Subject: Alnico verses ferrite verses neodymium
Posted by Ralph on Tue, 24 Aug 2004 21:37:22 GMT
View Forum Message <> Reply to Message

Speakers with alnico magnets are known to have better distortion properties than ferrite, excluding ones with Faraday rings. How does neodymium stack up?

Subject: Re: Alnico verses ferrite verses neodymium
Posted by Adrian Mack on Fri, 27 Aug 2004 12:50:10 GMT
View Forum Message <> Reply to Message

This page is exactly what you want:http://ldsg.snippets.org/appdx-b.php3#MAGNETS

Subject: Re: Alnico verses ferrite verses neodymium
Posted by Ralph on Sun, 29 Aug 2004 22:46:37 GMT
View Forum Message <> Reply to Message

Thanks Adrian. I didn't see anything mentioned about speaker properties using different magnet types. Have you discovered what properties neo gives?Ralph

Subject: Re: Alnico verses ferrite verses neodymium
Posted by Oberon on Tue, 07 Sep 2004 18:17:42 GMT
View Forum Message <> Reply to Message

Ragnar Lian, co-founder of Scan-Speak, said that speakers with alnico magnets had 10x less distortion than ferrite and neodymium had about 20x less. If a copper ring is added to a ferrite magnet, it can approach neodymium specs but only above a certain frequency, below which the ring becomes ineffective.

Subject: Re: Alnico verses ferrite verses neodymium
Posted by Ragnar Lian on Thu, 18 Nov 2004 18:37:12 GMT
View Forum Message <> Reply to Message

Sorry, I have not noticed this group. But here I am, still alive. Of economical reasons I have changed from loudspeakers to medical actuators, but the same physics are ruling. I do not know the reason for previous question, but I guess it is caused by an old JBL slogan "the alnico sound". The sonic difference alnico-ferrite is caused by more parameters.The physical shape of the normal ferrite magnet system is close to whorst case, causing many distortion mechanisms. Also ferrite magnets are relative "soft". When you put a current through the voice coil, it acts at an additional magnet, modulating the main magnet. Alnico have a sharp break point, at the right side magnet are "stiff", and on the wrong side, it is demagnetized. This was the main problem when we had the first generations og high power audio amplifiers (Dynaco Mark 3 and Stereo 120). Either it was OK, or the speaker was significantly and permanetly degraded . For ferrite, sound was normal more or less bad, but speaker was not demagnetized.I have made tests and simulations on 3 differend magnet systems having same linear movement and same Bxl, locking the coil in mid position, applying 10 amp current, and observing force in + and - direction. Result can vary, but the metioned numbers is representative. Of course, this is static properities, and dynamic properities may be different. I have not had time for further investigatemens, but I am an okd guy, and there shall also be lot of work and fun for younger people, come along !OOPS ! I do not yet know this forum, and have to find its form. I like to play ping-pong, and will now see if something happends

---

Subject: Re: Alnico verses ferrite verses neodymium
Posted by Wayne Parham on Fri, 19 Nov 2004 05:38:03 GMT
View Forum Message <> Reply to Message

I agree with your reasoning.I was talking with an M.E. yesterday about a cooling valve. He's working on the flow rates so we know what sizes are needed. That has absolutely nothing to do with this but while I was there, he showed me a little "toy" he put togther. It is nothing more than an aluminum pipe and a neodymium magnet. When you drop the magnet into the pipe, you might expect it to fall at the rate of gravity. But the current induced into the pipe generates a magnetic field that provides "magnetic viscosity." The magnet falls very slowly through the pipe, as if it were falling through a thick liquid.This is exactly the same principle as the shorting ring on a loudspeaker used to counteract flux demoduation. It is also used as a damping mechanism on electrical assemblies such as meter movements. Magnetism and electro-magnetism is interesting stuff.
