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Subject: Re: Speaker Voice Coil Cooling System Valve - Initial Tests

Posted by [Wayne Parham](#) on Wed, 29 Jun 2005 01:28:17 GMT

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One other thing I forgot to mention. The venting system in the driver itself appears to introduce some unidirectional flow. The port tends to exit air more than it takes in. I expect there are turbulent regions that make the system tend to draw air in more around the spider and exit air more through the vent. The center pole gets extremely hot way down inside the motor, getting hotter as you get closer to the front plate. That's why we want to heat sink it to a metal duct that contains several small capillary-like passages. The metal duct will conduct heat away from the motor, and the capillary-like passages will have a large surface area to transfer this to the air. If I were installing a cooling device like this in a loudspeaker with one of the cabinet walls very near the magnet, I might be tempted to make a large plate that acted as a heat sink, and connect it to a heat-conductive metal duct inserted deep inside the motor. This would allow air to pass through the duct, but would also heat sink to the plate. So for basshorns made this way, that might be a very attractive option. It's a similar system, but it uses the access panel as the heat sink. Don't just place the heat sink near the speaker and hope convection will cool the motor. It won't. You'll need physical contact between the access plate and the vent, preferably via a metal duct that extends deep into the motor, and so has a lot of surface area contact with it. Also, I found that once a panel is placed within about 1/4" of the vent, it was shrouded so effectively that flow was reduced to almost nothing. So be careful that the vent isn't restricted and there is adequate flow.

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