

---

Subject: physics of port tuning

Posted by [dbeardsl](#) on Mon, 02 Sep 2002 05:45:39 GMT

[View Forum Message](#) <> [Reply to Message](#)

---

I noticed something, messing around with a box calculator. When tuning a box I've thought that the tuning was simply using the air in the port as a mass and the air in the box as a spring in a simple spring/mass system. But then, how much the spring (air pressure inside the box) affects the mass (air in the port) is directly proportional to the area presented to it (port area). And if I follow that reasoning, the volume (port air mass) is directly proportional to the area, making the tuning frequency directly proportional to the length of the port no matter what the area... Whatever the case... I'm wrong and I noticed something that I really don't understand. If you have a certain tuning, and you divide the port in half down its length so it is now 2 ports, the overall length must increase to keep the same tuning... Why is that? Anyone care to explain more of the physics involved?

---