Nordland ODR-CS Custom Special Overdrive Owner's Manual

Contents

Nordland electronics

Nordland ODR-CS Custom Special Overdrive

Product Information

The ODR-CS Custom Special Overdrive is a high-quality effect device designed for guitar players. The device is built mainly by hand using good components to ensure it meets high-quality standards. The device has a 9V to 18V operating voltage and features protection against polarity reversal. The ODR-CS Custom Special Overdrive also has a True Bypass Footswitch and a Soft-LED for optimal switching clicks suppression. The device features a Germanium diodes knob for sound adjustment and tone control for bass, treble, and mid.

Features

- 9V to 18V operating voltage
- Protection against polarity reversal
- True Bypass Footswitch
- Soft-LED for optimal switching clicks suppression
- Germanium diodes knob for sound adjustment
- Tone control for bass, treble, and mid

Included Accessories

- Versatile Velcro pads
- Rubber feet

Connectivity

- Input Socket for instrument or effects device (1/4 or 6.3 mm plug)
- Output Socket for amplifier or additional effects pedal (1/4 or 6.3 mm plug)

Product Usage Instructions

1. Select the appropriate accessory (Velcro pad or Rubber feet) to attach to the bottom of the device depending on the use.
2. Connect the output signal from the instrument or from an effects device to the input socket using a mono jack cable (1/4 or 6.3 mm plug).
3. Connect a cable to the following device (amplifier, additional effects pedal, etc.) to the output using a mono jack cable (1/4 or 6.3 mm plug).
4. Use the Germanium diodes knob to adjust the sound.
5. Use the tone control for bass, treble, and mid to adjust the sound further.
6. Adjust the brightness of the LED using the brightness knob N inside the ODR-CS Custom Special Overdrive by removing the base plate.
7. After usage, keep the user manual in a safe place for future reference.
   Note: For battery operation, remove the bottom plate E (4x Phillips screws), and connect a 9V block battery (recommended: alkaline-manganese) to the clip and place it behind the footswitch. Using batteries is not recommended for environmental reasons.

Introduction

- Thank you for purchasing this effect device! Like my other products, I value good components and build the devices mainly by hand and measure the devices personally several times. Because only when it meets my own quality requirements does the device go into delivery.
- On my website you can read the development of the ODR-S at that time in more detail.
- You can also find a more detailed description of the development of the Nordland ODR-CS on my website!
- This is the detailed guide with some technical background to explain the functions better.

Development

- The ODR-CS (Overdrive Custom Special) is the successor to my development (ODR-S) from 1993. It has two consecutive distortion stages. The first is a classic overdrive circuit with two silicon diodes in the feedback path of an operational amplifier (also called soft clipping). At the end of this stage, two germanium diodes were added as limiters. (So called hard clipping).
- Unfortunately, these special germanium diodes have not been manufactured for decades. In my opinion, a new edition was no longer possible in series. But then, after a long search and a bit of luck, I had the chance to acquire a few thousand good sounding germanium diodes as NOS◊
  - NOS: New Old Stock – i.e. new goods that have been stored for a very long time!
- Based on today's experience, I was able to significantly improve the quality of the old ODR-S. I then revised the sound control, since the old control could still be refined today – 30 years later.
- Unfortunately, germanium semiconductors have always had a very high degree of scatter in the manufacturing process. This meant that each device always sounded slightly different. In order to keep the scatter small, I measure the germanium diodes with a characteristic curve recorder and select them based on their forward voltage. Finally, I adjust the effect of the germanium diodes with an internal bias control!

Improvements

- **9 V to 18 V:** The built-in components can handle 18 volts without any problems. The sound of the ODR-CS changes at an operating voltage between 9 V and 18 V. Please try it yourself!!
- **Protection against polarity reversal:** The device blocks in the event of polarity reversal and thus protects the electronics.
- **True Bypass Footswitch:** No loss of sound in bypass (effect off).
- **Soft footswitch click –** more comfortable than the usual hard toggles.
- Use of high-quality materials, such as: Stable Hammond MFG (England) 1590N1 aluminum housing, gold-plated Cliff jack sockets (also English company), gold-plated board connectors, boards with ENIG gold-plated pads, 1% (tolerance) metal film resistors and max. 5% film capacitors in the audio signal path for best sound quality.
- **Soft-LED:** Gentle on/off thread of the LED brightness to optimally suppress switching clicks.
- An LED brightness knob-potentiometer is located inside the ODR-CS!
- Selected germanium diodes with an internal bias knob for sound adjustment.
- A little G.D.C. knob that can reduce the effect of the germanium diodes (hard clipping).
- Optimized tone control for bass and treble.
- **Extended sound control for the mid knob:** not only adds mids, but can now also remove them.

Operation

Velcro or rubber feet?

- A set of Velcro pads and a set of rubber feet are included. Depending on the use, please attach the Velcro or

the rubber feet. Velcro tape preferably for pedalboards!

- **Note:** Please leave the screws free so that access to the inside (e.g. battery) is retained!

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-CS. 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 from an effects device is connected to the input socket ▼ with a mono jack cable (1/4″ or 6.3 mm plug).
  Note: When using a stereo cable, the device cannot be switched on unless the ring contact is grounded (GND)!
- A cable to the following device (amplifier, additional effects pedal, etc.) is also connected to the output ▲.

LED Brightness
A brightness knob N for the LED is located inside the ODR-CS. To do this, the base plate must be removed. With the knob wheel, the brightness can be adjusted very easily with your finger or thumb.

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 2 MΩ across this signal is grounded to divert DC offset-voltages, or vice versa capacitors to discharge, which reduces the switching-noise!
Attention: 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.

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

Drive

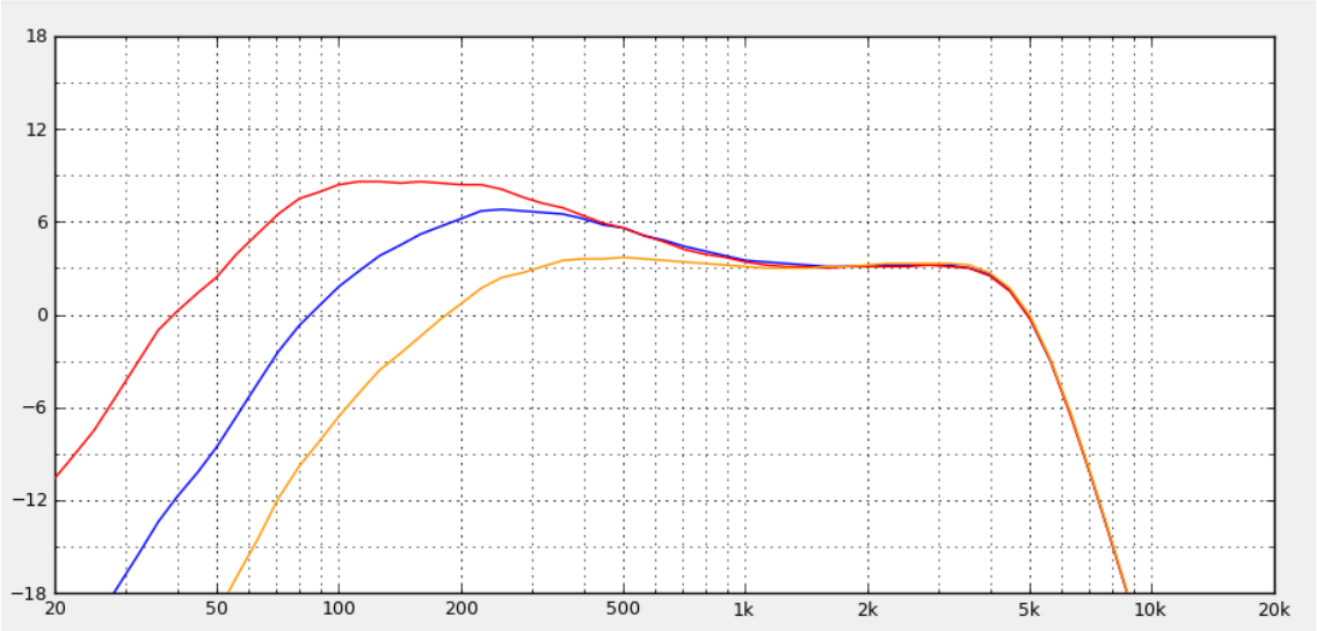
- This knob I set the degree of overdrive. It can be adjusted between “almost clean” and “heavily overdriven”.
- The volume changes depending on the position. Then adjust the volume with the level control H if necessary.

G.D.C. (Germanium Drive Control)

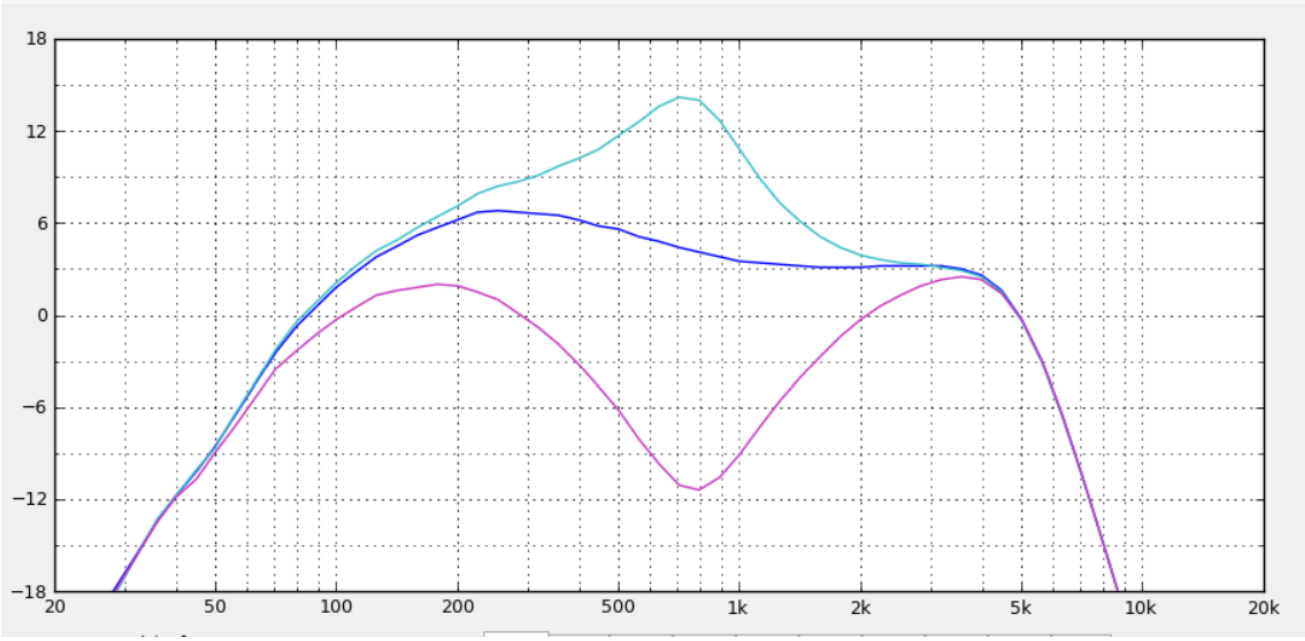
- The effect of the germanium diodes can be set with this knob J.
  - If the Drive knob I is turned up a little, the G.D.C. knob J adjusts the sound of the distortion (Germanium distortion!).
  - If the Drive knob I is turned up wide and the G.D.C. Knob is in the right area, you primarily hear the sound of the silicon diodes (overdrive).
  - You get a good low gain drive sound, for example, when the Drive control I is turned up a little (~ 9 o’clock) and the G.D.C. Knob J is between 9 o’clock and 12 o’clock.
- The germanium diodes reduce the output volume. At the left stop it is significantly lower (max. distortion or limitation) than if the G.D.C. J knob is turned clockwise.
  - In order to get into the area of the ODR-S (from 1993), the G.D.C. knob must be set to the left stop!

Tone Control Bass | Mid | Treble

- **Bass**
  This knob K controls the low frequencies.



  - **Red:** right stop
  - **Blue:** middle position
  - **Orange:** left stop
    Note: Guitars with humbuckers often need less bass, with single coils more bass
- **Mid**
  With this knob 11, the center frequencies can be raised or lowered.

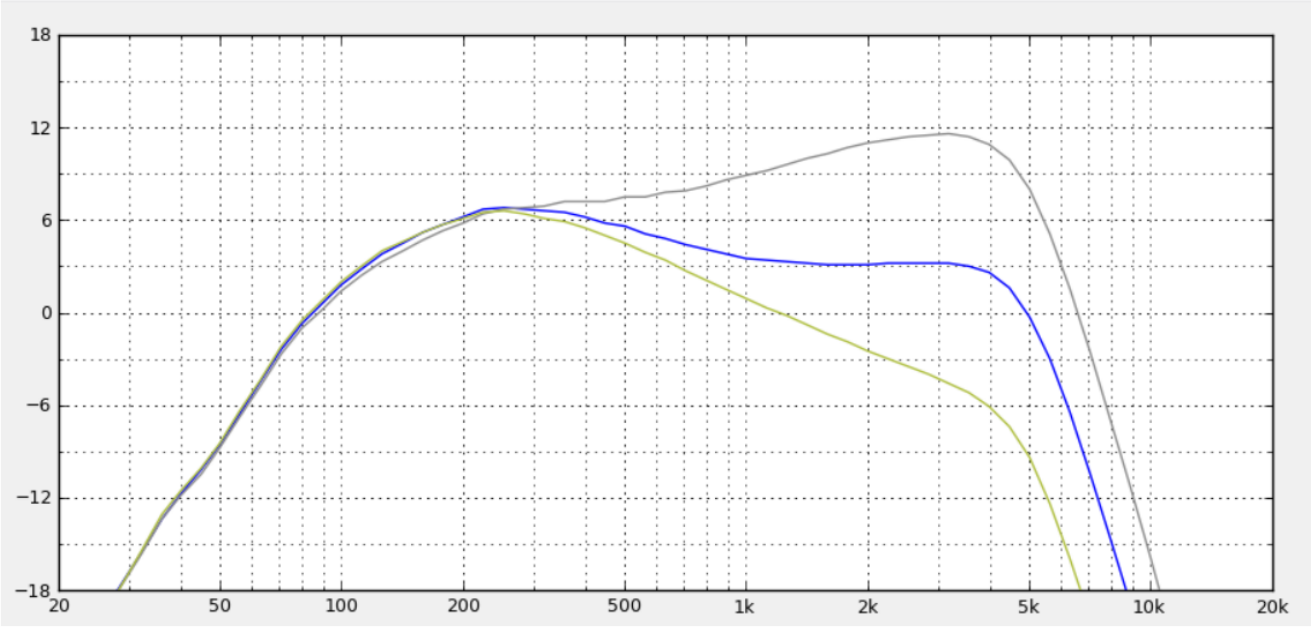


- **Cyan:** right stop
- **Blue:** middle position
- **Violet:** left stop

  Note: Compared to the ODR-S (from 1993), the mids can also be turned down here!

- **Treble**

  With this knob M, the high frequencies can be raised or lowered.



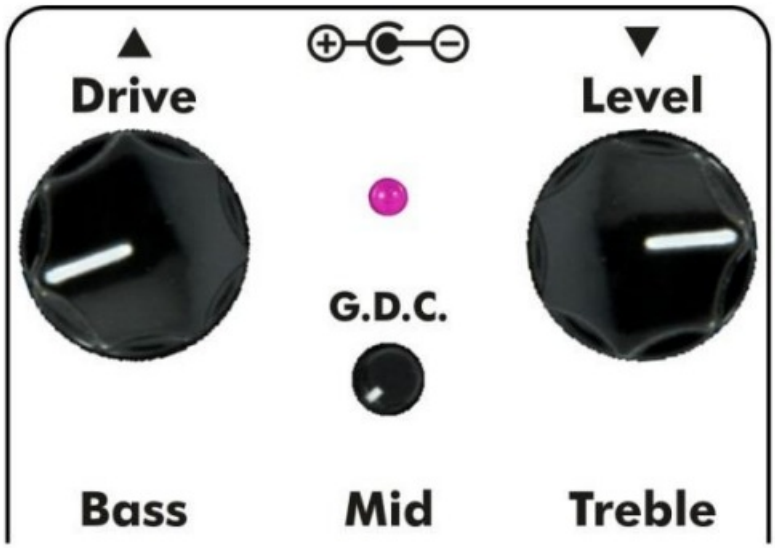
- **Gray:** right stop
- **Blue:** middle position
- **Green:** left stop

  Note: Please note that the positions of the knobs on the ODR-CS cannot be compared 1:1 with the ODR-S (from 1993)! Due to the improvements, e.g. extension of the middle knob, the knob positions are shifted to each other.

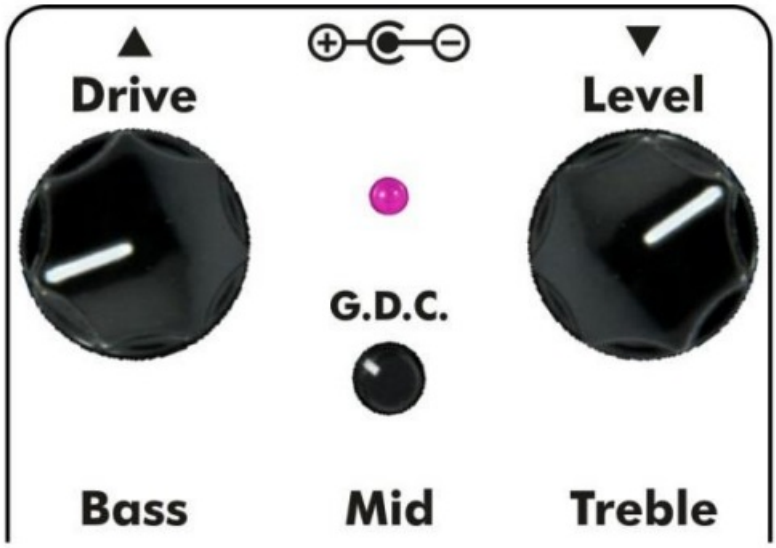
Sound-Examples

These Drive, G.D.C. and Level settings are just examples and will certainly vary with you depending on what guitar, amp, etc. you are using ☺
Examples also without any bass – mid – treble settings – please adjust them as desired

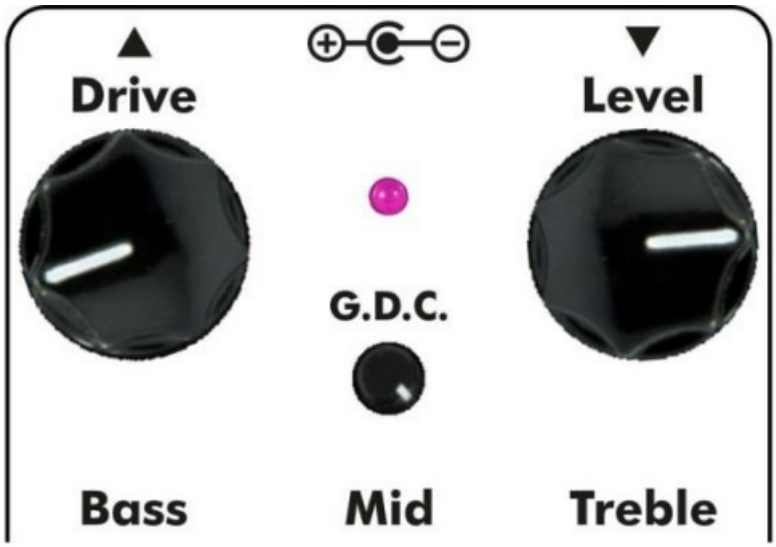
1. **Low Gain Germanium Drive I:**
   Set Drive to 8 o'clock position. Depending on your pickups (Single coil or Humbucker) you get a very low overdrive sound but with max.



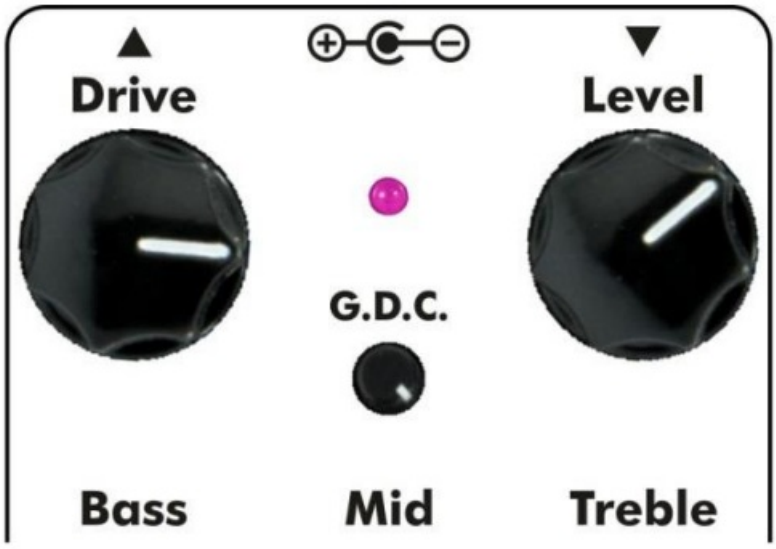
2. **Low Gain Germanium Drive II:**
   Now increase G.D.C. a bit to around 10 o'clock, but also decrease the level because less G.D.C means higher output level!



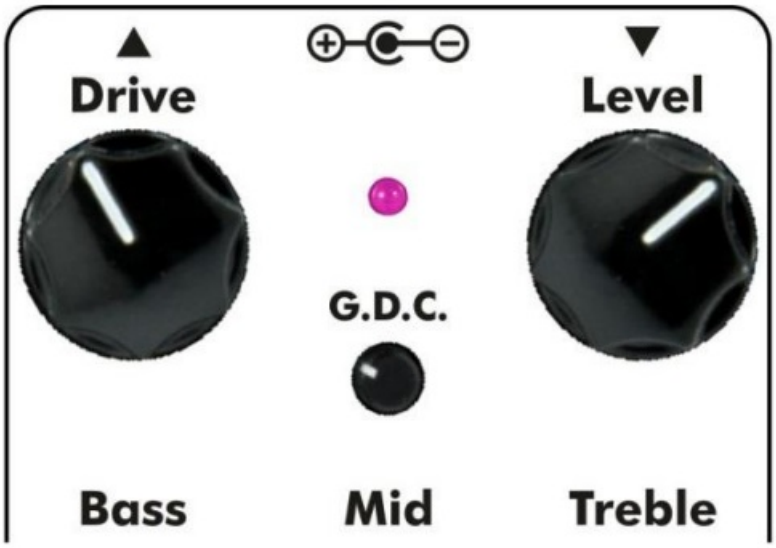
3. **Booster / Low Gain Drive:**
   Now set G.D.C. to its right stop to minimize the effect of the Germanium diodes. Increase the level for your desired boost output level!



4. **Lead Sound / Silicon Overdrive:**
   Using more Drive you will have a nice overdriven sound good for lead guitar. Adjust the Level for your desired output volume.

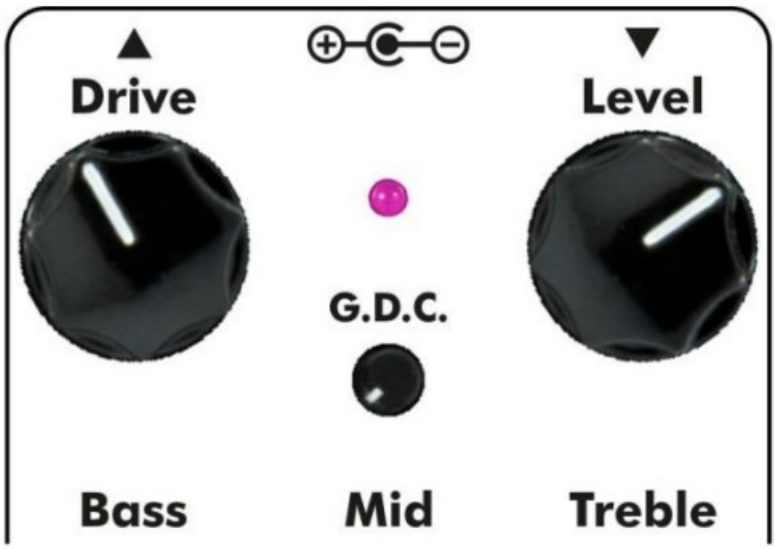


5. **Mixed Silicon / Germanium Overdrive:**
   In these positions you have a mixture of silicon and germanium. Tweak G.D.C. for your taste!



6. **ODR-S Overdrive**

Like #5 but with max. Germanium hard-clipping (G.D.C. left stop). A typical sound as it was generated by the ODR-S



Technical Data

- **Input impedance** ~1 MΩ,
- **Output impedance** ~1 kΩ
- **DC-Power supply**: 9 V to 18 V (electronically stabilized)
- **Consumption: approx:** 14 mA at 9 V, approx. 18 mA at 18 V
- **Powered by battery DC 9 V:**
  - Dry battery 6F22 (9 V)-Type (Carbon). Lifetime approx. 21 hours @ 300mAh
  - Dry battery 6LR61 (9 V)-Type (alkaline manganese) Lifetime approx. 35 hours @ 500mAh
- **Dimensions** 125 (l) x 66 (w) x 58 (h) mm
- **Weight** ~ 360 g (without battery, not included!)

Important notes / safety instructions

- DC voltages over 20 volts can damage the ODR-CS!
- Do not use the ODR-CS in a humid, dusty, dirty or hot environment.
- Liquids of any kind can damage the device. (Keep your cat away!)
- Do not use harsh cleaning agents. If necessary, the ODR-CS should be cleaned with a soft cloth.

Batteries

- Delivery WITHOUT batteries.
- If the batteries are mishandled, they may explode or leak. Therefore, always observe all safety instructions for the batteries.
- When changing the battery, the cables at the connections (input, DC, output) must first be removed! This prevents possible malfunction or damage.
- Batteries can leak! The escaping liquid is corrosive and attacks the material! If the ODR-CS is not used for a longer period of time, please remove the battery!
- The device is switched on by inserting a mono jack plug into the input socket! Please note this when using

batteries and pull out the jack plug to switch off.

- Subject to technical and written changes!
- This manual describes the technical data and details of the device at the time of publication of this document.
- A current version of these instructions can be found on the Nordland website: **https://nordland-electronics.de/en/products/download-en.html**

ABOUT COMPANY

- WEEE-Reg.-No.: DE59471800
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- Nordland is a registered trademark!
- **https://nordland-electronics.de**

Documents / Resources

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

References

- **Nordland Electronics / Deutsch**
- **Download Manuals**