
Subject: Re: part out Valencias & build NorthCreek or Pi? or keep Valencias?

Posted by GM on Thu, 21 Sep 2006 19:45:05 GMT

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Greets!OK, build this, preferably using either 19 mm 13 ply Baltic Birch, Appleply, or marine grade (only if you can find guaranteed no-void though) plywood (all dims inside): H = 40.5", W/D = 19.5", add a full width 811 horn mounting recess similar to the link's 800 Hz VoTT except just make its height big enough to fit the horn flange (~8.75"), and due to the narrow cab it will be necessary to notch out the sides; driver cutout down 17.88" from the top, and for initial tuning, a 5" dia. plastic pipe x 4" long ~5" from the bottom. Assuming a low output impedance amp, this should tune it down in the high 20s and perform similar to sealed except with a bit of extra gain. Shortening the tube to the 0.75" minimum should yield a ~T/S max flat alignment (max BW half space gain) once the horn is properly shelved, so none of this takes into account the LF wall/room gain. If the 4" pipe is too 'boomy', then either add more internal damping as required or just seal it off. For proper vent action, a good seal is essential, so I recommend using high grade neoprene gasket material in lieu of the typical cheap foam weatherstripping. WRT general construction, I recommend mounting the driver to a separate removable baffle like the 846B has rather than a rear access cover/removable back, then run top and bottom front to back braces. Since most of the cab's pressure is vertical, brace the panels using ~1.5" wide plywood strips glued on edge and vertically offset in a golden ratio, so centered at $\sim 19.5 \times 0.618 = \sim 12.06$ ", just don't extend the braces all the way to the top and bottom of the panel since this causes a vibration 'hot spot'. Just to make sure there's no horizontal modes of note, randomly add some strips tying the vertical strips together. Install a HF driver support cross brace and line the notch (no need to contour it to the driver's diameter) with neoprene or similar. For gluing, FWIW I prefer caulk tube loaded construction adhesive, adding a few scrap wood glue blocks along its length, then when it sets I add a second bead along the joint just in case there's any pinholes, though many folks are satisfied with cheap caulk's sealing attributes. WRT damping, Altec's recommendation of covering the top, one side, and back should work fine for sealed or vented, though I recommend adding a second full depth 'panel' louped around the horn to create a damping chamber. FWIW I normally used 1" thick acoustic fiberglass. Bottom line, it's a very room/personal preference dependent since some folks like more or less depending on how 'lively' they like their box sound. The space between the top/bottom of the horn 'lips' and the recess's walls along with the horn flange/baffle sides will need to be lined with either 1" acoustic fiberglass or similar.and if you're interested enough to delve into TL/MLTL design, then start here: <http://www.quarter-wave.com/> <http://www.geocities.com/rbrines1/>though some of his conclusions are a bit too narrow minded IMO since like most things it's not what you have, but how you use it that usually counts most. Anyway, looking forward to your thoughts on its performance/final tuning choice and whether you think it was worth the extra \$\$/effort. GM

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