

Key Features:

- 100% Class-A discrete signal path
- Ultra-fast "FET" response
- Attack & Release presets
- Studio-grade "discrete" preamplifier
- Rugged VU-style meter
- Low-noise electronics
- Optimised for guitar but also great for processing recorded instruments
- Selectable True, or Buffered, Bypass
- 50 hours life from single 9V / PP3 cell
- Optional external power (9-18V DC)
- Traditional Through-Hole PCB

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

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

Excluding the VU meter, 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.

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

The pedal can be powered by a 9V battery or from a 9V to 18V DC power supply. A higher voltage supply will increase the dynamic-range/headroom of the unit...

The Cali76 is a great performance tool, but is by no means limited to this task. Recording guitarists will find the unit highly useful for post-processing recorded drums, bass and vocals. The Cali76 will tame rogue dynamics and liven up flat-sounding mixes... Best of all it will impart a strong analogue footprint on otherwise sterile, digitally-recorded tracks.

INSTRUCTIONS / INFORMATION



Example Settings for Electric Guitar

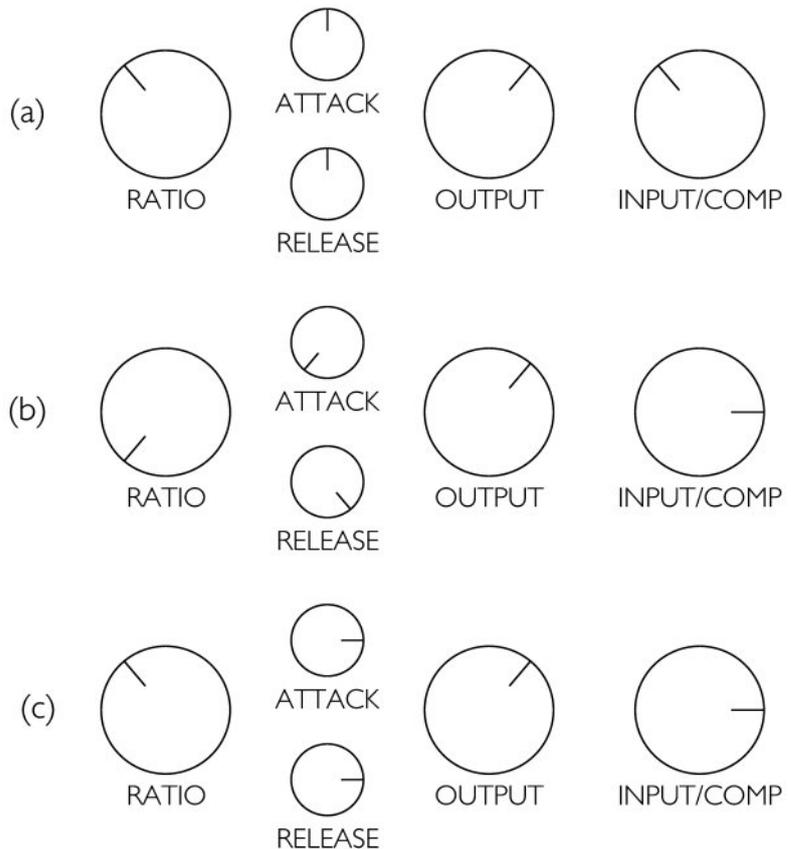


Figure 1: Useful Settings: (a) subtle compression; (b) percussive compression; (c) spongy compression (try "popping" strings when soloing).

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Input/Comp Control

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 "INPUT/COMP" control allows the user to vary the gain of this preamplifier. Turning this control clockwise increases the overall gain of the pedal. This also increases the amount of compression. The guitar will become increasingly more touch-sensitive. 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. In this scenario only the signal-peaks are compressed.

Output

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

Attack & Release

Attack & Release controls are all too often misunderstood, which is unfortunate as they are instrumental in achieving a usable sound. In most cases Attack & 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.

The Attack control determines 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.

In the context of the guitar - you may make the following observations when adjusting Attack settings:

Increasing Attack-time highlights the percussive "snap" of strongly picked notes.

Reducing Attack-time may impart a "spongy" feel to the character of the compressor - especially when "digging-in" to single notes!

Reducing the Attack-time to a very short time will result in undesirable distortion being generated - this will be heard to a greater extent when playing bass notes.

The Release control determines the duration of any gain reduction. 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 guitar, the Release must be set so that the compressor responds fully to every note played. If so, the release time must be short enough for the compressor to fully recover in the short time between one note ending and the next note beginning.

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.

Example Settings

Figure 1 presents some useful starting points, intended for use with guitar. Figure 5 consists of some more examples for use in processing various recorded instruments.

Bypass Mode (Internal Selection)

The bypass mode can be selected internally by changing the positions of four internal jumper-connectors.

"True-Bypass" can be obtained with all four jumpers in the lower-position.

A low impedance, or buffered-bypass, mode can be selected by moving all four jumpers to the upper-position. In this mode, the pedal will ensure that signal integrity is preserved even when driving long cable runs.

Jumpers can be simply pulled away and pushed back into place. Spare jumpers can be easily obtained if required.

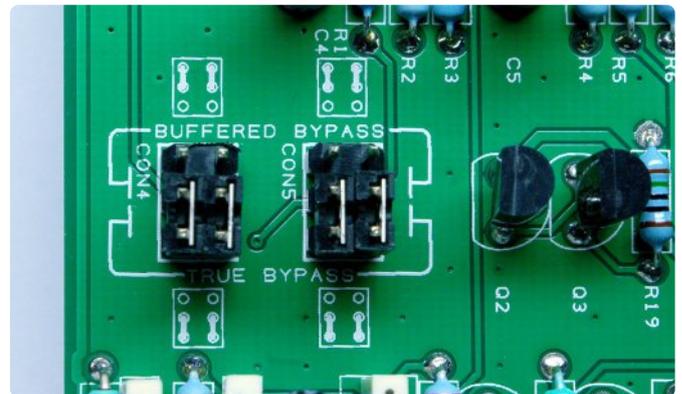


Figure 2: J4, J5, J6, J7: Bypass Jumper-Connectors.

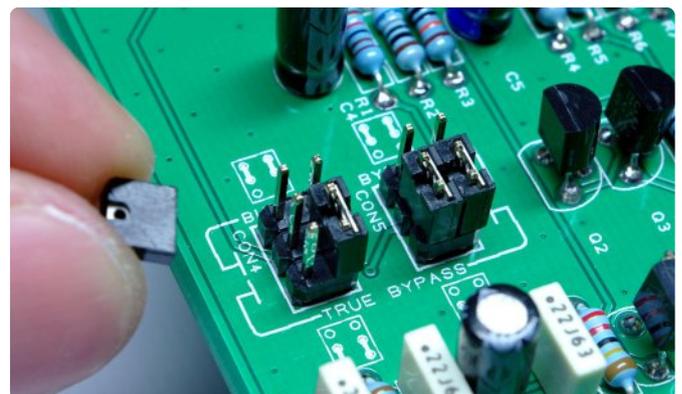


Figure 3: Changing the jumper position on J4.

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Input Sensitivity / Jumpers

The latest version of the Cali76 features a set of jumpers that give the user control over the sensitivity of the unit.

Should you prefer to have the input/gain control set very low, it could be worth experimenting with the jumper arrangement shown in figure 4. This will almost certainly help users to obtain more rotational resolution in a pro-audio set-up, where signals are relatively large.

Moving the jumper progressively right will result in more input attenuation and less sensitivity.

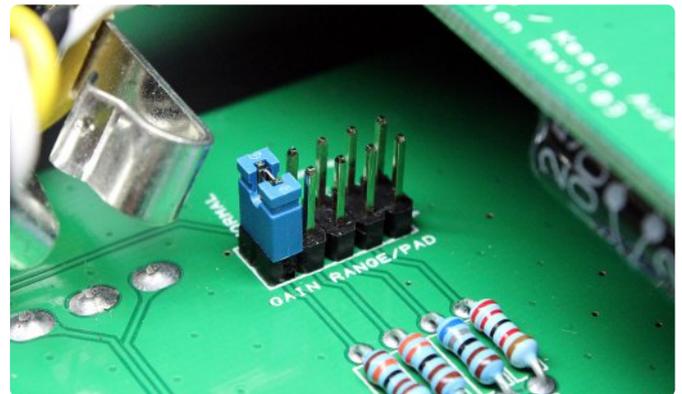


Figure 4: Input sensitivity jumpers on Cali76TX.

Battery & External Power

The internal 9V battery will provide good-quality operation for approximately 50 hours. After this time the user may choose to fit a fresh battery. This can be done easily by removing the four screws from the base of the enclosure. From here the new battery just clips into place. Be careful not to knock any of the components on the circuit-board.

Alternatively, an external supply can be used. 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.

It's unnecessary to remove the battery when using an external supply. There is no risk of damage to either the battery, supply or pedal. However, as is the case with all battery powered goods, old batteries are prone to leaking and so should not be left installed for prolonged periods of time.

About the Designer

"Origin" products are currently being developed by Simon Keats, of UK-company, Keats Audio. Simon has worked for a number of big-name "audio" companies, on a full-time basis and as a design consultant.

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Simon Keats/Origin Effects is not affiliated with Urei or Universal Audio in any way. This product draws inspiration from the Urei "1176" compressor, but does not feature any "like-for-like" circuitry!!!

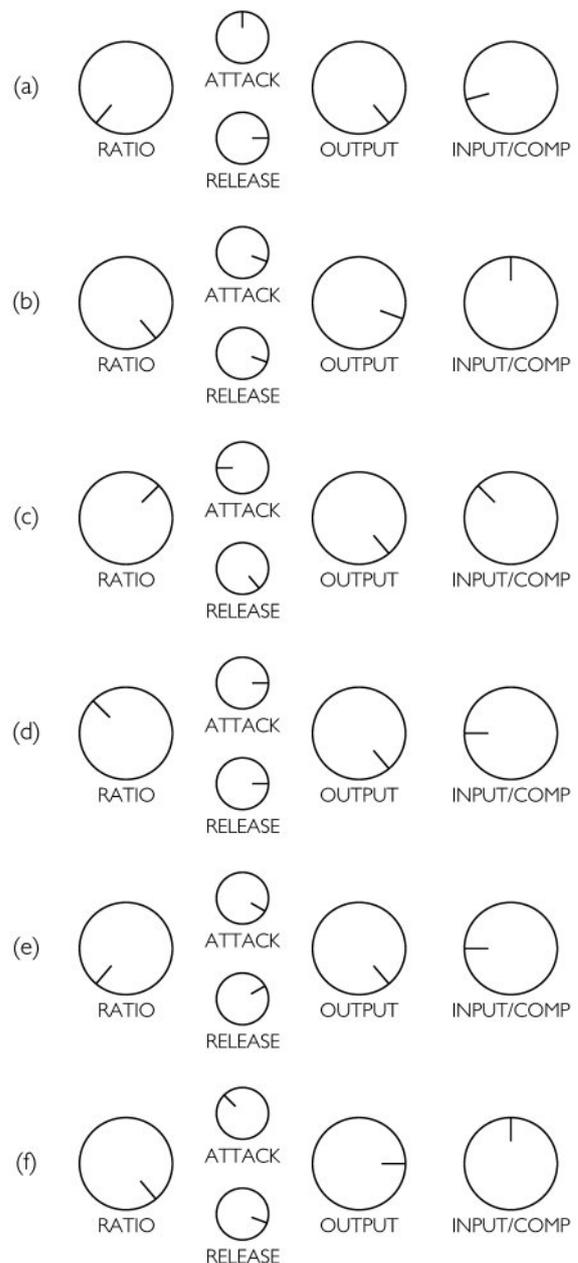


Figure 5: Useful Settings: (a) vocals - subtle compression; (b) vocals - limiting; (c) acoustic guitar / piano; (d) bass; (e) drums - subtle compression (famous Dr.Pepper Setting); (f) drums - "pumping" hard compression.

Note: All source signals normalised to -10dBV.