



Step-Up Transformers for Moving Coil Cartridges

So, you have the Step-Up Device and you want to properly install it into your system:

Step 1 - Connect the leads from your turntable to the input connectors on the Device.

Step 2 - Connect the ground lead from the turntable to the ground lug on the Device.

Step 3 - Use a short pair of interconnect cables to connect the output of the Device to the input of your Phono Preamplifier or Phono Inputs. For best results, this set of cables should be like the ones in this [DIAGRAM](#) .

Step 4 - Turn everything on and listen to the background noise. Move the ground / lift switch to whichever position is quietest. Then move the transformer around to find the quietest location.

If you are continuing to have problems, try connecting an ordinary piece of wire between the ground lug on the phono preamplifier and the device (in addition to the one from the turntable). Then try the ground / lift switch in both positions to see what sounds best. Then, if it still is not quiet enough, take a look at the following information:

Start from your cartridge and follow the wires, looking carefully for any places where the negative terminals of the cartridge (lets call them system ground) are connected to equipment grounds (let's call them chassis ground, sometimes referred to as drain wires) We only want one chassis ground connection between pieces of equipment. When there is more than one chassis ground connection, there is the possibility of a ground loop (it doesn't know which way to go, so it keeps on moving and generates noise.)

The other type of noise is interference (you get that from any parts of your system wires running too close to power transformers, power cords, or any kind of AC power.)

Now, since we all use RCA cables from the turntable to the phono preamp, the negative (system ground) wires have to be shielded with a chassis ground. (Read that sentence twice). Some turntables connect the shield of the RCA cables to the chassis ground wire at the turntable, and some do not.

The next 2 paragraphs repeat the initial steps above, but written in narrative format, and in more

detail:

If your turntable has a pigtail along with the RCA connectors, then that is the chassis ground from the turntable. Connect that pigtail to the ground lug on the step up transformer. Then connect everything else, without connecting the ground to the phono preamp. Try the ground / lift switch in both positions and see which is quietest. Then, additionally, connect a separate wire between the ground lug on the step up transformer and the ground screw on the phono preamp and see if that is quieter or noisier in either of the ground / lift switch positions. Then you can determine whether you need to ground the phono preamp to the step-up transformer or not. Regardless, you need the proper interconnect as shown in my [DIAGRAM](#) to go between the step up transformer and the phono preamp.

You only want them connected that way at one end, hence the ground / lift switch. So, here is the short answer. Remove the ground wire connecting the turntable from the phono preamp. Connect ONLY the ground from the turntable to the Box you got from me. Don't connect the wire from the box to the Phono Preamp just yet. Now, make sure that you use interconnect cable between the transformer and the Phono Preamp that have 2 wires inside (positive and negative) and the shield is connected to the outside (chassis ground of the cable) at only one end. (The cable will have the negative lead and the ground attached to the outside of the RCA connector at one end. The cable will only have the negative lead (Not the ground) attached at the other end.) Now, with everything hooked up, turn it on and listen to the hum. Then move the switch to whichever position offers less hum. Then touch the preamp ground wire to the ground lug and see if it is less or more noisy. Then remove the wire from the phono and see if it is quieter or not. Then touch the phono wire to the preamp wire and see if that is quieter.

Sounds like trial and error. It basically is, but the idea is to make sure that everything is grounded, and only grounded once, and the all the audio cables' shields are grounded, and only grounded once.

You will find that the transformers are very susceptible to Electro-Magnetic Radiation, and you may need to move them around a bit to find the quietest location. For me, it is just below my turntable and on top of my preamp.

If you want more information, check out

<http://www.rane.com/note110.html>

Included on their site are some diagrams on wiring that may be helpful.

You are welcome to send me any questions or suggestions.

Regards,

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