

PROFESSIONAL SHIELDING KIT

for guitar and bass

CONTENTS:

2 x self-adhesive copper foil 127 x 180 mm

1 x self-adhesive copper foil 30 x 350 mm

1 x self-adhesive copper foil 12 x 500 mm

2-core shielded high-quality cable, 50 cm

Stranded wire, 23 cm

Bare wire, 23 cm

Insulating tape

Instructions

golds
music

Göldo Professional Shielding Kit

Instruments that are not shielded or insufficiently shielded are sensitive to interference such as magnetic interference from mains transformers or stray fields from fluorescent lamps etc.. To protect an instrument against interference, all signal-carrying components and cables must be surrounded by a shield connected to ground.

Important: Any shielding is only effective if there is a connection to ground!

Required tools:

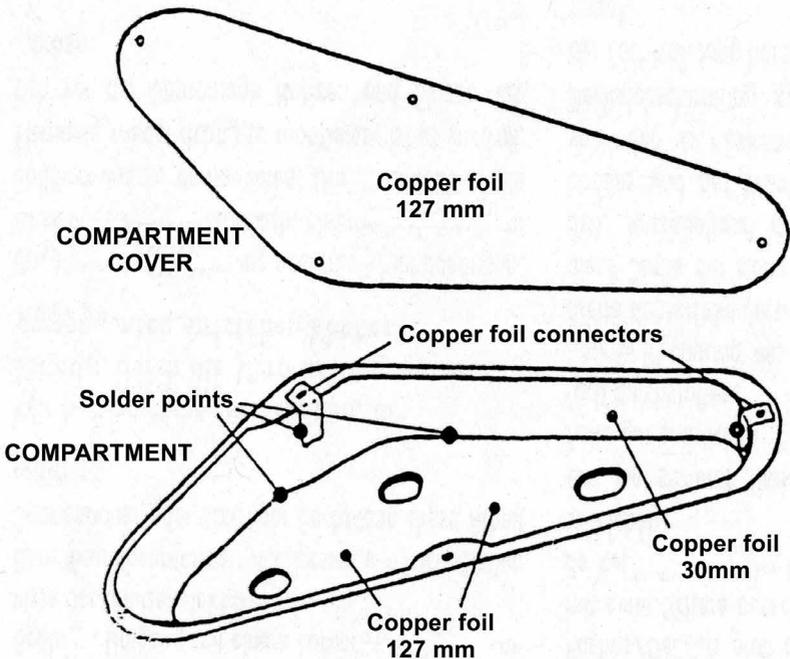
Soldering iron (approx. 40 W) with fine tip, screwdriver, open-ended or ring spanner for loosening the nuts of potentiometers, switches and sockets, tweezers or pointed pliers, wire stripper or sharp knife, scissors, and a soft pad for the instrument.

Required skills:

You should have some practice with a soldering iron, and also basic knowledge of guitar electronic. Without basic knowledge it is better to have a repair shop, a luthier or other specialist do this work.

We are not liable for damages that may occur through the installation of the Göldo Professional Shielding Kit!

In order to retrofit a good shielding, it is usually essential to desolder and disassemble electrical components. In order to reassemble all elements correctly afterwards, it makes sense to make notes and sketches before disassembly.



Shielding the electronic compartment, cover, pickguard:

First remove the knobs (for knobs with screw fastening, loosen the set screw on the side first). Unscrew all nuts and pull potentiometers, switches and jacks out of the holes. Keep the nuts and washers in a safe place or screw them back onto the threads. Before you remove the potentiometer/switch group, it is recommended to desolder the pickup connections. **Don't forget to make notes!**

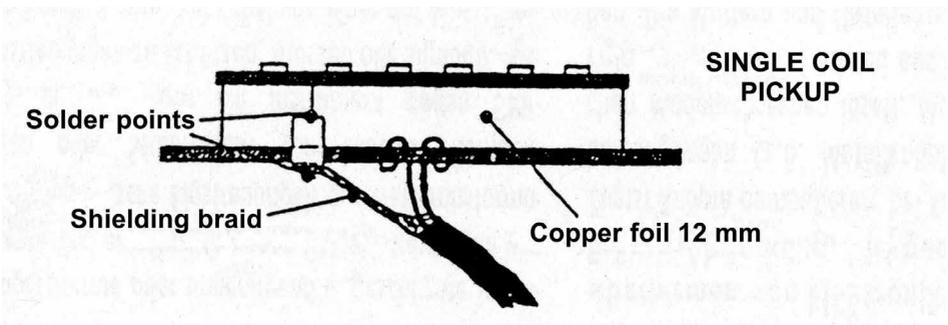
Before applying the foil, remove any paint residue and dust to ensure that the foil is applied flush and clean. Apply the copper foil pieces 127 x 180 mm on the bottom of the electronic compartment as well as on the lid - if necessary also on the area of the pickguard where the controls are located. To do this, either roughly sketch the contours of the compartment/lid on the foil before removing the protective film and cut it out with scissors, or glue the overlapping copper foil to the wall of the electronic compartment.

To ensure secure adhesion, press the foil down firmly. The holes for the potentiometers can be pierced easily.

Use the 30 mm copper foil for the wall of the electronic compartment. Usually, this size corresponds to the height of the wall (cut to size if necessary!). Then connect all foil in the cavity with some solder points (see drawing). To establish connection with the cover shield, put short strips of copper foil onto the edge of the compartment and don't forget to solder them (see drawing).

The strips should be clamped between the lid and the electrical compartment's rim when the lid is screwed on.

Routed jack (Strat) or switch (Les Paul) cavities may also be shielded if necessary. Use the enclosed strand wire for ground connection.



Shielding the pickups

Single-coil pickups: In order to optimize the shielding, the pickup winding must be covered with copper foil. The 12 mm wide copper foil (spool height usually 12 mm) is suitable for this.

Remove the pickups, carefully pull the bobbin out of the pickup cover or push it out pressing on the magnets from above. If the bobbin is glued to the cover, consult a specialist!

In order to avoid damage to the coils during soldering, an insulating tape strip should be applied under the subsequent soldering point before applying the copper foil (included in the kit on the back of the 12 mm wide copper foil). Then cover the winding in one layer with copper foil. For the ground connection, place a short copper foil bridge (*see drawing*) and solder carefully. Since the copper foil can be soldered very well, a short heating is sufficient.

If the pickup cables are not shielded, replace them with the supplied 2-core cable. To do this, cut off the cable according to the lengths of the original cable and strip approx. 2 cm of insulation from both sides of the outer insulation (use a wire stripper or knife). Twist the shielding braid. Tin all strand ends and shielding braid with the soldering iron. Desolder the original leads. **Important: Note the assignment of the connections beforehand!** Now solder the two inner leads to the pickup and the shielding braid to the copper foil bridge on the underside of the bobbin (*see drawing*).

For **large pickups with plastic cover** (e.g. P-90) it is also possible to line the inside of the cover with copper foil and to connect the shield to ground with a strand. Caution when soldering: Plastic is not very heat-resistant!

With **double coil pickups** (humbuckers), shielding only makes sense if they are also operated in single coil mode. Work steps as for single-coil pickups.

Safety

With poorly shielded instruments, noise is significantly reduced when the strings are touched with the hand because the strings of many instruments are connected to earth (ground) via cable to the amplifier. So your entire body is grounded when touching the strings and thus acts as a shield.

This can be life-threatening! If for some reason the amplifier housing is carrying live current, the musician will be carrying live current, too!

With a well shielded instrument, the noise level should be so low that the strings can be separated from the ground (usually a bare wire under the bridge). No need for „human shielding“.

Troubleshooting

If you worked carefully and in accordance with the instructions, the instrument should function perfectly after shielding with significantly reduced interference noise.

No output signal?

Probably a short circuit. Find out if signal-carrying parts are connected to ground.

Loud hum?

Probably a ground wire confused with a signal line. Simply swap the wires.