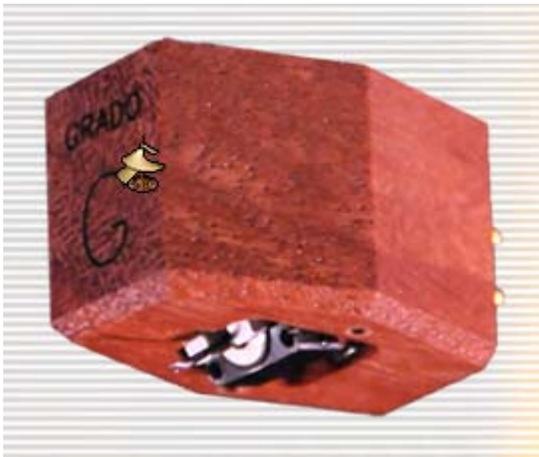


## Grado Reference 1 Moving Magnet Phono Cartridge

*You shouldn't count out MM cartridges; this one is superb and has a number of advantages.*

Published on August 19, 2009



:  
Hand-fashioned mahogany body  
Freq. response: beyond 50 kHz  
Output: 5mv (optional LO model: .5mv)  
Load setting: 47 K  
Tracking force: 1 to 2 grams  
Mounting: 1/2"  
Stylus not removable,

I

### Introduction

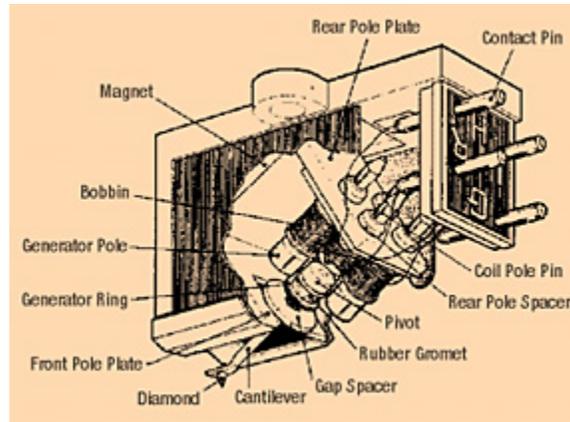
Ever since I graduated from an earlier Shure VR-15 many, many years ago I have been one of those typical analog audiophiles only into moving coil cartridges. I had thought they were the only truly high fidelity choice for a quality tone arm in a good turntable system, and feared problems of hum with moving magnet cartridges. Well, recently my longtime MC cartridge gave up the ghost after many years by suddenly reducing its right channel to less than half the level of the left. Research proved it not repairable and so a similar price-range cartridge to the Grado being reviewed went painfully to the trash heap.

### Grado Technology

I shouldn't have had any qualms whatever about moving magnets! I am even more pleased with this flagship Grado MM cartridge than I ever was with my moving coil. There were no hum problems whatever, and the cartridge was much easier to install in my SME-V arm than I had expected. It lined up perfectly in all the parameters that are so important in setting up a phono cartridge, and I didn't need the little aluminum shim that had been required with my MC cartridge due to its smaller size. The clean flat sides and bottom of the Grado are much easier to line up properly in the arm and on the disc than was the MC cartridge. And I could now sell off my Sumiko Flux Buster demagnetizer, since moving magnets not only don't need demagnetization, but are moreover completely ruined by it! I frankly had the shakes about this whole switchover, because it had been about 15 years since I had carried out any sort of cartridge mounting or turntable setup and had forgotten most of what was involved. My concerns were of no concern with the Grado.

Grado has two lines of cartridges. The Prestige Series are the affordable designs, with a combination of metal and plastic materials plus replaceable styli. They have a grading system consisting of different colors running from Black to Gold. Grado entered the world of high-end audio with the Reference Series of wood-body MM cartridges, which like the Prestige series, have a similar grading scale for the user to select the best value for their budget and application. Each cartridge has a high tolerance nude magnet and coil assembly which is isolated from the structure. The styli cannot be replaced but can be sent in to Grado for retipping. Some of the many Reference Series cartridges are now available in either a high or low output version. The low output model would require a

MC-type phono preamp to step up the voltage for a high-end line level preamp. In the case of the Reference 1 the low-output version at the same price was only .5mv whereas the high-output provided for review was 5mv. I was very thankful for Grado's choice of the high output version; I have a very long though high quality RCA cable going from my SOTA TT to my Sunfire AV preamp, and previously I had a problem of very low level interference from a local rock FM station. Now not only is the interference completely gone but the level at the AV preamp is about double what it formerly was - so much so that I need to lower levels when I am doing a comparison between a vinyl and CD/SACD version of the same recording, whereas it used to require raising the level considerably to match the digital sources.



All of Grado's cartridges use a derivation of the moving iron principle in three proprietary areas: Optimized Transmission Line cantilever technology, the Pivoted Fixed Axial Stylus-Generator Module, and the Flux-Bridger Generator System. The OTL stylus cantilever design eliminates resonances at the key junctions. All the separate sections are telescoped into one another, made of different alloys - some solid and some hollow - and then bonded together with a black material which controls and absorbs resonances that travel on the surface of the cantilever. This design makes records sound quieter and improves soundstaging and detail.

The Stylus-Generator Module brings the OTL cantilever shaft to a fixed axial pivot supporting the entire cantilever assembly. This type of support is more linear than conventional "teeter-totter" designs that balance the cantilever's mass with an iron armature. It has a very low tip mass, lowering distortion and giving longer vinyl life, and this system allows for implementing the Flux-Bridger Generator System. The latter uses four separate magnetic gaps between which the miniature element of the cantilever moves - creating an increase in flux in one gap while reducing it in the other. This highly efficient and perfectly balanced system requires fewer turns of coil than conventional designs, giving Grado cartridges lower mass and lower electrical inductance and making them insensitive to tone arm cable capacitance. Probably not many phono cartridges are actually made in the U.S. anymore, but all Grado cartridges are. They are each hand assembled and tested for frequency response, channel output, balance, phase linearity, inductance and resistance.

### Listening Tests

The very first thing I noted after the much higher volume level compared to my previous MC cartridge was the reduction of LP surface noise. Even though I use a VPI LP cleaning machine and different liquid treatments, plus zapping with a MapleShade Ionoclast ion generator and treating the stylus with Last's Stylast, and even though my high-end hearing is somewhat rolled off from what it was years ago, the surface noise on certain of my older LPs has still been annoying. In setting up the VTA of the Grado cartridge I used my old standby vinyl, the original Proprius *Jazz at the Pawnshop*, and in particular the track *Lady Be Good*. There is a section near the end where when VTA is perfect the sax jumps right out at you and a "ding" that is either a cymbal or cash register rings rather than sounding damped. I've used that track a lot and it has become scratchy. With the Reference 1 it didn't sound any different from the rest of the LP - yet there was no noticeable rolling off of the extreme high end.

The third attribute of the Grado I noticed was more weight and color in the sound than I was getting with my old MC cartridge. I tried a couple A/B disc comparisons again in which I had found the audiophile CD or SACD had somewhat superior bass end support than the identical recording on vinyl. Now they matched almost perfectly with the Grado, once I adjusted levels to match. This sort of improvement makes jazz recordings sound more rhythmic and exciting. One of the comparisons I made again was the recent F.I.M. K2HD mastered directly from the Toshiba direct disc of pianist Jun Fukamachi "at Steinway." Before the two sources had sounded amazingly identical. Now my actual direct disc, playing on my SOTA turntable with the Grado, pulled slightly ahead sonically, which seems to

be more logical all around.

Some of the “deep mono” audiophile reissues on vinyl from Pure Pleasure sounded more realistic and involving than they ever had before, especially when I made use of the handy mono option on my Sunfire preamp - a useful feature that was missing on the previous preamp. I also really dug an old LP with Slam Stewart and Major Holley playing their doublebasses along with their vocalizations - one one each of the front channels. These basses were walkin’ AND talkin’! (One of them sang in unison with his bass and the other one octave higher - I forget which is which - but there’s absolutely no doubt listening to them.)

Other attributes I felt to be part of the Reference 1’s sound were its highly detailed resolution and its outstandingly low distortion. In other comparisons I had made with identical recordings on CD or SACD there was often a high degree of similarity with the vinyl on the turntable, with perhaps a touch more “air” around the instruments in the vinyl reproduction vs. the optical disc. Now that air was still there, but in addition I was often hearing tiny details in the sound that were either not audible on the digital copy or reduced in clarity.

## Summary

I have heard that some audiophiles are simply turned off by the so-called signature sound of moving magnet cartridges. After my experience with the Grado MM I don’t know what they are talking about. The Reference 1 has a highly detailed, hi-res sound that is never metallic or annoying, even with poorer recordings. Neither is there the unnaturally rising high end slope of many MC cartridges. I can’t imagine anyone being displeased with the sweet sound of this lovely cartridge. If you are looking for a quality cartridge, don’t count out MM designs, especially this one. If your turntable system isn’t quite at the level of my vacuum SOTA/SME/MapleShade-supported system, check out some of the other Reference Series models, at prices down to around \$300, or the Prestige Series, running from about \$60 to \$220.

- John Sunier