Nordland ODR-C Custom Overdrive Owner's Manual

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Nordland ODR-C Custom Overdrive

Introduction

Moin, Moin, as we say here in the Nordland and congratulations on the purchase of this effect device! It was made mainly by hand, is equipped with very high quality and selected components and personally tested and measured.
Only when it meets my own quality requirements, the device comes in the delivery. This is the detailed guide with more technical background to better explain the functions.
The latest version is always on my website: **http://nordland-electronics.com**

Development

The ODR-C is based on one of my most successful developments (ODR-1) from the early 90s. The basis was to develop an overdrive that retains the sound of the guitar as much as possible – that is: sounds very “natural”. The device was very good sound, but was designed and manufactured for production in the Far East (Korea). Correspondingly cheap components were used.
The ODR-1 has always been my favorite overdrive and that’s why I’ve had the desire to rebuild the model and release it with high quality components in a small series.
The result is the new ODR-C, which sounds in the basic sound like my ODR-1, but has many news and quality improvements:

New Functions

- A small O.D.C.-knob to decrease the amount of overdrive compression technically occurs during the overdrive process.
- Another small Lo-Cut-knob to control the low frequencies out of the signal.
- A big Mid-knob to control the midrange.

Improvements

- The built-in components can easily handle 18 volts. The sound of the ODR-C changes during operation voltages between 9 V and 18 V. Please try it yourself!!
- Reverse polarity protection: The device locks in reverse polarity and thus protects the electronics.
- True Bypass Footswitch: No sound loss in the bypass (Effect Off).
- Soft-click of the footswitch – more comfortable than the usual hard switch.
- Use of high quality materials, such as: Stable Hammond MFG (Canada) 1590N1 aluminum body, gold plated cliff jacks (England), double-row gold-plated PCB-connectors, PCBs with ENIG/gold plated pads, 1% (tolerance) metal film resistors, ± 2% … 5% film capacitors in audio signal path for best sound quality.
- Soft LED: Fade in / out of the LED brightness to optimally suppress switching clicks.
- LED brightness control from dark to very light:
  Controllable with a small knob-potentiometer inside the housing.

Operation

Velcro or rubber feet
There is a set of Velcro pads and a set of rubber feet included. Depending on the application, please attach the Velcro or the rubber feet.
Note: Please keep the screws free so that access to the inside is maintained!

Connection to a DC power-supply:
Connect the DC-socket D to a standard power-supply (hum-free, electronically stabilized!). The voltage must be between 9 V and 18 V. Depending on the operating voltage, the device requires between 15 mA and 25 mA. The power-supply should be able to deliver at least 50 mA. The inner pole of the socket (5.5 mm / 2.1 mm) is ground, the outer ring must be on plus (+). If the polarity is wrong, the built-in reverse polarity protection prevents (to a certain extent) damage to the ODR-C. Nevertheless, it should be avoided, since when using other devices on this power supply, the positive contact on the housing (usually: ground) is applied. As a result, touching or wiring with another device may cause a short circuit in this power supply unit and possibly damage it!

Connection to a 9 V battery:
After removing the bottom plate E (4x Phillips screws), a 9 V block battery (recommended: alkaline-manganese) can be connected to the clip and placed behind the foot switch. Depending on the battery, this will last for several hours until it has to be replaced. For environmental reasons, however, I strongly advise against using batteries!

Connection

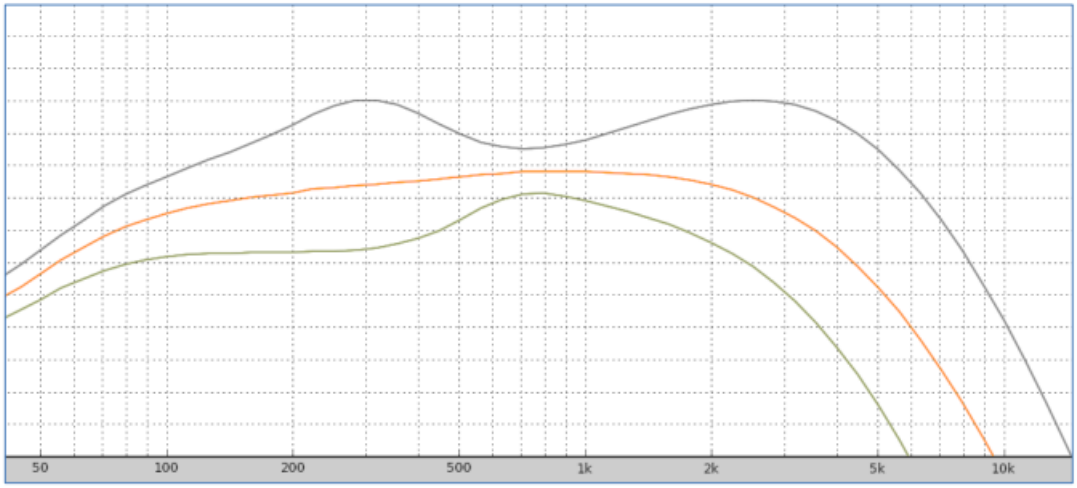
The output signal from the instrument or another effect-device is connected to the input jack ▼ with a mono-jack cable (1/4″ or 6.3 mm plug).
Note: When using a stereo-cable, the unit cannot be turned on unless the ring-contact is grounded (GND)! At the output -jack ▲ a cable to the following device (amplifier, another effect pedal, etc.) is connected.

Effect On
The true bypass-switch G turns the effect on / off. The LED F lights up when the effect is on. The signal is routed from the input-jack, through the footswitch directly to the output-jack. A resistor of 1M0 across this signal is grounded to divert DC offset-voltages, or vice versa capacitors to discharge, which reduces the switching-noise! Before switching on, please make sure that the volume H is set so low that any impairment or damage of any kind (health: hearing, electrical: loudspeakers, amplifiers) is excluded.
Note: Clicking noises when switching cannot be prevented 100%. Just after connecting to a DC power-supply, it can be a little louder when switching over the first few times. It takes a while until the operating values are stable. Then it gets quieter. If the crackling is permanently too high, this can also be caused by the connected devices by the previous or subsequent stage has superimposed some DC voltage (DC-offset)!

Level
This knob H adjusts the output-volume of the ODR-C.

Drive
This control I set the amount of overdrive. It can be adjusted between “almost clean” and “heavily overdriven”. The volume changes depending on the position of the knob. Then, if necessary, adjust the volume with the Level-control H. The overdrive circuit limits the signal and therefore it sounds more compressed (longer sustain) and it produces a lot of harmonics too.

Spectrum



This control 9 has always been special! Unlike other devices on the market (called Tone or Treble), which prune the signal simply in the treble (dull control) I use an active electronics, which regulates not only the treble (from about 1 kHz), but likewise the basses around approx. 300 Hz – so rather the lower middle range.

Orange: The center-position is the normal sound. In this position the button engages noticeably.
Gray: Turning the knob to the right raises treble and bass.
Green: Turning the knob to the left will lower treble and bass accordingly.
What remains is a good sounding middle section (600 Hz to 1 kHz). This results in well playable sounds in all positions.

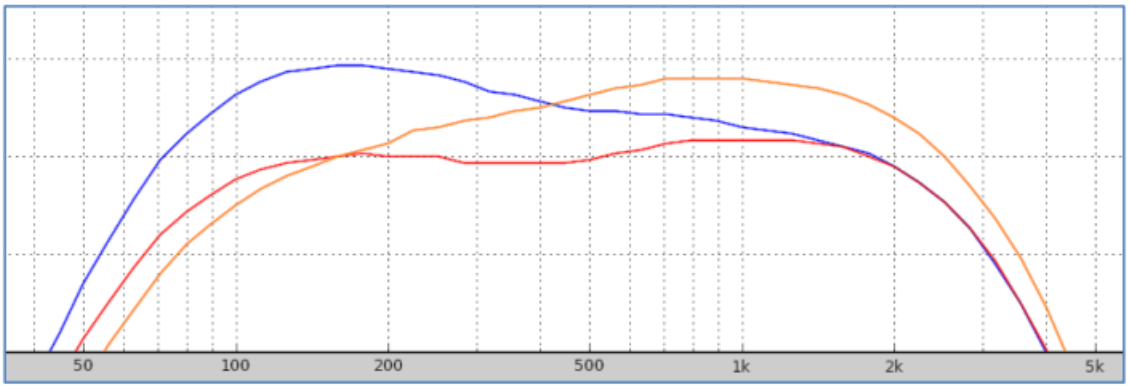
Custom

O.D.C. / Overdrive-De-Compress
This mini-knob 11 reduces the compression created by the ODR-1 overdrive stage. This makes the sound more dynamic (sounds more open), amplifies more the center-frequencies a bit and therefore sounds louder. The effect is subtle and becomes more noticeable audible the more the Drive knob is turned up.
Note: In the left position of the two small knobs O.D.C. and Lo-Cut, and in the mid-position of the “Mid” knob, the ODR-C sounds original as an ODR-1 should sound.
The picture on the page 2 (New Functions*) shows e.g. this setting!

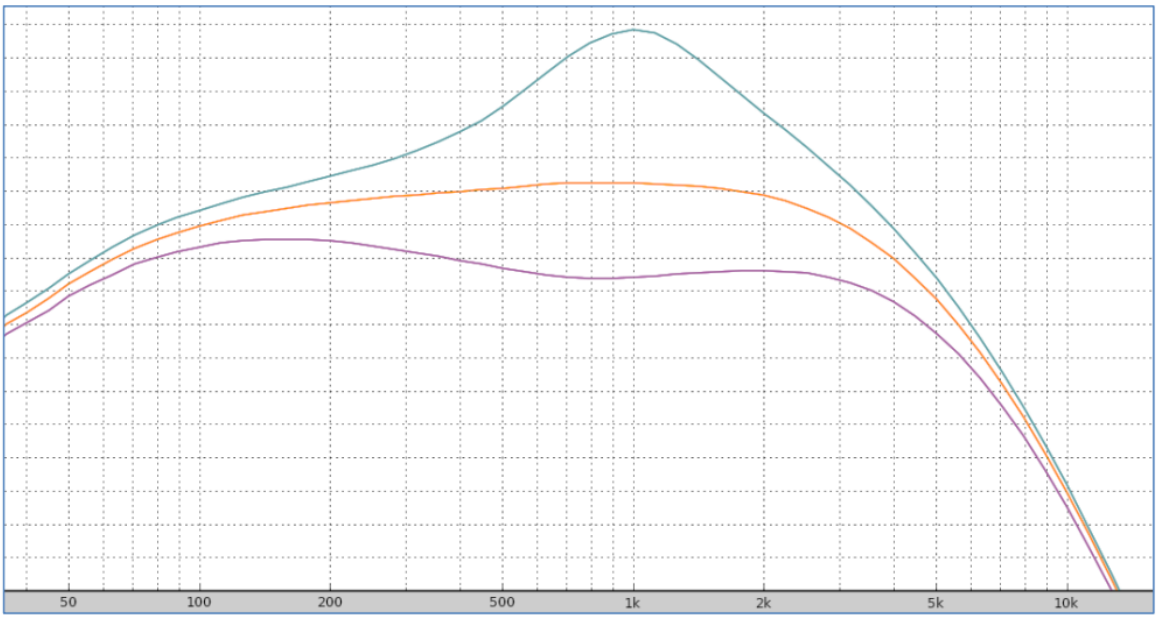
Lo-Cut
With this button 12 very low-frequencies (bass) are regulated away. Due to the lack of signal component, the auditory impression of less overdriving can occur, as the density of the signal decreases accordingly!

- Blue: Left stop
- Red: Mid-Position
- Orange: Right stop

  So do not be surprised: When “turning to the right”, the bass decreases – that is so intentional.



- **Bonus:** If the control is turned all the way to the right (orange), the overdrive (about 3 o’clock position) increases to counteract the reduced distortion!



Mid
With this control 10, the mid-frequencies can be raised (blue) or lowered (violet). While this changes the natural ODR-1 sound, it can be useful in, e.g. solo play, ensure a much better enforcement in the band structure.
The frequency and the bandwidth are optimally selected for the guitar sound but also overlap with the Spectrum-control. If so, correct it with the Spectrum-control!
In the middle-position (orange) – the button snaps in noticeably – it sounds like the ODR 1 again.

LED Brightness
In the basic version, the brightness is at a medium brightness-level. The LED brightness N can be set inside to a desired brightness.

Sound-Examples

Low Gain Drive

Light Overdrive / Blues

Medium Overdrive

Blues Solo / Overdrive

Heavy Dynamic Rhythm

Heavy Compressed Solo

These settings are just an example and will certainly vary depending on which guitar, amp, etc you are using ☺

Technical Data

- Input Impedance ~1 MΩ
- Output Impedance ~1 kΩ
- Power supply with DC 9 V battery:
  - Dry battery 6F22: (9 V)-Type (Carbon)
  - Dry battery 6LR61: (9 V)-Type (Alkali-Manganese)
- Battery life during continuous operation*):
  - Carbon: approx. 20 hours (calculated with a battery capacity of 300mAh)
  - Alkaline manganese: approx. 33 hours (calculated with a battery capacity of 500mAh)

    This information depends on the battery and the ambient conditions!
- DC power supply 9 V to 18 V (electronically stabilized)
- Power consumption: approx. 15 mA at 9 V, approx. 25 mA at 18 V
- Dimensions 125 (L) x 66 (W) x 58 (H) mm
- Weight ca. 380 g (without Battery)

Important Notes / Safety Instruction

- DC voltages above 20 volts could damage the ODR-C!
- Do not use the ODR-C in a humid, dusty, dirty, or hot environment.
- Liquids of any kind can damage the device. (Keep your cat away!)
- Do not use harsh detergents. If necessary, the ODR-C should be cleaned with a soft cloth.
- Batteries
    - Improper handling of batteries can cause them to explode or leak. Therefore, always observe all safety instructions regarding the batteries.
    - If the device is powered by a battery, the decreasing capacity LED will be dimly lit. Then the battery should be replaced.
    - When changing the battery, the cables at the connections (input, DC, output) must be removed beforehand! This prevents possible malfunctions or damage.
    - Inserting a mono jack plug into the input socket switches the device on! Please keep this in mind when using the battery and pull out the jack plug when switching off.
- Technical and written changes reserved!
- This manual describes the specifications and details of the device when this document is published.
- A current version of this manual can be found on the Nordland website: **https://nordland-electronics.de/en/products/download-en.html**

Documents / Resources

	**Nordland ODR-C Custom Overdrive** [pdf] Owner's Manual ODR-C Custom Overdrive, ODR-C, Custom Overdrive, Overdrive

References

- **Nordland Electronics / English**
- **Download Manuals**