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Subject: Ordered Stage 4 a few days ago, question on port...

Posted by [Greggo](#) on Wed, 25 Oct 2006 13:44:30 GMT

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Is the port simply a cut out in the baffle, or do I actually build a rectangular tube open at both ends that is 3.5x6" opening with a sectional length of 10"? Also, if I wanted to use a 3 or 4" flared port tube from parts express, how long should the tube be? I am planning on building the Stage 4 in two cabinets, one with the woofer centered and close to the top, with a round port or port/tube as is the case mounted in the center below the woofer, and a nice platform stand that slopes from just below the port to the floor so everything looks nice and tidy. Then I will have a separate cab mounted in a small sand-filled platform on top of the woofer box so the horn is fairly isolated from the woofer but still close enough so the cross-over design will work as intended. I may also angle the cabinet sides back or put a 45 degree edge on them, maybe as large as 2x2" even though diffraction is probably not an issue here I thought it might just look nice and give me some practice for future projects that will require such edge treatments. Anyways, I know that I should keep the internal volume that the woofer sees the same... anything else you would recommend given my aesthetic design goals here? Thanks, and looking forward to building your kit and putting it through the paces... Hope you are not offended that I would like to use a port tube from parts express, even if I just use the flared end in the baffle as I think it will look nice. Regards, Greg Jensen

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Subject: Re: Ordered Stage 4 a few days ago, question on port...

Posted by [Wayne Parham](#) on Wed, 25 Oct 2006 14:46:19 GMT

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The port is a rectangular duct made of wood. You can't fit a round port in the cabinet, but if you move the tweeter outside as you've described, then you can.

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Subject: Re: Ordered Stage 4 a few days ago, question on port...

Posted by [Greggo](#) on Wed, 25 Oct 2006 15:01:39 GMT

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OK, I hope I am not being a pest here, but if I go with the 4" tube that flares at both ends to meet the 7.25" flange, what length should I cut the tube to (and does that include the short flared section or only the part of the tube that is a straight 4" in diameter)? Thanks in advance for any help... first project other than single driver / open baffle... and I am math challenged. Regards, Greg Jensen

Subject: Re: Ordered Stage 4 a few days ago, question on port...

Posted by [Wayne Parham](#) on Wed, 25 Oct 2006 17:58:11 GMT

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You'll want to tune the box to 38Hz. To do that with a 4" port, I'd make it 6" long. The Helmholtz formula used to calculate this is for a straight (non-flared) port, but the alignment has a lot of "wobble room" so I wouldn't worry about the flare. In fact, you could safely use a 4" port anywhere from 5" to 7" and the response would be almost the same. Here's the Helmholtz formula: Here's a little BASIC program that will calculate the formulas for you:

```
10 INPUT "Enclosure Volume";VE
20 INPUT "Diameter of Port";PD
30 INPUT "Length of Port";PL
40 VB=VE*1728:PI=3.1415926535:AP=PI*((PD/2)^2):LC=PL+((8*PD)/(3*PI))
50 FR=(13548/(2*PI))*(AP/(VB*LC))^.560
60 PRINT "Fr =";FR;"Hz."
70 GOTO 10
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Subject: cool... Thanks Wayne! (nt)

Posted by [Greggo](#) on Wed, 25 Oct 2006 18:36:43 GMT

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(nt)

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