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Subject: Crap bought a bunch of worthless crossover parts  
Posted by [James W. Johnson](#) on Sat, 17 Jul 2004 02:19:49 GMT  
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I thought I needed 10 8 ohm 10 watt resistors to make an 8ohm 100watt part...I used the same thinking for all of them. :( these Eagle resistors were a buck each...what a waste.What in the heck do I really need here, I am having trouble with the math here.thanks

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Subject: Re: Crap bought a bunch of worthless crossover parts  
Posted by [James W. Johnson](#) on Sat, 17 Jul 2004 02:28:24 GMT  
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Basically I need a 25 ohm 40 watt part, a 16ohm 40 watt part and an 8ohm 100 watt part.I have 8 25 ohm resistors , 8 16 ohm resistors and 22 8 ohm resistors....maybe I can at least use some of these?

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Subject: The resistors that you do have...  
Posted by [wunhuanglo](#) on Sat, 17 Jul 2004 02:49:10 GMT  
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the 25's, the 16's and the 8's - what are their dissipation ratings?If the 8 ohm resistors are 20W, then two 8's in series will give you 16 ohms at 40W.If you need 25 ohms, use three 8 ohm resistors in series for a total dissipation of 60W at 24 (close enough to 25) ohms. Power resistors are like what, + or - 10% ? So three 8 ohm resistors will give you something like 21.6 to 26.4 ohms, depending on how the tolerances stack up?What's going to get kind of silly is making an 8 ohm, 100 watt part. You're going to have to series/parallel so may individual pieces it just won't be practical.

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Subject: Re: The resistors that you do have...  
Posted by [James W. Johnson](#) on Sat, 17 Jul 2004 03:24:03 GMT  
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They are Eagle Metal Oxide Film Non-Inductive Resistors5%, 10Watt, 8.5mm x 32mm, 33mm leads

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Subject: Re: Crap bought a bunch of worthless crossover parts

Posted by [Wayne Parham](#) on Sat, 17 Jul 2004 07:46:16 GMT

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You can use (8) 8 ohm resistors to form a high-power 8 ohm block. Connect two in series and four banks of those in parallel. Use the remaining two 8 ohm resistors for something else. For the 12dB cable assemblies, you need a 25 ohm resistor and a 16 ohm resistor. The 10dB assembly needs two 16 ohm resistors. Use all non-inductive 10 watt parts, and build them up in blocks of four. So each really uses a "resistor block" made using four 10 watt resistors. For the 25 ohm resistor used in the 12dB assembly, we use two pairs of series connected resistors, one a 20 ohm and the other a 30. The series connection gives 50 ohms and two of those in parallel makes 25 ohms. The 16 ohm block is easier, since it uses four of the same part, a 16 ohm resistor. Two in series, and the 32 ohms that is formed is then connected in parallel to another just like it to make 16 ohms. There are photos of the cable assemblies here.

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Subject: Obviously, I stand corrected...

Posted by [wunhuanglo](#) on Sat, 17 Jul 2004 09:22:51 GMT

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I never thought of building a "block" the way Wayne did (silly me). Sorry for any confusion I lent to the discussion.

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Subject: Re: Crap bought a bunch of worthless crossover parts

Posted by [James W. Johnson](#) on Sat, 17 Jul 2004 13:03:08 GMT

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I am sorry Wayne but I am still unable to come up with an 8 ohm block using 8 ohm resistors, are you sure 16 are not required for this? thanks

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Subject: Can someone check my final crossover for correctness please?

Posted by [James W. Johnson](#) on Sun, 18 Jul 2004 02:15:45 GMT

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I still have to put in a wire to connect the parts where you see the orange line. Please let me know if I have made any mistakes. thanks

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Subject: Also..

Posted by [James W. Johnson](#) on Sun, 18 Jul 2004 03:07:33 GMT

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Here is how I wired the resistors..

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Subject: Re: Also..

Posted by [Wayne Parham](#) on Sun, 18 Jul 2004 05:27:39 GMT

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It all looks A-OK to me.

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Subject: Re: Crap bought a bunch of worthless crossover parts

Posted by [Wayne Parham](#) on Sun, 18 Jul 2004 05:28:49 GMT

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What you've shown here is right.

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Subject: Re: Obviously, I stand corrected...

Posted by [Wayne Parham](#) on Sun, 18 Jul 2004 05:39:16 GMT

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Actually, I rather agreed with you in that I wouldn't want to solder together all the resistors if I could avoid it. But in this case, James already had a bunch of the ten watt eights.

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Subject: Thank You Wayne, I appreciate it very much!! Please look at the final as well.

Posted by [James W. Johnson](#) on Sun, 18 Jul 2004 22:02:22 GMT

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This thing weighs a ton! I put large nuts and a washer under the resistors to prevent burning...oh yes these will indeed see some power! I am excited to fire them up!

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Subject: Re: Thank You Wayne, I appreciate it very much!! Please look at the final as well.

Posted by [Wayne Parham](#) on Sun, 18 Jul 2004 22:20:27 GMT

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I'm glad you wrote back 'cause I meant to say something else and forgot. Your writing reminded me to tell you to check everything from time to time. I know you like to put the power to these things. I do too, and I run a Crown Microtech 2400 so I can really push 'em hard. I have the resistor banks mounted physically near a plastic plate used for my connector panel. The heat from the resistors has melted and deformed the plate. Sometimes I think about replacing it, but it is not really a problem so I don't. But I'm just saying that even when you build-up large blocks of resistors like this, they'll still get pretty hot when you put the power to them. So check them out from time to time.

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Subject: Re: The finishing process is coming along nicely too...although quite slow.

Posted by [James W. Johnson](#) on Sun, 18 Jul 2004 22:54:06 GMT

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Finish is teak veneer..

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Subject: Re: Thank You Wayne, I appreciate it very much!! Please look at the final as well.

Posted by [James W. Johnson](#) on Sun, 18 Jul 2004 23:09:14 GMT

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Thanks for the warning , I'll be sure and check them from time to time...meanwhile I think I have taken some good measures...here is a side view. I had some resistors almost burn a hole thru a wood crossover board one time so I have learned my lesson. :-)

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Subject: Sweet!

Posted by [Wayne Parham](#) on Mon, 19 Jul 2004 01:30:16 GMT

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I love teakwood. Those are going to be gorgeous!

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Subject: Re: Obviously, I stand corrected...  
Posted by [Larry Acklin](#) on Mon, 19 Jul 2004 15:43:19 GMT  
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I'm coming in late to this discussion. 2 ea 8 ohm in series = 16 ohm2 of those series assemblies in parallel = 8 ohms4 of the series assemblies in parallel = 4 ohms. Thats too low, right? Larry Acklin

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Subject: Re: Obviously, I stand corrected...  
Posted by [Wayne Parham](#) on Mon, 19 Jul 2004 21:22:36 GMT  
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You're right that (8) 8 ohm resistors connected as two groups of series/parallel blocks will yield 4 ohms. You can connect them up in other configurations too. But the mesh circuit shown in James' drawing yields 8 ohms. You can calculate it out using superposition.

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Subject: Re: Sweet!  
Posted by [James W. Johnson](#) on Tue, 20 Jul 2004 02:13:00 GMT  
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Thanks Wayne...Got the veneer finished today...I applied the fronts this morning then came home at lunch and trimmed them then set the backs on. After work I finished up the trimming and began sanding..95% of the sanding is done. I'll start applying the Polyurathane finish tomorrow. :-)| started a webpage for the Pis...<http://home.comcast.net/~bentvalve/pi.htm>

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Subject: Re: Sweet!  
Posted by [Wayne Parham](#) on Tue, 20 Jul 2004 06:03:35 GMT  
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That just really looks great, James. I know what they sound like already, so I think you'll be pleased. I think you have a great pair of speakers there. Beautiful!

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