ORIGIN EFFECTS

Cali76



CALI76 COMPACT BASS

The Cali76 Compact Bass is an 1176-style studio-grade FET compressor, complete with dedicated controls for parallel compression and sidechain filtering. We've taken everything that was great about the original Cali76, added new features optimised for bass and compressed the whole lot down into a pedalboard-friendly package!

A single combined Attack/Release control provides a continuous sweep of useful settings while avoiding combinations that can result in ugly distortion artefacts creeping into the lower registers. Meanwhile, the elegant jewel lamp functions as a three-colour gain reduction meter, providing vital and intuitive feedback to the player.

In addition to this pedal's low-noise circuitry and fast, musical FET response, two special features lift the Cali76 Compact Bass above the competition.

The first is the Dry Blend control, which lets you mix your dry signal back in with your compressed signal for true parallel compression, an indispensable studio recording technique. By combining the compressed and dry signals, you get all of the tone thickening and increased sensitivity of the Cali76's 1176-style compression, while retaining the natural attack and dynamic expression in your playing. It's the ultimate in transparent compression – both fat and punchy at the same time.

This pedal's second secret weapon is also culled from the studio engineer's handbook. The Cali76 Compact Bass allows you to rein in the amount of compression applied to the lowest frequencies via a variable-frequency high-pass filter placed in the compressor's sidechain. With the HPF control dialled in, the compression ratio effectively becomes frequency dependant. The low strings come back to life, adopting an extra weightiness, power and dynamic response, while the higher strings are strictly controlled, preventing slapped and popped notes from leaping out of the mix. This unique bass compressor is like having your own studio engineer sat on your pedalboard!

Origin Effects...

Key Features:

- 100% Class-A discrete signal path
- Classic, ultra fast “FET” response
- Studio-grade discrete-transistor preamp
- Combined Attack/Release control
- Dedicated Ratio control
- Dry Blend control for parallel compression
- Variable-frequency sidechain filter (HPF) control
- Rugged jewel-lamp gain reduction metering
- Optimised for bass but can process any source
- High-current, low-noise electronics
- Ultra-wide frequency response
- Ultra-high input impedance
- Silent switching
- High-quality “signal-conditioning” bypass mode
- Premium components throughout
- Advanced power supply filtering and protection
- Flexible external power requirements (9-18V DC)
- PSU Spec. 78mA @ 9V / 103mA @ 18V
- Designed and built in England



...Purity of Tone

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INTRODUCTION

The Cali76 Compact Series is a range of premium-quality, 1960s-style FET compressors, each inspired by the legendary Urei 1176. The idea behind the range was to bring the sonic properties of this revered studio classic into the scope of the average guitar geek…

The topology of each design was kept true to the original, while the actual circuitry has been carefully condensed. In this way it has been possible to retain the much-loved dynamic response of the original, while at the same time permitting a smaller, more stage friendly format.

Excluding the VU meter (where applicable), the circuitry is wholly transistor-based (otherwise known as "discrete"). Well designed transistor circuits, in contrast to IC-based designs, generate fewer harsh distortion artefacts. In addition, subtle harmonics are created which can positively enhance tone.

We've included a studio-grade 1960s-style discrete preamp, to work as an electronic interface between your guitar and the compressor. The preamp provides gain and also creates the optimum conditions for signal transfer.

In designing the Compact Series pedals, Origin Effects has gone to painstaking lengths to preserve the build quality and sonic integrity of the original Cali76 and SlideRIG circuits, even improving on them where possible.

The further reduction in size has been achieved by using a mixture of traditional through-hole and SMD components, spread across a pair of densely populated, stacked boards. The signal path utilises film and tantalum capacitors, carefully chosen low-noise transistors and rugged MELF resistors (essentially traditional through-hole resistors without the leads), which offer low-noise performance and rock-solid reliability.

One of the reasons why the original Origin pedals sound so good is that they deliver true FET compression, with a fast yet highly musical response that is a world away from the brutal and unforgiving sound of traditional VCA compressor pedal designs. The new Compact Series pedals stay true to Origin's design philosophy with absolutely no opamps or VCAs used in the signal path.

The new pedals are powered by mains adaptor only. Dispensing with the usual internal 9V battery option allows more space inside the enclosure for high-quality circuitry, while also supporting the high-current circuit design that is the key to these pedals' astonishingly low noise levels.

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CONTROLS

IN: The Cali76 features a very nice studio-grade input preamplifier. This works as an interface between the guitar and the compressor sections. In exactly the same way, a studio-engineer will first amplify a dry guitar signal before applying additional processing. The In control allows the user to vary the gain of this preamplifier.

Turning the In control clockwise increases the overall gain of the pedal. This also increases the amount of compression. The guitar will become increasingly touch sensitive as gain is increased. Too much gain and the preamplifier will clip and distort.

Compression is greatly reduced at lower gain settings, as much of the signal entering the compressor section falls below the compressor's internal threshold. Signal level must exceed this threshold in order to initiate gain-reduction. So, at lower gain settings, only the signal peaks are compressed.

OUT: The Out control simply determines the level of the signal present at the pedal's output. This can be set in order to keep the overall effected level close to that of the dry (bypass) signal. Alternatively, the level can be increased to help project a guitar solo.

DRY: The Dry control varies the amount of dry, uncompressed signal present at the pedal's output, thereby mixing the original, uneffected signal back in with the compressed signal. You can adjust the balance between the compressed and uncompressed signals by adjusting the Out and Dry knobs accordingly. Correct adjustments should deliver the increased sensitivity and sustain of the compressed signal, combined with the greater dynamic integrity of the uncompressed signal.

RATIO: Turn the Ratio control clockwise to increase the compression ratio. The Ratio control allows the user to adjust the amount of gain reduction applied for any given increase in guitar signal. At the lowest ratio setting, doubling the input signal (an increase of 100%) will result in the output increasing by 19%. At the highest ratio setting, the output would rise by only 3.5% for the same increase in input signal. The latter case represents "limiting". As was the case in the Urei 1176, changing the ratio setting also varies the threshold level of the unit. This helps to keep the output at a consistent level, regardless of settings.

In practice, lower Ratio settings will provide more gentle, transparent compression, while higher Ratio settings will deliver more aggressive compression with a tightly controlled dynamic range – in other words, the loudest and quietest notes you play will end up at roughly the same level.

ATT/REL: Compressor attack and release controls are all too often misunderstood, which is unfortunate as they are instrumental in achieving a usable sound. In most cases attack and release parameters should be adjusted to optimise the compressor's dynamic response to that of a particular instrument. However, they can also be adjusted to create strong dynamic effects. Incorrect settings can produce nasty distortions and frequency-dependant artefacts.

The Att/Rel knob adjusts the two parameters simultaneously to offer the user a choice of the most useful settings without any headaches! All our favourite combinations are here. All the troublesome settings are carefully side-stepped. Just adjust to taste!

The attack parameter can be thought of as the time taken for the compressor to react to the presence of a signal, i.e. the delay from the instant when you play the note to the moment the compressor actually reduces the gain. The longer the attack time/delay, the more pronounced the beginning of each note will sound. Increasing the attack time highlights the percussive "snap" of picked, popped and slapped notes.

The release parameter can be thought of as setting the duration of the gain reduction applied to the signal. This would be measured from the time that compression is triggered to the point that the compressor has returned to its idle state. For maximum effect when processing bass guitar, the release time must be set so that the compressor responds fully to every note played – in other words, short enough for the compressor to fully recover in the time between one note ending and the next note beginning.

Turning the Att/Rel knob clockwise will reduce the release time while increasing the attack time, best for percussive playing. Rotating the Att/Rel knob anti-clockwise will increase the release time while reducing the attack time for a smoother, more “spongy” feel.

HPF: The HPF knob controls the cut-off frequency of a high-pass filter positioned in the compressor's sidechain circuitry. Attenuating low frequencies from the sidechain has the effect of freeing up the low bass strings from excessive compression. This fattens the tone of your instrument and lets the low strings breathe. Dynamic control is still fully active for the higher registers, meaning that any slaps and pops are suitably taken care of! Turning the HPF knob clockwise will raise the cut-off frequency and free up more of the low end.

JEWEL METERING: Simple! Red for no compression. Orange for active compression. The brighter the lamp, the greater the amount of gain reduction. Yellow signifies that gain reduction has reached 27dB. Maximum compression occurs around 38dB.

CONNECTIVITY & POWER REQUIREMENTS

INSTR: Insert your guitar, other instrument or signal source here. The ultra-high input impedance will even work with piezoelectric pickups, provided that the connected lead is of sufficient quality and is reasonably short in length (a long lead will “load” a piezoelectric pickup, reducing the bandwidth).

We usually recommend placing our pedals directly after your guitar, to maximise signal-to-noise ratio. However, in rare instances you may prefer to place the compressor after your overdrive pedals – for instance, if you are looking to even out changes in level caused by kicking in a range of drives.

AMP: Connect to your amp or other pedals. The output impedance is low in all modes, so the unit will drive signals down the connected guitar lead, overcoming the issues of high-frequency signal loss associated with passive bypass systems.

9-18VDC: Insert power here. A high-quality regulated supply should be chosen to avoid damage from voltage surges and other over-voltage conditions. The connector should be the 2.1mm type with the centre-pin "wired negative". For best performance, the pedal should be powered from an 18V supply. This will increase the headroom, allowing cleaner processing of conventional guitar signals. This will also permit the use of hotter source signals, such as active guitar pickups.

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EXAMPLE SETTINGS



Percussive, lively & fat. *A slow attack time allows the compressor to accentuate the initial transient of any given note. Fast release allows the compressor to fully recover between notes, so that every phrase and chord will take on a percussive quality. Low ratio keeps compression artefacts / distortion to a minimum. High HPF results in fattened low bass frequencies.*



Dynamic control. *Medium attack time allows the compressor to catch transients early on without becoming too aggressive. Medium release time stops the compressor from pumping. Compression is natural and levels are balanced between various techniques. Medium HPF setting results in honest translation of low string player dynamics.*



Parallel compression. *A best of both worlds approach! Blend compressed and dry signals for increased sensitivity & sustain yet with a full sense of dynamic integrity. For players who want a sensitive feel without having the life compressed out of their carefully crafted dynamic playing style. HPF is disabled for equal compression across all strings.*

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ABOUT ORIGIN EFFECTS

Origin Effects is the brainchild of Simon Keats, a guitarist, electronic engineer and analogue circuit designer who has worked for the likes of Vox, Focusrite and Trident Audio. Having built bespoke effects for professional musicians and producers for many years, he launched the Origin Effects brand in 2012 to bring his exceptional designs to a wider audience.

His first two pedals – the 1176-inspired Cali76 compressor and the unique SlideRig, which chains two 1176-style compressors together for near-infinite clean sustain – have been widely recognised as the best pedal compressors ever made. Users range from guitarists and bass players like David Gilmour, Pino Palladino and Steve Lukather to Grammy Award-winning producers like Paul Epworth, Ross Hogarth and Terry Britten.

Please note that Simon Keats & Origin Effects Limited are in no way affiliated with Urei or Universal Audio.

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