



# SlideRIG

DUAL-CHAINED LIMITING AMPLIFIER

## Key Features:

- 100% Class-A discrete signal path
- Chained compressors for more "squash"
- Two user-presets
- Ultra-fast "FET" response
- Massive gain of 75dB at zero compression
- Internal Attack & Release presets
- Studio-grade "discrete" preamplifier
- Low-noise electronics
- Selectable True, or Buffered, Bypass
- 50 hours life from single 9V / PP3 cell
- Optional external power (9-18V DC)
- Traditional Through-Hole PCB

Our goal was to reproduce the slide-guitar tones first heard on Little Feat's classic album, "Dixie Chicken". The tone is clean and transparent, with an almost infinite shimmering-sustain. For many this represents the ultimate in slide-tone.

In the studio, the Little Feat tone was achieved by daisy-chain-connecting two Urei 1176 "FET" compressor channels. The 1176 has a fast response, unique character and smooth compression. Chaining the compressor sections allows the character to be retained, whilst vastly increasing the amount of compression. This level of compression is generally referred to as "Limiting" as the signal is maintained at a consistent level.

Our 1176-inspired Cali76 circuit forms the backbone of the SlideRig – with two identical Cali76 blocks being utilised in a true, dual-chained, topology.

The unit features switchable user-settings, providing the user with separate rhythm and lead presets. The most common scenario being the use of a subtle compression for quieter passages; and a fuller compression, with a clean level boost, for solo work.

A studio-grade 1960s-style preamp works as an interface between the guitar and the first compressor section. Just like the compressor blocks, the preamp uses discrete Class-A electronics for the purest tone possible.

The pedal can be powered from a single 9V battery, or from a 9V to 18V DC power supply. A higher-voltage external supply will increase the dynamic range of the unit and permits the use of hotter input signals. Overall, the sound will be cleaner, especially at extreme settings.

## INSTRUCTIONS / INFORMATION



### Block Diagram (Compressor Section)

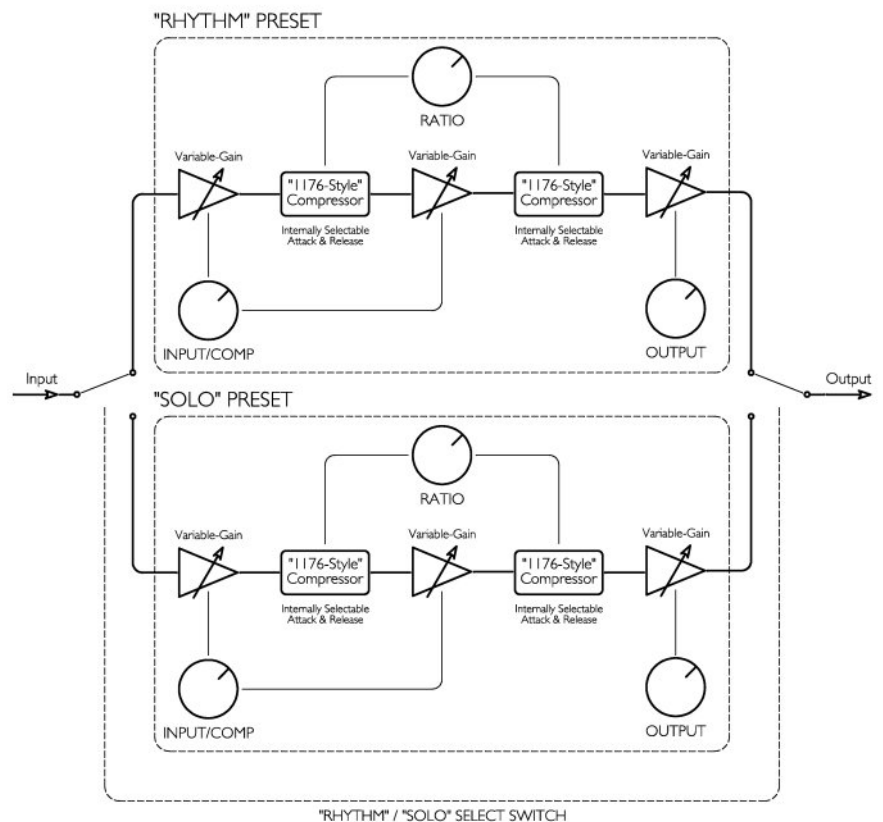


Figure 1: Block Diagram of Compressor Section (Conceptually Simplified).

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## Input/Comp Control

The SlideRig 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. Eventually, high gain settings will also serve to boost unwanted guitar-pickup noise.

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.

The "INPUT/COMP" control also varies the amount of signal routed from the output of first compressor to the input of the second (refer to the block diagram). This greatly affects compression levels in the second compressor stage.

## 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 0.2%, for the same increase in input signal. The latter case represents extreme "Limiting".

The SlideRig offers the user insane amounts of Ratio, and higher levels WILL generate distortion artifacts, particularly when processing chords. If this is a problem, just select a lower-Ratio setting.

## 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.

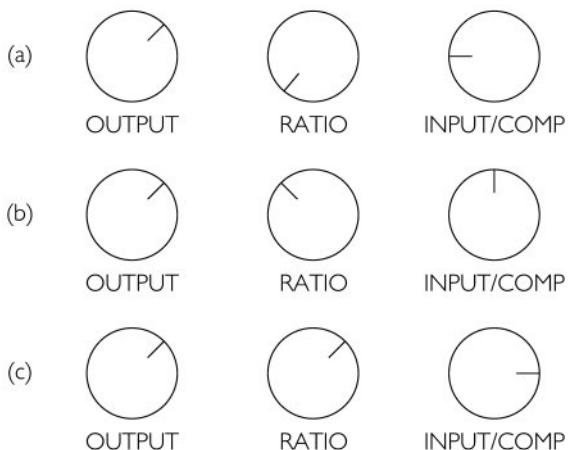


Figure 2: Useful Settings: (a) low compression; (b) medium compression; (c) high compression.

## 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.

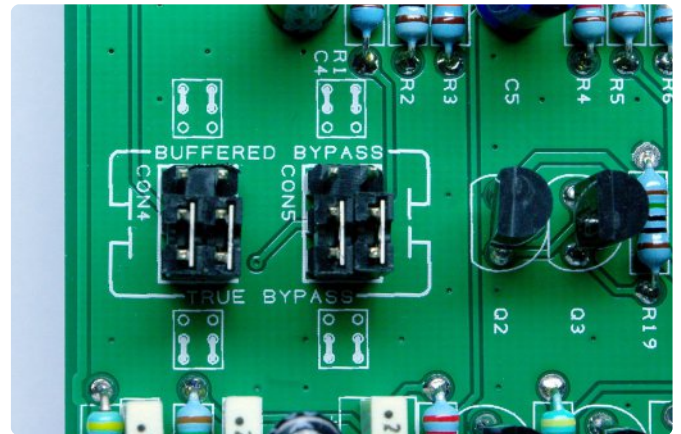


Figure 3: J4, J5, J6, J7: Bypass Jumper-Connectors.

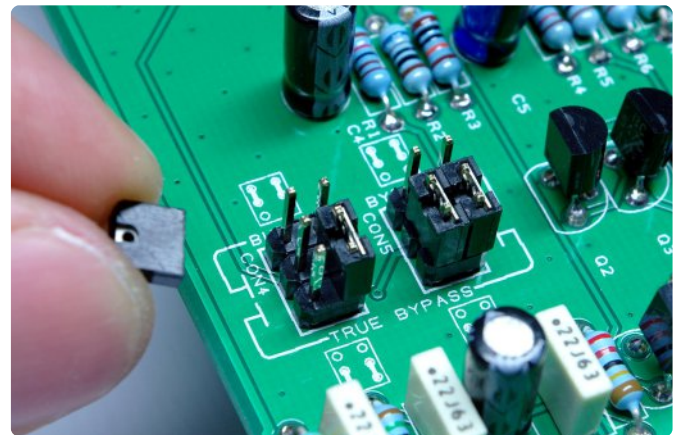


Figure 4: Changing the jumper position on J4.

## Rhythm/Solo Presets

Pressing the "SOLO" switch toggles the unit between "RHYTHM" & "SOLO" modes.

In "RHYTHM" mode, the three dials on the RHS of the pedal will be active and will offer full control over user-parameters. In "SOLO" mode the RHS dials become inactive and the dials on the LHS become active in their place.

## Attack & Release (Internal Selection)

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



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also be adjusted to create strong dynamic effects.

The SlideRig gives the user some scope to adjust Attack & Release through the use of internal jumper-connectors. It has been assumed that once a preferred setting is found that the user will rarely need to adjust these parameters.

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!

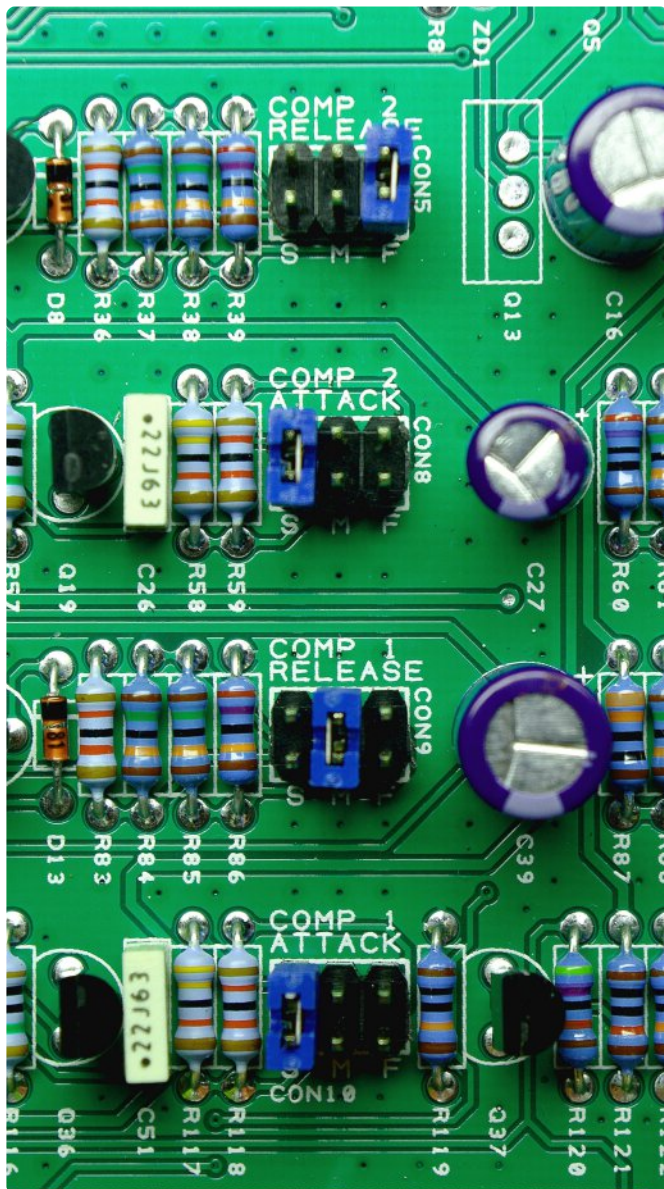


Figure 5: Attack & Release settings. Comp 1. Attack: Slow / Comp 1. Release: Medium / Comp 2. Attack: Slow / Comp 2. Release - Fast.

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.

Figure 5 shows the "Attack / Release" jumpers in their default positions. There are two sets of Attack & Release jumpers - one for each of the chained compressors (refer to the block diagram). Settings are applied to both user-presets.

## Treble-Lift Selection

When processing a signal with large amounts of compression, there is a tendency for treble frequencies to be slightly "rolled-off". This results in a smoother tone, which some may like and others may dislike.

The SlideRig features an internally-selectable "Treble-Lift" function. This reduces the amount of compression applied at treble frequencies, and results in a fuller treble response.

For the truest "Little Feat" tone leave the "Treble Lift" jumper in the "off" position.

## 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

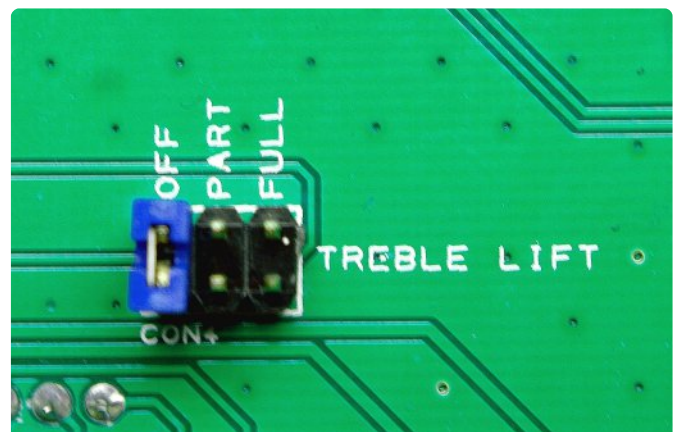


Figure 6: Treble-Lift jumper. Featuring three positions: "Off"; "Part" (partly-enabled); "Full" (fully-enabled).

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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.

Simon can be reached by email, telephone or by post, and will be happy to help with any enquiries.

Email:               simon@origineffects.com

Telephone:       0800 810 1070  
                      International: +44 800 810 1070

Address:           Simon Keats  
                      Origin Effects  
                      First Floor Office  
                      Unit C6 Station Yard  
                      Thame  
                      Oxfordshire  
                      OX9 3UH, UK

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!!!