



## Venting Closets and Enclosures into Attics or Outside

OK folks, it is time, once and for all, to set the record straight on venting air outside of the house. The real problem is the number of companies saying that it is OK to vent outside what we call in electronic terms, HOT AIR, but in HVAC terms, it's just warm air. It is warm, already 'conditioned' air.

The reason that these companies have recommended this is because they have simply taken an HVAC's remote, inline attic-mounted bathroom/range hood fan and are calling it a room/closet cooler. They are also following the manufacturer's recommendation to vent out of the house or into the attic. That is for the application the fan was intended for which involves hot, humid, smelly air, NOT air that has just been warmed by electronics and DEFINITELY NOT for extended periods of time. A bath/range hood fan is intended to be run for minutes, not hours if it is essentially set to run when equipment is on.

Here are the calculations for why this should not be done: Take a 5,000 Sq Ft home with 10' ceilings. That gives you 50,000 cubic feet of airspace. Add in a fan unit which vents 200CFM of air outside of the house. Now this is easy math - it will take 250 minutes, or a little over 4 hours, to theoretically completely remove all of the currently conditioned air out of the house! You might as well leave a window open all day.

So what is happening? This is not magic folks, air that is removed is replaced from the outside - it is a zero sum game. First off, negative pressure is being placed on the home and in that case, air will find its way into the home. Even with the best construction it can come in through penetrations in light cans, light switches, electrical outlets, around doors and windows or, even worse, through the chimney - in the wintertime this can be very dangerous, pulling carbon monoxide back into the home. But let's just say the home is sealed tight. What happens then is also an easy answer - nothing. If air cannot be pulled into the home, the home will become 'vacuumed' up to a certain point and then the fan will not be able to pull any more air. So the simple fact that the fan is running and exhausting air is an indicator that air is entering the home from somewhere.

During summer months in most areas, this means hot, humid air is entering the home. One of the key functions of the HVAC system is to remove humidity from the air; as the warmer air is drawn across the cold evaporator coils the resulting moisture drips into the drain pan. It is easier for the system to recycle and cool drier, previously conditioned air; higher humidity makes the system work harder decreasing AC efficiency by as much as 15%.

Now here's the big kicker - what about during the winter? Are you going to pull in cold air to vent warm air??? Where is the logic?????

So the bottom line is to just use common sense and simple calculations to form your own opinion on this subject. We simply do not recommend venting AV cabinets and closets into the attic or outside of the home. Instead, either vent to another room or more preferably, directly to the HVAC return vent. Even if the HVAC system is not running, the air will be distributed throughout the vents and into the home until the system is turned on.