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Subject: Double thickness front?

Posted by [CZ Eddie](#) on Sat, 20 Mar 2010 17:33:46 GMT

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I notice most pictures of the 4PI show the enclosure having a single thickness front, with both the 15" driver and horn mounted on top of the wood.

If I were to go with double-thickness front and flush mount the driver & horn, will that require any modification to the crossover or will it have any impact on the response?

This would bring the horn and baffle 3/4" forward, while the 15" driver stays the same. The vent would of course remain the same volume/length.

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Subject: Re: Double thickness front?

Posted by [Wayne Parham](#) on Sun, 21 Mar 2010 15:20:43 GMT

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I usually flush mount both woofer and tweeter. If you do that, no crossover changes are required. Both are sunk into the baffle very nearly the same amount. The tweeter is actually sunk into the baffle 1/2" and the woofer is 5/8", and this 1/8" difference does make slight shift in the position of the forward lobe, but it's tiny, so small it's even hard to measure.

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Subject: Re: Double thickness front?

Posted by [CZ Eddie](#) on Sun, 21 Mar 2010 16:38:22 GMT

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Thanks, Wayne. I didn't realize that. Do the plans include 3/4" all the way around, and an extra 3/4" for the front baffle for a total of a 1.5" thick front baffle?

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Subject: Re: Double thickness front?

Posted by [Wayne Parham](#) on Sun, 21 Mar 2010 17:31:24 GMT

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The plans show outside dimensions and specify 3/4" stock. What you can do if you want to route a recess to mount the drivers flush is to cut a ring to increase thickness just in the driver mounting area. Glue it behind the baffle, increasing the thickness in where the routed recess is cut and where the T-Nuts go. This adds thickness without displacing much internal volume. Or you can simply add another panel in front of the cabinet to increase front baffle thickness.

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Subject: Re: Double thickness front?

Posted by [BigmouthinDC](#) on Sun, 21 Mar 2010 20:12:57 GMT

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If you double up the front do you need to adjust the length of the pieces used for the port such that the effective length remains the same?

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Subject: Re: Double thickness front?

Posted by [Wayne Parham](#) on Mon, 22 Mar 2010 01:24:46 GMT

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Port length should be measured from entrance to exit, no matter what you've done with the baffle. So if the baffle is 3/4", then a 10" port should extend 9.25" back from it. If the baffle is 1.5", the port should extend back 8.5" back. Overall length - entrance to exit - should be 10".

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Subject: Re: Double thickness front?

Posted by [Infrasonic](#) on Wed, 24 Mar 2010 06:05:55 GMT

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Would it be a bad idea to have only the woofer countersunk and not the horn?

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Subject: Re: Double thickness front?

Posted by [Wayne Parham](#) on Wed, 24 Mar 2010 15:12:40 GMT

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No, that's OK but I think it looks much better to have the horn flare flush mounted as well as the woofer.

Some might chime in and say removing the diffraction edge is better when flush mounted. I wouldn't necessarily agree because the edge is so small it's acoustically "invisible" within the passband. But still, it doesn't hurt to remove that edge by flush mounting...

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