Subject: Tertiary winding OPTx windings
Posted by PakProtector on Thu, 24 Feb 2005 01:27:14 GMT
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Hey-Hey!!!,I figured this one deserved a new thread. Of what use is the third winding on an OPTx like a Dynaco A440/441 of an Acrosound TO-350? The third winding is ~16% as long(by turns count) as the main anode winding. In the case of the A441 this main anode winding is 4k3 a-a to 4, 8 and 16R on the secondary.Look at valves with a very different g2 voltage rating fro the plate. 6146 is one. Most of the TV sweep tubes for another. If it were desired to operate these types with a distributed load, or Ultra-Linear and feed g2 at the same potential as the anode, the maximum voltage would be severely limited.If we instead wrapped a seperate center tapped winding long with the main anode coil, we'd get the same sort of plate feedback to the g2 as with U-L but we could run g2 at a differnet DC voltage.Or...look at the Quad II OPTx, it has the third CT winding connected reverse phase (compared to the previous example) and the cathodes are connected to its ends. This has two effects. First is negative feedback delivered as the cathode follows the input signal. The other is an increased load (nominally a-a). The valve in the middle does not recognize how much of the load is on its cathode and which is on the anode, but the overall length is increased by ~16%. The load impedance is increased by 1.16-squared times the original anode load. Also Quad discovered a reduction in third harmonic beyond that offered by the level of NFB provided by the cathode laod. The cathode winding includes g2 current and this seemingly small contribution has important effects since PP only deals with elinimation of even harmonics.There's no doubt something I left out as obvious to me... regards,DouglasAll this is overshadowed by voltage ratings between the anode winding and the cathode winding is hard to deal with. McIntosh has three windings, wound tri-filar and those old black amps seem to survive well enough.

Subject: Re: Tertiary winding OPTx windings
Posted by Manualblock on Thu, 24 Feb 2005 02:14:26 GMT
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How do you feel about the Quad circuit? KT 66 tubes right?Charging up the camera; have the photo by tommorrow.

Subject: Re: Tertiary winding OPTx windings
Posted by PakProtector on Thu, 24 Feb 2005 02:39:00 GMT
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Aside from a slightly screwey front end, I think it has potential. I would modify the OPTx winding just a bit to take advantage of my E-Linear circuit. It is just such a design I am working through right now. Let me get a bit of Audio funding together again, and I'll be making a pair straight away. It is shaping up quite nicely. Now I have some UTC LS OPTx's and I can't figure out how to get

the Iron out of them. It looks like I'll have to wreck the nice cast aluminium can pretty thoroughly to examine its construction. 8k a-a/20W is *PERFECT* for 300B's.So many cool things to do, and sooooo little time.regards,Douglas