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Subject: 4 Pi Baffle Information

Posted by [NWCgrad](#) on Thu, 03 Mar 2011 15:03:01 GMT

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I am finally back on track to build speakers (I lost a year being assigned 450 miles from my family - geographical bachelor in navy terms).

I plan to start constructing the cabinets, two vented and one sealed, soon. I have a question on recessing the horn and woofer. The JBL 2226H datasheet indicates an overall diameter of 15 17/64". The plans call for a cutout of 13 15/16". What depth and diameter is recommended for the JBL recess for it to set flush with the cabinet?

I have a similar question for the horn, the Eminence website states for the H290 a cut out of 10.3" L x 4.9" H (vice 9.5" L x 4.75" H per the plans), with overall dimensions of 11.4" L x 6.5" H.

I am having the cabinets cut via a CNC so need to be able to provide exact information. I am moving to Cambodia this summer and need them completed before I leave.

I plan on building the cabinets before I order the kit from Wayne (otherwise I may get lazy and live with unfinished cabinets). Cabinets will be built of Baltic birch and veneered in either oak or cherry.

Thanks for assisting!

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Subject: Re: 4 Pi Baffle Information

Posted by [Wayne Parham](#) on Thu, 03 Mar 2011 16:48:32 GMT

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The cutout dimensions shown in the plans are right. So use those. As for the routing depth, I can't say by memory - it's around 3/8" - but I'll measure it later this evening.

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Subject: Re: 4 Pi Baffle Information

Posted by [NWCgrad](#) on Thu, 03 Mar 2011 16:56:00 GMT

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Thanks Wayne, I was planning on going with the cutouts from your plans. I would not trust spec sheet info over the plans of the speaker designer.

Are the outer dimensions correct? I am thinking that if the recess is too large or too deep the speakers will look crappy.

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Subject: Re: 4 Pi Baffle Information  
Posted by [Wayne Parham](#) on Thu, 03 Mar 2011 17:11:46 GMT  
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The outer dimensions are correct for the woofer, but the horn is sometimes a bit snug when routed using Eminence's dimensions. I'm not sure if there's a little bit of variance from horn to horn but I know I've had trouble there. If the cabinet is unfinished, obviously it can be re-routed but I've had some cabinets delivered finished and then when I went to install the horn, it was anywhere from 1/32" to as much as 1/8" too large. Seems more often that it is too wide than too tall. In a couple cases, rather than re-do a cabinet that was finished with an expensive polished laquer coat I had the horn planed to remove some of the edge. Turned out great, so don't be overly alarmed, but it was frustrating to find the horn didn't fit and have to take extra steps to correct it.

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Subject: Re: 4 Pi Baffle Information  
Posted by [NWCgrad](#) on Thu, 03 Mar 2011 17:33:32 GMT  
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Thank you for the information. Once I have the depth of the recess I will be ready to go.

Can't wait to get rolling on this project, it has been in the works for well over a year.

-SWN

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Subject: Re: 4 Pi Baffle Information  
Posted by [Wayne Parham](#) on Fri, 04 Mar 2011 00:17:24 GMT  
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The routing depth for the H290 is 3/8" and the depth for the 2226 is 5/8". However, I'd go 1/16" more to give room for a gasket. The O-Ring that comes with the 2226 is neat, but I prefer cutting my own gaskets from PVC. You can get it at any hardware store as shower pan material.

We glue a ring of wood behind the routed groove to give it added thickness and strength.

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Subject: Re: 4 Pi Baffle Information  
Posted by [NWCgrad](#) on Fri, 04 Mar 2011 03:20:13 GMT  
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Thank you for the information. I am having the CNC shop make a double thick front baffle (1.5"), the depth of the cabinet will be increased from 14.25" to 15.5" to compensate. All internal dimensions should be nearly the same as the original plans (the extra 0.25" of internal volume will be taken up 1.5" x 1.5" rails along the top and bottom to assist with assembly and structural integrity). Since the speakers will be shipped to Cambodia in August, I wanted the structure to be stronger than normal to survive military moves.

I cannot wait to listen to the final product. Trying to determine the initial playlist now, I know it will include Pink Floyd, Edgar Winter, Black Sabbath, Mozart and Coltrane.

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Subject: Re: 4 Pi Baffle Information  
Posted by [Nelson Bass](#) on Wed, 19 Jun 2013 17:23:42 GMT  
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Hi Wayne,

My H290 horns are closer to 1/4" in thickness than 3/8" and I will just mount it directly on the front panel (not recessed).

I intend to do the same with the 2226 but compared to flush mounted horn and bass driver this will cause the voice coils to be 3/8" misaligned to each other. Go or no go?

Will it be better to flush mount the horn and the bass driver or is it enough to recess the bass driver 3/8"?

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Subject: Re: 4 Pi Baffle Information  
Posted by [Wayne Parham](#) on Wed, 19 Jun 2013 18:09:18 GMT  
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Oh, that's perfect. The 1/8" difference shifts the forward lobe less than 1°. But if you use a gasket, you probably should go 3/8" if you want the horn to be flush with the baffle.

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Subject: Re: 4 Pi Baffle Information  
Posted by [Nelson Bass](#) on Wed, 19 Jun 2013 19:00:46 GMT  
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Hi Wayne,

I get the difference to be closer to 3/8" between flush mounted and just mounted on the baffle:

As far as I remember original the horn & bass driver were not recessed in the picture at your website?

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### File Attachments

1) [4Pi.jpg](#), downloaded 5924 times

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Subject: Re: 4 Pi Baffle Information

Posted by [Wayne Parham](#) on Wed, 19 Jun 2013 19:14:35 GMT

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You do not have to flush mount the drivers, if you don't want to. The forward lobe will shift ever so slightly, but the vertical nulls are widely spaced so it is a non-issue.

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Subject: Re: 4 Pi Baffle Information

Posted by [Nelson Bass](#) on Wed, 19 Jun 2013 19:31:46 GMT

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Great, thank you!

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