Subject: Re: Cryogenically treated audio components
Posted by guitarplayer on Tue, 22 Mar 2005 23:36:04 GMT
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Disclaimer--I am in the business of cryo-treating and selling cryo-treated parts.First, let me comment on what deep cryogenic treatment is...and is not. Using dry ice or sticking parts in the freezer does not qualify as deep cryogenic treatment (DCT). DCT is the name given to the process of very slowly cooling an object down via the use of a cryogen (LN2 being the most common) to a temperature below -180C (-320F), holding the object at that temperature for a number of hours, and then very slowly allowing the object to return to ambient temperature. DCT generally takes place in a chamber of some type and is controlled entirely by computer. At these extreme temperatures, the atomic bonds start to weaken and the grain structure of metal becomes better aligned, more uniform and packed more tightly together. Metals, when drawn, or bent, or annealed, or whatever, develop stresses. These stresses are relieved by DCT. The reduction of residual stresses is why DCT is widely accepted in the tooling industry as it makes mills, or blades, or whatever, last much longer as the austenite (large particles of carbon carbide) is converted to maternsite (fine grained metal lattice structure).Tool steels really don't have alot to do with high performance audio, but the relieving of residual stresses and improving dimensional stability has many benefits for our beloved hobby. Close grain lattice structure in copper, for example, results in a smoother more detailed sound as the signal encounters less resistance (although this cannot be measured) flowing on down the road. Many of the metals employed in the manufacture of cables, PCB's, power cord ends, connectors, etc, benefit greatly from DCT. DCT has also been shown to improve the strength of plastics, so greater durability can be expected as well. However, DCT is not a cure all. It does, in my experience, improve almost everything, but some caution is required as different parts require different treatment profiles. In treating whole pieces of audio gear extreme caution is required, as is finding a treatment house that has experience treating stereo components. Front panels can break and electrolytic caps can be rendered useless if a proper profile is not employed. Properly preparing the equipment for DCT is also vital. Performance benefits are many. IMHO, the sound becomes much smoother, while becoming more detailed. The music emerges from a blacker background and dynamics are also improved. I know, I know, it sounds like I am crazy, but try it, you'll like it.Regards,LeePS--I look forward to meeting many of you at the GPAF!