Subject: Re: Significant Correction to Post: Initial Listening Impressions of Yamaha ca-1010
Posted by Martin on Fri, 24 Sep 2004 13:43:23 GMT
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Hi akhilesh,My theory is the major differences between SS and tube amps has to do with the amps damping factor. In other words, the internal series resistance that the amp places in series with the speaker and cables is significantly different in the two styles of amps. This is not the only difference but I believe it explains a lot of the perceived properties of the bass produced. Typically people report that a tube amp is warmer and a solid state is cold and analytical. The speaker is not changing but the amp's influence on the response can be dramatic. If you look at my Project #5 you will see that I recommend different resistor value ranges depending on the style of amp. Most people using tube amps also use high efficiency drivers which means a big magnet and a low Qts. If a tube amp is used then the internal series resistance "increases" the Qts producing more bass and a warmer presentation. Connecting this same speaker system to a SS amp often produces a weak bass and shouting painful midrange response. When a multiway driver system, typically lower efficiency with a smaller magnet and higher Qts, is connected to a tube amp it produces a bloated uncontrolled bass response. Connecting the multi-way speaker to a SS amp and the performance is much better. These lower efficiency multi-way speakers are typically used with high powered SS amps.I arrived at the observations above after reading many years of posts on different forums describing how inserting a tube or solid state amp into an existing system changes the speakers performance. Typically it improves the full range speaker and degrades the multiway speaker. This is not absolutely the case in all situations but is a significant trend I have observed.So my reason for suggesting adding more series resistance to your speakers when using the SS amp is based on the difference in damping factor. You have built and optimized your speakers to perform well with your reference tube amp. The amp and the speakers are a consistent pairing that creates a high performance system. When you connect these same speakers to the SS amp, you have removed the internal series resistance and the combination is not optimized. MY hypothesis is that if you added 2 or 3 ohms of series resistance when you use the SS amp then the difference in what you hear will be much smaller, you have an apples to apples comparision of the "same" speaker with each amp. The differences can be contributed to the construction and circuit design in the amp and not masked by a difference in damping factor. In essence you would be running the experiment that I should be doing by inserting a tube amp in my variable BSC Lowther ML TL set-up.Hope that helps,Martin