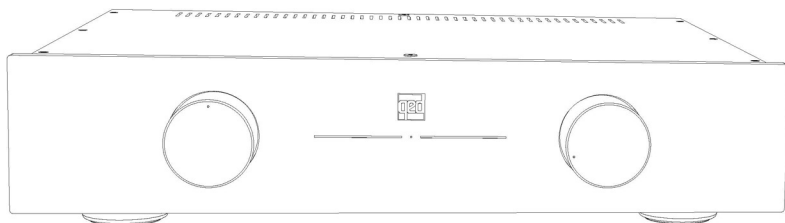


■ user instructions



LINE DRIVER \ PREAMPLIFIER

TRACE



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Scope of delivery

When unpacking, please ensure that everything is complete and undamaged. If you notice any damage, inform the shipping company and the dealer immediately. In this case, do not connect the device to the power supply!

- TRACE preamplifier (1x)
- Power cable (1x)
- Cinch protective caps (12x)
- XLR protective caps (2x)
- This manual (1x)
- Allen key (2x)
- Flight case (1x)

Warranty conditions

We provide a three-year guarantee on materials and workmanship for the preamplifier from the date of purchase and upon presentation of the purchase receipt.

The guarantee is void if the device is used improperly or not as intended, if it has been opened and repaired without authorization or if it has been technically modified.

There is no guarantee for transport damage. We therefore strongly recommend that you take out transport insurance for the return transport in the amount of the replacement value. Only use the original packaging.

Safety instructions

Do not place the device in the immediate vicinity of strong **heat sources** and do not expose it to direct sunlight or excessive dust.

The device should be sufficiently **ventilated** at the installation location. The ventilation openings must not be covered.

When placing devices on top of each other, ensure that there is **sufficient space** between them to allow unhindered heat dissipation. Do not place them directly above devices that generate heat, such as integrated amplifiers or power amplifiers.

The device should not be exposed to strong **impacts** or **vibrations**.

After transporting the device from a cold to a warm environment, do not connect it to the power socket until it has warmed up to room temperature and the **condensation** has completely evaporated.

No **liquids** may get into the device; it must be protected from rain and **moisture**.

Make sure that no **foreign objects** can get into the device through the ventilation openings.

Do not operate the device when it is open.

Before opening the device, always unplug the power cord and wait a few minutes until the **voltage** in the device has **discharged**.

Only operate the device with the **permissible mains voltage**. This is indicated on the back above the power switch.

Never bridge the mains fuse. Only replace a defective fuse with one of the same type and with identical values.

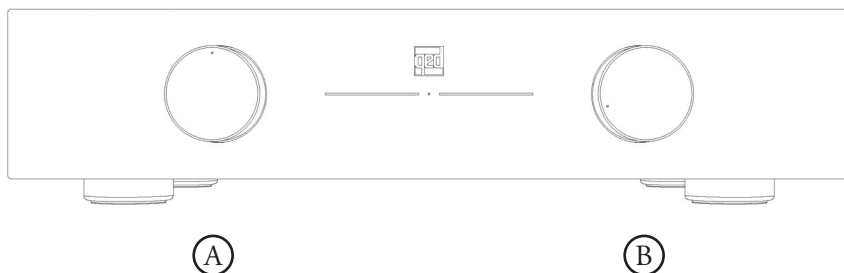
Always switch the system **off** if you want to make any changes to the mains or audio cabling.

First set the volume control to a **low volume** before pressing the power switch and starting playback.

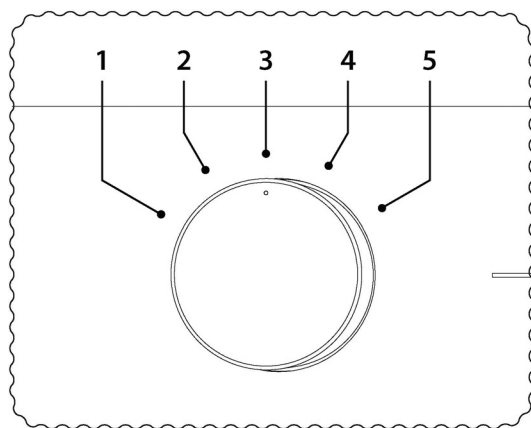


This device does not have a lower band stop or DC protection circuit and also amplifies **direct current!**

Controls / front

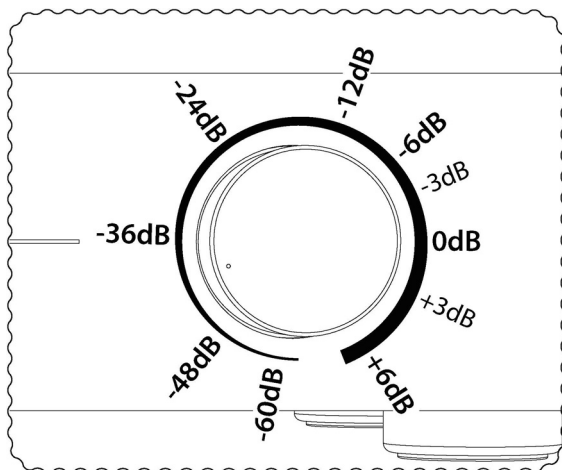


Ⓐ Input selector switch



The Trace has five unbalanced stereo inputs to which you can connect various line-level signal sources. These include CD players, D/A converters, tuners, media players, PCs and TVs. Use the **left selector switch** on the front to select the desired **signal source**. Inputs 1 to 5 are arranged *clockwise* on the selector switch and the corresponding input sockets are arranged *from left to right* as seen from the front.

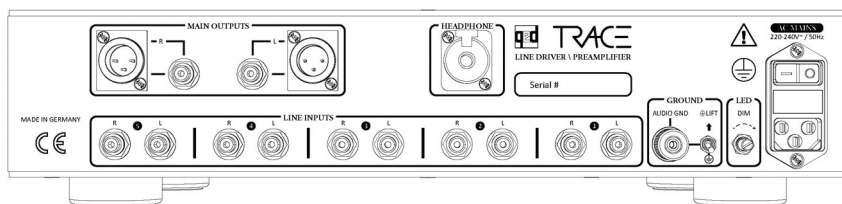
Ⓑ Volume control



With the volume control on the **right side** of the front, you can adjust the **listening volume** step by step *clockwise from quiet to loud*. At the lowest volume, the illuminated dot in the knob points vertically downwards (left stop).

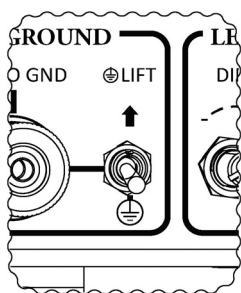
This control is a 48-step rotary switch with extremely precise fixed resistors, which guarantees a particularly high level of synchronization between the channels. In addition, it has a significantly lower inherent noise compared to a conventional potentiometer.

Controls / rear



Ⓒ Ⓓ Ⓔ

Ⓒ Ground lift switch

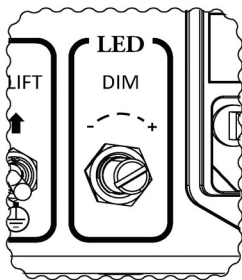


This switch can be used to connect or disconnect the **audio ground** to the protective **conductor potential**. If the ground lift switch is pointing downwards as shown in the picture, the audio ground is connected to the protective conductor, which is the initial configuration.

If *all* connected devices support this lift function or are equipped with a Euro plug without a protective conductor contact, interference voltages emanating from the protective conductor can be kept away from the audio chain if necessary.

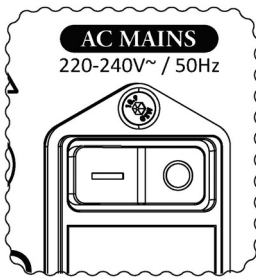
This switch can be useful for eliminating existing *ground loops*. Depending on the quality (contacts/line transitions) of the protective conductor connections of the individual devices, ground loops can arise, which can be avoided by connecting or opening sub-segments. The optimal switch position depends on the individual wiring, the design of the power grid and the other connected devices.

④ LED brightness



The **intensity** of the light points on the front can be continuously adjusted using this rotary control and adapted to personal needs, ambient brightness and the lighting of other devices.

⑤ Power switch

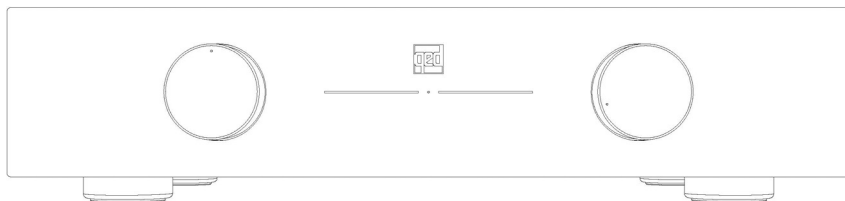


The Trace is **switched on and off** using the switch arranged horizontally above the power connection, in the form of a rocker.

If the switch is flipped towards the connection panel, the Trace is switched on.

If it is flipped towards the outer edge, it is switched off and disconnected from the power supply.

Status LEDs

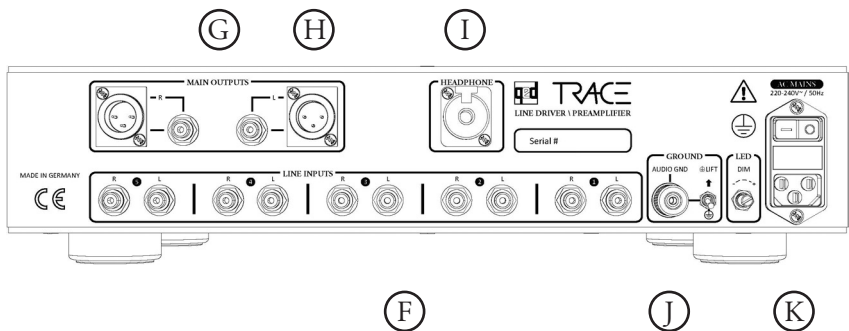


The current **position** of the input selector switch and the volume control is indicated by a light point in each of the **rotary knobs**.

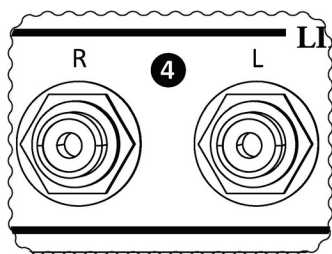
The **additional light point** in the **middle** of the front allows you to see the positions of the control buttons from a distance based on the resulting geometry of the three points in relation to each other – even in a darkened room.

If the Trace is switched off and disconnected from the power supply, the light in the rotary knobs go out immediately. The central point continues to light up until the voltage in the device's internal buffer has dropped to a low value.

Connections



F Input terminals

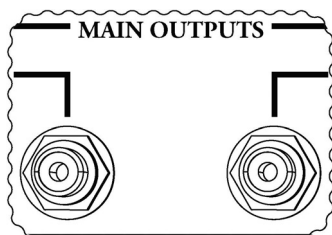


You can connect various **stereo sources** with high-level outputs, such as CD players, tuners, TVs, D/A converters, sound cards, etc. to the five pairs of sockets. Connecting a record player requires a separate phono amplifier with RIAA filter or one integrated into the record player.

The transmission is asymmetrical using RCA (cinch) cables.

All inputs are of equal value and electrically identical. The input impedance is 30 kOhm in each case.

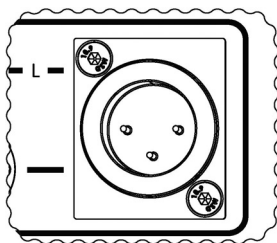
G Output terminals (unbalanced)



Outputs for connecting a **power amplifier** or active speakers using RCA cables.

For long cable runs, make sure that the capacitance of the audio cable does not exceed 750 pF.

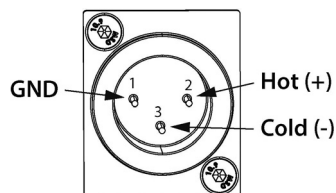
(H) Output terminals (balanced)



Two XLR connectors are used to connect a **power amplifier** or active loudspeakers using **symmetrical transmission**.

This type of transmission, known from recording studios and event technology, is used in environments that are *particularly* susceptible to interference – for example with long, parallel cables, possibly also affected by network interference from neighboring power lines. With symmetrical signal transmission, signals that have been introduced into the cable path by a source of interference are differentiated out again during desymmetrization.

Due to current-coupled transmission, the XLR connection is less sensitive to contact transition resistance caused by dirt or corrosion than the RCA connection.



symmetrical vs. asymmetrical

The properties of symmetrical transmission mentioned above are practically indispensable in event technology.

However, in the home audio sector, the requirements and technical environment differ *significantly* from this and do not make the additional features of symmetrical transmission absolutely necessary.

The Trace is able to meet the highest sound demands in both professional studios and private listening environments thanks to its equipment.

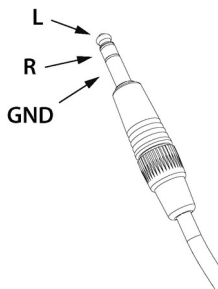
Since both outputs can be operated *simultaneously*, this allows bi-amping with two stereo power amplifiers or four mono power amplifiers on passive loudspeakers, or the parallel operation of two power amplifiers or active loudspeakers in different rooms.

① Headphone output



Connection for a **dynamic headphone** with a 6.3 mm jack plug.

To release the connection, *press* the red **release button** above the socket and pull out the plug at the same time.

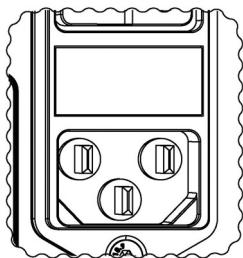


② Ground connection



If required, you can use this screw connection to establish an **additional ground connection** to other devices, mainly to the phono preamplifier.

③ Mains connection, fuse



For connecting a **power cable** with a cold appliance plug to supply power to the Trace. The insert for the **mains fuse** is located directly above the power connection.

The permissible input voltage (230VAC/50Hz or 115VAC/60Hz) is indicated on the device above the mains fuse. The mains voltage used *cannot* be switched or recoded internally.

Phasing in the power supply

For most electrical devices, it makes no difference in which **position** the **power plug** is inserted into the **power socket**. The power plugs commonly used in Germany therefore do not have anti-twist protection.

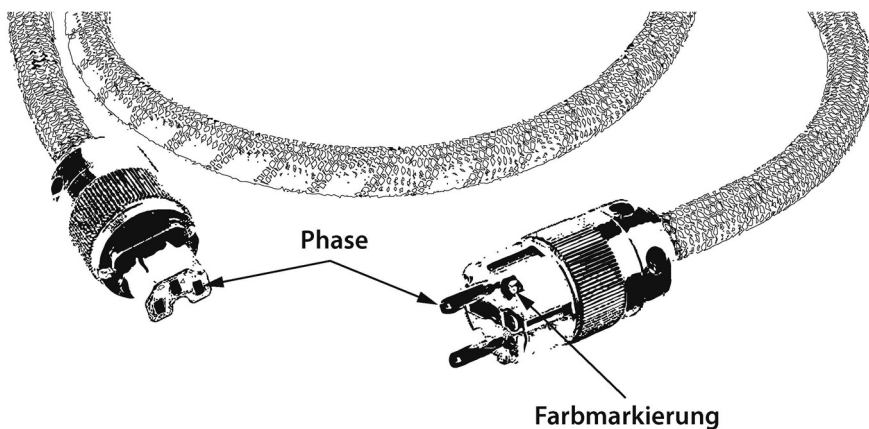
However, many HiFi fans have found that their stereo system sounds a *little more* detailed and spatial when the entire audio chain is connected in the correct phase, i.e. the power plugs are plugged into the power distributor in the optimal orientation.

The plug orientation that results in the *lower* alternating voltage between the audio ground and the protective conductor is preferable. In order to be able to measure this voltage, however, the potential equalization of the audio GND to the protective conductor must be *interrupted* for testing purposes.

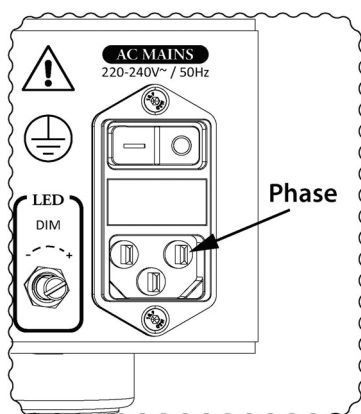


As most devices do not have a ground lift switch and are also operated with **life-threatening mains voltage**, you should *definitely* leave the phasing of your stereo system **to a specialist!**

Alternatively, you can use a test meter to check the correct orientation of the plug, which you can borrow from HiFi specialist stores for a small fee.



The power cable supplied with the Trace has a color marking on the plug side. The Trace is phased when the **marked side** is connected to the **mains phase**.



If you want to use a different power cable, you can use a continuity tester to align the corresponding plug side.

Adjusting the rotary resistance of the volume control

The preset *strength of the rotary resistance* of the Khozmo volume control can be reduced or increased.

Prepare a free place to place the device with a soft cloth as a base. Have the *smaller* of the two Allen keys provided and a flashlight ready to shine into the adjustment opening.

Turn the device off and disconnect all cables (power and audio cables) from the device.

First turn the volume control all the way to the left. From there, turn the volume exactly 24 steps to the right.

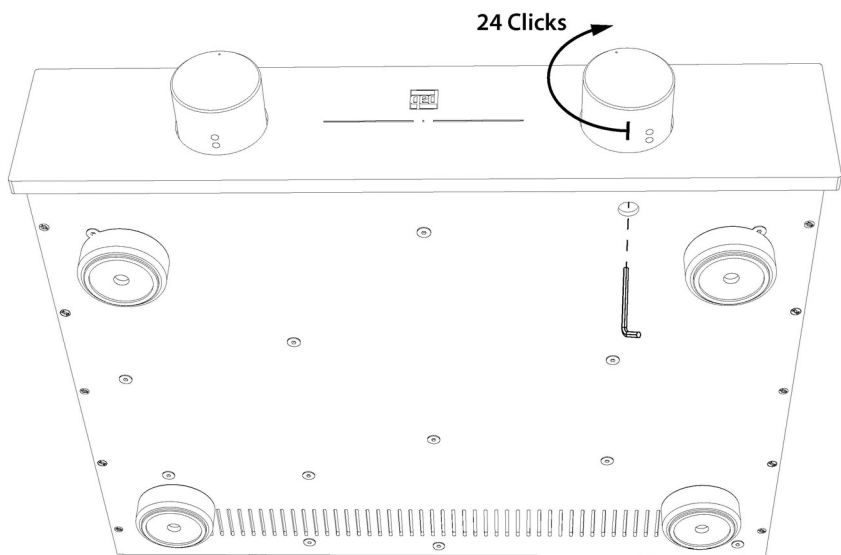
Now carefully place the device with the lid facing down on the prepared surface.



Shine the flashlight into the opening and *make sure* that the hexagon (Allen) head of the adjustment screw in the Khozmo is visible. If this is not the case, turn the volume control one step to the left or right until the adjustment screw appears.

With the Allen key, you can reduce the rotational resistance by turning the adjustment screw anti-clockwise and increase the rotational resistance by turning it clockwise.

To test the set torque, the Allen key must be *removed* again! Turn the volume knob one or two positions and then back again. Then reinsert the Allen key if necessary and adjust the rotational resistance until the desired torque is reached.



We recommend that you do not set the volume control's resistance too loosely to ensure a *secure locking position*. If the resistance is set too low, the Khozmo may end up in a position *between* two switching positions.

Technical data

Operating voltage

Device dependent	230 Volt / 50 Hz
or	115 Volt / 60 Hz

Power consumption

Stand-by	13 Watt
Max.	20 Watt

Input resistance

30 k Ω

Transmission range

Input +6 dBV	DC – 300 kHz / \pm 0,0 dB
Input 0 dBV	DC – 1,2 MHz / -3 dB

Max. input voltage

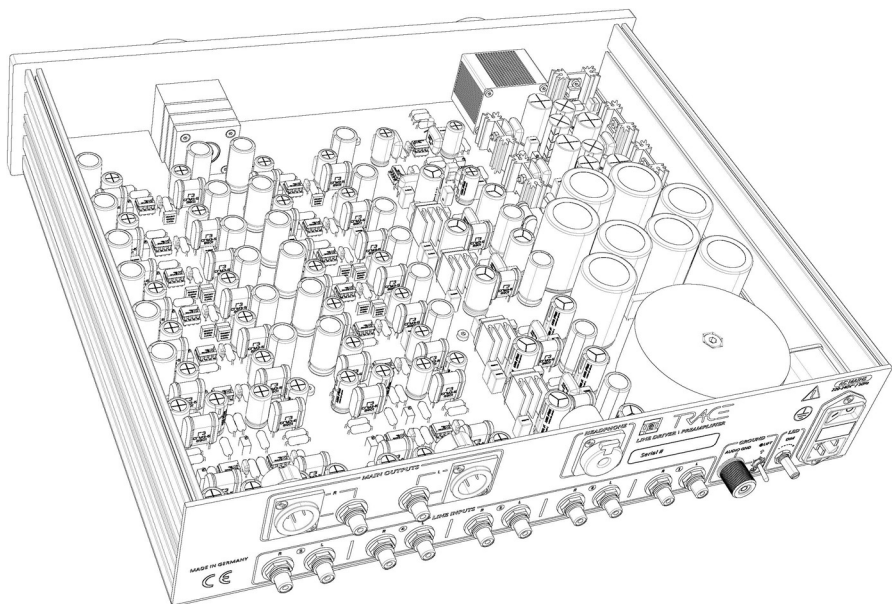
\pm 2,828 V (+6 dBV)

Amplification

RCA and XLR	+7 dB
Headphones	+17 dB

Output resistance

RCA and headphones	0,003 Ω
XLR	50 Ω



Housing

Material

aluminum

brushed

brushed

Color

anthracite gray / black anodized

Dimensions

W×H×D

450 × 107 × 362 mm

incl. buttons and sockets

450 × 107 × 420 mm

Weight

11 kg

Opening the housing cover

You can open the lid of the device for presentation purposes or for cleaning using the Allen key provided. Please note the following points:

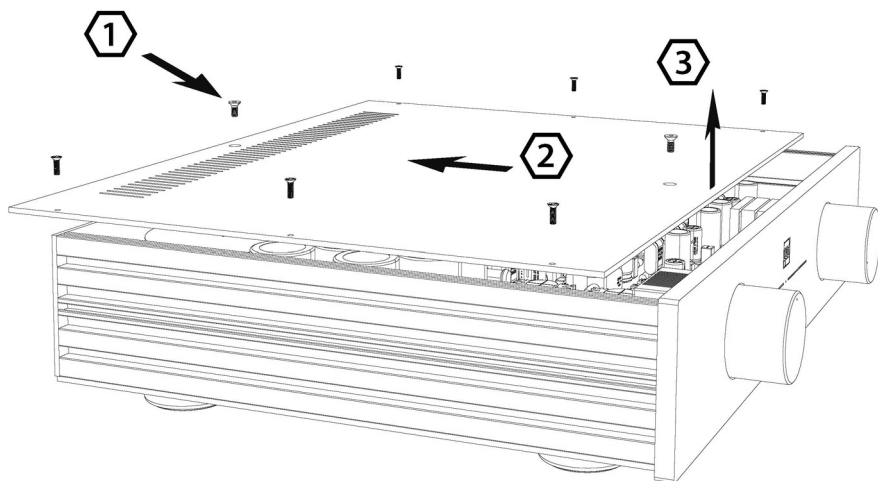
- **Switch off the Trace** and remove the power cable from the device!
- **Wait at least 10 minutes** so that most of the operating voltage in the device can discharge. Please note that there are still residual voltages, which only reach a value of less than 1 volt 30 minutes after the power has been disconnected.
- You can **then** use the Allen keys to loosen the screws ① visible on the lid. You need the smaller of the two keys for the outer screws that lead into the side walls. The inner two screws are loosened with the larger Allen key.
- Remove the screws and keep them a little away from the device.
- Make sure that there are *no objects nearby that* could fall into the device.
- Only now lift the lid off. So that you can grip it securely and lift it off horizontally, first push the lid plate ② back a little at the side with your hands. Now you can easily grasp the cover *at the front and back* and lift it off safely ③.
- **Do not use any objects**, such as brushes, to clean **inside the device**. Dust that has penetrated through the ventilation openings can be removed with a little compressed air from a can or a blower.
- **Do not carry out any other work on the device!** If this is necessary, contact the dealer or manufacturer.

WARNING!

THE DEVICE USES STORAGE CAPACITORS TO PROVIDE HIGH CURRENTS FOR THE INTERNAL OPERATING VOLTAGES, WHICH CAN SUDDENLY DISCHARGE IN THE EVENT OF A SHORT CIRCUIT (E.G. CAUSED BY METAL OBJECTS OR LIQUIDS) AND CAUSE SERIOUS DAMAGE!

THE DEVICE CONTAINS MANY ELECTRONIC COMPONENTS WITH OPEN CONTACTS!

FOLLOW THE PROCEDURE DESCRIBED AND BE SURE TO OBSERVE THE SAFETY INSTRUCTIONS!



Care

The Trace can be cleaned of dust using a lint-free cloth. Always wipe in the direction of the surface finish. A large flat brush is suitable for the ribs on the side panels.

If necessary, light cleaning fluids can also be used when cleaning with a damp cloth or sponge.



When cleaning the device, the cloth must always be kept dry to such an extent that no liquid can get into the device!

The housing, rotary controls and device feet are made of *anodized aluminum*. The lettering on the rear panel has been incorporated directly into the surface coating and is also made of this material.

There are components on the rear panel, the front, the rotary knobs and the device feet that contain *plastic*.



Do not use solvents!

info@qed-audio.de
www.qed-audio.de

