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Proper ventilation is critical to the longevity and performance of your electronics

By, Dave Hartfelder Diamond Case Designs, Inc.

Is Your Home Theater Full of Hot Air?

My wife has referenced me as being full of hot air on one or two occasions. Usually when I am embellishing a childhood story to my two kids. While there is really no harm in my verbal banter, the same cannot be said for excessive heat build up in your Home Theater System.

It has been shown that excessive heat build up around electronic equipment will both degrade its performance and reduce its lifespan. It is the number one reason for hard drive failures. With today's high-powered receivers, amplifiers and DVRs it is becoming increasingly important to keep your equipment well ventilated.

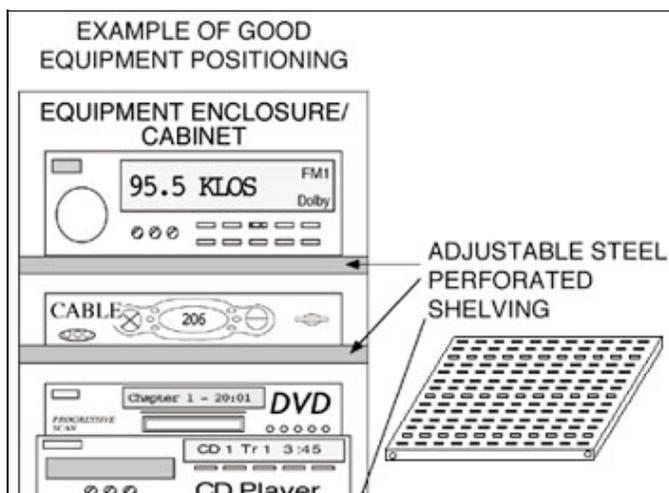


Some Like It Not So Hot



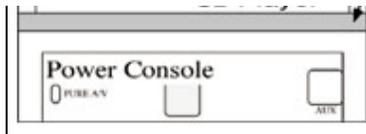
Electronic equipment manufacturers almost always suggest your equipment be kept on open shelving with 6 to 8 inches of space all around. Well, unless you live in a Radio Shack, most of us prefer to conceal our gear in a more attractive fashion...i.e. furniture. We have been producing fine furniture for electronics now for over 17 years and, of course, have had to deal with heat build up issues a time or two.

Simmer Down



Believe it or not, in certain circumstances with properly designed furniture, adequate ventilation can come from natural air flow. All of our furniture systems feature space behind the shelving and generous notches in the back panel. This channel of space creates an "air chimney" that allows rising warm air to escape. This natural ventilation can work IF, your equipment does not run constantly, the amplification is modest, and the equipment can be loosely spaced in the enclosure.

Proper equipment positioning is also critical for this natural flow. Your hottest components (Receivers, Amplifiers, DVRs, and Media Center PCs) should be placed at the top of the cabinet and should not be stacked upon. This way the hottest air will not rise up through your other components. Leave as much excess space above each unit as possible. As you work your way down

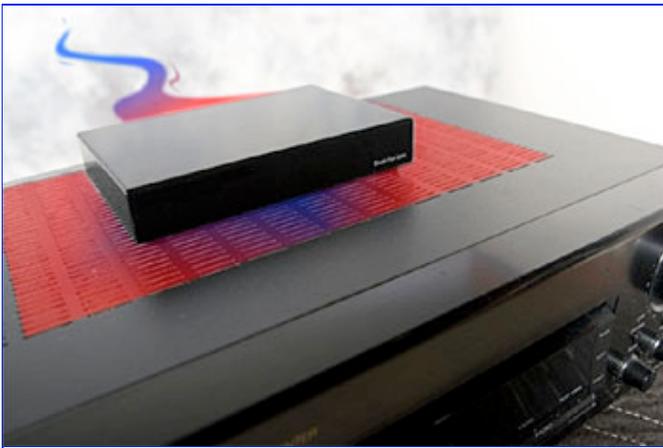


the equipment cabinet, position progressively cooler components. Components at the bottom of the cabinet should be devices like CD players, DVD players, or VCRs as they tend to run pretty cool. The hotter, upper components should each have their own shelf. The lower, cooler components can be safely

stacked on each other, a couple per shelf. A good rule of thumb is, if it has vent slots on the top, it's a "hot" component. Do NOT stack these components and place them higher in the cabinet. If it has a solid top surface, it likely runs cooler and can be placed lower in the cabinet. See the diagram depicting an example of good equipment positioning.

A Little Help Please!

Very often no matter how intelligently you lay out the equipment rack, your gear is going to get too hot and natural airflow will not be enough. This is when you need help with assisted or forced air ventilation. We offer two types of forced air ventilation, spot coolers and cabinet coolers.



A spot cooler is designed to ventilate a single component such as an amplifier, receiver, or DVR. It is a small metal box measuring 6"W x 4"D x 1"H and it is designed to sit directly on top of a heat generating component. Two whisper fans pull air up from the bottom of the cooler and exhaust it out its back. Using the same principal as the built in fans that are in computers, the circulating air helps keep circuit boards, hard drives, etc. cooler. An adjustable DC power supply allows you to specify an intensity level for the fans. They really are not perceptible during normal TV viewing, even at full speed. This "component-cooler" is available for sale in our on-line store for \$150.

While a spot cooler effectively circulates air around one component, it does not cool the entire equipment enclosure. Our cabinet cooling system is designed to do just that. The system features two large 4 1/2" diameter whisper fans mounted directly into the back panel. A lower fan blows fresh air into the cabinet, and an upper fan draws warm air out. This "push-pull" configuration is able to cycle up to 45 cubic feet of air per minute. Efficiency is increased further by replacing the standard wood component shelves with perforated steel shelves. The steel shelves have over 280 holes in them, allowing the air travel up through one component layer to the next. This is the best way to keep your equipment at approximate room temperature. The fans are controlled by an adjustable speed control, or rheostat. While the fans can be plugged in to run continuously, on many installations, we plug them into the switched outlet on the back of the receiver so that they automatically come on when the receiver is powered up.

Forced Air Ventilation: Cabinet Coolers



Our cabinet cooling forced air ventilation system including two fans, three steel shelves, and the adjustable rheostat is an optional feature that can be added to our Theater-Tech™, Evolution™, and Castleton™ Home Theater Furniture Systems for just \$399. It can also be retrofitted into many other enclosures, depending on their dimensions.

You spend hard earned dollars on your home theater equipment, why not maximize it's lifespan and performance with an appropriate operating environment. Proper equipment cooling/ventilation is just one more reason why Diamond Case Home Theater Furniture is the best choice for your system. Please call myself or by brother Steve at 800-616-5354 with any questions or to place an order.

Cabinet fan solutions: Spot coolers and cabinet coolers

The following solutions can be purchased through our on-line store or by calling us directly at 800-616-5354. Ask for Dave or Steve. Thanks!

Cooling Fan Options For Purchase:

<p style="text-align: center;">(1) Spot Cooler <i>Designed to cool a single hot running component. Includes power supply. Perfect choice for receivers, amplifiers, DVRs, AppleTV and more.</i> \$150.</p>	<p style="text-align: center;">(2) Spot Coolers <i>Designed to cool two hot running components. Includes power supply (both fans run on single power supply). Use to ventilate two different components including receivers, amplifiers, DVRs, AppleTV and more.</i> \$285.</p>	<p style="text-align: center;">Cabinet Cooling System <i>Best solution. Click for larger view. Use to ventilate an entire section of a component cabinet. . Includes (3) Steel shelves (19 7/8"W x 20 1/2"D x 1" Thick), (2) Whisper fans, and (1) Speed control mechanism. All wiring and grills included. Fans can be plugged into a standard AC outlet or into switched outlet on amplifier/receiver.</i></p>

\$399.

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(1) Playstation 3 Cooler

Playstation 3 runs very hot. This aftermarket cooler easily attaches to the systems and increases ventilation. Five internal fans.

\$40.

(1) XBOX 360 Cooler

XBOX 360 runs very hot. This aftermarket cooler easily attaches to the systems and increases ventilation. Three internal fans.

\$40.

(2) Drilled-In Spot Coolers

This solution is appropriate where our standard cabinet cooling system may not work. It can even be installed in furniture systems we did not produce. The fans are designed to be installed in a push-pull configuration.

\$285.

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Diamond Case Designs, Inc. - 655 N. Shepard St. - Anaheim, CA 92806 - (800) 616-5354 - www.diamondcase.com

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