

Lehle



# Lehle Little Dual

Operating instructions



www.lehle.com



Dear Musician!

Thank you for purchasing your **Lehle Little Dual!**

I have been building units that switch, split and route signals with no technical compromises and with maximum musical fidelity since 1999. Your new **Lehle Little Dual** comprises only the very best components.

Every assembly of your **Lehle Little Dual** has been made and tested in Germany.

Your **Lehle Little Dual** is of extremely robust design and construction, to make sure that you get absolutely years and years of enjoyment from it. If you should nonetheless have a problem, or simply a question, just mail me or a member of the Lehle team at: [support@lehle.com](mailto:support@lehle.com)

I wish you the very greatest pleasure and success using your **Lehle Little Dual!**

A handwritten signature in blue ink that reads "Burkhard Georg Lehle". The signature is written in a cursive, flowing style.

Burkhard Georg Lehle

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The **Lehle Little Dual** is the **Lehle Dual SGoS**'s little sister, a maximum signal-fidelity amp switcher for two amps. Both amps are activated simultaneously using the left footswitch, while the right is used to switch back and forth between them. High-intensity LEDs make it easy to read off switching state A or B, or A and B, even under high-power spots.

The centerpiece of the **Lehle Little Dual** is its high-end Lehle LTHZ transformer, which electrically isolates output A from output B, making history of hum loops - permanently! The **Lehle LTHZ** features a gold-plated-contact phase inverter and a gold-plated-contact ground switch. The two inputs can also be routed in stereo to outputs A and B, if you use the stereo signal of an effect unit as the input, for example. This also makes it possible to route instruments equipped with two pickups, including many acoustic and hybrid guitars, and also double basses, via two amplifier

systems - with no complications. These systems can be operated either in alternation or in parallel - without hum, and without sound losses, needless to say! The **Lehle Little Dual** - small, but so utterly effective!



### **Technical data**

Weight: 570 g

Length: 3.9"

Width: 4.8"

Overall height: 1.9"

Voltage: 8 - 20 V DC or AC

Max current: 55 mA

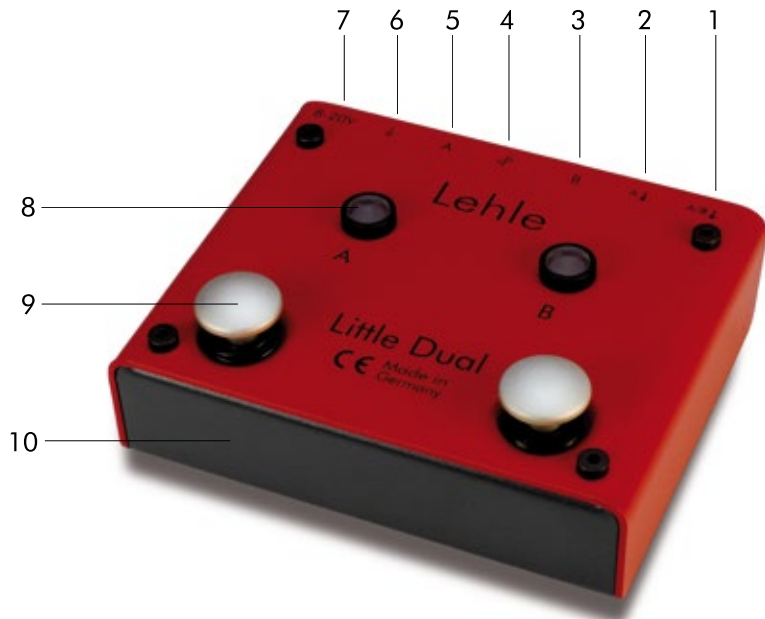
Max gain: +16 dBU (<1 % THD @ +16 dBU/40 Hz)

Total harmonic distortion: 0.003 % @ 0 dBU/1 kHz

Frequency range: 20 Hz – 100 kHz -0.1/+0.4 dB  
(source 600 Ohm, load 1 MOhm)

Input impedance (transformer impedance load): min. 2 MOhm @ 2 kHz

## General description



### 1. Input socket

■ *Connect your instrument or the output from an effect unit or DAW here.*

The mono input signal is fed into this socket; should the input socket (2) be used as well this signal will be routed to output B only.

### 2. Input socket for a 2<sup>nd</sup> signal

■ *Connect the 2<sup>nd</sup> pickup of your instrument or the 2<sup>nd</sup> stereo output from an effect unit or DAW here.*

The signal from this input socket is routed to output A only. Stereo signals such as the signals from different pickups can be switched individually to the outputs A and B, which could be 2 separate amplifiers or PA channels.

### 3. B-Output

■ *Connect your amplifier or the input of a mixing desk here.*

The signal is routed to output B directly via a goldplated switch with no semiconductors. The **Lehle Little Dual**, and therefore the instrument connected, is grounded via this socket. This output should therefore always be occupied.

### 4. Phase inverter switch

■ *The phase of the input signal from the A output can be inverted if necessary.*

This switch can be used to invert the phase of the input signal from the A output socket by 180°. Splitting signals to two amps may sometimes cause phase cancellations, resulting, for most musicians, in a “thin” sound. Inverting the phase eliminates this problem. Experiment to find out which position you prefer - as always, your individual taste is what counts!

### 5. A-Output

■ *Connect your amplifier or the input of a mixing desk here.*

Output A is electrically isolated from output B by the **Lehle LTHZ** high-end transformer - so hum loops are impossible, even if A and B are switched on simultaneously.

A balanced or an unbalanced signal is possible, irrespective of the type of signal fed from the input, this way you can connect any guitar or bass amp as well as balanced inputs on a mixing console.

## 6. Ground lift switch

■ *Connect the grounds of output sockets A and B if necessary.*

This switch connects the chassis of outputs A and B when it is pressed, connecting the ground conductors of the A and B outputs can help in some situations, depending on the units connected and on their power supplies. Actuate the ground lift switch to find out for yourself the position in which noise is minimised.

## 7. External power supply

■ *Connect a power pack for a voltage of 8 to 20 V to this socket when needed.*

The **Lehle Little Dual** switches all audio signals completely without electricity. To detect the switching status it requires an 8 to 20 V power supply for operation of the LEDs. Polarity is of no importance. The supply voltage is internally rectified and stabilized in order to guarantee trouble-free operation. A thermal cut-out automatically trips and switches the unit off if a short circuit occurs.

A correctly fitting plug connector for the power supply socket is supplied with the **Lehle Little Dual** and can be soldered to the required power

unit if necessary. It is advisable to use a separate power adapter or an outlet on a multiple outlet power adapter with electrically isolated outlets for the **Lehle Little Dual**, but with no other loads connected to it, to avoid interference noise during operation or when switching.

## 8. LEDs for switching status

■ *If the left (A) LED shows green, the output A (5) is active, if the right (B) LED is red, a signal is routed thru output B (3).*

The high-intensity LEDs under the lenses clearly indicate switching State A or B, even under stage lighting.

Output A (left) is GREEN and output B (right) is RED.

## 9. True-Bypass switch

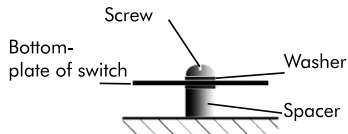
■ *Here you can switch.*

Two parallel slide switches with gold-plated contacts, which switch the stereo signal together with the ground connections, are actuated inside the switcher by means of a practically indestructible switching mechanism. The slide switches switch virtually silently, since they function completely bounce-free.



## 10. Base and fixing

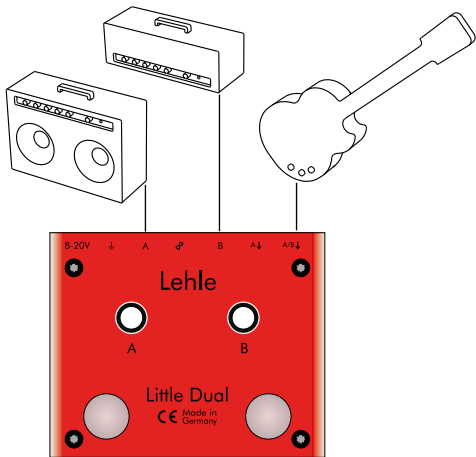
■ You can use the fixing screws supplied with the **Lehle Little Dual** to fix it to a base plate (or to a pedal board, for example).



Thanks to its ready-to-go fixing system, the **Lehle Little Dual** can be mounted without difficulty on a base plate. To do this, undo the four housing screws and detach the cover. Then fix the device base to a base plate using the two screws, the washers and the spacers supplied. Replace the cover and tighten the four housing screws - done!

## Typical uses

### Lehle Little Dual as an amp switcher



The **Lehle Little Dual** was designed specifically to split and switch the signal of your instrument between 2 amps which are running at the same time. This way you can achieve very nice blends,

e.g. with a clean and a crunchy amp sound. Phasing issues can be corrected at the push of a button, as afore-mentioned the output A features a phase-inverter switch.

### Device connections

- Output A (5) → Amplifier 1
- Output B (3) → Amplifier 2
- Input A (2) → -
- Input A/B (1) → Instrument

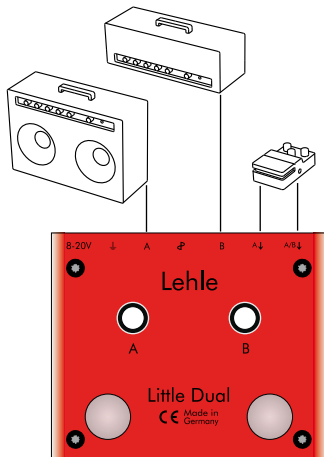
### How to do this:

1. Connect amplifier 1 to the output socket A (5).
2. Connect the 2<sup>nd</sup> amplifier to the output socket B (3).
3. Do not use the input socket A (2).
4. Connect your instrument to the input socket A/B (1) of the **Lehle Little Dual**.
5. Activate both amps with the left True-Bypass-switch (9).
6. Use the phase inverter switch (4) to find out which setting you prefer.
7. Use the ground lift switch (6) to determine

which position eliminates the most background noise.

8. There you go!

## Lehle Little Dual as an amp switcher for stereo effects and 2 amplifiers



A dual amp setup suggests the use of stereo effects, with one amp receiving the left stereo signal and the other amp receiving the right stereo signal. Chorus and delays create a very

wide soundscape when played through 2 amps simultaneously.

8. There you go!

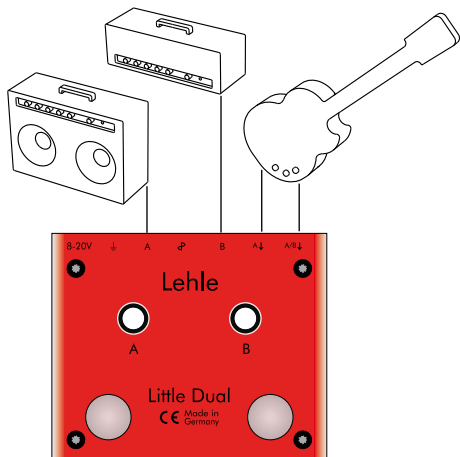
### **Device connections**

- Output A (5) → Amplifier 1 (left stereo signal)
- Output B (3) → Amplifier 2 (right stereo signal)
- Input A (2) → Left stereo signal from FX unit
- Input A/B (1) → Right stereo signal from FX unit

### **How to do this:**

1. For the left stereo signal connect the output socket A (5) to the input of amp 1.
2. Connect the output socket B (3) to the amp that should render the right FX signal.
3. Connect the left stereo output from your effects unit to the input socket A (2).
4. Connect the right stereo output from your effects unit to the input socket A/B (1).
5. Use the left True-Bypass switch (9) to activate both amplifiers.
6. Use the phase inverter switch (4) to find out which setting you prefer.
7. Use the ground lift switch (6) to determine which position eliminates the most background noise.

## Lehle Little Dual as an amp switcher for 1 instrument with piezo and magnetic pickups sent to 2 amplifiers



Some instruments are equipped with 2 different type of pickups, usually one magnetic e-guitar pickup and one piezo pickup. These signals have

totally different characteristics and sound best when played through their respective amp-types. A simple Y cable can be used in case both signals come from the same TRS socket (TRS > 2 mono TS plugs, commonly referred to as "insert cable"), otherwise use a separate mono cable for each signal.

### Device connections

- Output A (5) → Amplifier for acoustic guitar
- Output B (3) → Amplifier for electric guitar
- Input A (2) → Instrument acoustic pickup
- Input A/B (1) → Instrument magnetic pickup

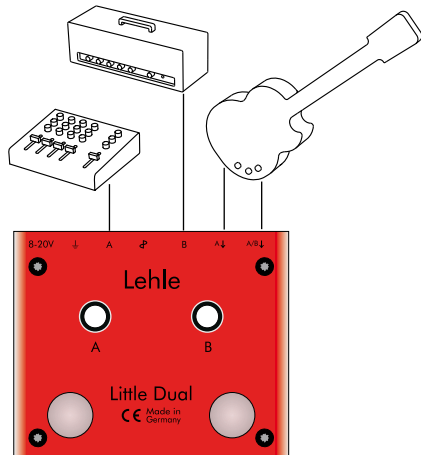
### How to do this:

1. Connect the acoustic amplifier to the output socket A (5).
2. Connect the 2<sup>nd</sup> amplifier to the output socket B (3).
3. Connect the acoustic pickup of your instrument to the input socket A (2).
4. Connect the magnetic pickup of your instrument to the input socket A/B (1).
5. Use the left True-Bypass switch (9) to activate

both amplifiers.

6. Use the phase inverter switch (4) to find out which setting you prefer.
7. Use the ground lift switch (6) to determine which position eliminates the most background noise.
8. There you go!

## Lehle Little Dual as an amp switcher for 1 instrument with piezo and magnetic pickups played through their respective amps or a mixer with DI function



In order to extend the previous setup and to make it more flexible, the piezo signal can be routed to a mixer, stagebox or DAW instead of a regular

guitar amp. This way acoustic and electric guitar sounds can be mixed together, either live for the FOH mix, monitoring or recording. Having the option to convert unbalanced signals to balanced is extremely useful and makes the use of additional equipment like DI boxes redundant.

### Device connections

- Output A (5) → Mixer, stagebox, DAW
- Output B (3) → Amplifier for electric guitar
- Input A (2) → Instrument acoustic pickup (active)
- Input A/B (1) → Instrument magnetic pickup

### How to do this:

1. Connect your mixer, stagebox or DAW to the output socket A (5).
2. Connect your electric guitar amp to the output socket B (3) an.
3. Connect the active pickup of your instrument to the input socket A (2) an.
4. Connect your magnetic pickup to the input socket A/B (1) an.
5. Use the left True-Bypass-switch (9) to activate

both amplifiers.

6. Use the phase inverter switch (4) to find out which setting you prefer.
7. Use the ground lift switch (6) to determine which position eliminates the most background noise.
8. There you go!

### Note:

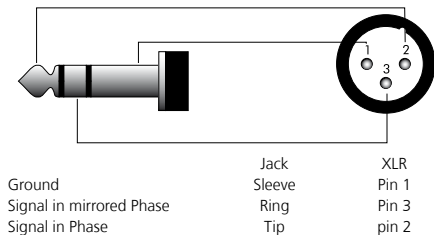
Output A can send out an unbalanced signal to guitar or bass amps or balanced signals to mixers or DAWs.

For connections to mixers or DAWs the signal should be buffered to eliminate impedance issues/mismatch.

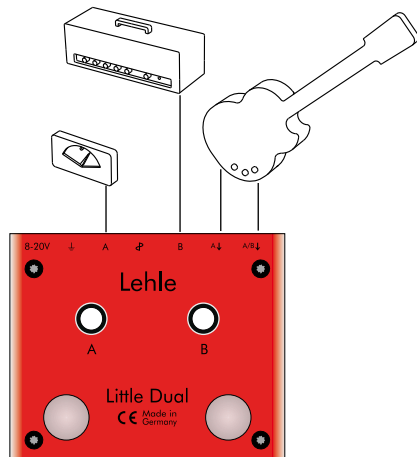
The signal from a passive pickup cannot be split to an amp or mixer without negative effects on your sound, since balanced inputs are usually low impedance.

**Balanced signal lines** are used to cross larger distances without interference. They are generally fitted with XLR connectors or TRS (Tip Ring Sleeve) jack plugs. Here, three cores are required: there are two signal conductors. In a balanced signal

line, the signal is present in phase at the tip, as in the case of an unbalanced signal line (XLR Pin 2). The second signal conductor carries the same signal, but with the opposite polarity or mirror-image phase (Ring, XLR Pin 3). The third conductor is the screening, and again constitutes the signal ground (Sleeve, XLR Pin 1).



## Lehle Little Dual as tuner-mute-box (1 instrument, 1 amplifier and 1 tuner)



In smaller setups with only 1 guitar and 1 amplifier the **Lehle Little Dual** can also be helpful to mute the signal for tuning in case you would like to keep it silent for the audience or your fellow



musicians.

This way the tuner is not in the direct signalpath and is isolated electrically from your amp.

### Device connections

- Output A (5) → Tuner
- Output B (3) → Amplifier
- Input A (2) → –
- Input A/B (1) → Instrument

### **How to do this:**

1. Connect your tuner to the output socket A (5) of the **Lehle Little Dual**.
2. Connect the amplifier to output B (3) an.
3. Do not use the input socket A (2).
4. Connect your instrument to the input socket A/B (1) of the **Lehle Little Dual**.
5. Use the ground lift switch (6) to determine which position eliminates the most background noise.
6. There you go!

## **Troubleshooting**

### ***Something is rattling inside my unit***

If you should happen to shake the **Lehle Little Dual** you will hear a slight metallic rattling from inside. This is a mechanical noise caused by a flat spring which diverts the force of the True Bypass switch button on to the horizontal slide switch inside the **Lehle Little Dual**. So this is not a defect, not a problem, just a healthy indication that the spring is not jammed.

## Signal flow chart of the Lehle Little Dual

