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Air Conditioners

Routine Maintenance Tips

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Air Conditoner Maintenance

By: Patrick Breen

Often, when I explain to clients the results of the whole house cooling system inspection, I see their eyes glazing over as if I'm speaking a foreign language. Most people don't care about the intricacies of an air conditioner, but the mechanics of how it works is fairly simple and there are steps you can take for routine maintenance. Now, at the beginning of the season, is the perfect time for this evaluation.

The typical air conditioning system operates on the principal that when a liquid converts to a gas it absorbs heat. Air conditioners (AC) simply use a liquid that converts to a gas at a very low temperature. The ambient warm air of a house is all it needs. We call these liquids refrigerants.

What the AC unit does is compress the refrigerant into a liquid, forcing it to emit all its heat, becoming very cold. This cold liquid is then pumped into your house where it is allowed to expand into a gas and then absorb heat. We blow the hot air through coils that contain this refrigerant, it absorbs the heat, and then the cooler air is circulated throughout our home. Voila!

There are two basic mechanical components to this operation - the compressor on the exterior of the house that compresses the refrigerant into a liquid; and the second component on the interior called the evaporative coil. Most homes use the blower system in the furnace to move the air around so the coils are mounted right above your furnace.

The by-product of this process is water. The simple fact is that hot air can keep water molecules suspended while cold air cannot. This is why, during the winter, condensation forms on windows when warm moist air comes in contact with cold windowpanes, and why water drains from your furnace when the AC unit is running. Air conditioners are dehumidifiers. This cooling system is basically circulation of a refrigerant, circulation of air, and draining of water. Maintenance for homeowners is keeping these components running as smoothly as possible.

There are other features such as a thermostat, sensors and regulating valves, but for basic do-it-yourself maintenance I recommend trimming shrubs and tall grass away from the condensing unit to allow for better air-flow. Clean off debris from the cooling fins, and patch or replace damaged insulation on the refrigerant line for better efficiency. Before inspecting the interior evaporative coil turn off all power to the unit and then clean any debris off the interior coils. Clean dust and dirt off the blower fan, and to avoid water dripping into your furnace and damaging the components inspect the drip pan and drain line to make sure it's not clogged.

Temperature differentials should range between 15 - 20 degrees. This is the difference in air temperature of what is going into the unit and what is being distributed. Factors such as humidity and where you test can influence results, but if you are getting a very low number I recommend, as with all HVAC systems, contracting your local technician.