerous situation that could result in serious injury or even death if it is not avoided.
WARNING!	This combination of symbol and signal word indicates a potentially dangerous situation that could result in serious injury or even death if it is not avoided.
NOTICE!	This combination of symbol and signal word indicates a potentially dangerous situation that could result in material and/or environmental damage if it is not avoided.

Warning Symbol	Meaning
	Warning - dangerous situation

Safety Instructions:

Intended use:

This device is intended for use as effects pedal for sound processing of signals from musical instruments with electromagnetic pickups. Any other use or use under other operating conditions is considered to be improper and may result in personal injury or property damage. No liability will be assumed for damages resulting from improper use.

Safety:

DANGER!
Risk of injury and choking hazard for children!
Children can suffocate on packaging material and small parts. Never allow children to play with packaging material or the device. Always store packaging material out of the reach of babies and small children. Always dispose of packaging material properly when it is not in use. Never allow children to use the device without supervision. Keep small parts away from children and make sure that the device does not shed any small parts (such as knobs, rubber feet) that children could play with.

WARNING!
Possible hearing damage due to high volumes on speakers, headphones, bass & guitar amplifiers!
With loudspeakers or headphones connected, the device can produce volume levels that may cause temporary or permanent hearing impairment. Over an extended period of time, even levels that seem to be uncritical can cause hearing damage. Do not operate the device permanently at a high volume level. Decrease the volume level immediately if you experience ringing in your ears or hearing impairment and seek medical advice.

NOTICE!
Damage to device if powered incorrectly!
This product is designed to be powered from a 9VDC, >200mA power supply with 2.1mm centre-negative barrel connector. Use of an incorrectly rated power supply could result in damage to the pedal and the power supply.

NOTICE!
Possible staining due from rubber feet!
The plasticiser used in the manufacture of the rubber feet on this product may react with floor coatings and result in permanent dark stains after some time. If necessary, use a suitable mat to prevent direct contact between the device's rubber feet and the floor.

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 to 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:

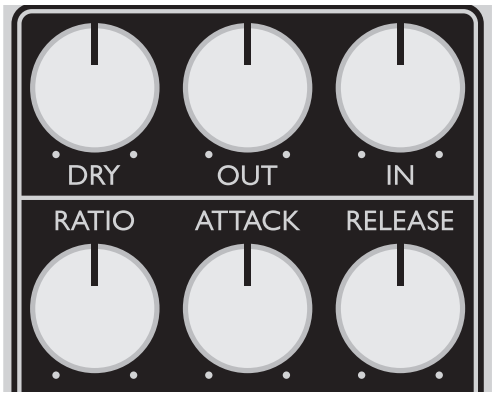
9VDC: Connect a 9VDC 2.1mm centre-negative mains power adaptor (minimum 200mA). Voltage is increased internally for additional headroom.

> **!** **NOTICE!**
> **Damage to device if powered incorrectly!**
> This product is designed to be powered from a 9VDC, >200mA power supply with 2.1mm centre-negative barrel connector. Use of an incorrectly rated power supply could result in damage to the pedal and the power supply.

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!

Controls (continued):

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.

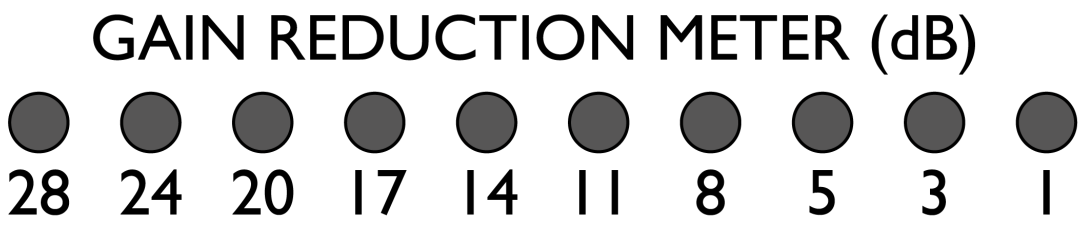
NOTE: The DRY control and OUT control are separate level controls, so you will need to decrease the OUT control as you increase the DRY control to maintain the same overall volume.

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.

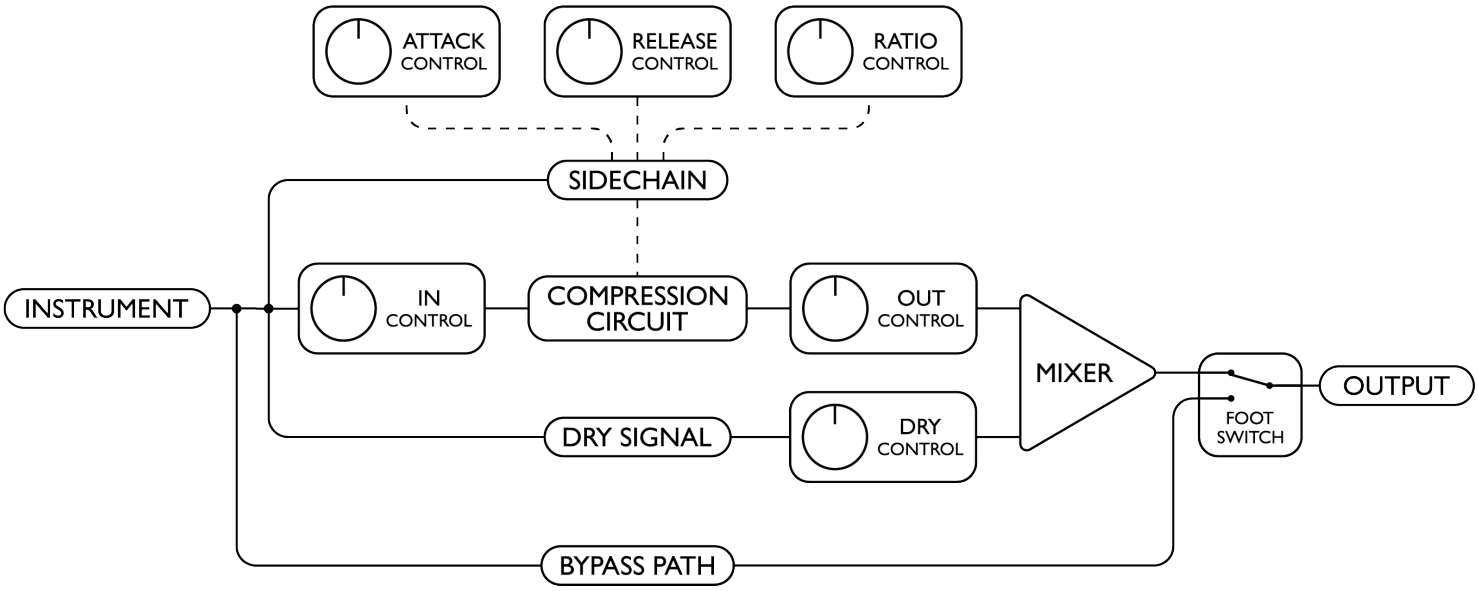
Line Level Signals:

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

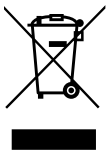
Measurement	Value
Input impedance	1M Ω
Output impedance	1k Ω
Current draw	200mA
Power supply requirements	9VDC 2.1mm centre negative connector

Appendix C: Connector Pin Out

Instrument & Amplifier 1/4” TS Sockets:

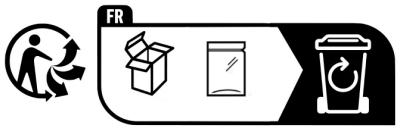
Pin	Description
Tip	Signal
Sleeve	Ground

Appendix D: Environmental Information



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.

The packing materials for this product are recyclable. Do not dispose of these materials with your normal household waste. Please refer to the symbols on the packaging for recycling information. Contact your local authority for further guidance on recycle in your region.



Les matériaux d'emballage sont recyclables.

Points de collecte sur www.quefairemesdechet.fr
Privilégiez la réparation ou le don de votre appareil !

Appendix E: Directives & Regulations

This product complies with Electromagnetic Compatibility (EMC) directive 2014/30/EU.

Origin Effects Ltd has conformed where applicable to European Union's Directive 2011/65/EU on Restrictions of Hazardous Substances (RoHS) as well as the following sections of California law which refer to RoHS, namely sections 25214.10, 25214.10.2, and 58012, Health and Safety Code; Section 42475.2, Public Resources Code.

This equipment has been tested and found to comply with the limits for a Class B device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Appendix F: 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.