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Subject: Re: physics of port tuning

Posted by [Jostein](#) on Tue, 03 Sep 2002 10:28:01 GMT

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The physics involved: Port resonance  $f_{port} = \frac{1}{2\pi} \sqrt{\frac{K}{M}}$  K is stiffness of airspring, M is mass of moving air in port.  $K = \beta \frac{A_p^2}{V_b}$ , there  $A_p$  is port area, and  $V_b$  is box volume and  $\beta$  is a stiffness constant for air.  $M = \rho A_p (L_p + \frac{16}{3} \sqrt{\frac{A_p}{\pi}} \sqrt{\pi})$  there  $\rho$  is air density and  $L_p$  is length of port. If you use one port with area A and port length  $L_p$  or 2 ports with area  $A/2$  and port length  $L_p$ , the tuning frequency should be the same

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