COMPRESSOR *Bass*

USER MANUAL

empress effects

Introduction

When we released our original Compressor back in 2011, it quickly became a favourite among guitar and bass players alike who were searching for something more than the typical oversimplified controls found on most compressor pedals. Although our original Compressor sounded great on bass (and still does!) we set out to do even better.

On top of the full range of features and controls normally only seen in high end studio equipment, such as input and gain reduction metering, independent attack and release controls, a mix knob for parallel compression, and an external sidechain insert, we've now added a fully variable sidechain high pass filter, and a two position 'tone + colour' circuit which adds gentle tone sculpting and harmonic distortion, giving your bass some delicious character.

We hope the Bass Compressor becomes a favourite of yours as well, and sincerely thank you for choosing Empress Effects.

- Steve Bragg

Quickstart

Added Control: Here's a good starting point for adding consistency and sustain to your playing while retaining dynamics. Adjust the input level so the gain reduction meter shows 8dB of gain reduction when playing your loudest.

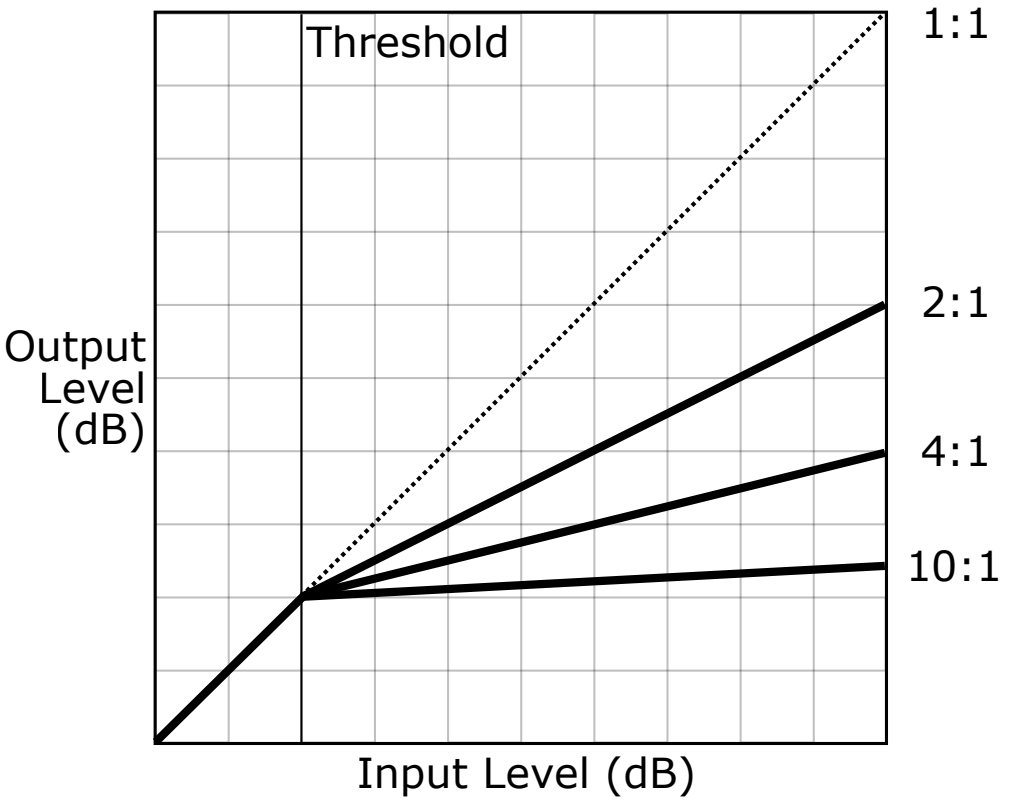
Smooth & Warm: Smooth, subtle compression that gives transparent dynamic control with a gentle mid-scoop and some warm harmonic distortion.

Slappa Da Bass: The heavy compression ratio will keep your pops under control, while the slow attack and quick release will enhance the percussive qualities of a finely slapped bass.

Level & Grind: This limiter will help keep your levels rock solid, while the mid-boost and distortion gives your bass some added presence and character.

The Basics of Compression

Compression can add consistency and sustain to your playing or it can be used to add note definition and other effects. It essentially narrows the difference between high and low audio levels by reducing the gain of any signal over the threshold.



The **ratio** determines how much gain reduction will be applied to the signal once it crosses over the threshold. At a 4:1 ratio, for every 4dB of input signal above the threshold, there will be 1dB of output signal. A 10:1 ratio would output 1dB for every 10dB of input signal, etc.

Controls at

input: sets the level entering the compressor circuit. Higher levels result in more compression.

attack: controls how quickly the compressor will reduce the gain when an incoming signal exceeds the treshold. Attack time increases as you turn the knob clockwise.
Range: 50µs - 50ms

mix: controls the level between the dry signal and the wet (compressed) signal. All the way clockwise is 100% wet signal and all the way counterclockwise is 100% dry signal. Blending in the dry signal brings back the dynamics that can be lost during compression. This technique of parallel compression allows for added sustain without losing the life associated with an uncompressed signal.

ratio: determines how aggressive the gain reduction is.

2:1 - good for gentle gain control. Very transparent.

4:1 - a great general purpose setting. Still transparent but offers a large range of compression.

10:1 - heavy compression. Close to limiting.

* The **colour** circuit can be bypassed in either or both tone switch positions via internal dipswitche
** Empress Effects fully endorses bass solos.

t a Glance

output: sets the output level. This will not affect the amount of compression. Can be used to make up gain lost in compression or as a boost for soloing. **

release: controls how quickly the compressor returns to its initial level. Release time increases as you turn the knob clockwise.
Range: 50ms - 1s

sc hp: a variable high pass filter that filters low frequencies from the sidechain. The filter frequency increases from 20Hz to 400Hz as the knob is turned clockwise.

tone + colour: The left position is a mid range cut at 500Hz, while the right position is a upper mid range boost at 2kHz. Both positions engage the 'colour' circuit which adds a subtle touch of harmonic distortion. *

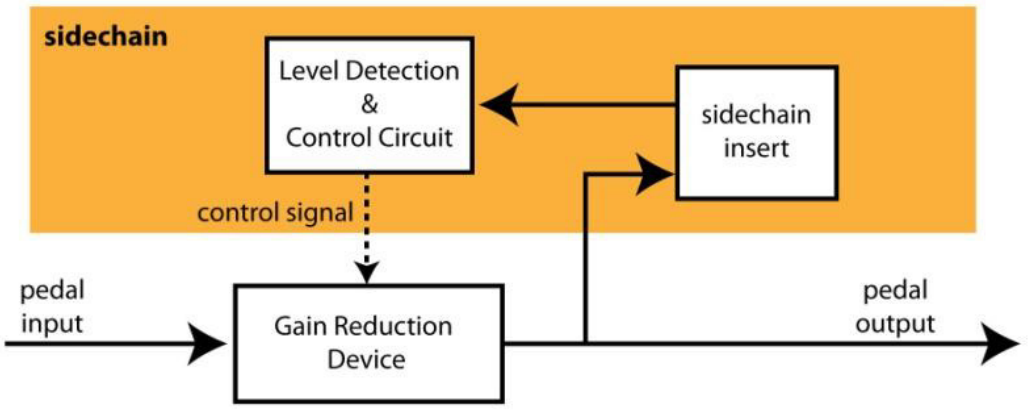
bypass stompswitch: when the LED is shining, the compressor effect is applied to the signal. When off, the compressor is being bypassed (true bypass).

es. Set the corresponding dipswitch to off if you prefer just the tone eq without the **colour** circuit.

Attack controls how quickly the gain reduction will begin after a signal has crossed over the threshold. **Release** controls how long it takes for the Compressor's gain to return to its initial level after the signal drops below the threshold.

Sidechain

The **sidechain** is the Compressor's level detection circuitry. Based on the signal sent to it, it will determine how much gain reduction is applied. Typically that signal is a copy of the input signal, taken from some point in the audio path. In our case it's taken after the gain reduction has occurred, which is known as 'feedback' style compression. It can be very useful to alter the sidechain signal in order to tailor how the compressor reacts.



Sidechain High Pass Filter

The **SC HP** (high pass filter) knob can be used to avoid triggering the compression with high energy low frequency notes, which helps avoid over-compressing and keeps the low frequencies sounding full while still controlling errant high notes that pop out.

Sidechain connector jack

The **sidechain connector jack** on the back of the pedal allows you to alter the sidechain signal by inserting an external device, such as an EQ. You can also have an external audio source trigger the compression by sending audio in through the ring of the sidechain jack.

The sidechain connector accepts a 1/8” TRS plug: Tip = send, Ring = return, Sleeve = ground.

Parallel Compression

The **mix** knob on the Bass Compressor allows for parallel compression. Parallel compression is achieved by blending a compressed audio

signal with the uncompressed version of itself. It opens up a ton of possibilities. A great use of parallel compression is to really squash the compressed signal (so it sounds way too over compressed), then use the mix knob to blend in some of the uncompressed signal. The result is very natural sounding, but feels a lot more exciting, with more sustain and retaining a good attack. Try experimenting with it!

Setting the bypass state on startup

To change whether the Compressor starts up in the engaged or bypassed state, hold down the stompswitch while powering on the Compressor. The first red gain reduction led will flash to let you know you are in the advanced configuration mode. Press the stompswitch to toggle between states:

gain reduction led 1 = bypassed at startup

gain reduction led 2 = engaged at startup

When finished, press and hold the stompswitch for 2 seconds to confirm and save your selection, and exit advanced configuration.

Specifications

Input Impedance:	1MΩ
Output Impedance:	2.2kΩ
Frequency Response (-3dB):	10Hz - 20kHz
Distortion:	<0.1%
Noise:	-101dB
Headroom:	+15dBu
Input Voltage:	9VDC
Required Current:	100mA
Power Input Connector:	2.1mm Barrel Connector
Height (enclosure only):	1.5”
Height (including controls):	2.5”
Length:	4.8”
Width:	2.6”
Weight:	1lbs

Powering the Bass Compressor

Go to www.empresseffects.com/power for a full list of compatible power supplies.

Please note: The Empress Bass Compressor requires at least 100mA of current to function properly. Any power supply rated at 9V DC, supplying negative tip polarity and at least 100mA of current should work.

Legal Stuff

FCC Compliance

Note: This equipment has been tested and found to comply with the limits for a Class B digital 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.

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment under FCC rules