

AUDIOQUEST DM-1000 PHONO CARTRIDGE DEMAGNETIZER

Most phono cartridges use "soft" magnetic materials. This includes the cores of MC cartridges as well as the pole-pieces of MM cartridges. For best sound these parts must be magnetically "oriented" or magnetically "amorphous".

Most MC cartridges have coils wrapped around a permeable core, which moves within a powerful magnetic field. Ideally the core should remain permanently in a magnetically amorphous state and possess no remnant or residual magnetization. However this is not possible since the core's retentivity cannot be reduced to zero, so, the core must be magnetically re-oriented at regular intervals by using a "demagnetizer".

Non-permeable core (air core) MC cartridges are not as susceptible to core disorientation as permeable core MC cartridges. However, no material is completely non-magnetic, it is only a question of degree. Non-permeable core MCs should also be periodically re-oriented.

The pole-pieces of MM and VM cartridges also become magnetized with use - demagnetizing them will improve the sound. Since it is possible to remove the magnets from an MM cartridge by removing the stylus assembly, the AQ DM-1000 will truly demagnetize the pole-pieces of MM cartridges. If the stylus assembly is not removed before demagnetizing the cartridge, the magnets themselves will be partially demagnetized. This would cause the output level to drop. However this could be rectified by obtaining a new stylus assembly, which contains new magnets.

Do not attempt to demagnetize moving iron, moving flux, induced magnet or variable reluctance cartridges, and do not demagnetize MM or VM cartridges with non-removable stylus assemblies.

HOW IT WORKS

The AQ DM-1000 uses an AC signal source and a miniature amplifier to send enough high-frequency wattage through the cartridge's coils to saturate and eliminate any existing local magnetization of the core (but not enough to damage the ultra-thin coil wire). The DM-1000 then smoothly attenuates the high-frequency signal to zero. If the object being processed is not contained in a strong magnetic field, this technique will in fact demagnetize it. In an MC cartridge, once the alternating magnetic field created by the high-frequency input has died away, the core will be oriented to the strongest local magnetic field, which is the main magnetic field of the cartridge itself. So, instead of demagnetizing the core, the DM-1000 has reoriented the core according to the magnetic field of the cartridge.

As long as a cartridge is not played, the core or pole pieces will remain properly oriented. However the electrical output from the coil also sets up local magnetic fields that will gradually affect the orientation of the core. The cartridge should be reoriented or demagnetized with the AQ DM-1000 for every 20 - 100 hours of playing time.

DIRECTIONS

- 1) If you are using the DM-1000 for the first time you will need to install 4 penlight (AAA) batteries. Remove the 4 screws holding the top cover (do not remove the screws from the lower half of the chassis). Install the 4 batteries being careful to follow the markings for correct polarity.
- 2) If you are demagnetizing an MM cartridge, first remove the stylus assembly.
- 3) Disconnect the tonearm cable (coming from your turntable) from your preamp or amp's phono input. Plug this cable into the RCA jacks on the AQ DM-1000.
- 4) Turn on the power switch of the DM-1000, and leave it on for 5 seconds.
- 5) Turn off the power switch of the DM-1000, and do not touch anything for 5 seconds.
- 6) Although it is not normally necessary, you may repeat steps 4 and 5 extra times if you wish.
- 7) Make sure the power of the DM-1000 is off, and disconnect the cable from the demagnetizer. Reconnect these cables to the phono input of your preamp or amp.
- 8) Replace any stylus assembly you may have removed. You are back in business.

Please make sure that your cartridge is set up properly. The overhang, tracking angle, vertical tracking angle (VTA) azimuth all make a big difference. Also clean your stylus regularly. Eventually the stylus will wear out, at which time the only "fix" is to get a new stylus or cartridge.