Subject: Thermionic four Pi's sound "horny"
Posted by Mike Borzcik on Fri, 31 Aug 2001 00:21:22 GMT
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Hey everyone,I just finished my Thermionic four Pi's today, after waiting quite a while for the horn flares to arrive. They sound pretty good on instrumental music, but I find that vocals exhibit a lot of the stereotypical 'horn' sound. My previous speakers were Magnepan MMG's, so is it possible that I'm just expecting too much in terms of neutrality, or could something else be wrong with the speakers? They also seem to be missing a bit of transparency and detail compared to the MMG's, but again, I might just be expecting too much. On a positive note, they do get quite loud and can be heard throughout my dorm, even when powered by my 55 watt Jolida 302A. The main reason I built them, though, was to have a neutral sounding high-efficiency speaker so that I could start experimenting with low powered SET's. From all the positive things I've read about Pi speakers, I think I might have done something wrong when I built the speakers. Any comments or suggestions?Thanks.Mike Borzcik

Subject: Re: Thermionic four Pi's sound "horny"
Posted by Wayne_Parham on Fri, 31 Aug 2001 02:16:53 GMT
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I know we've exchanged some E-mails - but please refresh my memory. What did you do for a crossover? If you have not installed the appropriate crossover - as shown in the schematic - or if there is something wrong with them, particularly in the compensation network, you can expect the speaker system to perform poorly. The compensation network is very important and without it you will have a 15dB peak in the vocal overtone region. So examine your crossover network carefully.

Subject: Re: Thermionic four Pi's sound "horny"
Posted by replay on Fri, 31 Aug 2001 11:04:11 GMT
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hi mike,i know what your going through, been there with my 7 pi corner horns. first my technician installed improper compensation for the x-over-which wayne thankfully corrected- but then my cabinetmaker made to large a cutout for the flare so i had to use the larger eminence cd flare. oops again, this flare needs different compensation again which i never corrected. in my previous post you will note the hesitation i had before i hooked up my new premium stage 4 pi's but they sound unbelievable, believe me when i say this as i at one time owned a pair of mg1's. there is no comparison, the pi's whoop there ass. the difference in sound with improper compensation or the improper flare is night & day. i honestly believe the 4 pi's performance is superior to anything from klipsch (much better components) and believe they can hold there own against the smallest

avantgarde's. but look at the savings!!! i'm glad your into tubes because i believe they are far more musical and i myself was running the decware zen s84c but have know switched to a more powerfull kr enterprise amp. the small set's are fine but the speakers sound so good i constantly turn them up. 10 watts a side is plenty. between you and wayne i'm sure you will sort things out, and please keep us posted on your results. thanks,george

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Subject: Re: Thermionic four Pi's sound "horny"
Posted by Mike Borzcik on Fri, 31 Aug 2001 21:58:15 GMT
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Hi,I used the standard Peavey CH-3 horn flare and built my own crossovers using the schematic you sent me. I just took some pictures of the crossovers, and I'll post them here as soon as the film is developed and I can scan them in. In the meantime, however, I'll try to give a detailed description of how I wired the crossovers, and maybe you can figure out what's wrong with it:For starters, I have a 10 uf 250V capacitor connected directly across the terminals of the woofer. The negative lead from the woofer goes directly into the negative binding post. The positive lead connects to a 1.0 mH (or uH or whatever the schematic called for; I don't have a copy of the schematic right now) inductor, which in turn is connected to the positive binding post.Also connected to the positive binding post is an 8.2 uF capacitor (the only deviation from the schematic that I know of--my sources didn't have 8.0 uF capacitors), which then connects to a 0.6 mH (or whatever...) inductor, the other end of which is connected to the negative binding post. The junction between the 8.2 uF capacitor and the 0.6 inductor is where the compensation network is connected. The compensation network consists of a 4.7 uF 450V Hovland Auricap capacitor connected in parallel with two 47 ohm Mills non-inductive resistors. The resistor in parallel give 23.5 ohms of resistance, which should be close enough to the 25 ohms called for in the schematic. In case it matters, the red lead of the capacitor is on the side nearest the positive binding post. The other end of the compensation network is connected to the positive terminal of the compression driver. The negative terminal of the compression driver connects to a 22 uF capacitor, which then connects to the negative binding post.As far as I can tell, I've followed the schematic exactly. I'm hoping that someone can wade through the description I've given and maybe find something wrong with my assembly. The speakers are listenable right now, but at the moment they don't match the transparency, neutrality, or detail of my Magnepans.Thanks for any help you can give!Mike Borzcik

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Subject: Re: Thermionic four Pi's sound "horny"
Posted by Wayne_Parham on Sat, 01 Sep 2001 04:49:16 GMT
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If you used 4.7uF in your compensation network, that's where your trouble is. Everything else

about your crossover is perfect, but the 4.7uF capacitor in the compensation network is ten times too large. It should be 0.47uF across the resistors and the capacitor being ten times too large effectively removes the compensation network from the circuit.

Subject: Re: Doh! Sorry to get your (and my) hopes up, but...
Posted by Mike Borzcik on Sat, 01 Sep 2001 22:43:39 GMT
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I checked my crossovers again, and I did indeed use 0.47 uF capacitors in the compensation network. I just read them wrong when I posted the description of the assembly. So that's unfortunately not the problem. Maybe once I get pictures of the crossovers there will be something that I missed in my written description. The problem could also be the acoustics of my room. I'm in a pretty small dorm room and the speakers are right next to each other. I can sit up to eight feet away from the speakers, but I'm still directly in front of both of them. Could being directly on-axis cause some of the horn sound? They do sound pretty good, so I still think that maybe I'm just being too picky. I'm still hoping that there's something wrong with them, though. :-)

Subject: "Nasal" sound
Posted by Wayne_Parham on Sun, 02 Sep 2001 00:53:44 GMT
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The sound you're describing is a sort of "nasal" sound, yes? Or is it more of being "surrounded by treble?" If it's the former, then I'll bet we have problems with the crossover. If the latter, then it may be your room. If it's the room, then every speaker should sound bad there. If that's the case, then check out the post called "Solution for raised wood floors and crawlspaces." It might give you some good ideas.

Subject: Re: "Nasal" sound
Posted by Mike Borzcik on Sun, 02 Sep 2001 02:58:55 GMT
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I guess the best way to describe the sound would be "harsh and cluttered." At very low levels the sound is very good, but as soon as I turn up the volume or there's a crescendo in the music, the upper midrange turns into a big blur and everything sort of melds together into a big blob of harshness.I'm starting to wonder if my amplifier is partly to blame. Now that I think about it, I had a little bit of the same problem with my Magnepans. They sounded awesome at low levels, but as soon as I pushed them louder everything kinda jumbled together. I was hoping that these new speakers would solve that problem by not making my amplifier work as hard to play loud, but

maybe they're actually making the effect more pronounced for some reason. If we find that there's nothing wrong with my speakers, I might try to redo a triode modification that I tried on my amp when I was using the Magnepans. I didn't like the modification then because it made the sound seem weak and thin, but it might work better with these speakers.From what I've read, I definitely believe that these speakers should sound better than they do now, so hopefully we're able to find something that I did wrong. I unfortunately can't send the crossovers themselves to you because the components are firmly glued to the inside of the cabinets. I should have the pictures of the crossovers in a few days, so I'll e-mail them to you as soon as I get them. Until then, I'll continue to enjoy these speakers at low levels, or at very high levels, forcing everyone in my dorm to listen to whatever I damn well want them to listen to. ;->Thanks!Mike Borzcik

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Subject: Harmonic distortion due to amplifier clipping
Posted by Wayne_Parham on Sun, 02 Sep 2001 06:12:48 GMT
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What you're describing sounds like clipping. It very well could be your amp. Have you tried other speakers to see if the problem follows the amp or the speakers?

Subject: Problem solved.
Posted by Mike Borzcik on Tue, 04 Sep 2001 20:29:39 GMT
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I think it was my amp. Different amp, problem goes away. Also I found that I had the speakers in bad locations, which only made matters worse. After a bit of rearranging, I found a way to situate the speakers so that they are about four feet apart instead of being right next to each other. This little change made all the difference in the world. I think that being directly on-axis was contributing to the harshness that I heard before. Between having a bad amp and bad speaker placement, the difference in sound quality was night and day after I got things right. I'll post a more complete review on the forum once I scan the pictures I took, but right now I'll say that I'm very impressed.Thank you, Wayne, for all the help and for designing such good speakers.Mike

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