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Subject: Notes On Speaker Grills

Posted by [Bill Epstein](#) on Sun, 03 Mar 2013 18:26:45 GMT

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In my Notes On 2PI Towers I mentioned they were designed for Grills, something I seldom do. Seldom, because I never seem to have any luck with them

I've used the spray adhesive/waxed paper technique and the brute force hundreds of staples routine. Never managed to get it right. Came close this time, tho'.

Knowing the baffle plywood was 23/32 and allowing for the thickness of the material and offset of the Grill Guides I used, 1/2" (15/32) material was what I chose for the frames. I also allowed for the extra thickness of the material and a slight gap between the bottom of the grill and the top of the secondary baffle, about 1/8" and sized the frames accordingly.

The order of process to arrive at a pair of "picture frames" was very important. First, I cut the frames on the table saw.

Second, with the blade lowered to make a dado groove 3/32 deep, I cut dados for the eventual use of window screen spline to hold the material. With my narrow kerf blade, I made one pass on all four sides of both plywood pieces nearly a 1/2" in and then a second pass to complete a 3/32x3/32 dado.

Third step was to rout the round-over to match that of the secondary baffle. Important here was to leave the router (it helps to have 5 of them!) just as it was for the secondary baffle round over.

Fourth step, now that the round overs were cut, was to jigsaw the insides of the pieces leaving 1" of material all the way around. You do this last because it isn't possible to keep the router level on a narrow 1" wide strip of wood.

That done, I nailed brads into the frames to hold them off the work surface while I painted; painting the nailed sides and then turning them over on the brads to paint the other.

Dry now, I took the frames to the speakers to align the Grill Guides. I wanted the grills to sit about 1/8" off the secondary baffle so I used a ruler of about that thickness as a shim, placed the frames against the speakers and, once aligned, clamped them in place. Then I drilled a 1/8" pilot hole through the frames and into the speaker baffle, making it certain that the guides would line up when the grills were complete. These grill Guides require a 7/16" and 1/2" bit for the two parts and I went ahead and drilled the frames and baffles, with a depth stop set at 1/2" for the Baffle holes; don't want to create 8 little ports.

Final step was to cut and fit the cloth, Parts Express 260-332, and with the screen spline, attach it to the frames. Done!

Here are the frames showing the dado and the brads that enable you to paint both sides w/o waiting for one side to dry:

One frame clampd to it's baffle for drilling the pilot holes:

The Grill Cloth fastened with screen spline ready to trim:

2PI Tower with it's protective grill in place, ready to sound muffled

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### File Attachments

- 1) [IMG\\_2919\\_1.jpg](#), downloaded 3406 times
  - 2) [IMG\\_2922\\_1.jpg](#), downloaded 3440 times
  - 3) [IMG\\_2923\\_1.JPG](#), downloaded 3336 times
  - 4) [IMG\\_2925\\_1.jpg](#), downloaded 3406 times
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**Subject: Re: Notes On Speaker Grills**

Posted by [Wayne Parham](#) on Sun, 03 Mar 2013 20:40:13 GMT

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Nice work, Bill, looks great!

One thing that has caught my fancy is using neo magnets embedded in the wood, under the veneer. They provide the holding force to retain the grille, and allow it to be removed without exposing any fasteners. Just use small cylindrical neo magnets and drill a hole to put them in. Add a dab of glue and cover them with your veneer. Voila! Hidden grille retainers!

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**Subject: Re: Notes On Speaker Grills**

Posted by [Bill Epstein](#) on Mon, 04 Mar 2013 01:52:27 GMT

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I thought about the magnets while I was planning the build but had the guides on hand so I went that way. The magnets under the veneer do make sense so next cabinets I'll give it a try.

Surprisingly, the PE grill cloth doesn't muffle the sound at all. I stood in front and removed and replaced the grill several times and heard no difference. Maybe at the listening position, tho'...

However, I had the backs of the cabinets just a few inches away from the fronts of the 4Pis until today and the sound was as if a wet towel was over the speakers. I was concerned, to say the least.

Today, I moved them to about 8" from the front wall with the 4s in front and the sound is clear from bottom to top. I absolutely love these giants for bass weight (maybe a bit overcooked at times), mid-range timbre and that very rare commodity, gorgeous massed violins.

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### File Attachments

1) [IMG\\_2929\\_1.JPG](#), downloaded 3124 times

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**Subject: Re: Notes On Speaker Grills**

Posted by [justphil](#) on Mon, 04 Mar 2013 14:23:47 GMT

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Considering making some grills for my 1pi and 2pi non towers.

Are the magnets strong enough to hold to hold the grills in place if they don't have anything to rest on on the bottom?

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**Subject: Re: Notes On Speaker Grills**

Posted by [Bill Epstein](#) on Mon, 04 Mar 2013 14:57:46 GMT

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justphil wrote on Mon, 04 March 2013 09:23 Considering making some grills for my 1pi and 2pi non towers.

Are the magnets strong enough to hold to hold the grills in place if they don't have anything to rest on on the bottom?

You should read the reviews on the PE website for the Neodymium magnets. "Hard to pry apart" and "from 3' away" are just a few examples of their strength!

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