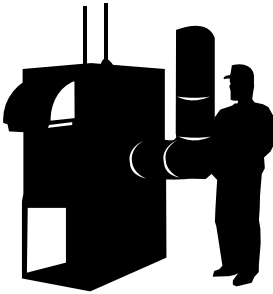


## Maintenance by Mattsson - Bob Mattsson (for Dec 2005)

This article is about hot air heat, and if I'm around next year I will do one on hot water heat. Do not attempt any maintenance yourself if you are not sure of what you are doing.



General – The basic furnace or heater (aka air handler) is a sheet metal box with gas jets and a heat exchanger. The heat exchanger has sealed channels to keep the combustion gases separate from the recirculating air used to warm your house. The heat from the gas flames rise inside a series of metal walls, transfers the heat through the metal to the air on the outside of the walls and goes out the smoke stack/chimney. The air outside the walls of the heat exchanger is forced past the heat exchanger by the blower and distributes the warmed air throughout the house via the ducting system. Of course there are all kinds of safety controls and valves inside the furnace also, but outside of a little vacuuming every year or two the adjustments are not for the average person. If you do open the furnace, make sure you put the panels in correctly and fully or the furnace may not work.

When the heat first comes on you hear a fan but nothing is coming out of the vents. The fan you hear is a combustion fan and comes on first as a safety measure to make sure there is no buildup of gas before ignition. After a short period of time you can hear the gas come on and ignite but the main blower will not start until the air is heated somewhat to prevent an even colder gush of air coming out of the registers then you get now on a cold day.

**Emergency Switch** – Most houses have two emergency shut-off switches for the furnace (these switches will immediately shutdown the heat and the air conditioner). One will be near the area but accessible in an emergency. The other one is located at the furnace itself. This one should be shut off when working at the furnace doing any maintenance, changing/cleaning filters or humidifier pads. The switch plates are red and indicate that it is the emergency shut-off. The switch plates should never be painted over and all family members should be familiar with their locations. If the heat or air conditioning is not

working check these switches first as they may have been inadvertently turned off. This can happen when cleaning, painting or when the grandchildren have been over.

Filters – Remember to shut off the switch before attempting any maintenance! The regular type filters should be changed twice a year, at the beginning of the heating season and again at the beginning of the air conditioning season. A good air flow makes for an efficient unit. Clogged filters make the unit work harder and longer. The electronic/electrostatic filter units must be removed and cleaned in your slop sink or driveway, dried, reinstalled and reconnected. Again, do this at the beginning of each season.

High/Low registers – The air ducts have a high and low register at each location. The low ones are for the heating season. The warm air coming out the ducts rises so it heats up the lower area first before rising and returning to the furnace via the return ducts. The high ones are for the cooling season. Cold air comes out, cools the surrounding area and drops down as cool air is heavier. The warmer air that is displaced, rises and is pulled in by the return ducts and passed over the cooling evaporator in the furnace again. Only one of these registers should be open at a time depending on the season. Ladies, do NOT block the registers with drapes or furniture. This is the same as shutting them off or closing partially and the heat will not reach that area.

Humidifier – The humidifier makes a big difference when you have hot air heat. Heating the air reduces the moisture content making you feel cooler than the actual temperature in the house and drying up your skin and nasal passages to say nothing about drying out your furniture and raising the instances of static electricity. Adding moisture to the air makes you feel warmer allowing you to keep your thermostat at a lower setting. The humidity control located near the thermostat should be set for the outside temperature. If you put on your glasses and get a magnifying glass you can read the settings. Or you can get your grandchildren to set it when they are over. Generally speaking it should be set at about 35 or 40 during a normal winter. If you feel it is too dry try a higher number. If you see a lot of moisture on your windows, lower the setting. Change the moisture distribution pad assembly at least once a year. You can attempt to clean it but they are not very expensive so not worth the effort. If you do this yourself (not a tough job) clean the flow tray and surrounding area. Make sure the drain is clear also. There is a damper that can be opened or closed on the duct bypass that connects the humidifier to the return ducting. This should be opened during the heating season and closed during the cooling season. The handle used to move the

damper indicates its position. This allows the air to circulate past the wet pad, picking up moisture and delivering it with the warm air throughout the house. The water shutoff for the humidifier is usually under one of the bathroom sinks or at the top of the hot water heater. Locate this valve in case you have to shut it off if a leak develops.

Next month – Thermostats and furnace drains