

Thank you for purchasing the NuForce Magic Cube. We are certain you will find it an indispensable accessory. The information below will assist you in the Magic Cube's installation and use.

Description

The Magic Cube is a passive device that minimizes the distortions inherent in amplifier-cable-loudspeaker interactions. The Magic Cube accomplishes its "magic" by creatively addressing two fundamental problems: the distortion that arises from amplifier-to-loudspeaker linkage and the distortion that occurs in the conduction of current through speaker cables.

Amplifier-Loudspeaker Interactions

The assumption that an amp and the speakers it drives are independent entities couldn't be further from the truth. In point of practical fact, they constitute a totality wherein the behavior of one directly affects the other. A loudspeaker's drivers and crossover store and release energy. This inevitable fact of life operates as a fundamental source of distortion expressing itself as a signal delayed in time with respect to the amplifier's original signal. We call this phenomenon the "back" signal inasmuch as it attempts to divert current back into the amp. Most modern amplifier designs include error-correction circuitry that attempts to extinguish the back signal, along with other troublesome problems. If the amplifier did not perform this function, the loudspeaker would "ring," e.g., resonate slightly at the frequencies that comprise the back signal.

The distortion we identify here arises when the amplifier does not deal adequately with the back signal. The problem is further compounded by the amplifier's attempt to send new signals to the loudspeaker while trying to correct for the back signal. Obviously this is a daunting set of tasks. Regardless of its design, in this regard, the amp inevitably makes mistakes that arrive as distortion at the loudspeaker's input terminals, thus degrading true fidelity.

The Magic Cube's Filter Section is designed to attenuate the primary back signal, thereby reducing distortion over a wide range of frequencies. In accomplishing this it also relieves amplifier stress, the benefits of which the listener hears as superior transient reproduction, dynamic headroom, and micro-dynamic resolution.

Conductor-Induced Phase Distortion

The Magic Cube's proprietary Smith Cell operates on the speaker cables' current flow as an additional distortion-reducing mechanism.

A degree of low-level phase error occurs within metal conductors, resulting in a blurring effect, particularly with respect to micro-dynamics. While this form of distortion is certainly subtle, a high-resolution system will reveal its presence to the experienced listener.

The process giving rise to phase error is a subject of debate among physicists and electrical engineers. Our own experiments have shown it to be audible and have further demonstrated the Smith Cell's effectiveness. This particular distortion mechanism is commonly referred to as "flicker," e.g., 1/f noise that occurs in all natural systems. It would seem that actions at the molecular level giving rise to 1/f noise also manifest themselves as a form of AC-signal modulation observed in thin-film testing of various metals.

The Smith Cell addresses “flicker” by processing current flow in a way that reduces the likelihood of electron interaction. While the distortion mechanism may be complex in nature, the improvement that the Smith Cell provides is audible, especially (as mentioned) in high resolution systems.

Operation

Under normal circumstances, the Magic Cube requires no maintenance. Further, any number of Smith Cell Sections can be used without concern for system safety. The user is thereby presented with the possibility of numerous applications in even the most elaborate multi-amp systems.

Standard Installation

The Magic Cube can be installed at the speaker cables’ terminus. A short length of additional cable connects the Magic Cube’s output to the loudspeaker’s binding posts. The other standard location is at the amplifier’s outputs, where a similar short length of cable connects the amp to the Magic Cube’s input. The speaker cables run from the Magic Cube’s outputs to the speakers’ binding posts. While either location will yield effective results, experimentation may reveal which better suits your system’s performance.

Bi-Wire Installation

Bi-wiring with the Magic Cube is relatively straightforward. However, certain precautions must be observed.

If the device were to be placed at the cables’ speaker end as described above, the default cables would be those feeding the speaker’s low frequency section. The Smith Cell Section has its greatest effect at midrange to low frequencies. It can also be placed on the high frequency cables, though you might want to experiment to decide which location sounds better. Irrespective of location, you must remember that *only one Filter Section can be used per amplifier channel*. Using a Filter Section on each bi-wire cable has the potential to present the amp with an excessive load.

If desired, *a separate Smith Cell Section can be used on either cable pair without concern*. If you opt for this, you must decide at which section of cable you prefer to place the Magic Cube’s Filter Section, since you can only use one Filter Section per amplifier channel. This is not a critical concern. The Filter Section will affect both parts of cable as long as they are connected to the same amplifier output. In this configuration we suggest that you connect the Filter Section to your cable’s high-frequency pair. The Filter Section’s strongest effect is on mid to high frequencies.

As a third configuration, place the Magic Cube at the amp’s outputs as outlined in the Standard Installation. In this configuration only a single Smith Cell / Filter combination need be used. The bi-wire cables are then connected to the Magic Cube’s output, with each section connecting to their respective speaker terminals.

Advanced Installations

It is possible, budget permitting, to *install a Smith Cell Section at both ends of a speaker cable* to further enhance beneficial effects. This application presents the amp with no significant load. There’s little risk of harm however many Smith Cells you put in the system. For long cable runs you can position Smith Cell Sections linked in series along intermediate points. But remember: only one Filter Section should be used per amplifier-output channel.

Conclusion

The Magic Cube can be adapted to any number of systems. Once you have experienced the improvements it provides you will never give it up. As a passive device, the Magic Cube contains nothing requiring maintenance. You can look forward to a lifetime of faultless service.

We thank you again for your purchase. If you have questions, feel free to contact your NuForce representative or the home office. We will do all that we can to assist.

What does the Magic Cube do for your system?

Quite simply, the Magic Cube makes any system, NuForce or otherwise, sound better. Owing to the unit's ability to heighten resolution, the listener will better perceive musical details in terms of micro-dynamics, ambient cues, and soundstage imaging.

Nuforce provides three interchangeable filters:

MC-SCTL - for low output impedance tube amps

MC-SCTH - for high output impedance tube amps

MC-SCSS - for low output impedance solid-state amps

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Section 0. Refer to “Nuforce Limited Warranty” document.

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(i) NuForce is promptly notified in writing by Buyer upon discovery of any such default; (ii) the defective Product is returned to NuForce, transportation charges prepaid by Buyer, accompanied by a brief statement explaining the alleged defect; and (iii) NuForce’

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NuForce Three (3) Year Limited Warranty

Reference 9 V3SE and MCH-300SEC7 have five year warranty. All other products in the Reference and MCH series have three year warranty.

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If you purchased the product in the U.S., deliver the product, at your expense, to any NuForce Service Center located in the U.S. If you purchased the product outside of the U.S., deliver the product to any NuForce Authorized Importer in the country where you purchased the product. Be aware, however, that not all countries have NuForce Authorized Service Providers and not all Authorized Service Providers outside the country of purchase have all parts or replacement units for the product. If the product cannot be repaired or replaced in the country it is in, it may need to be sent to a different country or returned to the country of purchase at your expense for repair or replacement. You can always deliver the product to NuForce's U.S. main service center for obtaining warranty service.

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