Subject: Re: Making some progress on my PVC pipe/ RS 1197 project
Posted by Wayne Parham on Thu, 05 Feb 2004 19:27:21 GMT
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Gerat write-up! Looks like an interesting project.About transmission lines: Naturally, the longer the line, the lower the fundamental resonant frequency. If augmentation begins in the upper mid-bass where the driver is already strong, you might develop pretty strong peaking that would sound in a way that many would describe as muddy. For example, I would expect the driver is pretty strong above 100Hz. If the fundamental resonance is between say 80Hz and 160Hz, then your speaker will be maybe 10dB louder in that region. That's definitely going to sound "muddy."A longer pipe that shifts the fundamental down to 50Hz would be better, and then you would need to damp the system so that the next successive higher frequency pipe harmonics (at 100Hz, 150Hz, and so on) were de-emphasized. They will be attenuated slightly from the fundamental anyway. But you will want to de-emphasize them as much as possible because your driver will probably be working strong by that point.Ideally, you would want the cabinet to provide augmentation where the driver response begins to fall off. It might be good to set the fundamental frequency similarly to the way you would set the Helmholtz frequency on a bass-reflex system. I'd suggest checking with Martin King at www.quarter-wave.com about that. Another good reference is Daniel Russel's paper, "Acoustic Filters, Waveguides and Transmission Lines."