Why You Shouldn't "Super" Size Your New Heating and Cooling System

Don't pay too much for Your Heating & Cooling System

We, as Americans, think that bigger is better and buy products that are "jumbo", "extra large", or "mega" size. We generally think we are getting a better value and more of what we want. But when it comes to a home's heating and cooling needs, super-sizing your system can cost you in both money and comfort.

If you are in the market to replace older, inefficient heating and cooling system with new energy efficient ones, an understanding of the critical importance of sizing the system correctly is needed. The correct size of heating and cooling equipment in your home will improve your comfort while reducing costs, maintenance and energy usage.

To give you some history, homes were not as tightly constructed in the past as they are today and it was not uncommon to install furnaces and air conditioners that were two to four times the necessary capacity. Now most people have added new windows, caulking, weather-stripping, and insulation to their homes. Making improvements such as these to reduce heat loss in the winter and heat gain in the summer allows you to install a much smaller system while still being comfortable and saving on your monthly utility bills.

The most common mistake made in new heating and cooling systems is oversizing. This will make the new system not only more expensive to buy and install, but also forces it to operate inefficiently. An oversized system will also breakdown more often and cost more to operate. Oversized heating equipment creates uncomfortable and large temperature swings. Oversized air conditioners (and heat pumps) do not run long enough to dehumidify the air, which results in the air feeling "clammy" and the potential for unhealthy mold growth in your home.

Oversized equipment experiences frequent starts and stops (known as "short cycling") will accelerate the wear and tear on the equipment, which can lead to premature failure. Oversized equipment also uses more fan power for the blower, which often leads to duct leakage due to higher operating duct pressures.

On the other side, undersized equipment, with airflow that is too low, can reduce the efficiency of the air distribution and accelerate wear on the system components, leading to earlier failure. Basically, your system will be working longer and harder to keep up with your comfort demands. Your system will have to run constantly and will wear itself out at a quicker rate.

A home "load calculation" is critical when homeowners are looking for a new heating and cooling system. This is basically a list of factors that determine what size system you need. A good contractor/technician will look at things such as, wall measurements, floor space, windows, R-value of home's insulation, overall square footage of livable space, etc. A close estimate of a building's air leakage is also necessary. This estimate should also include an inspection of the size, condition of seals on joints and insulation and location of distribution ducts in a forced air system.

Beware of a contractor/technician who only checks the "nameplate" (the label listing BTU's) of the existing unit and tries to sell you one just like it or even worse, one that's larger. This is not the correct way to size equipment and is not in your best interest.

Another method includes using simple “rule of thumb”. They may base the size of your home on similar homes like it, using a chart that takes into account a variety of factors. This method can be used for a first estimate, but should not be used to size the actual system. You should include a requirement to produce a written sizing calculation when negotiating with your heating and cooling contractor/technician.

So remember when you are looking to buy a new heating and/or cooling system correctly sizing of your system will directly affect the comfort level in your home, as well as the long-term life of the system and overall cost to you. Pick the right size and skip the super-size!

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